

# GREATER CHENNAI CORPORATION

**TENDER NOTICE NO.: S.W.M.C. No A7/3025/2017-Package-II**

# SCHEDULES (Volume II-B)

**Request for Proposal (RFP)**

# ‘Collection & Transportation of Solid Waste, Street Sweeping Waste (including street sweeping activities), Horticulture Waste and Collection & Storage of Domestic Hazardous Waste in the Zones No 11, 12, 14 & 15 (Package-II) to the Designated Processing Facility/ Dump Site/ Depositing Centers of Greater Chennai Corporation (the Authority)

**Under PPP on**

# Design, Build, Finance, Operate & Transfer (DBFOT)

**2019**

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# Schedule 1: Scope of Collection and Transportation of Solid Waste

The Scope of Collection and Transportation of Solid Waste is appended hereunder

# Daily Door to Door / Primary Collection & Transportation System of Solid Waste

Door to Door/Primary collection of Solid Waste from Households and All Markets (Vegetable Market, Fruit Market, Daily Market, Fish Market, Street Vendors etc.), Hotels, Restaurants, Banquet Hall, Institution, Other Commercial Establishments and any other establishment as notified by the Authority.

* + 1. The Concessionaire shall be responsible for providing time table bound door to door primary SW collection services in the Project Area.
    2. The Concessionaire shall be responsible to collect pre-segregated and/or unsegregated waste (as per KPIs) from waste generators. The Concessionaire shall segregate the waste in three separate streams namely Bio-Degradable, Non-Biodegradable and Domestic Hazardous Waste and store separately in suitable bins (biodegradable waste in green colour bin, non-biodegradable waste in blue/white colour bin and domestic hazardous waste in jute bag). The Authority may provide a set of two waste containers and a jute bag to its citizens for practicing waste segregation at home.
    3. The Concessionaire shall display at each street the time- table of primary collection & transportation vehicles (displayed in English and Tamil languages) to allow residents to avail the facility at prescribed time. This shall be also made accessible to general public on the web-based application and at the Authority’s website or as agreed and accepted in MIOP.
    4. E-Rickshaws engaged in this service shall collect waste only from households/commercial establishments and not from any other source.
    5. The Concessionaire shall be responsible for collecting segregated domestic hazardous waste from the households on bi-weekly basis and transport it to the Deposition Centre for its safe storage.
    6. One Deposition Centre for DHW shall be established for every 20 sq. km. of area. The Authority shall be responsible to provide these DHW Depositing Centres for safe storage of DHW. The Authority shall notify TNPCB authorized Concessionaire separately, from time to time, who shall be responsible for transportation of the domestic hazardous waste and its safe disposal**.**

# Collection & Transportation of Solid Waste from Canal/River Banks:

* + 1. The Concessionaire in consultation with the Authority and IE, shall identify the location of Hotspots along with the coordinates during the preparation of MIOP.
    2. The Concessionaire shall be responsible for the collection and transportation of solid waste lying at the banks of canals/rivers within the project area as per the frequency mentioned in KPIs mentioned in Schedule 17.
    3. The Concessionaire shall also be responsible for Operation and Maintenance of Beach Cleaning Machine. The Authority shall provide Beach Cleaning Machine along with Machine Condition Report (MCR) to Concessionaire. The Concessionaire shall provide services for cleaning of beach area falling under Zone 14 and Zone15.
    4. The Concessionaire shall be responsible for setting-up online Centralized MIS and 24 X 7 Complaint Redressal System (including call center) and shall indicate space requirements for the same in MIOP. The Authority shall provide the required space to the Concessionaire. The Concessionaire shall be responsible to operate the Centralized MIS and Complaint Redressal System.
    5. The Concessionaire shall be responsible for preparation of IEC Plan for creating awareness related to solid waste management. The IE and Authority shall approve the Plan. The Concessionaire shall conduct the IEC Programmes as per the Plan throughout the Concession Period.

# Collection and Transportation of waste from Bulk Generators

* + 1. The Concessionaire shall be responsible for the collection and transportation of waste generated from Bulk generators separately.

# Collection & Transportation of Horticulture and Garden Waste from public places

* + 1. The Concessionaire shall be responsible for the collection and transportation of horticulture/garden waste generated from public places using specialized equipment.
    2. The Concessionaire shall deploy separate vehicles for collection and transportation of horticultural/garden waste.
    3. The Concessionaire shall achieve the service standards as per KPI mentioned Schedule 17

# Street Sweeping, Collection and Transportation of Solid Waste

* + 1. The Concessionaire shall be responsible for the manual/mechanical sweeping of all streets daily within the Project Area as per KPI mentioned Schedule 17
    2. The Concessionaire shall deploy one big mechanical sweeper as specified under Technical Schedule 3, in each zone for the sweeping of National Highway roads, Bus route roads and TNRDC roads in the project area. Mechanical sweeping shall also be done in the night hours with the approval from Authority.
    3. The Concessionaire shall also deploy the Mechanical Sweepers with appropriate capacity (Small Mechanical Sweepers) for sweeping of the Interior Route Roads which are 6 m wide or more.
    4. The Concessionaire shall transfer the ‘Street Sweeping Waste’ into specified 1.1/0.66 cu m covered RC bins (Black Colour) to be provided at Secondary Collection Points (SCP).
    5. The Concessionaire shall in a time bound plan transport street sweeping waste from SCP to the designated site using Refuse Collector cum Compactor of 8 cum capacity having mechanical “Bin-Lifting” capability to lift 1.1/0.66 cum bins.
    6. The Concessionaire shall ensure that the Street Sweeping Waste shall not be mixed with any other type of waste from collection till disposal.

# Minimum Waste Guarantee to Decentralized Processing Facilities:

* + 1. The Concessionaire shall be responsible for providing the required quantum of segregated waste (i. e. approximate 39 TPD biodegradable wastes, 1-2 TPD plastic waste) to the existing decentralized facilities which shall remain operational during the Concession Period.
    2. In addition to this, Concessionaire shall also be responsible for providing the additional required quantum of segregated bio-degradable & plastic waste to the decentralized processing facilities to be set-up by the Authority in future.

# Secondary Storage of Solid Waste

* + 1. The Concessionaire shall provide covered and different coloured Bins depending upon type of waste received: and the capacity as agreed in MIOP
       1. Biodegradable - green color bin (capacity 1.1/0.66 cu m)
       2. Street sweeping waste - black color bin (capacity 1.1/0.66 cu m)
       3. Non-biodegradable – white/blue color bin (capacity 1.1/0.66 cu m)
    2. 1.1/0.66 cum RC bins shall be placed along the roads/streets as per CPHEEO Guidelines, and shall be used only for the temporary storage on day to day basis. There shall be three colour coded RC bins at each point/location for the storage of Biodegradable, Non-Biodegradable and Street Sweeping Waste.
    3. There shall be no mixing of different kinds of wastes (i.e. SW, street sweeping waste, drain silt, Green waste and C&D waste)
    4. The Concessionaire shall prepare Operation and Maintenance Manual for maintenance of Project Assets.

# Secondary Transportation of Waste

* + 1. From the RC bins, Refuse Compactors of 14 cubic meter and/or 8 cubic meter capacity shall transport segregated Bio-degradable, Non-Biodegradable and Street Sweeping Waste directly to Disposal Site at Perungudi or any other site/plant designated by the Authority.
    2. There should be no inter-mixing of segregated waste during entire phase of Collection and Transportation
    3. Refuse Collector cum Compactor of 6 cum capacity shall collect the waste from the commercial establishments/bulk generators and transport to the decentralized

facilities/ Disposal site at Perungudi site for the final disposal as instructed by the Authority

# Other Conditions

* + 1. The Concessionaire shall provide support to IE in daily monitoring of Project Operations with due approval from Authority. The Concessionaire shall assign supervisors throughout the Concession Period as per MIOP.
    2. The Concessionaire shall be responsible to prepare and develop the Micro Implementation Operation Plan (MIOP) for the collection and transportation of solid waste from households, bulk waste generators, commercial establishments etc. and shall submit the draft MIOP within 30 (thirty) days from the Commencement date which shall in turn be evaluated by the Authority and IE.
    3. The Concessionaire shall provide services as per Project Scope for 365 days in a year irrespective of any National Holidays, weekly holidays, Festivals and Political Force Majeure
    4. In case of any event of Political Force Majeure continuing for more than 3 working days, the Concessionaire shall notify the Authority and IE about its inability to render its services
    5. In consultation with the Authority and in line with SBM Guidelines/ SWM Rules 2016, the Concessionaire shall establish a system for integration of the informal waste collectors to facilitate their participation in formal solid waste management activities.
    6. The Concessionaire shall prepare an O&M Plan and give a list of activities under preventive maintenance for Project Assets. The O&M Plan shall be approved by the Authority and IE. If such preventive maintenance schedule needs any modifications during the Concession Period, the Authority and IE shall approve such modifications.
    7. All services must confirm to the provisions of SWM Rules 2016 and any amendment thereto in future as well as per the applicable Rules/Laws/Policies
    8. The Concessionaire shall put more emphasis on night conservancy works with the due approval of the Authority.
    9. The Concessionaire in consultation with the Authority and IE, shall identify the location of Hotspots along with the coordinates during the preparation of MIOP.
    10. The Concessionaire shall deploy one vehicle per zone for collection and transportation of carcasses to the designated facility/ site as prescribed by the Authority during the preparation of MIOP
    11. The Concessionaire shall maintain a Priority Services team comprising of six workers per zone along with vehicles for activities which shall not be limited to street sweeping, removal of waste from SCP and sanitation, removal of horticultural waste, removal of carcass if any. The Concessionaire shall appoint one nodal person

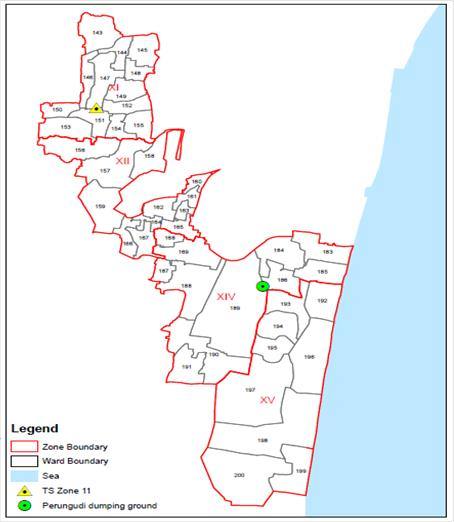
for coordination with Authority and IE. The Priority services shall be done within two hours of receipt of any request from the Authority/I.E

* + 1. The Concessionaire shall be responsible for collection and transportation of desilted waste to the designated location as per MIOP.
    2. The Concessionaire shall be responsible for operation & maintenance of one beach cleaning machine in the beach areas of Zones 14 and 15 as per MIOP.
    3. Collection and transportation of C&D waste shall not be the responsibility of Concessionaire.
    4. The Concessionaire shall ensure that there is 24\*7 real time monitoring of core KPI’s as ascribed in Schedule 17. The MIS system shall be compatible with the existing MIS system of the Authority. The software for the MIS system shall be provided by the Authority.

# Schedule 2: Project Area Details

# 2.1 Demographics of the Project Area

|  |  |  |
| --- | --- | --- |
| **Zone** | **Total no. of Wards & Nos.** | **Area (Sq. km)** |
| Zone 11 (Valasaravalkam) | 13 (143-155) | 20.49 |
| Zone 12 (Alandur) | 12 (156-167) | 20.52 |
| Zone 14 (Perungudi) | 11(183-191, 168, 169) | 35.78 |
| Zone15 (Sozhinganallur) | 9 (192-200) | 42.24 |
| **Total** | **45** | **119.03** |



# Schedule 3: Minimum Technical Specification of Project Assets1

* 1. **Deleted**

# Technical Specifications of E-rickshaw

|  |  |  |
| --- | --- | --- |
| **S.no** | **Description** | **Specifiaction** |
| 1 | Type of Electric cart | Fully Electric, battery automated and motor driven should be able to carry 6 HDPE bins of 80  litres capacity |
| 2 | Chasiss Construction | MS frame with 2mm thickness cross-members connecting them fabricated using MS square pipes  of suitable size with antocorrosive paint. |
| 3 | Dimensions of cart | Overall length : 2760 mm  Overall width : 1120 mm (5% tolerance for both) |
| 4 | Maximum Speed | 25 kmph |
| 5 | Motor | 1250-1500 W/48V BLDC motor |
| 6 | Transmission | Single central axis differential frive both forward  and reverse direction |
| 7 | Ground Clearance | 160 mm to 170 mm |
| 8 | Rear cargo Box | 1. Not less than 1400 mm\* 1000 mm\* 450 mm (L\*B\*H) 2. overall dimensions should be fabricated using MS sheet, MS square pipes of suitable thickness and size 3. Rear door near foldable single door arrangement 4. Side door foldable single door arrangement 5. Both side doors should be made of M.S sheet of thickness not less than 0.6 mm 6. Flooring should be made of M.S sheet of   thickness not less than 1.6mm |
| 9 | Pay load | Not less than 500 kgs |
| 10 | Running capacity | Not less than 60 km per charge |
| 11 | Speed of the vehicle | Less than 25 km/hr |
| 12 | Grade ability (climbing  ability) | 7 degree (maximum) |
| 13 | Brake system | Double rear drum pedal type |
| 14 | Wheel and tyres | Front: 90/90 \* R12-01 Nos and Back 14.5/70/12-  2 Nos and one spare tyre |

1 The standards mentioned for equipment is the minimum requirement. Any higher standards are acceptable with the permission of the Authority and IE

|  |  |  |
| --- | --- | --- |
| 15 | Battery capacity | Lithium Ion Battery pack ( Cell Model 18650) 48  V and 40 AH make : subha |
| 16 | Seating capacity | Cushioned seat to accommodate 2 person |
| 17 | Cabin | Weather Proof complete metal enclosed cabin with wind screen glass for driver protection with necessary frame structure for protection from heat  and rain |
| 18 | Dry weight | Not leass than 300 kgs |
| 19 | Suspension | Front: Telescopic 29MM heavy duty hydraulic shocker  Rear: Leaf spring with hydraulic shocker |
| 20 | Charger | Axiom Brand India make fast Charger 6 Amp |
| 21 | Accessories | 1. GSM SIM Tracker with 1 year warranty 2. Head lamp, front and rear indicators 3. Fire extinguishers 4. First Aid Kit 5. Functional safety by providig circuit breaker |

Fitness, compliance & test certificate to be submitted for the E-rickshaw/cart

* + 1. Fitness/compliance test ae per the Ministry of Road transport and highways GSR No. 709 (E) dated 8 October 2014
    2. Complaince certificate for the following test to be carried out as per the safety standards for E-Rickshaw/E-carts as per the Ministry of Road Transport and Highways notification No. S.O. 2590 ( E) dated 8 October 2014
    3. The Concessionare is required to deploy licensed operators for operating e- rickshaw

# Technical Specifications of Wheeled Bins for Street Sweeping

1. Material: Injection Moulded HDPE of EN Standard
2. Capacity: 120 Litres
3. Dimensions (without lid): 882 mm
4. Dimensions with lid: 955 mm
5. Top OD: 560 (L) mm \* 477 (B) mm
6. Bottom OD: 495 (L) mm \* 490 (B) mm
7. Wheel: 2 \* 200 mm HDPE Plastic wheels
8. Weight: 9.5 Kg

# Technical Specifications of Refuse Compactor Bins of 1.1 m3/0.66 m3 Capacity

1. General: Steel Solid waste Containers for waste collection shall be provided with 4 Castor Wheels made of one virgin piece of minimum 200 mm dia and 50 mm width shall have 360 degree with Blocking System. The Solid waste Collection Bins shall be of 1100 Ltrs Capacity as per DIN Standards. These should be closed type hygienic bins meeting DIN Standards. These Bins should be provided with Bin Cover which opens automatically when the Bin Lifter lifts the Bin onto the machine hopper. For this purpose, the Bins should be provided with special link arrangements, which are operated by the Compactor Bin Lifter. The Bin construction should be of Pressed Steel Sections for ensuring adequate structural strength required for handling with the Compactor Bin Lifter. Bin shall be designed to be easily handled by two Bin Handlers.
2. Capacity: 1100 Litre. (1.1 m3)
3. Base Material: Body : Mild Steel of minimum 2 mm thickness
4. Lid : Mild Steel
5. Dead weight : Minimum 115 kgs (Approx)
6. Load capacity : Minimum 600 kgs (Approx.)
7. Capacity: 660 Litre (0.666 m3)
8. Body: Mild Steel of minimum 2 mm thickness
9. Lid: Mild Steel
10. Dead weight: Minimum 70 kg (approx.)
11. Load capacity: 400 kg (approx.)
12. Other Requirements:
13. Four heavy duty swivel castors (3600 turning)
14. Adjustable spring supported lid for easy opening and closing
15. Rubber Profile on the lid, which should protect fingers before closing the lid of sections min. 3 cms between body and lid
16. Handles on body
17. Handle on the lid
18. Painted Green / Blue/ Black as specified.
19. Bins shall be painted with primer and anti-corrosive paints from inside and outside. All the bin locations should be provided with rigid concrete surface.

# Technical Specifications of Refuse Compactors (14 cum capacity)

1. General: The Refuse Compactor Vehicle shall be of universal type and suitable for changing fields of operation. It should be easy to handle and should allow the operating personnel to operate the vehicle with minimum physical effort and maximum safety. The vehicle should be capable of automatically loading and unloading solid waste from closed containers of 1100/660 Litres capacity as quick as

possible. secs, with facility for automatic opening of Bin Lid / Cover when in fully lifted condition in compactor hopper, with inbuilt link arrangement of Bins.

1. The Loading Height should not be more than 950mm-1 metre from the ground level. The body should consist of: Front bearings, ejection panel, Tailgate with hopper, slide plate, packer plate and Bin lifter.
2. The Volume of compactor would be 14 cum. The Tailgate hopper volume will be minimum 1.75 cum. Simultaneous automatic working of the compaction cycle should be possible while unloading from 0.66 cum and 1.1 cum bins. No damage to the Bin should occur. The Compaction operation should be able to operate during loading / unloading from the Bins and during the travel of the truck.
3. Refuse Collection Body: The refuse collection body should be in torsion-free steel construction of capacity 14 cum. The bottom, the sidewalls and the top must form a box-type design. The sidewalls as well as the top should be in reinforced frame steel construction. The tailgate bearing and automatic tailgate locking should be integrated into the rear frame of the body. At its front, a traversing bar should be welded to the bottom and top, which serves as a bearing for the telescopic ejection cylinder.
4. Roof panelling thickness: minimum 3 mm
5. Side panelling thickness: minimum 4 mm
6. Flooring thickness: minimum 4 mm
7. Rear cross bar thickness: minimum 6 mm
8. Superstructure Member thickness: Box section minimum 4 mm
9. Base Frame Member thickness: minimum 6 mm
10. Ejection Panel: The ejection panel shall run on a synthetic guide block within the lateral longitudinal guides of the boat-type bottom group of the refuse collection body and must be operated by a telescopic hydraulic ram. It must act during loading as a resistance for the refuse compaction process. The ejection plate shall be wear resistant steel plate of minimum 4 mm thickness of suitable grade with adequate strength to meet the operational requirements. The withdrawal of the ejection panel during the loading process shall be through hydraulic control to ensure optimum compaction.
11. Tailgate: The tailgate should form the main part of the refuse collection vehicle. The Tailgate should be comprise of three main groups:
12. Tailgate with Hopper: The tailgate with hopper should form the basic structure to which the functional parts, slide plate and packer plate are attached. It should be equipped with Automatic-locking system through long hole and hooks. This locking- system should be completely liquid-proof between tailgate and body by using double lip rubber seal. The hopper should be able to take the refuse from the solid waste bins. The hopper should have a capacity of minimum 1.75 cum.
13. Tailgate Hopper: Material of construction- Domex/Hardox steel
14. . The packer plate should be made of special steel of suitable grade.
15. Side panelling thickness: minimum 3 mm
16. Rear side of hopper plate thickness: minimum 6 mm
17. Hopper bottom plate thickness: minimum 6 mm
18. Superstructure Member thickness: minimum 6 mm
19. Lifter System: The lifter should be reliable with proven technology. There should be optimum system for the collection of various types of refuse within one collection point and its low rave rail should permit the hand loading of bulk refuse items as well as the easy emptying of wheel bins. Tipping of 1.1 m³ container and simultaneously operation of the compacting mechanism must be possible without moving back the lifter. It should be possible to undertake simultaneous operation of compaction and loading/unloading or compaction and movement of truck to save operational time. The lifter should be able to unload Solid waste from bin of 1100 Litre capacity. The bin lifter shall be suitable to lift the standard containers (HDPE Bins/ Metal Bins) of size 120 liter, 240 liter, 600 liter and 1100 liters.
20. A safety valve shall be provided in the system to avoid sudden descent of bin lifter in case of failure in hydraulic system or failure of automatic system.
21. Chassis: Make: TATA/ Ashok Leyland/Eicher/ Bharat Benz/ Mahindra
22. GVW: Minimum 16200 Kg or Equivalent
23. Unladed kerb weight of Chassis: 4000 – 4500 kg
24. Permissible garbage weight: 8000 kg
25. Wheel Base: minimum 4200 mm
26. Engine: Minimum 180 HP, BS-IV model
27. Transmission: 5 speed synchromesh gear box
28. Steering: Power steering
29. Tyres: 10.00 x 20- 16 PR, Front-2, rear-4, Spare-1(Lockable)
30. Dumping Operation:
31. Tailgate Operation: Tailgate opening and closing for dumping should be controlled from driver's cabin Optional hand lever for manual operation. The tailgate hydraulic valves should be electro-hydraulic/ electro-pneumatic for rugged operation
32. Ejector Plate operation: This operation should be controlled from driver's cabin Optional hand lever for manual operation. The ejector plate hydraulic valve should be electro-hydraulic/ electro-pneumatic.
33. Safety Features: Hose burst valve shall be fitted to the system to prevent the tailgate descending in the event of the hydraulic failure. There shall be a body prop provided on the tailgate to hold the tailgate in the open position for safety of workshop personnel when entering the body for maintenance or repair.
34. Painting The entire unit shall be painted with two coats of superior quality anit- corrosive primer with two coats of approved quality paint to ensure long lasting, resistance to rust, weathering and breakage. The color shade should be purchaser’s choice.
35. The compactor shall meet with all statutory requirements of Motor vehicles act and SWM Rules 2016 and specifications mentioned in the SBM portal.

# Technical Specifications of Refuse Compactors (8 cum capacity)

1. General: The Refuse Compactor Vehicle (RCV) should be a universal type and suitable for changing fields of operation. It should be easy to handle and should allow the loading personnel to operate the vehicle with minimum physical effort and maximum safety. Hand lever arrangement for operation of Compaction Cycle should be provided along with the electronic push button operating system. The vehicle should be capable of automatically unloading solid waste from closed containers of 1.1/0.66 cum capacity bins within 15 sec, with facility for automatic opening of Bin Lid / Cover when in fully lifted condition in compactor hopper, with inbuilt link arrangement of Bins.
2. The Loading Height should not be more than 950mm-1 metre from the ground level. The body should consist of Front bearings, ejection plate, Tailgate with hopper, slide plate, packer plate and Bin lifter. The Concessionairewill have to specify the make of important component along with technical specifications. Regarding quality of steel and other material relevant Code (if any) should be followed.
3. The Volume of compactor would be 8 cum. The Tailgate hopper volume will be minimum 1 cum. Simultaneous automatic working of the compaction cycle should be possible while unloading from 0.66 cum and 1.1 cum bins. No damage to the Bin should occur. The Compaction operation should be able to operate during loading / unloading from the Bins and during the travel of the truck.
4. Refuse Collection Body: The refuse collection body should be in torsion-free steel construction of capacity 8 m3. The bottom group, the sidewalls and the top must form a box-type design. The sidewalls as well as the top should be in reinforced frame steel construction. The tailgate bearing and automatic tailgate locking should be integrated into the rear frame of the body. At its front, a traversing bar should be welded to the bottom and top, which serves as a bearing for the telescopic ejection cylinder.
5. Roof panelling thickness: minimum 3 mm
6. Side panelling thickness: minimum 4 mm
7. Flooring thickness: minimum 4 mm
8. Rear cross bar thickness: minimum 6 mm
9. Superstructure Member thickness: Box section minimum 4 mm
10. Base Frame Member thickness: minimum 6 mm
11. Ejection Plate: The ejection plate should run on a synthetic guide block within the lateral longitudinal guides of the boat-type bottom group of the refuse collection body and must be operated by a telescopic hydraulic ram. It must serve during loading as a resistance for the refuse compaction process. The ejection plate should be of steel plate of minimum 4 mm thickness and of suitable grade to meet the operational

requirements. A hydraulic control unit should regulate the withdrawal of the ejection panel during the loading process, so that the compaction is optimised. The mechanism should consist of a profile-reinforced, wear-resisting plate of great sturdiness and the guide frame with the guide blocks. Alignment of ejection plate should be proper during forward & reverse movement.

1. Tailgate: The tailgate should form the main part of the refuse collection vehicle. The Tailgate should be made of by three main groups: Tailgate with Hopper: The tailgate with hopper should form the basic structure to which the functional parts, slide plate and packer plate should be attached. The tailgate shall unlock automatically and raise, to permit ejection of refuse from RCV hopper when hydraulic valve is actuated. It should be equipped with Automatic-locking system between tailgate and RCV Hopper body through long hole and hooks. This locking- system should be completely liquid-proofed between tailgate and body by using double lips rubber seal.
2. The hopper should be able to take the refuse from the solid waste bins of 1100/600 litre liters capacity. The hopper should have a capacity of minimum 1.10 M3. At its top, it should be fixed to the refuse collection body by means of two slotted hinges and should be supported by two hydraulic rams and two locking hooks mounted to the rear frame of the body. These bearing points and the locking hook should take up the compression forces. The profile-reinforced side walls of the frame should constitute the bearing for the two hydraulic rams which automatically release the locking mechanism and then lift the loading system for refuse discharge up to the final stop.The hopper used to take in the refuse should be permanently welded in between the side walls and should consist of highly solid fine-grained constructional steel made of High resistance steel. The carriage plate should be robust profile reinforced steel construction supplied with a wear-resistant cover plate made of high resistant Steel. The thickness of side plate should be of suitable grade material. It should be actuated by two hydraulic cylinders,and must run on suitable number of sliding blocks. At the bottom end of the slide plate a moveable packer plate should be Embedded. The packer plate should consist of highly solid steel and the strongly Reinforced lateral bearing arms for the attachment of the hydraulic rams. It should clear the hopper and initiate the primary compaction within the hopper. On completion of the swivel movement the compaction of the refuse and its transportation into the refuse collection body should begin. The packer plate should be made of special High resistance steel of suitable grade and should be actuated by 2 hydraulic cylinders.
3. Side panelling thickness: minimum 3 mm
4. Rear side of hopper plate thickness: minimum 6 mm
5. Hopper bottom plate thickness: minimum 6 mm
6. Superstructure Member thickness: minimum 6 mm
7. Lifter System: The Lifter System should be capable of lifting and unloading solid waste from 1100 ltrs. capacity bins. It should be light weight for high legal payloads. It should be reliable system with proven technology. There should be optimum system for the collection of various types of refuse within one collection point and its low rave rail should permit the hand loading of bulk refuse items as well as the easy emptying of wheel bins. Tipping of 1.1 m³ container and simultaneously working of the compacting mechanism must be possible without moving back the lifter. This should be done without any damages to the container. During compaction operation, loading / unloading of bins and travel of Truck should be able to operate continuously to continue to save operation time. The Tailgate lifting and closing as well as the compaction operation will be controlled with Hydraulic Lever System placed on rear side of the vehicles. The lifter system shall be provided with four cylinders i.e. two cylinders for leveling and lifting of Bin, and two cylinders for tipping operation.
8. Mounting: The lifter should be integrated at the rear end of the tailgate.
9. Chassis: Make: TATA/ Ashok Leyland/Eicher/Bharat Benz/Mahindra
10. GVW: Minimum11000 Kg
11. Wheel Base: minimum 3900 mm
12. Engine: Minimum 120 HP, BS-IV model
13. Transmission: 5 speed synchromesh gear box
14. Steering: Power steering
15. Tyres: 8.25 x 20 - 16 PR, Front-2, rear-4, Spare-1(Lockable)
16. Dumping Operation:
17. Tailgate Operation: Tailgate opening and closing for dumping should be controlled from driver's cabin Optional hand lever for manual operation. The tailgate hydraulic valves should be electro-hydraulic/ electro-pneumatic for rugged operation
18. Electric: Automatic operation (continuous cycle) by pushing electric operated push- button, compacting mechanism should be running till you switch off through the push button. Optional Manual operation by hand lever facility to be provided. The automatic cycles should be controlled with 4 proximity switches together with the hydraulic integrated control-group. Further 2 emergency stop switches should be provided.
19. The control system should be only operated by hydraulic and electric. Optionally one should be also able to operate the whole compactor with a hand-lever, which comes out directly from the main-control-block
20. Emergency electric stops to be provided. Signal-system to the driver’s cab to be provided on each side there should also be 1 switch for the signal system to the driver's cab. The system should encompass all installations relevant for the functioning of the entire bodywork and the distribution voltage should be tapped from the electrical system of the chassis vehicle.
21. Safety Features:

i. Hose burst valve shall be fitted to the system to prevent the tailgate descending in the event of the hydraulic failure. There shall be a body prop provided on the tailgate to hold the tailgate in the open position for safety of workshop personnel when entering the body for maintenance or repair.

1. Painting The entire unit shall be painted with two coats of superior quality anit- corrosive primer with two coats of approved quality paint to ensure long lasting, resistance to rust, weathering and breakage. The color shade should be purchaser’s choice

# Technical Specifications of Refuse Compactors (6 cum capacity)

1. General: The Refuse Compactor Vehicle (RCV) should be a universal type and suitable for changing fields of operation. It should be easy to handle and should allow the loading personnel to operate the vehicle with minimum physical effort and maximum safety. Hand lever arrangement for operation of Compaction Cycle should be provided along with the electronic push button operating system. The vehicle should be capable of automatically unloading solid waste from closed containers of 1.1/0.66 cum capacity bins within 15 sec, with facility for automatic opening of Bin Lid / Cover when in fully lifted condition in compactor hopper, with inbuilt link arrangement of Bins.
2. The Loading Height should not be more than 950mm to 1 meter from the ground level. The body should consist of Front bearings, ejection plate, Tailgate with hopper, slide plate, packer plate and Bin lifter. The Concessionairewill have to specify the make of important component along with technical specifications. Regarding quality of steel and other material relevant Code (if any) should be followed.
3. The Volume of compactor would be 6 cum. The Tailgate hopper volume will be minimum 1 cum. Simultaneous automatic working of the compaction cycle should be possible while unloading from 0.66 cum and 1.1 cum bins. No damage to the Bin should occur. The Compaction operation should be able to operate during loading / unloading from the Bins and during the travel of the truck.
4. Refuse Collection Body: The refuse collection body should be in torsion-free steel construction of capacity 6 m3. The bottom group, the sidewalls and the top must form a box-type design. The sidewalls as well as the top should be in reinforced frame steel construction. The tailgate bearing and automatic tailgate locking should be integrated into the rear frame of the body. At its front, a traversing bar should be welded to the bottom and top, which serves as a bearing for the telescopic ejection cylinder.
5. Roof panelling thickness: minimum 3 mm
6. Side panelling thickness: minimum 4 mm
7. Flooring thickness: minimum 4 mm
8. Rear cross bar thickness: minimum 6 mm
9. Superstructure Member thickness: Box section minimum 4 mm
10. Base Frame Member thickness: minimum 6 mm
11. Ejection Plate: The ejection plate should run on a synthetic guide block within the lateral longitudinal guides of the boat-type bottom group of the refuse collection body and must be operated by a telescopic hydraulic ram. It must serve during loading as a resistance for the refuse compaction process. The ejection plate should be of steel plate of minimum 4 mm thickness and of suitable grade to meet the operational requirements. A hydraulic control unit should regulate the withdrawal of the ejection panel during the loading process, so that the compaction is optimised. The mechanism should consist of a profile-reinforced, wear-resisting plate of great sturdiness and the guide frame with the guide blocks. Alignment of ejection plate should be proper during forward & reverse movement.
12. Tailgate:
    * 1. The tailgate should form the main part of the refuse collection vehicle. The Tailgate should be made of by three main groups: Tailgate with Hopper: The tailgate with hopper should form the basic structure to which the functional parts, slide plate and packer plate should be attached. The tailgate shall unlock automatically and raise, to permit ejection of refuse from RCV hopper when hydraulic valve is actuated. It should be equipped with Automatic-locking system between tailgate and RCV Hopper body through long hole and hooks. This locking- system should be completely liquid-proofed between tailgate and body by using double lips rubber seal.
      2. The hopper should be able to take the refuse from the solid waste bins of 1100/600 litre liters capacity. The hopper should have a capacity of minimum 1.10 M3. At its top, it should be fixed to the refuse collection body by means of two slotted hinges and should be supported by two hydraulic rams and two locking hooks mounted to the rear frame of the body. These bearing points and the locking hook should take up the compression forces. The profile-reinforced side walls of the frame should constitute the bearing for the two hydraulic rams which automatically release the locking mechanism and then lift the loading system for refuse discharge up to the final stop.The hopper used to take in the refuse should be permanently welded in between the side walls and should consist of highly solid fine-grained constructional steel made of High resistance steel. The carriage plate should be robust profile reinforced steel construction supplied with a wear-resistant cover plate made of high resistant Steel. The thickness of side plate should be of suitable grade material. It should be actuated by two hydraulic cylinders,and must run on suitable number of sliding blocks. At the bottom end of the slide plate a moveable packer plate should be Embedded. The packer plate should consist of highly solid steel and the strongly Reinforced lateral bearing arms for the attachment of the hydraulic rams. It should clear the hopper and initiate the primary compaction within the hopper. On completion of the swivel movement the compaction of the refuse and its transportation into the refuse collection body should begin. The packer plate should

be made of special High resistance steel of suitable grade and should be actuated by 2 hydraulic cylinders.

1. Side panelling thickness: minimum 3 mm
2. Rear side of hopper plate thickness: minimum 6 mm
3. Hopper bottom plate thickness: minimum 6 mm
4. Superstructure Member thickness: minimum 6 mm
5. Lifter System: The Lifter System should be capable of lifting and unloading solid waste from 1100/600 ltrs. capacity bins. It should be light weight for high legal payloads. It should be reliable system with proven technology. There should be optimum system for the collection of various types of refuse within one collection point and its low rave rail should permit the hand loading of bulk refuse items as well as the easy emptying of wheel bins. Tipping of 1.1/0.66 m³ container and simultaneously working of the compacting mechanism must be possible without moving back the lifter. This should be done without any damages to the container. During compaction operation, loading / unloading of bins and travel of Truck should be able to operate continuously to continue to save operation time. The Tailgate lifting and closing as well as the compaction operation will be controlled with Hydraulic Lever System placed on rear side of the vehicles. The lifter system shall be provided with four cylinders i.e. two cylinders for leveling and lifting of Bin, and two cylinders for tipping operation.
6. Mounting: The lifter should be integrated at the rear end of the tailgate.
7. Chassis: Make: TATA/ Ashok Leyland/Eicher/Bharat Benz/Mahindra
8. GVW: Minimum10000 Kg
9. Wheel Base: minimum 3800 mm
10. Engine: Minimum 100 HP, BS-IV model
11. Transmission: 5 speed synchromesh gear box
12. Steering: Power steering
13. Tyres: 8.25x 20 - 16 PR, Front-2, rear-4, Spare-1(Lockable)
14. Dumping Operation:
15. Tailgate Operation: Tailgate opening and closing for dumping should be controlled from driver's cabin Optional hand lever for manual operation. The tailgate hydraulic valves should be electro-hydraulic/ electro-pneumatic for rugged operation
16. Electric: Automatic operation (continuous cycle) by pushing electric operated push- button, compacting mechanism should be running till you switch off through the push button. Optional Manual operation by hand lever facility to be provided. The automatic cycles should be controlled with 4 proximity switches together with the hydraulic integrated control-group. Further 2 emergency stop switches should be provided.
17. The control system should be only operated by hydraulic and electric. Optionally one should be also able to operate the whole compactor with a hand-lever, which comes out directly from the main-control-block
18. Emergency electric stops to be provided. Signal-system to the driver’s cab to be provided on each side there should also be 1 switch for the signal system to the driver's cab. The system should encompass all installations relevant for the functioning of the entire bodywork and the distribution voltage should be tapped from the electrical system of the chassis vehicle.
19. Safety Features: Hose burst valve shall be fitted to the system to prevent the tailgate descending in the event of the hydraulic failure. There shall be a body prop provided on the tailgate to hold the tailgate in the open position for safety of workshop personnel when entering the body for maintenance or repair.
20. Painting The entire unit shall be painted with two coats of superior quality anit- corrosive primer with two coats of approved quality paint to ensure long lasting, resistance to rust, weathering and breakage. The color shade should be purchaser’s choice.

# Technical Specifications of Tipper Truck (10 cum capacity with Stainless steel lining- 4mm)

1. The vehicle shall be rugged and durable, shall incorporate the latest technological features offered by the manufacturer/ supplier; the vehicle should be suitable to be used to load around 10 cum solid waste and unload it by tipping the load body or by suitable arrangement; the vehicle should have provision to transport the garbage in covered and packed condition. The equipment should confirm to the following specifications. Basic Specification
2. Any HCV chassis with cab and load body should meet the following specifications:

|  |  |
| --- | --- |
| Gross vehicle weight | Minimum 16000 Kg |
| Engine Fuel efficient | Turbo charged 4-stroke, 6- cylinder inter cooler BS – IV Max Output : above 180 KW @2800rpm  Max torque : above 400 Nm @1600 rpm |
| minimum turning radius | 7 m±2% |
| Steering | Right hand drive, power |
| Frame | Ladder type heavy duty frame with riveted/bolted cross  members, side members of channel sections. |
| Ground Clearance | Above 250 mm |
| Cab | All steel fully forward control driver's cab. Cabin should have minimum two nos. foam padded adjustable seats having seat belts. Cab should have all standard accessories like  openable side windows. rear view door mirrors, laminated |

|  |  |
| --- | --- |
|  | windscreen, two speed windshield wipers, fuel gauge, multiple warning lamps and buzzer fur low oil pressure,  coolant level etc. |
| Painting | Paint and painting process shall be superior quality to ensure long lasting structure resistant to ruse weathering and  breakage |
| Load Body | Rugged and suitable to carry 10 cum solid waste with hydraulically operated top to load garbage from top and cover while transportation. It should have provision of hinged tail gate openable hydraulically to unload the garbage by tipping the load body with a front end tipping unit or by any other suitable arrangement. The body is to be fabricated from cold formed M.S. sections to reduce weight and should have welding by C02 MIG welding process to minimize in - built stresses.  Thickness of M.S sheets should be as under Floor Min 4 mm,  Sides: Min 3 mm , Top : Min 2.6 mm. |

# Technical Specifications for Truck Mounted Road Sweeping Machine (Big Mechanical Sweepers)

1. General: The Road Sweeping Machine shall be Diesel Engine Operated, Truck Mounted. The machine should be capable of sweeping and picking up the fine dust and pebbles.
2. Application: Cleaning of City/ Colony Roads, Parking & other Paved Areas.
3. Dimension and Sweeping System: The sweeping system comprises of central roller brush and two side brushes. Sweeping shall be carried out with the help of central brush and two side brushes simultaneously at all times. The Road Sweeper should be capable to sweep in Wet Mode. The machine should have minimum 18 nos pleated filters, which are cleaned continuously during the sweeping operation with Compressed Air Jets, purging.
4. The material of the brush shall be polypropylene. The suction nozzle has a continuous width of 2000 mm and is a part of the sweeping unit (nylon).
5. Suction Nozzle - 2000 mm
6. With Two Side Brushes – 3200 mm
7. Design: Truck Chassis: The Equipment shall be mounted on standard 2 Axle Truck Chassis 16T GVW, with standard make, Non-Sleeper Driver’s Cabin and Side PTO
8. Frame Description: Heavy Duty Steel Frame suitable for mounting of Diesel Engine, Vacuum Exhauster and other Electro-Hydraulic/ Electro-Pneumatic components of

the system. The Frame & machine components should be provided with suitable Vibration Dampners.

1. Auxiliary Engine: Engine should be of reputed make, six cylinder water cooled electric start diesel engine capable of developing minimum 150 HP at 2200 RPM.
2. Hydraulic System: The engine should drive the Hydraulic Pump. Individual Hydraulic motors should run the sweeping brushes. The tipping operation and dump door opening & closing shall be hydraulically actuated.
3. Blower and vacuum exhauster to be driven by auxiliary engine with FAD-18000 cum/hr
4. Sweeping Speed: 05-08 Km/Hr.
5. Sweeping width: 3200 mm
6. Dust Hopper Volume: 6000 litres or more
7. Dumping Height: 1100-1500 mm or more
8. The dumping operations should be hydraulically operated. Hopper door opening & closing to facilitate dumping shall be hydraulically acuated.
9. Filter System/ Dust Control System: It should comprise of Cartridge Filter system with continuous reverse compressed air jet purging cleaning during sweeping. It should have provision for compressed Air for cleaning filters provided through inbuilt air compressor. High efficiency suction fan should also be provided.
10. Operational Control: Complete control system should be operated through Programmable Logic Controllers (PLC).The Hydraulic Operations of the machine should be by push buttons and levers.
11. Salient Features: Machine Capable of undertake dry sweeping without necessity to spray water as pleated fabric filters (meeting PM-10 norms) are provided with continuous cleaning arrangement in machine. Rugged machine, specially designed for high ambient temperature and heavy dust loads prevalent in India.
12. Guarantee: The equipment shall be guaranteed against any manufacturing defect for at least two years from the date of commissioning of the equipment.

# Technical Specifications for LMV Mechanical sweepers

|  |  |
| --- | --- |
| Application | Dusty Industrial Roads, Wharfs, Berths, Paved Areas |
| Type | Truck Mounted-Dry sweeping-With Filters |
| Auxiliary Engine | 120 BHP, 4 Cylinders |
| Frame | Heavy Duty Steel Frame suitable for mounting of Diesel Engine, Vacuum Exhauster & other Electro-Hydraulic/Electro-Pneumatic  Components of the System. |
| Body | Industrial Grade Steel with sound proofing |

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| --- | --- | --- | --- |
| Sweeping System Sweeping. | 1 Center Brush (400 mm dia & 2000 mm long) + 2 Side Brushes (600 mm dia) +1 Full Length Suction Nozzle operating  simultaneously at a time. | | |
| Sweeping Width | 3200 mm | | |
| DUST HOPPER | Volume |  | 4 Cu.m |
| Material |  | MS Super structure with SS  Lining |
| Suction System | High efficiency Exhauster with FAD 12000 Cu.M/Hr, with Bag/Pleated Filters & Cartridge Filters- 18 no’s | | |
| Additional Wandering Hose | Fitted at rear side of the Equipment Dia – 150 mm, Length – 5000 mm | | |
| Instrument Panel | Engine Oil Pressure, Cooling Liquid Temperature Gauge, Fuel Gauge, hour meter, Horn, Fuse , Key Switch. | | |
| Chassis | 11 TON GVW- 4200 WB – 120 HP ENGINE-CABIN & PTO- ASHOK LEYLAND / TATA /EICHER/ BHARAT BENZ | | |
| Vehicle Drive System | During Sweeping, the Truck is driven for optimum speed between 2-5 km/hr with in Third Gear for optimum Fuel economy and long  life of Engine, Clutch, etc. | | |
| Drive For Pump, Blower | Through V-Belt Drives from Auxiliary Industrial Engine. | | |
| Sweeping Brushes | Through Hydraulic Motor (MAKE-EATON/DANFOSS) using power from Hydraulic Pump. All operations are controlled from  the Driver’s Cabin. | | |
| Tipping Operation | Hydraulically actuated rear discharge door locking / unlocking, door lifting & lowering and tipping. | | |
| Sweeping Speed &  Coverage | 2 to 5 Km per hour & Maximum Coverage 15,000 Sq.m per hour | | |
| Water Tank Capacity | 800 Liter, to be used for water spraying | | |

# Technical Specifications of Beach Cleaning Machine:

1. Beach Cleaning Machine:

**Make**: Barber

**Model:** 400 HD

**Dimensions:** h: 2.2 m x l: 3.6 x w: 2.3 m

**Weight:** approximately 1225 kg **Cleaning width:** 1.8 meters **Cleaning depth:** adjustable to 15 cm

**Operating speed:** 1 to 25 kilometres per hour

**Debris removed:** broken glass, plastic, syringes, cigarette butts, pop-tops, straws, cans, tar balls, stones .95 cm to 15.24 cm in diameter, sea grass, seaweed, fish, small pieces of wood.

**Performance:** cleans up to 20,000 m²/h **Hopper:** 1.52 cubic meters (1600 kg cap.) **Dump height:** 2.75 meters

**Tires:** 78.7 x 34.3 x 38.1 cm high flotation design

**Conveyor:** of bar flight type, covered with continuous 1.2 m wide belt, with stainless steel spring tines mounted on it.

**Hydraulic drive:** completely sealed and protected by the full flow filter. large capacity spline mounted pump, hydraulic motor, flow control, and built-in overflow protection.

**Hydraulic flow:** 45 litres per minute

**Hydraulic cap:** 42 litres

**Cylinders:** lift 7.62 cm x 45.72 cm single acting trip 2' x 5' single acting

**Paint:** DuPont IMRON polyurethane enamel

**Tractor:** 35 PTO horsepower 4-wheel drive agricultural type tractor with 71 cm rear wheels

**Other Tractor Requirements:** 540 RPM rear PTO, 3-point hitch and depending on model and options, up to two remote hydraulic valves with raise, hold and float positions. Larger or smaller tractors may be used depending on beach conditions.

1. Beach Cleaning Machine:

|  |  |
| --- | --- |
| **Technical data** | **Make: Firsttechno Model: Junior 2010** |
| Capacity screen surface | +2,5 M² |
| Operating cleaning width | 1500mm |
| Cleaning depth up to | 0-150mm |
| Beating rotating axles | 1 |
| Overall length | 3685 mm. |
| Width | 1840 mm. |
| Height | 1370 mm. |
| Size of tires (standard) | 26×12.00-12 |
| Net weight | 1140 kg |
| Unloading height | 1m40 |
| Hopper capacity | 0,5M³ |
| Power take-off speed | 540 RPM / PTO Z6, 1 3/8″ |
| Transmission | hydraulic |
| Noise | 75dB |
| Min-max power | 35-60 kw |
| Corrosions Protection / colour | zinc / 2 component Yellow RAL 1003 & grey RAL 7021 |
| Attach to drawbar eye | Cat. 1 |
| Tension roller for the screening belt | No |
| Tractor hydraulics | 2 double-acting circuits |
| Sifting band screen | 15×25/20×30/30×30 |
| Sifting band metal | 17/21 mm |

# Technical Specifications of Horticultural Waste Removal Vehicle:

|  |  |
| --- | --- |
| Lifting Moment | 9.2 mt |
| Number of hydraulic extension booms | 2 |
| Maximum hydraulic out reach | 8.0 metre |
| Slewing Range | 400 degree |
| Stabilizer Spread | R2 manual operated outriggers |
| Maximum Lifting capacity | 1120 kg @ 8.0 meter |
| Maximum Lifting capacity @ 2.3metre | 5580 kg |
| Operating pressure | 315 bar |
| Pump capacity | 30 to 45 litres/min |
| Crane dead weight | 1200 kg |
| Control | Floor |
| Attachment | Orange peel bucket |
| Code 4 | Additional hydraulic circuit for attachment |
| Paint protection | KTL coating |
| Safety Load Holding Valves | Load holding valve is used to prevent the normal lowering of crane due to internal leakages in the control valve. Load holding valve controls all the movements of the boom, i.e., load lifting, load holding, load lowering and prevents the cylinder  from overload. |
| Tipper capacity | 16-ton GVW truck with tipping capacity |

* 1. **Technical Specifications of Carcass Waste, hot spot and Priority service waste Removal Vehicle:**

|  |  |
| --- | --- |
| Type of Tipper | Garbage Tipper |
| Main Engine Capacity | 702 cc |
| Make Of Chassis | Fully Company Built-Up Box Tipper |
| Type Of Chassis Frame | Ladder Type Frame With Inverted Hat Section Long Members |
| Category Of Vehicle For Which Chassis To Be Used | Light Capacity Commercial Vehicles |
| Type Of Chassis | Chassis with Face cowl |
| Type Of Fuel | Diesel |
| Vehicle Emission Compliance | BS-IV |

|  |  |
| --- | --- |
| Fuel Consumption ( Declared By OEM As Certified By Test Agency Under Rule 115of CMVR 1989) | 21.5 Litre/Hr |
| Speed, Max | 60 Km/Hr |
| Main Engine Power BHP@rpm | 16 HP @ 3200 RPM BHP@rpm |
| Engine Torque Max,@ Rpm | 39 NM @ 1800 - 2200 RPM N-  M@rpm |
| Main Engine Aspiration | Natural Aspiration |
| No. Of Cylinder In Main Engine | 2 Nos |
| Fuel Tank Capacity | 30 Ltrs |
| Length Of Chassis | 3800 mm |
| Width Of Chassis | 1500 mm |
| Height Of Chassis | 1845 mm |
| Gradeability Of Vehicle With Load ( %) | 16.38 |
| Gradeability Of Vehicle Without Load( %) | 18 |
| Ground Clearance | 160 mm |
| Wheel Base | 2100 mm |
| Kerb Weight | 720 Kg |
| Gross Vehicle Weight | 1700 Kg |
| No Of Axle | 2 Nos |
| Axle Configuration ( No. Of Outside Tyre X No. Of Driving Tyre) | 4x2 |
| Type Of Front Axle And Suspension System | Rigid Beam Axle With Parabolic Leaf Spring & 2 Nos. Double Acting  Telescopic Hydraulic Shock Absorbers |
| Type Of Rear Axle And Suspension System | Banjo Type Live Axle With Parabolic Leaf Spring & 2 Nos. Double Acting Telescopic Hydraulic Shock Absorbers |
| Type Of BIS MARKED Vehicle Tyre | Radial |
| Size Of Front Tyres | 145 R 12 - 8PR mm |
| Size Of Rear Tyres | 145 R 12 - 8PR mm |
| Size Of Wheel | 4J x 12 mm |
| Chassis Transmission System | Manual |
| No. Of Speed/ Forward Gears | 4 |
| Type Of Steering | Manual |
| Turning Radius, Min | 4300 mm |
| Speed Governors | No |
| ABS Fitted | No |
| Front Vehicle Brake | Disc Brake Hydraulic, Dual Circuit Diagonal Split with Tandem Master Cylinder Acting On All Wheels With Automatic Wear Adjusters |

|  |  |
| --- | --- |
| Rear Vehicle Brake | Drum Brake Hydraulic, Dual Circuit Diagonal Split with Tandem Master Cylinder Acting On All Wheels |
| Type Of Clutch | 170mm Single Plate Dry Friction Diaphragm Type |
| Tipper Body Pivot Length | 1546 mm |
| Tipper Body Length | 2165 mm |
| Tipper Body Height | 670 mm |
| Overall Height Of Tipper From Ground | 1489 mm |
| Tipping Angle | 48 Degree |
| Tipper Container Capacity/Volume | 2.0 Cu. M |
| Body Plate Thickness | 2.0 mm |
| Main Frame Thickness | 3.0 - 4.0 mm |
| Pneumatic System | No |
| Hydraulic System | Yes |
| Tipping Hydraulic Cylinders(Make) | Reputed Make |
| Hydraulic System Driven By | Main Engine |
| Auxiliary Diesel Engine For Hydraulic And Pneumatic Operation | No |
| Tipper Container Material | Mild Steel |
| Thickness Of Sheet From Tipper Collector Container Made | 2.0 mm |
| Dumping Height | 352 mm |
| Engine Oil Pressure Level Indicator In Control Panel | Yes |
| Engine Cooling Liquid Temperature Indicator In Control Panel | Yes |
| Fuel Gauge Indicator In Control Panel | yes |
| Operating Hour Meter | No |
| Standard Spare wheel And Tool Kit | Yes |
| Locking/Unlocking Of Tipper Discharge Container | Yes |
| Lowering/Lifting Of Tipper Discharge Container | Yes |
| Paint | Automotive Paint |

# Schedule 4: Vehicle maintenance and Parking area for Package-2

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Existing lorry station location of GCC** | **Ownership of land** | **Area of the lorry station (sqm)** |
| Zone-11 | Zonal Office- XI Campus, Arcot Road,  Valasaravalkam. Chennai -600087 | Authority | 8349 |
| Zone-12 | New Street, Alandur R.T.O Office Near,  Alandur. Chennai-600016 | Authority | 1950 |
| Zone-14 | Puzhuthivakkam High Road, Puzhuthivakkam,  Chennai- 600091 | Authority | 9600 |
| Zone-15 | Zonal Office- XV Campus, 120 Rajiv Gandhi  Road, OMR, Sholinganallur. Chennai-600019 | Authority | 4200 |

# Schedule 5: Project Milestones

|  |  |  |
| --- | --- | --- |
| **S.no** | **Milestone** | **Timeline**  **(Days)** |
| 1 | Issuance of LoA | 0 |
| 2 | Signing of CA - Commencement Date | 30 |
| 3 | Appointment of IE | 60 |
| 4 | Submission of Draft MIOP | 60 |
| 5 | Review & Comments to be given by IE (with approval of the Authority) | 75 |
| 6 | Submission of Revised MIOP (Version I) | 82 |
| 7 | Review & Comments given by IE & Authority(with approval of the  Authority) | 89 |
| 8 | Submission of Final MIOP and Approval by Authority | 96 |
| 9 | Achievement of Financial Closure | 105 |
| 10 | Completion of Handing Over of all the four Zones to Concessionaire –  Commercial Operation Date (COD) | 135 |

# In case the Concessionaire opts for taking over 4 zones simultaneously, COD will be achieved on Day 120. Otherwise partial COD will be achieved on Day 120 and COD on Day 135.

# Schedule 6: Details of Minimum Waste Quantity and its Characteristics to be delivered to decentralized units and the centralized processing plant/ dump site2\*\*\* at Perungudi

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** |
| **year** | **Total waste quantity (TPD)** | **biodegrada ble waste**  **% (at source)** | **Biodegradabl e waste Quantity (TPD)1** | **Bio degradable waste diverted to decentralize d units\***  **(TPD)** | **recyclabl e waste**  **% (at source)** | **Recyclabl e waste Quantity (TPD)2** | **Plastic waste diverted to decentralize d units\* (TPD)** | **Inerts**  **% (at source)** | **Inert Quantit y (TPD)3** | **Minimum Guarantee d waste to be transporte d to PDG**  **(TPD)\*\*** |
| 2018 | 903 | 53.20 | 480.40 | 37 | 31.60 | 285.35 | 1.00 | 15.00 | 135.45 | 865 |
| 2019 | 939 | 53.20 | 499.55 | 37 | 31.60 | 296.72 | 1.00 | 15.00 | 140.85 | 901 |
| 2020 | 975 | 53.20 | 518.70 | 37 | 31.60 | 308.10 | 1.00 | 15.00 | 146.25 | 937 |
| 2021 | 1013 | 53.20 | 538.92 | 37 | 31.60 | 320.11 | 1.00 | 15.00 | 151.95 | 975 |
| 2022 | 1053 | 53.20 | 560.20 | 37 | 31.60 | 332.75 | 1.00 | 15.00 | 157.95 | 1015 |
| 2023 | 1094 | 53.20 | 582.01 | 37 | 31.60 | 345.70 | 1.00 | 15.00 | 164.10 | 1056 |
| 2024 | 1137 | 53.20 | 604.88 | 37 | 31.60 | 359.29 | 1.00 | 15.00 | 170.55 | 1099 |
| 2025 | 1181 | 53.20 | 628.29 | 37 | 31.60 | 373.20 | 1.00 | 15.00 | 177.15 | 1143 |

* The waste diversion quantities mentioned in columns 5 and 8 may vary in the future. The Concessionaire shall fulfil the obligation of providing the required quantity of biodegradable and recyclable waste to the existing and proposed decentralized processing facilities, and the MIOP shall be amended accordingly. The tolerance level for columns 5 and 8 shall be - 10 %.

\*\* The Concessionaire shall be required to deliver the minimum guaranteed waste to PDG as per the column 11on daily basis with the tolerance level of ± 10 % of the mentioned value, whereas waste quantity value as depicted in column 11 above shall be amended in case of waste diversion increases to the new decentralized

2\*\*\* In case, the Dump Site is relocated outside the project boundary, the extra distance shall be determined by new round the trip kilometer minus old round the trip kilometer as per the route plans finalized in MIOP. The distance travelled by the Vehicle shall be monitored by Global Positioning System (GPS). The differential distance shall be paid as per the Mechanical Department Rate of Greater Chennai Corporation which shall be Rupees Per Metric Ton Per Kilometer. (Note: This clause shall only be applicable for secondary C&T vehicles)

facility. The concessionaire shall ensure that the waste delivered shall not exceed density of six hundred kilograms per cubic meter (600 kg/m3). The waste not conforming to the density criteria shall be discounted for the computation of minimum guaranteed waste as mentioned in column 11 in the above table. The final tons per day computation shall be based on the monthly average.

1- The tolerance level for the bio-degradable waste that needs to be transported to PDG shall be ± 10% of the mentioned value in column 4

2- The tolerance level for the recyclable waste that needs to be transported to PDG shall be ± 10% of the mentioned value in column 7

3- The tolerance level for the inert waste that needs to be transported to PDG shall be ± 10 % of the mentioned value in column 10

# 6.1 List of Decentralized processing units and its capacity:

1. **Existing Vermicomposting units (Biodegradable waste)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Zone** | **Ward** | **Name Of The Location** | **Feeding Qty. In**  **Mt** | **Usage Of Manure Till**  **Date In Kgs** |
| **1** | 11 | 151 | Alapakkam first street( near Vivek  & Co) | 0.2 | 245 |
| **2** | 12 | 159 | GST Road, Meenambakkam | 0.1 | - |
| **3** | 15 | 200 | TNSCB, 9th Avenue  Chemmancherry | 0.75 | - |

1. **Existing composting units (Biodegradable waste)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Zone** | **Ward** | **Name of the location** | **feeding capacity in MT** |
| **1** | 11 | 151 | Alapakkam first street | 1.1 (sold at Rs. 12-15/kg) |
| **2** | 14 | 186 | Perungudi | 1.75 |
| **3** | 15 | 195 | kannaki Nagar | 1.0 |
| **4** | 15 | 200 | TNSCB, Tsunami Nagar 9th main road | 0.9 |
| **5** | 12 | 156 | Amma Unavagam Near Airport | 1.0 |
| **6** | 12 | 159 | X Real Apartments, Rajeshwari Nagar | 0.3 |

1. **Existing Biomethanation units ( Waste to Biogas) (Biodegradable waste)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Zone** | **Ward** | **Name of the location** | **Feeding**  **Qty. in MT** | **Manure in MT** |
| **1** | 12 | 166 | Amma Unavagam, Moosavarampet | 0.75 | 0.45 |
| **2** | 14 | 189 | Velachery main Road | 0.75 | 0.45 |
| **3** | 11 | 152 | Amma Unavagam, Valasaravalkam | 0.50 | 0.45 |
|  |  |  | **Total** | **2.0** | **1.35** |

1. **Newly proposed composting units under SBM: (Biodegradable waste)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Zone** | **Ward** | **Location** | **Capacity**  **(MT)** |
| 1 | 11 | 145 | Valliammalnagar Burial Ground, | 2 |
| 2 | 11 | 147 | Alappakkam Burial Ground | 2 |
| 3 | 11 | 150 | Gandhinagar Burial Ground | 1 |
| 4 | 12 | 158 | Nandambakkam | 2 |
| 5 | 12 | 162 | Thillai Ganga Nagar 1st main road Burial ground' | 2 |
| 6 | 12 | 165 | New colony Burial Ground | 2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | 14 | 184 | Anna High Road | 2 |
| 8 | 14 | 184 | School Road | 2 |
| 9 | 14 | 186 | Industrial Estate 4th Main Road | 2 |
| 10 | 14 | 188 | Pallikaranai old Dumping Ground | 1.5 |
| 11 | 14 | 188 | Pallikaranai old Dumping Ground | 1.5 |
| 12 | 14 | 189 | Malligeswaran Burial Ground, Thulukaththamman  koil main Road, Pallikaranai | 2 |
| 13 | 15 | 196 | Harichandra Salai, Injambakkam | 2 |
| 14 | 15 | 197 | kuppusamy Street | 2 |
| 15 | 15 | 198 | Parameswaran Nagar | 2 |
| Total | | | | 28 |

1. **Existing plastic shredding units:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SL. NO.** | **ZONE** | **WARD** | **LOCATION** | **CAPACITY OF SHREDDING**  **MACHINE** |
| **1** | 11 | 151 | Alapakkam 2 main cross street | 90 kg/hr |
| **2** | 11 | 151 | Alapakkam 2 main cross street | 90 kg/hr |
| **3** | 11 | 149 | Brindavan Nagar burial ground | 90 kg/hr |
| **4** | 12 | 160 | New street | 40 kg/hr |
| **5** | 12 | 160 | New street | 50 kg/hr |
| **6** | 12 | 167 | 100 Feet Road | 50 kg/hr |
| **7** | 14 | 190 | Tambaram-velachery Main Road | 40 kg/hr |
| **8** | 14 | 188 | Unit office-42 | 100 kg/hr |
| **9** | 14 | 186 | Unit Office-41 | 100 kg/hr |
| **10** | 15 | 187 | Zonal Office-15 | 50 kg/hr |
| **11** | 15 | 195 | 17th main road, kannaki Nagar | 70 kg/hr |
| **12** | 15 | 196 | Division office | 70 kg/hr |

* The quantity may increase or decrease during the concession period. The concessionaire needs to supply the specified quantity of segregated waste to the decentralized units as informed by the Authority from time to time or agreed between the Parties in the MIOP and subsequent revisions thereof..

**Schedule 7: Domestic Hazardous Waste Depositing Centers**

1. The Concessionaire shall be responsible for collecting segregated Domestic Hazardous Waste from the households on bi-weekly basis and transport it to the DHW Depositing Centre for its safe storage. The Concessionaire shall notify the timing and schedule of receipt of DHW waste collection to the public.
2. As per SWM Rules 2016, One DHW Depositing Centre shall be established for every 20 sq. km. of area. The Authority shall identify suitable location where the DHW depositing centre can be established. Authority shall be responsible to provide fully developed DHW Depositing Centre to the Concessionaire.

**Required no. of Domestic Hazardous Waste Depositing Centers (As per SWM Rules, 2016)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Zone** | **Zone-11** | **Zone-12** | **Zone-14** | **Zone-**  **15** | **Project**  **Area** |
| Area (sq. km) | 20.49 | 20.54 | 35.77 | 42.24 | 119.03 |
| Nos. to be established as per rules | 1 | 1 | 2 | 2 | 6 |
| Area Requirement (sq. m) | 20 | 20 | 40 | 40 |  |

1. The DHW Depositing Centers shall be maintained by the Concessionaire during the Concession Period. The Concessionaire shall provide adequate manpower and infrastructure for the functioning of Depositing Centers as specified under KPIs.
2. The Authority shall make arrangements with TNPCB to ensure that DHW is collected from the DHW Depositing Centers and transported to the TNPCB designated disposal facility/ site as identified by TNPCB. The timings and frequency of clearance of waste in DHW Depositing Centers shall be decided by the Authority.
3. The Concessionaire shall safely keep the DHW at the DHW Depositing Centers and shall handover the DHW to the agency appointed by the TNPCB/Authority.
4. The Concessionaire shall run IEC activities for waste generators for separate storage of DHW and its safe disposal.
5. The DHW Depositing Centre shall comply with the below mentioned requirements
   1. Must be completely enclosed
   2. Must have decontaminated area for personnel and equipment
   3. The building units should be chemically compatible with the hazardous waste
   4. Must have a leak detection system to indicate any failure in the integrity of floor.
   5. It must be open from 8.00 am to 8.00 pm to receive the DHW
6. The above provides only indicative requirements of “Domestic Hazardous Waste Depositing Centres”. The Authority in consultation with IE and TNPCB shall develop detailed guidelines for management of DHW Depositing Centers with detailed specifications of the each and every component.

# Compliance Requirements

# Legal Compliance Requirements

The Concessionaire shall comply with the applicable set of regulatory requirements which are not, limited to as hereunder

|  |  |  |
| --- | --- | --- |
| **Sl.**  **No.** | **PERMIT** | **AGENCY** |
| 1 | **Permits for driver** |  |
|  | Permanent driving license depending  on vehicle type. | Transport Department, Government of Tamil Nadu. |
| 2 | **Permits for Vehicles** |  |
| A | Vehicle Registration | Transport Department, Government of Tamil Nadu. |
| B | Fitness Certificate | Transport Department, Government of Tamil Nadu. |
| C | Pollution Control Certificates | Transport Department, Government of Tamil Nadu. |
| D | Driving license3 | Transport Department, Government of Tamil Nadu. |
| 3 | Water & Sewer Connection | Chennai Metropolitan Water Supply and Sewerage  Board (CMWSSB) |
| 4 | Application for PAN and other tax  registrations including Service Tax | Concerned Department of Government of India and  Government of Tamil Nadu |
| 5 | Clearance for employing Labour –  Primary Employer | Commissioner of Labour |
| 6 | Employment of migrant Labour | Commissioner of Labour |
| 7 | Fire safety equipment | Government of Tamil Nadu / Police Department |
| 8 | Working in night shifts | Authority / Police Department |
| 9 | Insurance of Vehicles | Any concerned Insurance Company |
| 10 | Any other applicable permit | Concerned Authority |

3 Driving License applicable for E-Rickshaw as well.

# Acts, Amendments and Regulatory Institutions

|  |  |  |
| --- | --- | --- |
| **S.**  **No.** | **Act** | **Provisions under the Act** |
| **National Policies** | | |
| 1 | **National Green Tribunal** | National Green Tribunal was constituted in 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal rights relating to environment and giving relief and compensation for damages to persons and property. The tribunal has jurisdiction over all civil cases relating to implementation of the following regulations:  The Water Act, 1974;  The Water Cess Act, 1977;  The Forest Conservation Act, 1980; The Air Act, 1981;  The Environment Protection Act, 1986;  The Public Liability Insurance Act, 1991; and The Biological Diversity Act, 2002 |
| 2 | **Central Pollution Control Board** | Central Pollution Control Board (CPCB) is a statutory organization under the Ministry of Environment, Forests and Climate Change (MoEFCC) which was established for the control of water, air and noise pollution, land degradation and hazardous substances and waste management. The specific functions of CPCB include the following:  Advise the Central Government on matters concerning prevention, control and abatement of water and air pollution;  Co-ordinate the activities of SPCB’s and provide them with technical and research assistance;  Establish and keep under review quality standards for surface and groundwater as well as for air quality; Planning and execution of national programme for the prevention, control and abatement of pollution through  the Water and Air Acts and |

|  |  |  |
| --- | --- | --- |
|  |  | The CPCB is responsible for the overall implementation  and monitoring of air and water pollution control under the Water Act, 1974, and the Air Act, 1981. |
| 3 | **The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987 and Tamil Nadu Air (Prevention of Control of**  **Pollution) Rules 1983** | These laws address the prevention and control of air pollution. Under section 21 of this Act, it is mandatory to obtain consent from Pollution Control Board to establish or operate any industrial operation. Activities involving emission of pollutants like establishing batch  mixing plants require consent from TNPCB. |
| 4 | **The Water (Prevention And Control Of Pollution) Act 1974** | An act to provide for the prevention and control of water pollution, and for the maintaining or restoring of wholesomeness of water, for the establishment, with a view to carrying out the purposes aforesaid, of Boards for the prevention and control of water pollution, for conferring on and assigning to such Boards powers and  functions in the country. The Act was amended in 1988. |
| 5 | **The Environment (Protection) Act, 1986, as amended (EPA Rules 1986, as amended thereafter).** | Popularly known as EP Act, it is an umbrella legislation that supplements existing environmental regulations. This law essentially links pollution and natural resource issues. Salient features of the Act are the following: Section 6 empowers the Government of India to make rules to regulate environmental pollution by stipulating standards and maximum allowable limits to prevent air, water, noise, soil and other environmental pollutants Section 7 prohibits operations that emit pollutants in excess of standards  Section 9 regulates handling of hazardous substances and identifies persons responsible for discharges and pollution prevention.  Empowered by the EP Act, the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India has issued various notifications such as Hazardous Wastes (Management & Handling) Rules, 1989; Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989; Noise Pollution (Regulation and Control) Rules, 2000; Environmental Impact  Assessment Notification, 2006 etc. |

|  |  |  |
| --- | --- | --- |
| 6 | **Central Motor Vehicle Act and Rules, 1989 and further amendments** | The Act provides in detail the legislative provisions regarding licensing of drivers/conductors, registration of motor vehicles, control of motor vehicles through permits, special provisions relating to state transport undertakings, traffic regulation, insurance, liability, offences and penalties, etc. For exercising the legislative provisions of the Act, the Government of India made the  Central Motor Vehicles Rules 1989 |
| 7 | **Hazardous Wastes (Management Handling and Trans boundary Movement) Rules, 2016 as amended further** | This law addresses handling of hazardous substances that fall under specified schedules and necessitates authorisation for such facilities from State Pollution Control Board. Projects attracting these rules will have to follow the guidelines for handling and disposal of  hazardous wastes. |
| 8 | **Solid Waste**  **Management Rules 2016 (Previously known as Municipal Solid waste (Management & Handling) Rules 2000 and applicable by-laws of the Authority.** | This notification by Ministry of Environment and Forest lays down the methods of handling Solid Waste Management (SWM) and its scientific disposal in supersession of the Municipal Solid Waste (Management and Handling) Rules, 2000. These rules are apply to every urban local body, outgrowths in urban agglomerations, census towns, notified areas, notified industrial townships, areas under the control of Indian Railways, airports, airbases, Ports and harbours, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious and historical importance, and to every domestic, institutional, commercial and any other non-  residential solid waste generator situated in the areas. |
| 9 | **The Noise (Regulation and Control) Rules, 2000 as amended in October 2002.**  **As per the Environment (Protection) Act (EPA) 1986 the ambient noise levels are to be maintained as stipulated by the Central Pollution**  **Control Board (CPCB)** | The ambient air quality standards in respect of noise for different areas/zones namely industrial, commercial, residential or silence areas/zones are specified in the Schedule of these rules. An area comprising not less than 100 metres around hospitals, educational institutions and courts may be declared as silence area/zone as per these rules. The noise levels in any area/zone shall not exceed the ambient air quality standards in respect of noise as specified in the Schedule. |

|  |  |  |
| --- | --- | --- |
|  | **for different categories of areas like, commercial, residential and silence**  **zones etc.** |  |
| 10 | **Bio Medical Waste Management Rules 2016** | This notification by Ministry of Environment and Forest  lays down the method of collection of hospital waste, its transportation and disposal based on scientific methods |
| 11 | **The Batteries (Management and Handing) Rules 2001 & further amendments** | These rules apply to every manufacturer, importer, re- conditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacture, processing, sale, purchase and use of batteries or  components thereof. |
| 12 | **The Petroleum Act and Rules, 1934 & its amendments** | An Act to consolidate and amend the law relating to the import, transport, storage, production, refining, blending, or reclaiming by recycling of petroleum and  other inflammable substances |
| 13 | **E-Waste (Management and Handling) Rules, 2016** | The rules prescribe procedures for manufacture, dealer, refurbisher, and Producer Responsibility Organisation for collection, dismantling, recycling, and disposal of electronic wastes and requires authorisation of the State Pollution Control Board for the same whereas single authorization of CPCB for Extended Producer  Responsibility |
| 14 | **Plastic waste**  **(Management & handling) Rules 2016** | This rule is a responsibility of every waste generator, local body, Gram Panchayat, manufacturer, Importers and producer. Plastic sheet used for packaging, wrapping the commodity shall not be less than fifty microns in thickness. Waste Generators including institutional generators, event organisers shall not to litter the plastic waste, segregate waste, handover to authorize agency and pay user fee as prescribed by AUTHORITY and spot fine in case of violation. Promote use of plastic waste for road construction as per Indian Road Congress  guidelines or energy recovery or waste to oil etc. |
| 15 | **Public Liability Insurance Act, 1991** | According to this notification, all the Major Accident Hazard (MAH) units handling chemicals in excess of the threshold quantities referred to in the MSIHC Rules, 1989 are mandated to take an insurance policy and  deposit an equal amount in the Environment Relief Fund |

|  |  |  |
| --- | --- | --- |
|  |  | (ERF) to ensure immediate payment to the chemical  accident victims. |
| 16 | **Prohibition of Employment as Manual Scavengers‘ and their Rehabilitation Act 2013** | This act prohibits construction of insanitary latrines and employment or engaging of manual scavenger for the purpose of manual scavenging. No person, local Authority or any agency shall, from such date as notified by the State Government (which shall not be later than one year from the date of commencement of this Act), engage or employ, either directly or indirectly, any  person for hazardous cleaning of a sewer or a septic tank |
| 17 | **The National**  **Environment Tribunal Act, 1995** | This act provides for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident, with a view to giving relief and compensation for damages to persons, property and the environment and  for matters connected there with or incidental thereto. |
| **State Policies** | | |
| 18 | **Tamil Nadu District Municipalities Act, 1920** | Under this act, local bodies are empowered to provide and maintain public amenities and facilities.  Establishment, constitution and government of District Municipalities and authorities  Taxation and Finance  Public Health, Safety and Convenience  The law delineates constitution/election of urban local  bodies and demarcates powers and responsibilities of these authorities |
| **Operational Policies And Directives Of The World Bank** | | |
| 19 | **OP/BP 4.01 -**  **Environmental Assessment** | Operational Policy 4.01 (OP 4.01) is one of the ten safeguard policies of the World Bank, which provides the Environmental Assessment (EA) guidance for the lending operations. The OP 4.01 requires the borrower to screen projects upstream in the project cycle for potential impacts. Thereafter, an appropriate EA approach to assess, minimize / enhance and mitigate potentially adverse impacts is selected depending on nature and scale of project. The EA needs to be integrated in the  project development process such that timely measures |

|  |  |  |
| --- | --- | --- |
|  |  | can be applied to address identified impacts. The policy requires consultation with affected groups and NGOs to recognise community concerns and the need to address the same as part of EA.  TNUIFSL has adopted the principles of the above policy and has evolved a management framework to address the  environmental issues in its lending operations. |
| 20 | **Factories act of 1948** | 1. Deals with the health of workers in the work place defining the various parameters in maintaining the cleanliness, disposal of effluent, standard of lightening, noise levels, latrines, etc., 2. Deals with the safety provisions. Fencing of machineries, restriction of women and children in certain type of process, testing of pressure plants, hoists and lifts, lifting machineries, chains, ropes and lifting tackles by competent persons, appointment of safety officers etc., are explained. 3. Specifies the necessity for welfare of workers such as washing facilities, first aid appliances, rest room, crèches, canteen, appointment of welfare officers, etc., 4. Compulsory disclosure of information by the occupier to the workers as well as to the public, permissible limit of exposure of chemicals and toxic substance, workers participation in safety management etc, are prescribed. 5. The restriction of working hours such as weekly hours, weekly holidays, compensatory holidays, night shifts, over time, etc., 6. The working conditions of young persons, regarding the certificate of fitness reduced working hours etc. 7. Deals with the leave eligibility for a worker 8. For any contravention of the provisions of this act, or of any rules made there under, the occupier and the manager of the factory shall each be guilty of an offence and punishable with |

|  |  |  |
| --- | --- | --- |
|  |  | imprisonment for a term which may extend to 2 Years of with fine which may extend to 1 lakh  rupees or with both. |
| 21 | **Child Labour ( Prohibition and**  **Regulation) act 1987** | Under this act the children below the age as specified inside the act are prohibited from working. |
| 22 | **EPF Act 1952** | The employer and employee contribution should be as per the act and pension and other benefits etc should be  also as per this act and its amendments. |
| **Competent Regulatory Agencies** | | |
| 23 | **Municipal Bodies** | For most laws applicable to TNUIFSL projects, municipal authorities (who will be recipients of finances) will have to certify that they are abiding by the law they are entrusted to protect and administer. In case of other borrowers, clearances specified in the Acts would have  to be obtained before sanctions. |
| 24 | **Chennai City Municipal Corporation Act** | The authority and concessionaire should follow the guidelines put forth in the CCMC act of 1919 and its subsequent amendments while implementing the project  related activities |
| 25 | **Tamil Nadu Pollution Control Board** | The activities that would cause air emissions and/or effluent discharges and/or hazardous waste disposal needs to be reported to the TNPCB and relevant consents/NOC/authorization is required to be obtained. TNPCB is also mandated to monitor the implementation  of consent conditions on a regular basis. |

# Schedule 9: Environmental Health and Safety Plan

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
| 1. | **Collection:**   1. Primary collection vehicles overloaded with waste, resulted in road littering during waste collection 2. Sound limits for vehicles and sanitary workers who perform door to door   collection of solid waste | 1. Air emissions- PM2.5, PM10, SO2,   NOx, & CO   1. Noise   pollution | 1. Prohibition on open burning of waste 2. Primary collection vehicles will carry the waste only as per designed capacity & will not be overloaded/over spilled waste. 3. Provision of door to door collection of the waste in different streams at pre-defined timings 4. Vehicles involved in collection should have Pollution under Control (PUC) Certificates. Vehicles should possess most recently completed PUC certificates with them. 5. All primary collection vehicles to carry First Aid kit and should be given proper training on how to handle medical emergencies. 6. All the vehicles should undergo periodic maintenance as per O&M plan. 7. Provision of Personal Protective Equipment such as mask, gloves & goggles, safety shoes/gum boots/ reflector jackets 8. Proper lubrication will be provided to minimize squeaking noise due to friction for primary collection vehicles 9. During primary collection schedule the alert | 1. Motor Vehicle Act & Rules. 2. Environment Protection Act 1986 3. Air Act, 1981 4. The Noise Rules, 2000 5. SWM Rules 2016 | Concessio naire |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  |  |  | (whistle or bell) by the sanitary worker to collect the waste should not exceed the prescribed noise limits.   1. Most optimum route to be adopted with minimum no. of vehicles with the help of GIS mapping and apps for general public 2. The sound from vehicles should not be more   than 80 decibels |  |  |
| 2. | **Secondary Storage Points:**   1. Open bins or common points for waste disposal 2. No clear distinction of bins for   storage of wet & dry waste   1. Storage of   waste for longer duration at  Secondary | 1. Soil   Contamination   1. Unaesthetic view 2. Conditions for breeding of mosquitoes and grazing by cattle 3. Odour   nuisance   1. Hinderance to general public 2. Health hazards | 1. Prohibition on open dumping and littering on roads/public places 2. Regular & timely collection of waste from temporary waste storing points at least twice in a day to prevent degradation of waste & thus generation of odour 3. Adequate number of additional bins for excess waste as and when required by the waste generators 4. Regular bin washing and maintenance to be done. 5. Closed type container & bins with clear distinction for wet waste, dry waste and street sweeping waste should be used for collection of waste so as to avoid mixing of different types of waste. 6. Sanitizing the bins around 2m periphery of | 1. Enviro nment Protecti on Act 1986 2. SWM Rules 2016 | Concessio naire |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  | collection points  d) Waste  burning at secondary collection  points |  | surrounding area by usage of lime or bleaching powder (disinfection), so that there will be no harm for public.   1. In case of odour usage of sanitizers to reduce the odour nuisance 2. Provision of Bins with lids/cover |  |  |
| 3 | Domestic hazardous waste collection centres | | 1. Separate collection and storage plan for Domestic Hazardous Waste 2. Timely disposal of DHW from collection centres to Hazardous waste disposal facility. 3. Stringent safety and emergency measures to be in place at the collection centres to avoid any accidents 4. Clear specification of hazardous waste items generated from HH and awareness to be created on the same on how to store the waste. | 1. Central or State Pollution Control Board 2. SWM Rules, 2016 3. EP Act, 1986 4. Hazardous Wastes Management & Handling Rules, 2016 | Authority and maintenan ce of collection centres to be done by Concessio naire |
|  | Collection & transportation of domestic hazardous  waste at | Accidental release of hazardous chemicals into environment | 1. DHW collection vehicles shall be enclosed type, container proof and should have display of hazard information 2. Minimum safety equipments to be installed in   the DHW transportation vehicles. |  | Concessio naire in coordinatio n with  authority |

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| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  | DHW Centres | during transportation | c) Emergency numbers to be displayed on vehicles in case of emergency situations |  |  |
| 4 | Workshop or Municipal Garage for daily upkeep and maintenance of vehicles | | 1. There shall be adequate workshop facilities for the maintenance not only of their fleet of vehicles, but also of containers, handcarts, etc. 2. Workshop shall have electricity, water and consumables 3. The workshop should have minimum safety related equipments. 4. There should be first aid centre inside the workshop area to attend the emergencies 5. The site should contain numbers to nearby hospitals, ambulance numbers, fire station numbers for display at various locations 6. It should have adequate technical staff (trained men and women), spares, and preventive maintenance schedules to ensure that at least 80% of the vehicles run on the road each day and the downtime is minimised to the extent possible 7. The depots of the garage should carry spare parts of vehicles, compactors, and other equipment, according to the service contract   signed by the suppliers of the equipment and the | SWM Rules, 2016 | Authority and Concessio naire |

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| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  |  | | concessionaire   1. Workshop or repair-centre in the garage should be a completely independent unit 2. Servicing checks by a mechanic for any inadequacies in vehicles 3. Proper treatment and disposal mechanism of waste water 4. Green belt and noise absorbing plants to avoid air, noise pollution. 5. Proper disposal of scrap materials, equipments,   batteries etc periodically |  |  |
| 5. | **Disposal:**   1. Accidental vehicle spillage 2. Solid waste disposal in water bodies 3. Disposal of plastics in aquatic system/wa   ter bodies | 1. degradation surface and ground water quality 2. Contaminates nearby water bodies/lakes 3. Creates   unaesthetic and ill effects for nearby local residents | 1. No leakage of leachate is allowed from any waste carrying vehicles including e rickshaw. All vehicles shall have leachate collection tank, irrespective of its type and carrying capacity. 2. Waste shall be transported in closed vehicles 3. Waste shall be transported as per the designed capacity of the vehicles 4. Prohibition on disposal of plastics or solid waste in water bodies 5. Regular cleaning of roads & drains and removal of collected waste to the disposal site without mixing the segregated waste 6. Regular monitoring of incoming waste through   weighbridge at the disposal site | 1. Water –   Pollution Control Act 1974   1. EP Act 1986 2. Tamil Nadu Water Rules, 1974 3. SWM Rules 2016 | Concessio naire |

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| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  | 1. Leakage   from e rickshaw, and bins, compactor s, tippers, or   1. Uncollecte d wastes clog drains and channels causing   flooding |  |  |  |  |
| 6. | Social issues or benefits of development project | 1. Unaesthetic view, heavy noise & traffic congestion 2. Odour   problems   1. Local labour – construction 2. Indirect   employment | 1. Local people will be preferred for employment. 2. Movement of transportation vehicles will be scheduled according to type of area 3. Continuous exposure to air & noise pollution will be prevented 4. Uniform For Men: Cap, T-shirt/Shirt, fluorescent Jacket, Trouser/pant, Safety Shoes as per IS 15298 (Part 1&2) : 2011/ISO 20345 : 2004 , hand gloves, mask, 5. Uniform For Women: Cap, Salwar Suit/Saree,   fluorescent jacket, shoes, hand gloves, mask. | 1. Minimum Wages Act 2. Indian Labour Act. 3. Indian Motor Vehicles Act & Rules | Concessio naire |

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| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  |  |  | 1. Concessionaire shall provide at least 2 sets of dress to the workers every six months. 2. Periodical Health check-up for the employees. 3. Providing medical card/minimum health cover insurance for the employees 4. Proposed project will require manpower during construction/implementation phase thereby creating job opportunities. 5. Improvement in transport, communication facilities, lifestyle and social status etc. due to ancillary development. 6. Waste will not be stored at concession area for more than 12 hours 7. Covered bins & vehicles to minimize odor, flies, mosquitoes & pathogen breeding on littering waste 8. The Concessionaire shall use appropriate safeguards for the personnel manning the DHW Deposition Centers as per the law of the safeguards required under Atomic Energy   Regulatory Commission |  |  |
| 7. | Occupational health & safety impacts  during | a) Health impacts of exposure to a variety of  harmful | 1. Hazard Identification & Risk Assessment analysis shall be prepared for all activities of C&T related jobs. 2. Impact mitigation measures shall be | 1. Motor Vehicle Act & Rules. 2. SWM Rules   2016 | Concessio naire |

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| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  | collection & transportation of waste | materials of waste related pollutants.   1. Accidental spillage by moving vehicles. 2. Cut & Bruises during handling of Waste. 3. Allergies from pathogen and airborne dust | implemented for all significant risks identified.   1. All centers of labour contact points shall be provided with First Aid and other requirements. 2. Emergency Preparedness plans shall be prepared and implemented for all manpower working centers and its field extension centers. 3. An Environment Health & Safety policy shall be prepared and implemented throughout the activities area. 4. Adequate manpower manager staff shall be provided to listen into the manpower related grievances. 5. Workers will be provided with PPE such as mask, gloves, shoes, & goggles 6. Periodical health check-up and minimum health insurance cover for the employees. 7. Proper training will be provided regarding maintenance of Health 8. Tie-up with local hospital will be done to provide ambulance to handle emergency cases, if required 9. Routine inspections, housekeeping and maintenance will be carried out at regular intervals 10. Measures such as deferred timings and stretch | c) EP Act 1986 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Activities** | **Potential Impacts Identified** | **Preventive, Control & Mitigation Measures** | **Applicable Legal Compliances** | **Responsib le Agency** |
|  |  |  | breaks to be adopted |  |  |

# Schedule 10: Management Information System (MIS)

* + 1. The Concessionaire, IE and the Authority shall jointly set-up one control room for the Project Area. The space (RDC Office) for the Control Room shall be provided by the Authority. The space requirement shall be provided by the Concessionaire in MIOP. The Concessionaire shall be responsible for providing hardware and software system to enable real-time tracking of activities. The Authority, Concessionaire and IE shall deploy one representative respectively for MIS.
    2. The Concessionaire shall set-up an automated Management Information System (MIS) that facilitate effective monitoring of the project. There shall be provision to feed the information “manually”, in case information is not obtained automatically.
    3. The Concessionaire shall be responsible to provide data/information required for generating reports and project monitoring.
    4. The Authority may or may not suggest more reports/automation from time to time, to enhance the effective monitoring of the Project.
    5. The Concessionaire shall also set-up 24 X 7 Complaint Redressal System for handling complaints related to the Project Operations.
    6. The Concessionaire shall be responsible to Operate the Centralized MIS and Complaint Redressal System throughout the Concession Period

# Reporting through MIS:

* + 1. The Concessionaire shall be responsible for deploying required hardware and installing the Authority licensed software system for generating on demand automated reports for continuous monitoring of Project Operations. The System shall comprise of following, but not limited to the below mentioned.
    2. Daily Biometric Attendance System shall be installed at all the Ward/Division Offices within the Project Area. The Authority shall provide the suitable locations in every ward to the Concessionaire for setting-up Biometric Attendance System.
    3. The Concessionaire shall install GPS devices in all the Secondary Collection Vehicles and Mechanical Sweepers which shall enable real-time tracking of vehicles at the Control Room.
    4. The Concessionaire shall install RFID Tags with unique codes on Primary Collection Vehicles, RC bins and wheeled bins and these unique codes shall be used in the MIS Reports.
    5. The Radio Frequency Identification Device (RFID) tags in the RC vehicles shall be placed in such a way that the signal shall be transmitted to the Control Room only when the RC bin has been lifted and emptied by the RC vehicle.
    6. The helpers travelling with the Secondary C&T vehicles shall take a minimum of two time and date stamped photographs along with the location (Latitude & Longitude) (Pre and Post unloading) of the bins and these photos shall be immediately transmitted to the control room via the dedicated app.
    7. The Concessionaire shall provide geo-fenced cellular handsets to the entire supervisory staff of primary collection and transportation as well as street sweeping which shall get activated/deactivated once the personnel enters/ exits from her designated work periphery, which shall be detailed in the personnel wise beat plan in the Approved MIOP.
    8. The Concessionaire shall also conduct manual supervision of activities, which cannot be tracked through automated system (Refer Schedule 17 on KPIs). The Concessionaire shall develop a mobile application to monitor the Project Operations on day to day basis.
    9. The Concessionaire shall develop formats for arranging data into meaningful information. The formats shall be developed for automated and manual data by the Concessionaire, in consultation with IE/ Authority.
    10. The data generated from automated systems and mobile application shall be directly accessible to IE and the Authority through control room as well web based and mobile application-based dashboards. The Concessionaire shall also compile and submit the data in prescribed formats to IE and the Authority on daily basis.
    11. The Concessionaire shall submit Daily, Weekly, Fort-nightly, and Monthly for any specific duration MIS Reports to the IE in the formats approved by the Authority.
    12. IE shall compare the MIS Report with the Key Performance Indicators (KPIs) and report Daily, Weekly, Fort-nightly and Monthly Performance Report to the Authority.
    13. IE shall be responsible to prepare Monthly Performance Reports and submit it to the Authority. The Monthly Report shall form basis for calculating monthly penalties and payments to the Concessionaire.

# Complaint Redressal System:

* + 1. The Concessionaire shall set-up a 24 X 7 Complaint Redressal System for handling complaints related to Project Operations. Concessionaire shall put a detailed Standard Operating Plan (SOP) in place to elaborate the System
    2. The Concessionaire shall provide online platform for the logging and tracking the complaints. The Concessionaire shall also enable the system to register the complaint through SMS and provide the status through Automated SMS
    3. The Concessionaire shall install a minimum of 5 (five) dedicated phone lines and staff in the Control Room to receive complaint from Public. The waiting time shall not be more than 2 minutes for any call. It shall be further assessed during the MIOP preparation stage.
    4. The Concessionaire shall maintain records of Complaints received that includes name, date, time, location, type of compliant and the subsequent action taken to solve the complaint. This record shall be verified by IE and the Authority
    5. All calls shall be recorded and shall be reviewed for the quality of interaction of their staff with the customers. This recording shall be made available to IE and the Authority.
    6. Complaint redressal shall be done by the Concessionaire within 6 hours of receipt of any complaint regarding daily operational activities. The Concessionaire shall redress any complaint related to infrastructure replacement within 24 hours of receipt of complaint.

# Hardware & Other Components

* + 1. The Concessionaire shall deploy the hardware and software system with due approval from Authority

# GPS in All Vehicles

The Concessionaire shall install GPS system in all the vehicles with following device specification or better:

* + 1. General Specifications**:**
       1. Dual band GPRS (900/1800 Mhz).
       2. On-board Storage of at least 2 days of data.
       3. Internal battery to sustain operation for at least 10 hours with a minimum recording at interval of 30s and reporting at intervals of minimum of 120s.
       4. A minimum reporting interval of 30s.
       5. Alerts on external power disconnection.
       6. Internal antenna or antenna wire enclosed in metal sheath.
       7. IP 65 enclosure (i.e. water proof for occasional sprays of water and dust proof).
       8. Device should be hidden – minimum of -161db gain for GPS antenna.
       9. Ability to work against sustained external voltage of upto 33v and handle transient of as high as non-spike 55v/6000 Joules spikes (To work in presence of hydraulics, falling battery).
       10. Digital Input: 2 minimum. Changes to digital input must be communicated immediately – i.e. changes should not be missed because it falls in between recording interval. On the other hand transients (< 1-2s) must be discarded.
       11. Analog Input: 1 minimum
    2. Accessories:
       1. Must be able to detect engagement of bin’s raising/lowering.
       2. Must be able to detect raising/lowering of tipper’s body
    3. GPS Running Requirement
       1. 98% of installed GPS shall be operational all the time.
       2. Any non-operational GPS shall be replaced within 24 hours of time of non- functioning.
       3. If any GPS is not operational (within the above limits), driver shall be provided with android/Mobile Application enabled phone with location tracking capability

and same shall be monitored by Concessionaire

* + 1. RFID (Radio Frequency Identification Reader)
       1. RFID tag in non-breakable, non-temper & non-removable enclosure shall be fixed on all key project assets by the Concessionaire. Key assets shall include (but not limited to):
       2. 1.1 cum/0.66 cum RC bin
       3. E-Rickshaw
       4. Equipments
       5. RFID tag should contain information such as Asset type, Asset no., purchase date, insurance details, servicing schedules, date of replacement if any, any other information.
       6. Vehicle RFID Tags shall store Information in RC and Insurance details, in structured format.
       7. The Concessionaire shall provide (2 RFID Readers per ward) including inbuilt display to read RFID tag information. These readers shall be fitted with GPRS module and information shall be relayed to the asset records on server indicating asset information.
       8. Concessionaire shall replace the damaged RFID Tag within the 24 hours’ time of non-functioning. New RFID tag in place of damaged tag shall be fixed with the same information.
    2. Mobile Application for Reporting from site

The Concessionaire shall provide robust mobile applications to report the site conditions. Following are minimum requirements:

* + - 1. Mobile application shall be able to send information to control room about the ground situation along with “Photo”, “Geo-Tag (latitude-longitude) and Status update.
      2. This mobile application shall work even when GPRS connectivity is not there and the moment GPRS connectivity is available, data shall be uploaded to the servers.
      3. Data collected from this application shall not be alterable by the originator.
      4. This application shall be used for (but not limited to):
         1. Report Arrival of Collection Vehicle by sending photograph of street.
         2. Report Arrival of Refuse Compactors for clearing of bins from Secondary Collection Points
         3. Reporting after clearing Silt
         4. Reporting after clearing road sweeping
         5. Reporting of any other site condition
         6. Reporting after cleaning of river/canal banks
    1. Concessionaire shall also train all their staff to use the application.
    2. Bio-Metric Attendance
       1. The Concessionaire shall deploy biometric attendance system for all the Ward/Division Offices under the Project Area, to report staff attendance. Following are minimum requirements:

1. Bio-Metric Attendance System shall display each record instantaneously to the central server
2. For staff who have missing finger prints (at times reported by few workers), alternate fool proof system shall be deployed.
3. Only records received from bio-metric attendance shall be treated as valid records for staff reporting – in reports generated from servers.

# Schedule-11 Scope of Work for Independent Engineer

IE shall appoint relevant staff/personnel4 for daily monitoring of Project Implementation and Operations after the signing of its IE Service Agreement with the Authority or the Authority assigned Institution. IE shall appoint minimum staff for monitoring of Project Implementation and Operations activities as given below:

|  |  |  |
| --- | --- | --- |
| **Sl.**  **No.** | **Key Professionals** | **Nos\*** |
| **1** | Project Director | 1 |
| **2** | Deputy Project Director/ Process Auditor | 1 |
| **3** | IT/MIS Manager | 1 |
| **Sl.**  **No.** | **Professionals** | **Nos** |
| **4** | Finance Officer | 1 |
| **5** | Manager-Contract Management | 1 |
| **6** | Social Development/IEC Specialist | 1 |
| **7** | Manager-EHS | 1 |
| **8** | Zonal Manager | 4 |
| **9** | Zonal Assistant Manager | 4 |
| **10** | Secretary - Project Director | 1 |
| **11** | Executives - Deputy Project Director | 12 |
| **12** | Executives- Finance | 8 |
| **13** | Executive- Contract Management | 8 |
| **14** | Executive-Social/ IEC | 4 |
| **15** | Executives- IT/MIS | 5 |
| **16** | Executives- Real Time Monitoring | 6 |
| **17** | Executives- Complaint Redressal | 6 |
| **18** | Executives- EHS | 2 |
| **19** | Monitoring Supervisors | 20 |
|  | **Total** | **87** |

\*Indicative

# Objective:

* + 1. Act independently, as per the provisions of Concession Agreement and review all activities associated with Project Implementation and Operation to ensure compliance to the Concession Agreement;
    2. Assist Parties to this Concession Agreement in arriving at an amicable solution of any Project Implementation and Operational issue, if any;
    3. Report to Authority on the technical and financial aspects of the Project on daily/continuous basis; and

4 The payment for Independent Engineer shall be approximately Rupees 2 (two) crores per annum of which 50 % shall be borne by the Authority and the remaining 50% to be borne by the Concessionaire

* + 1. Act, if required on behalf of the Authority and fulfil various reporting requirements regarding Project Implementation and Operation, except on decision making.

# Role of the Independent Engineer

The Independent Engineer ("IE") is expected to play a positive and independent role in discharging its functions, thereby facilitating the smooth Project Implementation and Operation of the Project during the Implementation Period and Concession Period. The Independent Engineer shall oversee the assigned activities as per this Schedule. Broadly, the role of the Independent Engineer shall be:

* + 1. Appraise the MIOP and shall make recommendations to the Authority for its approval.
    2. Review the activities associated with, but not limited to, Project Design, Project Plan, Procurement of Project Assets, Quality of Project Assets, DHW Depositing Centre Design, Vehicle Parking and Workshop Design, Project Implementation Schedule, Construction Supervision, Operation and Maintenance Manual, Project Monitoring, Financial Closure Document, Insurance, EHS, Applicable Consent and Clearances and Project Scope of Concessionaire to ensure compliance as per the Approved MIOP;
    3. Report to the Authority on the various physical, technical and financial aspects of the Project based on daily/continuous basis;
    4. Assist the Parties on arriving at an amicable settlement of disputes, as the case may be;
    5. Review matters related to social issues and Health, Safety and Environment and report the Authority
    6. IE Shall continuously monitor, on daily basis, the operations of the project activities, authenticate the daily reports submitted by the Concessionaire and generate its own report for checking of the Concessionaire’s report and satisfy itself and report to Authority.

# Scope of Services

The scope of services to be provided by the Independent Engineer is detailed in the subsections of this clause. In addition to the services as detailed hereunder, the IE shall also discharge duties as desired by Authority time to time.

# Preparatory Phase

* + 1. On receipt of Draft MIOP from the Concessionaire, the Independent Engineer shall review the submitted documents for any changes, or modifications, if any
    2. Shall ensure that the MIOP submitted by the Concessionaire is in compliance with the Scope of Work of the Concessionaire as well as various Project requirements of the Agreement, including those specified in the Concession Agreement, suggest to the Concessionaire for any changes and shall make recommendation to the Authority for approval.
    3. The Independent Engineer shall present its review in writing to the Authority and seek its suggestions as well as approval for the proposed modifications in MIOP. Thereafter

a joint meeting shall be facilitated with both the concerned Parties to convey the details of the proposed modifications.

* + 1. The IE shall send a notice in this effect to the Parties for the proposed modification. All these activities shall be completed within 15 working days post submission of Draft MIOP by the Concessionaire.
    2. The IE shall ensure that the Concessionaire submits the revised MIOP within seven days from the receipt of such notice.
    3. Thereafter the Independent Engineer shall review the modified MIOP and/ or supporting documents sent to it by the Concessionaire and notify within 7 (seven) days of receiving such documents to the Authority for final approval
    4. The IE shall review and appraise to the Authority and seek approval from the Authority for incorporating changes sought by the Concessionaire to the Approved MIOP. The Authority shall approve the revised MIOP within a period of 7 (seven) days post receipt of revised MIOP.
    5. Constantly monitor the progress of MIOP Preparation and other activities and appraise Authority of progress achieved by Concessionaire on the first working day of every week

# Handing Over Phase

The IE would monitor, in accordance with Good Industry Practice and relevant KPIs, the progress during the Procurement of machinery, equipment, vehicles, manpower etc. required for the project along with the phase wise handing over of the zones to the Concessionaire. For this purpose, the Independent Engineer shall undertake, inter alia, the following activities:

* + - 1. Shall monitor the progress of project with respect to procurement of project moveable assets and their technical specifications;
      2. Shall monitor the deployment of required project staff and manpower for the project operation and ensure reasonable absorption of existing casual/temporary workers of the Authority
      3. Shall assist the Authority in issuing of wellness/worthiness certificates for moveable assets for handing over to the Concessionaire
      4. Shall assist the Authority, wherever required in administration of the Concession Agreement in full and in accordance with applicable laws;
      5. Shall attend regular meetings (“Project Review Meetings” or “PRMs”) with the Authority and the Concessionaire, to be held at least once in every two weeks during the procurement and handover Period to report on progress and quality of work performed by the Concessionaire and to discuss problems or

other pertinent matters relating to the work.

* + - 1. The IE shall take notes at the meetings and provide a copy of the minutes to each person who attend the meeting.
      2. Designate tests on solid waste and/or equipment and if the situation warrants shall instruct the Concessionaire to conduct test in recognized laboratory;
      3. Interpret the document requirements and make decisions regarding performance reporting by the Concessionaire for compliance. The IE shall inform and advise the Authority, in a timely manner all matters relating to the implementation and progress of the Works on fortnightly basis;
      4. Review, approve or disapprove in consultation with the Authority, plan, report and any other document of the Concessionaire to enforce compliance and conformance with the requirements of Concession Agreement;
      5. Whenever considered necessary or advisable to ensure supervision of corrective action to be taken for reformation of defective work, the IE may require inspection or testing of such work, and shall report to the Authority about the compliance or non-compliance;
      6. Provide the services of experts to check the quality of materials and the workmanship as per the Approved MIOP
      7. Reviews all the activities by Concessionaire and ensure conformity of the same with the Approved MIOP
      8. Address issues relating to site specific conditions, design modifications, or Concessionaire disputes.
      9. Issue Readiness Certificate/ Provisional Readiness Certificates to the Concessionaire for various activities specified in the Agreement after approval from the Authority;
      10. Ensure the Concessionaire has sent necessary notices/ pamphlets /posters/ advertisement to RWAs/ NGOs/ citizens about the impending handover of the Project Area to the Concessionaire.
      11. The IE shall prepare and submit to Authority, Progress Reports including the following:
          1. Weekly progress of works;
          2. Slippages, if any, in the procurement schedule vis-à-vis planned schedule and the reasons thereof;
          3. Schedule for the succeeding week;
          4. Issues, if any, with regard to the works along with the details of the

action taken for the resolution of the same;

* + - * 1. Photographic record of progress of works over the previous week.

# Concession Period

During this period the Independent Engineer would monitor, in accordance with Good Industry Practice, the Project Operations & Maintenance activities undertaken by the Concessionaire so as to ensure compliance with the O&M Requirements as per the Concession Agreement. The specific activities to be undertaken would include the following:

* + - 1. IE shall be responsible for verification of enumerated data of all the households (done by the Concessionaire) within the Project Area. The IE shall be responsible for preparing formats for data enumeration and get it approved from Authority within 7 working days from COD. The Concessionaire shall collect data related to address, number of members, GPS coordinates, contact number etc. On submission of this data by the Concessionaire, IE shall use this data to evaluate KPIs.
      2. IE shall ensure that the monitoring of Project Operations is done on daily basis as per the Approved MIOP. The IE shall share the daily, weekly, fortnightly and monthly report with the Authority.
      3. The IE shall deploy adequate manpower for monitoring of KPIs on continuous basis; IE shall be responsible for conducting general inspection of the Project Area on daily basis, pay surprise visits as and when situation demands to ascertain conformity with Concessionaire’s Project Scope.
      4. The IE shall also appoint one representative from their side, who shall be responsible for tracking daily Project Operations and compiling daily, weekly, fort-nightly and monthly MIS at Control Room
      5. Provide administration of the contract in full and in complete accordance with applicable laws;
      6. Review and approve test results on solid waste, materials, vehicles and/or equipment used;
      7. Interpret the requirements of the Concession Agreement and consult Authority regarding performance of the Concessionaire. The IE shall inform and advise the Authority, in a timely manner all matters relating to the Project Operation and Maintenance;
      8. Review work which fails to comply with the specifications and requirements of the Agreement.
      9. Review, approve or disapprove in consultation with the Authority, plan, report or any other document of the Concessionaire to enforce compliance and

conformance with the requirements of the Agreement;

* + - 1. IE shall be responsible for certifying the quantity and quality of waste diversions to Decentralised Processing Facilities
      2. Address issues relating to site specific conditions, C&T Plan modifications, or Concessionaire disputes
      3. Review the SOPs and O&M Manual as per the Schedule 19 from time to time and assist the Concessionaire in finalising the same. The Independent Engineer shall also consult Authority prior to finalisation of the documents;
      4. Monitor Operation and Maintenance activities (including maintenance of Project Assets, KPI linked performance, safety and environmental issues) and the overall quality of Project Operation activities so as to ensure compliance by the Concessionaire with the O&M Requirements, O&M Plan and O&M Manual;
      5. As the case may be, IE shall undertake rebasing of IAQ and MQ in accordance with this Concession Agreement
      6. As the case may be, IE shall undertake calculation for unexpected increase in the waste quantity as defined under Schedule 31
      7. IE shall monitor the deployment of infrastructure and manpower by Concessionaire for Emergency Situations

1. In case of occurrence of Disaster, IE shall facilitate and monitor implementation of Disaster Management Plan as per MIOP
2. IE shall monitor implementation and progress of IEC Plan as per MIOP
   * + 1. Undertake a quarterly review of the various records and registers to be maintained by the Concessionaire and suggest suitable remedial measures/ procedures, where necessary.

# Meetings, Records and Reporting

* + - 1. The IE shall attend regular meetings (“Project Review Meetings” or “PRMs”) with the Authority, and the Concessionaire, to be held at least once in every month during the Active Operations Period to report on progress and quality of work performed by the Concessionaire and to discuss problems or other pertinent matters relating to the work. The IE shall take notes at the meetings and provide a copy of the PRM minutes to each person who attended the meeting.
      2. The Independent Engineer shall, in the ordinary course, maintain record of the activities undertaken by it in discharge of its functions and responsibilities. This would include records but not limited to in respect of the following:

1. Manpower deployed and other organizational arrangements of the Independent

Engineer;

1. Review Report of documents submitted to it by the Concessionaire
2. Inspections undertaken, and notices/ instructions issued to the Concessionaire;
3. Review of compliance with Project Requirements and O&M Requirements;
4. Concessionaire’s Payments
5. Change in Law;
6. Force Majeure Events;
7. Breaches and defaults by the Parties; and
8. Handback Requirements
   * + 1. The Independent Engineer would be required to submit the following reports to the Client / GCC / Parties:
9. MIOP Completion Report
10. Financial Closure Report
11. Asset Procurement Report
12. Employee Report
13. Asset Registry Report
14. Monthly Progress Report (MPR)
15. Tariff Rebasing Report
16. Report on Payment for Unexpected Increase in Quantity
17. Accident Report
18. DHW Disposal Report
19. Weekly Complaint Redressal Report
20. Service Addition or Deletion Report
21. Waste Quantity Report to Decentralized Units and Disposal Facility/ dump site
22. Insurance Report
23. Legal Encumbrance Report
24. EHS Compliance Report
25. Daily Project Asset Availability Report
26. IEC Report
27. Contract Administration/ Deviation Report
28. Daily, Weekly, Monthly and Quarterly Performance Report

# Capacity Building

Organizing Workshops and Seminars for capacity building of Client and other stakeholders at their own risk and cost. At least one in every six months during the entire tenure of IE

# Schedule-12 Scope of IEC Activities

# Introduction

This Schedule shall be referred to as a guidance note for developing the awareness amongst the citizens of the project area about the need of keeping their city clean by following SWM Rules 2016 and cooperating with the Concessionaire in achieving the objectives of Project.

The community participation is important to:

* + 1. Achieve the principles of reducing, reusing, and recycling waste.
    2. Discouraging littering of waste on streets and into drains, open spaces, water bodies,
    3. Promotes storage of waste at source, segregated as biodegradable, non-bio-degradable and domestic hazardous waste Achieve increased level of awareness about the efficient methods of waste management among the public through involvement of RWAs, or NGOs.

# Agency for Carrying out IEC activity

The concessionaire shall carryout the IEC activity or alternatively may hire appropriate agency having proven credentials in IEC activity. The hired agency by the concessionaire may be NGO, Trust, CBO or Body Corporate. In case the concessionaire hires agency other than itself then that agency must possess at least following credentials in activities:

* + 1. Design and Implementation of household surveys, assessment and reporting
    2. Community awareness building for behaviour change and Information Education Communication (IEC) Programs related to solid waste management, sanitation, health and hygiene, economic and social well-being of rag pickers, sanitary workers, vulnerable groups etc. livelihood, composting etc.
    3. Capacity Building of local groups on livelihood, social safeguard, sanitation, health and environment impact due to improper disposal and handling of solid waste.
    4. The agency shall impart project specific training to them prior to deployment. Whenever services of the hired agency staff are found /noticed unsatisfactory by Authority they shall be removed/terminated by the concessionaire immediately as per direction of Competent Authority.

# Program Objectives

* + 1. Awareness Generation: The following objective would be attained through production of IEC materials and its usages at different level:
       1. Create awareness among the community, and prepare residents for upcoming project, inform about SWM rule 2016, source segregation, health and environment impacts, roles of Authority and Concessionaire in the project, etc. through web site,

mass media communication strategies such as newspapers releases, hoardings, glow sign boards, radio, TV, street plays, etc. with the approval from the Authority and other concerned departments

* + - 1. Design IECs best suitable to reinforce the messages given by agencies involved in implementation of PPP SWM in towns or other local initiatives at Authority level
    1. Door to Door Waste Collection
       1. Establish a working and sustainable model at the ward level to develop habit amongst residents for storing wet, dry and domestic hazardous waste separately
       2. In case in the area where provisioning of community bin has been made, awareness shall be generated for disposing waste in segregated fashion; and,
       3. Facilitate awareness amongst beneficiaries about paying for improved service standard and motivating beneficiaries for payment.
       4. Undertake programme in a phased manner to ensure community participation in waste segregation. For this purpose, regular meetings shall be arranged by the concessionaire in consultation with ward level authority, with representatives of local resident welfare associations, local groups etc.
    2. Social Safeguard of Sanitary WorkersTraining of sanitary workers for improved health and economic status of sanitary workers through regular use of personal protective equipment (PPE)/ protective gears.
    3. Income Generation through Waste: Training and handholding of informal waste pickers to be active members of private operators for door to door collection of segregated waste and its disposal at identified locations.
    4. Target Groups:

The Concessionaire is expected to network, coordinate and consult with the following target groups and beneficiaries:

* + - 1. Authorities for promoting Zonal level Program and support consultations)
      2. Authority officials
      3. Mayor/Chairman
      4. All ward councillors in Program ward/Officials of the Authority
      5. Education Department
      6. Health Department
      7. Pollution Control Department
      8. Officials of leading newspapers within city
      9. Senior citizen forum, clubs, local samities, or any other influential groups
      10. Colleges, and institutes, National Social Service (NSS), National Cadet Corps

(NCC), Scouts and Guide, Eco-clubs in schools, etc.

* + - 1. Men, women, and children in wards including poverty pockets
      2. Local samities or groups (newly formed within the Program or existing)
      3. School Principals, Teachers, and Children in wards
      4. Vyapar Mandal
      5. Hotel Association
      6. Identified Informal waste pickers.
      7. Formal and informal waste traders
      8. Maid servants (male and female)
      9. Sanitary workers, security persons placed at sanitary land filled sites, related persons
      10. Any others, as per need and requirements
    1. Suggested Approach

The Concessionaire can facilitate discussions amongst residents and local groups through brochures, pamphlets, and any other appropriate methods to disseminate identified information to individuals. The following are some of the proposed approach and methodologies for awareness generation but not limited to. The Concessionaire is expected to explore the suggested approach best suitable to local needs and requirements. Other local innovations and related initiatives if any will be appreciated.

* + 1. Baseline Survey/data collection

Conduct baseline survey to assess the socio-economic status of target groups, willingness and affordability of resident to pay, , formal and informal traders involved in collection of plastic and other waste. This baseline information would help the Authorities to decide the user’s fees as per economic status and category of users such as shops, hotels, dharamshalas, temples, vegetable mandi, marriage halls/gardens, hotels/restaurants, etc.

* + 1. Stakeholders Analysis
       1. Any intervention will affect stakeholders differently; some of the stakeholders can influence the decision-making process. It is important therefore to identify stakeholders who might have a negative impact (such as informal waste pickers) and those who can influence the decision-making process (such as business owners and neighbours of project area. Concessionaire need to consider the proposed list of stakeholders and related categories for doing the stakeholder analysis.
       2. Concessionaire shall assess who are the different stakeholders in the project; does the project threaten the interest of certain stakeholders; what potential conflicts

among the stakeholders can the project create etc. These would help to include messages in IEC materials and organise training programs accordingly.

* + 1. Stakeholders Consultation
       1. Organise formal or informal process of consultation with resident in city locations or through door-to-door initiatives. The main objective is to establish meaningful interaction between municipal officers, citizens, and other stakeholders and to obtain consensus on a concrete plan of action. Representative groups should be consulted to ascertain their perceptions of the SWM services, their expectations, willingness to support and participate in the SWM program and willingness to pay for the services, the mode of payment, and the periodicity of payment.
       2. The most effective way to ensure that the right messages reach all participants is to launch a door-to-door awareness campaign. This step is very important. At all stages of the project, it establishes continuing contact with the participants, provides feedback, and builds a bond between the project and the beneficiaries. It kills any space for rumour mongering and builds the confidence of the people, who begin to believe that the project means to deliver the goods.
       3. The Concessionaire shall facilitate the initial ward cleaning with support from the Authority to develop confidence and faith amongst households that some good practices on SWM will start in their area. This can be an entry point activity in the ward for starting a door to door solid waste collection system.
       4. Religious leaders play a significant role in changing people’s minds.
       5. Recommendation from a well-respected religious leader to keep surroundings clean, avoid littering, and manage waste as advised by the NGO will go a long way toward improving the situation in urban areas.
       6. Coordinate with hotel and market associations, institutions, etc. to ensure solid waste collection time best suitable to local needs.
    2. Community Organization
       1. Identify Swachta-Samities/RWAs that are taking some initiatives at the local level with limited technical skills and resources. The NGO can reorganize the group, and do the required capacity building and utilise their resources in initiating door to door solid waste collection with support from sanitary workers not employed by Authority or working on contract, informal wastepickers etc. In the absence of existing groups it is expected to form new such groups. These groups can be named as ‘SWACHH Group’ in each ward or for other Authorities as well.
       2. . The group formed at the zonal/unit/ward level as the case may be will be ultimately responsible to ensure door to door solid waste collection, source segregation, payment for the services, maintenance of the dustbins, etc.

1. Awareness activities
2. Implement campaign within educational institutions especially regarding source segregation, health and environment impact. Organise regular meetings with principals, teachers, and students to explain the need for change and the usefulness to society of new ways to manage waste. The message can be reinforced by holding essay, debate, or drawing and painting competitions on the subject and publicizing the winning contestants. The leading schools could be persuaded to work as role models for other schools in taking up awareness campaigns in the city through their students. Such campaigns should be highly publicized, and other schools should be persuaded to follow suit.
3. Prepare hoardings/glow sign boards and do wall writing with approval of Authority at prominent locations on source segregation and health and environment impact. In addition, other mass media communication strategy can be used for community awareness on identified topics at large such as, TV and radio audio and visual spots.
4. Organise regular street plays for awareness about waste management and motivate non- participating residents. The main objectives of this tool of communication will be to
5. Attract residents to participate in the on-going SWM program Emphasize the importance of segregation and disposal of household solid waste and in keeping streets clean
6. Drive home the importance of solid waste reduction and waste recycling and discourage use of plastics in daily life.
7. Disseminate information on the benefits of composting wet waste and kitchen waste.
8. Door to Door segregated Solid waste Collection:

The Concessionaire should conduct door-to-door waste collection in all wards in a phased manner as per MIOP.. The following activities are proposed for implementation with support from Authority and private operator:

1. Identifying wards, colonies, or areas where there is no proper mechanism of street sweeping and door-to-door solid waste collection, where the Authority has future plans to initiate door-to-door collection of household waste; or where any local groups have taken initiatives using their own resources. The areas identified will be finalized in consultation with the officials from Authority
2. Facilitate developing working model for segregated storage of household waste in separate containers/bins only. This is essential to develop habits for disposing household waste at the appropriate place. It is important to collect waste in segregated form. But depending upon the situation of the city and mind set of residents, developing proper disposal habits and paying for the facility is more important.
3. Concessionaire shall ensure proper disposal of collected waste from the bins located on identified locations in the market
4. Facilitate Authority to remove dust bin from the ward and pilot a dustbin free zone.
5. deleted.
6. Supervise a waste collection team with support from SWACHH Group. This waste collection team and supervisor of concessionaire will be expected to review whether waste is segregated at source or not with support from agency. The supervisor needs to request HH to give waste in segregated form only as much as possible.
7. The waste collection team need to compile daily information on source segregation in a prescribed format. This will help to assess the trend whether waste is segregated at source or not.
8. Concessionaire will be expected to make provision for giving award to HHs, hotel and market associations etc. for giving segregated waste and payment of user’s charges on a regular basis.
9. Create a help-line and a mechanism for receiving public complaints and addressing them quickly.
10. Forming small working groups represented by Authority official s, Concessionaire and ward councillors for monthly review, documenting the initiatives taken, and monitoring the public grievances.
11. Preparation of operation and maintenance plan and ensure its timely completion as per schedule.
12. Social safeguard of waste collector and sanitary workers:
13. Ensure capacity building of rag pickers, sanitary workers, vehicle drivers, guards/security person for use of protective gear, health and environment impact due to improper handling and disposal of solid waste.
14. Promote use of protective gears amongst sanitary workers engaged SWM Service, and make them about health and economic impact.
15. Monitor and document use of protective gears amongst sanitary workers and rag pickers as per identified PPE (personal protective equipment) safeguard checklist. Plan motivational campaigns for its regular use as per need.
16. Capacity building of local groups
17. Organise training program for SWACHH group, and RWAs to motivate the community toward waste management is important for ensuring the sustainability of a system. All stakeholders need to be oriented toward segregation at source and to understand the problems and health issues concerned with inefficient disposal of municipal solid waste.
18. Rag pickers and itinerant waste retrievers should preferably be involved for door to door collection of source-segregated waste. Rag pickers need to be educated on the ill effects of abusing alcohol and drugs, rummaging through solid waste piles without safety gear, contracting infections through unsafe handling of waste, and so forth.
19. Training in the right method of segregation and collection of waste should be given. They should also be taught to manage their time and to follow the route plan for each sector. They should be taught soft skills to interact with residents and to promote congenial working relations with their partners.
20. Target groups should domestic maids, hotel/restaurant workers, RWA’s.
21. Expected Outcomes:

The following are the main expected outcomes of awareness programs and capacity building of local groups:

* 1. Door-to-door collection of waste in segregated form for onward processing;
  2. Increased knowledge of community at large about the importance of proper disposal of waste and its health, environmental and economic benefits

Production of compost from bio-degradable waste and utility items from plastic waste linked to market/other appropriate, increased livelihood opportunities for the informal waste sector.

* 1. Community participation and developing habit of paying user charges
  2. Compliance of SWM rules 2016

1. Support to be provided by Authority

Authority will support the Concessionaire in following issues:

* 1. Support to Concessionaire in coordinating and networking at zonal level departments and agencies if required regarding follow-up of pending issues, and handling of grievances
  2. Facilitate in identifying the gaps in implementation of awareness activities at field level
  3. Monitoring, supervision, and review of Concessionaire’s activities on a monthly basis

The Authority officials should be involved in the whole process since its inception. This will include on job trainings, regular support, monitoring, and supervision. Authority involvement will ensure a sense of ownership, which is essential to ensure sustainability of the SWM mechanism.

1. Monitoring and Reporting Requirements

Monitoring System The Concessionaire is expected to conduct the internal monitoring of the activities to assess their effectiveness in field. The IE will provide the basic monitoring indicators. In addition to this, regular monitoring of the IEC activities will be done by Authority through regular field visits as well as monthly and quarterly review meetings at zone and ward level. In-charge IEC activities of Concessionaire will

review reports and documents submitted and prepare feedback and comments to improve the quality of their submissions. He/She will prepare quarterly report on performance of Concessionaire functioning with technical support from IE.

1. Reporting System

The Concessionaire will implement activities described above in accordance with the approved work plan during the contract period however for the sake of clarity here the IEC activity shall be carried out for the first three years after signing of the contract. The Concessionaire shall maintain daily records of the progress with regard to the works carried out. These will form the basis of periodic reports and returns as may be required by the IE. The reports to be submitted to AUTHORITY by Concessionaire are as under:

# Reports and Returns for IEC activities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.no** | **Deliverables** | **Number**  **of Copies** | **Duration** | **Topic** |
| 1 | Action Plan | 2 | During MIOP  submission | Schedule of activities |
| 2 | Monthly Progress Reports | 2 | Tenth day of each month | Brief summary of activities taken up, progress achieved and problem encountered  during the preceding month |
| 3 | Quarterly Progress reports | 2 | Two weeks after completion of the quarter | Reports which provide detailed assessments of the progress achieved, problems encountered and results of  program taken up |
| 4 | Community level training reports | 2 | Within ten days after the completion of each training program | Topics, objectives, brief details of various sessions, copy of presentations, outcomes, suggestions, analysis, feedback, participants registration list  and photographs |
| 5 | Baseline Reports | 2 | Ten days after  achieving COD | Survey finding, census data |
| 6 | A final Report | 2 | One month prior to the completion of assignment | Compliance activites undertaken, main achievements, suggestions, constraints, successful case  study etc |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.no** | **Deliverables** | **Number**  **of Copies** | **Duration** | **Topic** |
| 7 | Documents inclusive of IEC  materials | Two hard and soft  copies | One month prior to the completion  of assignment | All documents/materials produced during assignment  period |
| 8 | Copies of all data sheets used for the collecting information and  data | I set | One month prior to the completion of assignment | All data sheets and documents collected |
| 9 | Directory of SWACHH group | 2 sets | One month prior to the completion of assignment | Name of the key functionaries, phone numbers and address with photo if  possible |

Above reports shall be submitted to Authority after its verification and approval from Concessionaire. The verification of all above report shall be carried out by concerned in-charge from Private Operator.

1. Action Plan for Awareness Generation on SWM

Above are some of the awareness generation activities which may change according to changing needs of the Program requirements. During the Implementation Period and Concession Period, some new activities can be added as per the identified requirements. The Concessionaire is expected to prepare a detailed action plan for carrying out at least the following activities for awareness generation as a part of the MIOP and get it approved by IE and Authority for implementation.

# Proposed IEC Action Plan for Solid Waste Management Activates

|  |  |  |
| --- | --- | --- |
| **S.no** | **Activity /Issues** | **Indicators** |
| **Output-1 Component: Improved and increased solid waste management services**  **through awareness Generation** | | |
| 1.1 | Baseline survey within the project area | Data on no.of HH/ commercial establishments, rag pickers etc. Socio economic status, health problems faced by sanitary workers, perception about the  protective gears, status of health benefits |
| 1.2 | Public Consultations | With various stakeholders in each lanes of  the ward across towns (formal) |
| 1.3 | Formation of SWACH Group | With various stakeholders in each lanes of  the wards across the towns. RWA’s and other large housing infrastructure |

|  |  |  |
| --- | --- | --- |
| 1.4 | SWM school campaign | Identify number of secondary government and private schools interested to participate for information dissemination at home and  peer group. |
| 1.5 | Awareness through mass media | Display of hoardings/glow sign boards on  source segregation and health and environment impact |
|  |  | Transmission of awareness messages/audio visual spots through popular channels, FM on source segregation and health and  environment impact |
| 1.6 | Street Plays | Street plays on prime hot spots, during local  level training, rallies, competitions, public consultations etc |
| **Output-2 Component: Door to Door Solid waste collection, domestic hazardous waste,**  **waste storage at secondary storage points and handling of grievances** | | |
| 2.1 | Door to Door Solid waste Collection | Door to door collection of segregated waste, separate storage of DHW, collection and deposition at collection centres.  Gradual increase in source segregation. Disposal of segregated waste at secondary collection points. Creation of helpline for  grievance handing |
| **Output-3 Social Safeguard to sanitary workers** | | |
| 3.1 | Use of protective gears during  handling of solid waste | Enhanced awareness and active  participation |
| 3.2 | Health Insurance | Enhanced awareness and active  participation |
| 3.3 | Enumeration of Ragpickers |  |
| **Output-4 Capacity building of Local Groups** | | |
| 4.1 | Orient Sanitary workers on use of PPP and health concerns, good behavior, practices and right methods of segregation and  collection of waste. | Enhanced awareness and increased health benefits |
| 4.2 | Orient sanitary workers and rag pickers on various welfare schemes related to education, health,  employment etc | Increased awareness and improved well being |

# Schedule 13: Guideline for Social Safeguard

# Introduction

* + 1. This schedule is part of the Draft Concession Agreement (DCA) under the Request for Proposal (RFQ cum RFP) through the PPP model. The social safeguard requirements for the project components as specified in this Schedule
    2. Avoidance of Interference: The Concessionaire shall not interfere unnecessarily or improperly with the access to and use and occupation of all roads, footpaths and any other property in the Project Area
    3. The Concessionaire shall indemnify and hold the Authority harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

# Handling and Management of solid waste

* + 1. Organise house-to-house collection of waste or through bin collection as the case may be on regular pre-informed timings and schedule by using bell ringing of musical vehicle (without exceeding permissible noise levels);
    2. Ensure that, waste (solid waste, dry leaves) are not burnt;
    3. Ensure that, stray animals do not move around waste bins. Such bins should be provided with heavy lid.
    4. Ensure to remove all SW deposited in bins on a daily basis and transfer it to disposal site wherever applicable, so that there is no nuisance/ odour problem in any locality due to waste bins/waste transfer points
    5. Concessionaire shall ensure providing adequate protective gears including hand gloves and gum boots to all sanitary workers engaged in collection and handling of solid waste.

# Secondary Collection of Waste

* + 1. A storage facility shall be so placed that it is accessible to users;
    2. Wastes stored are not exposed to open atmosphere and shall be aesthetically acceptable and user-friendly;
    3. Concessionaire needs to ensure that no bins or containers, wherever placed, shall overflow with the waste at any point of time.
    4. Bins for storage of bio-degradable wastes shall be painted green, those for storage of recyclable wastes shall be printed white/blue and those for storage of other wastes shall be printed black;
    5. Concessionaire ensures to train their sanitary workers to avoid manual handling of waste. If unavoidable due to constraints, manual handling shall be carried out under proper precaution with due care for safety of workers by regular use of required protective gears.

# Transportation of Solid waste

* + 1. Vehicles used for transportation of waste shall be properly covered so that the waste is not visible to public, nor exposed to open environment preventing their scattering.
    2. Concessionaire shall ensure that the vehicles engaged in waste transportation follow the permissible speed limits and other road safety norms.

# Engagement of Staff and Labor

Concessionaire shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment and extending other facility in compliance to the Applicable Law. The Concessionaire shall be encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from places not limited to but near to geography.

# Rates of Wages and Conditions of Labor

* + 1. The Concessionaire shall pay rates of wages and observe conditions which are not lower than the minimum wage as notified by GoTN time to time
    2. The Concessionaire shall inform their personnel about their liability to pay personal income taxes in respect of such of their salaries, wages, allowances, and any benefits as are subject to taxes under the Laws of the Country for the time being in force, and the Concessionaire shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

# Persons in the Service of Employer

The Concessionaire may recruit or absorb temporary sanitary workers from the Authority to the extent possible.

# Labor Laws

* + 1. The Concessionaire shall comply with all the relevant labor Laws applicable to the Contractor’s Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.
    2. The Concessionaire shall require his employees to obey all applicable Laws, including those concerning safety at work and shall do needful for the compliance.
    3. Concessionaire shall follow and implement all statutory provisions on labor (including not employing or using children as labor and equal pay for equal work), health, safety, welfare, sanitation and working conditions. The Concessionaire shall base the employment relationship upon equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment or retirement, and discipline. The Concessionaire shall provide equal wages and benefits to men and women for the work of equal value or type.

# Working Hours

* + 1. All morning shift workers shall report for the duty on or before 6 AM every day
    2. The workers shall not be made to work outside the normal working hours stated in the employment terms & condition (appointment letter), unless:
       1. Otherwise stated;
       2. The Independent Engineer gives consent, or
       3. The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Concessionaire shall immediately inform IE and seek consent.

# Facilities for Staff and Labor

The Concessionaire shall provide welfare facilities for the Personnel. The Concessionaire shall not permit any of the Concessionaire Personnel to maintain any temporary or permanent living inside the premises of project assets area.

# Medical and Accidental Facilities

* + 1. The Concessionaire shall at all times take all reasonable precautions to maintain the health and safety of the employed personnel. In collaboration with local health authorities, the Concessionaire shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the project area.
    2. The Concessionaire shall appoint a Safety Officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the Authority to issue instructions and take protective measures to prevent accidents. Throughout the contract period, the Concessionaire shall provide whatever is required by this person to exercise this responsibility and Authority.
    3. The Concessionaire shall send, to IE, details of any accident as soon as practicable after its occurrence. The Concessionaire shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as IE may reasonably require.
    4. If malaria or other insect-borne diseases be prevalent in the Project area, the Concessionaire shall provide his staff and labor with suitable prophylactics, equip living accommodation with screens and bed-nets, and carry out spraying with approved insecticides, as appropriate and to the IE’s satisfaction
    5. The Concessionaire shall be responsible for the safety of the labor employed by him and he shall be liable for payment of necessary compensation in the case of accidents as per Workers Compensation Act.
    6. When excavations have been made or obstacles have been put in public through-fares or in places where there is likelihood of accidents, the Concessionaire shall comply with any requirement of law on the subject and shall provide suitable Hoarding- Lighting,

watchmen when and where necessary or by any duly constituted Authority, for protection of works and safety and convenience of the public or others. In case of excavations on roads, a traffic diversion plan should be made and got approved by the concerned authorities.

* + 1. It shall be the Concessionaire’s sole responsibility to protect the public and its employees against the accident from any cause and he shall indemnify the Government against any claims for damages for injury to person or property, resulting from any such accidents and the Concessionaire shall, where the provisions of the Workmen’s Compensation Act apply, take steps to properly insure against any claims thereafter.
    2. When an accident occurs at any solid waste collection, segregation, storage, processing, treatment and disposal facility or landfill site or during the transportation of such waste, which results in the death of any of the workmen employed by the Concessionaire which is so serious as to be likely to result in the death of any such workmen, the Concessionaire shall within 24 hours of the happening of such accidents, intimate the Authority in writing, the fact of such accident. The Concessionaire shall indemnify Authority against all loss or damage sustained by the Authority resulting directly or indirectly from Concessionaire’s failure to give intimation in the manner aforesaid including the penalties or fines if any payable by the Government or Authority as a consequence of Authority’s failure to give notice under the Workmen’s Compensation Act or otherwise confirm to said Act in regard to such accident.
    3. In the event of an accident in respect of which compensation may payable under the Workmen’s Compensation Act VIII of 1923 whether by the Concessionaire. Concessionaire by the Government as principal it shall be lawful for the Competent Authority to retain out of moneys due and payable to the Concessionaire. Concessionaire such sum or sums of money as may, the opinion of the Competent Authority shall be final in regard or all matters arising under this clause.
    4. The Concessionaire shall provide and maintain upon the Works and the Site sufficient, proper and efficient life-saving appliances and first-aid equipment to the approval of the IE and in accordance with the requirements of ILO Convention No.62. The appliances and equipment shall be available for use at all times during the Contract Period.

# Deleted

# Supply of Drinking Water and Sanitation

* + 1. The Concessionaire shall so far is reasonable, having regard to local conditions, provide on the Site and at his expense an adequate supply of drinking water for the use of Contractor’s staff and work people, together with sanitary facilities (portable toilets or latrines), to the satisfaction of the IE.

# Measures against Insect and Pest Nuisance

* + 1. The Concessionaire shall at all times take the necessary precautions to protect the Concessionaire’s Personnel employed on the project area from insect and pest nuisance, and to reduce their danger to health. The Concessionaire shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

# Prohibition of Alcoholic Liquor and Drugs

* + 1. The Concessionaire shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal thereto by Contractor's Personnel.

# Festivals and Religious Customs

* + 1. The Concessionaire shall respect the Country's recognized festivals, days of rest and religious or other customs.

# Funeral Arrangements

* + 1. The Concessionaire shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.

# Prohibition of Forced or Compulsory Labor

* + 1. The Concessionaire shall not employ "forced or compulsory labor" in any form. "Forced or compulsory labor" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

# Prohibition of Child Labor

* + 1. The Concessionaire shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.
    2. The Concessionaire shall not employ any child to perform any work, including work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child’s education, or to be harmful to the child’s health or physical, mental, moral, or social development. “Child” means a child below the statutory minimum age specified under applicable National, provincial or local law.

# Employment Records of Workers

* + 1. The Concessionaire shall keep complete and accurate records of the employment of labor at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and shall be available for inspection by the Engineer during normal working hours.

# Workers Organizations

* + 1. Concessionaire shall enable alternative means for the Concessionaire’s Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. Concessionaire shall not discourage the Concessionaire’s Personnel from forming or joining workers’ organizations of their choosing or from bargaining collectively, and shall not discriminate or retaliate against the Concessionaire’s Personnel who participate, or seek to participate, in such organisations and bargain collectively. The Concessionaire shall engage with such workers’ representatives. Workers’ organisations are expected to fairly represent the workers in the workforce.

# Non-Discrimination and Equal Opportunity

* + 1. The Concessionaire shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Concessionaire shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination.

# Insurance for Contractor’s Personnel

* + 1. The Concessionaire shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Concessionaire or any other of the Contractor’s Personnel. The insurance shall cover the Employer and the Engineer against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, Sickness, disease or death of any person employed by the Concessionaire or any other of the Contractor’s Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer’s Personnel. The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor’s employees, the insurance may be affected by the Subcontractor, but the Concessionaire shall be responsible for compliance with this Clause. In addition to any other insurance required to be taken out by statutory requirements (e.g. Workmen’s Compensation Act 1923), the Concessionaire shall take out an Accident Insurance in favour of each workman employed by him on the Works. Provided that, in respect of any persons employed by any Sub- Contractor, the Concessionaire’s obligations to insure as aforesaid under this sub Article shall be satisfied if the Sub-Concessionaire shall have taken out Accident Insurance in respect of Concessionaire’s workmen employed on the works and the Concessionaire shall require such Sub-Concessionaire to produce to the Employer, when required, such policy of Accident Insurance and the receipt for the payment of the current premium.

# Schedule 14: Minimum Infrastructure Requirements for the First Year (Package- 2)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Particulars** | **Zone-**  **11** | **Zone-**  **12** | **Zone-14** | **Zone-15** | **Total** |
| 1 | Tricycle | **Deleted** | | | | |
| 2 | E-rickshaw | 293 | 211 | 271 | 213 | **988** |
| 3 | RC Bins (1.1 cum) | 840 | 647 | 1041 | 776 | **3304** |
| 4 | RC Bins (0.66 cum) | 654 | 504 | 811 | 605 | **2574** |
| 5 | Refuse Compactor (6  cum) | 2 | 1 | 2 | 2 | **7** |
| 6 | Wheeled Bin | 467 | 322 | 554 | 490 | **1833** |
| 7 | Refuse Compactor (14  cum) | 13 | 9 | 15 | 11 | **48** |
| 8 | Refuse Compactor (8  cum) | 5 | 4 | 7 | 5 | **21** |
| 9 | Tipper for Transportation of Domestic Hazardous  Waste | **One for the entire package** | | | | |
| 10 | Mechanical Sweeper  (Big) | 1 | 1 | 1 | 1 | **4** |
| 11 | Mechanical Sweeper  (LMV) | 4 | 1 | 5 | 3 | **13** |
| 12 | Refuse Compactor for  Sweeping Waste | **Deleted** | | | | |
| 13 | Bin Washer | 3 | 3 | 2 | 2 | **10** |
| 14 | Equipment for Horticultural waste |  |  |  |  | **2 for the entire**  **package** |
| 15 | Beach Cleaning Machine ( Authority) |  |  |  |  | **One Machine for**  **Zone-14**  **& 15** |
| 16 | Carcass Waste  removal vehicle | 1 | 1 | 1 | 1 | **4** |
| 17 | Back Hoe Loader for Hot spot cleaning  purpose | 2 | 2 | 2 | 2 | **8** |
| 18 | HMV tipper for Hot  spot clearance | 1 | 1 | 1 | 1 | **4** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 19 | Two Ton Tipper for Hot spot cleaning  purpose | 5 | 5 | 5 | 5 | **20** |
| 20 | Two ton tippers for  Priority service work | 3 | 3 | 4 | 3 | **13** |

\*\* In addition to the infrastructure requirements detailed above 1-20, the Concessionaire is desired to maintain sufficient spare infrastructure/ movable assets to achieve the operational efficiency as per the KPI targets, and the sufficient spare infrastructure/ movable assets to be detailed in the MIOP. The above indicative requirements shall be subject to modifications during the preparation of MIOP. Post COD, the Concessionaire needs to deploy the infrastructure indicated in the Approved MIOP, read with the KPIs as per schedule 17 of Vol II B.

# Schedule 15: Minimum Year-wise Infrastructure Requirements for Package-2

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Zone** | **S.no** | **YEAR >** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Zone-11 | 1 | Tricycle | deleted | | | | | | | |
| Zone-11 | 2 | E-rickshaw | 293 | 8 | 9 | 10 | 9 | 10 | 10 | 11 |
| Zone-11 | 3 | RC Bins (1.1 cum) | 840 | 840 | 840 | 840 | 1021 | 1021 | 1021 | 1021 |
| Zone-11 | 4 | RC Bins (0.66 cum) | 655 | 655 | 655 | 655 | 728 | 728 | 728 | 728 |
| Zone-11 | 5 | Refuse Compactor (6 cum) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-11 | 6 | Wheeled Bin | 467 | 467 | 467 | 467 | 467 | 467 | 467 | 467 |
| Zone-11 | 7 | Refuse Compactor (14 cum) | 12 | 13 | 14 | 14 | 15 | 16 | 16 | 17 |
| Zone-11 | 8 | Refuse Compactor (8 cum) | 5 | 6 | 6 | 6 | 7 | 7 | 7 | 8 |
| Zone-11 | 9 | Tipper for Transportation of  Domestic Hazardous Waste | One for the entire package | | | | | | | |
| Zone-11 | 10 | Mechanical Sweeper (Big) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-11 | 11 | Mechanical Sweeper (small) | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Zone-11 | 12 | Refuse Compactor for Sweeping  Waste | deleted | | | | | | | |
| Zone-11 | 13 | Bin Washer | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Zone-11 | 14 | Carcass waste removal vehicle | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-11 | 15 | Two Ton Tipper for Hot spot  cleaning purpose | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zone-11 | 16 | Backhoe Loader for Hot spot  cleaning purpose | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-11 | 17 | HMV tipper for Hot spot clearance | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-11 | 18 | Two-ton tipper for Priority service  work | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |
| Zone-12 | 1 | Tricycle | deleted | | | | | | | |
| Zone-12 | 2 | E-rickshaw | 211 | 7 | 7 | 7 | 8 | 6 | 10 | 6 |
| Zone-12 | 3 | RC Bins (1.1 cum) | 647 | 647 | 647 | 647 | 728 | 728 | 728 | 728 |
| Zone-12 | 4 | RC Bins (0.66 cum) | 504 | 504 | 504 | 504 | 567 | 567 | 567 | 567 |
| Zone-12 | 5 | Refuse Compactor (6 cum) | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Zone-12 | 6 | Wheeled Bin | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 |
| Zone-12 | 7 | Refuse Compactor (14 cum) | 9 | 10 | 10 | 10 | 11 | 11 | 11 | 12 |
| Zone-12 | 8 | Refuse Compactor (8 cum) | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| Zone-12 | 9 | Tipper for Transportation of  Domestic Hazardous Waste | One for the entire package | | | | | | | |
| Zone-12 | 10 | Mechanical Sweeper (Big) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-12 | 11 | Mechanical Sweeper (small) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Zone** | **S.no** | **YEAR >** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Zone-12 | 12 | Refuse Compactor for Sweeping  Waste | deleted | | | | | | | |
| Zone-12 | 13 | Bin Washer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-12 | 14 | Carcass waste removal vehicle | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-12 | 15 | Two Ton Tipper for Hot spot  cleaning purpose | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zone-12 | 16 | Backhoe Loader for Hot spot  cleaning purpose | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-12 | 17 | HMV tipper for Hot spot clearance | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-12 | 18 | Two-ton tipper for Priority service  work | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
|  |  |  |  |  |  |  |  |  |  |  |
| Zone-14 | 1 | Tricycle | deleted | | | | | | | |
| Zone-14 | 2 | E-rickshaw | 271 | 9 | 7 | 8 | 11 | 9 | 11 | 8 |
| Zone-14 | 3 | RC Bins (1.1 cum) | 1041 | 1041 | 1041 | 1041 | 1265 | 1265 | 1265 | 1265 |
| Zone-14 | 4 | RC Bins (0.66 cum) | 811 | 811 | 811 | 811 | 986 | 986 | 986 | 986 |
| Zone-14 | 5 | Refuse Compactor (6 cum) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| Zone-14 | 6 | Wheeled Bin | 554 | 554 | 554 | 554 | 554 | 554 | 554 | 554 |
| Zone-14 | 7 | Refuse Compactor (14 cum) | 15 | 16 | 17 | 18 | 18 | 19 | 20 | 21 |
| Zone-14 | 8 | Refuse Compactor (8 cum) | 7 | 7 | 7 | 8 | 8 | 8 | 9 | 9 |
| Zone-14 | 9 | Tipper for Transportation of  Domestic Hazardous Waste | One for the entire package | | | | | | | |
| Zone-14 | 10 | Mechanical Sweeper (Big) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-14 | 11 | Mechanical Sweeper (small) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zone-14 | 12 | Refuse Compactor for Sweeping  Waste | deleted | | | | | | | |
| Zone-14 | 13 | Bin Washer | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Zone-14 | 14 | Carcass waste removal vehicle | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-14 | 15 | Two Ton Tipper for Hot spot  cleaning purpose | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zone-14 | 16 | Backhoe Loader for Hot spot  cleaning purpose | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-14 | 17 | HMV tipper for Hot spot clearance | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-14 | 18 | Two-ton tipper for Priority service  work | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Zone-14 | 19 | Beach Cleaning Vehicle (Authority) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |
| Zone-15 | 1 | Tricycle | deleted | | | | | | | |
| Zone-15 | 2 | E-rickshaw | 213 | 7 | 8 | 7 | 10 | 3 | 9 | 7 |
| Zone-15 | 3 | RC Bins (1.1 cum) | 776 | 776 | 776 | 776 | 944 | 944 | 944 | 944 |
| Zone-15 | 4 | RC Bins (0.66 cum) | 605 | 605 | 605 | 605 | 735 | 735 | 735 | 735 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Zone** | **S.no** | **YEAR >** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Zone-15 | 5 | Refuse Compactor (6 cum) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-15 | 6 | Wheeled Bin | 490 | 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| Zone-15 | 7 | Refuse Compactor (14 cum) | 11 | 12 | 12 | 13 | 14 | 14 | 15 | 16 |
| Zone-15 | 8 | Refuse Compactor (8 cum) | 5 | 5 | 5 | 6 | 6 | 6 | 7 | 7 |
| Zone-15 | 9 | Tipper for Transportation of  Domestic Hazardous Waste | One for the entire package | | | | | | | |
| Zone-15 | 10 | Mechanical Sweeper (Big) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-15 | 11 | Mechanical Sweeper (small) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Zone-15 | 12 | Refuse Compactor for Sweeping  Waste | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-15 | 13 | Bin Washer | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-15 | 14 | Carcass waste removal vehicle | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-15 | 15 | Two Ton Tipper for Hot spot  cleaning purpose | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zone-15 | 16 | Backhoe Loader for Hot spot  cleaning purpose | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Zone-15 | 17 | HMV tipper for Hot spot clearance | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zone-15 | 18 | Two-ton tipper for Priority service  work | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Zone-15 | 19 | Beach Cleaning Vehicle (Authority) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |

The Concessionaire shall deploy two horticultural waste removal vehicles for the entire package.

The Concessionaire shall perform the beach cleaning of Zone 14 (110000 sq. m.) and Zone 15 (467500 sq. m.) beach area with the help of beach cleaning machine provided by the Authority

The above indicative requirements shall be subject to modifications as per the approved MIOP5

5 *The above indicative requirements shall be subject to modifications during the preparation of MIOP. Post COD, the Concessionaire needs to deploy the infrastructure indicated in the Approved MIOP, read with the KPIs as per schedule 17 of Vol II B.*

# Schedule 16: Minimum Manpower Requirements (Package-2)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Particulars** | **Zone-**  **11** | **Zone**  **-12** | **Zone-**  **14** | **Zone**  **-15** | **Total** |
| Waste Collector for Primary Collection | **deleted** | | | | |
| Street Sweepers | 409 | 283 | 486 | 430 | **1608** |
| Waste Collector for E-Rickshaw | 363 | 262 | 336 | 265 | **1225** |
| Drivers for 6 Cum Compactors | 2 | 1 | 2 | 2 | **7** |
| Helpers for 6 Cum Compactors | 4 | 2 | 4 | 4 | **14** |
| Drivers for Refuse Compactor 8 Cum | 6 | 5 | 9 | 6 | **26** |
| Helpers for Refuse Compactor 8 Cum | 12 | 10 | 18 | 12 | **52** |
| Drivers for 14 Cum Compactors | 14 | 11 | 19 | 14 | **58** |
| Helpers for 14 Cum Compactors | 28 | 22 | 38 | 28 | **116** |
| Drivers for Big Mechanical Sweeper | 1 | 1 | 1 | 1 | **5** |
| Helpers for Big Mechanical Sweeper | 2 | 3 | 3 | 2 | **10** |
| Drivers for Small Mechanical Sweeper | 5 | 1 | 6 | 4 | **16** |
| Helpers for Small Mechanical Sweeper | 10 | 2 | 12 | 8 | **32** |
| Drivers for Bins washer | 4 | 4 | 2 | 2 | **12** |
| Helpers for Bin washer | 7 | 7 | 5 | 5 | **24** |
| Drivers for DHW tippers | **One for the entire package** | | | | |
| Operators for Horticultural waste removal  vehicle |  |  |  |  | **3** |
| Operators for Beach cleaning machine |  |  | 2 | 2 | **4** |
| Labour for hot spot | 40 | 60 | 60 | 58 | **218** |
| Priority service labour | 12 | 12 | 12 | 12 | **48** |
| DHW supervisor |  |  |  |  | **6** |
| Sweeper for BRR, TNRDC, NH | 200 | 170 | 220 | 214 | **804** |
| Back hoe driver | 4 | 4 | 4 | 4 | **16** |
| Priority service driver | 2 | 2 | 2 | 2 | **8** |
| Hot spot driver | 25 | 25 | 25 | 25 | **100** |
| Carcass waste driver | 2 | 2 | 2 | 2 | **8** |
| Project Manager | **1 for entire package** | | | | |
| Managers | 1 | 1 | 1 | 1 | **4** |
| Assistant Managers | 3 | 3 | 3 | 2 | **10** |
| Supervisors | 14 | 7 | 12 | 15 | **48** |
| Assistant Supervisor |  |  |  |  | **65** |
| TOTAL |  |  |  |  | **4550** |

# Schedule 17: Key Performance Indicators, Penalty & Payment Calculations, Evaluation

# Key Performance Indicators

The table below enumerates the Components of C&T and their respective weightages on the basis of the proportion of O & M costs.

**Table 1: Weightages of Components**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Component of C&T** | **Weightage (%)** |
| **1** | Primary Collection | 26 |
| **2** | Street Sweeping & Silt Collection | 26 |
| **3** | Secondary Collection & Transportation | 24 |
| **4** | Management Information System (MIS) | 3 |
| **5** | Complaint Redressal | 12 |
| **6** | Compliances | 5 |
| **7** | IEC Activities | 4 |
| **8** | Development Phase | NA |
| **9** | Procurement Phase | NA |
| **10** | Transition Phase | NA |
| **11** | Disaster Management | NA |
| **Total** | | 100 |

For each of these components, KPIs are created and sub weightages assigned to them as per criticality of operation. An example is enumerated in the table below:

**Table 2: Weightage Calculation for KPIs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl.**  **No.** | **Component** | **Weightage (W)** | **Key Performance Indicators** | **Criticality of Operation**  **Value (C)** | **Sub weightage Calculation (%) C/W\*100** |
| **1** | Street Sweeping & Collection | 26 | Collection of silt overflowing from  Canal/ River Banks | 7 | 7/ 26 \*100 = 26.92 % |
| 2 | Minimum required deployment of Manpower | 7 | 7/ 26 \*100 = 26.92 % |
| 3 | Minimum required Deployment of Small/Big Mechanical Street  Sweeper | 7 | 7/ 26 \*100 = 26.92 % |
| 4 | Minimum required deployment of wheeled bins & other equipment as  per MIOP | 3 | 3/ 26 \*100 = 11.54 % |
| 5 | Timely Street sweeping on daily  basis | 2 | 2/ 26 \*100 = 7.69 % |
| 6 | **Total** | | | 26 | 100 % |

The following table provides the total number of KPIs for all components and their respective sub weightages along with the tentative timelines, evaluation parameters and penalty mechanism.

# Table 3: Key Performance Indicators:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl.**  **No.** | **Component** | | **Timeline** | **Weightage (As per proportion**  **of O&M costs)** | **Sub Sl.**  **No.** | **Key Performance Indicators (KPIs)** | **Core (1)/ Non- Core (0) Activity** | **Parameter for Evaluation** | **Weightage (As per criticality of operation) WCO** | **Sub Weightage (As per criticality of operation)** | **Assigned Target (A) From COD (months)** | **Tolerance Level (T)** | **Actual Performance (P)** | **Performance Slabs & Penalty** | **Penalty (F) calculation per day Example of Slab I** |
| **1** | **LoI - CA Signing** | | **0-30** | NA | 1 | Signing of CA | 1 |  | NA | NA | NA | NA |  | Bid Security forfeiture | NA |
| **2** | **Development Phase** | | **31-90** | NA | 2 | Submission of Draft MIOP | 1 |  | NA | NA | NA | NA |  | **After 45 days from signing of CA: Rupees 30000 per day** | NA |
| **3** | **Procurement Phase** | | **31-**  **105** | NA | 3.1 | 1. Procurement of Movable Assets 2. Manpower Recruitment | 1 | Submission of Financial  Closure document & Purchase Order | NA | NA | NA | NA |  | **After 75 days from signing of CA: Rupees 40000 per day** | NA |
| **4** | **Transition Phase** | **Handover Phase I** | **106-**  **120** | NA | 4.1 | 1. Zone wise area takeover by Concessionaire from GCC 2. Simultaneous deployment of Infrastructure & Manpower | 1 | Taking Over Note to be jointly signed by parties. | NA | NA | NA | NA |  | **HAP I: After 90 days from signing of CA: (IAQ/365)\* 2 per day** | NA |
| **Handover Phase II** | **121-**  **135** | NA | 4.2 | 1 | NA | NA | NA | NA |  | **HAP II: After 105 days from signing of CA: (IAQ/365)\* 2 per day** | NA |
| **5** | **Operation & Maintenance Phase** | **Primary Collection** | **136-**  **3057** | 26 | 5.1 | Minimum required deployment of Manpower | 1 | Numbers | 5 | 19.23 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 19.23 % of 26 % of 50% 0f (IMQ)/30 |
| 5.2 | ~~R~~equired deployment of E-Rickshaws as per Approved MIOP | 1 | Numbers | 5 | 19.23 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 19.23 % of 26 % of 50% 0f (IMQ)/30 |
| 5.3 | Collection of solid waste ( Pre-Segregated + Unsegregated) from Households *Tolerance level is only for segregated waste\*\*\** | 1 | Coverage | 5 | 19.23 | Zone No. …….–  Existing Qty of Segregated SW: x MT  Month 1 = x + y Month 2 = x + 2y Month 3 = x + 3y  Till Month 12 = x +12y  *Where y = (Total SW Qty Generated - x)/12*  Months 13-96: 100% | Months 01- 12: 10 % of the Assigned Target  Months 13 - 96: 10 %  \*\*\* Applicable only for the Segregated SW component |  | F= 5% of 19.23 % of 26 % of 50% 0f (IMQ)/30 |
| 5.4 | Collection of solid waste from Market Areas | 1 | Frequency (Minimum 3 times daily) | 3 | 11.54 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5% of 11.54 % of 26 % of 50% 0f (IMQ)/30 |
| 5.5 | Supplying segregated minimum guaranteed solid waste to decentralized  processing units | 1 | quantity & quality (density) as per Schedule 6 of Vol II  B of this RFP | 4 | 15.38 | Months 01- 96: 100 % | Months 01- 96: 10 % |  | F= 5% of 15.38 % of 26 % of 50% 0f (IMQ)/30 |
| 5.6 | Collection of Horticultural waste from Parks & Roadsides. | 0 | Frequency (Minimum 2 times daily) | 1 | 3.85 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 3.85 % of 26 % of 50% 0f (IMQ)/30 |
| 5.7 | Collection & Deposition of Domestic Hazardous waste at assigned DHW Deposit Center | 0 | Minimum Twice a week | 1 | 3.85 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 3.85 % of 26 % of 50% 0f (IMQ)/30 |
| 5.8 | Provisioning & maintenance of Separate Compartments in e-rickshaws for Dry and Wet solid waste. | 0 | Numbers | 1 | 3.85 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 3.85 % of 26 % of 50% 0f (IMQ)/30 |
| 5.9 | Installation of Signage Boards on Streets and establish vantage points | 0 | Numbers | 1 | 3.85 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 3.85 % of 26 % of 50% 0f (IMQ)/30 |
| **6** | **Street Sweeping** | **26** | 6.1 | Timely Street sweeping on daily basis | 1 | Frequency (Minimum Twice) | **7** | 26.92 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 %** | F= 5 % of 26.92 % of 26 % of 50% 0f (IMQ)/30 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **& Collection** |  |  | 6.2 | Minimum required deployment of Manpower | 1 | Numbers | **7** | 26.92 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 26.92 % of 26 % of 50% 0f (IMQ)/30 |
| 6.3 | Required Deployment of Small/Big  Mechanical Street Sweeper as per Approved MIOP | 1 | Numbers | 7 | 26.92 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 26.92 % of 26 % of 50% 0f (IMQ)/30 |
| 6.4 | Required deployment of wheeled bins & other equipment as per Approved MIOP | 1 | Numbers | 3 | 11.54 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 11.54 % of 26 % of 50% 0f (IMQ)/30 |
| 6.5 | Collection and transportation of desilted waste to the designated location as per  MIOP | 0 | As per MIOP | 2 | 7.69 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 7.69 % of 26 % of 50% 0f (IMQ)/30 |
| **7** | **Secondary Collection & Transporta tion** | **24** | 7.1 | Clearing and disinfection of bins as per MIOP subject to the condition that no  bins are overflowing | 1 | Frequency (Minimum Twice Daily) | 5 | 20.83 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 20.83 % of 24 % of 50% 0f (IMQ)/30 |
| 7.2 | Transportation of segregated waste via required deployment of functional vehicles as per approved MIOP | 1 | Numbers | 2 | 8.33 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 8.33 % of 24 % of 50% 0f (IMQ)/30 |
| 7.3 | Minimum required deployment of manpower | 1 | Numbers | 2 | 8.33 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 8.33 % of 24 % of 50% 0f (IMQ)/30 |
| 7.4 | Designated number of functional closed bins- in specified color-for wet solid waste, dry solid waste, street sweeping solid waste, silt, etc. as per MIOP | 1 | Numbers | 1 | 4.17 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 4.17 % of 24 % of 50% 0f (IMQ)/30 |
| 7.5 | Bin replacement (Broken/Stolen) within  24 hours | 0 | Numbers | 2 | 8.33 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 8.33 % of 24 % of 50% 0f  (IMQ)/30 |
| 7.6 | Bin washing as per MIOP | 0 | Frequency (Fortnightly once) | 1 | 4.17 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 4.17 % of 24 % of 50% 0f (IMQ)/30 |
| 7.7 | Provisioning of Top Cover for  Secondary C&T vehicles | 0 | Numbers | 1 | 4.17 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 4.17 % of 24 % of 50% 0f  (IMQ)/30 |
| 7.8 | Beach Cleaning as per MIOP | 1 | Frequency | 2 | 8.33 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 8.33 % of 24 % of 50% 0f (IMQ)/30 |
| 7.9 | Supplying segregated minimum guaranteed solid waste to decentralized  processing units | 1 | quantity & quality (density) as per Schedule 6 of Vol II  B of this RFP | 8 | 33.33 | Months 01- 96: 100 % | Months 01- 96: 10 % |  | F= 5 % of 33.33 % of 24 % of 50% 0f (IMQ)/30 |
| **8** | **MIS** | 3 | 8.1 | Submission of Reports with periodicity & format as prescribed in MIOP and/ or requested by IE/ Authority | 1 | Numbers | 1.5 | 50.00 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 %**  **Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 50 % of 3 % of 50% 0f (IMQ)/30 |
| 8.2 | Provision of minimum required Manpower & Infrastructure | 0 | Numbers | 1.5 | 50.00 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 50 % of 3 % of 50% 0f (IMQ)/30 |
| **9** | **Complaint Redressal** | 12 | 9.1 | Redressal of all complaints within 6 hours except 10.2 | 1 | Numbers | 6 | 50.00 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 50 % of 12 % of 50% 0f (IMQ)/30 |
| 9.2 | Redressal of complaints for Replacement/ Retrofitment/ Repairing of Assets within 24 hours | 1 | Numbers | 4 | 33.33 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 33.33 % of 12 % of 50% 0f (IMQ)/30 |
| 9.3 | Functional 24\*7 Call Centre (IVRS) | 1 | Number of Complaints Addressed Successfully | 2 | 16.67 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5% of 16.67 % of 12 % of 50% 0f (IMQ)/30 |
| **10** | **Complianc es** | 5 | 10.1 | Legal compliances | 1 | Certification | 1.5 | 30.00 | Months 01- 96: 100 % | Months 01- 96: 0 % |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 30 % of 5 % of 50% 0f  (IMQ)/30 |
| 10.2 | EHS Compliances | 1 | Visual Inspection &  Sampling | 1.5 | 30.00 | Months 01- 96: 100 % | Months 01- 96: 0 % |  | F= 5 % of 30 % of 5 % of 50% 0f  (IMQ)/30 |
| 10.3 | Non- mixing of C&D waste/ Horticultural waste/Biomedical waste/ | 1 | Visual Inspection & Sampling | 1 | 20.00 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 0% |  | F= 5 % of 20 % of 5 % of 50% 0f (IMQ)/30 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | hazardous waste Drain Silt with solid waste |  |  |  |  |  |  |  |  |  |
| 10.4 | Regular inspections of Workshop,  Server Room & Complaint Redressal System | 0 | Certification | 1 | 20.00 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 20 % of 5 % of 50% 0f (IMQ)/30 |
| **11** | **IEC**  **Activities** | 4 | 11.1 | Conducting Information, Education and Communication Activities as per Schedule 11 & MIOP | 1 | Numbers | 1.5 | 37.50 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | **Slab I : 0 % < (A-T-P) <= 10 % : 5 % Slab II : 10% < (A-T-P) <= 20 % : 10 % Slab III : 20% <(A-T-P) <=50 % : 20 % Slab IV: 50% <(A-T-P) <=75 % : 45 % Slab V : 75% <(A-T-P) <=100 % : 100 %** | F= 5 % of 37.50 % of 4 % of 50% 0f (IMQ)/30 |
| 11.2 | Coverage of Door to Door Campaigns as per MIOP | 1 | Numbers | 1.5 | 37.50 | Months 01- 06: 100 %  Months 07- 96: 100 % | Months 01- 06: 10 %  Months 07- 96: 5% |  | F= 5 % of 37.50 % of 4 % of 50% 0f (IMQ)/30 |
| 11.3 | Achieving segregation up to 100 % at HH level in 12 months and maintenance of 100 % thereafter\*\*\* | 1 | Numbers | 1 | 25.00 | Zone No. …….–  Existing Segregation Level: x %  Month 1 = x % + y % Month 2 = x % + 2y % Month 3 = x % + 3y % Till Month 12 = x %  +12y %  *Where y = (100-x)/12*  Months 13-96: 100% | Months 01- 12: 10 % of the Assigned Target  Months 13 - 96: 10 % |  | F= 5 % of 25 % of 4 % of 50% 0f (IMQ)/30 |
| Total | | |  | 100 |  |  |  |  | 100 |  |  |  |  |  |  |
| **13** | **Disaster Management** | |  | NA | 13.1 | Adequate allocation of manpower & infrastructure as per MIOP |  | As per MIOP |  |  |  |  |  | **After 30 days from signing of CA: Rupees 25000 per day** |  |
|  | NA | 13.2 | Performance during disasters as per  approved plan |  | As per MIOP |  |  |  |  |  | **40% of daily payment** |  |

# Penalty and Payment Mechanism

* + 1. For the Development and Procurement Phases, no weightages or tolerance levels have been assigned. The penalties imposed for these phases are lump sum in nature (Refer Table No. 3)
    2. For the Handing Over Phase, the penalty per day will be (IAQ/365) \*2 (RUPEES)- cumulative default………..
    3. The O&M Phase has been divided into one to two time periods against which different targets and tolerance levels have been assigned for all the KPIs as shown in the table below (except for KPI nos. 5.3, 5.5, 7.9, 11.1, 11.2 and 12.3 in Table 3:

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Time Period(Months)** | **Tolerance Levels** |
| 1 | 0-4 | 10 % |
| 2 | 5-96 | 5 % |

* + 1. Formula for Monthly Penalty = R\*WCO \*PP Where:

R= Penalty Rate as per Penalty Slabs specified in Table 4 of Schedule 17 WCO (Weightage as per criticality of operation) = WKPI \*WComp

WKPI = Sub-weightage of KPI WC = Weightage of Component

PP = Performance based Payment (Monthly)

* + 1. For all the KPIs and their different time periods, five levels of Penalty Slabs have been created as seen in table 3 with higher penalty charges for higher penalty slabs.
    2. In case of consistently high deficiency levels, the surcharge on penalty would be implemented as specified in sub Article 8.7 of Vol II A.
    3. Calculating Monthly Payment: An Example for the Time Period 5-96 months
       1. Let us assume that the Initial Annual Quote (IAQ) of the Concessionaire is Rupees 120000.
       2. So, the Initial Monthly Quote (IMQ) of the Concessionaire is Rupees 10000 (IAQ/ 12)
       3. Thus, the Fixed Payment portion is Rupees 5000 (50% of IMQ) and the Performance based Payment (PP) is Rupees 5000 (50% of IMQ)
       4. The following table illustrates penalty calculation for some specific KPIs for the time period Months 5-96 post COD
       5. It has been further assumed that for the remaining KPIs, there is no deficiency in performance.

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**Table 4: Penalty Calculation**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl.**  **No.** | **Component** | **Key Performance Indicators** | **Assigned**  **Target (A %)** | **Tolerance Level (T%)** | **Actual**  **Performance (P%)** | **Deficiency (D %)**  **= A-T-P** | **Penalty**  **Calculation (INR)** |
| 1 | Primary Collection | Minimum required deployment of  Manpower | 100 | 5 | 90 | 5 | 12.50 |
| 2 | Street Sweeping &  Silt Collection | Timely Street sweeping on daily basis | 100 | 5 | 75 | 20 | 35 |
| 3 | Secondary Collection &  Transportation | Transportation of segregated waste via required deployment of functional vehicles  as per approved MIOP | 100 | 5 | 85 | 10 | 20.83 |
| 4 | Management  Information System (MIS) | Provision of minimum required Manpower & Infrastructure | 100 | 5 | 80 | 15 | 7.5 |
| 5 | Complaint Redressal | Redressal of complaints for Replacement/ Retrofitment/ Repairing of Assets within 24 hours | 100 | 5 | 75 | 20 | 20 |
| 6 | Compliances | Non- mixing of C&D waste/ Horticultural waste/Biomedical waste/ hazardous waste/  Drain Silt with solid waste | 100 | 5 | 90 | 5 | 2.5 |
| 7 | IEC Activities | Conducting Information, Education and Communication Activities as per Schedule 11 & MIOP | 100 | 5 | 55 | 40 | 15 |

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The Total Monthly payment to be made to the Concessionaire is illustrated in the table below:

**Table 5: Monthly Payment**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Component** | **Value (Rupees)** |
| 1 | Fixed Payment | 5000 |
| 2 | Performance based Payment | 5000 |
| 3 | Total Monthly Penalty | 97.50 |
| 4 | Actual Performance based payment | 4902.50 |
| 5 | Total Monthly Payment | 9902.50 |

# Evaluation Mechanism during O&M Phase (Post COD)

* + 1. The evaluation of the performance of the Concessionaire during the O&M Phase based on KPIs shall be done by the Independent Engineer (IE) daily throughout the Concession period.
    2. The IE shall calculate and maintain records of the daily performance of the Concessionaire (Daily Performance Report-DPR) both online & offline (hard and soft copies) which shall be accessible to both the Authority and the Concessionaire.
    3. The IE shall compile and aggregate the DPRs of the Concessionaire into a Monthly Performance Report (MPR) and based on that calculate the monthly penalty and payment. The MPR both online & offline (hard and soft copies) shall be accessible to both the Authority and the Concessionaire
    4. The abstracts of the DPRs and MPRs shall be uploaded on the public interface of the MIS system for the citizens to access.
    5. The evaluation parameters for the KPIs have been clustered into three categories on the basis of their mode of evaluation:

1. Automatic Verification (Real Time) based on MIS, GPS, RFID. And Internet of Things (IoT) devices
2. Manual Verification to be implemented by a team of Monitoring Supervisors (MS) reporting to the IE
3. Combination of Automatic and Manual Verification.
   * 1. The following KPIs shall be monitored and evaluated by the IE via Automatic Verification:
4. Collection of solid waste from Market Areas
5. Collection of Horticultural waste from Parks & Roadsides.
6. Supplying segregated minimum guaranteed solid waste to processing units (through weigh bridge/ weighing arrangements of the Authority). Further the quality parameter i.e. the density of solid waste has to be measured and evaluated as per the frequency to be determined in the

MIOP. Any deviation in either minimum quantity of waste guaranteed to be delivered or its quality shall be treated as deficiency of the KPI no.

7.8 and evaluated accordingly for payments and penalties.

1. Minimum required deployment of Manpower – Primary C&T
2. Minimum required deployment of E-Rickshaws & Tricycles
3. Beach Cleaning
4. Collection of Silt overflowing from drains & canals
5. Minimum required deployment of Manpower – Secondary Collection & Transportation as well as street sweeping.
6. Minimum required Deployment of Small/Big Mechanical Street Sweeper
7. Minimum required deployment of wheeled bins & other equipment as per MIOP
8. Transportation of segregated waste via minimum required deployment of functional vehicles (Compactors)
9. Proper functioning of Call Centre
10. Non-redressal of solid waste removal request & garbage overflow complaints within 6 hours
11. Non-servicing of infrastructure & manpower related complaints within 24 hours
12. Beach Cleaning
    * 1. The following KPIs shall be monitored and evaluated by the IE via Manual Verification:
13. Collection of solid waste (Pre-Segregated + Unsegregated) from Households
14. Collection & Deposition of Domestic Hazardous waste at assigned DHW Deposit Centre
15. Installation of Signage Boards on Streets and establish vantage points
16. Timely Street sweeping on daily basis
17. Provisioning of Top Cover for all secondary C&T vehicles
18. Regular inspections of Workshop, Server Room & Complaint Redressal System
19. Non-mixing of C&D waste/ Horticultural waste/Drain Silt with solid waste
20. Coverage of Door to Door Campaigns
21. Conducting Information, Education and Communication Activities
22. Increase in proportion of segregation at HH level
    * 1. The following KPIs shall be monitored and evaluated by the IE via a combination of Automatic & Manual Verification:
      2. Clearing of bins as per MIOP
23. Disinfection of bins as per MIOP
24. Bin washing as per MIOP
25. Bin replacement (Broken/Stolen) within 24 hours
26. Designated number of functional closed bins- in specified color-for street sweeping solid waste, silt, dry solid waste, wet solid waste etc.
27. Provisioning of Separate Compartments in tricycles and e-rickshaw for Dry and Wet solid waste.
28. EHS

# Example of Incentive Payment:

The Concessionaire is not levied any penalty for any of the core KPIs for the months May, June, July and August. Then the Concessionaire is eligible for incentive payment for the May-July block as follows:

Incentive Payment = 1% \* ( MQ of May + MQ of June + MQ of July)

The month of August shall be considered for the next cycle of incentive payment if applicable.

1. **Example of Surcharge on Penalty:**

Deficiency level for a specific KPI in month 1 is 16 %. Hence the applicable penalty is 10 %. Deficiency level for that specific KPI in month 2 is anywhere between 10% to 20 %. Now the applicable penalty for this KPI shall be 10% + 25% of 10 = 12.5 %

Deficiency level for that specific KPI in month 3 is anywhere between 10% to 20 %. Now the applicable penalty for this KPI shall be 12.5% + 25% of 12.5 = 15.63 %

# Evaluation Process and Data Requirement

* + 1. The Indicative Evaluation and Monitoring Process to be adopted by the IE as well as Indicative Data Requirements is given in the table below

**Table 6: Indicative KPI Evaluation Process**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Key Performance Indicators (KPIs)** | **Parameter/ Data for Evaluation** | **Indicative Method for Performance Calculation** | **Indicative Method for Performance Monitoring by IE** | **Data Source** | **Data**  **Collection Frequency** |
| Collection of solid waste Pre- Segregated + Unsegregated) from  Households | Coverage | (Total no. of HHs segregating waste/ Total no  of HHs) \*100 | Monitoring Supervisors to maintain quarterly records of HHs segregating  waste along with georeferencing | Monitoring Supervisor/  Control Room | Daily |
| Collection of solid waste from Market Areas | Frequency (Minimum 3 times daily in different  time periods) | (Actual trips/ Minimum Trips as per MIOP) \*100 | GPS monitoring of Vehicles, RFID & Videography | Control Room | Daily thrice |
| Collection of Horticultural waste from Parks & Roadsides. | Frequency (Minimum 2 times daily in different  time periods) | (Actual trips/ Minimum Trips as per MIOP) \*100 | GPS monitoring of Vehicles, RFID & Videography | Control Room | Daily twice |
| Collection & Deposition of Domestic Hazardous waste at  assigned DHW Deposit Center | Frequency Twice a week | (Actual Trips/ Total specified Trips as per MIOP) \*100 | Cross checking of both HHs and the Concessionaire, georeferencing and  videography evidence | Monitoring Supervisor/  Control Room | Biweekly |
| Supplying segregated minimum guaranteed solid waste to decentralized units and centralized  processing facility | Daily Quantity | (Actual Quantity supplied  /Quantity to be supplied as per MIOP/) \*100 | Daily Feedback from Centralized & Decentralized Units | Control Room | Daily |
| Minimum required deployment of Manpower – Primary Collection | Numbers | (Actual deployed/ minimum required) \* 100 | Access data from biometric attendance records. | Control Room | Daily |
| Minimum required deployment of E-Rickshaws | Numbers | (Actual deployed/ minimum required) \*100 | Access data from RFID tags | Control Room | Daily |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Key Performance Indicators (KPIs)** | **Parameter/ Data for Evaluation** | **Indicative Method for Performance Calculation** | **Indicative Method for Performance Monitoring by IE** | **Data Source** | **Data Collection**  **Frequency** |
| Installation of Signage Boards on Streets/ wall painting and establish  vantage points | Numbers | (Actual Installations in good condition/ Total Installations  reqd.) \*100 | Fortnightly/ Monthly Visual Inspection | Monitoring Supervisor | Fortnightly |
| Collection of waste & silt from drains & canals | Frequency | (Total no of preidentified hotspots cleaned in specified time period/ Total no. of  preidentified hotspots) \*100 | GPS monitoring of Vehicles, RFID & Videography | Control Room | Daily |
| Minimum required deployment of Manpower- street sweeping | Numbers | (Actual deployed/ minimum required) \* 100 | Access data from biometric attendance records | Control Room | Daily |
| Minimum required Deployment of Small/Big Mechanical Street  Sweeper | Numbers | (Total deployed/ minimum required) \*100 | Access data from RFID tags via MIS | Control Room | Daily |
| Minimum required deployment of wheeled bins & other equipment as  per MIOP | Numbers | (Actual Deployment/ Minimum reqd. deployment  as per MIOP) \*100 | Access data from RFID tags | Control Room | Daily |
| Timely Street sweeping on daily basis | Frequency (Minimum 2 times daily in different  time periods) | (Actual no. of sweeping rounds/ minimum required as per MIOP) \*100 | Visual Inspections on daily basis along with photographic evidence inclusive of date and coordinates. | Monitoring Supervisor/ Control Room | Daily twice |
| Clearing and disinfections of bins as per MIOP subject to the condition  that no bins are overflowing | Frequency (2/3 times a day) | (No. of bins cleared/ Total no of bins) \*100 | RFID tags along with photographic evidence inclusive of GPS  coordinates and date. | Control Room & Monitoring  Supervisor | Daily twice/thrice |
| Bin washing as per MIOP | Frequency (Fortnightly once) | (No. of bins washed/ Total no of bins) \*100 | RFID tags along with photographic evidence inclusive of GPS  coordinates and date. | Control Room & Monitoring  Supervisor | Fortnightly |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Key Performance Indicators (KPIs)** | **Parameter/ Data for Evaluation** | **Indicative Method for Performance Calculation** | **Indicative Method for Performance Monitoring by IE** | **Data Source** | **Data Collection**  **Frequency** |
| Transportation of segregated waste via minimum required deployment of functional vehicles (Compactors) | Numbers | (Actual Deployment/ Minimum reqd. deployment as per MIOP) \*100 | Access data from RFID tags & GPS & Videography | Control Room | Daily |
| Minimum required deployment of manpower | Numbers | (Actual deployed/ minimum required as per MIOP) \* 100 | Access data from biometric attendance records. | Control Room | Daily |
| Designated number of functional closed bins- in specified color-for street sweeping solid waste, silt, dry solid waste, wet solid waste etc. | Numbers | (Actual Deployment/ Minimum reqd. deployment as per MIOP) \*100 | Access data from RFID tags | Control Room & Monitoring Supervisor | Daily |
| Bin replacement (Broken/Stolen) within 24 hours | Numbers | (Actual Replacement/ Replacement Requests) \*100 | Access data from RFID tags | Monitoring Supervisor | Daily |
| Provisioning of Separate Compartments in e-rickshaw for Dry and Wet solid waste. | Numbers | (Actual No. of vehicles with compartments/ Total no of vehicles) \*100 | Access data from RFID tags | Control Room & Monitoring Supervisor | Daily |
| Submission of Reports with periodicity & format as prescribed in MIOP and/ or requested by IE/  Authority | Frequency | (No. of reports submitted on time/ Total reports to be submitted on time) \*100 | Receipt of Reports with periodicity & format as prescribed in MIOP and/ or requested by IE/ Authority (in both  soft and hard copy) | Control Room | Daily/ Weekly/ Monthly |
| Provision of minimum required Manpower & Infrastructure -MIS | Numbers | Actual deployed/ minimum required) \* 100 | Access data from Biometric  attendance, RFID and visual inspections | Control Room | Weekly |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Key Performance Indicators (KPIs)** | **Parameter/ Data for Evaluation** | **Indicative Method for Performance Calculation** | **Indicative Method for Performance Monitoring by IE** | **Data Source** | **Data Collection**  **Frequency** |
| Functional 24\*7 Call Centre (IVRS) | Number of  Complaints Addressed within 24  hours | (Positive Feedback/ Total Feedback) \* 100 | Access data from MIS | Control Room | Daily |
| Redressal of all complaints within 6 hours except below | Numbers | (No. of Complaints Addressed within 6 hours/ No. of complaints registered  in 6 hours+ backlog) \*100 | Access data from MIS and IVRS database | Control Room | Daily |
| Redressal of complaints for Replacement/ Retrofitment/ Repairing of Assets within 24 hours | Numbers | (No. of Complaints Addressed within 24 hours/ No. of complaints registered  in 24 hours+ backlog) \*100 | Access data from MIS | Control Room | Daily |
| Regular inspections of Workshop,  Server Room & Complaint Redressal System | Score | Inspection score out of 100 | Visual Inspection | Monitoring Supervisor | Weekly |
| Legal Compliances | Monthly certification | Actual no. of Certifications issued/ total no. of  Certifications) \*100 | Visual Inspection, Biometric & Inventory data, procurement data of  consumables | Control Room & Monitoring  Supervisor | Monthly |
| Non-mixing of C&D waste/  Horticultural waste/Drain Silt with solid waste | Daily certification | (Actual no. of Certifications  issued/ total no. of Certifications) \*100 | Visual Inspection & Random Sampling | Monitoring Supervisor | Daily |
| EHS Compliances | Daily certification | Actual no. of Certifications  issued/ total no. of Certifications) \*100 | Visual Inspection, Biometric &  Inventory data, procurement data of consumables | Control Room &  Monitoring Supervisor | Daily |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Key Performance Indicators (KPIs)** | **Parameter/ Data for Evaluation** | **Indicative Method for Performance Calculation** | **Indicative Method for Performance Monitoring by IE** | **Data Source** | **Data Collection**  **Frequency** |
| Conducting Information, Education and Communication Activities as per Schedule 11 & MIOP | IE certification | (Total no. of campaigns held/ No. of campaigns specified in MIOP) \*100 | IE certification based on attendance sheet, Photographs & GPS coordinates | Monitoring Supervisor | Daily |
| Achieving segregation upto 100 % at HH level in 12 months and maintenance of 100 % thereafter | (Total no. of HHs segregating waste/ Total no of  HHs)\*100 | (Total no. of HHs segregating waste/ Total no of HHs) \*100 | Monthly record of HHs segregating waste. | Monitoring Supervisor | Daily |
| Conducting Information, Education and Communication Activities | 4 campaigns per zone per month with Authority & IE | (Total no. of campaigns held/ No. of campaigns specified in IAP) \*100 | IE certification based on attendance sheet, Photographs & GPS coordinates | Monitoring Supervisor | Daily |

# Evaluation Mechanism during Disasters

* + 1. The occurrence of Disaster in the Project Area shall be notified by the National Disaster Management Authority of India.
    2. Post official notification, the Disaster Management KPIs shall become effective in place of O&M KPIs and evaluation shall be on the basis of those specific KPIs for the entire duration of the Disaster.

The Disaster Management KPIs shall primarily focus on primary and secondary collection & transportation of waste to designated facility/ site, collection and transportation of horticultural waste and debris to designated facility along with deployment of adequate manpower and infrastructure

# Schedule 18 : Format for Bank Guarantee

B.G. No. Dated:

* 1. In consideration of you, Greater Chennai Corporation, having its office at Ripon Buildings, Chennai- 600003 (hereinafter referred to as “Authority”, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the Bid of [a Company registered under provision of the Companies Act, 1956/2013] and having its registered office at

[and acting on behalf of its Consortium] (hereinafter referred to as the “Concessionaire” which expression shall unless it be repugnant to the subject or context thereof include its/their executors administrators, successors and assigns), for the Collection & Transportation of Solid Waste, Street Sweeping Waste ( including street sweeping activities), Horticulture Waste and Collection & Storage of Domestic Hazardous Waste in the Zones No 11, 12, 14 & 15 (Package-II) to the Designated Processing Facility/ Dump Site/ Depositing Centers of Greater Chennai Corporation referred to as “the Project”) pursuant to the RFP Document dated\*\*\*\*\* issued in respect of the Project and other related documents (hereinafter collectively referred to as “RFP Documents”), we [Name of the Bank] having our registered office at

and one of its branches at (hereinafter referred to as the “Bank”), at the request of the Concessionaire, do hereby in terms of sub Article

1.3.5 of Vol I read with sub Article 5.1 of Vol II A, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the RFP Documents (including the RFP Document) by the said Concessionaire and unconditionally and irrevocably undertake to pay forthwith to Authority an amount of Rs (Rupees ) as Performance Security (hereinafter referred to as the “Performance Security ”) as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Concessionaire if the Concessionaire shall fail to fulfil or comply with all or any of the terms and conditions contained in the said RFP Documents.

* 1. Any such written demand made by Authority stating that the Concessionaire is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the RFP Documents shall be final, conclusive and binding on the Bank.
  2. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Concessionaire or any other person and irrespective of whether the claim of Authority is disputed by the Concessionaire or not merely on the first demand from Authority stating that the amount claimed is due to Authority by reason of failure of the Concessionaire to fulfil and comply with the terms and conditions contained in the RFP Documents including failure of the said Concessionaire to keep its Bid open during the Bid validity period as set forth in the said RFP Documents for any reason whatsoever. Any such

demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. (Rupees only).

* 1. This Guarantee shall be irrevocable and remain in full force for a period of 6 (six) months from the Bid Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between Authority and the Bidder, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid**.**
  2. We, the Bank, further agree that Authority shall be the sole judge to decide as to whether the Concessionaire is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the RFP Documents including, inter alia, the failure of the Concessionaire to keep its Bid open during the Bid validity period set forth in the said RFP Documents, and the decision of Authority that the Concessionaire is in default as aforesaid shall be final and binding on us, notwithstanding any differences between Authority and the Concessionaire or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.
  3. The Guarantee shall not be affected by any change in the constitution or winding up of the Concessionaire or the Bank or any absorption, merger or amalgamation of the Concessionaire or the Bank with any other person.
  4. In order to give full effect to this Guarantee, Authority shall be entitled to treat the Bank as the principal debtor. Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said RFP Documents or to extend time for submission of the Bids or the Bid validity period or the period for conveying acceptance of Letter of Award by the Concessionaire or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said RFP Documents by the said Concessionaire or to postpone for any time and from time to time any of the powers exercisable by it against the said Concessionaire and either to enforce or forbear from enforcing any of the terms and conditions contained in the said RFP Documents or the securities available to Authority, and the Bank shall not be released from its liability under these presents by any exercise by Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the said Concessionaire or any other forbearance, act or omission on the part of Authority or any indulgence by Authority to the said Concessionaire or by any change in the constitution of Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
  5. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
  6. We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch that shall be deemed to have been duly authorized to receive the said notice of claim.
  7. It shall not be necessary for Authority to proceed against the said Concessionaire before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which Authority may have obtained from the said Concessionaire or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealized.
  8. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of Authority-In writing.
  9. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Guarantee for and on behalf of the Bank.

Signed and Delivered by Bank

By the hand of Mr./Ms , its and authorized official.

(Signature of the Authorized Signatory) (Official Seal)

# Schedule 19: O&M for Collection and Transportation Vehicles

The Concessionaire shall prepare and update Operations and Maintenance Manual (O&M Manual) covering all aspects of O&M of movable and immovable infrastructure associated with this Project as per the CPHEEO Manual. This O&M Manual shall be a part of the MIOP to be prepared by the Concessionaire during the Planning Phase.

The O&M Manual shall contain the following, but not limited to:

* + 1. The Concessionaire shall submit Standard Operating Procedures (SOP) for all the equipment’s and vehicles. The Concessionaire shall comply with the SOPs throughout the Concession Period.
    2. The Concessionaire shall ensure Operation and Maintenance of all the vehicles and equipment’s is performed as per the manufacturer’s specifications.
    3. The Concessionaire shall make an O&M Plan of various infrastructure, following the Technical Specifications set out in this document (Schedule 3)
    4. The Concessionaire shall report their preventive maintenance schedule for all the equipment’s and vehicles in their monthly MIS Report. The Concessionaire shall also provide any unscheduled repair and maintenance service, if required.
    5. The Concessionaire shall do painting of all the movable assets using anticorrosive paint yearly once.
    6. The Concessionaire shall provide an O&M Team of qualified professionals for the operations and maintenance of the equipment’s and vehicles.
    7. The Concessionaire should ensure that the collection bins, vehicles and equipment are in good condition and are cleaned as per the schedule plan using disinfectants.
    8. The Concessionaire shall ensure that all the electro-mechanical equipment such as GPS in vehicles are in working condition. IE shall be responsible for conducting periodic inspection of the Project Assets.
    9. The Concessionaire shall ensure that the vehicles do not leak leachate during transportation of waste. IE shall be responsible for conducting periodic inspection of such compliances.
    10. The Concessionaire shall ensure all the vehicles are duly registered and insured and should meet all the relevant norms of applicable Motor Vehicle Act and Transportation Act.
    11. In addition to the infrastructure requirements detailed above 1-15, the Concessionaire is desired to maintain sufficient spare infrastructure/ movable assets to achieve the operational efficiency as per the KPI targets, and the sufficient spare infrastructure/ movable assets to be detailed in the MIOP.

# Schedule 20: Required Characteristics of the Solid Waste being transported to Decentralized Processing Facilities

1. The Concessionaire shall be responsible for providing the required quantum of segregated waste (i. e. approximate 37 TPD biodegradable/wet waste, 1-2 TPD plastic waste as per year 2018) to the existing decentralized facilities which shall remain operational during the Concession Period.
2. The Concessionaire shall ensure that the Biodegradable Waste meant for diverting to Decentralized Processing Facility shall confirm with following:
   1. The biodegradable waste shall be free from any other category of waste
   2. Deleted.
   3. The waste shall be delivered within 2 hours of collection to avoid generation of leachate
3. The Concessionaire shall ensure that the Plastic Waste meant for diverting to Decentralized Processing Facility shall also be free from any other category of waste

# Schedule 21: Micro Implementation and Operation Plan

This schedule provides an indicative framework for preparation of MIOP. The Concessionaire shall prepare Draft Seasonal Action Plan (SAP) on the basis of MIOP. The Seasonal Action Plan shall be submitted by the Concessionaire before 15 working days prior to start of monsoon season. (SAP should be for three periods 1. South west Monsoon Period, 2. North-East Monsoon Period and Non-Monsoon Period). IE shall review and suggest modifications in the plan in consultation with Authority within seven working days, if any. Concessionaire has to submit final SAP within seven working days.

The Concessionaire has to formulate MIOP for the following activities, but not limited to:

# Consent, Clearances and Approval

*The Concessionaire shall prepare a list of consent and clearances required for the Project. The Concessionaire shall define the relevant body and timeline for each consent and clearance.*

# Labour Absorption

*The Concessionaire may absorb the existing temporary manpower of the Authority for performing its operations to the extent possible.*

# Route Plan/Beat-wise Plan for Primary Collection

*Concessionaire shall prepare micro level route /beat-wise plan for all the wards. The Plan shall specify location, dedicated timing, manpower, supervisory staff and infrastructure, allocated secondary collection points for waste storage for each route/beat. The Concessionaire shall also take into account extraordinary circumstances and make modifications in the plan accordingly.*

# Route Plan for Secondary Collection and Transportation

*Concessionaire shall prepare route plan for secondary collection and transportation. The Plan shall specify the dedicated timing for specific routes, secondary collection points, secondary collection vehicles, manpower, and supervisory staff for all the routes.*

# Route Plan for Collection of Street Sweeping Waste

*Concessionaire shall prepare micro level route /beat-wise plan for all the roads/streets. The Plan shall specify location, dedicated timing, manpower, supervisory staff and infrastructure (mechanical sweepers and bins) and allocated secondary collection points for waste storage for each route/beat. The Concessionaire shall also take into account extraordinary circumstances and make modifications in the plan accordingly.*

# Route Plan for Collection of DHW

*Concessionaire shall be responsible for collecting segregated domestic hazardous waste from the households on bi-weekly basis and transport it to the Deposition Centre for its safe storage. Concessionaire shall prepare micro level route /beat-wise plan for bi-weekly collection of DHW to be accommodated in primary collection.*

# Plan for Removal of Garden and horticultural waste

*The Concessionaire shall prepare plan for removal of horticultural waste and garden waste generated in the project area. The removal should be done with the help of specialized equipment. The concessionaire should also be prepared for emergency situations for removal of garden and horticultural waste*

# Asset Deployment Schedule

*The Concessionaire shall prepare an Asset Deployment Schedule. The Schedule shall specify the asset deployed for all the activities as required for fulfilling the Project Scope.*

# Allocation of Priority Services Team

*Concessionaire shall deploy a Priority Services team consisting of six workers and one vehicle per zone for extraordinary circumstances. The Concessionaire shall nominate one nodal person under MIOP for each zone that shall be responsible for allocation of the Priority Services Team. Priority Services Team should be assembled within two hours.*

# Supply of minimum guaranteed waste to the decentralized units:

*The Concessionaire shall fulfil the obligation of providing the required quantity of biodegradable and recyclable waste to the decentralized units. In this respect, the Concessionaire shall refer section 4.5 under PIM, prepare a list of decentralized units and update the list, as the case may be. The Concessionaire shall define the capacity of decentralized plants, respective waste diversion quantities and the planned sources, from where the waste shall be diverted.*

# Operation and Maintenance Plan for DHW Deposition Centres

*The Concessionaire shall be responsible for the operation and maintenance of DHW Deposition Centres. The Concessionaire shall deploy necessary manpower for the functioning of DHW Deposition Centres. The Plan shall include the no. of deposition centres, dedicated locations attached with the centre and the quantity of DHW. The Concessionaire shall indicate the schedule for the secondary transportation of DHW to Hazardous Waste Facility. The Authority shall be responsible to take note of the schedule, and organise secondary transportation of DHW.*

# Operation and Maintenance Plan for Beach Stretches

*The Concessionaire is responsible for cleaning the beach stretches lying under Zones 14 and 15 with the help of specialized equipment. The Authority shall provide the required equipment and Concessionaire is responsible for the Operation and Maintenance of the equipment. The plan should also include the mechanism of cleaning during weekends, holidays and public gathering etc.*

# Collection and Transportation of Solid Waste/silt from Canal/River Banks

*Concessionaire shall be responsible for the collection and transportation of solid waste/silt lying at the banks of canal/river falling within the project area. Concessionaire shall include the list of stretches in the MIOP. The Plan shall allocate stretches and assign necessary manpower and equipment’s for collection of waste.*

# Management Information System

*The Concessionaire shall set-up a real-time monitoring system for tracking the daily Project Activities. The Concessionaire shall prepare MIS Formats for reporting the performance to IE and Authority on daily, weekly and monthly basis. The Concessionaire shall prepare a list of all moveable assets, bins*

*and equipment’s along with its RFID no. The Concessionaire shall also specify space requirement for setting-up centralised Control Room in MIOP.*

# Complaint Redressal System

*The Concessionaire shall set-up Complaint Redressal System for handling complaints related to Solid Waste. The Concessionaire shall prepare daily log of complaints received, action taken and complaints closed. The Concessionaire shall also display telephone nos. of concerned officials at public locations.*

# Financial Model

*The Concessionaire shall submit a soft copy (excel format) of the Financial Model for this Project*

# Asset Maintenance Schedule (O&M plan)

*The Concessionaire shall prepare a maintenance schedule for all the project assets. The Schedule shall be made for all the vehicles, equipment’s and bins. The Schedule shall contain the GPS no., date of purchase of asset, servicing schedule and servicing report. The Concessionaire shall also specify the replacement schedule for the project assets. The Schedule shall be in alignment with the KPIs.*

# Litter Free Corridor plan

*The Authority shall identify the locations which needs to be maintained as Litter Free corridor. Concessionaire shall prepare a maintenance schedule for maintaining the specified areas as Litter Free corridor.*

# Disaster Management Plan

*The Concessionaire shall prepare Disaster Management Plan as per the conditions given in Schedule 22.*

# IEC Plan

*The Concessionaire shall prepare IEC Plan for creating awareness regarding solid waste management activities. Concessionaire shall specify frequency of IEC programmes, type of activity, population coverage and maintain records of activities including photographic evidences.*

# Carcass Disposal

*The Concessionaire shall deploy one vehicle per zone for collection and transportation of carcasses to the designated facility/ site as prescribed by the Authority during the preparation of MIOP*

# Night Conservancy works

*The Concessionaire shall deploy required manpower and infrastructure to perform night conservancy which shall include a minimum of 50 (fifty) percent of street sweeping and clearance of SCPs.*

**Indicative Norms to be considered by the Concessionaire while preparing MIOP**

|  |  |  |
| --- | --- | --- |
| **S.no** | **Activity** | **Indicative Norms** |
| 1 | Tricycles | deleted |
| 2 | E-rickshaw | Once e- rickshaw for collection from 500 HH (as per  Authority recommendation) |
| 3 | Street Sweeping (manual) | One labour for manual sweeping for 750 m of road or 400 m  of road in case of roads with center median |

|  |  |  |
| --- | --- | --- |
| 4 | Clearance of bins from market areas and Bus Route  Roads | Three times a day including clearance during night shifts |
| 5 | Night conservancy timings | From 10.00 pm to 5.00 am |
| 6 | Clearance and bins from  commercial and hot spot locations | Minimum two times a day |
| 7 | Deployment of Mechanical  Sweepers | Roads having width of 6m and above which includes BRR,  TNRDC, SH and NH. |
| 8 | Beach Cleaning | Twice a day in two shifts |
| 9 | Cleaning of waste from  canal/riverbanks | Clearance of waste from canal/riverbanks from hot spots on  daily basis and as per the Authority recommendations. |
| 10 | Secondary Collection bins | Green for wet waste, blue for dry waste and black for street sweeping waste. Bins should be placed based on approval of  Authority and based on public needs |
| 11 | Back up | Minimum 10% backup on E-rickshaw required for C&T  operations |

# Schedule 22: Disaster Management Framework

* + 1. The Concessionaire shall prepare the Disaster Management Plan pertaining to Collection & Transportation of Solid Waste in Project Area as per the guidelines provided in/ by:
       1. National Disaster Management Authority/ State Disaster Management Authority
       2. Technical Note on Solid Waste Management during Emergencies by WHO Regional Office for South-East Asia
       3. City Disaster Management Plan, 2017 for Chennai prepared by the Authority
       4. Any other relevant documents vetted by the Authority
    2. The Concessionaire shall prepare Disaster Management Plan pertaining to Collection & Transportation of Solid Waste in Project Area for the following types of Disasters (as per applicability):

1. Hydro- Meteorological (Examples: Cyclones, Droughts, Coastal Erosion)
2. Geological (Examples: Landslide, Tsunami, Earthquakes)
3. Chemical, Industrial & Radiological
4. Accidents (Example: Urban Fire, Vehicular Accidents, Poisoning, Blast at Domestic Hazardous Waste Deposition centres)
5. Biological (Examples: Diseases, Pests, exposure to biological vectors spread by organic waste )
   * 1. The Concessionaire shall focus on critical activities like collection and disposal of waste from primary and secondary sources, collection and disposal of horticultural waste, redeployment of manpower and infrastructure as well as rerouting of collection & transportation routes if applicable.
     2. The Concessionaire shall specify the requirements for additional manpower and infrastructure if any. Moreover, the requirements from the authority in terms of logistics & management shall be clearly specified.
     3. The Disaster Management Plan prepared by the Concessionaire shall be in sync with the overall City Disaster Management Plan, 2017 for Chennai prepared by the Authority
     4. The payment mechanism during Disasters will be based on Disaster Management KPIs which shall be finalized by the IE & the Authority on the basis of the Disaster Management Plan to be included in the MIOP

# Schedule 23 Deleted

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# Schedule 24 Banker for GCC

To be incorporated at the time of Signing of Concession Agreement.

# Schedule 25 Project Site Office for IE

**Main Office:**

Greater Chennai Corporation, Ripon Building,

Chennai-600003.

# Regional Office:

Regional Deputy Commissioner (South) Office

No: 115, Dr. Muthulakshmi Salai, Adyar, Chennai-600020

# Zonal Office:

**Zone: 11**

No.33, Arcot Road, Valasaravakkam, Chennai – 600087.

# Zone: 12

No.1, New Street, Near GST Road, Alandur, Chennai – 600016

# Zone: 14

No.6/64, Puzhuthivakkam Main Road, Chennai – 600091.

# Zone: 15

No.120, Rajiv Gandhi Salai,

(Old Mahabalipuram Road) Sholinganallur, Chennai–600119.

# Schedule 26 Construction of Project Facility

|  |  |  |
| --- | --- | --- |
| **Zone** | **Existing lorry station location of GCC** | **Area of the lorry station (sqm)** |
| Zone-11 | Zonal Office- XI Campus, Arcot Road,  Valasaravalkam. Chennai -600087 | 8349 |
| Zone-12 | New Street, Alandur R.T.O Office Near,  Alandur. Chennai-600016 | 1950 |
| Zone-14 | Puzhuthivakkam High Road,  Puzhuthivakkam, Chennai- 600091 | 9600 |
| Zone-15 | Zonal Office- XV Campus, 120 Rajiv Gandhi Road, OMR, Sholinganallur.  Chennai-600019 | 4200 |



The Concessionaire shall develop additional infrastructure in the lorry shed that shall be transferred to him during the Concession Period based on Project requirements.

# Schedule 27 Authority Assets

# Authority Fixed assets:

The following are the fixed assets provided by the Authority to the Concessionaire during the Concession Period

# Lorry Station:

|  |  |  |
| --- | --- | --- |
| **Zone** | **Existing lorry station location of GCC** | **Area of the lorry station (sqm)** |
| Zone-11 | Zonal Office- XI Campus, Arcot Road,  Valasaravalkam. Chennai -600087 | 8349 |
| Zone-12 | New Street, Alandur R.T.O Office Near,  Alandur. Chennai-600016 | 1950 |
| Zone-14 | Puzhuthivakkam High Road,  Puzhuthivakkam, Chennai- 600091 | 9600 |
| Zone-15 | Zonal Office- XV Campus, 120 Rajiv  Gandhi Road, OMR, Sholinganallur. Chennai-600019 | 4200 |

**DHW Deposition Centres:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Zone** | **Zone-11** | **Zone-12** | **Zone-14** | **Zone-15** | **Project Area** |
| Area (sq. km) | 20.49 | 20.54 | 35.77 | 42.24 | 119.03 |
| Nos. to be established as  per rules | 1 | 1 | 2 | 2 | 6 |
| Area Requirement (sq. m) | 20 | 20 | 40 | 40 | The locations will be finalized during the preparation of MIOP by the  Concessionaire |

# Authority Movable Assests:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.**  **No.** | **Description** | **Specifications** | **Available** |
|  |  |  | **MAKE: MODEL:** |
| 1. | **CAPACITY;**  **Hopper volume:** | The Beach Cleaning Machine  hopper should hold minimum 2 cubic metre of debris |  |
| 2. | **CLEANING WIDTH** | The Beach Cleaning Machine minimum cleaning width should be  7 feet |  |
| 3. | **DUMP HEIGHT** | Dump height should be not less  than 9 feet. |  |
| 4. | **CLEANING PERFORMANCE** | The Beach Cleaning Machine should Clean up to 8 Acres per hour both in dry & wet beach sand. |  |
| 5. | **CLEANING**  **DEPTH**: | Adjustable to 6” |  |
| 6. | **CONVEYOR:** | Of bar flight type, covered with continuous 6' wide belt, with stainless steel spring tines mounted on it. |  |
| 7. | **HYDRAULIC DRIVE:** | Completely sealed and protected by the full flow filter. Large capacity spline mounted pump, hydraulic motor, flow control, and built-in  overflow protection. |  |
| 8. | **SIZE OF THE MACHINE** | Suitable dimensions: H X L X W |  |
| 9. | **WEIGHT OF**  **THE MACHINE** | Suitable |  |
| 10. | **TYRES** | Suitable |  |
| 11. | **DEBRIS TO BE REMOVED** | Broken glass, plastic, syringes, cigarette butts, pop-tops, straws, cans, tar balls, stones 3/8" to 6" [13 mm to 150 mm] in diameter, sea grass, seaweed, fish, and small  pieces of wood. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 12. | **OPERATING SPEED**: | The Beach Cleaning Machine should be able to clean up to speed of 20 km/hr. |  |
| 13. | **WORKING AREA:** | The Beach Cleaning Machine should work equally well in wet sand and in dry sand. |  |
| 14. | **VISIBILITY:** | The Beach Cleaning Machine operator should have excellent visibility from the tractor of the area to be cleaned and also the area immediately in front of the Beach  Cleaning Machine. |  |
| 15. | **TURNING:** | The Beach Cleaning Machine should be able to continuously clean the beach even while turning. |  |
| 16. | **STABILITY:** | The Beach Cleaning Machine should have a stable wide wheelbase and low center of gravity. |  |
| 17. | **VERSATILITY;**  **other uses:** | The Beach Cleaning Machine should be capable in areas other than the beach to pick stone, remove thatch and remove garbage from grass or paved areas. The **Beach Cleaning Machine should have a towing tractor, which can be quickly detached and used for other purposes.** |  |
| 18. | **Galvanization:** | Entire Frame of Beach Cleaning Machine should be full hot dip galvanized. (Entire Frame includes Bucket, moldboard, lift arms, Stainless Steel tines and hardware)  Tines should be Stainless Steel |  |
| 19. | **PAINT** | Polyurethane enamel or equivalent  (corrosion resistant) |  |
| 20. | **EASE OF**  **MAINTENANCE**: | The Beach Cleaning Machine  should be constructed with ease of |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | maintenance as a primary  consideration. |  | |
| 21. | **LUBRICATION SYSTEM** | Beach Cleaning Machine should have an automatic lubrication  option. |  | |
| 22. | **FINISHING** | The Beach Cleaning Machine should grade the beach while cleaning. It should knock down the  high spots and fills in the holes. |  | |
| 23. | **WARRANTY** | The warranty of the Beach Cleaning Machine should be for minimum Two (2) full years from the date the customer puts it into operation.  Everything including the chains,  sprockets, tines etc. should be covered under this warranty |  | |
| 24. | **MAINTENANCE**  **& OVERHAULING TOOLS** | Necessary basic tool kit and first aid box with kit should be provided at free of cost. |  | |
|  | C:\Users\IPE-240\AppData\Local\Temp\IMG-20180413-WA0019.jpg | | |  |

# Schedule 28 Format of IAQ

To be incorporated post tender.

# Schedule 29 ABPRR (example)

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Wards Nos.** | **Area (Sq. km)** | **ABPRR** |
| Zone 11 (Valasaravalkam) | 143 | 2.60 |  |
| 144 | 1.13 |  |
| 145 | 1.80 |  |
| 146 | 1.29 |  |
| 147 | 2.42 |  |
| 148 | 0.92 |  |
| 149 | 1.61 |  |
| 150 | 1.04 |  |
| 151 | 1.48 |  |
| 152 | 1.36 |  |
| 153 | 2.27 |  |
| 154 | 1.02 |  |
| 155 | 1.56 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Wards Nos.** | **Area (Sq. km)** | **ABPRR** |
| Zone 12 (Alandur) | 156 | 3.19 |  |
| 157 | 4.16 |  |
| 158 | 2.24 |  |
| 159 | 3.37 |  |
| 160 | 0.66 |  |
| 161 | 0.75 |  |
| 162 | 1.29 |  |
| 163 | 0.52 |  |
| 164 | 0.62 |  |
| 165 | 1.11 |  |
| 166 | 1.22 |  |
| 167 | 1.41 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Wards Nos.** | **Area (Sq. km)** | **ABPRR** |
| Zone 14 (Perungudi) | 168 | 0.85 |  |
| 169 | 2.69 |  |
| 183 | 2.46 |  |
| 184 | 2.83 |  |
| 185 | 2.09 |  |
| 186 | 1.85 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Wards Nos.** | **Area (Sq. km)** | **ABPRR** |
|  | 187 | 0.89 |  |
| 188 | 4.27 |  |
| 189 | 10.94 |  |
| 190 | 4.65 |  |
| 191 | 2.26 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Wards Nos.** | **Area (Sq. km)** | **ABPRR** |
| Zone 15 (Sozhinganallur) | 192 | 2.51 |  |
| 193 | 2.42 |  |
| 194 | 2.19 |  |
| 195 | 1.73 |  |
| 196 | 5.22 |  |
| 197 | 9.01 |  |
| 198 | 8.73 |  |
| 199 | 3.00 |  |
| 200 | 7.43 |  |

# Schedule 30 Format for Termination Notice

Date:

To,

Name of the SPV/Company of the Successful Bidder Address of the SPV/Company

Attention: Name of the Authorized Person of the SPV/Company of the Successful Bidder

# Name of the Project: Collection & Transportation of Solid Waste, Street Sweeping Waste ( including street sweeping activities), Horticulture Waste and Collection & Storage of Domestic Hazardous Waste in the Zones No 11, 12, 14 & 15 (Package-II) to the Designated Processing Facility/ Dump Site/ Depositing Centres of the Greater Chennai Corporation.

**Concession Agreement Number:**

# Dear Sir or Madam,

**Subject: Termination of the Contract**

On this day of 20 under sub Article 13.2 of this Draft Concession Agreement, Your Company as the Concessionaire under the above Contract, is notified that it had committed a substantial breach of the Contract. You are requested to respond within 15 days after receiving that notice, in accordance with Article 13.2 of the General Conditions of this Concession Agreement.

You have not ‘provided a satisfactory written response’ or ‘provided proposals to satisfactorily remedy the breach’ within the required time, that is by the date which was 7 days after the notice was delivered.

The Authority is therefore terminating the Contract, in accordance with Article xxx of the General Conditions of this Concession Agreement, with effect from the date on which

the termination is to take effect.

You are instructed to attend a meeting on the date (agreed beforehand if possible)

two or three days before the date on which termination takes effect to jointly take an inventory of infrastructure and equipment and agree what will remain to complete the Works and what is to be removed. You must leave the Project Area free from encumbrances after removing the agreed infrastructure and equipment, before date of termination.

Please advise appropriate date two or three days before the proposed meeting if you will be unable to attend the meeting.

Yours sincerely,

The Commissioner, (the Authority) Greater Chennai Corporation, Ripon Buildings,

Chennai-600003.

# Schedule 31: Escrow Agreement

This Project Escrow Agreement (this " Escrow Agreement") is entered into on

by and among:

* + 1. **THE GREATER CHENNAI CORPORATION**, established under the Chennai City Municipal Corporation Act 1919, represented by its Commissioner and having its principal office at Greater Chennai Corporation, Ripon Building, Chennai 600003 (hereinafter referred to as the **“Authority” (**which expression shall, unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) OF THE ONE PART;
    2. [*Please insert name of the company*], a company incorporated under the provisions of the Companies Act, 1956/2013 with CIN [•] and having its registered office at [•], Chennai, (hereinafter referred to as the “**Concessionaire**” (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) OF THE SECOND PART;
    3. [*Please insert name of the Bank*], a Bank incorporated under the provisions of the Banking Regulation Act 1949 established and amended in 2013, and the Bank is in the list of Scheduled Banks of the Reserve Bank of India, having its registered office at [•],(hereinafter referred to as the “Escrow Agent” (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) OF THE THIRD PART
    4. The Authority, the Concessionaire and Escrow Agent are herein after referred to individually as the “Party” and collectively as the “Parties”;

WHEREAS:

* + - 1. According to the concession agreement entered into on between Authority and the Concessionaire (the "Concession Agreement"), the Authority and the Escrow Agent shall establish an Escrow Account for the benefit of the Concessionaire. The Authority shall fund such account (pursuant to the terms of this Agreement), which shall serve to secure Authority's payment obligations towards the Concessionaire under the

Concession Agreement.

* + - 1. The Escrow Agent is willing to serve as an escrow agent in accordance with the terms and conditions of this Agreement.
      2. Unless otherwise defined herein, all capitalized terms shall have the meaning ascribed to them in the Concession Agreement.

NOW, THEREFORE, the Parties hereto agree as follows:

* + - * 1. ESCROW ACCOUNT (“PROJECT ACCOUNT”)

1. Appointment

The Authority and the Concessionaire hereby appoint the Escrow Agent to serve as the escrow agent for the purposes of this Agreement and subject to the terms of this Agreement and the Escrow Agent hereby accepts this appointment.

1. Escrow Account

Within 15 (Fifteen) Working Days from the date of Financial Closure hereof, the Authority and the Escrow Agent shall establish an escrow bank account denominated in Indian Rupees for the benefit of the Concessionaire (the " PROJECT ACCOUNT ").

1. Deposit and Replenishment Request
   1. Within thirty (30) days of signing of the Escrow Agreement (“Project Account Agreement”), the Authority shall deposit an amount equal to 2 (two) months of the applicable Monthly Quote (the “Initial Escrow Amount”) into the Escrow Account;
   2. In the event that the amount in the Project Account falls below 50% (fifty percent) of the Initial Escrow Amount, the Escrow Agent shall send a written request (“Replenishment Request”) to the Authority to replenish the Project Account and with a copy to the Concessionaire for the same.
   3. The Authority shall replenish the Escrow Account so that the amount present in the Escrow Account equals to two months of the applicable MQ and thereafter the Escrow Agent shall intimate the Concessionaire.
   4. The amount equal to two months of the applicable MQ and any other deposits made (if applicable) shall be referred to as the "Escrow Amount".
2. Identification and Separation

The Escrow Agent shall clearly identify in its records the Escrow Account as an escrow account and shall keep the funds standing to the credit of the Escrow Account segregated from and not commingled with the Escrow Agent’s own funds or the funds of any of its other customers or third parties.

1. Fees
   1. The Fees to be paid to the Escrow Agent for the establishment and management of the Escrow Account shall be borne equally by the Authority and the Concessionaire.
   2. Any payment made by the Authority under this Agreement shall be made from the following account or from such other account which Authority may designate from time to time:

Bank:

Account number:

BIC (SWIFT):

Address of Bank:

1. Escrow Account Statements

The Escrow Agent shall provide monthly statements regarding the Escrow Account to Authority and the Concessionaire.

* + - * 1. ESCROW AMOUNT

The Escrow Agent shall hold the Escrow Amount in escrow for the sole benefit of the Concessionaire. The Escrow Agent shall not release any of the Escrow Amount for any person other than the Concessionaire. In particular, the Escrow Agent shall not accept any requests for withdrawals or transfers of the Escrow Amount from the Authority for the benefit of Authority or any third party, unless it is made in accordance with this Agreement.

The Escrow Agent shall not apply any right of set-off against the Escrow

Amount, grant any lien over the Escrow Amount, or apply any fee or deduction in relation to the Escrow Amount.

At the end of each anniversary of COD year, the Escrow Agent shall transfer into an account of the Authority as the Authority shall designate, any amount exceeding an amount equivalent to two months of the applicable MQ and any other deposits made (if applicable).

* + - * 1. PAYMENT

Each month, the Concessionaire shall raise the FP and PP invoices (two copies each) and send it to the Authority/ IE, with a copy to Escrow Agent as per the sub Article 8.8.

The Escrow Agent shall make the relevant payment to the Concessionaire based on the recommendation of the Authority within a period of 30 [thirty] days.

At the end of the Concession Period or on the Termination Date, as the case may be, the Authority shall send instructions to the Escrow Agent requesting him to release and transfer any due and payable amounts to the Concessionaire and any remaining amounts to be transferred to Authority.

* + - * 1. OBLIGATIONS OF THE ESCROW AGENT

1. The obligations of the Escrow Agent under this Agreement are subject to the following terms:
   1. The duties of the Escrow Agent are only as herein specifically provided and are purely administrative in nature.
   2. The Escrow Agent shall neither be liable for, nor chargeable with knowledge of, the terms and conditions of any other agreement, instrument or document in connection herewith, including, without limitation, the Concession Agreement, and shall be required to act in respect of the Escrow Account only as provided in this Agreement. This Agreement sets forth all

the obligations of the Escrow Agent with respect to any and all matters pertinent to the Escrow Account contemplated hereunder and no additional obligations of the Escrow Agent shall be implied from the terms of any other agreement.

* 1. The Escrow Agent shall incur no liability in connection with the discharge of its obligations under this Agreement or in connection therewith, except such liability as may arise from the Escrow Agent’s negligence, willful misconduct or otherwise from any breach of this Agreement. Such liability, however, shall not exceed the amount on the Escrow Account outstanding at the date of the said breach by the Escrow Agent;

1. In the event that the amount in Escrow Account falls below 50 (fifty) % of the value of two months of the applicable MQ or on payment to the Concessionaire for two months, whichever is earlier, the Escrow Agent shall send a written request (“Replenishment Request”) to the Authority to replenish the Project Account and shall intimate the Concessionaire for the same.
2. Thereafter the Escrow Agent shall notify the Concessionaire about the replenishment of Escrow Account by the Authority.
3. The Escrow Agent shall not be required to perform any acts which will violate any laws or regulations applicable in India and in the State of Tamil Nadu;
4. In the event of any bankruptcy proceedings or enforcement proceedings against any of the Parties pursuant to applicable laws or regulations, the Escrow Agent shall, notwithstanding the provisions of this Agreement, act and perform in accordance with the applicable laws or regulations.
   * + - 1. REPRESENTATIONS AND WARRANTIES

Each Party represents and warrants that, as of the date hereof and in the foreseeable future:

has the authority to enter into this Agreement;

this Agreement constitutes a legally valid and binding obligation, enforceable against it in accordance with its terms;

its entry into and/or performance under this Agreement will not be in breach of any express or implied terms of any contract with or other obligation to any third party; and

it is solvent and able to perform all of its obligations under this Agreement.

* + - * 1. MISCELLANEOUS

1. Notices

Any notice or other communication to be given or made under this Agreement to the Parties shall be in writing. Except as otherwise provided in this Agreement, such notice, request or other communication shall be delivered by registered mail or facsimile to the Party(ies) at the following addresses

AUTHORITY:

The Escrow Agent: The Concessionaire:

1. Entire Agreement

This Agreement constitutes the entire agreement and understanding between the Parties with respect to its subject matter (i.e. escrow arrangement) and replaces and supersedes all prior agreements, arrangements, undertakings or statements regarding such subject matter.

1. Amendments

No variation of or amendment to this Agreement shall be effective unless made in writing and executed by all the Parties hereto.

1. Assignment

Neither this Agreement nor any of the rights or obligations hereunder may be assigned by a Party without the prior written consent of the other Parties.

1. Severability

Whenever possible, each provision of this Agreement shall be interpreted in such a way as to be effective and valid under law, but if any provision of this Agreement is unenforceable or invalid under law, such provision shall be ineffective only to the extent of such unenforceability or invalidity, and the remaining provisions of this Agreement shall continue to be binding and in full force and effect.

1. Confidentiality

Unless otherwise determined by a competent jurisdiction, the Parties, their employees, representatives and agents shall keep the provisions of this Agreement strictly confidential and, except as may be required by law, shall make no disclosure thereof to any person, except the Parties’ respective legal counsel and professional advisers, without the prior written consent of the other Parties.

1. Termination

This Agreement shall be automatically terminated upon the expiry of the Concession Period, as defined in the Concession Agreement, or on the Termination of the Concession Agreement. It may also be terminated earlier if Authority and the Concessionaire agree to terminate the Agreement and send a termination notice to the Escrow Agent.

1. Dispute Resolution Mechanism
   1. This Agreement shall be governed by and construed in accordance with the laws of India and the laws of the State of Tamil Nadu
   2. If any dispute arises out of or in connection with this Agreement, this dispute shall not affect the Parties’ duty to continue the performance of all of their non- disputed obligations.
   3. If any dispute arises, either Party shall give notice to the other Parties of the same, whereupon the Parties shall meet promptly and in a good faith to attempt to reach an amicable settlement.
   4. All disputes not settled amicably pursuant to sub-Article above shall be heard by the Madras High Court at Chennai;
      * + 1. Withdrawals upon Termination

Upon Termination or Expiration of the Concession Agreement, all amounts standing to the credit of the Escrow Account shall, notwithstanding anything in this Agreement, be appropriated and dealt with in the following order:

1. all taxes due and payable by the Concessionaire for and in respect of the Project;
2. outstanding Payments;
3. all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement;
4. any other payments required to be made under the Concession Agreement; and
5. balance, if any, in accordance with the instructions of the Authority:

IN WITNESS WHEREOF, each Party has duly executed this Agreement in four (4) originals on the date set out on the first page hereof.

SIGNED SEALED AND DELIVERED

For and on behalf of the Authority by (Signature) (Name) (Designation)

SIGNED, SEALED AND DELIVERED

For and on behalf of CONCESSIONAIRE by SIGNED, SEALED AND DELIVERED

In the presence of.

1)

2)