Apart from the above, regular inspection and monitoring of important components of the landfill shall be done as per the schedule given below:

Final Top Cover:	Once in a year and after each substantial rainfall it should be checked for any erosion, landslides, movement of soil, slope, etc.
Vegetation:	Four times in a year a check should be made for existence of dead plants/trees. Any plant/tree found dead shall be removed immediately.
Final Grade:	Twice a year should be checked for ponding/logging of water. If any abnormalities found, slope should be corrected by putting soil.
Surface drains:	Four times a year and after each substantial rain should be checked for any blockages. Leaves, debris or any other accumulation found in the drain shall be removed immediately.
Gas Monitoring:	As required in the Management Plan it should be checked for strong presence of odor. The gas monitoring equipments (compressor, pipes, flaring stand, etc) should be checked to ensure their workability as they might become inoperable due to high gas generation.
Groundwater Monitoring:	As per the Action Plan. A regular inspection shall be done to check for any failures in the monitoring system.
Leachate Management:	As required by the plan.

5.12 DESIGN CALCULATION FOR INTEGRATED SOLID WASTE MANAGEMENT FACILITY AT BARUIPUR

The total land area requirement has been worked out on basis of solid waste generated in the Baruipur city, characteristics of the waste etc.

The construction of landfill shall be taken up into two phases. Baruipur Municipality has demarcated 0.6 acre of land for the construction of the sanitary landfill site for first phase construction and estimated 3.1 acre land (approx.) will be considered as second phase for future provision.

Table 5-27: Area Requirement for Integrated Solid Waste Management facilities

Sl. No.	Description	Area Requirement (in Acre for the year 2029)
1	Design Area (first phase)	0.6 Acre
2	Design Area (second phase)	3.1 Acre

5.12.1 Vehicles & Manpower Requirement for Vermi-Compost Plant & SLF

Table 5-28: Vehicles Requirement Landfill Processing

Landfill Operation Vehicle		
Sl. No	Vehicle type	Number
1	Bulldozer	1
2	Excavator	1
3	Dumper 6 m^3	1

Table 5-29: Man power Details for Vermi-Compost & Landfill

List of Manpower details of Compost		
Sl. No.	Particulars	Nos.
1	Plant In-Charge	1
2	Weigh Bridge Operator	1
3	Labourers	6
4	Tractor Attached Loader Driver & Front Loader	1
5	Excavator & Bulldozer Driver	1
6	Security Guard	3

CHAPTER 6 PROPOSED INSTITUTIONAL FRAMEWORK

It is proposed to take steps for institutional strengthening and internal capacity building to ensure that endeavor to improve the existing scenario is successful. Institutional strengthening can be done by adequately decentralizing the administration, delegating adequate powers at the decentralized level, by inducting qualified and competent professionals into the administration and providing adequate training to the existing staff.

Baruipur Municipality (BM) has demonstrated its commitment to developing slums and poor communities. BM is responsible for the delivery of variety of functions like Water Supply, Sewerage, Sanitation, drainage, solid waste management, roads and transportation to the citizens and has taken long strides in this regard. It has also been dealing with medical relief, preventive medicine, sanitation and conservancy, maternity and child welfare, control of food adulteration and some other functions under the Public Health regulations.

6.1 INTRODUCTION

The sustenance of the proposed SWM services depends on robustness and capacity of institutional framework. It is proposed to take steps for institutional framework to ensure that endeavor to improve the existing scenario is successful. Institutional framework can be done by adequately decentralizing the administration, delegating adequate powers at the decentralized level by inducting qualified and competent professionals into the administration and providing adequate training to the existing staff.

6.2 RECOMMENDATIONS FOR INSTITUTIONAL STRENGTHENING

The recommendations for the institutional framework are based on the specific tasks to be carried out under the proposed MSW Project. The activities which need to be focused as per the proposed plan include:

- Segregation of waste at source
- Mechanism of waste collection
  - Primary collection
  - Secondary collection
- Transportation of waste from secondary collection locations
- Development of integrated SWM processing facility
- Operation and maintenance of installed SWM system
  - Landfill
  - Composting
  - Transportation
  - Waste collection infrastructure

In the above listed components, several activities/infrastructure developments are proposed to be taken up for implementation for the first time. The Baruipur Municipality(BM) requires capacity building to execute the proposed plan.

In view of successful PPP arrangement in many cities for SWM management; it is proposed to consider the private sector participation for developing and operating new services. Based on analysis of the merits and demerits of the existing system, it is proposed to have responsibility delegation for undertaking each activity under proposed SWM plan as below:

Table 6-1: Roles and Responsibilities for O&M of ISWM

Activities	Organization/ Institution	Scope of work/ Responsibilities
Segregation and collection	Baruipur Municipality	• Deploy of more sanitary workers • Sensitization of residents/public about segregation. • Provide facilities/bins for segregation • Collection from house holds • Transportation of waste to bins. • Orientation/sensitization of sanitary workers. • Involve NGO's / CBO's in public awareness.
Transportation	Baruipur Municipality Private agency	• Selection of party/ agencies for procurement and execution • Work out finance model with agency. • Funding • Monitoring and supervision of agency work. • Readdressal of issues. • Monitoring management and coordination. • Procurement of equipments/ facilities. • Installation of facility. • Safety of equipments. • Collection/ lifting of waste from secondary collection points. • Operation and maintenance of vehicles. • Transportation of waste to site
Integrated SWM facility	Baruipur Municipality	• Selection of agency for execution

Activities	Organization/ Institution	Scope of work/ Responsibilities
		• Funding • Monitoring of construction and management • Supervision of commissioning.
	PPP	• Design and construction • Commissioning • O&M

The existing staff of BM shall be adequate for doing monitoring of SWM services by different private operators but require capacity building to undertake this activity efficiently. Therefore in addition to private operator participation, institutional strengthening is required within BM to ensure sustainability. For institutional strengthening, it is proposed to decentralize the administration, delegate adequate powers at decentralized level and bring accountability at all levels. It is proposed to decentralize SWM functions at three levels:

- Election ward level
- Sanitary ward level, and
- City level

6.3 ELECTION WARD LEVEL

The election ward level administration shall be fully responsible for ensuring storage of segregated waste at source, primary collection of waste, street sweeping and transferring waste to bins, cleaning surface drains and public places. The cleaning of each street, lane, by-lane, markets and public places shall be regularly supervised by the election ward level supervisors. It is proposed to have two wards under one supervisor.

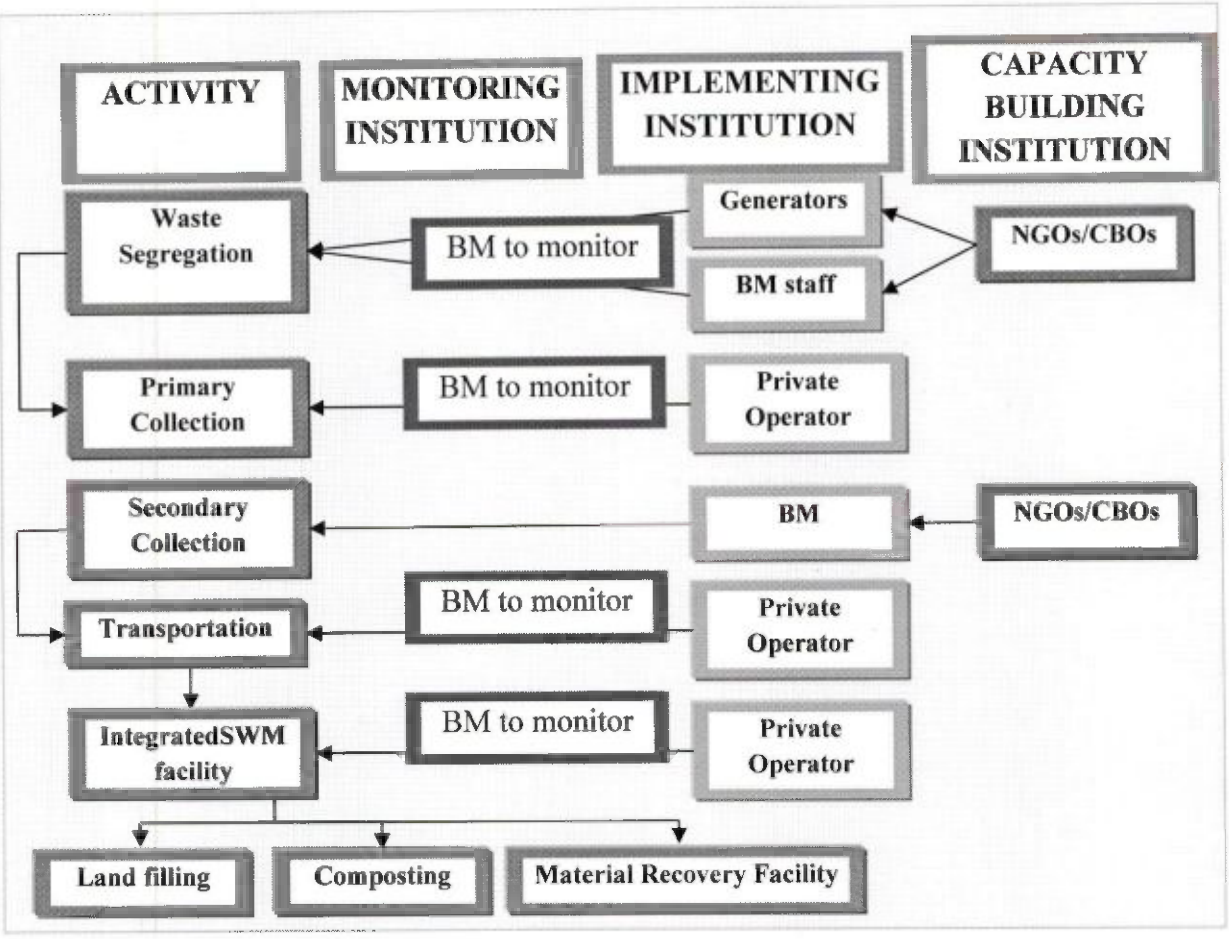


Figure 6-1: Proposed Institutional Framework for SWM

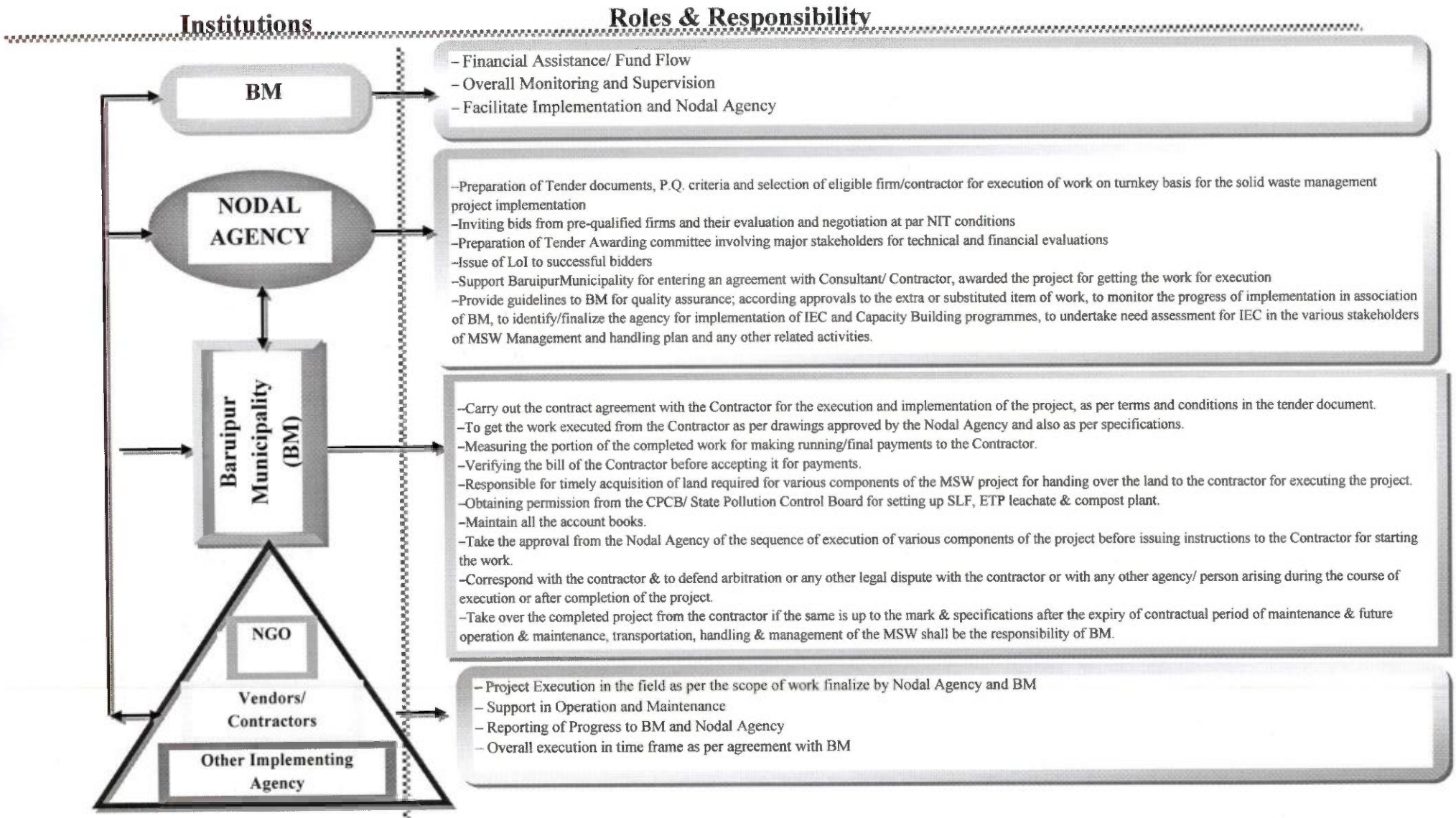
6.4 SANITARY WARD LEVEL

The sanitary ward level administration shall effectively supervise and support the work of sanitary supervisors and also provide due support for upkeep of solid waste collection infrastructure, transportation of waste processing and disposal sites. The sanitary inspector shall ensure that there is adequate coordination between sanitary supervisors of his ward. The fleet of vehicles shall be assigned at sanitary ward level.

6.5 CITY LEVEL

The city level administration shall supervise and support the sanitary ward administration. The city level administration shall monitor daily waste quantities collected and transported from each sanitary ward and enquire if any abnormality is reported. The central department is responsible for monitoring activities at the integrated solid waste management facility. The city level administration shall ensure that private operator is undertaking SWM services as per the contract.

Figure 6-2: Proposed Institutional Framework for Operation and Maintenance



6.6 LEGAL ASPECTS

Solid waste management systems adopted in Indian cities are highly inefficient and outdated, lacking public participation. Overall public apathy is observed in the matter of handling and disposal of municipal waste. A system of throwing garbage on the streets by citizens and local bodies collecting the waste from the streets and disposing of it in the most unhygienic manner is in vogue. These systems can be corrected by taking concerted measures involving the public at large through their active participation in the process and by Municipality performing its duties effectively.

Solid waste management practices can never reach the desired level of efficiency until the public participates and discharges its obligation religiously. The system therefore, can only be improved by modernizing the solid waste management system by the Municipality and ensuring public participation through very serious motivational efforts along with adequate legislative support for taking punitive measures.

For improving solid waste management practices in city, the Supreme Court Committee has given wide ranging recommendations defining the roles and responsibilities of the citizens, NGOs, local bodies, etc. Subsequent to the aforesaid report, the Government of India, Ministry of Environment has notified municipal solid waste (Management & Handling) Rules 2016 under the Environment Protection Act 1986; these rules have clearly laid down the measures to be taken by the Municipality as well as smaller urban local bodies. Keeping in view both the above report and the rules it is necessary to incorporate suitable provisions in the state law to ensure public participation and for providing for minimum level of service.

Local law also needs to provide for punishment on the spot to those who do not adhere to the directions given for maintaining appropriate solid waste management system in the city giving adequate power to the Municipality to punish the offenders.

The following legal provisions may be incorporated by the State Governments in the law-governing Municipality.

6.7 LEGAL PROVISIONS

6.7.1 Duty of occupiers of premises to store solid waste at source of generation

It shall be incumbent on the occupiers of all premises to keep two receptacles, one for the storage of food/organic/bio-degradable waste and another for recyclables and other types of solid wastes generated at the said premises.

6.7.2 Duty of occupier not to mix recyclable /non-bio-degradable waste and domestic hazardous waste with food waste etc.

It shall be incumbent on the occupier of any premises to ensure that the recyclable waste as well as domestic hazardous waste generated at the said premises does not get mixed with the food/bio-degradable waste and that they are stored separately.

6.7.3 Duty of Societies/Associations/Management to provide community bins

It shall be incumbent on the management of Co-operative Societies, Associations, Residential and Commercial Complexes, Institutional buildings, markets and the like to provide community bin/bins of appropriate size as may be prescribed by urban Municipality, for the temporary collection of waste other then recyclable waste and hazardous waste, to be stored at their premises for its primary collection by the municipal authorities. A separate community bin may also be provided for the storage of recyclable waste where door to door collection of recyclable waste is not practiced.

6.7.4 Receptacles to be kept in good repair

Receptacles as stated in 3 above shall at all times be kept in good repair and condition and shall be provided in such number and at such places as may be considered adequate and appropriate to contain the waste produced by the citizens supposed to be served by the community bins.

6.7.5 Duty of occupiers to deposit solid waste in community bins

It shall be incumbent on occupiers of all premises for whom community bins have been provided as per 3 above, to cause all segregated domestic waste, trade waste, institutional waste from their respective premises to be deposited in the appropriate community bins.

6.7.6 Duty of Municipality to provide bins for Waste storage depots

It shall be incumbent on the Municipality to: Provide and hygienically maintain adequate waste storage bins in the city and place large mobile receptacles at such places for the temporary storage of waste collected from households, shops and establishments as well as from streets and public places until the waste is transported to processing and disposal sites.

6.7.7 Duty of Municipality to collect waste from community bins transport

It shall be incumbent for Municipality to remove all solid waste deposited in community bins on a daily basis transport to processing or disposal sites.

6.7.8 Duty of Municipality to clean all public streets, open public spaces and slums

It shall be incumbent on Municipality to arrange for cleaning of all public streets having habitation on both or either side, and all slums on all days of the year including Sundays and public holidays.

6.7.9 Prohibition against littering the street and deposit of solid waste

No person shall litter public streets or public places or deposit or cause or permit to be deposited or thrown upon or along any public street, public place, and land belonging to the Municipality or any unoccupied land or on the bank of a water-body.

6.7.10 Punishment for littering on streets and depositing or throwing any solid waste

Whosoever litters the street /or public places or deposits or throws or causes or permits to be deposited or thrown any solid waste or construction debris at any place in city would be punished as specified under penalty subsection.

CHAPTER 7 IEC MATERIAL &PUBLIC AWARENESS

To enable people to participate in the development process, it is necessary that people have adequate knowledge about the nature and content of these Programmes. Public Awareness through Information, Education and Communication (IEC), therefore, assumes added significance in the context of the Programmes. Through IEC techniques the stakeholders and local community could be educated and aware about the issues and advantages of existing and implementing system of the solid waste management. The basic approach of IEC plan is to create effectiveness of the Solid Waste Management System. Its operational efficiency can be improved through Information, Education and Communication (IEC) techniques.

Apart from this, to have the municipal solid waste collection in segregated form and adequate handling and processing, the Municipal staff as well as the other stakeholders/ private operators involved in this process should be properly trained and sensitized. For this purpose need of Information, Education & Communication (IEC) Plan and Training & Capacity Building of BM staffs responsible for Solid Waste Management have been assessed and are being proposed.

7.1 OBJECTIVE

The major objectives of the IEC and Capacity Building are as follows:

1. Bringing of attitudinal and behavioral changes among the residence about the segregation of waste and sanitation improvement.
2. Public awareness through informing and educating the masses on various aspects of solid waste management and achieve the target of receiving segregated waste from each household.
3. Creating Public Participation in Planning and Management of MSW Activities
4. Capacity Building of the personnel's involved in implementing MSW i.e. Institutional Capacity of Health Department of Baruipur Municipality for Improved MSW Management.
5. Integration and involvement of private sweepers and Rag Pickers in improving MSW management

7.2 PUBLIC PARTICIPATION AND AWARENESS THROUGH INFORMATION, EDUCATION AND COMMUNICATION (IEC) PLAN

The success of any solid waste management scheme can be measured through the extent of cooperation and participation of people, effectiveness of the proposed system and operational efficiency. Communication is an integral part of planning for sustained development. The development of human society has largely been due to its ability to communicate information and ideas with each other and to use such information and ideas for progress.

The Programmes being implemented by the Govt. Departments aim at sustainable holistic development in all development projects. The success of these programmes is critically dependent on the participation of the people, particularly target groups, in the implementation process. The approach should be to emphasize on communication with target groups, local community for the implementing programme of Solid Waste Management in respective areas of Baruipur.

7.3 APPROACH OF IEC PLAN

The basic approach of Information, Education and Communication Plan is to make aware the public about the need of reduction and segregation of waste from the households along with the collection system of waste to take public cooperation to make hygienic structure of the area.

- Focus Group Discussions
- Inter personal communications
- Creating watchdog committees comprising of local influential people and important stakeholders, societies
- Printed materials and Audio-visual aids
- Other locally popular media.

The entire implementation shall be designed to cover entire Municipal area of the city in a very planned and strategic way for the efficient implementation and for the success and sustainability of the MSW management.

7.3.1 Communication:

Communication Planning is an integral part of planning for sustained development. The development of human society has largely been due to its ability to communicate information and ideas with each other and to use such information and ideas for progress. First attempt would be a public campaign, which is the objective of the IEC Plan, will be launches to raise awareness about cleanliness.

7.3.1.1 Door to Door Campaign:

For door to door information spreading, involvement of health workers (Sanitary staff) would be easy and speedy along with the volunteers. It will also create a platform for a better communication management among public and sanitary staff. The volunteers and health workers will lead to spread the project information with the help of support material which will be helpful for providing effective information along with time saving.

7.3.1.2 Public Address Meeting:

Interpersonal and community meeting is a great tool to share the information, views and direct interaction for the effective involvement and awareness among the residents. The message and information and people commitment can be taken for the segregation and better management for the Segregated Solid Waste Management Scheme. Some workshop and seminars will also lead to inform the stakeholders at a time with proper preparation and communication and their participation and cooperation for sanitary improvement.

7.3.1.3 Media Support:

Media support is essential and a very important part of IEC programme to inform, educate and aware the masses. Media support includes the use of television, radio, print media and folk theatre therefore,

accords priority for the promotion of non-formal sanitary improvement education and creation of awareness among all sections of the society through diverse activities using traditional and modern media of communication. The media should be informed and involved for each programme which would be conducting according to the IEC plan.

7.3.1.4 Folk Programme:

Street play which is an important tool for creating entertained information, education and basically aware the lower income group and lower middle income group residents. The street play theme should be to the point on the IEC plan and in local point of view to realize the residents as of their part. Mass media should also be encouraged for their support in public awareness program.

7.3.2 Social Mobilization:

For the social mobilization, attitudinal and behavioral changes of the residents' involvement of major and social stakeholder are essential. For this purpose institutional and other organizations involved in social activities are a great awareness center for the social mobilization and public awareness as indicated below:

- Educational Institutions (Schools and Colleges etc.)
- NGOs/ CBOs/ Societies Support
- Sr. Officials/ Administration Officers / Sr. Citizens
- Ministerial Supports etc.

7.4 IDENTIFICATION & ACTION

Identification and selection of target groups plays a key role in creating effective awareness in residential. For solid waste management, it becomes more important as the source of MSW starts from houses due to which target starts from household female head, youths and children who requires some form of role model or different methods to influence their behavior. It is a very important aspect which could be at waste generators level and may reduce, reuse and recycle their waste. The other part of target groups may be waste collector and waste managers. These types of target groups are directly involved with the solid waste management. Along with this, there are other groups which can be helpful for the better management of MSW segregated waste collection, operation, handling and proper disposal. The major target groups are as following:

Table 7-1: IEC action Identification

Sl. No.	Target Groups	Target Group Details	Action Plan
1	Waste Generator	Residential Areas (Women (household), Maids, children and Youths) Commercial Areas	Holding locality-wise meetings, seminars, targeted community meetings with self help groups, through street plays, technical and pictorial presentation along with aware

Sl. No.	Target Groups	Target Group Details	Action Plan
		(Shopping areas, Vegetable markets, Offices, Hotels, Restaurants) Institutional Areas (Jr. High Schools, Colleges)	them about health hazards and remedial measures and sanitation improvement. Informing and suggesting them about the segregated waste management and their important role.
2	Waste Collector	Sweepers Rag pickers Waste loaders Truck drivers Landfill supervisors	They all should be involved and sensitize about the need of segregated waste collection and sanitation improvement. The waste collection, transportation and disposal of the waste in proper timing so that waste could not be overflow. The waste collector should be trained about the collection of segregated waste.
3	Waste Managers	Administrators and supervisors Control and monitoring team Complaint handlers Computer software operators and specialists	Presenting them about the Rules and Regulation and updating them about the ongoing activities and techniques for MSW management. Training programmes for the technical staffs Providing the reviews of progress and monitoring activities
4	Leaders	Political Leaders (Local MLA, MP) Religious Leaders Community Leaders	These leaders can be motivated to participate actively in promotional efforts of community involvement in segregated solid waste management.
5	School Teachers and Students	Primary Schools Jr. High Schools Public Schools	School teachers can be informed and involved in the segregated solid waste management scheme and can be motivated to educate the children for the sanitary improvement. The students can be educated and trained for the segregated waste management system and they can be great awareness creators for the societies. Some groups of students can be created as monitoring and awareness team for sanitation improvement which will make a great impact on societies and communities.
6	Media	Print Media Electronic Media	Launching mass campaign for educating and motivating local communities and families about the need of segregation of Solid Waste and its management for sanitation and hygienic improvement.
7	Elite groups or social organizations	NGOs, Societies CBOs	Sensitize and motivate local influential people like Sr. citizens, leading businessmen, social club members, NGOs

Sl. No.	Target Groups	Target Group Details	Action Plan
		Sr. citizens Association Rotary Clubs/ Lions Club	and CBOs etc. to undertake or sponsor such activities for solid waste management for effective strategy of public participation and awareness.

Once the target groups have been identified, the responsibility lies in developing the approach for educating these groups. For successful implementation of any program involving public at large, it is essential to spell out clearly and make them know the manner in which the problem is proposed to be tackled to keep area clean and improve the quality of life.

The communication material should be developed and must be utilized in public awareness program through the tools of publicity. The use of various publicity tools as public address meetings, workshops, School Activities, Street Plays, Distribution of Handbills, Pamphlets and Handbills etc. can be used.

This professional work be outsourced to Event management Companies/ NGOs etc who will carry out all programmes for not less than six months through:-

- Mobile Campaign;
- Leaflets;
- Cinema Slides;
- Arranging Hoardings & Banners;
- Holding Seminars and Workshops;
- Locality wise general Campaign for awareness;
- Involving schools and their students for ***"Keep Your City Clean"*** Campaign;
- Holding Exhibitions;
- Importing Trainings to workers for cleaning works in Public and Community Toilets;
- Record Consultations, suggestions and general feedback from the people and deliver to ULB for planning and mitigating redressal issues of complains.

7.4.1 Quantification of Works

Slide - 1

Through **Auto Van** & **Loudspeaker** and distributions of one page handouts (1,00,000 nos.) – **5 Vehicles** each week for **30 weeks** covering the entire city

Slide - 2

Leaflets: on segregation of solid waste to each house – 70,000 nos. in Hindi

Slide - 3

Cinema Slides & TV Slots: Slides 10 nos. on sanitation daily show for one minute for 6 months

Slide - 4

Hoardings: 20 nos(20 ft x 10 ft) & **Banners :** 50 nos(6 ft x 5 ft)

Slide - 5

Workshops & Seminars: 2 nos. per month per ward for 6 months i.e. 12 x 51 = 612 nos.

Slide - 6

Through **Auto Van** & **Loudspeaker** and distributions of one page handouts (1,00,000 nos.) – **5 Vehicles** each week for **30 weeks** covering the entire city

Slide - 7

All Schools: 100 nos. Rally for 10 days in 6 months

Slide - 8

Exhibitions: 2 nos. in 6 months

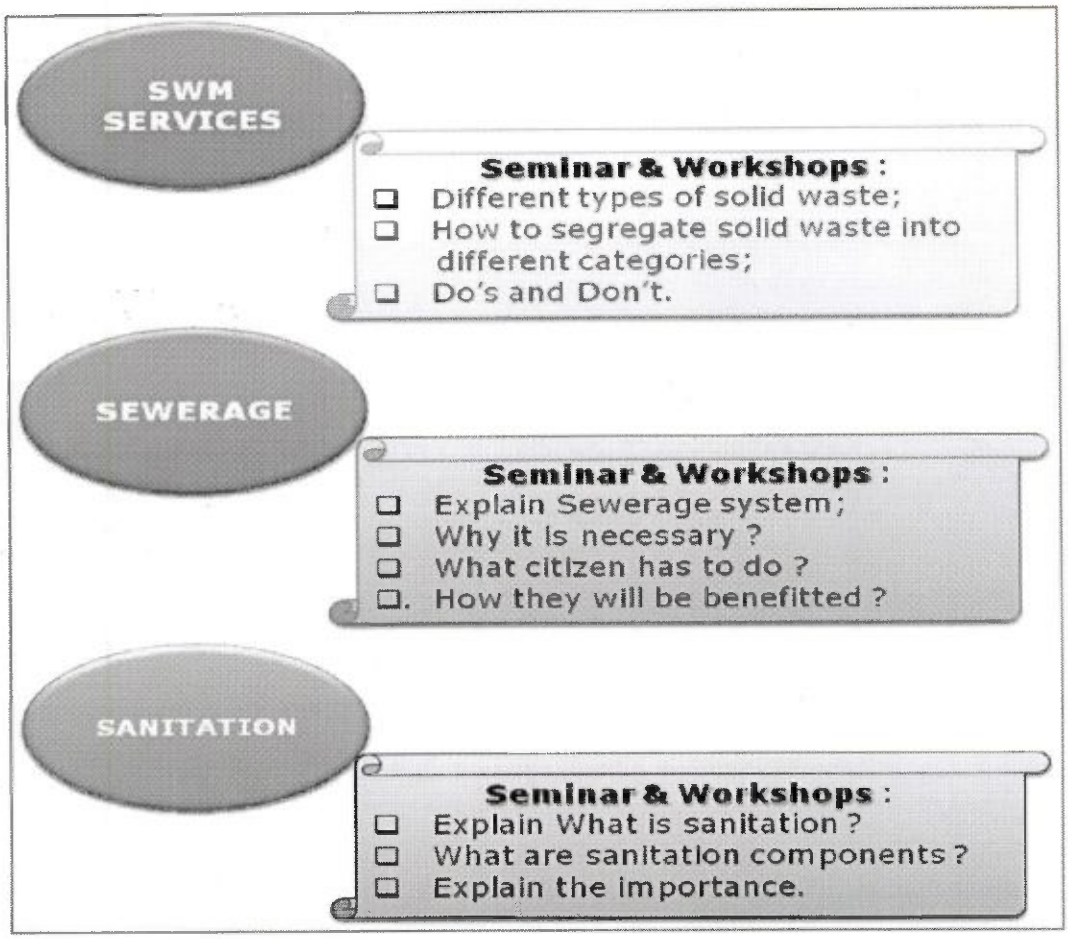
Slide - 9

Trainings to workers: 10 programmes for 20 participants each

Slide - 9

Record Feedback: Submit a full report

7.4.2 Subject Matters (Seminar, Workshops)



7.4.3 Activities Covered in Leaflets, Hoardings and Banners, Campaign and Exhibitions

HOARDINGS & BANNERS

"KEEP YOUR CITY CLEAN"

Citizen shall Do	Citizen shall not Do
Handover your waste to BMC waste collector;	Do not throw your waste into drains and on roads/ open spaces;
Segregate your waste and keep it in separate bins;	Do not mix your all wastes;
Get your toilet connected to sewer system;	Do not let your sewage into drains or into ground;
Keep your waste into litter bins;	Do not litter in open space, on buildings etc;
Point out insanitary condition of your area to BMC staff;	Do not allow insanitary condition in your area;
Use public toilets wherever there is.	Do no defecate in open areas.

Exhibitions

Photographs Presentation of all Works of Sewerages, SWM Services, Public & Community Toilet Cleaning, Littering, and all other related Items

CAMPAIGN

City Sanitation Plan (CSP):

- Miking the endeavors of the state Govt. on sanitation of your city;
- Timely pay sanitation fees to serve you better;
- Do not litter here & there;
- Co-operate with BMC workers to keep your City Sanitized;
- Do not defecate in open.

CHAPTER 8 ENVIRONMENTAL AND SOCIAL ASPECTS

8.1 ENVIRONMENTAL AND SOCIAL ASPECTS

Present environmental situation is not monitored. It is considered that due to inadequate basic sanitation facilities, pollution of air and water is prevailing. There is no activity undertaken by the Baruipur for mainstreaming the rag pickers and work is too planned for their resettlement.

8.2 SOCIAL ISSUES OF RAGPICKERS AND RESETTLEMENT PLAN

Mainstreaming activity will be taken up by the Baruipur by employing the rag pickers in waste processing plant and sanitary landfill site. Free medical checkup can be taken up by Baruipur for all their SWM workers & other manual workers.

It is observed that near about 60-80 (approx.) rag pickers involved in segregation and reselling goods from the waste in the Baruipur city. For rag pickers the reselling of goods is the livelihood. Therefore, to ensure living wage for rag pickers it is proposed to educate them and involve in waste management system in due course of project implementation.

8.3 ENVIRONMENTAL ISSUES AND THEIR MITIGATIONS

During execution of projects of sewer line, there will be environmental hazards in air, water and river construction activity shall be planned for minimization of all hazards by following standard methods of mitigation.

Major environmental issues involved in MSW management system are given below:

Table 8-1: Environmental Issue and Action Plan

Sl. No.	SWM Management System	Major Issues Involved	Action Plan
1	Primary Collection	Primary Collection of solid waste is not appropriate resulting accumulation of solid waste on roadsides and vacant plots and in low lying areas and storm water drains.	Door-to-door waste collection service has to be provided to households. The roadside waste collected by street sweepers must be directly dumped into a separate bin at the secondary waste collection point.
2	Secondary Storage of Solid Waste	In the absence of secondary storage facility for MSW, it is dumped at any location in the vicinity – drains, vacant plots, street corners, low lying areas, and other open areas. Heaps and stretches of un-segregated waste in open areas is an eyesore, thereby causing environmentally hazardous & unhygienic conditions across the	Separate colored bins must be provided at the secondary storage location for biodegradable and non-biodegradable, and recyclable wastes. The bins must be covered and cleared at the scheduled time to prevent storage of waste for a long time and littering of waste outside the bins

Sl. No.	SWM Management System	Major Issues Involved	Action Plan
		city, thus, creating conditions for breeding of mosquitoes, grazing by cattle	
3	Solid Waste Transportation	It is observed that transportation vehicles are overloaded with waste, resulting in road littering during transportation. The loading and unloading of waste is done manually and safai karamcharis involved in this activity do not use any Personal Protection Equipment (PPE) for their protection.	The waste transportation vehicles must be covered at all times expect while loading and unloading activities and the loaded waste should not exceed the capacity of these vehicles.
4	Collection and disposal of construction waste	The construction/ demolition waste generated by local residents is transported in tractor trolleys and disposed off in open/ low-lying areas in the vicinity, privately	The construction and demolition waste must not be dumped in any open areas in an unorganized manner.
5	Disposal of solid waste	The solid waste collected from various sources is disposed off in open dumpsites indiscriminately without segregation or pre-processing. There is no engineered sanitary landfill site for safe disposal of solid waste.	According to MSW Rules, 2016, biodegradable waste shall be processed and converted into compost or used for power generation; recyclables shall be segregated and sold to recyclers; no hazardous waste be dumped along with MSW; construction waste to be segregated and used for filling low lying areas and only remaining waste shall be dumped into engineered landfill facility.

Municipality should have strict initiative for proper implementation of action plan to avoid environmental and social nuisance.

8.4 ENVIRONMENTAL SCENARIO

Due to growing prosperity and changing lifestyle of people, communities are getting increasingly oriented towards consumerism. They are guzzling resources in a wasteful manner and in the process, generating a variety of wastes, a bulk of which is in the form of solid waste. Consequently, a sea change has occurred lately in both quantum and composition of solid waste. In many cities, the rate of generation of solid waste has increased so much that the civic agencies responsible for the collection and disposal of wastes are unable to deal with the total quantity produced every day. As a result, a major part of the waste remains uncollected and accumulates in the form of heaps at various locations within the inhabited areas. Inefficient and improper methods of disposal result in scenic blights and create serious hazards to human health. These include pollution of air and water resources, accident hazards and an increase in rodent and insect vectors of disease.

The composition of solid waste has changed in such a manner that, today, a major proportion of the waste is composed of non-biodegradable materials such as plastics, iron, glass and other metals. The Indian Cities generate about 110,000 tonnes of garbage in one day of which around 44,000 tonnes are organic and 66,000 tonnes are inorganic. This type of waste can only be recycled or disposed of through special processes. Due to these reasons, the task of handling solid waste has become a highly specialized managerial task.

In most of the Indian cities, waste comprises mainly of not easily combustible vegetable and meat wastes, since the more easily combustible substances such as cardboard, paper, cloth, and plastics are already eliminated at source or by rag pickers for sale to 'kabariwalas'. Even with the implementation of waste reduction, recycling, and transformation technologies, disposal of solid waste in landfills remains a significant component of an integrated waste management strategy. Contrary to what its name suggests, the method of land filling, till now, has been operated in an unsanitary manner. Most landfill sites give an unhygienic look. Not only this, the consideration of the environmental parameters in designing and developing these projects has been neglected.

The recent directions of the Supreme Court of India to the various municipalities and states' departments of Urban Development to ensure compliance with the Municipal Solid Waste Rules, 2016 (MSW Rules), have brought municipal solid waste management (MSWM) issues under the spotlight. Municipalities have thus started to address the MSW issue, for a number of reasons, including citizen concern and recent mandates from the Supreme Court. According to legislation on municipal solid waste formulated and enacted by the Union Ministry of Environment and Forest as empowered under the Environment Protection Act of 1986—the submission of an environmental impact assessment prior to the designing and development of any landfill facility in the country has been made mandatory.

8.5 ENVIRONMENTAL MANAGEMENT PLAN

8.5.1 Environmental Monitoring

Environmental monitoring has to be conducted at MSW landfill and composting facility to ensure that no contaminants that may affect public health and surrounding environment are released from the environment. The monitoring required is divided in to three categories:

- Vadose zone monitoring for gases and liquids
- Ground water monitoring and
- Air quality monitoring

8.5.1.1 Vadose Zone Monitoring

The vadose zone is defined as the zone from the ground surface to where the permanent ground water is found. An important characteristic of the vadose zone is that the pore spaces are not filled with water, and that the small amounts of water that are present coexist with air. Vadose zone monitoring at landfills involves both liquids and gases.

8.5.1.2 Liquid Monitoring In the Vadose Zone

Monitoring for liquids in the vadose is necessary to detect any leakage or leachate from the bottom of a landfill. In the vadose zone, moisture held in the interstices of soil particles or within porous rock is always held at pressures below atmospheric pressure. To remove the moisture it is necessary to develop a negative pressure or vacuum to pull the moisture away from the soil particles. Because suction must be applied to draw moisture out of the soil in the vadose zone, convention wells or other open cavities cannot be used to collect samples in this zone. The sampling devices to be used for sample extraction in the unsaturated zone are suction lysimeters.

The most commonly used class of lysimeter used for obtaining samples of moisture in the vadose zone is the ceramic cup sampler, which consists of a porous cup or ring made or ceramic material that is attached to a short sections of nonporous tubing (e.g. PVC). When placed in the soil, because of its pores it becomes extension of the pore space of the soil. Soil moisture is drawn in through the porous ceramic element by the application of a vacuum. When a sufficient surface through a narrow tube by the application of vacuum or is pushed up by air pressure.

8.5.1.3 Gas Monitoring In the Vadose Zone

Monitoring for gases in the vadose zone is necessary to detect the lateral movement of any landfill gases. Vadose zone gas monitoring probe is to be used for monitoring of land gases. Gas samples are to be collected from multiple depths in the vadose zone.

8.5.1.4 Ground Water Monitoring

Monitoring of the ground water is necessary to detect changes in water quality that may be caused by the escape of leachate and landfill gases. Both down and up gradient wells are required to detect any contamination of the underground aquifer by leachate from the landfill. To obtain a representative sample, the liquid in permanent sample collection tubing, where used, must be purged before the sample is collected.

8.5.1.5 Landfill Air Quality Monitoring

Air quality monitoring in landfills involves:

- The monitoring of ambient air quality at and the Landfill and composting facility.
- The monitoring of landfill gases extracted from the landfill and
- The monitoring of gases from any gas processing or treatment facility.

Monitoring Ambient Air Quality

Ambient air quality is to be monitored at landfill site to detect the possible movement of gaseous contaminants from the boundaries of the landfill site and emission from the composting plant.

Monitoring Extracted Landfill Gas

Landfill gas is to be monitored to assess the composition of the gas, to determine the presence of trace constituents that may pose a health or environmental risk.

Monitoring Off-Gases

Monitoring of-gases from landfill and composting facilities is to be done to determine compliance with the local air pollution control requirements.

The following table gives the details of parameters to be monitored and the frequency of monitoring during the operation of SLF:

Table 8-2: Environmental Monitoring Plan during Operation of SLF

Sl. No.	Activities to be Carried Out	Parameters to be Monitored	Duration of Monitoring
1	Monitoring of groundwater quality at up and down streams in monitoring wells	Colour, Odour, Taste, Turbidity, pH, CaCO3, Iron , Chlorides , Fluoride, TDS, Ca2+, Mg2+, Cu, Mn, SO4, NO3, C6H5OH, Hg, Cd, Se, As, CN, Pb, Zn, Anionic Detergent (as MBAS)	Quarterly (4 times in a year covering every season)
		Cr6+, Mineral oil, Alkalinity as CaCO3, Aluminum (as Al)	
		Boron (as B), Total Coliform E.coli	
2	Monitoring of ambient air quality at landfill	BM_{10}, $BM_{2.5}$, CH_4, SO_x, NH_3, CO & NO_2	Twice a week per one month for each season.
3	Monitoring of leachate quality before and after treatment	pH, turbidity, TDS, TSS, Ammonical Nitrogen, Kjeldal Nitrogen, CN, Ntrates, Total hardness (as $CaCo_3$), Cl, F, Sulphates, Kjeldahl N, BOD, COD, Phenolic compounds (as C_6H_6 OH), heavy metals such as As, Hg, Pb, Cd, Cr, Cu, Zn, Ni, CN etc.	Monthly during rainy season
4	Monitoring of landfill gas quality	CH4, CO2, CO, H2S	Monthly
5	Monitoring of surface water quality from drain channel at the exit of landfill	pH, Dissolved Oxygen, BOD (3 Days at 27C°), Free Ammonia (as N), Sodium Adsorption Ratio, Boron	Monthly during rainy season & twice a year (one post monsoon, pre monsoon)
		Conductivity, Temperature	
		Turbidity, Magnessium Hardness (as CaCO3), Total Alkalinity (as CaCO3), Chloride (as Cl), sulphate (as SO4), Nitrate (as NO3), Fluoride (as F), Sodium (as Na), Potassium (as K)	
		TKN, Total Phosphorous (as PO4), COD, Phenolic compounds (as C6H5OH), Lead (as Pb), Iron (as Fe), Cadmium (as Cd), Zinc (as Zn), Arsenic (as As), Mercury (as Hg), Chromium (as Cr)	
		Nickel (as Ni), Total Coliform, Faecal Coliform	

The post-closure monitoring plan envisaged for the site is as mentioned below:

Table 8-3: Environmental Monitoring Plan during Post-Closure Period

Sl. No.	Activities to be Carried Out	Parameters to be Monitored	Duration of Monitoring
1	Monitoring of groundwater quality at up and down streams from monitoring wells	Colour, Odour, Taste, Turbidity, pH, CaCO3, Iron , Chlorides , Fluoride, TDS, Ca2+, Mg2+, Cu, Mn, SO4, NO3, C6H5OH, Hg, Cd, Se, As, CN, Pb, Zn, Anionic Detergent (as MBAS)	**Quarterly, for first five years. If there is no change in the groundwater quality, then annually for another 10 years**
		Cr6+, Mineral oil, Alkalinity as CaCO3, Aluminum (as Al)	
		Boron (as B), Total Coliform	
		E.coli	
2	Monitoring of ambient air quality at landfill	BM_{10}, $BM_{2.5}$, CH_4, SO_2, NH_3, H_2S & CO, NO_2	**For first five years bimonthly**
			For another 10 years, yearly
3	Monitoring of landfill gas quality	CH_4, CO_2& CO	**For first five years, bimonthly**
4	Monitoring of surface water quality from storm water drain channel at the exit of landfill	pH, Dissolved Oxygen, BOD (3 Days at 27C°), Free Ammonia (as N), Sodium Adsorption Ratio, Boron	**For first five years, quarterly.**
		Conductivity, Temperature	**For another 10 years, semi-annually.**
		Turbidity, Magnesium Hardness (as CaCO3), Total Alkalinity(as CaCO3), Chloride (as Cl), sulphate (as SO4), Nitrate (as NO3), Fluoride (as F), Sodium (as Na), Potassium (as K) TKN, Total Phosphorous (as PO4), COD, Phenolic compounds (as C6H5OH), Lead (as Pb), Iron (as Fe), Cadmium (as Cd), Zinc (as Zn), Arsenic (as As), Mercury (as Hg), Chromium (as Cr)	
		Nickel (as Ni), Total Coliform, Fecal Coliform	
5	Inspection of final cover to check,		**Quarterly**
	a. The vegetation growth is occurring satisfactorily without stunted growth		
	b. If any erosion gullies are formed		

Sl. No.	Activities to be Carried Out	Parameters to be Monitored	Duration of Monitoring
	exposing the barrier layer.		
	c. Identifying collection of water on landfill cover		
6	Inspection of surface water drainage system to check a. Cracks in drains and pipes due to settlements. b. Clogs in drains which need immediate cleaning		**Quarterly**

8.5.2 Environmental Monitoring Agency

BM should ensure periodical environmental monitoring with outsourcing it to established government/private organization. Generally Pollution Control Board has all the necessary equipments to cater the requirement of monitoring; hence Baruipur Municipality may take the services of Pollution Control Board in this regard.

CHAPTER 9 COST ESTIMATION

9.1 CAPITAL COST OF THE PROPOSED SCHEME

The implementation of the scheme is scheduled to complete by year 2019 after which commercial production of integrated facility will commence.

Table 9-1: Primary Collection System

Sl. No	Item	Unit Rate in INR	Required Number	Total Amount (INR) in Figures
1	House hold Bin 10 lit	120	36346	4,361,520.00
2	Tricycle van with 6 nos. of 50 lit bins	26780	36	964,080.00
2	6 nos. 50 lit bin for existing tricycle	590	270	159,300.00
4	Community bins- 100 lit capacity (2nos. bin in each location)	1829	272	497,488.00
5	Battery Operated auto rickshaw	140000	17	2,380,000.00
6	100 lit bins for battery operated auto rickshaw (4nos. bin in each auto rickshaw)	1829	68	124,372.00
7	Road side bins- 240 lit capacity (2nos. bin in each location)	3947	102	402,594.00
8	Auto tipper	860000	4	3,440,000.00
9	TT Container	185000	26	4,810,000.00
10	Tractor	700000	2	1,400,000.00
11	Wheel barrow for road sweeping & drain cleaning -110 lit	6925	52	360,100.00
	Total			**18,899,454.00**

Table 9-2: PPE Equipment Costing

PP Equipment Requirement				
Sl. No.	Equipments / Implements	Quantity	Unit Rate	Amount
1	Long hand brooms	40	100	4,000.00
2	Metal tray with Plate	40	110	4,400.00
3	M. S. Shovel	12	580	6,960.00
4	Gloves	149	170	25,330.00
5	Mask	149	55	8,195.00
6	Appron	149	285	42,465.00
7	Rain coat	149	620	92,380.00
8	Safety Boot	174	500	87,000.00
		Total		**270,730.00**

CHAPTER 9 COST ESTIMATION

9.1 CAPITAL COST OF THE PROPOSED SCHEME

The implementation of the scheme is scheduled to complete by year 2019 after which commercial production of integrated facility will commence.

Table 9-1: Primary Collection System

Sl. No	Item	Unit Rate in INR	Required Number	Total Amount (INR) in Figures
1	House hold Bin 10 lit	140	36346	5,088,440.00
2	Tricycle van with 6 nos. of 50 lit bins	26780	36	964,080.00
2	6 nos. 50 lit bin for existing tricycle	590	270	159,300.00
4	Community bins- 100 lit capacity (2nos. bin in each location)	1829	272	497,488.00
5	Battery Operated auto rickshaw	160000	17	2,720,000.00
6	100 lit bins for battery operated auto rickshaw (4nos. bin in each auto rickshaw)	1829	68	124,372.00
7	Road side bins- 240 lit capacity (2nos. bin in each location)	3947	102	402,594.00
8	Auto tipper	900000	4	3,600,000.00
9	TT Container	185000	26	4,810,000.00
10	Tractor	700000	2	1,400,000.00
11	Wheel barrow for road sweeping & drain cleaning -110 lit	6925	52	360,100.00
	Total			**20,126,374.00**

Table 9-2: PPE Equipment Costing

PP Equipment Requirement				
Sl. No.	Equipments / Implements	Quantity	Unit Rate	Amount
1	Long hand brooms	40	100	4,000.00
2	Metal tray with Plate	40	110	4,400.00
3	M. S. Shovel	12	580	6,960.00
4	Gloves	149	170	25,330.00
5	Mask	149	55	8,195.00
6	Appron	149	285	42,465.00
7	Rain coat	149	620	92,380.00
8	Safety Boot	174	500	87,000.00
			Total	**270,730.00**

Table 9-3: Vehicle Cost for Vermi-Compost Plant

Compost Plant Operation Vehicle				
Sl No.	Vehicle Type	Number	Unit Rate	Total Cost
1	Loader cum Backhoe	1	2500000	2,500,000.00
2	Tractor attached loader	1	1200000	1,200,000.00
3	Water tanker with slurry pump	1	300000	300,000.00
4	Tractor	1	700000	700,000.00
5	Tipping trolley	2	180000	360,000.00
6	Pushcart with 6 nos. bin 30 lit	6	13580	81,480.00
	Total			**5,141,480.00**

Table 9-4: Cost of Vehicle for Vermi-Compost Plant

Landfill Operation Vehicle				
Sl No.	Vehicle Type	Number	Unit Rate	Total Cost
1	Buldozer	1	7552000	7,552,000.00
2	Excavator	1	3072000	3,072,000.00
3	Dumper 6m3	1	1200000	1,200,000.00
	Total			**11,824,000.00**

SUMMARY OF COST OF COLLECTION VEHICLES AND O&M VEHICLES

Estimated Cost for SWM System	
A. Collection System	
A.1 Procurement of vehicles for Primary Collection & Secondary Transportation	**18,899,454.00**
A.2 Procurement PP Equipments for Primary Collection	**270,730.00**
B. Processing Plant	
B.1 Procurement of Vehicles for Operation of Vermi-Compost Plant	**5,141,480.00**
C. Sanitary Landfill	
C.1 Procurement of Vehicles for Operation of the Landfill	**11,824,000.00**
Sub Total	**36,135,664.00**
Contingency – 3%	**1,084,069.92**
Total	**37,219,733.92**

SWM Project Cost Sanctioning

Sl No.	Name of ULB	Project Cost (in Rs. Crore)	GoI Share (in Rs. Crore)	State Share (in Rs. Crore)	Additional State Share (in Rs. Crore)	ULB Share (Crore)	Project Period (in year)
1	**Baruipur Municipality**	**3.72***	1.30	0.44	1.80	0.18	2 yr

Executive Engineer
South Division, S & SWM
W & S Sector, KMDA

Superintending Engineer (S/O)
KMDA

15-12-17
Chief Engineer (S/O)
KMDA

Chief Engineer-In-Charge
Water & Sanitation Sector
K.M.D.A.

Chairman
Baruipur Municipality

CHAPTER 10 OPERATION AND MAINTENANCE ARRANGEMENT AND REVENUE GENERATION

10.1 O&M ARRANGMENTS & REVENUE

SWM will be under a separate department in the Baruipur Municipality. It is considered as emergency department and round the year service shall be rendered. There Asst. Engineers will be in charge of

- Landfill Site Manager
- Waste Processing Unit Manger
- City Conservancy service Manger.

They will be supported by Sub-Assistant Engineer and Sanitary Inspector. Other category staff shall be placed according to the necessity from manpower strength. Monitoring cell headed CEO and City Manager will daily monitor S.W.M. Services for the ULB and will prepare reports in the report format (Daily/Monthly/Quarterly/Annually) and publish annual administrative report along with preparation of draft SWM budget & Schedule of fees and charges.

10.1.1 Monitoring Cell as Sanitation Cell

Maintaining the sanitary condition of a town is one of the crucial aspects of sanitation apart from creating basic infrastructure. A successful operation requires a threefold attention for all the time as noted below.

A Strong 'Sanitation Cell' in the ULB comprising of.

- Municipal commissioner/ CEO;
- Environmental Engineer with his team sanitary Supervisory engineers;
- Municipal Health officer with his team of health inspectors and sanitary workers;
- Ward wise sanitary inspectors and general sanitary inspectors;
- A sub-cell of monitoring and grievance redressal system management professional team of at least 5 persons.

City Sanitation Task Force for taking monthly situation analysis on the city sanitation

- This task force shall take note of sanitation situation of the town once a month under chairmanship of Mayor/ Chairman of the ULB.

An informal body administering all day to day support in

- Awareness and Campaign;

- Indentifying the violators of sanitation rules;
- Institutional support services from
  - State Govt.
  - Civil Societies
  - Local NGOs
  - Elected representatives
  - Urban departments of the State Govt.
  - National Govt. (CPCB, CPHEEO)

District Magistrate or his representative shall sit quarterly with all the members and overview the sanitation situation. All dept shall provide all manpower & expertise with special assistance to sanitation and O& M where possible.

10.1.2 Operation and Maintenance Cost

The objective of a good maintenance programme is to keep the system in a good operating condition so that it can function efficiently throughout its design life. Lack of maintenance can have health implications as well as cause damage to properties when things go wrong. It is important that the operation and maintenance personnel continuously monitor the condition of the sanitation system to ensure proper functioning thereof. Inspection and testing provide the means for the monitoring activity. *Table 10.1* shows cost for manpower for operation of vehicles and equipments.

Table 10-1: Cost Requirement of Manpower for Operation of Vehicles and Equipments

Sl No	Equipments	Waste cum Sweeper collector			Drivers		
		Nos.	Salary	Amount	Nos.	Salary	Amount
1	Tricycle van with 6 nos. of 50 lit bins	81	7000	567000			
2	Wheel barrow for road sweeping & drain cleaning -110 lit	52	7000	364000			
3	Battery Operated auto rickshaw				17	7500	127500
4	Auto tipper				4	7500	30000
5	Movable Compactor				2	9000	18000
6	Tractor				6	8000	48000
Total		**133**		**931000**	**29**		**223500**

Table 10-2: Operation & Maintenance Cost of Primary Collection Equipments & Vehicles

Sl No.	Description of Items	Equipment Numbers	Operation Cost	Total	Maintenance Cost	Total	O&M Cost
1	Battery operated Auto Rickshaw	17	3540	60180	283	4814	64994
2	Auto tipper	4	11700	46800	936	3744	50544
3	Tractor	6	15600	93600	1248	7488	101088
4	Movable compactor	2	20800	41600	1664	3328	44928
Total			**51640**	**242180**	**4331**	**19374**	**261554**

O & M cost of Primary Waste Collection

- **O & M Cost** = 931,000+ 223,500+242,180+ 19,374= **1,416,054** **per Month**

O & M cost of Vermi Compost Plant

Table 10-3: O&M Cost of Manpower of Plant & SLF

O & M cost of Compost Plant & SLF				
Sl. No.	Position	Nos.	Salary	Amount
1	Plant Manager In-charge	1	20,000	20,000
2	Weigh Bridge Operator -	1	10,000	10,000
3	Labours	6	7,000	42,000
4	Tractor Attached Loader Driver & Front End Loader	1	12,000	12,000
5	Excavator & Bulldozer Driver	1	14,000	14,000
6	Security Guard	3	6,500	19,500
	Total			**117,500**

Table 10-4: Operational Cost Analysis for Vermi-Compost Plant & SLF

Sl. No.	Particulars	Amount (INR)
A	**Salary of Staff**	**117,500**
B	**Utilities, Consumables & Miscellaneous Supplies- per day**	
B.1	Fuel (Diesel)	67,860
B.2	Electricity - machine operation daily	20,000
	Utilities, Consumables & Miscellaneous Supplies Per Day	**87,860**

Sl. No.	Particulars	Amount (INR)
C	**Other Expenses**	
C.1	Repair and Maintenance of CP Machinery	8,000
C.2	Repair and Maintenance of CP Vehicles	5,000
C.3	Plant & Office Running Expenses	3,000
C.4	Quality check of Compost	1,000
	Other Expenses Per Year	**17,000**
	TOTAL (A+B+C)	**222,360**
TOTAL MONTHLY COST FOR OPERATION OF PLANTS		**222,360**

Table 10-5: Operational Monthly Expenditure

Sl. No.	O&M Cost (per month)	Amount (INR)
1	O & M cost of Primary collection and Secondary Transportation	1,416,054
2	O & M for Vermi Compost Plant & Sanitary Landfill	222,360
	Total (INR)	**1,638,414**

O & M Cost per month - **1,638,414.00 (INR)**

O & M Cost per year –**19,660,973.00 (INR)**

Escalation of O&M Cost per year after full utilization - 5.0%

Escalation Factor - 1.05

Table 10-6: Operation and Maintenance Charges calculation for 10 Years

Expenses	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
O&M cost for the Project	19,660,972.80	20,644,021.44	21,676,222.51	22,760,033.64	23,898,035.32	25,092,937.09	26,347,583.94	27,664,963.14	29,048,211.29	30,500,621.86

10.1.3 Revenue Generation

To make the system of cleaning the whole city on regular basis, the residential as well as commercial waste collection method has to be implemented. To make system self-sustainable, there is requirement of revenue collection by selling out recyclable items (non-biodegradable) and biodegradable wastes and by collecting user charges.

10.1.3.1 Proposed User Charges for Sanitation Services

Table 10-7: Proposed user Charges for sanitation services

Sl. No	Items		Nos.	Unit Rate	Amount per month
1	Household		17659	35	618,080.00
2	Shops		764	100	76,400.00
3	Markets		5	3000	15,000.00
4	Institution	Higher Secondary School	4	500	2,000.00
		Secondary School			
		Primary School	17	500	8,500.00
5	Restaurants & Hotel		30	1000	30,000.00
6	Health Centre	Hospital	2	800	1,600.00
		Nursing Home	8	500	4,000.00
7	Bank		25	500	12,500.00
8	Marriage Hall		22	1000	22,000.00
9	Auditorium		2	600	1,200.00
10	Cinema Hall		3	1000	3,000.00
Total (monthly)					**794,280.00**
Revenue from Proposed User Charges per annum					**9,531,360.00**

10.1.3.2 Revenue Generation from Recyclable Items

Table 10-8: Revenue Generation by Recyclable Items

Sl. no.	Parameter	AVERAGE % of each Parameter in Total quantity of Solid Waste (7 days)	Quantity in TPD (2019) 22	Unit rate per Ton	Total Amount	Amount Per Month
1	Metals	1.24%	0.201	10,000	2005.5	60,165
2	Glass & Ceramics	7.36%	1.111	7,500	8332.53	249,976
3	Leather	1.22%	0.184	7,000	1289.13	38,674
4	Plastic	4.92%	0.796	9,000	7161.58	214,847
Total (Monthly)						**563,662**
Revenue Generation by Recyclables Items per annum						**6,763,943**

10.1.3.3 Revenue Generation from Plant

Table 10-9: Revenue Generation by Biodegradable items

Sl. No.	Type	Unit Rate/Ton	Quantity (TPD)	Total Amount	Per Month	Per Annum
1	Vermi-Compost	4000	2.5	10,000.00	**300,000.00**	**3,600,000.00**

Table 10-10: Total Revenue Generation

Sl. No.	Revenue Generation (per Month)	Amount (INR) in Month
1	Revenue from Proposed User Charges	794,280.00
2	Revenue from selling out the recyclable items	563,662.00
3	Revenue from Compost	300,000.00
	Total Revenue per Monthly (INR)	**1,657,942.00**

Total monthly Revenue generation = **1,657,942.00 (INR)**

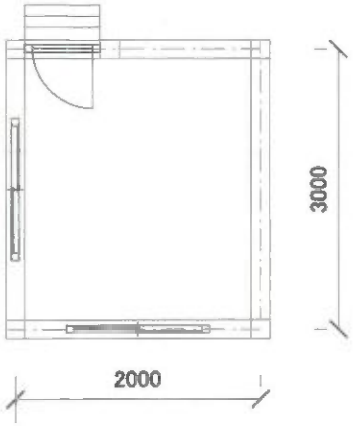
Total yearly Revenue generation = **19,895,304.00 (INR)**

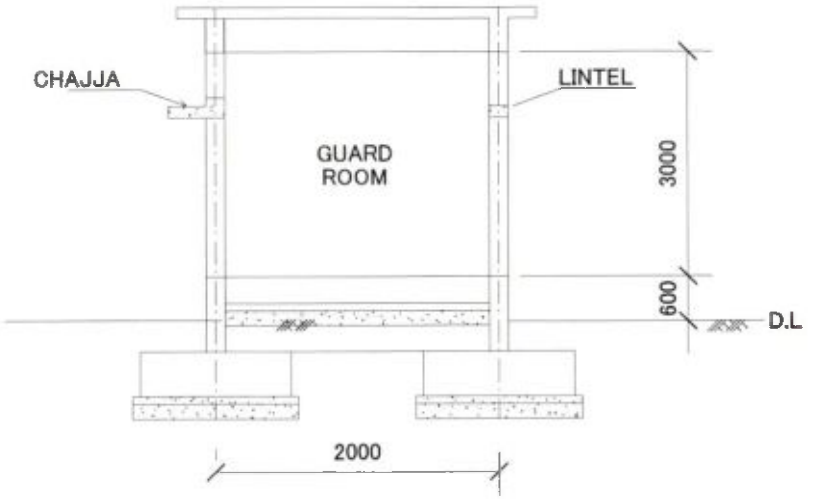
Escalation of Revenue after every 3years after full allocation - 20%

Escalation factor - 1.20

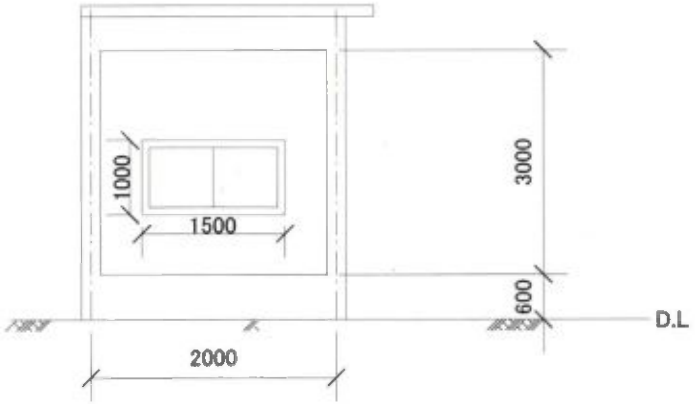
Table 10-11: Total Revenue Generation calculation for 10 years

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Total Revenue	13,633,331.33	16,786,119.86	23,874,363.18	23,874,363.18	23,874,363.18	28,649,235.82	28,649,235.82	28,649,235.82	34,379,082.99	34,379,082.99





SECTION



ELEVATION

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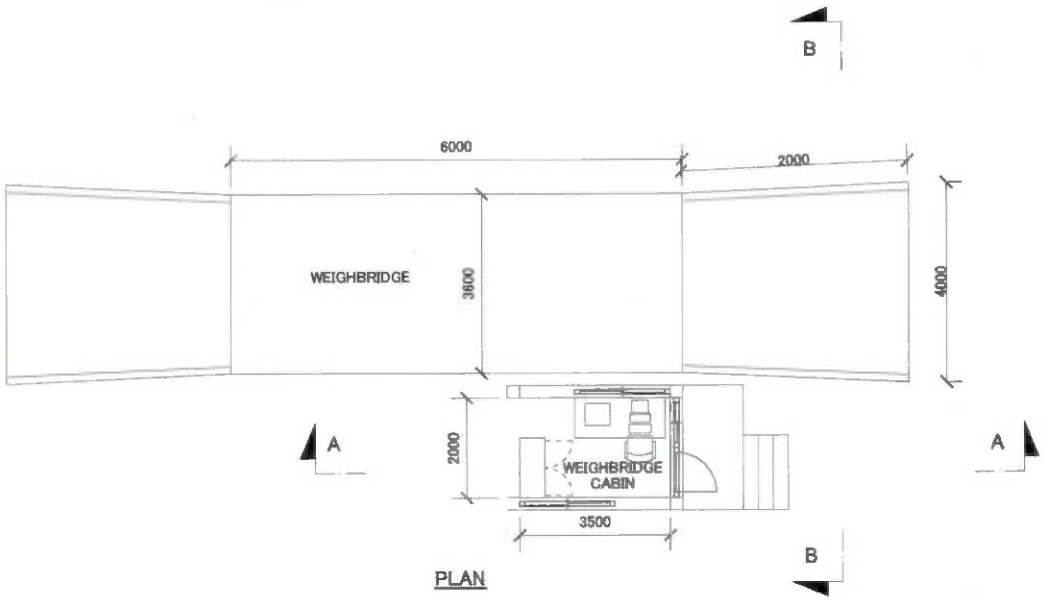
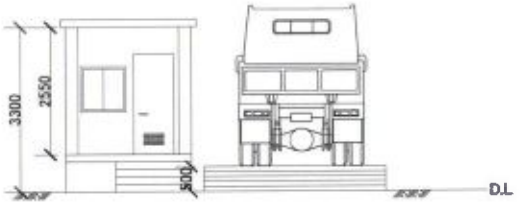
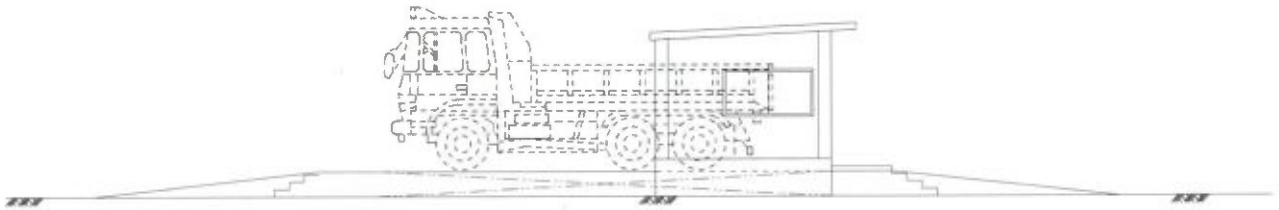
DRAWING TITLE:	TYPICAL GUARD ROOM DETAILS
ENVIRONMENTAL ENGINEERING SERVICES	
DWG NO B-1	



PLAN

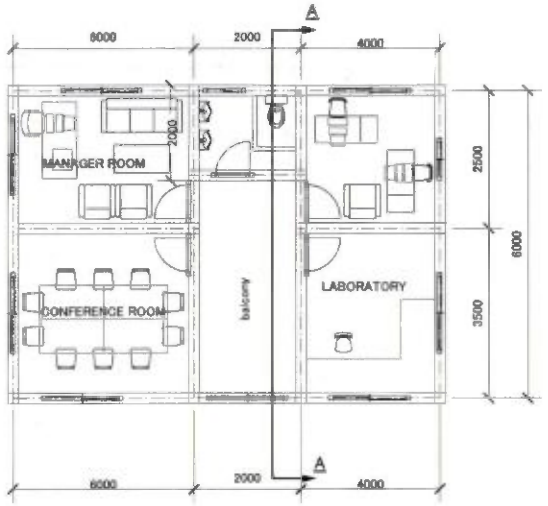


VIEW B-B

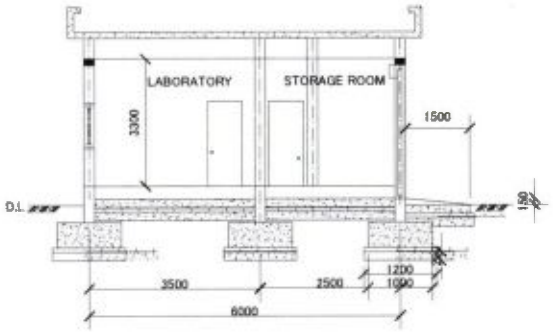


SECTION A-A

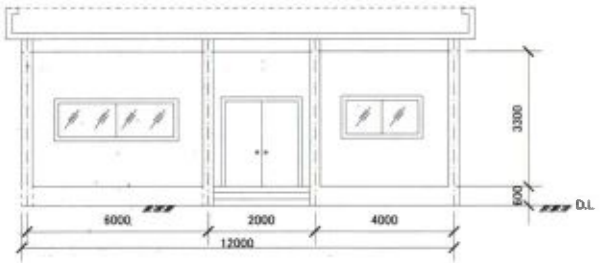
PROJECT TITLE:	BARUIPUR SWM PROJECT
DRAWING TITLE:	TYPICAL WEIGHBRIDGE & WEIGHBRIDGE CABIN DETAILS
PREPARED BY:	ENVIRONMENTAL ENGINEERING SERVICES
	DWG NO: B-2



FIRST FLOOR PLAN



SECTION AA



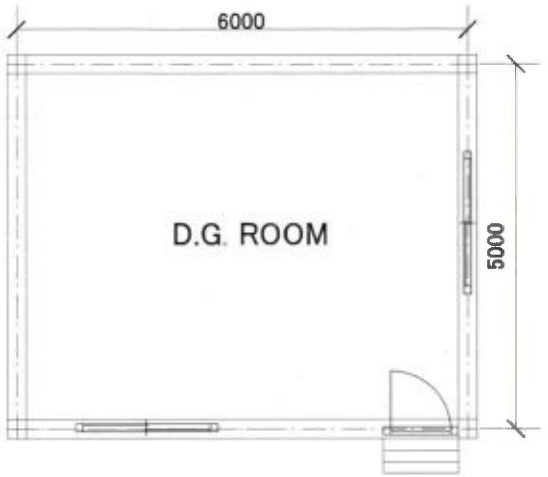
FRONT ELEVATION

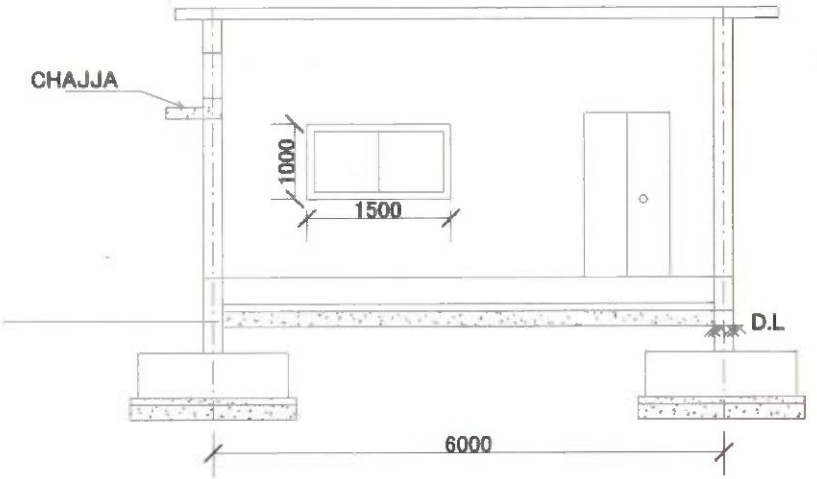
PROJECT TITLE:
BARUIPUR SWM PROJECT

DRAWING TITLE:
TYPICAL DRAWING OF WORKSHOP CUM ADMINISTRATIVE BUILDING OF BARUIPUR

PREPARED BY:
ENVIRONMENTAL ENGINEERING DIVISION

DWG NO:B-2





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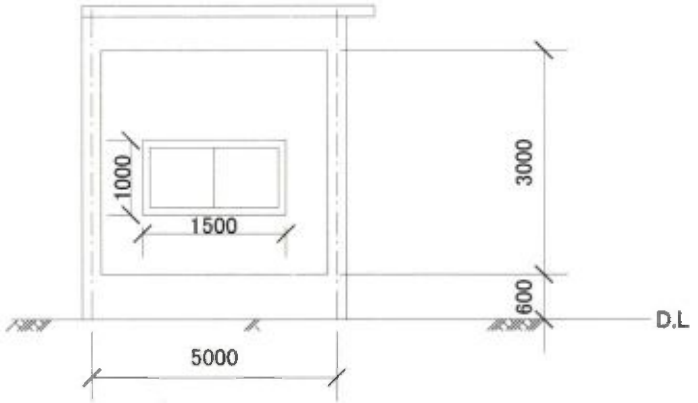
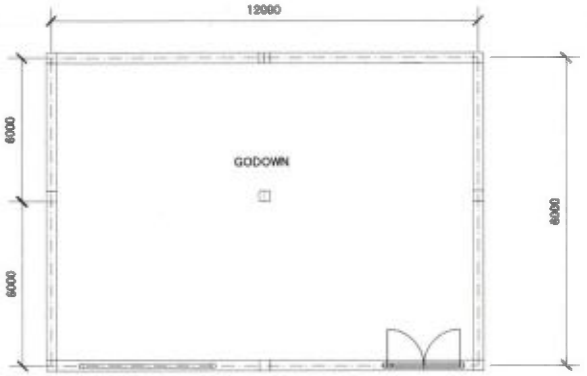
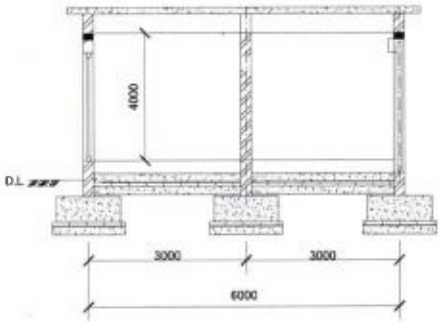


ELEVATION

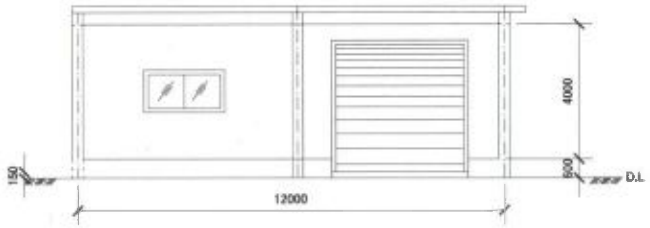
PROJECT TITLE:	BARUIPUR SWM PROJECT
DRAWING TITLE:	TYPICAL DETAILS D.G ROOM
PREPARED BY:	ENVIRONMENTAL ENGINEERING SERVICES
	DWG NO B-4



GROUND FLOOR PLAN

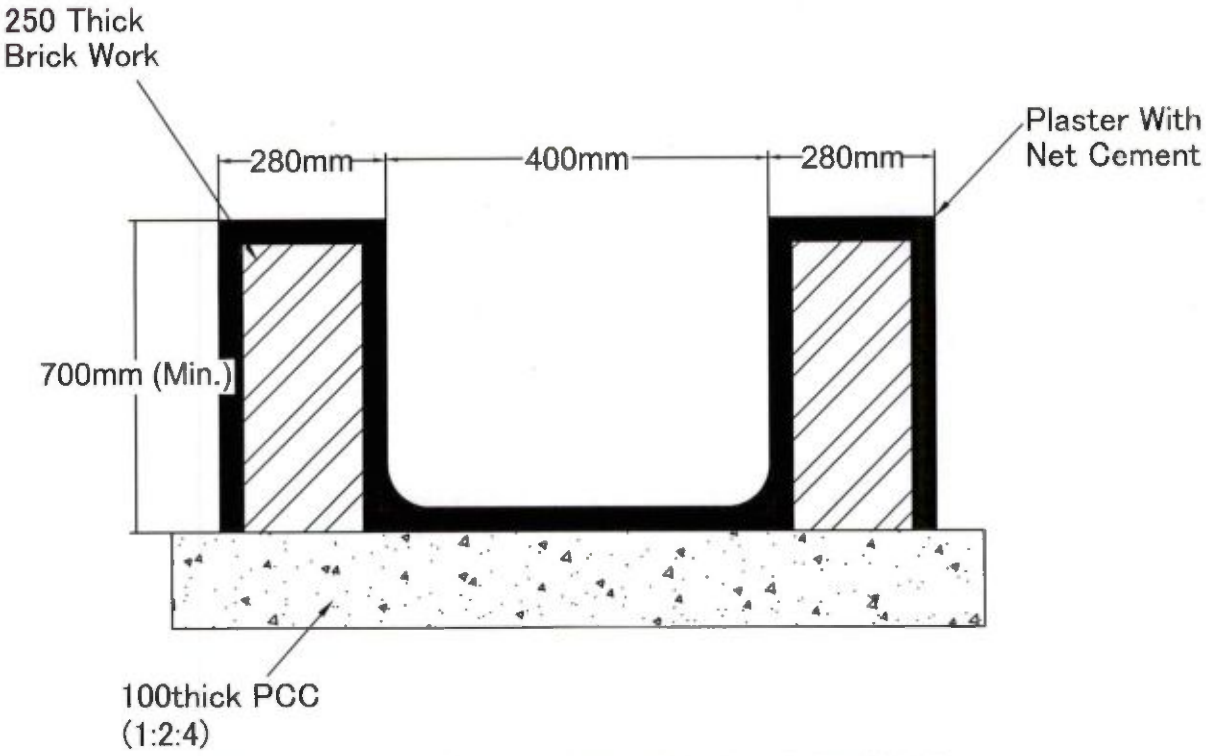


SECTION AA



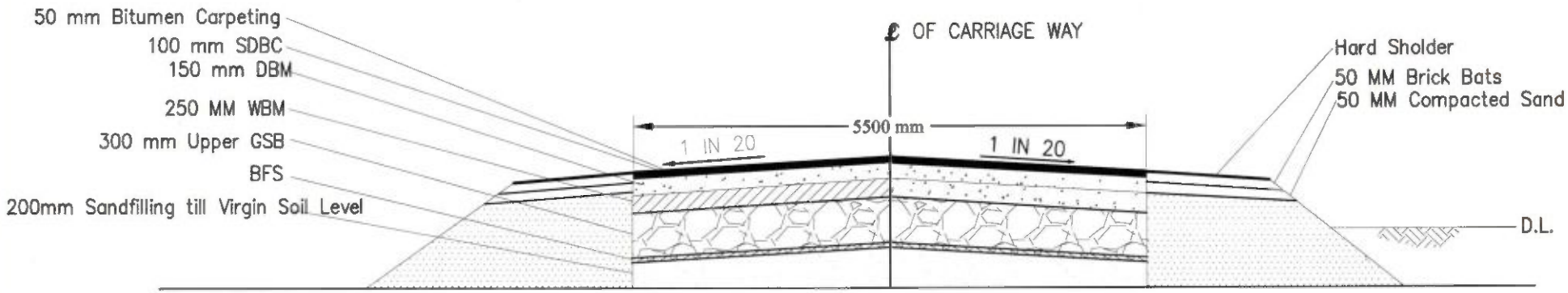
FRONT ELEVATION

PROJECT TITLE:	BANJIPUR SWM PROJECT
DRAWING TITLE:	TYPICAL DETAIL OF GODOWN
PREPARED BY	ENVIRONMENTAL ENGINEERING SERVICES
	DPR NO: D-5



TYPICAL CROSS SECTIONAL DETAILS OF OUTFALL OF STORM WATER DRAIN

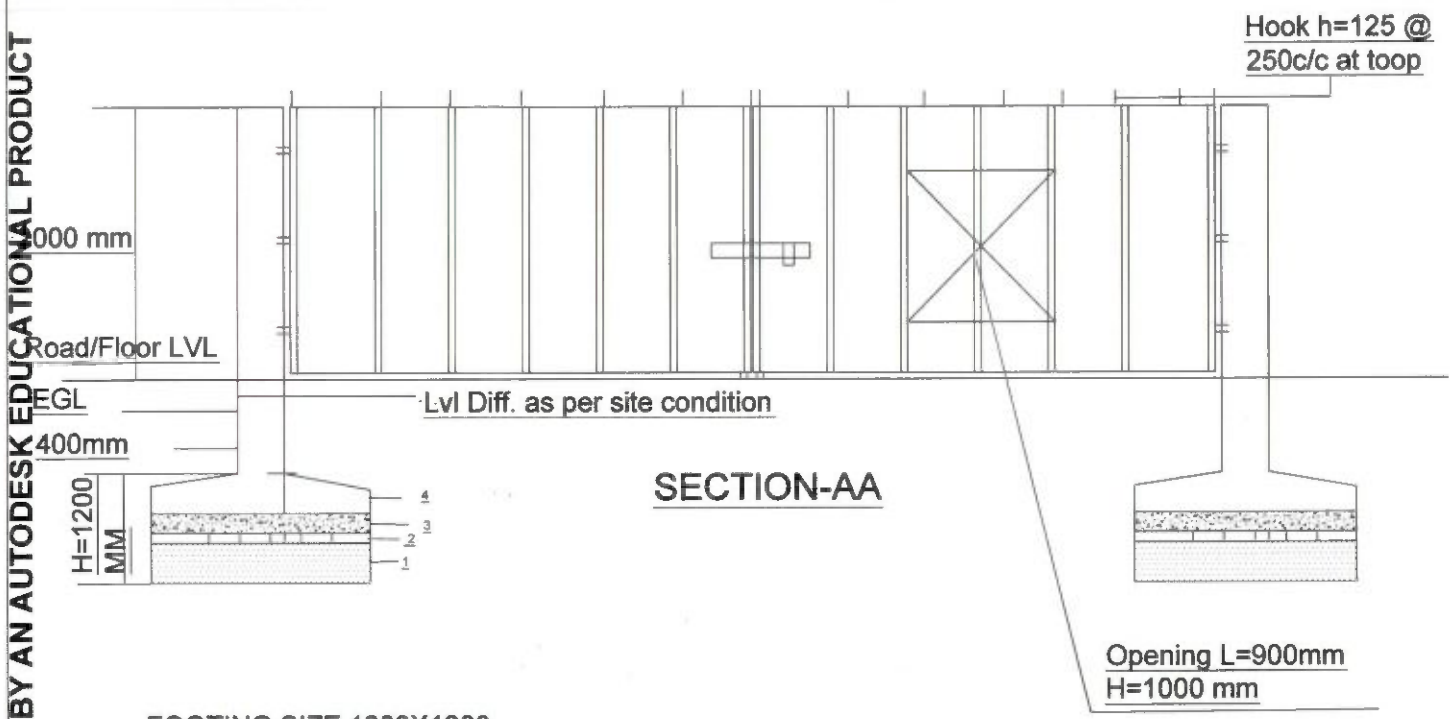
PROJECT TITLE: BARUIPUR SWM PROJECT
DRAWING TITLE: DETAIL OF STORM WATER DRAIN
PREPARED BY: ENVIRONMENTAL ENGINEERING SERVICES
DWG NO. B-6



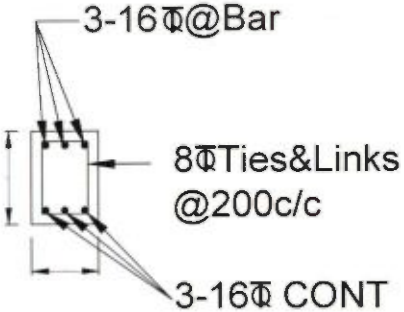
TYPICAL SECTION OF INTERNAL ROAD

PROJECT TITLE:	BARUIPUR SWM PROJECT
DRAWING TITLE:	TYPICAL SECTION OF INTERNAL ROAD
PREPARED BY:	ENVIRONMENTAL ENGINEERING SERVICES
	DWG NO: B-7

PLAN OF GATE



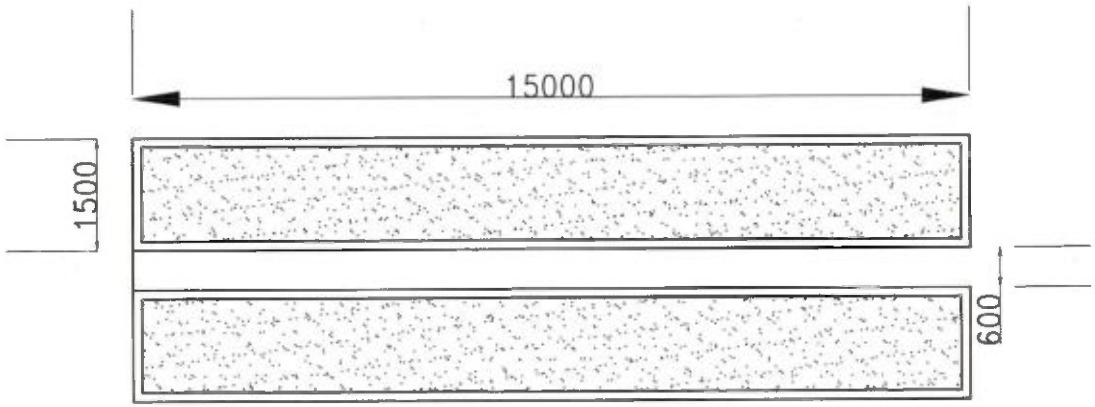
SECTION-AA



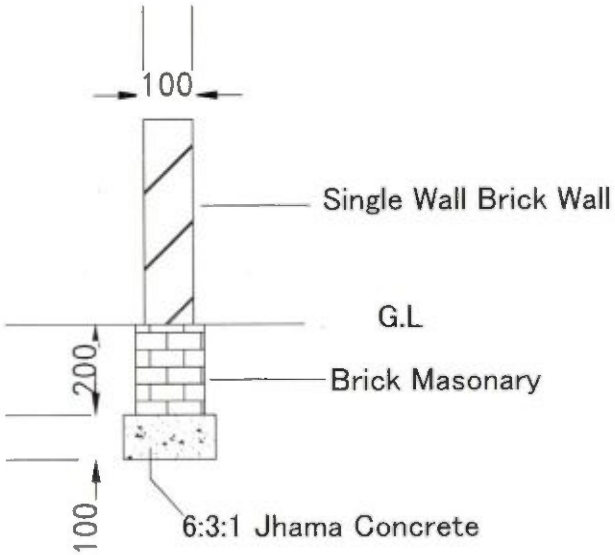
DETAIL OF COLUMN

FOOTING SIZE 1200X1200
and Reinforcement ,10mm
Dia & 150c/c bothways
1 SAND FILLING ,550MM,
2) SBFS-75mm,
3) PCC-100,mm
4) RCC-300 mm

CLIENT:	BARUIPUR SWM PROJECT
DRAWING TITLE:	DETAIL OF GATE
PREPARED BY:	ENVIRONMENTAL ENGINEERING SERVICES
	DWG NO. B-8



Vermi Pit 15m X 1.5m X 0.6m



PROJECT TITLE:	BARUIPUR SWM PROJECT
DRAWING TITLE:	TYPICAL PLAN OF VERMI PIT
PREPARED BY:	ENVIRONMENTAL ENGINEERING SERVICES
	DWG No. B-9

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

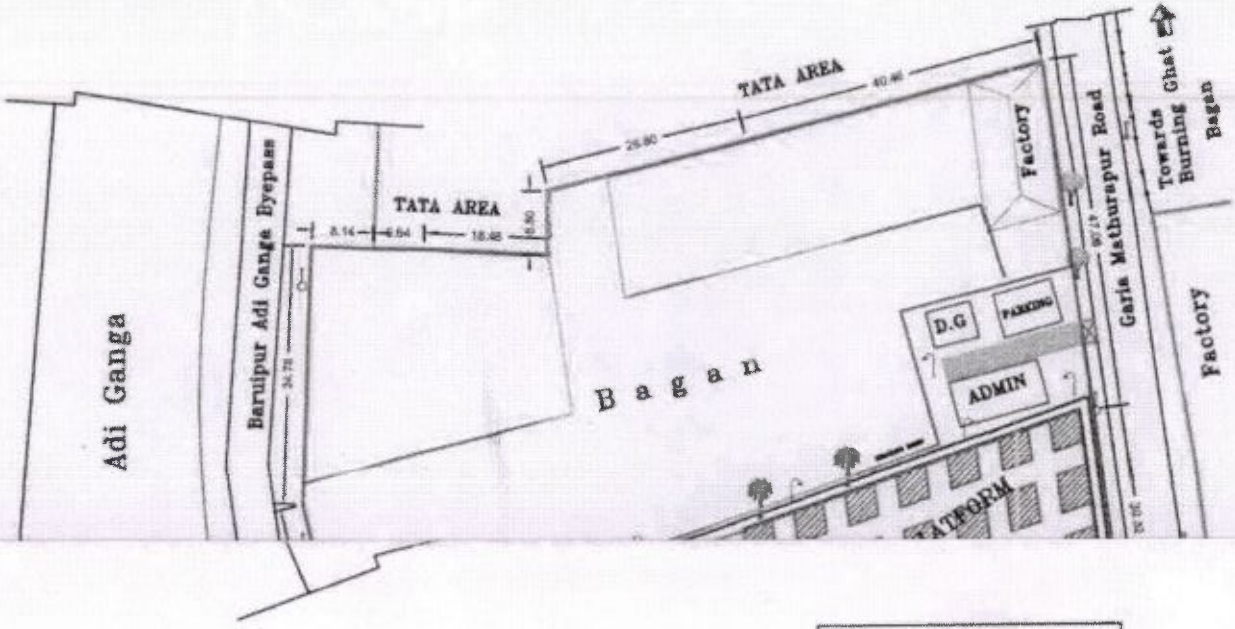
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

AIL PROJECT REPORT OF SCIENTIFIC
UNICIPAL SOLID WASTE MANAGEMENT
STEM UNDER BARUIPUR MUNICIPALITY

NVIRONMENTAL ENGINEERING SERVICES

OUT DRAWING OF VERMI COMPOST PLANT

f Junior Engineer ipur Municipality	Sign. of Chairman Baruipur Municipality



NORTH

MAGNETIC

LEGEND

S.L.	DESCRIPTION	SHOWN AS
1.	BUILDING	
2.	HUTMENT	
3.	EXISTING ROAD	
4.	DRAIN	
5.	BOUNDARY WALL	
6.	GATE	
7.	LIGHT POST	
8.	ELECTRIC POST	
9.	HITENSION POLE	
10.	TRANSFORMER	
11.	PROPERTY LINE	
12.	MUNICIPAL LAND	
13.	PROJECT AREA	

TITLE	DETAIL PROJECT REPORT OF SCIENTIFIC MUNICIPAL SOLID WASTE MANAGEMENT SYSTEM UNDER BARUIPUR MUNICIPALITY
PREPARED BY	ENVIRONMENTAL ENGINEERING SERVICES
	22.9.17
Sign. of Junior Engineer Baruipur Municipality	Sign. of Chairman Baruipur Municipality

ANNEXURE

Annexure number	Description of Items
1	Drawing of Guard Room
2	Drawing of weighbridge and weighbridge cabin details
3	Drawing of Administrative Building
4	Drawing of D.G Room
5	Drawing of Godown
6	Drawing of Storm Water Drain
7	Drawing of Internal Road of CP
8	Drawing of Gate and Boundary Wall
9	Drawing of Vermi-Compost Pit
10	Drawing of Baruipur Vermi-Compost Plant
11	Estimation of Admin Building
12	Estimation of Security Room
13	Estimation of Weighbridge Cabin
14	Estimation of Godown
15	Estimation of D.G Room
16	Estimation of Road of Vermi-Compost Plant
17	Estimation of Aerated Lagoon
18	Estimation of Storm Water Drain of CP & SLF-1
19	Estimation of Storm Water Drain of SLF-2
20	Estimation of Boundary Wall of CP & SLF-1
21	Estimation of Boundary Wall of SLF-2
22	Estimation of Leachate Sump
23	Estimation of Leachate Drain
24	Estimation of Vermi-Compost Platform
25	Estimation of Car Wash Pool
26	Door to Door SWM Survey Sheet
27	Vegetable Market SWM Survey Sheet
28	Institutions SWM Survey Sheet
29	Hotel & Restaurants SWM Survey Sheet
30	Hospital Nursing Home SWM Survey Sheet

HOUSEHOLD WASTE GENERATION SURVEY — BARUIPUR MUNICIPALITY

NAME OF WASTE HANDLER	Sanjay Nayak

Date	3.8.2017 to 8.8.2017

SL NO	WARD NO	NAME OF THE RESPONDENT	RESIDENTIAL ADDRESS	HOUSEHOLD SIZE	TOTAL QUANTITY OF WASTE PER DAY IN gms					Total 5 day	Per day	QUANTITY OF WASTE PER CAPITA PER DAY IN gms	REMARKS/OTHER DETAILS REGARDING SURVEY
1	6	Aruna Banerjee	Banerjee Para	4	330.00	1000.00	725.00	1230.00	1120.00	4405.00	881	220.25	
2	6	Kasenath Bisha	Banerjee Para	3	1180.00	1350.00	1865.00	780.00	465.00	5640.00	1128	376.00	
3	6	Arnab Day	Banerjee Para	3	400.00	850.00	695.00	520.00	550.00	3015.00	603	201.00	
4	6	Devando Gupto	Banerjee Para	4	1200.00	475.00	740.00	1175.00	1350.00	4940.00	988	247.00	
5	6	Robindo Gupto	Banerjee Para	5	1000.00	750.00	870.00	350.00	1440.00	4410.00	882	176.40	
6	6	Gopal Banerjee	Banerjee Para	6	2400.00	420.00	695.00	785.00	975.00	5275.00	1055	175.83	
7	6	Tripte Banerjee	Banerjee Para	2	500.00	570.00	735.00	360.00	725.00	2890.00	578	289.00	
8	6	Govindo Banerjee	Banerjee Para	4	1120.00	1160.00	1690.00	770.00	675.00	5415.00	1083	270.75	
9	6	Shivday Mondol	Banerjee Para	3	600.00	730.00	355.00	118.33	520.00	2323.33	464.66667	154.89	
10	6	Prafullo Shau	Banerjee Para	8	2100.00	1500.00	1110.00	138.75	430.00	5278.75	1055.75	131.97	
11	6	Mrityunjoy mukerjee	Banerjee Para	4	700.00	960.00	1650.00	412.50	910.00	4632.50	926.5	231.63	
12	6	Shabham Mondal	Banerjee Para	5	1300.00	1450.00	750.00	150.00	585.00	4235.00	847	169.40	
13	6	Somer	Banerjee Para	3	300.00	725.00	740.00	246.67	985.00	2996.67	599.33333	199.78	
14	6	Chirmoy Banerjee	Banerjee Para	4	100.00	890.00	840.00	210.00	1125.00	3165.00	633	158.25	
15	6	K Bhattaeharjee	Banerjee Para	4	500.00	685.00	825.00	206.25	720.00	2936.25	587.25	146.81	
16	6	Santanu Pal	Banerjee Para	4	500.00	1050.00	1115.00	278.75	1140.00	4083.75	816.75	204.19	
17	6	Alok Banerjee	Banerjee Para	2	300.00	875.00	945.00	472.50	725.00	3317.50	663.5	331.75	
18	6	Dev Das	Banerjee Para	3	500.00	730.00	765.00	255.00	970.00	3220.00	644	214.67	
19	6	S Mitro	Banerjee Para	5	1150.00	1100.00	1335.00	267.00	520.00	4372.00	874.4	174.88	
20	6	Supradeep Bosu	Banerjee Para	5	3000.00	1420.00	3915.00	783.00	420.00	9538.00	1907.6	381.52	

21	6	Arun Das	Budha para	4	1300.00	985.00	2840.00	710.00	610.00	6445.00	1289	322.25	
22	6	J Nath	Budha para	3	1190.00	870.00	1555.00	518.33	590.00	4723.33	944.66667	314.89	
23	6	Tilok Banerjee	Budha para	5	500.00	540.00	705.00	141.00	1295.00	3181.00	636.2	127.24	
24	6	Bablu Roy	Budha para	3	200.00	1050.00	1005.00	335.00	690.00	3280.00	656	218.67	
25	6	A Bhattacharjee	Budha para	4	500.00	875.00	1045.00	261.25	765.00	3446.25	689.25	172.31	
26	6	Gopal Day	Budha para	3	300.00	875.00	895.00	298.33	1130.00	3498.33	699.66667	233.22	
27	6	A Bhattacharjee	Budha para	4	500.00	1420.00	3785.00	946.25	970.00	7621.25	1524.25	381.06	
28	6	Gopal Day	Budha para	3	200.00	1100.00	365.00	121.67	1040.00	2826.67	565.33333	188.44	
29	6	Ashim Bhattacharjee	Budha para Puraton tanu	4	500.00	1420.00	715.00	178.75	1275.00	4088.75	817.75	204.44	
30	8	Gopal Chanda	Sada brata gat	4	1500.00	985.00	1440.00	360.00	1060.00	5345.00	1069	267.25	
31	8	Kasenath Saha	Sada brata gat	5	300.00	985.00	2095.00	419.00	870.00	4669.00	933.8	186.76	
32	8	Dipankar Saha	Sada brata gat	4	2200.00	820.00	115.00	3610.00	560.00	7305.00	1461	365.25	
33	8	Mina Munda	Sada brata gat	2	1100.00	710.00	665.00	660.00	910.00	4045.00	809	404.50	
34	8	Sulan Naskor	Sada brata gat	4	1000.00	530.00	770.00	650.00	570.00	3520.00	704	176.00	
35	8	Nilanjon Das	Sada brata gat	3	1500.00	1090.00	520.00	1390.00	810.00	5310.00	1062	354.00	
36	8	Atanu Mondol	Sada brata gat	4	2135.00	950.00	2915.00	1650.00	495.00	8145.00	1629	407.25	
37	8	Nonda Naskor	Sada brata gat	2	480.00	975.00	2240.00	750.00	690.00	5135.00	1027	513.50	
38	8	Shamol Monal	Sada brata gat	5	1500.00	1320.00	10770.00	740.00	850.00	15180.00	3036	607.20	
39	8	Ajit Bhowmick	Sada brata gat	3	1200.00	185.00	1330.00	840.00	2275.00	5830.00	1166	388.67	
40	8	p c Sarkar	Sada brata gat	4	1340.00	890.00	1060.00	825.00	1240.00	5355.00	1071	267.75	
41	8	Devpal Sarkar	Sada brata gat	3	300.00	960.00	1670.00	1115.00	1540.00	5585.00	1117	372.33	
42	8	N N Dey	Sada brata gat	5	750.00	750.00	2300.00	945.00	975.00	5720.00	1144	228.80	
43	8	Jaydev Haldar	Sada brata gat	4	700.00	650.00	7270.00	4240.00	845.00	13705.00	2741	685.25	
44	8	Prrbote Datto	Sada brata gat	9	3000.00	560.00	770.00	337.50	675.00	5342.50	1068.5	118.72	
45	8	S Datto	Sada brata gat	5	1400.00	420.00	4940.00	2775.00	830.00	10365.00	2073	414.60	
46	8	Soste Mukurjee	Sada brata gat	5	1700.00	1225.00	1540.00	560.00	805.00	5830.00	1166	233.20	
47	8	L Datto	Sada brata gat	1	200.00	125.00	190.00	250.00	240.00	1005.00	201	201.00	

48	8	Biplib Bisha	Sada brata gat	3	500.00	600.00	880.00	920.00	875.00	3775.00	755	251.67	
49	8	Tredav Bisha	Sada brata gat	2	500.00	420.00	1470.00	1050.00	1450.00	4890.00	978	489.00	
50	8	Tapan Day	Sada brata gat	2	400.00	630.00	1365.00	1370.00	700.00	4465.00	893	446.50	
51	8	Kajol Kundu	Sada brata gat	3	500.00	850.00	520.00	1050.00	440.00	3360.00	672	224.00	
52	8	Prasanta Ghosh	Sada brata gat	3	1300.00	2775.00	225.00	2880.00	870.00	8050.00	1610	536.67	
53	8	C Datto	Sada brata gat	7	1200.00	1050.00	1005.00	1980.00	1210.00	6445.00	1289	184.14	
54	8	Mahakanto Jha	Sada brata gat	4	6250.00	1870.00	2115.00	2640.00	805.00	13680.00	2736	684.00	
55	8	Purnima Haldar	Sada brata gat	3	1800.00	405.00	1365.00	3030.00	690.00	7290.00	1458	486.00	
56	8	Srivirte mirtro	Sada brata gat	4	200.00	910.00	1220.00	2610.00	595.00	5535.00	1107	276.75	
57	8	Somir Das	Sada brata gat	3	1300.00	1315.00	1650.00	320.00	1140.00	5725.00	1145	381.67	
58	8	Sapan Naskor	Sada brata gat	5	600.00	2125.00	945.00	3020.00	535.00	7225.00	1445	289.00	
59	8	Modanmoun Haldar	Sada brata gat	4	650.00	210.00	155.00	5610.00	2850.00	9475.00	1895	473.75	
60	8	Boblu mondal	Sada brata gat	4	800.00	3230.00	775.00	880.00	745.00	6430.00	1286	321.50	
61	8	Pridip Roy	Sada brata gat	4	900.00	1820.00	1125.00	860.00	795.00	5500.00	1100	275.00	
62	7	Arun Ghosh	Police Berck Rood	3	400.00	450.00	605.00	380.00	420.00	2255.00	451	150.33	
63	7	S S Ghosh	Police Berck Rood	5	500.00	530.00	710.00	2870.00	975.00	5585.00	1117	223.40	
64	7	Jayanta Saha	Police Berck Rood	4	900.00	1130.00	1595.00	400.00	985.00	5010.00	1002	250.50	
65	7	Biswajit Pal	Police Berck Rood	4	860.00	4060.00	425.00	1760.00	820.00	7925.00	1585	396.25	
66	7	Susant Pal	Police Berck Rood	3	1600.00	2535.00	805.00	530.00	710.00	6180.00	1236	412.00	
67	7	Devotoshe Noth	Police Berck Rood	7	1500.00	1560.00	1020.00	320.00	530.00	4930.00	986	140.86	
68	7	Amol Nath	Police Berck Rood	5	350.00	960.00	940.00	950.00	1090.00	4290.00	858	171.60	
69	7	Napur Nath	Police Berck Rood	3	1000.00	1490.00	1420.00	2330.00	930.00	7170.00	1434	478.00	
70	7	Susanto Chakroborty	Saha Para	5	2650.00	605.00	3560.00	1340.00	1465.00	9620.00	1924	384.80	
71	7	Subroto Chokobrty	Saha Para	4	580.00	290.00	1075.00	910.00	390.00	3245.00	649	162.25	
72	7	Roma Saha	Saha Para	4	125.00	2810.00	425.00	1315.00	460.00	5135.00	1027	256.75	
73	7	Chittaranjan Saha	Saha Para	5	265.00	1325.00	1375.00	2125.00	1475.00	6565.00	1313	262.60	
74	7	Ashok Saha	Saha Para	2	575.00	250.00	2750.00	210.00	950.00	4735.00	947	473.50	

75	7	Ghour Saha	Saha Para	5	765.00	1065.00	880.00	3230.00	975.00	6915.00	1383	276.60	
76	7	Siddharth Saha	Saha Para	3	555.00	2505.00	690.00	1820.00	1320.00	6890.00	1378	459.33	
77	7	Aruna Saha	Saha Para	4	920.00	1595.00	0.00	155.00	185.00	2855.00	571	142.75	
78	7	Naran Saha	Saha Para	5	1100.00	680.00	1420.00	2125.00	530.00	5855.00	1171	234.20	
79	7	Lokikanto Saha	Saha Para	5	2350.00	840.00	1650.00	3745.00	590.00	9175.00	1835	367.00	
80	7	D Saha	Saha Para	2	1350.00	215.00	1910.00	2005.00	475.00	5955.00	1191	595.50	
81	7	Supal Saha	Saha Para	4	450.00	1650.00	1710.00	1175.00	1265.00	6250.00	1250	312.50	
82	7	Suval Saha	Saha Para	3	365.00	1410.00	1490.00	555.00	975.00	4795.00	959	319.67	
83	7	Shamal Kumar Saha	Saha Para	2	265.00	560.00	280.00	645.00	705.00	2455.00	491	245.50	
84	7	Ajoy Saha	Saha Para	3	275.00	810.00	1050.00	1720.00	430.00	4285.00	857	285.67	
85	7	Delip Saha	Saha Para	2	665.00	830.00	370.00	490.00	1145.00	3500.00	700	350.00	
86	7	Sujoy Saha	Saha Para	5	525.00	1765.00	1810.00	0.00	1070.00	5170.00	1034	206.80	
87	7	Somar Saha	Saha Para	3	235.00	2265.00	0.00	835.00	875.00	4210.00	842	280.67	
88	7	Mrityunjoy Saha	Saha Para	7	1200.00	1235.00	630.00	2110.00	785.00	5960.00	1192	170.29	
89	7	Basudev Saha	Saha Para	4	750.00	390.00	1130.00	335.00	1560.00	4165.00	833	208.25	
90	7	Somir Saha	Saha Para	4	500.00	1330.00	0.00	0.00	2015.00	3845.00	769	192.25	
91	7	Biswanath Saha	Saha Para	3	650.00	195.00	3060.00	440.00	1465.00	5810.00	1162	387.33	
92	7	Sanjoj Saha	Saha Para	4	2000.00	725.00	1370.00	175.00	710.00	4980.00	996	249.00	
93	7	Sambonath Saha	Saha Para	3	365.00	730.00	1050.00	1525.00	470.00	4140.00	828	276.00	
94	7	Sanat Kumar Saha	Saha Para	3	365.00	965.00	2880.00	1005.00	835.00	6050.00	1210	403.33	
95	7	Sasthi Saha	Saha Para	6	400.00	310.00	1980.00	890.00	375.00	3955.00	791	131.83	
96	7	Soma Saha	Saha Para	4	190.00	1705.00	2640.00	620.00	420.00	5575.00	1115	278.75	
97	7	Goutam Saha	Saha Para	8	1500.00	1365.00	3030.00	1330.00	745.00	7970.00	1594	199.25	
98	7	Kasenath Saha	Saha Para	3	1200.00	1150.00	2610.00	765.00	1365.00	7090.00	1418	472.67	
99	7	Lakhikanta Saha	Saha Para	5	250.00	1665.00	320.00	1345.00	465.00	4045.00	809	161.80	
100	7	Ashis Saha	Saha Para	5	2000.00	1460.00	3020.00	1110.00	520.00	8110.00	1622	324.40	
101	7	Alok saha	Saha Para	3	100.00	980.00	5610.00	3090.00	695.00	10475.00	2095	698.33	

102	7	Lakhikanta Saha	Saha Para	5	750.00	415.00	880.00	100.00	3045.00	5190.00	1038	207.60	
103	7	S . R Saha	Saha Para	5	565.00	830.00	860.00	3210.00	1230.00	6695.00	1339	267.80	
104	7	Ashok Saha	Saha Para	5	2000.00	1645.00	380.00	370.00	1425.00	5820.00	1164	232.80	
105	1	Shibu das Mondol	Dey Para	6	500.00	435.00	2870.00	440.00	1175.00	5420.00	1084	180.67	
106	1	Modan Mondal	Dey Para	4	650.00	1895.00	400.00	1105.00	770.00	4820.00	964	241.00	
107	1	Bata Krisria	Dey Para	3	1450.00	1775.00	1760.00	1190.00	0.00	6175.00	1235	411.67	
108	1	Manesh Mondol	Dey Para	4	1275.00	890.00	530.00	2870.00	550.00	6115.00	1223	305.75	
109	1	Molay Mondal	Dey Para	6	1500.00	665.00	320.00	1000.00	1355.00	4840.00	968	161.33	
110	1	Kriki Kanto	Dey Para	4	365.00	1010.00	950.00	2480.00	990.00	5795.00	1159	289.75	
111	1	Bidun Mondal	Dey Para	4	1500.00	500.00	2330.00	200.00	2310.00	6840.00	1368	342.00	
112	1	H. R Paik	Dey Para	4	900.00	1780.00	1340.00	1650.00	630.00	6300.00	1260	315.00	
113	1	Avijit Mondal	Dey Para	5	265.00	3800.00	440.00	1840.00	1915.00	8260.00	1652	330.40	
114	1	Puranado Mondal	Dey Para	3	310.00	950.00	1450.00	200.00	0.00	2910.00	582	194.00	
115	1	Suvat sakha purkit	Dey Para	5	1775.00	0.00	1570.00	1900.00	295.00	5540.00	1108	221.60	
116	1	Amar Saha	Dey Para	4	2150.00	1320.00	1440.00	3110.00	915.00	8935.00	1787	446.75	
117	1	Sanal Ray	Dey Para	3	365.00	0.00	2600.00	2410.00	1510.00	6885.00	1377	459.00	
118	1	SuroJit Haldar	Dey Para	16	3500.00	840.00	220.00	940.00	2505.00	8005.00	1601	100.06	
119	1	J . Saha	Dey Para	5	1200.00	925.00	1960.00	330.00	805.00	5220.00	1044	208.80	
120	1	Sama sunder Banerjee	Dey Para	5	1225.00	2020.00	3210.00	755.00	590.00	7800.00	1560	312.00	
121	1	Raju Banerjee	Dey Para	15	3065.00	400.00	1220.00	570.00	310.00	5565.00	1113	74.20	
122	1	Saymal Baitya	Dey Para	4	3100.00	635.00	1060.00	660.00	1705.00	7160.00	1432	358.00	
123	1	Surjo Banerjee	Dey Para	3	1875.00	1110.00	0.00	1010.00	1365.00	5360.00	1072	357.33	
124	1	Tapas Nath	Dey Para	4	1250.00	3090.00	1050.00	0.00	1150.00	6540.00	1308	327.00	
125	1	Sumita Bhowmiet	Dey Para	4	3500.00	100.00	430.00	540.00	1665.00	6235.00	1247	311.75	
126	1	A .B. Nijar	Dey Para	4	340.00	3210.00	280.00	1665.00	1460.00	6955.00	1391	347.75	
127	1	Hamit Malla	Dey Para	2	2350.00	370.00	1860.00	0.00	980.00	5560.00	1112	556.00	
128	1	Uhama Saha	Dey Para	4	530.00	440.00	3010.00	405.00	415.00	4800.00	960	240.00	

129	1	G . C. Parmanik	Dey Para	3	640.00	1105.00	0.00	1135.00	830.00	3710.00	742	247.33	
130	1	Puja Sane	Dey Para	2	3200.00	1190.00	0.00	2650.00	1645.00	8685.00	1737	868.50	
131	1	Bisnu Munda	Dey Para	3	1200.00	2870.00	800.00	1320.00	395.00	6585.00	1317	439.00	
132	17	Eala Roy	Station Road	5	115.00	1000.00	910.00	1775.00	435.00	4235.00	847	169.40	
133	17	Laki Ghosh	Station Road	2	225.00	2480.00	200.00	805.00	1895.00	5605.00	1121	560.50	
134	17	Rabin Base	Station Road	3	200.00	200.00	1300.00	1175.00	1775.00	4650.00	930	310.00	
135	17	S.S Das Gupta	Station Road	2	1700.00	1650.00	270.00	555.00	890.00	5065.00	1013	506.50	
136	17	Rupas Kanu	Station Road	5	350.00	1840.00	1140.00	645.00	665.00	4640.00	928	185.60	
137	17	Bejoy ram Kanu	Station Road	3	975.00	200.00	600.00	1720.00	1010.00	4505.00	901	300.33	
138	17	Lakiram Kajal	Station Road	5	950.00	1900.00	1980.00	490.00	1330.00	6650.00	1330	266.00	
139	17	Shela Kanu	Station Road	4	1200.00	3110.00	660.00	0.00	765.00	5735.00	1147	286.75	
140	17	Pradip Kanu	Station Road	2	1350.00	2410.00	320.00	835.00	1345.00	6260.00	1252	626.00	
141	17	Shuton Basu	Station Road	3	450.00	260.00	820.00	2110.00	870.00	4510.00	902	300.67	
142	17	Guttam Karmakar	Station Road	4	350.00	620.00	870.00	335.00	550.00	2725.00	545	136.25	
143	17	D .M . Mosko	Station Road	3	165.00	1410.00	1550.00	0.00	1225.00	4350.00	870	290.00	
144	17	Monje Sarkar	Station Road	12	3050.00	310.00	2180.00	440.00	625.00	6605.00	1321	110.08	
145	17	Devatos nath Sarkar	Station Road	4	400.00	280.00	0.00	175.00	0.00	855.00	171	42.75	
146	17	Hori das Roy	Station Road	5	2500.00	1140.00	0.00	1525.00	995.00	6160.00	1232	246.40	
147	17	Ajoy Kumar	Station Road	6	1250.00	1460.00	640.00	1005.00	1655.00	6010.00	1202	200.33	
148	17	Jyota Das	Station Road	3	450.00	1430.00	0.00	890.00	705.00	3475.00	695	231.67	
149	17	Depa Misra	Station Road	2	230.00	1830.00	940.00	620.00	300.00	3920.00	784	392.00	
150	17	Jayanta Banerjee	Umacharan Roy Road	8	365.00	1030.00	0.00	1330.00	495.00	3220.00	644	80.50	
151	17	Tomal Banerjee	Umacharan Roy Road	4	1675.00	960.00	2230.00	765.00	1050.00	6680.00	1336	334.00	
152	17	Hanip Misteri	Kabi Nazrul Sarani	7	4600.00	210.00	1300.00	1345.00	1105.00	8560.00	1712	244.57	
153	17	Topa ali Mistri	Kabi Nazrul Sarani	7	2560.00	740.00	0.00	870.00	1015.00	5185.00	1037	148.14	
154	17	Rodin Mister	Kabi Nazrul Sarani	4	1200.00	1180.00	1850.00	550.00	1020.00	5800.00	1160	290.00	
155	17	Smajal Mister	Kabi Nazrul Sarani	5	1300.00	390.00	1200.00	1225.00	1000.00	5115.00	1023	204.60	

156	17	Nazrul Mister	Kabi Nazrul Sarani	4	1250.00	655.00	940.00	625.00	1690.00	5160.00	1032	258.00	
157	17	Samesure Misiter	Kabi Nazrul Sarani	4	850.00	2110.00	330.00	0.00	355.00	3645.00	729	182.25	
158	17	Safiuddin Mister	Kabi Nazrul Sarani	4	3500.00	510.00	755.00	995.00	1110.00	6870.00	1374	343.50	
159	17	Ashour Ali	Kabi Nazrul Sarani	5	350.00	1010.00	570.00	1655.00	1650.00	5235.00	1047	209.40	
160	17	Astap ali Malla	Kabi Nazrul Sarani	4	1100.00	1290.00	660.00	705.00	750.00	4505.00	901	225.25	
161	17	Hapiy Salma	Kabi Nazrul Sarani	3	2675.00	1070.00	1010.00	300.00	740.00	5795.00	1159	386.33	
162	17	K. E Mondal	Kabi Nazrul Sarani	2	800.00	350.00	0.00	495.00	840.00	2485.00	497	248.50	
163	17	Jakir Hossin	Kabi Nazrul Sarani	4	1200.00	1080.00	540.00	1050.00	825.00	4695.00	939	234.75	
164	17	Narul Habu mulla	Kabi Nazrul Sarani	3	2000.00	2060.00	1665.00	1105.00	1115.00	7945.00	1589	529.67	
165	17	Sabik Mouisher	Kabi Nazrul Sarani	4	1350.00	520.00	0.00	1015.00	945.00	3830.00	766	191.50	
166	17	M .B . Ali	Kabi Nazrul Sarani	7	2950.00	580.00	405.00	1020.00	765.00	5720.00	1144	163.43	
167	17	M .D Ahmed	Kabi Nazrul Sarani	6	1750.00	2730.00	1135.00	1000.00	1335.00	7950.00	1590	265.00	
168	17	Fazalum Raman	Kabi Nazrul Sarani	3	2100.00	2080.00	2650.00	865.00	3915.00	11610.00	2322	774.00	
169	17	Hafez Abur	Kabi Nazrul Sarani	7	1350.00	1050.00	1320.00	0.00	890.00	4610.00	922	131.71	
170	17	Kadir Mallt	Kabi Nazrul Sarani	4	1750.00	830.00	1775.00	1520.00	825.00	5875.00	1175	293.75	
171	17	Abut khair malla	Kabi Nazrul Sarani	4	1050.00	1780.00	805.00	805.00	375.00	4440.00	888	222.00	
172	17	Masubul Hussan	Kabi Nazrul Sarani	5	750.00	3610.00	1175.00	300.00	1200.00	7035.00	1407	281.40	
173	17	j . U Naskar	Kabi Nazrul Sarani	4	350.00	660.00	555.00	505.00	560.00	2630.00	526	131.50	
174	17	Mester Elise	Kabi Nazrul Sarani	5	1500.00	650.00	645.00	1060.00	420.00	4275.00	855	171.00	
175	17	Amorfaru	Kabi Nazrul Sarani	3	550.00	1390.00	1720.00	285.00	1225.00	5170.00	1034	344.67	
176	17	Mukter Mondal	Kabi Nazrul Sarani	13	3060.00	3000.00	4500.00	4725.00	2960.00	18245.00	3649	280.69	
177	17	Karim Misteri	Kabi Nazrul Sarani	4	1200.00	850.00	0.00	1550.00	600.00	4200.00	840	210.00	
178	17	Rohim mister	Kabi Nazrul Sarani	5	850.00	500.00	835.00	790.00	1420.00	4395.00	879	175.80	
179	17	A. M . Mister	Kabi Nazrul Sarani	4	450.00	660.00	2110.00	1310.00	4240.00	8770.00	1754	438.50	
180	3	ASHOKE NASKAR	121/A ,158 KULPI ROAD	2	1040.00	1340.00	335.00	1655.00	1420.00	4370.00	874	437.00	
181	3	SANJOY NASKAR	850 BARUIPUR RAILGATE	3	1000.00	840.00	0.00	2330.00	775.00	4945.00	989	329.67	
182	3	RNENDU SEKHAR NASK	123 BARUIPUR RAIL GATE	5	630.00	500.00	440.00	505.00	560.00	2635.00	527	105.40	

183	3	AVOY NASKAR	BARUIPUR RAIL GATE	5	1200.00	1780.00	175.00	920.00	2250.00	6325.00	1265	253.00	
184	3	BIREN NASKAR	BARUIPUR RAIL GATE	3	1060.00	800.00	1525.00	785.00	920.00	5090.00	1018	339.33	
185	3	SATYAJIT HALDAR	BARUIPUR RAIL GATE	3	1520.00	950.00	1005.00	365.00	1050.00	4890.00	978	326.00	
186	3	CHANDRA SEKHAR ARY	BARUIPUR RAIL GATE	3	1360.00	0.00	890.00	715.00	1870.00	4835.00	967	322.33	
187	3	DILIP DAS	263 BARUIPUR RAIL GATE	2	1030.00	1320.00	620.00	1440.00	330.00	4740.00	948	474.00	
188	3	ARABINDA NASKAR	BARUIPUR RAIL GATE	8	2000.00	0.00	1330.00	2095.00	755.00	6180.00	1236	154.50	
189	3	SWAPAN KU.GHOSH	208 POTI PARA ROAD	3	1810.00	840.00	765.00	115.00	570.00	4100.00	820	273.33	
190	3	SANKAR KU.NASKAR	POTI PARA ROAD	4	1250.00	925.00	1345.00	2665.00	660.00	6845.00	1369	342.25	
191	3	NIRMAL GUHA THAKUR	129/D UKIL PARA	2	1000.00	435.00	870.00	770.00	1010.00	4085.00	817	408.50	
192	3	SANKAR MAJUMDAR	UKIL PARA	2	1760.00	170.00	550.00	520.00	0.00	3000.00	600	300.00	
193	3	PUSPITA SENGUPTA	UKIL PARA	1	200.00	190.00	230.00	530.00	310.00	1460.00	292	292.00	
194	3	SUBHAS MONDAL	K/129 UKIL PARA	2	510.00	312.50	625.00	240.00	165.00	1852.50	370.5	185.25	
195	3	GOPAL BHOUNIK	129B UKIL PARA	6	2190.00	1605.00	3210.00	3200.00	0.00	10205.00	2041	340.17	
196	3	DILIP DAS	586 UKIL PARA	4	765.00	497.50	995.00	1330.00	405.00	3992.50	798.5	199.63	
197	3	SANKAR MONDAL	UKIL PARA	5	2350.00	560.00	1655.00	835.00	1135.00	6535.00	1307	261.40	
198	3	SEKHAR ROY	130 UKIL PARA	5	1630.00	420.00	705.00	810.00	2650.00	6215.00	1243	248.60	
199	3	J.CHATTERJEE	KRISHNA APARTMENT	2	450.00	1225.00	300.00	275.00	3560.00	5810.00	1162	581.00	
200	3	S.K.MONDAL	KRISHNA APARTMENT	3	650.00	825.00	495.00	1165.00	1075.00	4210.00	842	280.67	
201	3	ALPANA GANGULY	KRISHNA APARTMENT	5	420.00	600.00	1050.00	3365.00	425.00	5860.00	1172	234.40	
202	3	SANDIP CHATTERJEE	KRISHNA APARTMENT	3	630.00	1420.00	1105.00	1265.00	1375.00	5795.00	1159	386.33	
203	3	SATHI ROY CHOUDHARY	KRISHNA APARTMENT	4	1430.00	4240.00	1015.00	860.00	1750.00	9295.00	1859	464.75	
204	3	BAIDYANATH MITRA	KRISHNA APARTMENT	4	720.00	510.00	1020.00	0.00	880.00	3130.00	626	156.50	
205	3	SUKUMAR KARMAKAR	100/2 UKIL PARA IST LANE	3	1000.00	2775.00	1000.00	3705.00	690.00	9170.00	1834	611.33	
206	3	SUDIP DAS	UKIL PARA IST LANE	3	1530.00	560.00	865.00	1120.00	0.00	4075.00	815	271.67	
207	3	RANJIT MONDAL	UKIL PARA IST LANE	3	400.00	2250.00	0.00	815.00	1420.00	4885.00	977	325.67	
208	3	DHANANJOY HALDAR	UKIL PARA IST LANE	3	1680.00	920.00	1520.00	2610.00	1650.00	8380.00	1676	558.67	
209	3	ANINDA SUNDAR UKIL	UKIL PARA IST LANE	5	3800.00	1050.00	805.00	0.00	1910.00	7565.00	1513	302.60	

210	3	SAMBHU MONDAL	UKIL PARA IST LANE	4	1150.00	770.00	1300.00	1320.00	810.00	5350.00	1070	267.50	
211	3	SANKAR NASKAR	UKIL PARA IST LANE	5	2610.00	405.00	505.00	1230.00	1030.00	5780.00	1156	231.20	
212	3	SUBNASH MONDAL	UKIL PARA IST LANE	4	1750.00	910.00	1060.00	1425.00	960.00	6105.00	1221	305.25	
213	3	MALATI PAL	135 UKIL PARA IST LANE	4	1190.00	1315.00	285.00	1175.00	210.00	4175.00	835	208.75	
214	3	DUKHIRAM SARKAR	,UKIL PARA IST LANE	4	2320.00	2125.00	470.00	770.00	740.00	6425.00	1285	321.25	
215	3	GOBINDA GHOSH	468 SAHAJAN ROAD	6	2300.00	210.00	1550.00	1390.00	1180.00	6630.00	1326	221.00	
216	3	ARUP KU,KARMAKAR	166 SAHAJAN ROAD	4	1830.00	3230.00	790.00	300.00	390.00	6540.00	1308	327.00	
217	3	GOBINDA CH.MONDAL	128 UKIL PARA (NORTH)	5	2000.00	1820.00	1310.00	850.00	655.00	6635.00	1327	265.40	
218	3	S. HALDAR	129 UKIL PARA (NORTH)	3	1200.00	155.00	1655.00	500.00	2110.00	5620.00	1124	374.67	
219	14	RUDRAJIT CHATTERJEE	JAGATBANDHU APARTMENT	2	320.00	225.00	330.00	660.00	510.00	2045.00	409	204.50	
220	14	PHARIZINNAT	JAGATBANDHU APARTMENT	4	2800.00	3745.00	505.00	1340.00	1010.00	9400.00	1880	470.00	
221	14	PAMPA NASKAR	JAGATBANDHU APARTMENT	2	530.00	720.00	420.00	480.00	560.00	2710.00	542	271.00	
222	14	RATHIN DUTTA	JAGATBANDHU APARTMENT	1	290.00	980.00	450.00	245.00	270.00	2235.00	447	447.00	
223	14	KALYANI MUKHERJEE	D JAGATBANDHU APARTMEN	3	1295.00	825.00	820.00	880.00	1450.00	5270.00	1054	351.33	
224	14	KAMALA CHATTERJEE	JAGATBANDHU APARTMENT	1	210.00	125.00	250.00	180.00	310.00	1075.00	215	215.00	
225	14	S. MONDAL	B JAGATBANDHU APARTMEN	5	3030.00	1270.00	1305.00	950.00	1660.00	8215.00	1643	328.60	
226	14	NAMITA NASKAR	A JAGATBANDHU APARTMEN	3	1160.00	770.00	995.00	550.00	830.00	4305.00	861	287.00	
227	14	DIPANKAR DEY	D JAGATBANDHU APARTMEN	4	1000.00	505.00	1010.00	750.00	1210.00	4475.00	895	223.75	
228	14	RAKTIM DUTTA	C JAGATBANDHU APARTMEN	3	900.00	1445.00	910.00	740.00	2275.00	6270.00	1254	418.00	
229	14	ALOKE KU. NASKAR	62A POILDANGA ROAD	3	1720.00	655.00	1310.00	840.00	1315.00	5840.00	1168	389.33	
230	14	DEEPA BANERJEE	62 SAHAJAN ROAD	3	1420.00	1395.00	825.00	825.00	565.00	5030.00	1006	335.33	
231	14	KALIPADA MANNA	SAHAJAN ROAD	2	630.00	825.00	595.00	215.00	250.00	2515.00	503	251.50	
232	14	ASHIM NASKAR	330 SAHAJAN ROAD	4	1520.00	800.00	1600.00	945.00	1590.00	6455.00	1291	322.75	
233	14	BISWADIP NASKAR	331SAHAJAN ROAD	3	2600.00	1225.00	310.00	765.00	2095.00	6995.00	1399	466.33	
234	14	BIJON MONDAL	331 SAHAJAN ROAD	4	1000.00	480.00	1395.00	1335.00	1090.00	5300.00	1060	265.00	
235	14	PRADIP MONDAL	SAHAJAN ROAD	7	3560.00	525.00	2250.00	3915.00	1300.00	11550.00	2310	330.00	
236	14	JAHARLAL DUTTA	59 SAHAJAN ROAD	4	1380.00	1410.00	465.00	2840.00	1175.00	7270.00	1454	363.50	

237	14	GOPAL SARDAR	SAHAJAN ROAD	6	2540.00	1555.00	1800.00	2555.00	965.00	9415.00	1883	313.83	
238	14	SAMIR SARDAR	46 SAHAJAN ROAD	7	2780.00	1885.00	1095.00	705.00	1430.00	7895.00	1579	225.57	
239	14	DULAL HALDAR	SAHAJAN ROAD	5	2150.00	1335.00	450.00	1005.00	2650.00	7590.00	1518	303.60	
240	14	BISWANATH SARKAR	57 SAHAJAN ROAD	4	1660.00	265.00	530.00	1045.00	1320.00	4820.00	964	241.00	
241	14	SADHUNSU DAS	SAHAJAN ROAD	4	945.00	1110.00	1130.00	895.00	1775.00	5855.00	1171	292.75	
242	14	KUNTAL DAS	SAHAJAN ROAD	2	450.00	210.00	460.00	620.00	205.00	1945.00	389	194.50	
243	14	SWAPAN GHOSAL	SAHAJAN ROAD	2	180.00	825.00	535.00	330.00	1175.00	3045.00	609	304.50	
244	14	RINA GHOSAL	SAHAJAN ROAD	3	655.00	990.00	1560.00	765.00	555.00	4525.00	905	301.67	
245	13	BIJOY DUTTA	BUDDHI PUR CHHAIPARA RO	10	2770.00	4225.00	4560.00	2250.00	2965.00	16770.00	3354	335.40	
246	13	NIKHIL KU.BAIDYA	BUDDHI PUR CHHAIPARA RO	4	1250.00	1470.00	945.00	870.00	1720.00	6255.00	1251	312.75	
247	13	SUNIL KU. MONDAL	BUDDHI PUR CHHAIPARA RO	4	475.00	790.00	610.00	550.00	490.00	2915.00	583	145.75	
248	13	NABIN SANBUI	UBUDDHI PUR CHHAIPARA R	2	425.00	1155.00	1105.00	1225.00	0.00	3910.00	782	391.00	
249	13	TAPAN KAYAL	BUDDHI PUR CHHAIPARA RO	4	600.00	420.00	1505.00	625.00	835.00	3985.00	797	199.25	
250	13	DIPALI KUNDU	BUDDHI PUR CHHAIPARA RO	4	700.00	1455.00	515.00	0.00	2110.00	4780.00	956	239.00	
251	13	ASHOKE MONDAL	UBUDDHI PUR CHHAIPARA R	4	1400.00	1365.00	405.00	995.00	335.00	4500.00	900	225.00	
252	13	UMA ROY	BUDDHI PUR CHHAIPARA RO	3	1680.00	1335.00	1490.00	1655.00	0.00	6160.00	1232	410.67	
253	13	SAMIR SARDAR	UBUDDHI PUR CHHAIPARA R	4	710.00	302.50	605.00	705.00	170.00	2492.50	498.5	124.63	
254	13	ASUTOSH GANGULI	BUDDHI PUR CHHAIPARA RO	4	710.00	1665.00	2180.00	300.00	890.00	5745.00	1149	287.25	
255	13	BIMAL KU GAYEN	BUDDHI PUR CHHAIPARA RO	3	535.00	205.00	835.00	495.00	825.00	2990.00	598	199.33	
256	13	KIRITI PAL	BUDDHI PUR CHHAIPARA RO	4	790.00	970.00	810.00	1050.00	375.00	6270.00	1254	313.50	
257	13	SAMAR BISWAS	BUDDHI PUR CHHAIPARA RO	4	840.00	2375.00	275.00	1105.00	370.00	5415.00	1083	270.75	
258	13	MAHANANDA NASKAR	BUDDHI PUR CHHAIPARA RO	3	1430.00	1050.00	1165.00	1015.00	560.00	5220.00	1044	348.00	
259	13	MRINAL KANTI MISTR	UBUDDHI PUR CHHAIPARA I	4	425.00	580.00	1365.00	1020.00	420.00	3810.00	762	190.50	
260	13	DEV DULAL MONDAL	BUDDHI PUR CHHAIPARA RO	4	2550.00	1550.00	1265.00	1000.00	1225.00	7590.00	1518	379.50	
261	13	BHASKAR NASKAR	BUDDHI PUR CHHAIPARA RO	2	1210.00	2510.00	1560.00	865.00	825.00	6970.00	1394	697.00	
262	13	MONORANJAN KOYAL	UBUDDHI PUR CHHAIPARA I	4	335.00	0.00	0.00	0.00	600.00	935.00	187	46.75	
263	13	PANCHANAN SARKAR	UBUDDHI PUR CHHAIPARA I	3	670.00	700.00	1400.00	1320.00	720.00	4810.00	962	320.67	

264	13	HAKTI RANJAN KUND	SUBUDDHI PUR CHHAIPARA I	2	1700.00	985.00	1120.00	805.00	170.00	4780.00	956	478.00	
265	13	NILKANTA NASKAR	776 NASKAR PARA	3	975.00	1125.00	815.00	300.00	890.00	4105.00	821	273.67	
266	13	SUKHILA MONDAL	NASKAR PARA	7	655.00	720.00	2610.00	690.00	825.00	3985.00	797	113.86	
267	13	DILIP GHOSH	1076 NASKAR PARA	3	1300.00	1140.00	0.00	850.00	375.00	2440.00	488	162.67	
268	13	PANCHU GOPAL SAHA	NASKAR PARA	3	1830.00	725.00	3045.00	2275.00	370.00	5600.00	1120	373.33	
269	13	TAPAS MONDAL	NASKAR PARA	3	1700.00	970.00	1230.00	1240.00	560.00	5700.00	1140	380.00	
270	13	SUDIPTA SARKAR	NASKAR PARA	3	1420.00	520.00	1425.00	1540.00	420.00	5325.00	1065	355.00	
271	13	SOUMITRA SARKAR	NASKAR PARA	3	725.00	420.00	1175.00	975.00	1225.00	4520.00	904	301.33	
272	13	SUMITRA BASU	NASKAR PARA	7	1250.00	610.00	770.00	845.00	825.00	4300.00	860	122.86	
273	13	GOURI KOYAL	NASKAR PARA	3	710.00	590.00	0.00	675.00	600.00	2575.00	515	171.67	
274	13	RADIP BHATTYACHARJ	NASKAR PARA	4	2150.00	1295.00	550.00	830.00	1420.00	6245.00	1249	312.25	
275	13	ALATI BHATTYACHARJ	NASKAR PARA	3	665.00	690.00	1355.00	805.00	620.00	4135.00	827	275.67	
276	13	RABIR BHATTACHARJE	NASKAR PARA	3	1500.00	765.00	990.00	740.00	850.00	4845.00	969	323.00	
277	13	TAPAN CHAKLADAR	NASKAR PARA	4	865.00	1130.00	2310.00	875.00	575.00	5755.00	1151	287.75	
278	13	MUKUL NASKAR	143A /143A /1 NASKAR PARA	3	385.00	970.00	630.00	1450.00	1605.00	5040.00	1008	336.00	
279	13	JOYDEV MOLLICK	SUBUDDHI PUR BELTALA	8	1300.00	1040.00	1915.00	700.00	650.00	5605.00	1121	140.13	
280	5	JAYANTA NASKAR	SHIBINI PITH	4	565.00	1275.00	0.00	440.00	385.00	2665.00	533	133.25	
281	5	PRASAD CHOUDHARY	77/A/2 SHIBINI PITH	2	710.00	1060.00	295.00	420.00	625.00	3110.00	622	311.00	
282	5	DIPANKAR DAS	SHIBINI PITH	4	1500.00	870.00	915.00	830.00	1230.00	5345.00	1069	267.25	
283	5	SAMIR KANTA MONDA	77/B/7 SHIBINI PITH	4	1510.00	560.00	1510.00	905.00	600.00	5085.00	1017	254.25	
284	5	KRISHNA CHAKRABORT	SHIBINI PITH	6	2280.00	910.00	2505.00	1020.00	620.00	7335.00	1467	244.50	
285	5	AMAL KANTI GHOSH	SHIBINI PITH	2	420.00	570.00	1005.00	540.00	725.00	3260.00	652	326.00	
286	5	D.K.SEN	SHIBINI PITH	2	860.00	810.00	655.00	485.00	330.00	3140.00	628	314.00	
287	5	SISHIR BASU	SHIBINI PITH	6	1620.00	495.00	825.00	1130.00	510.00	4580.00	916	152.67	
288	5	KRISHNA LAL BASU	SHIBINI PITH	4	700.00	690.00	2035.00	875.00	2010.00	6310.00	1262	315.50	
289	5	RATAN BASU	SHIBINI PITH	4	2530.00	850.00	3275.00	875.00	650.00	8180.00	1636	409.00	
290	5	BABUL BOSE	SHIBINI PITH	4	570.00	2275.00	0.00	775.00	675.00	4295.00	859	214.75	

291	5	PARESH SAHA	144 BHATTYACHARYA PARA	4	795.00	1240.00	3105.00	220.00	485.00	5845.00	1169	292.25	
292	5	AMALENDU HAZRA	BHATTYACHARYA PARA	4	1000.00	1540.00	810.00	540.00	630.00	4520.00	904	226.00	
293	5	AMAL BASU	BHATTYACHARYA PARA	3	675.00	975.00	1660.00	655.00	950.00	4915.00	983	327.67	
294	5	INDRAJIT ROY	BHATTYACHARYA PARA	5	1560.00	845.00	830.00	570.00	705.00	4510.00	902	180.40	
295	5	OLANATH CHOKRABOI	K.C MITRA LANE	4	630.00	675.00	1210.00	950.00	885.00	4350.00	870	217.50	
296	5	BIMAL DEVNATH	K.C MITRA LANE	3	2850.00	830.00	2275.00	1175.00	520.00	7650.00	1530	510.00	
297	5	NDIP BHATTYACHARY	K.C MITRA LANE	4	860.00	805.00	1315.00	530.00	1815.00	5325.00	1065	266.25	
298	5	KANCHAN DUTTA	681 K.C MITRA LANE	3	760.00	740.00	565.00	420.00	970.00	3455.00	691	230.33	
299	5	GANASINDHU GHOSH	K.C MITRA LANE	4	2320.00	875.00	750.00	1125.00	1100.00	6170.00	1234	308.50	
300	5	ARABINDA GHOSH	K.C MITRA LANE	3	850.00	1450.00	790.00	965.00	1170.00	5225.00	1045	348.33	
301	5	DILIP DAS	435 K.C MITRA LANE	3	1070.00	700.00	2095.00	640.00	240.00	4745.00	949	316.33	
302	5	DEVSANKAR KOR	K.C MITRA LANE	3	630.00	440.00	1090.00	655.00	610.00	3425.00	685	228.33	
303	5	BANI SENGUPTA	23 K.C MITRA LANE	3	1240.00	870.00	1300.00	1750.00	755.00	5915.00	1183	394.33	
304	5	SAMAR BASU	K.C MITRA LANE	3	250.00	1210.00	1175.00	1830.00	725.00	5190.00	1038	346.00	
305	5	TARUN MALICK	456 K.C MITRA LANE	3	450.00	805.00	965.00	790.00	1360.00	4370.00	874	291.33	
306	5	D.DAS	461K.C MITRA LANE	3	1120.00	690.00	1430.00	905.00	465.00	4610.00	922	307.33	
307	5	S.DASGUPTA	K.C MITRA LANE	5	1810.00	595.00	1560.00	710.00	550.00	5225.00	1045	209.00	
308	11	NITIN PUTUTUNDU	TUN PARA G.G. ADHIKARI L	5	1890.00	1140.00	1475.00	775.00	1350.00	6630.00	1326	265.20	
309	11	DILIP PUTUTUNDU	TUN PARA G.G. ADHIKARI L	1	250.00	535.00	425.00	220.00	310.00	1740.00	348	348.00	
310	11	KRISHNA PUTUTUNDU	TUN PARA G.G. ADHIKARI L	3	900.00	850.00	550.00	450.00	975.00	3725.00	745	248.33	
311	11	KINSHUK PUTUTUNDU	TUN PARA G.G. ADHIKARI L	3	1300.00	745.00	360.00	490.00	725.00	3620.00	724	241.33	
312	11	KUSHAL PUTUTUNDU	TUN PARA G.G. ADHIKARI L	3	2600.00	795.00	0.00	1090.00	675.00	5160.00	1032	344.00	
313	11	AMAL DUTTA	TUN PARA G.G. ADHIKARI L	6	1570.00	420.00	970.00	530.00	520.00	4010.00	802	133.67	
314	11	AJIT GAYAN	TUN PARA G.G. ADHIKARI L	5	1400.00	975.00	840.00	420.00	430.00	4065.00	813	162.60	
315	11	SAMIRAN DAS	TUN PARA G.G. ADHIKARI L	3	750.00	985.00	390.00	610.00	910.00	3645.00	729	243.00	
316	11	BISWANATH SARAF	TUN PARA G.G. ADHIKARI L	2	410.00	820.00	585.00	715.00	585.00	3115.00	623	311.50	
317	11	DILIP DEY	TUN PARA G.G. ADHIKARI L	5	1400.00	710.00	0.00	875.00	985.00	3970.00	794	158.80	

318	11	ADINATH CHATTERJEE	TUN PARA G.G. ADHIKARI L	5	1420.00	530.00	1050.00	1300.00	905.00	5205.00	1041	208.20	
319	11	NILA BHATTYACHARYA	G.G. ADHIKARI LANE	3	1530.00	1090.00	0.00	1200.00	710.00	4530.00	906	302.00	
320	11	RAJESWAR MONDAL	G.G. ADHIKARI LANE	3	560.00	930.00	720.00	815.00	775.00	3800.00	760	253.33	
321	11	BHARATI PUTUTUNDU	198/A G.G. ADHIKARI LANE	7	1260.00	1465.00	1540.00	700.00	480.00	5445.00	1089	155.57	
322	11	SATISH CH. HALDAR	G.G. ADHIKARI LANE	9	2930.00	390.00	980.00	1000.00	450.00	5750.00	1150	127.78	
323	11	ASHOKE BASU	213 NATUNPARA	5	2560.00	460.00	0.00	2230.00	490.00	5740.00	1148	229.60	
324	11	SABITA MITRA	NATUN PARA	4	3100.00	1475.00	415.00	1225.00	1090.00	7305.00	1461	365.25	
325	11	SAILEN KU. MITRA	NATUN PARA	3	3020.00	950.00	0.00	870.00	530.00	5370.00	1074	358.00	
326	11	NIRMAL CHATTERJEE	NATUN PARA	4	1320.00	975.00	0.00	720.00	420.00	3435.00	687	171.75	
327	11	KALPANA KARMAKAR	NATUN PARA	5	4160.00	1320.00	915.00	2120.00	610.00	9125.00	1825	365.00	
328	11	NITISHA MONDAL	NATUN PARA	5	3460.00	185.00	620.00	1854.00	470.00	6589.00	1317.8	263.56	
329	11	MOMATA NASKAR	230/A NATUN PARA	2	560.00	530.00	850.00	212.00	835.00	2987.00	597.4	298.70	
330	11	PRADIP NASKAR	218 NATUN PARA	7	2780.00	590.00	575.00	1260.00	375.00	5580.00	1116	159.43	
331	11	BASANTI MUKHERJEE	NATUN PARA	4	2100.00	475.00	1605.00	750.00	420.00	5350.00	1070	267.50	
332	11	MURARI MOHAN GHOS	NATUN PARA	4	2650.00	1265.00	650.00	450.00	745.00	5760.00	1152	288.00	
333	11	BIMALENDU TIKADAR	NATUN PARA	5	1870.00	975.00	385.00	490.00	1365.00	5085.00	1017	203.40	
334	11	SUBHAS KOR	NATUN PARA	3	1450.00	705.00	625.00	1265.00	465.00	4510.00	902	300.67	
335	11	HARIDAS HALDAR	NATUN PARA	7	3840.00	430.00	1230.00	975.00	520.00	6995.00	1399	199.86	
336	11	B.K. SINHA	NATUN PARA	4	1540.00	1145.00	600.00	705.00	695.00	4685.00	937	234.25	
337	11	SUJIT PUROKAIT	NATUN PARA	3	520.00	1070.00	620.00	880.00	1350.00	4440.00	888	296.00	
338	11	AMITAVA HALDAR	NATUN PARA	3	590.00	875.00	475.00	990.00	1040.00	3970.00	794	264.67	
339	11	ADINATH MONDAL	NATUN PARA	3	1070.00	785.00	350.00	1240.00	975.00	4420.00	884	294.67	
340	11	A.K.BAKSHI	65 NATUN PARA	2	790.00	660.00	510.00	305.00	725.00	2990.00	598	299.00	
341	15	DEV NATH MITRA	C-4 CHURCH LANE	4	1950.00	2015.00	360.00	1260.00	675.00	6260.00	1252	313.00	
342	15	SWAPAN PARAMANICI	CHURCH LANE	4	2490.00	1465.00	770.00	750.00	520.00	5995.00	1199	299.75	
343	15	SUBODH DAS	2 CHURCH LANE GOAL PUK	5	860.00	710.00	1210.00	1350.00	430.00	4560.00	912	182.40	
344	15	PRASAD BHATTYACHA	ELA APARTMENT	3	1450.00	470.00	1240.00	820.00	910.00	4890.00	978	326.00	

345	15	TILAK CHATTERJEE	ELA APARTMENT	3	430.00	335.00	1120.00	430.00	585.00	2900.00	580	193.33	
346	15	N.G.NASKAR	ELA APARTMENT	2	730.00	375.00	288.00	270.00	485.00	2148.00	429.6	214.80	
347	15	BIPLAB MURMU	ELA APARTMENT	2	590.00	420.00	195.00	600.00	225.00	2030.00	406	203.00	
348	15	AMBHU CHAKRABORT	ELA APARTMENT	3	1220.00	745.00	450.00	450.00	720.00	3585.00	717	239.00	
349	15	BIPLAB GOSWAMI	ELA APARTMENT	7	2900.00	1365.00	960.00	755.00	1140.00	7120.00	1424	203.43	
350	15	ANJALI GHOSH	ELA APARTMENT	2	420.00	465.00	520.00	645.00	425.00	2475.00	495	247.50	
351	15	AVIJIT SARKAR	ELA APARTMENT	2	660.00	520.00	675.00	750.00	370.00	2975.00	595	297.50	
352	15	TAPAS HALDAR	ELA APARTMENT	3	1090.00	695.00	445.00	1185.00	520.00	3935.00	787	262.33	
353	15	PRAGATI BANERJEE	ELA APARTMENT	2	390.00	530.00	650.00	430.00	420.00	2420.00	484	242.00	
354	15	SAMIT MONDAL	CHURCH LANE	4	920.00	790.00	1105.00	740.00	610.00	4165.00	833	208.25	
355	15	SUNIL KARMAKAR	CHURCH LANE	2	180.00	905.00	275.00	150.00	290.00	1800.00	360	180.00	
356	15	SUPRATIK MOLLICK	CHURCH LANE	3	720.00	710.00	1160.00	770.00	1295.00	4655.00	931	310.33	
357	15	ATANU HALDAR	CHURCH LANE	5	1690.00	775.00	785.00	2100.00	1230.00	6580.00	1316	263.20	
358	15	ARIJIT HALDAR	CHURCH LANE	2	110.00	480.00	1560.00	195.00	230.00	2575.00	515	257.50	
359	15	SANATAN MOLLICK	CHURCH LANE	4	980.00	450.00	2015.00	1340.00	1210.00	5995.00	1199	299.75	
360	15	AFSAR MONDAL	CHURCH LANE	4	1690.00	490.00	1465.00	970.00	1120.00	5735.00	1147	286.75	
361	15	SUJIT MONDAL	CHURCH LANE	6	1890.00	1090.00	710.00	1820.00	980.00	6490.00	1298	216.33	
362	15	TAPAS DAS	CHURCH LANE	7	3100.00	530.00	610.00	2650.00	2560.00	9450.00	1890	270.00	

SWM Survey Sheet

Hospital Questionnaire

1	Ward No.		15
2	Date		3/08/17
3	Contact Person with Designation		Shyamal chakraborty.
4	Contact No.		9474571057.
5	Location / Address of Hospital		Baruipur - Sub-divisional Hospital.
6	No. of Beds in the Hospital		368.
7	Quantity of Waste Generated per day in Kg (approx.)		50kg.
8	Type of waste	Bio- Medical Waste ✓	50 kg.
		Municipal Solid Waste	130kg.
		*Other waste if any	
9	Whether they have any system for collection of Bio-Medical Waste		greentech environment Private Ltd.
10	Municipal Solid Waste Collection Mechanism		(Into Truck/Trailer/ Open Dump/ Any Other) TRY-CYCLE ✓
11	Solid Waste Collection Frequency		(Daily/after 1 day/after 2 day/after 1 week/any other)
12	Suggestions/Remarks		Everyday morning. Solid waste collection by. Baruipur Municipality.

Shyamal Chakraborty
Asstt. Superintendent
Signature of Respondent
(Non Medical)
Baruipur S. D. Hospital
South 24 Parganas

SWM Survey Sheet

Hospital Questionnaire

1	Ward No.		03
2	Date		08/08/2017
3	Contact Person with Designation		DR. Banani Dutta.
4	Contact No.		9831324595
5	Location / Address of Hospital		Sevatirtham Nursing Home. Sajahan Road, Baruipur. Kol-144
6	No. of Beds in the Hospital		30
7	Quantity of Waste Generated per day in Kg (approx.)		15 kg.
8	Type of waste	Bio- Medical Waste	
		Municipal Solid Waste	
		Other waste if any	
9	Whether they have any system for collection of Bio-Medical Waste		Medicare Environmental Management Pvt. Ltd
10	Municipal Solid Waste Collection Mechanism		(Into Truck/Trailer/ Open Dump/ Any Other) TRY-CYCLE
11	Solid Waste Collection Frequency		(Daily/after 1 day/after 2 day/after 1 week/any other)
12	Suggestions/Remarks		

Banani Dutta 8/8/17

Signature of Respondent
Proprietor cum R.M.O.
Sevatirtham Nursing Home
Sajahan Road, Baruipur, Kol.-144

SWM Survey Sheet

Hospital Questionnaire

1	Ward No.		3 RD
2	Date		08/08/2017
3	Contact Person with Designation		Satyabrata Das
4	Contact No.		9564705034
5	Location / Address of Hospital		Santiniketan Nursing Home & Society. Sajahan Road, Baruipur KOL 144
6	No. of Beds in the Hospital		30
7	Quantity of Waste Generated per day in Kg (approx.)		15kg.
8	Type of waste	Bio- Medical Waste	
		Municipal Solid Waste	
		Other waste if any	
9	Whether they have any system for collection of Bio-Medical Waste		Medicare Environmental management ✓
10	Municipal Solid Waste Collection Mechanism		(Into Truck/Trailer/ Open Dump/ Any Other) TRY-CYCLE ✓
11	Solid Waste Collection Frequency		(Daily/after 1 day/after 2 day/after 1 week/any other) and 3 day
12	Suggestions/Remarks		

Satyabrata Das

Signature of Respondent

SWM Survey Sheet

Hospital Questionnaire

1	Ward No.		03
2	Date		08/08/2017
3	Contact Person with Designation		Habibulla
4	Contact No.		8647874938
5	Location / Address of Hospital		Baruipur Globe Nursing home Shajahan Road Baruipur Kol 144
6	No. of Beds in the Hospital		20
7	Quantity of Waste Generated per day in Kg (approx.)		6Kg.
8	Type of waste	Bio- Medical Waste	
		Municipal Solid Waste	
		Other waste if any	
9	Whether they have any system for collection of Bio-Medical Waste		
10	Municipal Solid Waste Collection Mechanism		(Into Truck/Trailer/ Open Dump/ Any Other) TRY-CYCLE
11	Solid Waste Collection Frequency		(Daily/after 1 day/after 2 day/after 1 week/any other)
12	Suggestions/Remarks		

Signature of Respondent
BARUIPUR GLOBE NURSING
HOME & SOCIETY
Shajahan Road, Baruipur
Kolkata- 700144

SWM Survey Sheet

Hospital Questionnaire

1	Ward No.		11
2	Date		08/08/2017
3	Contact Person with Designation		Subroto Baidya
4	Contact No.		9836607996
5	Location / Address of Hospital		The New Life Nursing Home Baruipur, Rail gate
6	No. of Beds in the Hospital		20
7	Quantity of Waste Generated per day in Kg (approx.)		10 kg.
8	Type of waste	Bio- Medical Waste	
		Municipal Solid Waste	
		Other waste if any	
9	Whether they have any system for collection of Bio-Medical Waste		
10	Municipal Solid Waste Collection Mechanism		(Into Truck/Trailer/ Open Dump/ Any Other) TRY-CYCLE
11	Solid Waste Collection Frequency		(Daily/after 1 day/after 2 day/after 1 week/any other) One month
12	Suggestions/Remarks		

Subrata Baidya

Signature of Respondent

The New Life Nursing Home Kolkata-144 Baruipur Rail Gate

SWM Survey Sheet

Vegetable Market Questionnaire

1	Ward No.	8
2	Date	3/08/17
3	Contact Person	Govindo Sardar
4	Contact No.	—
5	Location or Address of Market	Baruipur Joint Roy-choudhary state, Purtan Bazar
6	No. of Shops in the Market (approx.)	300
7	Quantity of Waste Generated per day (approx.)	1 ton
	a) Peak Season	—
	b) Slack Season	—
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other) choudhary.
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
10	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

Vegetable Market Questionnaire

1	Ward No.	12
2	Date	3/8/2017
3	Contact Person	Sajahan Laskar
4	Contact No.	~~94~~ 9748719632
5	Location or Address of Market	Barui Pur kachari Bazar
6	No. of Shops in the Market (approx.)	800
7	Quantity of Waste Generated per day (approx.)	9 tone
	a) Peak Season	
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other) Compakter
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
10	Suggestions/Remarks	

S. Sarkar
Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	17
2	Date	4/8/2017
3	Contact Person with Designation	Arabinda Bagni
4	Contact No.	9830335771
5	Name of Hotel/Restaurant	~~The~~ Quality Restaurant
6	Location or Address of Hotel/Restaurant	Station Road, Kalitala
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	25
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	20 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Arabinda Bagani

Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	17
2	Date	3/8/2017
3	Contact Person with Designation	Palash Adhikary
4	Contact No.	9230434399
5	Name of Hotel/Restaurant	Shiv Shankar Hotel
6	Location or Address of Hotel/Restaurant	Baruipur rail Gate Kaletale
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	50
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	2 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
14	Suggestions/Remarks	

Signature of Respondent

Palash Adhikary

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	7
2	Date	3/8/2017
3	Contact Person with Designation	Arun Das
4	Contact No.	9231707107
5	Name of Hotel/Restaurant	Ganpati Restaurant
6	Location or Address of Hotel/Restaurant	Baruipur Purston Bazzer
7	Capacity of Hotel (Total no. of Rooms)	2
8	Average Occupancy per day (No. of Guests/Customers)	~~30 KG~~ 300
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	15 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	10
2	Date	4/8/2017
3	Contact Person with Designation	Dipak Malik
4	Contact No.	9830143895
5	Name of Hotel/Restaurant	Anna Parna Hotel
6	Location or Address of Hotel/Restaurant	Barui Pur Kalpi Road
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	120
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	10 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Dipak Malik
Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	12
2	Date	07/08/2017
3	Contact Person with Designation	Md. Aftab alam
4	Contact No.	9430286846
5	Name of Hotel/Restaurant	Kolkata Raj Hotal
6	Location or Address of Hotel/Restaurant	Kachari bazar Baruipur
7	Capacity of Hotel (Total no. of Rooms)	01
8	Average Occupancy per day (No. of Guests/Customers)	150
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	10 kg.
	a) Peak Season	30 kg.
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	n

Md. Aftab Alam
Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	10
2	Date	4/8/2017
3	Contact Person with Designation	Tapan Barik
4	Contact No.	~~944~~ 9007014313
5	Name of Hotel/Restaurant	Bijoli Grill
6	Location or Address of Hotel/Restaurant	Barui Pur Potar Sathi
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	62
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	20 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) 3-4 day
14	Suggestions/Remarks	

Gouranga Giri
Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	10
2	Date	4/8/2017
3	Contact Person with Designation	Sanat Kumar Saha
4	Contact No.	900 7922421
5	Name of Hotel/Restaurant	SAHA HOTEL AND Restaurant
6	Location or Address of Hotel/Restaurant	Barui Pur Kulpi Road -
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	120
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	12 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	12
2	Date	5/8/2017
3	Contact Person with Designation	Kamal Das
4	Contact No.	8697432850
5	Name of Hotel/Restaurant	Mani Nanda hotel
6	Location or Address of Hotel/Restaurant	Kulpi Road, Baruipur
7	Capacity of Hotel (Total no. of Rooms)	1
8	Average Occupancy per day (No. of Guests/Customers)	50
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	4 K.G
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Signature of Respondent

Kamal Das

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	15
2	Date	4/08/17
3	Contact Person with Designation	Pwak Biswas.
4	Contact No.	—
5	Name of Hotel/Restaurant	Hotel and Restrent
6	Location or Address of Hotel/Restaurant	church lane.
7	Capacity of Hotel (Total no. of Rooms) .	4 Tableys.
8	Average Occupancy per day (No. of Guests/Customers)	120
9	a) Peak Season	150 .
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	50kg .
	a) Peak Season	70Kg .
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	11
2	Date	5/08/2017
3	Contact Person with Designation	Anshuman Halder.
4	Contact No.	9038050237
5	Name of Hotel/Restaurant	~~Raxbna~~ Rasona, Natun Para
6	Location or Address of Hotel/Restaurant	Natun para. Baruipur
7	Capacity of Hotel (Total no. of Rooms)	01
8	Average Occupancy per day (No. of Guests/Customers)	100
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	5Kg.
	a) Peak Season	10Kg.
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
14	Suggestions/Remarks	

Signature of Respondent

for Bandana Rakshit

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	11
2	Date	3/08/17.
3	Contact Person with Designation	Swajit Pal. (Manager)
4	Contact No.	9231846134
5	Name of Hotel/Restaurant	RUBY'S FOOD PLAZA.
6	Location or Address of Hotel/Restaurant	02
7	Capacity of Hotel (Total no. of Rooms)	—
8	Average Occupancy per day (No. of Guests/Customers)	100
9	a) Peak Season	180 - 250.
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	1 Kg/day.
	a) Peak Season	2.5 Kg/day
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) T.T Container.
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
14	Suggestions/Remarks	

Signature of Respondent

Swajit Pal

SWM Survey Sheet

Hotel ~~Vegetable~~ Market Questionnaire

1	Ward No.	17
2	Date	08/08/2017
3	Contact Person	Haridas Roy.
4	Contact No.	—
5	Location or Address of ~~Market~~ Hotel	Anandadham Hindu Hotel Station Road, Baruipur
6	No. of Shops in the Market (approx.) Room / Costomer	01 / 20
7	Quantity of Waste Generated per day (approx.)	02 kg.
	a) Peak Season	
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other)
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
10	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

Hotel ~~Vegetable~~ Market Questionnaire

1	Ward No.	17
2	Date	08/08/2017
3	Contact Person	Pataluddin Laskar
4	Contact No.	9748693154
5	Location or Address of ~~Market~~ Hotel	Ashama Hotel Baruipur, Satation Road
6	No. of Shops in the ~~Market~~ (approx.) Total Room. / costemers	02 / 50
7	Quantity of Waste Generated per day (approx.)	05 kg.
	a) Peak Season	15 kg.
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other)
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) No
10	Suggestions/Remarks	

Signature of Respondent

Pataluddin Laskar.

SWM Survey Sheet

HOTEL ~~Vegetable~~ Market Questionnaire

1	Ward No.	12
2	Date	08/08/2017
3	Contact Person	Bappi Adhikari
4	Contact No.	9830867396
5	Location or Address of ~~Market~~ Hotel	Shree Hindu Hotel Station Road, Baruipur
6	No. of Shops in the ~~Market~~ (approx.) Total Room / costemer	01 / 100
7	Quantity of Waste Generated per day (approx.)	02 Kg.
	a) Peak Season	
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other)
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) NO.
10	Suggestions/Remarks	

বাপ্পী অধিকারী

Signature of Respondent

SWM Survey Sheet

Hotel/Restaurant Questionnaire

1	Ward No.	08
2	Date	08/08/2017
3	Contact Person with Designation	Bappa Mallik
4	Contact No.	9153235515
5	Name of Hotel/Restaurant	Alima Hotel
6	Location or Address of Hotel/Restaurant	Baruipur, Shagair Road.
7	Capacity of Hotel (Total no. of Rooms)	01
8	Average Occupancy per day (No. of Guests/Customers)	90
9	a) Peak Season	
10	b) Slack Season	
11	Quantity of Waste Generated per day in Kg (approx.)	3 Kg.
	a) Peak Season	
	b) Slack Season	
12	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
13	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
14	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	
2	Date	07/08/2017
3	Contact Person	
4	Contact No.	
5	Designation	Teacher Incharge
6	Name of School or Collage	Sri Ramakrishna Ashrama Institute
7	Location or Address of School or Collage	Paduputkur Baripur Kol 144
8	Total no. of Teachers and Staffs (approx.)	86
9	Total no. of Students (approx.)	
10	Quantity of Waste Generated per day in Kg (approx.)	
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

Signature of Respondent

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	02
2	Date	07/08/2017
3	Contact Person	~~Shri~~ Siddhartha Roy.
4	Contact No.	9163282394
5	Designation	Teacher
6	Name of School or Collage	Sujuan nagar F.P
7	Location or Address of School or Collage	Baruipur, Subudelhapur Sujuan colony.
8	Total no. of Teachers and Staffs (approx.)	05
9	Total no. of Students (approx.)	132
10	Quantity of Waste Generated per day in Kg (approx.)	2 Kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
13	Suggestions/Remarks	

Siddhartha Roy (A.T.)

Signature of Respondent 07/08/17.

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	03
2	Date	07/08/2017
3	Contact Person	Dipika Shad Sadhukhan
4	Contact No.	9681717612
5	Designation	Teacher Incharge.
6	Name of School or Collage	Amiya Prova Smriti GSFP.
7	Location or Address of School or Collage	Uttarukpal para.
8	Total no. of Teachers and Staffs (approx.)	03
9	Total no. of Students (approx.)	45
10	Quantity of Waste Generated per day in Kg (approx.)	2 Kg.
11	Municipal Solid Waste Collectión Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	নিয়মিত আবর্জনা পরিষ্কার করলে দূষণ কমবে, জলা-জমিও উন্নত হবে।

Signature of Respondent

Dipika Sadhukhan.
7.1.17

Teacher-in-charge
Amiya Prova Smriti G.S.F.P. School

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	12
2	Date	07/08/2017
3	Contact Person	Rejwel Mistry.
4	Contact No.	8336838205
5	Designation	Incherge
6	Name of School or Collage	Micael School
7	Location or Address of School or Collage	Kalyanpur Road
8	Total no. of Teachers and Staffs (approx.)	16
9	Total no. of Students (approx.)	500
10	Quantity of Waste Generated per day in Kg (approx.)	3 Kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

R. Mistry

Signature of Respondent

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	12
2	Date	04/08/17.
3	Contact Person	Madhushree Das.
4	Contact No.	9143279150
5	Designation	~~Head~~ TIC.
6	Name of School or Collage	Padmapukur Uper Primary School.
7	Location or Address of School or Collage	Padmapukur, Baruipur-144
8	Total no. of Teachers and Staffs (approx.)	6
9	Total no. of Students (approx.)	183
10	Quantity of Waste Generated per day in Kg (approx.)	3Kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

✓ Madhusree Da. 04/8/17

Signature of Respondent
ভারপ্রাপ্তা শিক্ষিকা
পদ্মপুকুর ইউ. পি. স্কুল
বারুইপুর চক্র, কলকাতা-৭০০ ১৪৪

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	3
2	Date	4/08/17.
3	Contact Person	Mina Das.
4	Contact No.	03324338335
5	Designation	Head Mistress.
6	Name of School or Collage	Rashmoni Balika Vidyalaya.
7	Location or Address of School or Collage	-
8	Total no. of Teachers and Staffs (approx.)	55+19(P)
9	Total no. of Students (approx.)	2753+664(P)
10	Quantity of Waste Generated per day in Kg (approx.)	25Kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
13	Suggestions/Remarks	It will be helpful if Municipality collect the waste after 1 day.

✓

Das 04/8/17
Signature of Respondent
Teacher-in-charge
RASHMONI BALIKA VIDYALAYA
P.O. Baruipur, South 24 Pargs.

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	10
2	Date	3/08/17
3	Contact Person	Ashoke Ku. Mondal.
4	Contact No.	8583891789.
5	Designation	~~Head master~~ T.I.C.
6	Name of School or Collage	Mondal Para FP school.
7	Location or Address of School or Collage	C/o Pukur, MondalPara Baruipur. KOL-144.
8	Total no. of Teachers and Staffs (approx:)	5
9	Total no. of Students (approx.)	100
10	Quantity of Waste Generated per day in Kg (approx.)	7 Kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) Vat.
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
13	Suggestions/Remarks	

✓ Ashoke Kumar Mondal
Signature of Respondent 03/08/17
Teacher-in-charge
Mondalpara F.P. School
Baruipur (Dakshin, Kol-144)

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	17
2	Date	3/08/17.
3	Contact Person	Sayeeda Begum.
4	Contact No.	9874093380
5	Designation	T/C.
6	Name of School or Collage	Saraswati Hindi Prathamik Vidyalaya.
7	Location or Address of School or Collage	Baruipur-Kol-144
8	Total no. of Teachers and Staffs (approx.)	6.
9	Total no. of Students (approx.)	114.
10	Quantity of Waste Generated per day in Kg (approx.)	2-2.5kg.
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) Van.
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

03/08/2017

Signature of Respondent

Saraswati Prathamik Hindi Vidyalaya
Baruipur, Kolkata-144

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	7
2	Date	3/8/2017
3	Contact Person	Debarghya Roy
4	Contact No.	033-24338353
5	Designation	Ass. Head master
6	Name of School or Collage	Baruipur High School
7	Location or Address of School or Collage	Baruipur, South 24 Parganas
8	Total no. of Teachers and Staffs (approx.)	38
9	Total no. of Students (approx.)	2140
10	Quantity of Waste Generated per day in Kg (approx.)	10 KG
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

03/08/17

Signature of Respondent

Teacher-in-Charge
Baruipur High School
P.O.&P.S.- Baruipur
South 24 Pgs., 700144

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	08
2	Date	3/8/2017
3	Contact Person	K. Bhattacharya
4	Contact No.	8697816696
5	Designation	H/M
6	Name of School or Collage	Baruipur Girls High School
7	Location or Address of School or Collage	Baruipur Parabon Bazzer
8	Total no. of Teachers and Staffs (approx.)	26 (A.T + Staff + H/M) + 04 Para teachers
9	Total no. of Students (approx.)	1500 (approx)
10	Quantity of Waste Generated per day in Kg (approx.)	25 KG
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other) ✓
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other) ✓
13	Suggestions/Remarks	On road side huge garbage are stocked, bad smell reports. Kindly take necessary action to solve elsewhere

K. Bhattacharya
3/8/17
Signature of Respondent

Headmistress
BARUIPUR GIRLS' HIGH SCHOOL (H.S.)
P.O.- BARUIPUR, KOLKATA- 144

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	10
2	Date	4/8/2017
3	Contact Person	Ratna Sen
4	Contact No.	9051213221
5	Designation	H.m
6	Name of School or Collage	Dream Children
7	Location or Address of School or Collage	Robindro Nager, Baruipur
8	Total no. of Teachers and Staffs (approx.)	10
9	Total no. of Students (approx.)	150
10	Quantity of Waste Generated per day in Kg (approx.)	0.500
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

DREAM CHILDREN Primary School Nursery

Signature of Respondent

SWM Survey Sheet

School/Collage Questionnaire

1	Ward No.	5
2	Date	4/8/2017
3	Contact Person	Tapas Kumar Mondal
4	Contact No.	9143318198
5	Designation	Head master
6	Name of School or Collage	Bina Pani Path Sala
7	Location or Address of School or Collage	Dutta Para, Baruipur
8	Total no. of Teachers and Staffs (approx.)	7
9	Total no. of Students (approx.)	99
10	Quantity of Waste Generated per day in Kg (approx.)	3K.G
11	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/Tri cycle/Pushcarts/Any Other)
12	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
13	Suggestions/Remarks	

T Kr Mondal

Signature of Respondent

Head Master
Binapani Pathshala
Duttapara, Baruipur
24 Parganas (S)

SWM Survey Sheet

Vegetable Market Questionnaire

1	Ward No.	7
2	Date	3/8/2017
3	Contact Person	Jaydev Ghosh
4	Contact No.	8820576829
5	Location or Address of Market	Baruipur Purabon Bazzer
6	No. of Shops in the Market (approx.)	150
7	Quantity of Waste Generated per day (approx.)	1000 K.G
	a) Peak Season	
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other)
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
10	Suggestions/Remarks	

Signature of Respondent

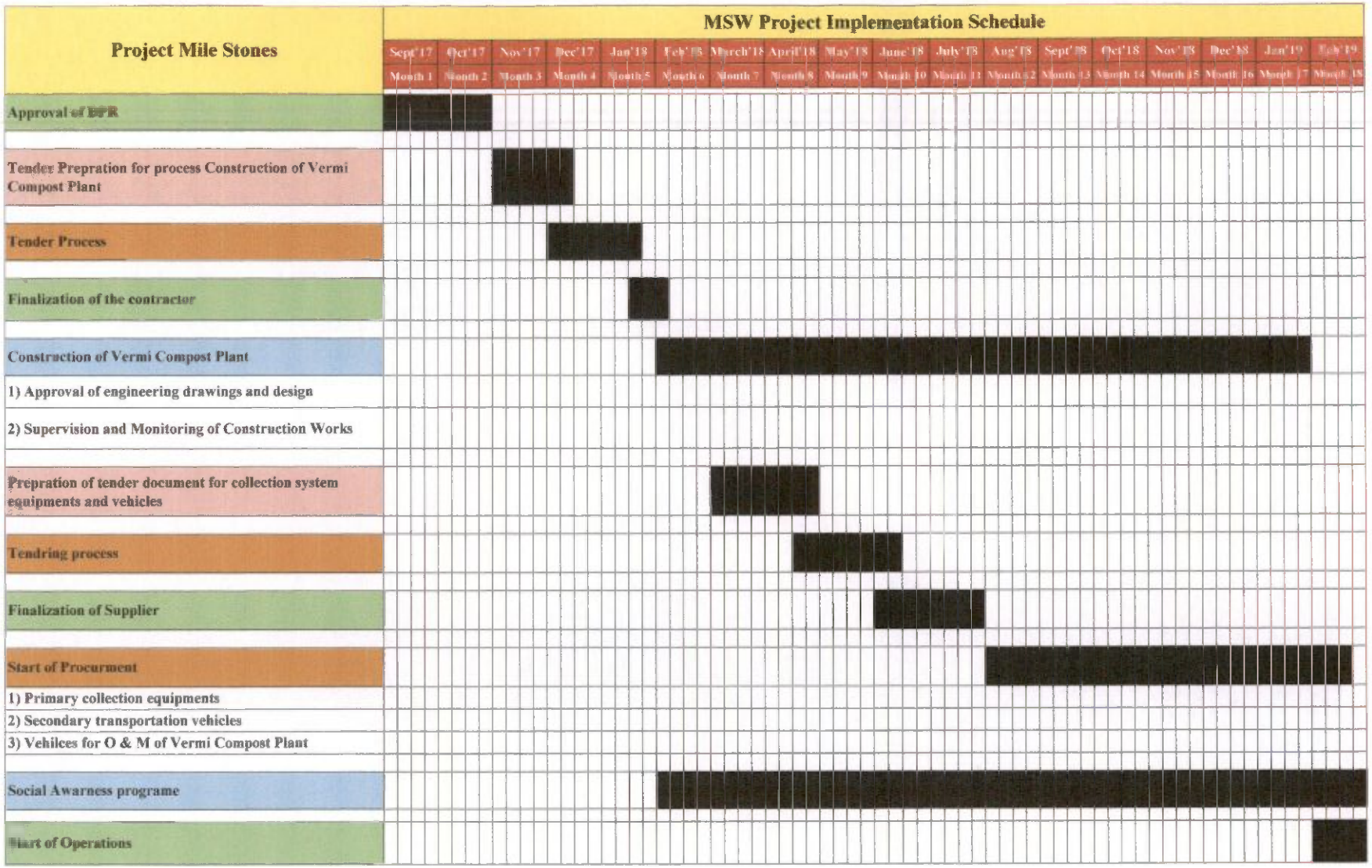
SWM Survey Sheet

Vegetable Market Questionnaire

1	Ward No.	15
2	Date	03/08/17.
3	Contact Person	Dilip Ku. Ghosh.
4	Contact No.	9874678206.
5	Location or Address of Market	Baruipur Informal Market.
6	No. of Shops in the Market (approx.)	34
7	Quantity of Waste Generated per day (approx.)	120kg.
	a) Peak Season	
	b) Slack Season	
8	Municipal Solid Waste Collection Mechanism	(By Truck/Trailer/ Open Dump/ Pushcart/ Tricycle/Any Other)
9	Solid Waste Collection Frequency	(Daily/after 1 day/after 2 day/after 1 week/any other)
10	Suggestions/Remarks	

Dilip kumar Ghosh. 3.8.17
Signature of Respondent

PROJECT SCHEDULE


Project Mile Stones
MSW Project Implementation Schedule
Sept'17
Oct'17
Nov'17
Dec'17
Jan'18
Feb'18
March'18
April'18
May'18
June'18
July'18
Aug'18
Sept'18
Oct'18
Nov'18
Dec'18
Jan'19
Feb'19
Month 1
Month 2
Month 3
Month 4
Month 5
Month 6
Month 7
Month 8
Month 9
Month 10
Month 11
Month 12
Month 13
Month 14
Month 15
Month 16
Month 17
Month 18
Approval of DPR
Tender Prepration for process Construction of Vermi Compost Plant
Tender Process
Finalization of the contractor
Construction of Vermi Compost Plant
1) Approval of engineering drawings and design
2) Supervision and Monitoring of Construction Works
Prepration of tender document for collection system equipments and vehicles
Tendring process
Finalization of Supplier
Start of Procurment
1) Primary collection equipments
2) Secondary transportation vehicles
3) Vehilces for O & M of Vermi Compost Plant
Social Awarness programe
Start of Operations

QUOTATION

OF VEHICLES FOR BARUIPUR SWM DPR

सतनाम इन्डस्ट्रिज

Ph 2251-0398
Fax

M/s. SATNAM INDUSTRIES

SACK BARROW

HEAVY DUTY PLATFORM TROLLEY

Manufacturer of :

Refuse Trailer, Night Soil Trailer, Water Tank Trailer, Double Wheel Barrow, Single Wheel Barrow, Plate Form Trolley, Sack Barrow, G.I. Tank, W.I. Grills. Gate & General Order Suppliers

WORKS : 133, BELIAGHATA ROAD, KOLKATA - 700015
4No, PAGLADANGA ROAD, KOLKATA - 700015

SI/44/17-18 26/05/2017

To,
Environmental Engineering Services,
270 A B.B Chatterjee Road,
Kolkata-700042
West Bengal.

Sub : Qoutation for SWM articles,

As per your enquiry the above referred subject, we are very pleased to submit our quotation.

1. 3000 lt. Water Tank Trailer with pump	@Rs.355000.00
2. Tricycle Van with 6 nos 50 lt bin	@Rs.28200.00
3. 50 lit Bin	@Rs.650.00
4. Battery operated Auto Rickshaw	@Rs.182000.00
5. 60 lt Bin	@rs.1250.00
6. Auto Tipper	@Rs.990000.00
7. TT Container 2m3 Hydraulic System	@Rs.200000.00
8. 1100 lt. MS Compactor Bin	@Rs.52500.00
9. Push Cart with 4 nos 50 lt Bin	@Rs.9500.00
10.2 m3 capacity M.S Container	@Rs.170000.00

Thanking you,

Yours faithfully,

For Satnam Industries

SINCE 1972

UBIQUE INDUSTRIES

8/H/5, CHAULPATTY ROAD, KOLKATA-700 085
PHONE : 2370-3243, Fax No. : (033) 2371-9865
E-mail : ubiqueindustries@yahoo.co.in / tapandas1972@yahoo.com

Manufacturers of ALL HYDRAULIC TROLLEYS, TRAILERS, TANKERS, TROLLEYS, WHEEL-BORROWS, HAND CRAFTS & FABRICATION JOB

S.S.I. Regd. No. : 21-04-13729-PMT-S.S.I. Dt. 2-3-78 VAT No. : 19400169072, C.S.T. No. : 19400169266

38/2017 03/06/17

To
Environmental Engineering Services,
270 A B.B chatterjee Street,
Kolkate-42,
West Bengal.

Sub : Quotation for SWM Articles

Dear Sir,

In reply to your enquiry, we are very pleased to quote our rate for your kind consideration.

1.	3000 ltrs. Water Tank Trailer	@Rs.352000.00 each
2.	Tricycle Van with 6 nos 50 ltrs bin	@Rs.28500.00 each
3.	6 nos 50 ltrs bin	@Rs.700.00 per bin
4.	Battery operated Auto rickshaw	@Rs.190000.00
5.	8 nos 60 ltrs bin	@Rs.1300.00
6.	Auto Tipper	@Rs.985000.00
7.	TT Container 2m3 with hydraulic system	@Rs.205000.00
8.	1100 ltrs. M.S Compactor bin	@Rs.51200.00
9.	Push Cart with 4 nos 50 ltrs bin	@Rs.9300.00
10.	2m3 M.s Container	@Rs.175000.00

Thanking you,

Yours faithfully,

For UBIQUE INDUSTRIES

ALL SUBJECT TO KOLKATA JURISDICTION

Phone : 2371 0236
Mobile : ** 9830087295/9433249673
E-mail : unifab.anup@gmail.com

UNIFAB

Engineers, Manufacturers & Fabricators

MANUFACTURERS OF : CESSPOOL EMPTIER, TRAILOR, BARROWS, HAND CARTS TROLLEYES, TAR BOILER, DUSTBIN, HYDRAULIC TRAILOR AND TRUCK ETC

OFFICE : 1/2A/1A, RAMKRISHNA NASKAR LANE, KOLKATA - 700 010

Ref. No. UF/05/17-18/097 Date 03.06.2017

To
Environmental Engineering Services
270A, B.B. Chatterjee Road
Kasba, Kol-42

Sub : Quotation for SWM articles

Respected Sir,

In reply to your enquiry for the above subject, we are very pleased to quote our rates as under.

Sl No.	Equipments	Unit Rate in INR
1	Water tanker 3000 lit with slurry pump (1HP) capacity	3,50,000.00
2	Tricycle van with 6 nos. 50 lit bin	27,500.00
3	6nos. 50 lit bin	620.00 per bin
4	Battery operated auto rickshaw	1,70,000.00
5	8 nos. 60 lit bin	1,220.00 per bin
6	Auto tipper with 1.2 m3 capacity 2 compartment (hydraulic)	9,80,000.00
7	TT Container 2m3 capacity with hydraulic type wheel	1,90,000.00
8	Compactor bin 1100 lit capacity (M.S)	48,525.00
9	Push cart with 4 nos. 50 lit bin	8,500.00
10	M.S Container with wheel 2m3 capacity hydraulic open from top	1,60,000.00

TERMS & CONDITION

VALIDITY : 50 days months from the date.
RATE : Our above rate is inclusive of all other charges, free delivery at your office
DELIVERY : Delivery depends on quantities of order.
PAYMENT : Part payment against part delivery should be issue by cheque.

Thanking you.

Yours faithfully,

For UNIFAB

ECO DYNAAMIC EQUIPMENTS

Manufacture & Trader for Electric Vehicle

QUOTATION

Ref: EDE/TM/KM04/17-18/34 Dated: 18.04.2017

To,

Mr. Ajeet Singh

M/s. Environmental Engineering Services

Kolkata, West Bengal

Sub: Budgetary Offer for Eco Bull (Electric Multi Utility Vehicle)

Dear Sir,

We refer to your discussion with our Mr. S. Vijayan regarding the Offer for the above mentioned Eco Bull (Electric Multi Utility Vehicle). We would like to take this opportunity to introduce ourselves as a leading manufacturing /marketing with equipment special purpose equipment for solid waste management.

We attach herewith our Technical Specifications for Eco Bull (Electric Multi Utility Vehicle).

ECO- Bull Mini (Electric Multi utility Vehicle)

Model Name	**(Multi utility Vehicle) ECO- Bull**
Motor Rated:	Power 1.2KW
Grade ability (Steep Climbing Ability):	7°
Max Speed:	17Km
Drive:	Central Axis Differential Drive
Range per Charge (Mileage):	60Km

Battery Type:	Lead-Acid Battery
Battery Capacity	60V / 120Ah
Charging Time:	6-8 Hrs
Dry Weight:	350Kg
Loading Weight:	800Kg
Seating Capacity:	1 Person
Min Turning Radius:	-- M
Forward & Reverse:	Available
Brake System:	Drum with Pedal
Hand Brake:	Optional
Suspension Front:	Telescopic Suspension
Suspension Rear:	Leaf Spring

Sl no.	Description	Quantity	Amount
1	**Eco-Bull Mini (Electric Multi Utility Vehicle)**	**1 Nos.**	**1,50,000**
	Add: Vat @5%		**7,500**
	Total		**1,57,500**
	Add: TCS over Machine Value @ 1%		**1,575**
	Total Invoice Value		**1,59,075**

Thanks & Regards

ECO DYNAAMIC EQUIPMENTS

Address: No 4/1, Thadagam Road,
Pannimadai(Po),Coimbatore,Tamilnadu,India,641017.
Email: info@ecodynaamicequipments.com
Phone: +9199521-25511

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बी ई एम एल लिमिटेड

BEML LIMITED

(A Govt. of India Mini Ratna Company under Ministry of Defence)
Regional Office: Kolkata

NEW FRONTIERS. NEW DREAMS

Manufacturing Units :

Bangalore Complex
Tel : 080-25242414
e-mail : bemlcgmr@vsnl.com

KGF Complex
Tel : 08153-263020
e-mail : bemlede@vsnl.net.in

Mysore Complex
Tel : 0821-2402422
e-mail : bemlmys@sancharmet.in

International Business Division
Tel: +91-80-2222 2730, 2223, 3350
e-mail : office@export.beml.co.in

Technology Division
Tel : +91-80-2296 3100-109
e-mail : office@ctd.beml.co.in

Trading Division
Tel : +91-80-22963113
e-mail : office@trading.beml.co.in

Regional Offices :

Bilaspur
Tel : 07752-252082
e-mail : bilaspur@rm.beml.co.in

Chennai
Tel : 044-28270792
e-mail : Chennai@rm.beml.co.in

Hyderabad
Tel : 040-23227032
e-mail : Hyderabad@rm.beml.co.in

Kolkata
Tel : 033-24015299
e-mail : kolkatta@rm.beml.co.in

Mumbai
Tel : 022-22049490
e-mail : Mumbai@rm.beml.co.in

Nagpur
Tel : 0712-2248435
e-mail : nagpur@rm.beml.co.in

New Delhi
Tel : 011-23316500
e-mail : delhi@rm.beml.co.in

Ranchi
Tel : 0651-2560370
e-mail : ranchi@rm.beml.co.in

Sambalpur
Tel : 0663-2521604
e-mail : sambalpur@rm.beml.co.in

Singrauli
Tel : 07805-268260
e-mail : singrauli@rm.beml.co.in

BEML Service Centres :

Moula Ali, Hyderabad
Tel : 040-27240873
e-mail : sh@zibak.beml.co.in

Ongole – Service Activity Centre
Mobile No. : 9440312607

Service Activity Centre
Katni – 483501 (M.P.)
Mobile No. : 9425156473

Service Centre & Stores
Kolkata – 700088
Tel : 033-24010782

BEML/MCM/G-7/17-18/09 17.05.2017

Mr. Ajeet Singh
Kolkata

Dear Sir,

Sub: Your Enquiry for BEML Equiprment.

With reference to your e-mail dated 17.05.2017, we are offering BEML model BD80 Dozer, BE220G Excavator and BL9H Loader from our regular production line as under:

BEML Model Description	Unit Ex BEML KGF Price	Ex works Delivery
BEML Model BD80 Bulldozer powered by BEML diesel engine model B6D125-1 developing **180 FHP at 1850 RPM** fitted with 4 side open canopy generally as per specification sheet enclosed.	**Rs. 90.00 Lakhs** (Rupees Ninety lakhs only)	Standard delivery is within 1-2 month(s) from the date of issue of DO from NBFC/Bank. Actual delivery may vary as per current stock position.
BEML 'G' series excavator Model **BE220G Hydraulic Excavator** powered by BEML diesel engine developing **148 FHP** at 2100 RPM and fitted with **1.00 Cum. (SAE heaped)** Heavy Duty bucket generally as per specification sheet enclosed.	**Rs. 45.00 Lakhs** (Rupees Forty three lakhs only)	
BEML model **BL9H** Back-hoe Loader **(WORK HORSE)** powered by BSIII diesel engine developing **76 fhp @ 2200 rpm** and fitted with **1.0 Cu.M multipurpose 6 in 1 bucket** and **0.24 m3** back-hoe bucket, generally as per specification sheet enclosed.	**Rs. 21.00 Lakhs** (Rupees Twenty One lakhs only)	

The Excise duty, Educational Cess, CST, Octroi / Entry Tax and other statutory levies, (if any) will be charged extra at actual at the time of dispatch of equipment.

.....2

BEML/MCM/G-7/17-18/09 17.05.2017

Present rate of Excise duty is @12.50% and CST is @ 2% with form-C or, CST @ 5.5% without form-C. TCS (Tax collected at source) @ 1% shall be applicable for BL9H Backhoe loader only.

Important Terms and Conditions are as under:

Validity: 30 days from the date of offer.

Payment Terms: 100% before despatch of equipment.

Warranty: The equipment will be under warranty for manufacturing defects under proper storage and operation & maintenance for a period of 12 months or 2000 hrs from date of commissioning, whichever occurs earlier.

Warranty of the equipment is for manufacturing defects only under proper storage, operation and maintenance. Daily maintenance like up keep of equipment, greasing etc to be on customer scope. Consumable like filters, oils, electrical, rubber items and GET items are not covered under warranty and to be procured by the customer as per requirement/usage.

Transportation & Transit Insurance: To be arranged by the purchaser from our factory at KGF, Karnataka. However if so desire, we can also arrange transportation and transit insurance on your behalf .The charges for the same to be paid extra at actual before dispatch of equipment . The Risk and reward of ownership of the equipment will be transferred to the purchaser on dispatch of equipment from our works.

Commissioning: Unloading and safe custody of equipment at site will be the responsibility of the purchaser. BEML shall depute Service Representative to your site for supervision of erection & commissioning of the equipment and also for breakdown maintenance. Facilities such as skilled & semi-skilled labor, fuel, tools & tackles, crane, etc required for commissioning/ maintenance / repair of the equipment are to be provided by purchaser free of cost.

We hope the above offer is in line with your requirement. Now, we request you to give us an opportunity to serve our best by supplying the above equipment.

Thanking you,

Yours sincerely,

for BEML LIMITED.

BISWAJIT DUTTA
Manager (Sales)
Mob: +91-9051213395

EICHER MOTORS LIMITED

QUOTATION

Ref: EML/DEL/SK09/17-18/51

Dated: 02/06/2017

M/s. Environmental Engineering Services

Saltlake, Kolkata

Dear Sir,

This has reference to your discussion/ verbal discussions/ enquiry through email of date 02.06.2017 with us for Eicher truck. We are pleased to forward our quotation for the same.

We attach herewith our **Technical Specifications of 6 m3 Eicher 11.10 HDG (DSD/3800) and 10 m3 Eicher 40.35 3485/CAB.**

COMMON	Title:	Eicher 11.10 HDG (DSD/3800)	Eicher 40.35 3485/CAB
	Condition:	New	New
	Body Style:	Trucks	Trucks
	Description:	A fully built medium haulage truck, used for carrying market loads.	A fully built medium haulage truck, used for carrying heavy loads.
ENGINE & TRANSMISSION	Engine:	E483 DI Turbocharged Intercooled	Eicher Common Rail System
	Emission Norms:	BS-III	BS-III
	Engine Cylinders:	4	6
	Displacement (cc):	3298	4948
	Max Power:	94 bhp @ 3200 rpm	125KW @ 2400 rpm
	Max Torque:	284 Nm @ 1440 rpm	600Nm @ 1400-1600rpm
	Transmission:	Manual	Manual
	Clutch:	310 mm dia., Single plate dry type. Hydraulic assisted	352 mm dia., Single Plate dry push type with clutch booster
	Gearbox:	5-speed	6-Speed
	Fuel:	Diesel	Diesel
	Fuel Tank:	200 Litres	415

PERFORMANCE	Gradeability (%):	23	18
	Turning Radius:	7400 mm	6600 mm
	Max Speed (km/h):	90	67
STRUCTURE & DIMENSIONS	Chasis Type	Chassis with Cabin	Chassis with Cabin
	Cabin Type:	Day Cabin	Sleeper Cabin
	Tiltable Cabin:	Yes	Yes
	Axle Configuration:	4x2	4x2
	Tyres:	Front: 8.25 x 20 - 16 PR	
		Rear: 8.25 x 20 - 16 PR	10.00 x 20 - 16PR
	Wheelbase (mm):	3800	3485
	Overall Length (mm):	7090	5905
	Overall Width (mm):	2125	2450
	Overall Height (mm):	2590	3005
	Ground Clearance (mm):	220	252
WEIGHTS	GVW / GCW (Kgs):	11950	35200
	Kerb Weight:	3600 kgs	5665
	Payload (Kgs):	7795	29535
SAFETY & COMFOR	Brakes:	Air Brakes	Air Brakes
	Front Axle & Suspension:	Forged "I" section reverse Elliot type axle,	Heavy duty forged "I" beam reversed elliot typ
		Semi elliptical Laminated leaf springs suspension	Semi-elliptical laminated leaf springs at front
	Rear Axle & Suspension:	Fully floating Banjo type axle,	Meritor RS-160, Banjo type fully floating
		Semi elliptical Laminated leaf springs suspension	Hydraulic double acting telescopic shock absorbers in front Axles only
	Seat Type:	Standard	Standard
ADDITIONAL INFORMATION	Body Options:	Drop Side Deck	
	Additional information:	Load body Length - 5230 mm	
		Load body Width - 2125 mm	
		Load body Height - 854 mm	

PROS & CONS	Pros:	Brakes, Fuel efficiency	Brakes, Fuel efficiency
	Cons:	Gearbox	Gearbox
Price/unit		**1233000**	**2190000**
Add: Vat @5%		**166455**	**295650**
Total Invoice Value		**1399455**	**2485650**
In words		**Thirteen lacs ninety nine thousand four hundred fifty five**	**Twenty four lacs eighty five thousand six hundred fifty**

Also, we attach herewith our **Technical Specifications of Eicher 380 Super DI Tractor as below:**

Engine	
Engine Type	DI, 4 Stroke, Diesel
Displacement	2500.00 CC
Maximum Power	2150
HP range	40
No Of Cylinders	3
FuelTank	
FuelTank Capacity	0 litre
Dimension	
Length	NA
Width	NA
Height	NA
Wheelbase	1905 mm
Ground Clearence	NA mm
Tyres	
Tyres Front	6.00-16, 8
Tyres Rear	12.4-28, 12
Brakes	
Brakes	Mechanical shoe type Brakes Mechanical Actuation
Others	
Clutch Type	Dual clutch Dry type single friction plate Heavy duty single cerametallic plate
ClutchSize	280
Filter Type	NA
Air Cleaner Type	NA
Maximum Road Speed	0
No Of Gears	8F+2R

Steering Type	Mechanical steering (ball and nut type)
Transmission Type	NA
Pto Type	6 spline
Pto Speed	540
Pto Hp	36.4
Turning Radius	0
Hydraulic Lift Capacity	1200
Total Weight	2010
Speed Forward	3.00-30.80
Speed Reverse	NA
Battery	12v 75AH
Price/unit	6,84,000
Add: Vat @5%	34,200
Total Invoice value	**7,18,200**
In words	**(Seven Lakhs eighteen hundred two hundred rupees)**

Terms & Conditions:

Validity : Thirty days from the date.
Rate : Our above rate is inclusive of all other charges, free delivery at your office.
Delivery : Delivery depends on quantities of order.
Payment : Part payment against part delivery should be issue.

Please feel free to contact us any further query. We request you to give us an opportunity to serve our best by supplying the above equipment.

Thanks & Regards

EICHER MOTORS LIMITED
CIN No. L34102DL1982PLC129877
Regd. Office: 3rd Floor, Select Citywalk
A-3, District Centre, Saket
New Delhi- 110 017
Phone No.: +91-124-4415600
Email: info@eicher.in

(This is a computer generated document. No signature will appear)

PS Earthmovers Pvt. Ltd.
Authorised Dealer

QUOTATION

TATA HITACHI
Reliable solutions

Ref: - PSEPL/KOL/EX-200 LC SUPER/17-18/072

Date:-15.05.2017

ENVIRONMENTAL ENGINEERING
SALTLAKE

Dear Sir,
This has reference to your discussion / verbal enquiry / Telephonic enquiry / Enquiry through E mail of date 15.05.2017 with us for one EX200LC SUPER Tata Hitachi Excavator.We are pleased to forward our quotation for the same.

	Description	Qty	Price/Unit
1	**Tata Hitachi Hydraulic Excavator model EX-200 LC Super, fitted with 0.91 cu.m Bucket, 5.68 m boom, 2.22 m arm, and Powered by CUMMINS 6BT5.9C Engine.**	1	46,32,380.95
2	**Add : VAT @ 5 %**		2,31,619.05
3	**Total Invoice Value**		48,64,000.00

In Words: Rupees Forty Eight Lac Sixty Four Thousand Only.

Terms and Conditions

Delivery From	**Kharagpur Plant**
Transportation	Buyer's account.
Insurance	Buyer's account.
Delivery Days	Within 15 to 20 days after receipt of Delivery Order.
Order to be placed in favour of	**P.S. EARTHMOVERS PVT. LTD.**
Validity	Till **31st MAY' 2017.**
Warranty	Machine will be warranted for a period of 12 months or 2000 hrs, whichever is earlier, from the date of commissioning of the machine
Taxes & Duties :	Rates Applicable at the time of Despatch shall be levied. Any Payment made for Rs. 200000/- or above in cash will attract additional @1 % TCS on total payment made by cash.
DO :	In Favour Of **P.S. EARTHMOVERS PVT. LTD.**
Payment:	**ICICI BANK DETAILS:** **Account Number:000405112583** **Account Name: P S Earthmovers Pvt Ltd** **Branch Code:0004, Nariman Point Branch, Mumbai** **IFSC:ICIC0000004**

Please feel free to contact us for any further query.We eagerly look forward to your valuable order.

Thanks and Regards

For P.S. EARTHMOVERS PVT. LTD.

P.S. Earthmovers Pvt. Ltd.
AN ISO 9001 - 2008 CERTIFIED COMPANY
CIN-U29244WB2006PTC108701
Regd. Office : 40/2/1Z, Lake Road, Kolkata- 700 029, Ph:+91 033 2465 7101, Fax : 033 2465 7102, E-mail :info@psempl.com. / www.psempl.com
Head Office : P.O.- Nibra, NH-6, Near Ankurhati Check Post, P.S.- Domjur, Dist- Howrah- 711409, Ph.:+91 033 2669 7105/7107/7108, Fax : +91 033 2669 7106
Toll Free No.: 18002121050

QUOTATION

Leading Construction & Agriculture Equipment Manufacturer in India

Ref: JCB/KOL/TB34/17-18/78

Dated: 22.05.2017

Environmental Engineering Services
Saltlake, Kolkata

Sir,

We attached herewith our Technical Specifications of JCB 3DX Backhoe.

Brand	JCB
Model	3DX Backhoe
Electrical System	130 Ampere-houre 12 volts battery system with alternator and full road lighting
Engine	
Engine Make Model	JCB 448
Engine Type	Naturally Aspirated, 4 cylinder, Water Cooled, Diesel Engine
Engine Gross Power	56 KW (76 mHP) @ 2200 RPM
Engine Capacity/Displacement	4.8 litres
Engine Torque	310 nm (31.6 kgm) @ 1200 RPM
Hydraulic System	
Hydraulics Pump Detail	Filtration through suction strainer and return line "JCB Filtromatic Filter".
Hydraulics Maximum Flow	118 lpm @ 2200 rpm
Hydraulics Main Relief Pressure	3300 p.s.i.
Transmission	
Transmission	The JCB synchroshuttle transmission provides superb drive power in all conditions. It consists of a 4-speed, fully synchromesh, smooth shift gearbox with integral torque convertor and electrically operated reversing shuttle
Torque Converter	Torque converter stall ratio is 3.01:1
Number of Travel Speeds	4
Travel Speeds Range Forward	6.1-40 kn/hr
Travel Speeds Range Reverse	6.1-9.8 km/hr
Brake System	

Steering	Power track steering rod system provides equal turn steering & quick response with less operating force
Brakes	JCB 'Q' brakes, hydraulically actuated, dual line, self adjusting (compensated), oil immersed, multi-disc type on the rear axle, well protected from dirt, water etc. requiring no maintenance. Operated through independent pedalslinked together for normal u
Dimension	
Overall Length	5.90 m
Overall Height	3.61 m
Overall Width	2.35 m
Wheel Base	2.17 m
Ground Clearance	0.36 m
Backhoe Performance	
Backhoe Max Dig Depth	4.77 m
Backhoe Max Operating Height	5.97 m
Backhoe Max Loading Height	4.18 m
Backhoe Max Bucket Rotation	185Ë
Backhoe Lift Capacity	1490 kg
Loader Performance	
Loader Max Dump Height	2.74 m
Loader Max. Reach at Full Height	1.20 m
Loader Below Ground Dig Depth	0.07 m
Loader Max Operating Height	3.45 m
Loader Lift capacity to full height	3.23 m
Max Operating Weight	7460 kg
Services Filling Capacity	
Fuel Tank Capacity	128 ltr
Engine Coolant capacity	16.5 ltr
Engine Oil capacity	15 ltr
Transmission capacity	17.5 ltr
Hydraulic Oil capacity	130 ltr
Gear Oil Capacity(Rear Axle)	21 ltr

Description	Cost
JCB 3DX Backhoe	20,70,000
Add 13.5% vat	2,79,450
Total Value	**23,49,450**

Terms & Conditions:

Validity	: one month from the date.
Rate	: Our above rate is inclusive of all other charges, free delivery at your office.
Delivery	: Within 20 days after receipt of delivery order.
Warranty	: Machine will be warranted for a period of 12 months.
Payment	: Part payment against part delivery should be issue.

We hope the above price is within your requirement. Now, we request you to give us an opportunity to serve our best by supplying the above equipments.

Thanks & Regards

Address:-
Unit No. 38, 3rd Floor, Shrachi Tower,
Plot No. 1-25 B/1, East Calcutta,
Area Development Project Kasba at 686,
Anandapur, Kolkata, West Bengal 700107
Ph: 033 2280 2188

Other Offices

1. Address: **Plot No. DTA-006-001-002, Mahindra World City Village Bagru Khurd Tehsil Sanganer, Off Jaipur Ajmer Road, NH-08, Jaipur, Rajasthan 302027**

2. Address: **Quite Office, No.10, 1st Floor B, Sector 40B, Chandigarh, 160036 Phone: 0172 466 8880**

3. Address: **504, 5th Floor, Barton Centre, Mahatma Gandhi Road, Bengaluru, Karnataka 560001 Phone: 080 2532 5983**

QUOTATION

PS Earthmovers Pvt. Ltd. Authorised Dealer

TATA HITACHI solutions

Ref: PSEMPL/KOL/TH 86/17-18/071 Date: 15.05.2017

ENVIRONMENTAL ENGINEERING
SALTLAKE

Dear Sir,
This has reference to your discussion / verbal enquiry / Telephonic enquiry / Enquiry through E mail of date 15.05.2017 with us for one TH.86 Tata Hitachi Backhoe Loader. We are pleased to forward our quotation for the same.

Sl. No	Description	Qty	Price/Unit
1	TH 86 Backhoe Loader fitted with 1.00 cum Loader Six In One Bucket, 0.30cum GP Backhoe bucket and Powered by TATA 497 TC Engine & HD Tyre .	1	22,27,251.30
2	Add: VAT @ 5%		1,11,362.56
3	Total		23,38,613.86
4	Add: TCS Over Machine Value @ 1%		23,386.14
5	Total Invoice Value		23,62,000.00

In Word: Rupees Twenty Three Lac Sixty Two Thousand Only.

Delivery from:	RSO Kolkata.
Transportation :	**Buyer's Account**
TCR	**Seller's Account .**
Insurance :	**Buyer's Account**
Delivery :	Within 7 days after receipt of all documents Delivery Order
Order to be placed in favour of :	**P.S. EARTHMOVERS PVT.LTD.**
Validity :	Till 31st May'2017.
Taxes & Duties :	Rates Applicable at the time of Delivery. . Any Payment made for Rs. 200000/-or above in cash will attract additional @1 % TCS on total payment made by cash.
Warranty :	12 months or 2000 hours whichever is earlier from the date of Commissioning of Machinery at Site.
DO :	**In Favour Of P.S. EARTHMOVERS PVT.LTD.**
Payment:	**Account Number:000405112583** **Account Name: P S Earthmovers Pvt Ltd** **Branch Code:0004, Nariman Point Branch, Mumbai** **IFSC:ICIC0000004**

Please feel free to contact us for any further query. We eagerly look forward to your valuable order.

Thanks and Regard

For P.S. Earthmovers Pvt Ltd

P.S. Earthmovers Pvt. Ltd.
AN ISO 9001 - 2008 CERTIFIED COMPANY
CIN-U29244WB2006PTC108701
Regd. Office : 40/2/1Z, Lake Road, Kolkata- 700 029, Ph:+91 033 2465 7101, Fax : 033 2465 7102, E-mail :info@psempl.com. / www.psempl.com
Head Office : P.O.- Nibra, NH-6, Near Ankurhati Check Post, P.S.- Domjur, Dist- Howrah- 711409, Ph.:+91 033 2669 7105/7107/7108, Fax : +91 033 2669 7106
Toll Free No.: 18002121050

NILKAMAL LIMITED

Manufacture/ Supplier

Asarpota Chambers, 2nd floor Opp. Mirch Masala Resturant, Nr. Swastik Char Rasta, Navrangpura, Ahmedabad, Gujarat 380009

QUOTATION

Ref: NL/AHM/MA89/17-18/081

Date: 25.05.2017

Mr.

Ajeet Singh
Environmental Engineering Services

Dear Sir,
With reference to your e-mail dated 16.05.2017, we are offering Tri cycle with 6 bins of IC 50 lit, 10 lit, 50lit, 60lit, 240lit, 1100 lit bins and 110 lit wheel barrow from our regular production line as under. We are pleased to forward our quotation for the same.

Sl No.	Description	Qty	Price/Unit
1	**Price for Tri cycle with 6 bins of IC 50 lit**	1	26,780
2	**Price for 50 lit bin** Model: BMCONLID50LTRWH Manufacturing Process: BLOW MOLD Dimension: Top O.D – Dia 430 mm Top O.D - Dia 402 mm (Effective) Bottom O.D - Dia 324 mm Height O.D - 507 mm Lid O.D – Dia 430 mm × 120 mm Height Total Height with LID O.D. – 583 mm Raw Material : HMHDPE Capacity: 50 ltrs	1	590
3	**Price for 10lit bin** **Model: BMCONLID10LITRWH** **Manufacturing Process: BLOW MOLD** **Dimension:** Top Dia : 242 mm Bottom Dia : 212mm Height (without lid): 300 mm approx Height (overall): 350 mm approx	1	140

	Material: HMHDPE Handle: Flexible handle with strong strength Usage: Lock-lid airtight container for door to door collection Capacity: 10 ltrs		
4	**Price for 60 lit bin** Model: RFLB60L1 Manufacturing Process: ROTO MOLD Dimension: Top O.D –430 (L) × 400 (B) mm approx Bottom O.D - 332 (L) × 332 (B) mm approx Height (without lid): 563 mm approx Height (with lid): 711 mm approx LID:415 (L) × 415 (B) × 180 (H) mm Capacity: 60 ltrs Material: LLDPE Usage: with & without single/dual mounting pole	1	1,187
5	**Model : NILKAMAL WB 240L** **Manufacturing Process: INJECTION MOLDED** Dimension: Top O.D – 580 (L) × 739 (B) mm approx Bottom O.D - 550 (L) × 647 (B) mm approx Height (without lid): 1001 mm approx Height (with lid): 1082 mm approx Capacity: 240 ltrs Material: HDPE EN Stardard Usage: Wheel Bin	1	3,947
6	**Model : RFLB100L1** **Manufacturing Process: ROTO MOLD** Dimension: Top O.D – 496(L) × 496 (B) mm approx Bottom O.D - 358 (L) × 358 (B) mm approx Height (without lid): 705 mm approx Height (with lid): 915 mm approx Capacity: 100 ltrs Material: LLDPE Usage: Free Stand Litter Bin	1	1,829
7	**Wheel Barrow Model: RCWBL110L1**	1	6,925

	Manufacturing Process: ROTO MOLD Dimension: Top Dimension: 750 mm × 730 mm Bottom Dimension: 450 mm × 430 mm Height: 360 mm approx Material: LLDPE Type of Product: Wheeled Waste Bins Capacity: 110 L		

We hope the above offer is in line with your requirement. Now, we request you to give us an opportunity to serve our best by supplying the above equipment.

Contact Person: Mr. Jignay H Dave
Mob: 919727716997
Email – jignay.dave@nilkamal.com

Nilkamal Limited,
Asarpota Chambers, 2nd Floor,
Opp. Mirchi Masala Restaurants
Near Swatik Char Rasta, C.G. Road,
Navarangapura, Ahmedabad- 380009
Tel No. (079)26402663/26448324
Email: swm.ahmedabad@nilkamal.com

Sintex

QUOTATION

SINTEX PLASTIC TECHNOLOGY LIMITED

Ref: Sin/GUJ/CF62/17-18/07

Date: 28.05.2017

Dear sir,
This has reference to your discussion/Telephonic enquiry of date 28.08.2017 with us for 10lit, 50lit, 60lit, 240lit, 1100 lit wheel barrow bins, 110lit and 2m3 Auto tipper from our regular production.

1. Sintex **10 Ltr** Waste Bin With Closed Lid - Green (BMB 01-01) **160 Rs**

   SKU: PL.ST.WA1.475402
   Type of Product: Waste Bins with Closed Lid
   Capacity: 50 L
   Color: Green

2. Sintex **50 Ltr** Waste Bin With Closed Lid - Green (BMB 05-01) **1,071 Rs**

   SKU: PL.ST.WA1.475402
   Type of Product: Waste Bins with Closed Lid
   Capacity: 50 L
   Color: Green

3. Sintex Waste Bins Rectangular Military Green **60 L** - GBR 06-01 **2,079 Rs**

   SKU: PL.ST.WA1.475402
   Type of Product: Waste Bins with Closed Lid
   Capacity: 50 L
   Color: Green

4. Sintex **240 Ltr** 2 Wheeled Industrial Waste Bin-Green (GBRW 24-04) **6,727 Rs**

   SKU: PL.ST.WA1.475460
   Type of Product: Wheeled Waste Bins
   Capacity: 240 L
   Color: Green

5. Sintex **1100 Ltr** 4 Wheeled Industrial Waste Bin - Green (GBRW 110-04) **48,951Rs**

   SKU: PL.ST.WA1.475460
   Type of Product: Wheeled Waste Bins
   Capacity: 240 L

6. Sintex **110 Ltr** 2 Wheeled Wheel Barrow - Green (GWBSS 11-01) **7,120 Rs**

   Top Dimension: 670 mm × 650 mm
   Bottom Dimension: 450 mm × 430 mm
   Type of Product: Wheeled Waste Bins
   Capacity: 110 L

7. 2m3 capacity Auto tipper (hydraulic) including vat **9, 00,000 Rs**

We hope the above offer is in line with your requirement. Now, we request you to give us an opportunity to serve our best by supplying the above equipment.

Thanks & Regards,
Sintex Limited

Sintex Yarn Address,
119, Kalasagar, shopping hub, 1st floor
Opp. Sai Baba temple, Sattadhar,
Ahmedabad- 380061, Gujarat India
Phone: +917927400500/501
Email id: id.mktg.yarns@sintex.co.in

Sintex Textile Address:
Sintex Industries BVM Kalol
(N. Gujarat) 382 721. India
Phone: +91 – 2764-253000
Email Id: cc@sintex.co.in

BULL

BULL MACHINES (PVT) LIMITED

Bull Machines Pvt Ltd
S.F. No. 5/1 - A, Trichy Road, L & T By-Pass Junction,
Chinthamani Pudur Post, Kamachipuram, Coimbatore,
Tamil Nadu 641103
Phone : +91 422- 3296281, 3291291, 6525753,

QUOTATION

Mr. Ajeet Kumar Singh	Ref: BML/CO/SD21/17-18/18
Environmental Engineering Services	Dated: 02/06/2017
Kolkata	
	Quotation Validity: 30 days from the date of quotation

Dear Sir,

With reference to your mail and telephonic discussion dated 28th May, 2017, we are offering Bull HD 100 Tractor Attached Loader with Technical specification which describes as follows.

Engine	
Engine Type	Turbo charged Euro III Diesel engine
Displacement	1040.00 Litres
Maximum Power	76hp @ 2200rpm
HP Range	100
Maximum Torque	300Nm @ 1500rpm
FuelTank	
FuelTank Capacity	128 litre
Dimension	
Length	6040 mm
Width	NA
Height	3710 mm
Wheelbase	2220 mm
Ground Clearence	480 mm
Tyres	
Tyres Front	9.00 x 16 - 16 PR
Tyres Rear	16.9 x 28 - 14 PR
Brakes	
Brakes	Hydraulic Oil immersed brakes

Others	
Front Axle	Steer axle, centrally pivoted with oscillation angle plus or minus 16 degree
Rear Axle	Drive axle rigidly mounted, incorporates Max-trac torque proportioning differential, driven by short propshaft from gear box
Emission	BS-III
Transmission Type	CARRARO synchroshuttle transmission with integral torque converter
No Of Gears	4
Maximum Speed	0
Hydraulic Lift Capacity	3307 PSI (228 bar)
Bore And Stroke	
Standard Operating Weight	7750
Standard Loader Capacity	NA
Turning Radius	8.9
Long Dig Depth	4600
Short Dig Depth	NA
Steering Type	Power steering
Front Tyre Size	9.00 x 16 - 16 PR
Rear Tyre Size	16.9 x 28 - 14 PR
Battery	12V battery system

Description	Price
Total invoice value of Bull HD 100 Tractor Attached Loader including vat	**13,50,000**

Delivery within 30 days from date of purchase order

Thanks & Regards
Yours Sincerely,

Bull Machines Pvt. Limited

(This is a computer generated document. No signature will appear.)

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4. The amount will be credited to the State Government's account in RBI as per procedure laid down by Ministry of Finance, Department of Expenditure vide O.M. No. F-II (45/76/SC) dated 22.02.1977.

5. In addition to the entire Scheme being governed by the Guidelines of the Swachh Bharat Mission (SBM) which is available at www.mohua.gov.in and following the same while releasing funds to the beneficiaries/ULBs, the release of funds for the **Solid Waste Management** will be restricted to and governed by the guidelines given in **Paragraph 7** of the SBM guidelines.

6. Entry has been made at **Sl. No. 10** of Grant-in-aid Register for the year 2018-19.

7. No U.C. is pending for this project from Govt. of West Bengal.

8. This issues with the approval of Finance Division vide note on **e-file No. 3125021** dated **11/06/2018**.

Yours faithfully,

(Gopal Jha)
Under Secretary to the Govt. of India
Tel: 23062565

Copy to:-

1. Director General, Audit Central Revenue and Expenditure, Near ITO, AGCR Building, New Delhi-110002
2. Principal Accounts Officer, Ministry of Housing and Urban Affairs, Nirman Bhawan, New Delhi.
3. Chief Secretary, Government of West Bengal, Kolkata.
4. Shri. M.N. Pradhan, Director, State Urban Development Agency (SUDA), ILGUS Bhavan, Sector-III, H-C Block, Bidhannagar, Kolkata - 700 106
5. Finance Division
6. Sanction file

(Gopal Jha)
Under Secretary to the Govt. of India

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SUDA - 281/2016/416

04.06.2018

From : Director, SUDA &
State Mission Director, SBM (U)

To Joint Secretary & Mission Director
Swachh Bharat Mission (U)
Ministry of Housing and Urban Affairs, Government of India
Nirman Bhawan, New Delhi – 110 011

Sub. : Claim for Government of India Share as per Action Plan for different components in 2018-19, under SBM (U) for the State of West Bengal.

Ref.: 1. Your Memo No.: 1/31/2015-SBM dated 2nd May 2018
2. Our Memo No.: SUDA-281/2016/146 dated 23rd April 2018

Sir,

As per request, it is being clarified that all the 13 DPRs for 13 new SWM Projects indicated in the minute of the 2nd State High Powered Committee Meeting, under Swachh Bharat Mission (Urban), which was held on 28th March 2018, at the Conference Hall, Nabanna, had been appraised in all respect by the Chief Engineers of both Municipal Engineering Directorate and Kolkata Metropolitan Development Authority, Urban Development and Municipal Affairs Department, Government of West Bengal, both Technically and Financially.

Again the cost of SWM vehicles and equipments had been considered based on the rates approved either by the Municipal Engineering Directorate or the Kolkata Metropolitan Development Authority, UD & MA Department, Govt. of West Bengal or as per Market Rate analysis.

You are now requested to release the sum of Rs. 332.11 crore for the year 2018-19 as detailed in our memo in reference.

Thanking you.

Yours faithfully,

Director, SUDA &
State Mission Director, SBM (U)

SUDA – 281/2016/416/1(1) 04.06.2018

Copy forwarded for kind information to:

1. PS to the Principal Secretary, UD & MA Department, Govt. of W.B.

Director, SUDA

No. 1/31/2015-SBM
Government of India
Ministry of Housing and Urban Affairs

Nirman Bhawan, New Delhi
Dated 2nd May, 2018

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To

Shri. M.N. Pradhan
Director, State Urban Development Agency (SUDA)
ILGUS Bhavan, Sector-III, Hi-C Block,
Bidhannagar, Kolkata - 700106
(Email:wbsudadir@gmail.com)

Subject: Action Plan for 2018-19 under SBM (U).

Sir,

Kindly refer to West Bengal's letter No.SUDA-281/2016/146 dated 23.04.2018 on the above subject. IFD's observations on the State Govt. is reproduced below:-

"(i) Central assistance for SWM projects have to be restricted to 35% of the appraised cost or tendered cost whichever less is. In the SHPC minutes it has been indicated that DPRs for 13 new SWM projects are technically appraised by Reputed Institutes/Chief Engineers of the Department. It may be indicated/clarified as to whether the DPRs have been economically appraised, and whether the cost indicated against each project is appraised cost.

(ii) Regarding the procurement of SWM vehicles and equipment, the basis of cost estimates may be indicated for each item."

2. In view of above, you are requested to kindly furnish the requisite information at the earliest.

Yours faithfully,

(R.S. Tayal)
Deputy Secretary to the Govt. of India
Tel: 23061167
Email: rstayal@nic.in

Gmail

Director, SUDA <sbm.wbsuda@gmail.com>

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ind release of fund for 2nd Installment for already sanctioned 10 Nos of SWM projects

1 message

Wed, Jun 13, 2018 at 12:04 PM

Director, SUDA <sbm.wbsuda@gmail.com>
To: mkmandalud@gmail.com, Rajendar Jayal <rajjhuni@gmail.com>
Cc: vk.jindal@nic.in, sanghamitrab@kpmg.com, "Dewan, Salim" <salimdewan@kpmg.com>
Bcc: Sujay Mitra <sujay.mitra@gmail.com>, bkpal.suda@gmail.com, BADRI NARAYAN Kar <karbnarayan@gmail.com>

Ref: Letter No. 1/31/2015-SBM dated 12th June, 2018

Sir,

Reference above, we are thanking you for releasing fund for 1st Installment of new 13 SWM Projects for 13 ULBs and the procurement of SWM Vehicles and equipments for the rest 97 ULBs.

But it is to mention that implementation of 10 SWM Projects for 14 ULBs are running in full swing.

You have had released only 50% of VGF Grant as 1st Installment in the Month of April, 2017 for the above SWM projects. As per our requirement stated in our letter No SUDA-281/2016/146 dated 23.04.2018, 2nd installment for the stated above projects amounting for **Rs. 94.16 Cr.** may kindly be released as soon as possible, so that we can implement the said projects in time.

Regards,

Director SUDA

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Minutes of the 2nd Meeting of State High Powered Committee under Mission Nirmal Bangla (Urban)/Swachh Bharat Mission (Urban)

Date: 28th March 2018	Time: 11.30 AM	Venue: Conference Hall of the Chief Secretary at Nabanna

List of the Members and other Participants Present: Placed at Annexure-I

The Chief Secretary to Government of West Bengal and the Chairman of the State High Powered Committee under Mission Nirmal Bangla (Urban)/Swachh Bharat Mission (Urban) chaired the meeting.

At the outset, the Secretary, Urban Development & Municipal Affairs Department, Government of West Bengal welcomed all the members of the Committee and explained the overall plan and activities under Mission Nirmal Bangla (Urban).

Detailed discussion took place on the progress of the 10 nos. of Solid Waste Management Projects of 14 ULBs under implementation, the proposed 13 nos. of Solid Waste Management Projects of 13 ULBs for approval, Strategy for covering all the ULBs to ensure segregation at source, 100% door to door collection and transportation and action plan of the components for the year 2018-19,

1. Approval of DPRs of Solid Waste Management:

DPRs of following 13 Solid Waste Management Projects of 13 ULBs of West Bengal have been placed before the Committee for consideration. The SWM Projects are technically appraised by Reputed Institutes/Chief Engineers of the Department. Lands for the projects are available with the ULBs in each case. After detailed deliberation, the Committee has approved the DPRs of following SWM Projects:

Sl. No.	ULB	Estimated Cost (Rs. In Lakh)		
		Bulk purchase of Equipments and Vehicles	Construction of SLF, Compost /Bio-gas/Vermi-Compost Plant	TOTAL DPR COST
1	Durgapur MC	2553.47	3877.82	6431.29
2	Bankura	559.63	1088.9	1648.53
3	Purulia	392.72	1066.82	1459.54
4	Coochbehar	266.11	669.16	935.27
5	Burdwan	1683.37	2133.2	3816.57
6	Arambag	298.82	634.86	933.68
7	Raghunathpur	201.61	360.43	562.04
8	Kharagpur	1542.31	1865	3407.31
9	Panihati	1241.04	3281.35	4522.39
10	Kanchrapara	824.37	1879.05	2703.42
11	Baruipur	372.2	892.68	1264.88
12	Garulia	430.4	618.85	1049.25
13	Asansol MC (P-II)	0	2911.69	2911.69
	TOTAL	10366.05	21279.81	31645.86

It was decided that beyond the Government of India share of 35%, the remaining will be borne by the State Government and ULB. This fund sharing pattern between the State Government and ULB will remain same as approved for the earlier Projects i.e. 5% share will be borne by the ULBs having below 10 Lakh Population and 10% share will be borne by the ULBs having above 10 Lakh Population, and the remaining fund will be borne by the State Government as Matching State Share & Additional State Share.

It was decided that for these projects, all the vehicles and equipments will be procured centrally from the end of State Urban Development Agency (SUDA) and construction of Sanitary Landfill & Processing Plants will be done by the ULBs under the supervision of Municipal Engineering Directorate & Kolkata Metropolitan Development Authority.

2. **Procurement of SWM Vehicles and Equipments for 97 ULBs:**

It was decided that to ensure Segregation at source, 100% door to door collection and Transportation in all the ULBs, procurement of all the SWM Vehicles and Equipments of all the ULBs will be done Centrally from SUDA. After that DPR for the ULBs will be prepared for establishment of Processing Plant and Sanitary Landfill site subject to availability of suitable Land.

After detailed deliberation, the Committee has approved the following two DPRs for procurement of SWM Vehicles and Equipments for all the remaining ULBs of West Bengal:

i. A DPR for Improvement of Transportation System of Municipal Solid Waste of the ULBs with total Project Cost of Rs. 64.49 Crore, is prepared by SUDA in consultation with the ULBs and appraised by Municipal Engineering Directorate, Government of West Bengal. Procurement for 23 nos. 8 CuM Movable Compactors, 117 nos. 10 CuM Dumpers, 179 nos. 2.2 CuM Fuel Operated Tippers and 663 nos. Battery Operated Hydraulic Tippers are in progress. In this respect, work order for 23 nos. 8 CuM Movable Compactors has already been issued. Re-tender for the remaining items have been done due to non availability of successful bidders in 1st call.

ii. A DPR for ensuring Segregation at source, 100% door to door collection and Transportation in all the ULBs with total Project Cost of Rs. 258 Crore, have been prepared by SUDA in consultation with the ULBs and appraised by Municipal Engineering Directorate, Government of West Bengal.

Procurement to be made for 10 ltrs Household Bins, 100-120 Ltr. Litter Bin, 240-660 ltrs. Community Bin, Tricycle Van, Battery Operated Cart, Wheel Barrow, Auto Tipper, Compactor (Movable), Dumper, Tractor, TT Container, Jetting cum Suction Machine, Road Sweeping Machine, Cesspool, Loader cum Back Hoe and Safety Measures etc.

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3. Annual Action Plan for the Year 2018-19:

The Committee has approved the Annual Action Plan of the Components for the year 2018-19 amounting to total GoI Share of Rs. 237.95 Crore, which will be submitted to Government of India. Details of the Annual Action Plan of all Components for 2018-19 approved by SHPC :

Sl No.	Components	Action Plan	Estimated Project Cost	Total Central Share (Rs in Crore)
1	Community Toilet	Construction of 2000 Seats	Rs. 19.60 Crore (@98000/- per seat)	7.84
2	Public Toilet	Construction of 1000 Toilet Seats	Rs. 9.80 Crore (@98000/- per seat)	3.92
		Construction of 2000 Urinal Seats	Rs. 6.4 Crore (@32000/- per seat)	2.56
3	Solid Waste Management (SWM)	13 Nos of New SWM Projects of 13 ULBs	Rs. 316.46 Crore	110.76
		Procurement of SWM Vehicles for Improvement of Transportation System of Municipal Solid Waste of the ULBs	Rs. 64.49 Crore	22.57
		Procurement of all the SWM Vehicles and Equipments for 97 ULBs to ensure Segregation at Source, 100% Door to Door Collection and Transportation of Grabage	Rs. 258 Crore	90.30
TOTAL				237.95

4. Claim of Fund from GoI in the Year 2018-19:

The Committee has approved the Claim of Fund amounting to Rs. 332.11 Crore from Government of India in the year 2018-19, which will be submitted to Government of India. Details of Claim of Fund from Government of India in the year 2018-19 approved by SHPC:

Rs. in Crore

Sl No	Financial Year	Installment	SWM Amount	CT Amount	PT Amount	PT -Urinal Amount	Total Amount
1	2017-18	2nd	94.16	0	0	0	94.16
2	2018-19		223.63	7.84	3.92	2.56	237.95
TOTAL			295.22	7.84	3.92	2.56	332.11

5. Miscellaneous:

- As per direction of Hon'ble Chief Minister to Government of West Bengal a Clean & Green City/Ward Competition has been designed to create and maintain a healthy and beautiful environment in the cities and also to develop a competitive environment among the Cities and also among the Wards within the City. In the discussion, it was decided that in the evaluation parameters, cleanliness of Schools should be added.
- The Chef Secretary to Government of West Bengal raised an issue that the market areas & its nearby drains of Darjeeling City remain very much dirty due to accumulation of wastes during ~~pick~~ peak season for the tourists. . In this connection the Secretary, UD & MA Department has explained the activities already taken up through an Integrated Solid Waste Management project under State Plan Fund for Darjeeling City. In the project all kinds of vehicles and equipments are being procured for ensuring segregation at source, 100% door to door and market waste collection and regular Road sweeping. Bio Gas Plant are being constructed for processing of Bio Degradable Wastes and the recyclable items will be sold out. .

Meeting ended with thanks to and from the chair.

(Malay De)
Chief Secretary to Government of West Bengal
& Chairman, SHPC, MNB (U)

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Annexure-I

List of Members and Other Participants Present

1. Sri Malay De, IAS, Chief Secretary, GoWB
2. Sri Harekrishna Dwivedi, IAS, Additional Chief Secretary, Finance Department
3. Sri Sanjay K Thade, IAS, Principal Secretary, Backward Classes Welfare Department
4. Sri Arnab Roy, IAS, Principal Secretary, Environment Department
5. Sri D. Nariala, IAS, Principal Secretary, School Education Department
6. Sri Khalil Ahemed, IAS, Municipal Commissioner, Kolkata MC.
7. Sri Onkar Singh Meena, IAS, Secretary, UD & MA Department
8. Sri Arvind Mina, IAS, S.P.D., PBSSM, School Education Department
9. Sri Sutanu Kar, IAS, Director, SUDA
10. Smt. Pragyan Bharati , Wash Specialist, UNICEF

11. Sri J. Chattopadhya , D.L.B., UD & MA Department
12. Sri Amit Das, Chief Engineer, MED, UD & MA Department
13. Sri B. N. Kar, Additional Director, ILGUS, UD & MA Department
14. Sri Subhasish Chattapadhya, Director General (SWM), Kolkata MC
15. Sri K. Ghosh Dastidar, Executive Engineer, Kolkata MC
16. Sri Bijay Krishna Pal, Executive Engineer, SUDA
17. Sri Saumya Bandyopadhyay, Assistant Engineer, M.E.D, UD & MA Department
18. Sri S S S Gous, Programme Coordinator, SUDA
19. Dr. Sujay Mitra, Chief Manager – Planning & Monitoring, SUDA

No. 20/1/2016-SBM-I
Government of India
Ministry of Urban Development

18th July 2016

OFFICE MEMORANDUM

Sub: Revisions/ Modifications of the operational guidelines of Swachh Bharat Mission (Urban)

This is to notify that the following changes have been made to the guidelines with respect to Swachh Bharat Mission (Urban):

1. State High Powered Committees (SHPCs) are given the flexibility to re-determine targets for IHHLs and CTs, subject to overall state-wise funds envelope (sum of allocation under IHHL and CTs, for the entire mission period) remaining unchanged.

2. Increase in base unit cost of CTs to Rs 98,000 per seat, wherein VGF/Grant will be upto 40% of project cost (i.e. VGF/Grant of Rs 39,200 per seat). This will be subject to overall state-wise funds envelope (sum of allocation under IHHL and CTs, for the entire mission period) remaining unchanged. This marks a shift from monitoring of toilet construction to monitoring of ODF status achievement.

3. Extension of VGF/Grant of upto 40% as available for CTs to Public Toilet projects as well (i.e. VGF/Grant of Rs 39,200 per seat). Unit cost of PTs to be same as CTs. Targets for PT to be set under CT component. This will be subject to overall state-wise funds envelope (sum of allocation under IHHL and CTs, for the entire mission period) remaining unchanged

4. Inclusion of urinals in ODF component, wherein VGF/grant of upto, 40% to be given on lines of CTs/PTs, and base cost of urinals to be Rs. 32,000 per unit (i.e. VGF/Grant of Rs 12,800 per unit). Targets for urinals to be set under CT component. This will be subject to overall state-wise funds envelope (sum of allocation under IHHL and CTs, for the entire mission period) remaining unchanged.

5. The central assistance for Municipal Solid Waste Management component be raised from present 20 percent to 35 percent. This will be subject to overall state-wise funds envelope, for the entire mission period, for SWM remaining unchanged.

This issues with the approval of competent authority.

18.7.16

(V.K. Kushwaha)
Under Secretary to the Government of India
Tel: 23062654

To:

1) Chief Secretaries of all States/ Union Territories
2) Principal Secretaries/ Secretaries of Urban Development of all States/ Union Territories
3) Mission Directors (SBM) of all States/ Union Territories

Copy for information to: (i) PSO to Secretary (UD) (ii) JS&FA, MoUD (iii) JS (SBM) (iv) Director (SBM-I)/DS (SBM-II)

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सत्यमेव जयते

Government of India

Government of India
Ministry of Urban Development

Guidelines for

Swachh Bharat Mission (SBM)

स्वच्छ भारत
एक कदम स्वच्छता की ओर

December 2014

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CONTENTS:

1. Introduction

1.1. According to Census 2011 India's urban population is 377 million or 31% of the total population. These numbes are expected to increase to 600 million by 2031. The Census 2011 also showed tat in 4,041 statutory towns, close to eight million households do not have access › toilets and defecate in the open (7.90 million). Weak sanitation has significant helth costs and untreated sewage from cities is the single biggest source of water reource pollution in India. This indicates both the scale of the challenge ahead of th Indian cities and the huge costs incurred from not addressing them.

1.2. The Swachh Bharat Miss (SBM) emanates from the vision of the Government articulated in the addr of The President of India in his address to the Joint Session of Parliament on 9th Je 2014:

> "We must not tolerate › indignity of homes without toilets and public spaces lied with garbage. For ensuring hygiene, waste manament and sanitation across the nation, a "*Swachh Bhe Mission*" will be launched. This will be our tribute to Natma Gandhi on his 150th birth anniversary to be celeb›d in the year 2019"

SBM is being implemented by the Mry of Urban Development (M/o UD) and by the Ministry of Drinking Water and Sation (M/o DWS) for urban and rural areas respectively. These guidelines are for implementation of Swachh Bharat Mission (Urban).

2. Swachh Bharat Mission (SBJrban Overview

2.1. Mission Objectives

2.1.1. Elimination of open defecation
2.1.2. Eradication of Manual Scavengir
2.1.3. Modern and Scientific Municipal Waste Management
2.1.4. To effect behavioral change regahealthy sanitation practices
2.1.5. Generate awareness about sanitand its linkage with public health
2.1.6. Capacity Augmentation for ULB's
2.1.7. To create an enabling environm private sector participation in Capex (capital expenditure) and Opex (o›n and maintenance)

2.2. Duration of the mission

The Mission will be in force till 2nd October 2019

2.3. Mission components

The Mission has the following components:

2.3.1. Household toilets, including conversion of insanitary latrines into pour-flush latrines;
2.3.2. Community toilets
2.3.3. Public toilets
2.3.4. Solid waste management
2.3.5. IEC & Public Awareness
2.3.6. Capacity building and Administrative & fice Expenses (A&OE)

By Public Toilets, it is implied that the are to be provided for the floating population / general public in places such as markets, train stations, tourist places, near office complexes, or other pic areas where there are considerable number of people passing by.

By Community toilets, it is implied that a shared facility provided by and for a group of residents or an entire settlent. Community toilet blocks are used primarily in low-income and/or informsettlements / slums, where space and/or land are constraints in providing a hold toilet. These are for a more or less fixed user group.

2.4. Mission Coverage: Cs and target population

2.4.1. All Statutory towns will be covunder the Mission. Definition of statutory towns is at ***Annexure I***.

2.5. Mission Strategy

2.5.1. Comprehensive Sanitation Pla, which includes
(a) City Level Sanitation Plans
(b) State Sanitation Concept As per ***xure IV***
(c) Sate Sanitation Strategy

2.5.2. Behavioral Change Strateg IEC

2.5.3. Enabling Environment for sector participation

2.5.4. Capacity Building

2.5.5. Special focus groups : The State Governments shall pursue the following:

i. All manual scavengers in urban areas are identified, insanitary toilets linked to their employment are upgraded to sanitary toilets, and that the manual scavengers are adequately rehabilitated.
ii. In their efforts to streamline and formalize SWM systems it shall be the endeavor of ULBs that the informal sector workers in waste management (rag pickers) are given priority to upgrade their work conditions and are enumerated and integrated into the formal system of SWM in cities.
iii. All temporary accommodation for migrants and the homeless in urban areas have adequate provision for toilets either on the premises or linked to a public / community toilet.
iv. Mandating that construction labour in urban areas have access to temporary toilets at all sites in urban areas, buildings, parks and roads where construction / maintenance work is taking place or where construction labour is temporarily housed.
v. Priority shall be accorded pro-actively to cover households with vulnerable sections such as pensioners, girl children, pregnant and lactating mothers.

2.6. Mission Outlay

The estimated cost of implementation of SBM (Urban) based on unit and per capita costs for its various components is Rs. 62,009 Crore. The Government of India share as per approved funding pattern amounts to Rs. 14,623 Crore. In addition, a minimum additional amount equivalent to 25% of GoI funding, amounting to Rs. 4,874 Crore shall be contributed by the States as State/ULB share. The balance funds is proposed to be generated through various other sources of fund which are, but not limited to:

a. Private Sector Participation
b. Additional Resources from State Government/ULB
c. Beneficiary Share
d. User Charges
e. Land Leveraging
f. Innovative revenue streams
g. Swachh Bharat Kosh
h. Corporate Social Responsibility
i. Market Borrowing
j. External Assistance

3. Concept Sanitation Strategy:

It is understood that without a proper **city sanitation plan** and resulting **state sanitation strategy**, as indicated in National Urban sanitation policy-2008, comprehensive planning cannot be achieved to attain the objectives of Swachh Bharat Mission. However, both the activities require time and wide consultation at various levels including citizen engagements. It is also understood that although many states and cities have prepared these plans and strategy, many more have not done so.

In order to give a quick start to the Swachh Bharat Mission, it is, therefore proposed that all states may submit a **brief concept Note on state sanitation strategy**, as given in the ***AnnexureIV*** of these guidelines as a part of there initial proposal, in order to claim their first installment for individual household toilets, IEC and Capacity Building as well as the revolving fund for other components.

The concept note and proposal shall be submitted online to MoUD by state governments by 30 January 2015.

The states should however, simultaneously start preparing City sanitation plans for each city and State Sanitation strategy as per National Urban sanitation Policy 2008 as these will be required before any further release can be made to the states.

4. SBM (Urban) Component -I: Household toilets

4.1. SBM (Urban) aims to ensure that

a) No households engage in the practice of open defecation,
b) No new insanitary toilets are constructed during the mission period and
c) Pit latrines are converted to sanitary latrines.

The Target Group for construction of household units of Toilets, thus, is:

(i) 80% of urban households engaging in open defecation
(ii) All households with insanitary latrines
(iii) All households with single-pit latrines

These will be targeted under this component for the construction of household toilets or individual household latrines during the mission period. The remaining 20% of households practicing open defecation are assumed to be catered by community toilets due to constraints of space.

4.2. **Household toilets** constructed under SBM (Urban) will have two main structures – the toilet *superstructure* (including the pan and water closet), and the

substructure (either an on-site treatment system, or a connection to existing underground sewerage system).

4.2.1. Whenever a sewerage system is available within 30 metres from the proposed household toilet, only the toilet superstructure may be constructed and connected to the existing sewerage system. ULBs must facilitate these connections for household toilets under SBM (Urban), wherever applicable and economical.

4.2.2. In the event that a sewerage system is not available within 30 meters from the proposed household toilet, in addition to the construction of the toilet superstructure, an on-site treatment system (such as twin pits, septic tanks, bio-digesters, or bio-tanks) should also be constructed for the collection, treatment and/or disposal off sewage at, or near the point of generation.

4.2.3. ULBs should ensure that all household toilets being constructed under SBM are built in tandem with water supply arrangements in ULBs. Beneficiary households will be responsible for the operation and maintenance of the household toilets. Suggested technical specifications, technologies and tentative cost of household toilets are available at ***Annexure II***

4.3. For this component, ***beneficiary*** shall mean any household that does not have access to an individual household toilet or has an insanitary toilet (dry/ *bahou* and single pit latrine). No other criteria is to be applied:

4.3.1. Selection of Beneficiary Household shall be as per the strategy adopted by ULB under the guidance of state government. However, the following guiding principals may be followed:

(i) Initially, a campaign to create awareness may motivate beneficiaries to come forward on their own. This should be taken at the ULB level and followed up by accepting a simple application and undertaking, to be verified within 7 days and approved at ULB level.

(ii) ULBs are expected to carry out a house-to-house survey. In so doing they shall also take into consideration Census 2011 data or any recent survey available to them. This baseline data shall be put in public domain by 15.02.2015.

(iii) Any Claims and objections received shall be addressed in a transparent manner and continuous modifications can made in the baseline data.

(iv) Based on this house to house survey, all households practicing open defecation shall be identified and ULB's need to approve either a Household toilet or plan for community toilets for each of such identified household/group of household.

4.3.2. Beneficiary households will be targeted under this scheme irrespective of whether they live in authorized/unauthorized colonies or notified / non-notified slums. Under SBM (Urban), tenure security issues are to be de-linked with benefits.

4.3.3. The states and ULB's must ensure that the maximum number of beneficiaries from individual households toilets will be normally limited to the numbers indicated in the Census of India 2011 for each town.

4.4. Central government incentive for the construction of household toilets will be Rs. 4,000 per household toilet for each identified beneficiary household.

4.4.1. 50% of the Central Government incentive (Rs. 2,000/-) will be released to the identified beneficiary household by the ULB as 1st installment on approval by the ULB along with share of the state government. There is no bar on releasing any extra funds at any stage using additional resources generated/provided by state government/ ULB.

4.4.2. The ULB shall verify each application before releasing any incentive. Verification of the application should be completed within 7 working days of its submission of application by the beneficiary.

4.4.3. The remaining 50% of Central Government incentive as 2nd installment should be released to the identified beneficiary household along with the State Government's incentives upon verification of physical progress of construction of the household toilet. The actual process of verification will be as per the directions of the respective State Government.

4.4.4. F[illegible]al Verification of the construction of the household toilet should be supported by location-based technologies, wherein self-attested geo-tagged photographs of the construction, along with the applicant are taken out. These photographs must be uploaded to the SBM (Urban) MIS and be monitored by the ULBs and the States.

4.4.5. All financial incentives (government and /or private) for this component will be deposited directly (by electronic clearing service) into the bank accounts of the beneficiary households (including accounts opened under the *Pradhan Mantri Jan Dhan Yojana*). No cash/cheque disbursals shall take place.

The ULBs should ensure that financial incentives to beneficiary households are transferred in a timely and hassle-free manner. The State government should evolve standard norms for this throughout the state and ensure the monitoring of its implementation.

5. SBM (Urban) Component II: Community toilets

5.1. Under SBM (Urban), it is estimated that about 20% of the urban households in cities, who are currently practicing open defecation are likely to use community toilets as a solution due to land and space constraints in constructing individual household latrine.

5.2. Community toilet blocks will consist of a given number of toilet seats, as per requirements, toilet superstructure including the pan and water closet, and a substructure (either an on-site treatment system, or a connection to underground sewerage/septage system) shared by all the toilet seats and facilities for hand wash.

5.2.1. Care should be taken to ensure that these facilities have adequate provision for separate toilets and bathing facilities for men, women and facilities for the disabled (e.g. ramp provision, braille signage, etc.).

5.2.2. The norms for connection of the superstructure to an on-site system or connection to an underground sewerage system as defined in paragraphs 4.2.1 and 4.2.2 above will apply here.

5.2.3. ULBs should ensure that all community toilets being constructed under SBM (Urban) are built in tandem with water supply arrangements in ULBs. Suggested technical specifications, technologies and tentative cost of community toilets are available at ***Annexure II***.

5.3. For this component, ***beneficiaries*** shall be groups of households ("beneficiary household group") in urban areas whose members practice open defecation and who do not have access to household toilet, and for whom the construction of individual household toilets is not feasible. Beneficiary household groups under this component of SBM (Urban) shall be identified by the procedure as designed by the ULB. This may be application based or survey based, with or without participation of community based organisations. Involvement of civil society organisations is to be encouraged. NGO's, Area, Ward or Mohalla Sabha's may be used for this purpose. Beneficiary household groups will be targeted under this scheme irrespective of whether they live in authorized/unauthorized colonies or notified / non-notified slums. Under SBM (Urban), tenure security issues are to be de-linked with benefits.

5.4. Once a sufficient number of households are identified as a group, the ULB shall identify suitable piece of land adjoining their houses/dwelling and design the toilet block. Efforts should be made to look into all possible sources of revenue generation by leveraging land ,use of rooftop or any other means.

5.5. Central government incentive for the construction of community toilets will be in the form of 40% Grant/VGF, for each community toilet block constructed. The remaining funds have to be generated as indicated in para 2.6 above.

5.6. Projects will be prepared and sanctioned by ULBs. In the entire project approval and procurement process, all provisions and procedures as prescribed by respective State Governments for ULBs must be followed in their entirety. The entire approval procedure except for release of Central funds will end at the ULB level. To this end the States are required to empower the ULBs if not already done so. This includes the delegation of powers to allot land (for this purpose) to ULB's and mechanisms to leverage this land to make the Community Toilet a viable project.

5.7. All community toilets constructed under SBM must have a minimum 5 year maintenance contract.

5.8. States will contribute a minimum of 25% funds towards community toilet projects to match 75% Central Share. (10% in the case of North East States and special category states).

6. SBM (Urban) Component -III: Public Toilets

6.1. Under SBM (Urban), States and ULBs will ensure that a sufficient number of public toilets are constructed in each city. All prominent places within the city attracting floating population should be covered.

6.2. Care should be taken to ensure that these facilities have adequate provision for men, women and facilities for the disabled (e.g. ramp provision, braille signage, etc.) wherever necessary. Suggested technical specifications, technologies and tentative cost of public toilets are available at ***Annexure II***.

6.3. ULBs should ensure that all Public Toilets being constructed under SBM (Urban) are built in tandem with water supply arrangements in ULBs.

6.4. There will be no Central Government incentive support for the construction of public toilets under SBM (Urban). States and ULBs are encouraged to identify land for public toilets, and leverage this land and advertisements to encourage the private

sector to construct and manage public toilets through a PPP agreement. Additional funding support by any means other than GoI grant can be used for public toilets.

6.5. The Projects will be prepared, sanctioned and implemented by ULBs. In the entire project approval and procurement process, all provisions and procedures as prescribed by respective State Governments for ULBs must be followed in their entirety. The entire approval procedure should end at the ULB level. To this end the States are required to empower the ULBs if not already done so. This includes the delegation of powers to allot land (for this purpose) to ULB's and mechanisms to leverage this land to make the Public Toilet a viable project.

6.6. All Public Toilets constructed under SBM must have a minimum 5 year maintenance contract.

7. SBM (Urban) Component IV: Solid Waste Management

7.1. Municipal Solid Waste Management (MSWM) refers to a systematic process that comprises of waste segregation and storage at source, primary collection, secondary storage, transportation, secondary segregation, resource recovery, processing, treatment, and final disposal of solid waste. The Manual on Municipal Solid Waste Management, 2000 published by M/o UD and revised from time-to-time, may be referenced for DPR formulation and implementation.

7.2. ULB's are to prepare DPR for Solid waste management of their city in consultation with state governments. Smaller cities can form clusters to become viable entities to attract private investment. 100% Cost reimbursement for preparing the DPR shall be done by GoI as per unit cost and norms set up by NARC.

7.3. State governments may handhold ULB's in quickly preparing DPR's for SWM by empanelling /shortlisting /identifying private or government agencies for the same.

7.4. The DPR's should be bankable, having a viable financial model. These will be prepared emanating from the needs identified in the City Sanitation Plan. DPRs should be aligned with Govt. of India's goals outlined in the NUSP 2008, SWM rules, advisories, CPHEEO manuals (including cost-recovery mechanisms), O&M practices and Service-level Benchmark advisories released by M/o UD from time to time. Street Sweeping and litter control interventions will be part of DPR which is essential for a clean city.

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7.5. In order to promote projects of waste to energy, it is clarified that the central government Grant / VGF may also be used for such projects, either upfront or as generation based incentive for power generated for a given period of time.

7.6. The State High Powered Committee (HPC) will authorize institutes of national repute for appraisal of DPRs for the technical and economic appraisal of DPRs for projects recommended by ULBs. No appraisal will be done by MoUD. The cost of DPR appraisal by these institutes shall be an admissible component under administrative costs, subject to norms as approved by MoUD.

7.7. The performance and quality of appraisal by these identified and authorized institutes will be evaluated and monitored by HPEC as well as NARC and corrective actions taken wherever necessary.

7.8. The State Level high power committee will approve the DPR as well as the financial model of solid waste management.

7.9. The implementation of SWM projects will be as per directions of State Level High Power Committee.

7.10. Central government incentive for the SWM projects will be in the form of a maximum of 20% Grant / VGF for each project. The remaining funds have to be generated as indicated in para 2.6 above.

7.10.1. While considering projects under MSWM it will be ensured that there is no duplication in terms of funding under any other scheme or programme.

7.10.2. Detailed technical and financial appraisal of the DPRs will be carried out in the manner prescribed in paragraph 10.5.4. O&M arrangements for the project shall necessarily be an integral part of the project in the DPR.

7.10.3. SWM projects will be sanctioned by the State level HPC which shall include a representative of the MoUD. In the entire project approval and procurement process, all provisions and procedures as prescribed by respective State Governments must be followed in their entirety. The entire approval procedure for MSW projects except for release of Central funds will end at the State Level.

7.10.4. The States shall be free to choose the technology for SWM projects, toilets and street sweeping. The Ministry of Urban Development shall, from time to time, bring to the notice of the States, through advisories and manuals, and other consultative mechanisms, various options available in these fields.

7.10.5. States will contribute a minimum of 25% funds for SWM projects to match 75% Central Share.(10% in the case of North East States and special category states).

8. SBM (Urban) Component -V: IEC & Public Awareness

8.1. A key strategy under SBM (Urban) is behavior change communication to ensure that sanitation as an issue is mainstreamed with the general public at large and should cover issues of open defecation, prevention of manual scavenging, hygiene practices, proper use and maintenance of toilet facilities (household, community or otherwise), etc., and its related health and environmental consequences. Communication material for behavior change shall be designed in consultation with the M/o Information and Broadcasting, M/o Health & Family Welfare, and should be in sync with the material being used under SBM (Rural).

8.2. A total of **15%** of the total central allocation will be earmarked for this component. Of this, **12%** will be earmarked for States to undertake massive public awareness campaigns on sanitation and establishing its link to public health, hygiene and the environment through various means including - radio, social media, documentaries, plays, workshops, etc. The remaining **3%** will be earmarked for the MoUD to draw a national media campaign and developing standard campaign tools for effective awareness and communication on sanitation.

8.3. Expenditure on Newspaper and TV is not an admissible item under this component for the state government or for the ULB's as this is taken care by government of India ministries and organisations.

8.4. States shall prepare an annual action plan, with details of State funding commitment, for Public Awareness & IEC and State HPC shall approve it. At least 50% of the IEC fund in each annual plan, as approved by State HPC, must go to the ULB's for IEC activities at the grass root level.

8.5. HPEC at State level shall be the competent authority to authorize and delegate administrative powers for use of the state level funds within the approved plan. ULB's shall be competent to spend the minimum 50% part of the ULB level funds, as per approved plan.

8.6. Under no circumstance shall this fund be utilized for purchase of vehicles, construction and maintenance of buildings, creation of posts and payment of salary, and purchase of furniture and fixtures.

States will contribute a minimum of 25% funds towards IEC & Public awareness to match 75% Central Share (10% in the case of North East States and special category states) in each annual plan.

9. SBM (Urban) Component VI : Capacity Building and Administrative & Office Expenses (A&OE)

9.1. **3%** of the total Central Government allocation under the mission will be earmarked for capacity building, administrative and office expenses of States and ULBs.

9.2. **2%** of the total Central Government allocation under the mission will be utilized at MoUD level for capacity building, convening national and regional workshops, various awards and best practice recognition, programme research, studies, international cooperation for capacity building and technology development, A&OE and various eligible purposes in consultation with the Integrated Finance Division (IFD) of the M/o UD.

9.3. States shall propose extensive capacity building activities to be implemented in a mission-mode manner, which will enable the progressive achievement of objectives of SBM (Urban) in a time-bound manner. These will be specified in the comprehensive annual action plan prepared by each state. This will be approved by State Level High Power Committee after sharing and considering suggestions from MoUD. At least 50% of this fund, in each annual plan, as approved by State HPC, must go to the ULB's for activities at the ULB level.

9.4. HPEC at State level shall be the competent authority to authorize and delegate administrative powers for use of these funds. ULB's shall be competent to use the minimum 50% fund, as per approved plan, passed on to them.

9.5. States will be encouraged to use other available capacity building funds to dovetail or integrate capacity building activities of ULB's.

9.6. States and ULBs should identify relevant officials (both senior level officials and field-level functionaries) for training and draw up a calendar of training for them. It will be the responsibility of the State Mission Director to ensure that identified officials undergo adequate capacity building / training to ensure the success of SBM (Urban) in the state. Additionally, states should also identify relevant officials / persons capable of spreading the training on sanitation under SBM (Urban) as "master trainers" who can attend central government training on SBM (Urban) and then organize subsequent training to diffuse the message of SBM (Urban) in the states.

9.7. All support structures for implementing the mission at the state and ULB levels defined in the Mission Management Structure (section 11 of the SBM (Urban) guidelines), *i.e.*, the Programme Management Units (PMUs) at the State level, the Programme Implementation Units (PIUs) at the city level, and Independent Project Review & Monitoring Agencies (IPRMA) etc., engaged on an outsourced basis, shall be funded under this head.

9.8. Under no circumstance shall this fund be utilized for purchase of vehicles, construction and maintenance of buildings, creation of posts and payment of salary, and purchase of furniture and fixtures.

9.9. States will contribute a minimum of 25% funds towards Capacity Building and Administrative & Office Expenses (A&OE) to match 75% Central Share.(10% in the case of North East States *and special category* states) in each annual plan.

10. Funding pattern and financial process

10.1. *Funding pattern:* Guiding Principals:

a) First installment will be released to states on receipt and acceptance of proposal containing the brief concept state sanitation strategy as given in **Annexure IV**.
b) For House Hold Toilets, Funds in the first installment will be released as per number of beneficiary household identified, in the concept sanitation plan, at the rate of Rs. 2000/- Central assistance.
c) For Community Toilets and Solid Waste Management Projects, Adequate funds will be released on the proposal of the State Government for SWM and Community toilet projects. It will be ensured that funds do not remain parked with the state governments GoI share of grant / VGF may be drawn from this pool fund maintained at state level. This will be replenished on demand by states based on progress.
d) For IEC, Capacity Building and Administrative expenditure, appropriate percentages of (a) and (b) above shall be added to the first installment.
e) States will contribute a minimum of 25% funds towards all components to match 75% Central Share. This will be 10% in the case of North East and special category States.
f) Subsequent installments shall be released based on utilization certificates of previous grants, physical and financial progress and other indicators as approved and desired by the National Advisory & Review Committee (NARC).

10.2. Clarification on Grant v/s VGF

10.2.1. Under Swachh Bharat Mission, projects under PPP mode are encouraged, to invite private capital in urban infrastructure as well as to bring in private sector efficiency in delivery of urban services and O & M. It is also understood that in the current scenario, there may be a requirement for viability gap funding. For solid waste management, revenue streams such as Compost from organic waste, recycled construction material from C & D waste, Power from waste to energy plants can be leveraged.

10.2.2. All ULB's must first explore possibility to take up the projects in a PPP mode for the above reasons. Government of India funds as per prescribed funding pattern will be available for claiming VGF.

10.2.3. State governments can also add or generate funds for ULB's as additional incentives over and above minimum 25% share required to make the projects viable.

10.2.4. Release of VGF grants will be as per contractual arrangement with the private partner and as approved by state government. However, it will be ensured that funds do not remain parked with the state governments.

10.2.5. Adequate funds will be released on acceptance of the proposal of the State Government for SWM and Community toilet projects. ULBs will initiate project preparation and bidding as per the guidelines for community toilets and SWM.

10.2.6. States will release the Central Government share of VGF adding their share in conformity with the contractual requirements of the project taken up on PPP mode.

10.2.7. In case state government feels that a project is not suitable to be taken under PPP methodology, it may then consider the GoI share (as per funding pattern) to be treated as Grant from GoI to the ULB. It will be up to the state government and ULB to arrange for the balance resources for the project, which must be ensured at the time of approving a project.

10.2.8. For PPP Projects, state governments to follow their own policy and rules. No project shall be referred to Government of India.

10.3. Allocation of funds to States / UTs

10.3.1. The mission will be implemented with the following classification of funding to states:

S. No.	Classification	Percentage Allocation (Central Govt. funding)	Total Amount for Mission Period Rs. Crore
i.	Project Fund based on Normative Criteria	60%	8773.80
ii.	Performance Fund based on Performance Matrix	20%	2924.60
iii.	Public Awareness & IEC Activities	15%*	2193.45
iv.	Capacity Building & A&OE	3%	438.69
v.	Research, Capacity Building & A&OE (M/o UD)	2%	292.46

*3% of which to be retained by M/o UD

10.3.2. The **Project Fund** specified in 10.3.1(i) above shall be allocated as follows:

i. The distribution of the Project fund will be as under: (Rs. in Crore.)

a.	Project Funds for States other than the North-East	80%	7019.04
b.	Project Funds to North-East States	10%	877.38
c.	Flexi Funds*	10%	877.38

*Flexi Funds in terms of the Department of Expenditure OM No. F.No.55(5)/PF.II/2011 dated 06.01.2014) will be available to states

ii. Where ever it is required for fund allocation to be divided among States / UTs it will be done by giving :

A) 50% weightage to the ratio of urban population in each State / UT to the total urban population, and

B) 50% weightage to the ratio of number of statutory towns in each State / UT to the total number of statutory towns.

Both ratios shall use Census 2011 data. Details of distribution of Project Fund across States / UTs are at ***Annexure III.***

10.3.3. The **Performance Grant** specified in 10.3.1(ii) above shall be kept with the SBM National Mission Directorate as Performance Grant and released as per the criteria mentioned below for rewarding performing states. The release of the performance grant shall be based on a Performance Matrix and Third Party Evaluation by the Independent Project Review & Monitoring Agency (IPRMA) on the following outcomes:

a. Elimination of open defecation
b. Conversion of insanitary latrines into pour-flush latrines
c. Eradication of manual scavenging
d. Prevention of pollution of water sources
e. Ensuring cleanliness and hygiene in public places
f. Awareness creation
g. Capacity building

The National Advisory & Review Committee (NARC) at the M/o UD may also design other relevant criteria for the release of these funds and shall take a final view regarding the release of this grant keeping in view the progress made and circumstances of each State. This will not be applicable in the first installment. No withholding of 20% shall be done while releasing the first installment to the states.

10.4. Disbursal of funds to States / UTs and ULBs

10.4.1. States / UTs will submit a proposal for release of grant to the Central Government based on projections and authenticated targets with a Concept Note on State Urban Sanitation strategy in the format given in **Annexure IV**. This shall be submitted online to the SBM National Mission Directorate.

10.4.2. On acceptance of the State Government's proposal by the ministry, first installment of funds shall be disbursed to States / UTs in the following manner:

i. 50% of the project fund shall be divided among states as per the formula mentioned at 10.3.2 (see also **Annexure III**).
ii. 12% of Project funds released above shall be released as IEC and the Public Awareness component and,

iii. 3% of the Project funds released above shall be released or the Capacity Building and A&OE funds.

iv. No withholding of 20% shall be done on account of performance grant, while releasing the first installment to the states.

10.4.3. Subsequent installments (including for Capacity Building & IEC, and the Public Awareness and A&OE) shall be released on

(i) Submission of the Utilization Certificate for 75% of the fund released as 1st installments and,

(ii) Satisfactory physical and financial progress as per NARC criteria.

The quantum of subsequent installments will be based on actual demands and projections of expenditure for admissible components as per funding pattern of SBM.

10.4.4. Release of central contribution towards Grants / VGF by States/UTs for projects shall be in a manner described in paragraph 10.1 and 10.2 above.

10.4.5. At the end of the 2nd and 3rd quarters of each Financial Year, the use of allocated funds by States / UTs under the mission shall be reviewed by NARC, and NARC may reallocated funds from non-performing states to performing states based on the potential to utilize funds in a given financial year.

10.4.6. State governments shall evolve a suitable mechanism to release funds along with state share to ULBs within 30 days of release of the central share by M/o UD. Interest at the rate specified by the M/o Finance from time-to-time shall be levied on the State for any delay in release of funds to ULBs beyond 30 days. This will be implemented by appropriate deductions from the state's next installment of fund release under the mission.

10.5. Sanction of projects (DPRs)

10.5.1. Projects will be sanctioned by state government (HPEC) or ULBs as prescribed in these guidelines. This is specified for each for each component of SBM in these guidelines.

10.5.2. Only new projects will be considered under the Mission and it will be ensured that there is no duplication. Projects will be considered as "new" if they are not projects already sanctioned and ongoing under state and central schemes and externally-aided programmes.

10.5.3. Wherever Detailed Project Reports (DPRs) are to be prepared for project sanction, fund release and monitoring, the cost of DPRs for the projects under the Mission shall be reimbursed subject to norms set-up by the NARC.

10.5.4. The State High Powered Committee (HPC) will authorize institutes of national repute for appraisal of DPRs for the technical and economic appraisal of DPRs for projects recommended by ULBs. The cost of DPR appraisal by these institutes shall be an admissible component under administrative costs, subject to norms as approved by MoUD.

11. Mission Management Structure Swachh Bharat Mission (SBM)

Urban will have a three-tier mission management structure as follows:

11.1 National Level

11.1.1. A **National Advisory and Review Committee (NARC)** headed by the Secretary, M/o UD, and comprising representatives of relevant line ministries will be notified by the M/o UD. NARC will meet as per the requirements, but will meet at least once in three months. The functions of NARC will be:

i. Overall monitoring and supervision of SBM (Urban)
ii. Advise the States / UTs to explore avenues for innovative resource mobilization of private financing and leveraging land for PPP in sanitation projects.
iii. Approve installments and release of installment of funds for states / UTs by Central Government under the mission.
iv. Develop and modify performance matrix and criteria for the release of performance grants to States / UTs as specified in paragraph 10.3.3.
v. Monitor outcomes and performance of projects sanctioned under SBM (Urban)
vi. NARC may delegate, as it considers appropriate, some of the functions within prescribed limits, to the National Mission Director (NMD) of the SBM National Mission Directorate to ensure speedy implementation of the mission
vii. Any other issue which may be referred to it by the Government

11.1.2. The **SBM National Mission Directorate** will be headed by a National Mission Director (NMD) who will not be below the rank of Joint Secretary to the Government of India.

i. The NMD will be the overall in-charge of all activities related to SBM (Urban). NMD will be supported by a suitable team of officers at the

National Mission Directorate and will be Member-Secretary of NARC for all matters.

ii. The Mission Directorate shall be supported by a dedicated Project Management Unit (PMU) with 10-12 experts and support staff mainly on an outsourced basis. The PMU shall cover 4 verticals – Programme management, IEC & Media, Information Technology, and Monitoring & Evaluation.

iii. The SBM National Mission Directorate will formulate a framework for support structure for the State Mission Directorates and issue appropriate guidelines / advisories to states from time-to-time.

11.2. State level

11.2.1. A **High Powered Committee (HPC)** under the chairpersonship of the State's Chief Secretary, and with members drawn from concerned departments (including a MoUD representative) shall be responsible for the management of SBM (Urban) at the State / UT level. The functions of the SLMRC will include:

i. Preparation, approval, and online publishing of the State Sanitation Strategy (SSS) for the respective state and City Sanitation Plan (CSP) for all cities covered under SBM (Urban), if not already done.

ii. Finalisation of the Concept Note on the Urban Sanitation Situation before submission to the SBM National Mission Directorate

iii. Empanel consultants of repute and experience for:
   a. Preparation of DPRs under SBM
   b. Conducting independent review and monitoring during execution of projects

iv. Empanel reputed Institutes like IITs, NIT's, State Technical Universities etc. for appraisal of DPRs.

v. Sanction projects relating to Solid Waste Management recommended by the ULBs.

vi. Plan for additional resource mobilization .

vii. Plan for fund flow in the short, medium and long term

viii. Recommend proposals for release of installments of funds for projects under the mission

ix. Monitor outcome and O&M arrangements of projects sanctioned and completed under the mission

x. Review the progress of Capacity Building, IEC, and Public Awareness activities under the mission and approve their annual action plan.

xi. Address violation of norms and conditions

xii. Ensure convergence of action for sanitation in the state and bring about inter-departmental coordination for this purpose as and when required.

xiii. Ensure timely audits of funds released and review the "Action Taken Reports" on various Audit reports of the mission and other similar reports

xiv. Review legal issues, if any

xv. Take up any other matter relevant for the efficient implementation of the mission, or matters referred to it by the SBM National Mission Directorate

11.2.2. The ***SBM State Mission Directorate*** will be located within the Urban Development Department (UDD) in the State / UT.

i. The SBM State Mission Directorate will be headed by a State Mission Director (SMD) of appropriate seniority. The SMD will also function as Member-Secretary to the State Level HPC.

ii. The SMD will create / notify a uniform structure across the state for the planning, designing, project preparation, appraisal, sanction and implementation of sanctioned projects under the mission at the ULB level. This shall be done keeping in mind the advisories issued by the National Mission Directorate from time-to-time.

iii. The Mission Directorate shall be supported by a dedicated Project Management Unit (PMU) on an outsourced basis.

11.3. ULB level

The SBM is envisaged as People's movement (Jana Andolan) for ensuring hygiene, waste management and sanitation across the country. It is therefore essential that in its implementation the ULBs elicit the active participation of the Ward Committees, Area Sabhas, Resident Welfare Associations, NGOs and Civil Society Groups.

12. Monitoring & Evaluation (M&E)

12.1. States / UTs will be required to send in Monthly Progress Reports (MPRs) / Quarterly Progress Reports (QPRs) in prescribed formats with regard to targets and achievements. Apart from these, the Mission Directorate may prescribe other reports that may be considered appropriate from time to time. Given the scale of the mission, a comprehensive and robust IT enabled MIS will be established for tracking of targets and achievements. States / UTs will be required to submit progress reports online once this MIS is operational.

12.2. Monitoring activities will include, but not be limited to, third party evaluation, impact evaluation studies, etc. The evaluation of the mission will be undertaken during the course of its implementation to effect mid-term correction and align the mission to achieve its objectives

12.3. A **District Level Review and Monitoring Committee (DLRMC)** will be constituted with a view to fulfill the objective of ensuring satisfactory monitoring of projects under the Chairpersonship of a Member of Parliament. Detailed guidelines for this purpose will be issued separately by the SBM National Mission Directorate.

13. Logo and Tag line

The Logo and Tagline for the SBM (Urban) is given in ***Annexure V***. This shall be displayed prominently on all projects and literature/publications under the mission.

***

Annexure I: Targets and definitions under SBM (Urban)

(Definitions reproduced from "House & Household Series Tables, Census of India 2011)

Targets under SBM (Urban)

For the purpose of SBM (Urban), the following action will have to be taken:

S. No.	Objective	Action under SBM (Urban) (Targets)	Census 2011 definition
i.	Elimination of open defecation	• 80% urban households defecating in the open to be targeted for construction of household toilets	No latrine within premises – open
ii.		• 20% urban households defecating in the open to be targeted for construction of community toilets	No latrine within premises – open
iii.		• Construction of public toilets for floating population (presumed at 5% of total urban population)	Total urban population
iv.	Conversion of insanitary latrines into sanitary latrines	• 100% of urban households having insanitary latrines to be targeted for construction of household toilets	• Night soil disposed into open drain • Service latrine with night soil removed by humans • Service latrine with night soil serviced by animals
v.	Conversion of single pit latrines	• 60% of urban households having	• Pit latrines with slab • Pit latrines with

S. No.	Objective	Action under SBM (Urban) (Targets)	Census 2011 definition
		pit latrines	ventilated improved pit • Pit latrines without slab / open pit
vi.	Solid Waste management	80% of the urban population to be covered by SWM services (allowing for a 2% increase year on year)	• Total urban population

Definition of Types of latrines under Census 2011

As per the Census of India 2011, the following various types of latrine facilities were surveyed:

1. Flush / pour flush latrine connected to piped sewer system: If a pour flush latrine is connected to a system of sewer pipes that collect both human excreta and waste water and removed them from the household environment

2. Flush / pour flush latrine connected septic tank: If a pour flush latrine is connected to a septic tank that collects both human excreta and wastewater and removes them from the household environment

3. Flush / pour flush latrine connected other system: If the pour or pour-flush latrine is connected to any system other than a piped sewer system or septic tank e.g. excreta and waste water gets flushed into the street, yard / plot, drainage ditch or any other location

4. Pit latrines*: defecation into pits dug into the ground for reception of night soil directly without flushing.
    a. Pit latrine with slab: A pit latrine with a squatting slab or platform or set firmly supported on all sides, and raised above the surrounding ground level to prevent surface water from entering the pit, and easy to clean.
    b. Pit latrine with ventilated improved pit: Pit latrines with slabs that are ventilated by a pipe extending above the latrine roof and the open end of the vent pipe is covered with mesh or fly-proof net
    c. Pit latrine without slab / open pit: Pit latrines without a squatting slab or platform or seat

    *Census 2011 does not distinguish between single pit and twin pit latrines. However for SBM single pit latrines will be considered insanitary and shall be converted. Definition of twin pit latrine see Annexure II.

5. Night soil disposed into open drain: Where a latrine facility may exist, but the excreta and waste water is disposed directly into an open drain

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6. Service latrine: where human excreta is collected in a bucket, or other container, or even allowed to collect in the open
    a. With night soil removed by humans: where the human excreta is removed physically by human beings
    b. With night soil serviced by animals: where the human excreta is removed physically by animals

7. No latrine within premises – public latrine: Households have no latrines within the premises of the dwelling unit and use an available public latrine

8. No latrine within premises – open: Households have no latrine within the premises of the dwelling unit and defecate in the open in areas such as open fields, bushes, rivers, streams, railway tracks, etc.

9. Insanitary latrine means a latrine which requires human excreta to be cleaned or otherwise handled manually, either in situ or an open drain or pit into which the excreta is discharged or flushed out, before the excreta fully decomposes in such manner as may be prescribed.(Chapter I Section 2(i)(e) The Prohibition of employment as manual scavengers & their Rehabilitation Act,2013)

The Census of India 2011 defines **two broad kinds of urban areas** as follows:

i. **Statutory towns** are urban areas defined by administrative units that have been defined by 'statute' as urban such as municipal corporations, municipalities, cantonment boards, notified town area committees, town panchayats, or nagar palikas; and
ii. **Census Towns**: All administrative units satisfying the following criteria: (i) it should have a minimum population of 5,000 persons; (ii) at least 75% of the male main working population should have been engaged in non-agricultural pursuits; and (iii) it should have a density of population of at least 400 persons per km^2 (1,000 per $mile^2$)

Annexure II: Technical options for toilets under SBM (Urban)

This note explains the technical options for toilets that are recommended under the Swachh Bharat Mission (SBM) Urban.

On-Site Sanitation (OSS) vs. Underground Sewerage

Wherever a sewerage system is available within 30m from the proposed individual household, community or public toilets only the superstructure (i.e. toilets) may be constructed under SBM and connected to the existing sewerage system. No construction of treatment units such as twin pits, septic tank, bio-digester or bio- tank shall be allowed.

Features of OSS Systems

When sewage is collected, treated and/or disposed off at, or near the point of generation, without the use of an underground sewerage system, the system is called "on-site sanitation" (OSS) system. OSS systems are sanitation facilities provided for the use of individual households, community and the floating population. There are a number of situations when an underground sewerage system may not be feasible or desirable. For example, for smaller cities where construction of sewerage infrastructure may be expensive, or those cities that are in hilly areas or in undulating terrain where it may not be practical to construct a sewer network, or even in many cities that have grown organically and where not all households are connected to the existing sewerage network.

OSS systems consists of two main structures, the toilet (superstructure, including the pan and water closet) and the treatment unit. OSS retains waste in the vicinity of the toilet either in a pit, tank or vault. The treatment ranges from a basic sanitary facility such as twin-pit latrines, to a simple type of treatment system by combining a septic tank and a soak pit, or a bio-digester toilet (aerobic and anaerobic).

The following technological options for OSS are recommended under Swachh Bharat Mission (SBM) Urban for construction of Individual Household Latrines (IHL) / household toilets, group / shared latrines, and, community and public toilets

S. No.	OSS Option	Kind of Latrines				Application
		IHL	Shared Latrines	Community Toilets	Public Toilets	
1.	Twin-pit latrines / Leach Pits	✓				• In low- to medium-density areas, particularly peri-urban areas, where there is space to install pits and where the digested sludge can be applied to

S. No.	OSS Option	Kind of Latrines				Application
		IHL	Shared Latrines	Community Toilets	Public Toilets	
						local fields and/or gardens as a fertilizer and soil conditioner • Where water use is in the range 30–50 liters per capita per day depending upon the characteristics of the soil or groundwater level
2.	Septic Tank System with soak pit	✓	✓	✓	✓	• Septic tanks are widely used to provide partial treatment of wastewater from individual homes, household clusters or institutional buildings where there is no sewerage network. • For soak pits to function, soil conditions must be suitable for infiltration of effluent from septic tanks
3.	Bio-digester toilets (Anaerobic – developed by DRDO)	✓	✓	✓	✓	• Widely used to provide 80% treatment of wastewater from IHL, household clusters or institutional buildings where there is no sewerage network. • The effluent should be passed through a reed bed or soak pit before discharge. • For soak pits to function, soil conditions must be suitable for infiltration of effluent from septic tanks
4.	Aerobic BioTank	✓	✓	✓	✓	• Widely used to provide 100% treatment of

S. No.	OSS Option	Kind of Latrines				Application
		IHL	Shared Latrines	Community Toilets	Public Toilets	
						wastewater from IHL, clusters of houses or institutional building where there is no sewerage networks. The effluent can be directly discharged since it is completely safe; • Chlorination is followed after treatment

Technical features and specification for toilets under SBM (Urban)

The details of technical features and specifications for toilets are given as under. The costs are simply estimates at this point of time and should be verified at the time of selection and installation of the technology.

I. Twin-Pit Latrine

Description	It consists of superstructure (Toilet) and treatment units (two chambers). The two underground chambers (pits) are provided to hold fecal sludge. These are normally offset from the toilet and should be at least 1 meter apart. A single pipe leads from the toilet to a small diversion chamber, from which separate pipes lead to the two underground chambers. The pits should be lined with open-jointed brickwork. Each pit should be designed to hold at least 12 months accumulation of fecal sludge. Wastewater is discharged to one chamber until it is full of fecal sludge. Discharge is then switched to the second chamber. Just before the second chamber is full of fecal sludge, the contents of the first pit are dug out. During the time of storage, digestion should ensure that it is odorless and free of pathogens.
O&M Requirements	The pits must be used alternately and the diversion chamber must be accessible so that flow can be diverted between chambers. Wastewater should never be diverted back to the first chamber before digested sludge has been removed from it. Responsibility for O&M of the twin-pit latrine rests primarily with the householder, who needs to ensure that the pits are used in the correct sequence and are emptied at the appropriate time.

<table>
<tr><td></td><td>However, ULB utility or private contractors are required for emptying and to ensure safe disposal of septage at a treatment plant.</td></tr>
<tr><td>Additional Infrastructure / treatment requirements</td><td>If digested material cannot be used in local fields and gardens, provision will have to be made for transportation to areas outside the city for reuse on agricultural land.</td></tr>
<tr><td>Limitations</td><td>• Households may not understand the system and as a result may not use the pits alternately, or may omit to rest the filled pit at least for one year so that the contents degrade and become harmless.
• Explanation of the operation and maintenance requirements is therefore essential at the time of installation.
• Water may percolate through the soil surrounding the pit and pollute groundwater, which is a potential problem if water is used for drinking.</td></tr>
<tr><td>Specifications</td><td>(a) Size options for Toilet/ Super Structure (as shown in Fig.1):
a. 750 mm x 900 mm x 1900mm; or
b. 800 mm x 1000 mm x 1900 mm
(b) Material – Brick work (as per Fig. 1) / FRP/ Pre-cast Cylindrical Unit
(c) Minimum Land Requirement – 40 Sq. ft. - 60 Sq. ft. (depending upon the location of superstructure and distance between two pits)
(d) Size of Pits is shown in Table -1 below
<table>
<tr><th></th><th colspan="2">5 users*</th><th colspan="2">10 users**</th><th colspan="2">15 users***</th></tr>
<tr><th></th><th>Dia</th><th>Depth (A)</th><th>Dia</th><th>Depth (A)</th><th>Dia</th><th>Depth (A)</th></tr>
<tr><td>Pit size</td><td>900</td><td>1000</td><td>1100</td><td>1300</td><td>1300</td><td>1400</td></tr>
</table>
*- only for IHL
**- Group household toilets
The specification for pits given at Fig 2 may be referred to.</td></tr>
<tr><td>Cost (for 5 users)</td><td>Tentative cost varies from Rs. 15,000/- to Rs. 20,000/- depending upon the construction material.</td></tr>
</table>

DESIGN OF PITS UNDER DIFFERENT CONDITIONS	
Normal conditions	A typical pour flush latrine with circular pits for normal conditions is shown in **Figure 2.** In rocky strata with a soil layer in between, the leach pits can be designed on the same principle as those for low subsoil water level and taking the long-term infiltrative capacity as 20 l/m2/d. However, in rocks with fissures, chalk formations, or old root channels, pollution can flow for very long distances; hence these conditions demand careful investigation and adoption of adequate pollution safeguards. Pits in

	black cotton soil should be designed taking infiltrative rate of 10 l/m^2/d. A vertical fill (envelope) of 300 mm in width with sand, gravel or ballast of small sizes should be provided all round the pit outside the pit lining in rocky strata with fissures and in black cotton soil.
In water-logged areas	The pit top should be raised by 300 mm above the likely level of water above ground level at the time of water logging. Earth should then be filled well compacted all-round the pits up to 1.0 m distance from the pit and up to its top. The raising of the pit will necessitate the raising of latrine floor also. A typical pour flush latrine in water-logged areas is shown in **Figure 3**.
In high subsoil water level	Where the subsoil water level rises to less than 300 mm below ground level, the top of the pits should be raised by 300 mm above the likely subsoil water level and earth should be filled all round the pits and latrine floor raised as stated above. A typical pour flush latrine with leach pits in high subsoil water level is shown in Figure 4.
Where space is a constraint	Where circular pits of standard sizes cannot be constructed due to space constraints, deeper pit with small diameter (not less than 750 mm), or combined oval, square or rectangular pits divided into two equal compartments by a partition wall may be provided. In case of combined pits and the partition wall should not have holes. The partition wall should go 225 mm deeper than the pit lining and plastered on both sides with cement mortar. A typical pour flush latrine with combined pits is shown in Figure 5.

II. Septic Tank

Description	A septic tank is a buried chamber that collects, stores and treats the wastewater under anaerobic conditions. Effluent from septic tanks should be discharged into a soak pit. A well-managed septic tank will remove about 50 to 60 % of the biological load in the wastewater
Mode of operation	Solids settle in the tank and digest anaerobically. This reduces sludge volume and enables wastewater to infiltrate into the ground without clogging the leaching system. Sludge settles in the tank and digests anaerobically over time, releasing methane and other gases.
O&M Requirements	Septage must be removed from septic tanks at least once every 2 or 3 years and transported off-site for treatment prior to disposal. Municipal utility or private contractors are required for desludging of septic tanks and to ensure safe disposal of septage at a treatment plant. However the responsibility for O&M of the septic tank itself lies with the owner of the property
Limitations	• Cost and space requirements for the soak pit. • Though septic tanks are designed for receiving black water, they often receive both black and grey water. As a result, the retention time in the septic tank is insufficient and the soak pit becomes hydraulically overloaded. This means that the septic tanks need to be de-sludged regularly
Specifications	(a) **Size options for toilet / super structure as shown in Fig. 1** • 750 mm x 900 mm x 1900mm or • 800 mm x 1000 mm x 1900 mm (b) **Material** – Brick work (as per Fig. 1) / FRP / Pre-cast Cylindrical Unit (c) **Minimum Land requirement** - 40 Sq. ft. to 50 Sq. ft. (depending upon the location of superstructure) (d) **Soak-pit size** - The seepage pit may be of any suitable shape with the least cross-sectional dimension of 0.90 m and not less than 1 m in depth below the invert level of the inlet pipe. The construction shall be of perforated brickwork

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(e) **Recommended sizes of septic tanks** for households (up to 20 users – group / shared toilets) is given in Table 2 below:

No. of users	Length (m)	Breadth (m)	Liquid depth (m) (Cleaning interval of)	
			2 years	3 years
5*	1.5	0.75	1.0	1.05
10**	2.0	0.90	1.0	1.4
15**	2.0	0.90	1.3	2.00
20**	2.3	1.10	1.3	1.80

**- only for IHL*

***- Group household toilets*

Note 1: The capacities are recommended on the assumption that discharge from only WC will be treated in the septic tank

Note 2: A provision of 300 mm should be made for free broad.

Note 3: The sizes of septic tank are based on certain assumption on peak discharges, as estimated in IS: 2470 (part 1) and while choosing the size of septic tank exact calculations shall be made.

Cost (for 5 users)	• Tentative cost varies from Rs. 25,000/- to Rs. 30,000/- depending upon the construction material (toilet and septic tank). • Pre fabricated septic tanks are available at lower cost in the market, which also may be explored to speed up the implementation.

III. Biodigester Toilet (Developed by DRDO)

Description	A bio-digester toilet is an anaerobic multi-compartment tank with inoculum (anaerobic bacteria) which digests organic material biologically. The details of bio-digester toilets are shown in **Figure 7**. This system converts faecal waste into usable water and gases in an eco-friendly manner. It can be connected to the toilet or a series of toilets. The toilet can be a superstructure fixed on the bio-digester or a separate unit. Bio-digester has an inlet, an outlet and a gas pipe. The tank has two components, namely, anaerobic microbial inoculum (seed bacteria) and specially designed fermentation tank. The tank can be made out of Stainless steel, Mild steel, FRP or concrete. Semi-treated water from bio-digester tank is needed to be further disposed into a soak pit or a reed bed arrangement for its treatment to acceptable levels of discharge.
Advantages	• As there is no sludge formation, there is no need for de-sludging and treatment. It is therefore more economical in the long-term as it conserves water and has minimum O&M • Night soil degradation, occurs through microbial reaction which converts it into bio gas and odorless water. • Technology is environmental friendly, maintenance free and efficient without depending on conventional energy sources. • Permits use of toilet cleansing agents. • Suitable for mobile and stationary platforms. • Lifelong usage bio-digester tank does not need recharging, re-shifting or maintenance. • Costs lesser than the conventional toilets. • Easy to transport and install.

<table>
<tr><td></td><td>• One-third to one-fourth capacity of septic tank
• Space requirement is less.</td></tr>
<tr><td>Limitations</td><td>•</td></tr>
<tr><td>Specifications</td><td>
Toilet Superstructure
(a) Size of Toilet / super structure – as shown in Fig. 1
• 750 mm x 900 mm x 1900mm or
• 800 mm x 1000 mm x 1900 mm
(b) Material – Brick work (as per Fig. 1) / FRP/ Pre cast Cylindrical Unit

Bio tank
(a) Land requirement – 25 sq. ft.
(b) Tank internal dimensions – 1336 mm x1036 mm x 900 mm
(c) Diagonal partition wall of 8mm thickness (adequately stiffened by ribs)
(d) Tank is buried 600mm deep and anchored by 300mm long stainless steel (SS316) anchor bolts at corners
(e) FRP tanks of 8mm thickness
(f) Provision of water sealed outlet from the tank
(g) For 5-6 users:
a. Total capacity: 700 litres (1000 mmX700 mm and 1000 mm depth). Where space is a constraint the depth of the tank can be increased to 1.5 m
b. Volume of anaerobic Compartment (30% of total capacity): 210 litres
c. Tank may be constructed with masonry also.

Table 3 - Volume of bio-digester tank for various user groups:
<table>
<tr><th>No. of users</th><th>Size of bio-digester / bio-toilet</th><th>Remarks</th></tr>
<tr><td>4-8 (Single family)</td><td>0.7m^3 (FRP / RCC material)</td><td>Individual</td></tr>
<tr><td>8-15 (two families)</td><td>1.2 m^3 (FRP / RCC material)</td><td>Group / shared</td></tr>
<tr><td>30-50</td><td>3.2 m^3 (FRP / RCC material)</td><td rowspan="4">Community</td></tr>
<tr><td>100-120</td><td>6.0 m^3 (FRP / RCC material)</td></tr>
<tr><td>200-220</td><td>12.0 m^3 (FRP / RCC material)</td></tr>
<tr><td>500-600</td><td>30.0 m^3 (FRP / RCC material)</td></tr>
</table>
</td></tr>
<tr><td>Cost Estimates</td><td>
• Toilet cost between Rs. 12,000 and Rs. 15,000 depending on material of construction;
• Bio-digester tank as per Table 4 below:
<table>
<tr><th>Bio-digester tank -></th><th colspan="3">Material of construction</th></tr>
<tr><th>No. of users / Capacity</th><th>Masonry</th><th>Precast Cylindrical Unit</th><th>Fiber reinforced plastic</th></tr>
<tr><td>5 to 7 users (700 Litre)</td><td>17,100</td><td>11,600</td><td>22,000</td></tr>
<tr><td>10 to 12 users (1000 Litre)*</td><td>19,000</td><td>13,600</td><td>24,000</td></tr>
</table>
*Group / Shared toilets
</td></tr>
</table>

IV. Bio Tank / Bio Toilets (Patented by private operators and approved by the Department of Science and Technology)

Description	This technology differs from that of the bio-digester toilets developed by DRDO since the process adopted is aerobic - which involves a different multi-strain of bacteria which breaks down the waste matter through oxidization. Bio-toilets consist of a purpose built multi-

	chambered bio-tank in which the waste is stored as shown in **Figure 8**. The movement of the waste is slowed down as the waste flows from one chamber to another by a special process in the Bio-tank such that the multi-strain bio-media present in the tank can digest the waste and convert it fully into non-toxic neutral water. This water then passes through the last chamber for disinfection. Here water is treated with Chlorine where the majority of the germs are killed. The resultant water is free from all sorts of E-coli and fecal coliforms. The bricks and mortar Bio-tank is described in the last diagramme of Figure 8.The superstructure is made of bricks and mortar. These are available in both flush and non-flush models.
Advantages	• Aerobic bacteria are very efficient in breaking down organic waste and the waste is decomposed into water by the bacteria within 24 hours. The end products of aerobic degradation are carbon dioxide (CO_2) and water (H_2O). • The aerobic pathway also releases a substantial amount of energy. • The Bio-toilet is available in both, portable as well as fixed models. The advantage of the portable model is that it can be shifted from one location to another as and when required, and the module can be assembled and disassembled easily. • The Bio-toilet eliminates the need for any periodic sludge removal.
Limitations	• The bacteria functions best in temperatures between 4 and 55 degrees centigrade • Bio-toilets need proper bacteria inoculation periodically depending on the usage at particular sites. An in-depth understanding of the operation and use of toilets in a given area must be undertaken BEFORE choosing bio-toilets as a solution. Attention must be given to O&M, especially in dense urban settlements where chances of blockage of bio-toilets increase, making it dysfunctional over a period of time if the inoculation is not done in time. • Phenyl/ Harpic or any strong detergent/acid and bleaching powder should not be used to clean the pan. Only herbal / ayurvedic cleaning agents should be used. • Chlorine dose is necessary for disinfection.
O&M	Responsibility of cleaning the toilet / superstructure is with the owner of the household in the case of IHLs / shared latrines and with the ULB in the case of community / public toilets.
Specifications	(a) **Size of Toilet/ Super Structure as shown in Fig. 1 –** • 750 mm x 900 mm x 1900mm or • 800 mm x 1000 mm x 1900 mm

	(b) **Material** – Bricks and Mortar walls of Bio Digester tank and Superstructure, PCC tank floor, RCC toilet floor, PVC Door and Frame, RCC/PVC/GI sheet Toilet Roof. (c) **The Bio-toilet system consists of:** • Bio digester Tank(Bricks & Mortar/FRP/Steel), • Superstructure(Bricks & Mortar/FRP) • Indian Pan/WC • Size: 4 feet x 4 feet tank base, 4 feet tank height, 6 feet superstructure height. • Maximum usage recommended: 30 defecations/ day/ bio-toilet (no limit on urination) (d) **Land requirement** - 16 Sq. ft.
Cost Estimates	The tentative cost of bio-toilet including super structure is approximately Rs.20,000/– depending upon material of construction. The bio-toilets should be supplied by the manufacturers, and the O&M for at least 5 years (including the feeding of inoculum in the periodicity needed) along with IEC (to train users for O&M) by the manufacturer / supplier also should be built into the undertaking.

Norms & Specifications for Community and Public Toilets

Description	A ***community toilet block*** is a shared facility provided for a group of residents or an entire settlement. Community toilet blocks are used primarily in low-income informal settlements where space and/or land are constraints. Pour flush option is generally used in this kind of OSS systems. It is also advisable to provide facilities like washing, bathing, and a small incinerator in this block for the use of the community ***Public toilets*** are provided for the floating population / general public in places such as markets, train stations or other public areas, where there is a considerable number of people passing by.
Septic tanks for public / community toilets	Recommended sizes of septic tanks for community/ public toilets (up to 300 users) is given below in **Table 5.**

No. of users	Length (m)	Breadth (m)	Liquid depth (cleaning interval of)	
			2 years	3 years
50	5.0	2.00	1.0	1.24
100	7.5	2.65	1.0	1.24
150	10.0	3.00	1.0	1.24
200	12.0	3.30	1.0	1.24
300	15.0	4.00	1.0	1.24

<table>
<tr><td></td><td>Source: Manual on Sewerage and Sewage Treatment Systems, 2013 Part A Engineering
Note 1: A provision of 300 mm should be made for free board.
Note 2: The sizes of septic tanks are based on certain assumptions on peak discharges, as estimated in IS: 2470 (Part 1) and while choosing the size of septic tank exact calculations shall be made.
Note 3: For population over 100, the tank may be divided into independent parallel chambers of maintenance and cleaning</td></tr>
<tr><td>Community Toilet - Norms for toilet seats</td><td>• One seat for 35 men;
• One seat for 25 women
• Adequate bathing facilities</td></tr>
<tr><td>Public Toilets - Norms for toilet seats</td><td>Norms for toilet sets for public toilets are given in Table 6 below:
<table>
<tr><th>S. No.</th><th>Sanitary Unit</th><th>For Male</th><th>For Female (A)</th></tr>
<tr><td>i.</td><td>Water Closet</td><td>One per 100 persons up to 400 persons; For over 400 persons, add at the rate of one per 250 persons or part thereof</td><td>Two for 100 persons up to 200 persons; over 200 persons, add at the rate of one per 100 persons or part thereof</td></tr>
<tr><td>ii.</td><td>Ablution Taps</td><td>One in each W.C.</td><td>One in each W. C.</td></tr>
<tr><td>iii.</td><td>Urinals</td><td>One for 50 persons or part thereof</td><td>Nil</td></tr>
<tr><td>iv.</td><td>Wash basins</td><td>One per W. C. and urinal provided</td><td>One per W. C. provided</td></tr>
</table>
Source: Manual on Sewerage and Sewage Treatment Systems, 2013 Part A Engineering
Note:
i) It may be assumed that two-thirds of the number are males and one-third females
ii) One water tap with drainage arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.
* At least 50% of female WCs may be Indian pan and 50% EWC
iii) Separate seat may also be provided for trans-genders
iv) Special arrangements may be made for physically challenged.</td></tr>
<tr><td>Treatment units</td><td>1. Bio Digester with reed bed systems/ soak pits
2. Bio Tank
3. Septic Tank with Soak Pits</td></tr>
<tr><td>Cost</td><td>Tentative basic cost for community toilets is Rs. 65,000/- per seat and public toilets is Rs. 75,000/- per seat. However, the cost per seat would vary depending upon the construction material, quality of construction, type of treatment technology adopted and O&M for specified period etc. However the cost of toilet in bio-digester given by NBCC are as under.</td></tr>
</table>

	Superstructure 5 Cubicle for 200 users		
	Pre Painted galvanized Sheets	Masonry	Cement Board
	Rs. 1,63,000.00/-	Rs.95,000.00/-	Rs. 80,000.00/-
	Superstructure 10 Cubicle for 400 users		
	Pre Painted galvanized Sheets	Masonry	Cement Board
	Rs.3,26,000.00/-	Rs. 1,80,000.00/-	Rs. 1,60,000.00/-
	Bio Digester Tank 10 KLD for every 200 users		
	Masonry		
	Rs. 1,74,000.00/- per 200 user		
Additional Infrastructure	It must be ensured that adequate water supply arrangement shall be made for proper functioning and upkeep of toilets. Wherever possible, ULBs should ensure that public and community toilets are outfitted with solar panels for the generation of electricity to ensure uninterrupted power supply and bring down O&M costs.		
Implementation Mode	All toilets shall be constructed through PPP mode with inbuilt provision of O&M for at least a period of 5 years.		

For additional details the guidelines developed by NBCC can be downloaded. (www.nbccindia.gov.in)

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Figures

Figure 1: Detailed layout of toilet

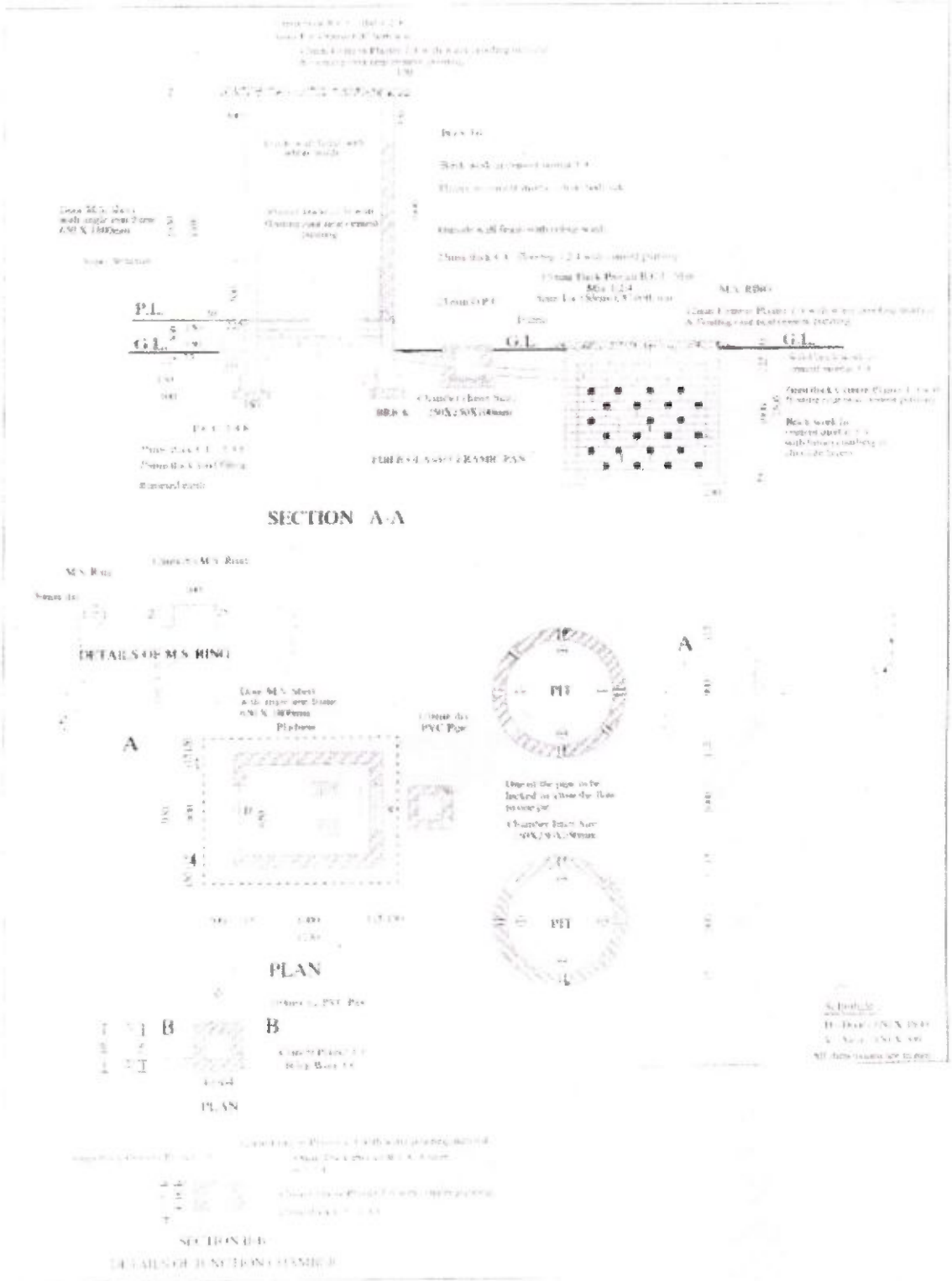
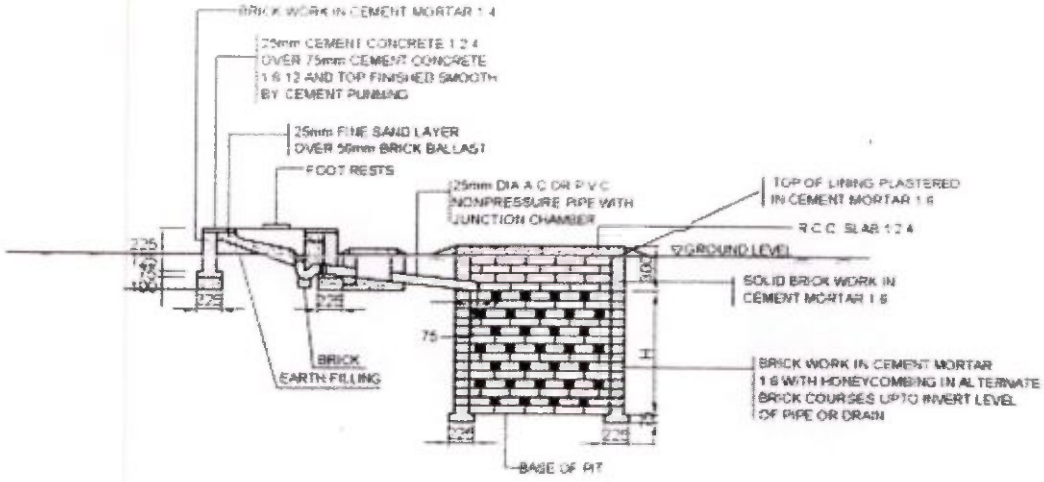
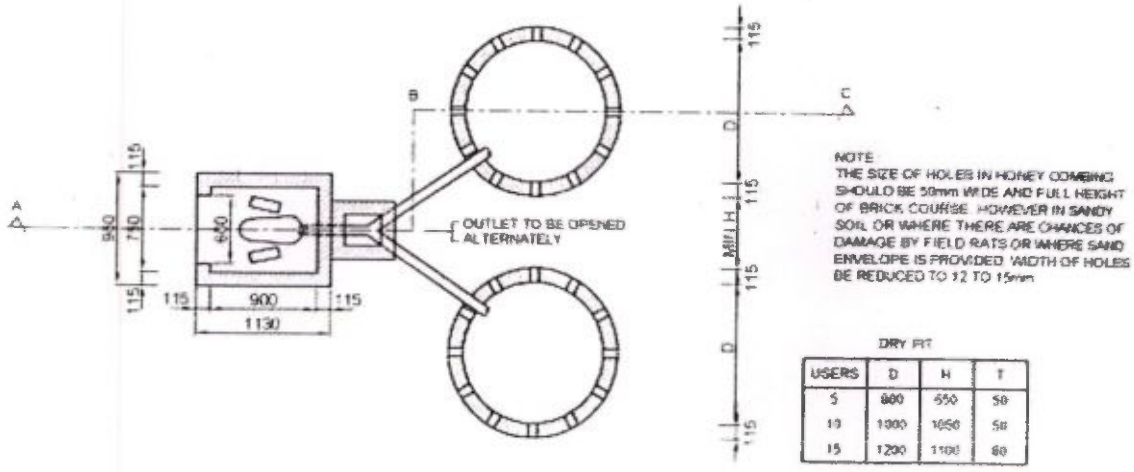


Figure 2: Pour-flush latrine with circular pits

(Source: Manual on Sewerage and Sewage Treatment Systems, 2013, Part A: Engineering)



SECTION A B C



USERS	D	H	T
5	800	550	50
10	1000	1050	50
15	1200	1100	60

PLAN

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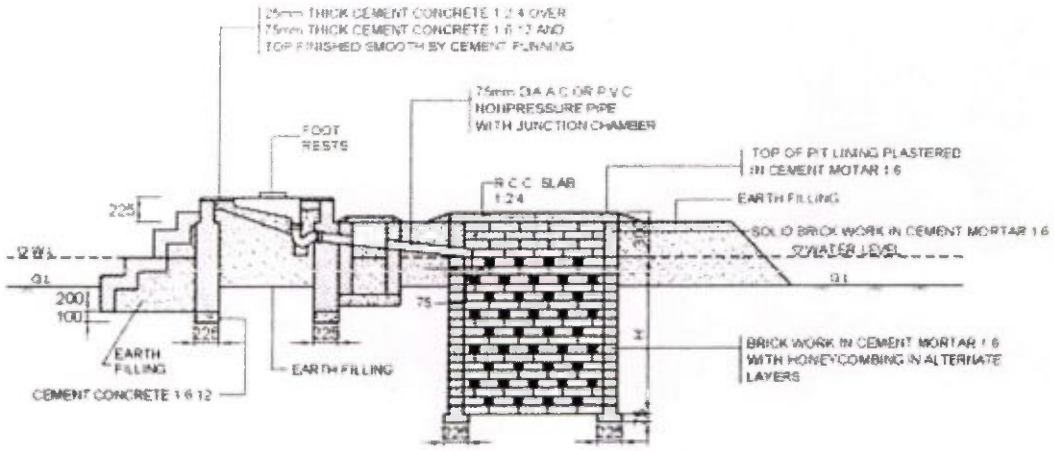
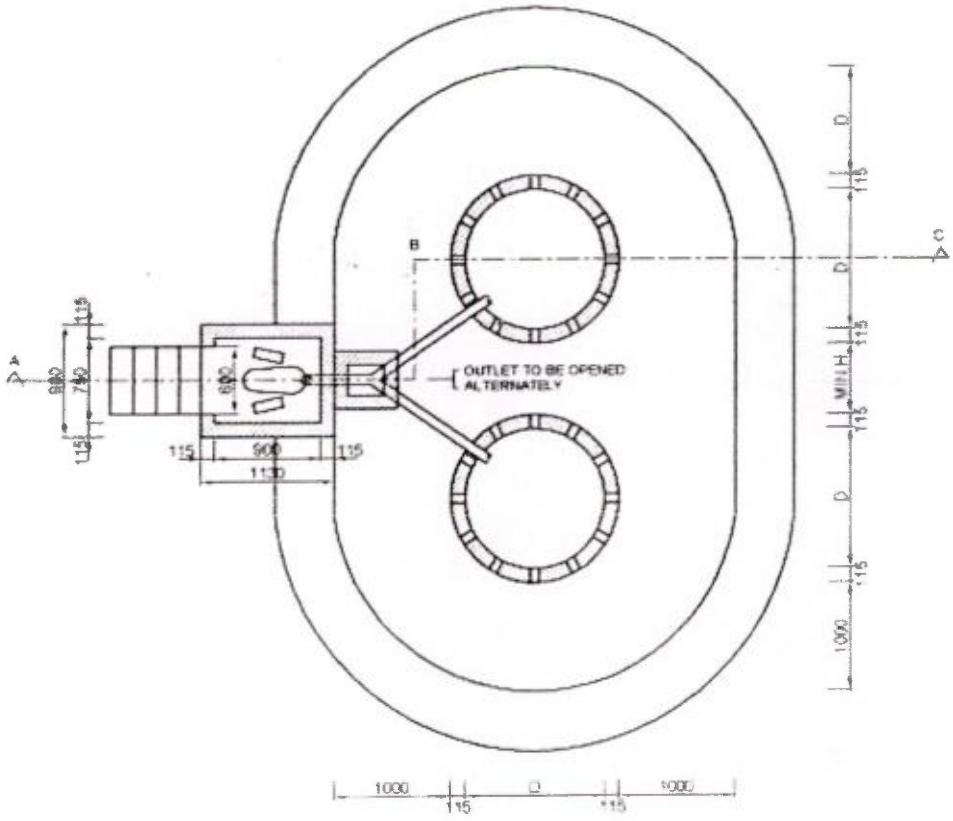
Figure 3: Pour-flush latrine in water-logged areas

(Source: Manual on Sewerage and Sewage Treatment Systems, 2013, Part A: Engineering)



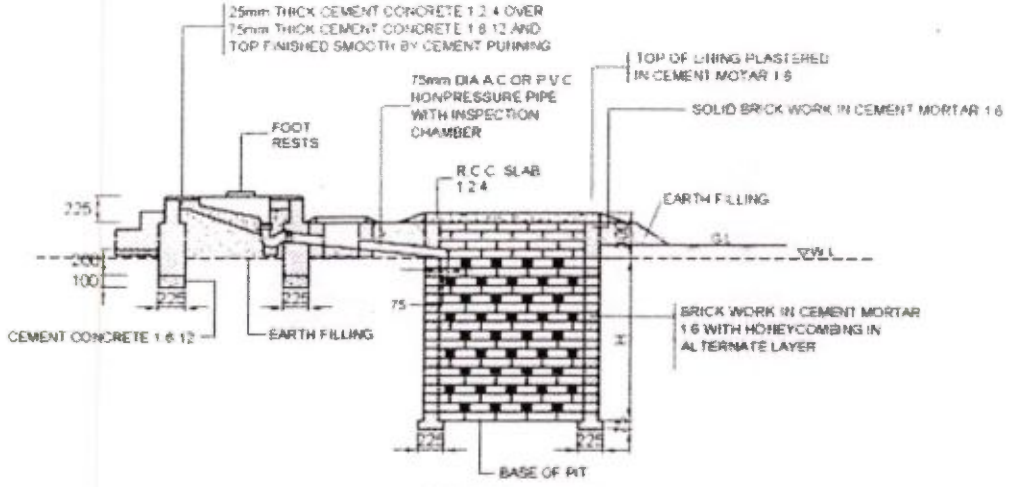
SECTION A B C



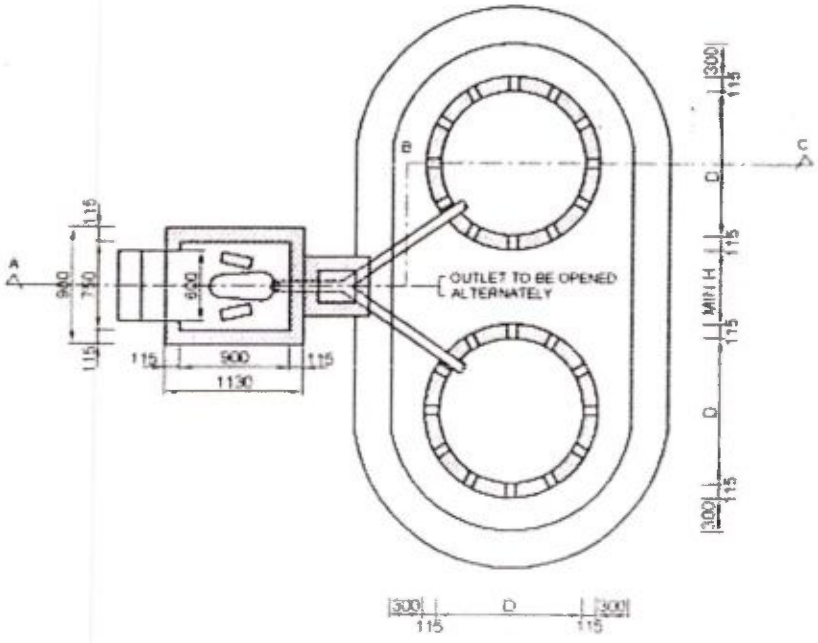
PLAN

Figure 4: Leach pits in high subsoil water level

(Source: Manual on Sewerage and Sewage Treatment Systems, 2013, Part A: Engineering)



SECTION A B C



PLAN

Figure 5: Pour-flush latrine with combined pits

(Source: Manual on Sewerage and Sewage Treatment Systems, 2013, Part A: Engineering)

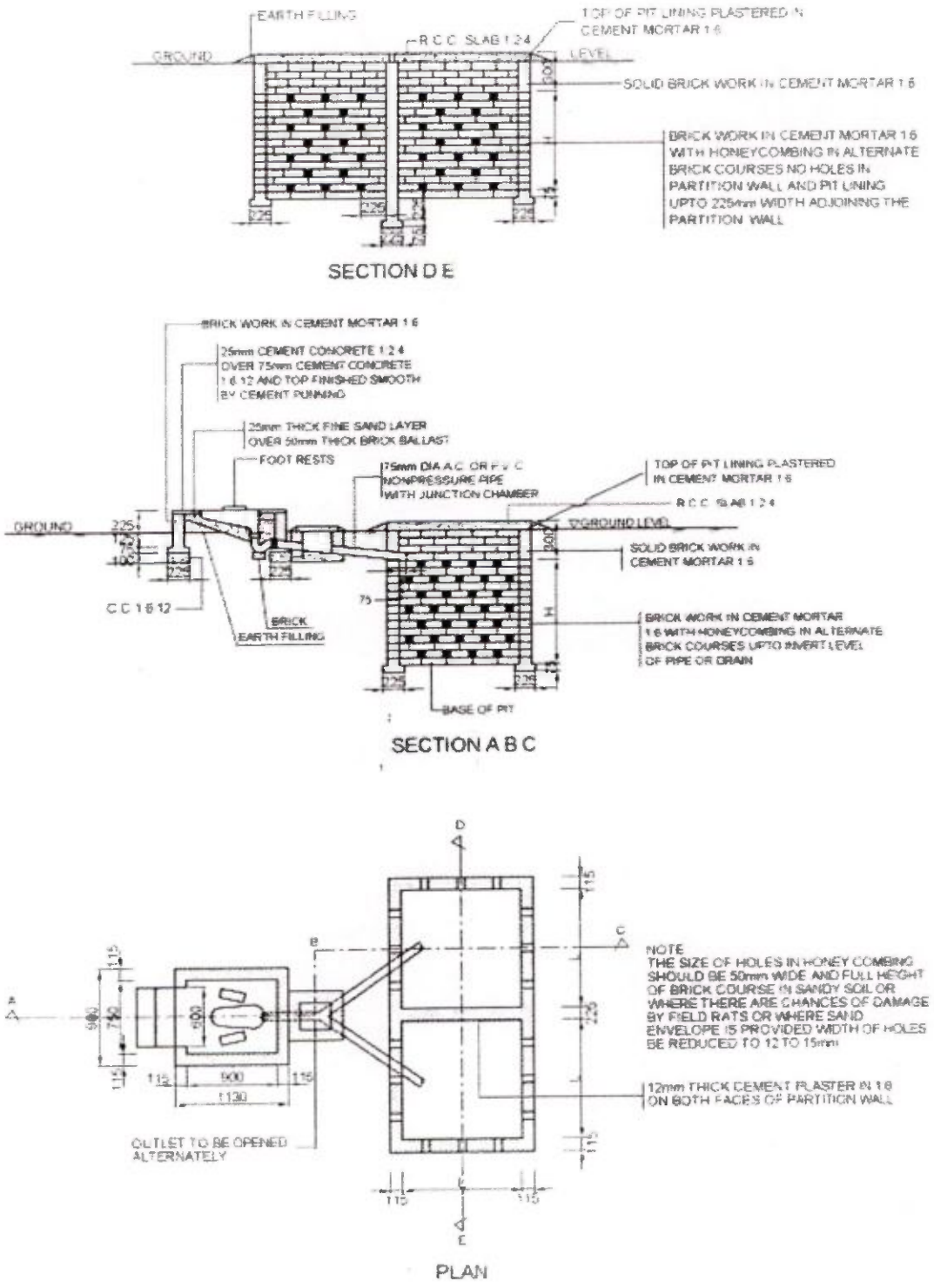


Figure 6: Typical sketch of two-compartment septic tank for 5 users

(Source: Manual on Sewerage and Sewage Treatment Systems, 2013, Part A: Engineering)

(Dimensions in mm)

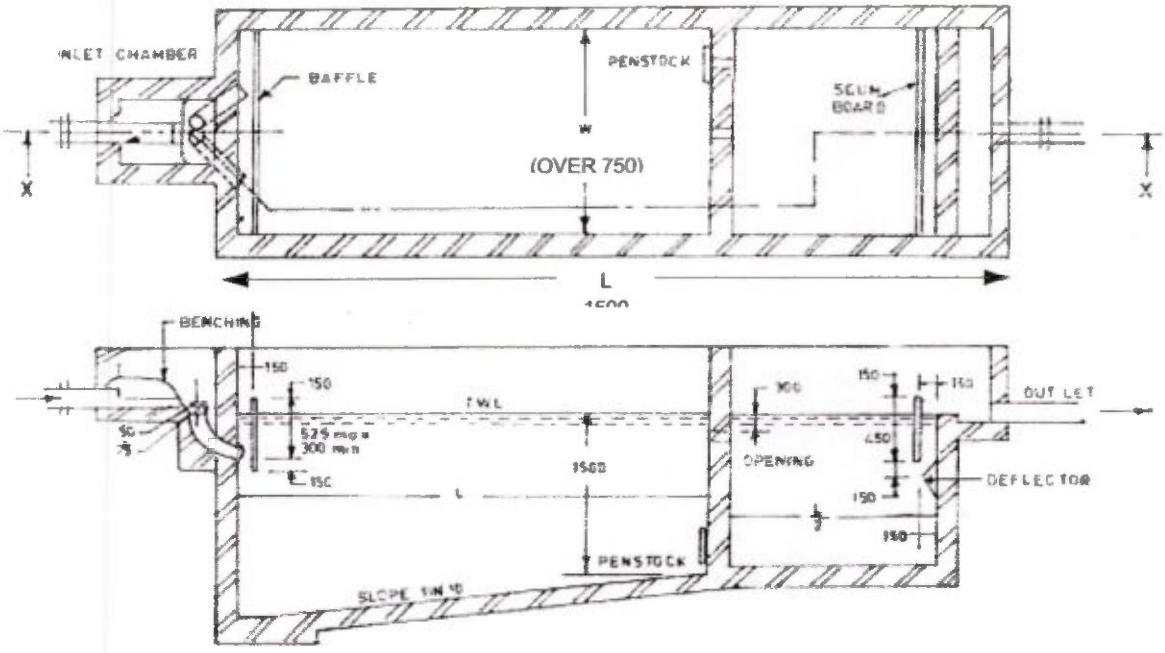


Figure 7: Details of bio-digester with reed bed

(Source: DRDO)

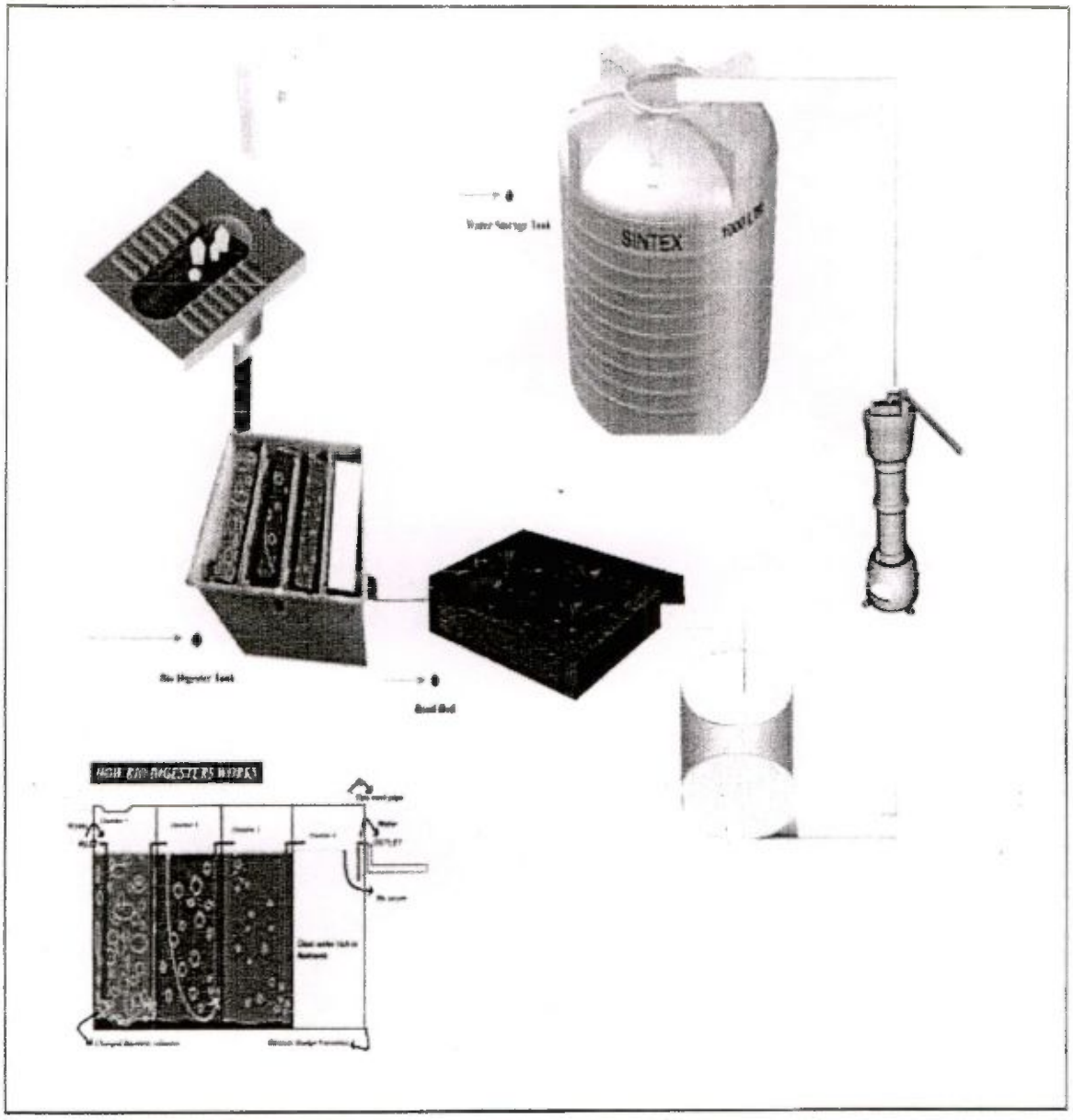
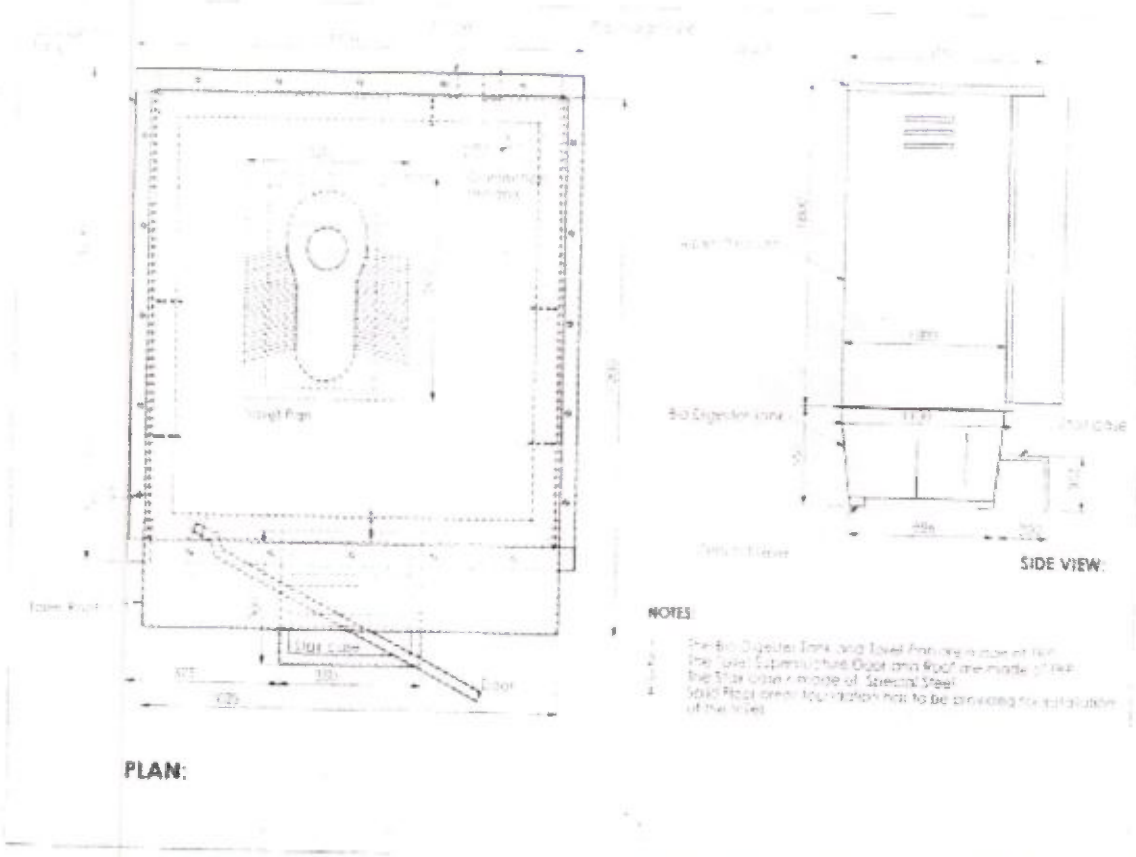
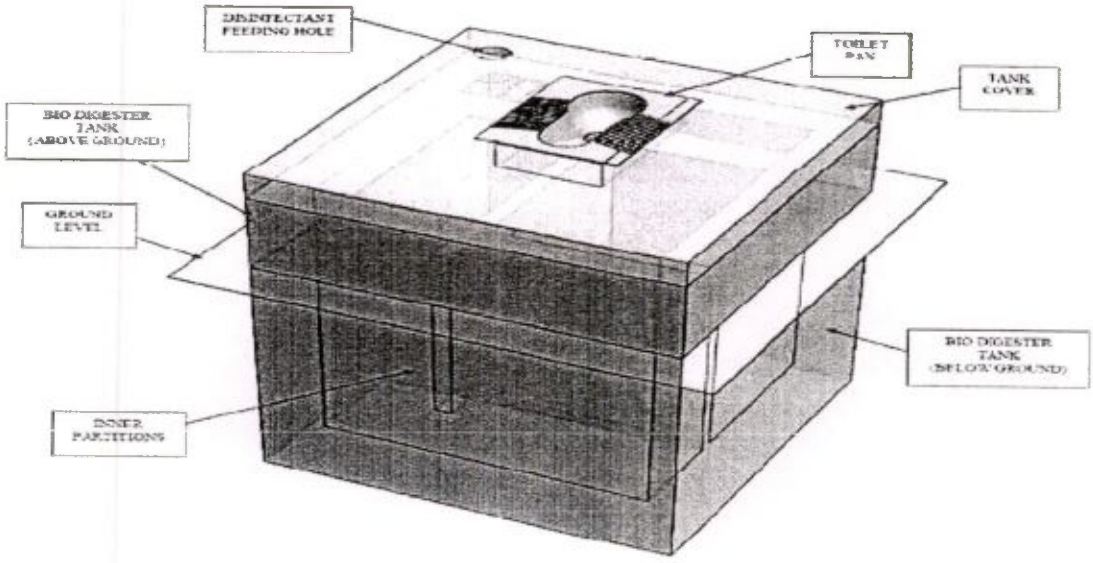


Figure 8: Details of Bio-Toilet
(Source: Private Agency)





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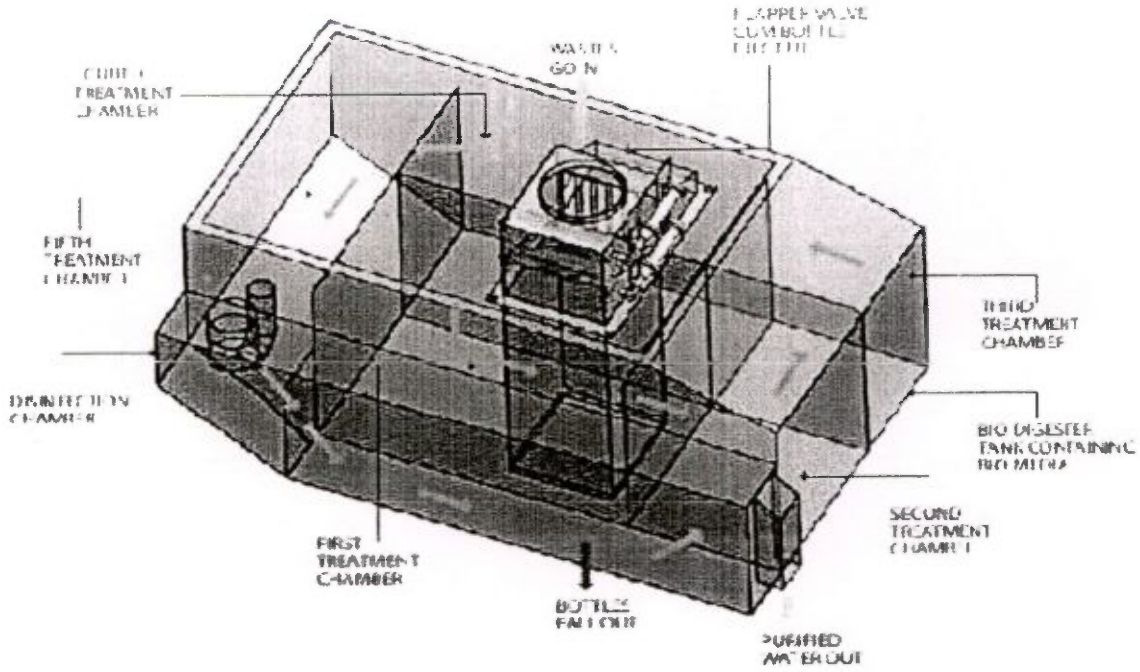

FIRST
TREATMENT
CHAMBER
SECOND
TREATMENT
CHAMBER
BIO DIGESTER
TANK CONTAINING
THIRD
TREATMENT
CHAMBER

Annexure III: Distribution of the Project Fund across States / UTs under SBM (Urban)

States/UTs	POPULATION OF STATUTORY TOWNS		STATUTORY TOWNS		OPEN DEFECATION		Fund Share*
	Pop. (minus OG)	Population Share (%)	No.	ST Share %	HHs	HH Share %	(%)
ALL India	**31,85,49,793**		**4,041**		**79,02,614**		
NON-NE STATES	**31,20,08,498**		**3,823**		**78,59,648**		
ANDAMAN & NICOBAR ISLANDS	1,08,058	0.03%	1	0.03%	1,209	0.02%	0.03%
ANDHRA PRADESH	2,30,04,396	7.37%	125	3.27%	5,81,673	7.40%	5.32%
BIHAR	1,12,41,824	3.60%	139	3.64%	5,46,409	6.95%	3.62%
CHANDIGARH	9,61,587	0.31%	1	0.03%	6,397	0.08%	0.17%
CHHATTISGARH	56,87,885	1.82%	168	4.39%	4,15,147	5.28%	3.11%
DADRA & NAGAR HAVELI	98,265	0.03%	1	0.03%	1,992	0.03%	0.03%
DAMAN & DIU	68,273	0.02%	2	0.05%	678	0.01%	0.04%
GOA	4,01,929	0.13%	14	0.37%	5,788	0.07%	0.25%
GUJARAT	2,31,88,334	7.43%	195	5.10%	3,88,836	4.95%	6.27%
HARYANA	78,61,917	2.52%	80	2.09%	1,28,059	1.63%	2.31%
HIMACHAL PRADESH	6,58,036	0.21%	56	1.46%	10,911	0.14%	0.84%
JAMMU & KASHMIR	29,40,098	0.94%	86	2.25%	44,501	0.57%	1.60%
JHARKHAND	53,05,359	1.70%	40	1.05%	2,54,374	3.24%	1.37%
KARNATAKA	2,21,63,498	7.10%	220	5.75%	5,34,829	6.80%	6.43%
KERALA	52,47,614	1.68%	59	1.54%	18,429	0.23%	1.61%
MADHYA PRADESH	1,87,83,104	6.02%	364	9.52%	7,89,555	10.05%	7.77%
MAHARASHTRA	4,67,83,521	14.99%	256	6.70%	6,94,830	8.84%	10.85%
NCT OF DELHI	1,14,02,709	3.65%	3	0.08%	62,210	0.79%	1.87%
ODISHA	59,69,842	1.91%	107	2.80%	4,08,170	5.19%	2.36%
PUDUCHERRY	7,48,267	0.24%	6	0.16%	18,941	0.24%	0.20%
PUNJAB	95,55,705	3.06%	143	3.74%	1,02,026	1.30%	3.40%
RAJASTHAN	1,57,17,489	5.04%	185	4.84%	4,31,290	5.49%	4.94%

States/UTs	POPULATION OF STATUTORY TOWNS		STATUTORY TOWNS		OPEN DEFECATION		Fund Share*
	Pop. (minus OG)	Population Share (%)	No.	ST Share %	HHs	HH Share %	(%)
TAMIL NADU	2,98,32,766	9.56%	721	18.86%	11,28,692	14.36%	14.21%
UTTAR PRADESH	4,06,94,476	13.04%	648	16.95%	9,65,922	12.29%	15.00%
UTTARAKHAND	24,89,380	0.80%	74	1.94%	19,206	0.24%	1.37%
WEST BENGAL	2,10,94,166	6.76%	129	3.37%	2,99,574	3.81%	5.07%
NE STATES	**65,41,295**		**218**		**42,966**		
ARUNACHAL PRADESH	3,13,557	4.79%	26	11.93%	4,241	9.87%	8.36%
ASSAM	33,19,375	50.74%	88	40.37%	27,900	64.94%	45.56%
MANIPUR	6,36,625	9.73%	28	12.84%	3,427	7.98%	11.29%
MEGHALAYA	3,75,930	5.75%	10	4.59%	1,887	4.39%	5.17%
MIZORAM	5,71,771	8.74%	23	10.55%	1,019	2.37%	9.65%
NAGALAND	5,05,440	7.73%	19	8.72%	2,279	5.30%	8.22%
SIKKIM	1,47,695	2.26%	8	3.67%	719	1.67%	2.96%
TRIPURA	6,70,902	10.26%	16	7.34%	1,494	3.48%	8.80%

Annexure IV

Concept Note on State Urban Sanitation Strategy for the State of _____

PART A: Parameters determining the existing urban sanitation situation

1	**State Profile**	
1.1	Name of the state	
1.2	Total Urban Population as per 2011 Census	
1.3	Number of Statutory towns 1 as per Census 2011	
1.4	Number of Census towns 2 as per Census 2011	
1.5	Population of statutory towns (as per Census 2011)	
1.6	Population of census towns (as per Census 2011)	
1.7	Total number of urban households	

2	**Status of Sanitation Situation as per Census 2011*[FOR STATUTORY TOWNS ONLY]***	**Total nos. as per Annexure 1 (State)***
2.1	Number of urban households resorting to open defecation (not in premises – open)	
2.2	Number of urban households having pit latrines	
2.3	Number of urban households having insanitary latrines	

3	**Solid waste management (tentative quantity based on per capita waste generation) [FOR STATUTORY TOWNS ONLY]**	**Total (State)***
3.1	Total Solid waste generated (in MT)	
3.2	Total Waste collected (in MT)	
3.3	Total Waste Transported (in MT)	
3.4	No. of cities with SWM Disposal Facility	
3.5	Total Waste treated (in MT)	

*City-wise information may also be added wherever available.

PART B: Institutional Mechanism for Swachh Bharat Mission (SBM) - Urban

	Provide Details		
Name of the Nodal Agency for SBM	*[Provide name of Nodal Agency; else if not designated, provide details of process by which nodal agency will be appointed]*		
Name and Designation of Nodal Officer with contact no.	*[Provide name of Nodal Officer; else if not designated, provide details of process by which nodal officer will be appointed]*		
Institutional Mechanism		**Start date (Month / Year)**	**End date (Month / Year)**
a. Constitution of the State-level High Powered Committee (S- HPC)	*[Provide details of S- HPC; else if not constituted. provide details of process by which S- HPC will be constituted; timeline should be max. within 1 month of submission of concept note]*		
b. Setting up of State Mission Directorate	*[Provide details of Mission Directorate; else if not constituted, provide details of process by which Mission Directorate will be constituted; timeline should be max. within 1 month of submission of concept note]*		
c. Setting up of PMU at the state-level under SBM	*[Provide details of PMU set-up; else if not set-up, provide details of process by which PMU will be put in place; timeline should be max. within 3 months of submission of concept note]*		
Submission of State Sanitation Strategy as per the National Urban Sanitation Policy, 2008 (please refer Ministry's website www.moud.gov.in)		**Start date (Month / Year)**	**Date of submission (Month / Year)**

PART C: Component-wise action plan for Swachh Bharat Mission (SBM) – Urban

Physical Targets

1.		Targets	*Baseline 2014*	*Cumulative Estimated Projection upto2019*	*Reasons/Justification based on 2001-2011 data and other factors*	*Target 2014-15*	*Target 2015-16*	*Target 2016-17*	*Target 2017-18*	*Target 2018-19 (up to Oct, 2019)*	*Cumulative Target (2014-19)*
A*	a	Construction of new individual household latrines (IHL)	*[80% of Part A, 2.4]*								*[100% of 2014 baseline]*
	b	Conversion of pit latrines into sanitary latrines	*[Part A, 2.2.4]*								*[60% of 2014 baseline]*
	c	Conversion of insanitary latrines into sanitary latrines	*[Part A, 2.2.5]*								*[100% of 2014 baseline]*
B*		Construction of Community toilets [NORM: 1 seat / 25 women and 1 seat / 35 men]	*[20% of Part A, 2.4]*								*[100% of 2014 baseline]*
C*		Construction of Public Toilets [NORM: 1 seat / 50 women and 1 seat / 100 men up to specified numbers**]	*[Part A, 1.2]*								*[5% of 2014 baseline]*
D		Solid waste Management	*[No. of cities proposed to be covered]*								*[100% excluding the on-going project]*
E		Capacity Building	*[Part A, 1.3]*								*[100% of cities]*
F		Public Awareness & IEC	*[Part A, 1.3]*								*[100% of cities]*

*Efforts shall be made to construct the toilets within two years i.e. upto 2016-17.

**Please also refer Manual on Sewerage & Sewerage Systems, Part A for more details (page No. 8-16)

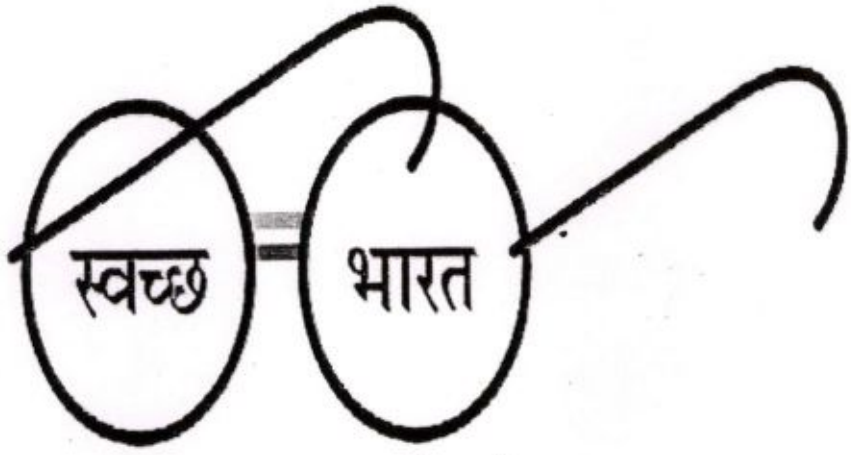
Financial Targets

(Rs in Crores)

2	**Funding [As per the funding pattern in the SBM Urban Guidelines]**	*2014-2019 (TOTAL)*		*2014-15*		*2015-16*		*2016-17*		*2017-18*		*2018-19 (upto Oct. 2019)*		*Remarks*
		Tentative / estimated	*Central Share*	*Tentative / estimated*	*Central Share*	*Tentative / estimated*	*Central Share*	*Tentative / estimated*	*Central Share*	*Tentative / estimated*	*Central Share*	*Tentative / estimated*	*Central Share*	
A	a. Construction of new individual household latrines (IHL)(Based on the cost													

2

	per household toilets)													
	b. Conversion of pit latrines into sanitary latrines (based on the cost per household toilets)													
	c. Conversion of insanitary latrines into sanitary latrines (based on the cost per household toilets)													
B	Construction of Community toilets [NORM: 1 seat / 25 women and 1 seat / 35 men] (based on cost per seat)													
C	Construction of Public Toilets [NORM: 1 seat / 50 women and 1 seat / 100 men up to specified numbers](Based on cost per seat)		-		-		-		-		-		-	
D	Solid Waste Management (based on per capita cost of Rs.1500/ capita may be considered less or more with proper justification in a separate sheet)													
E	Capacity Building & A&OE (5% on Central share)													
F	Public Awareness & IEC (15% on Central share)													
	Total													



एक कदम स्वच्छता की ओर