

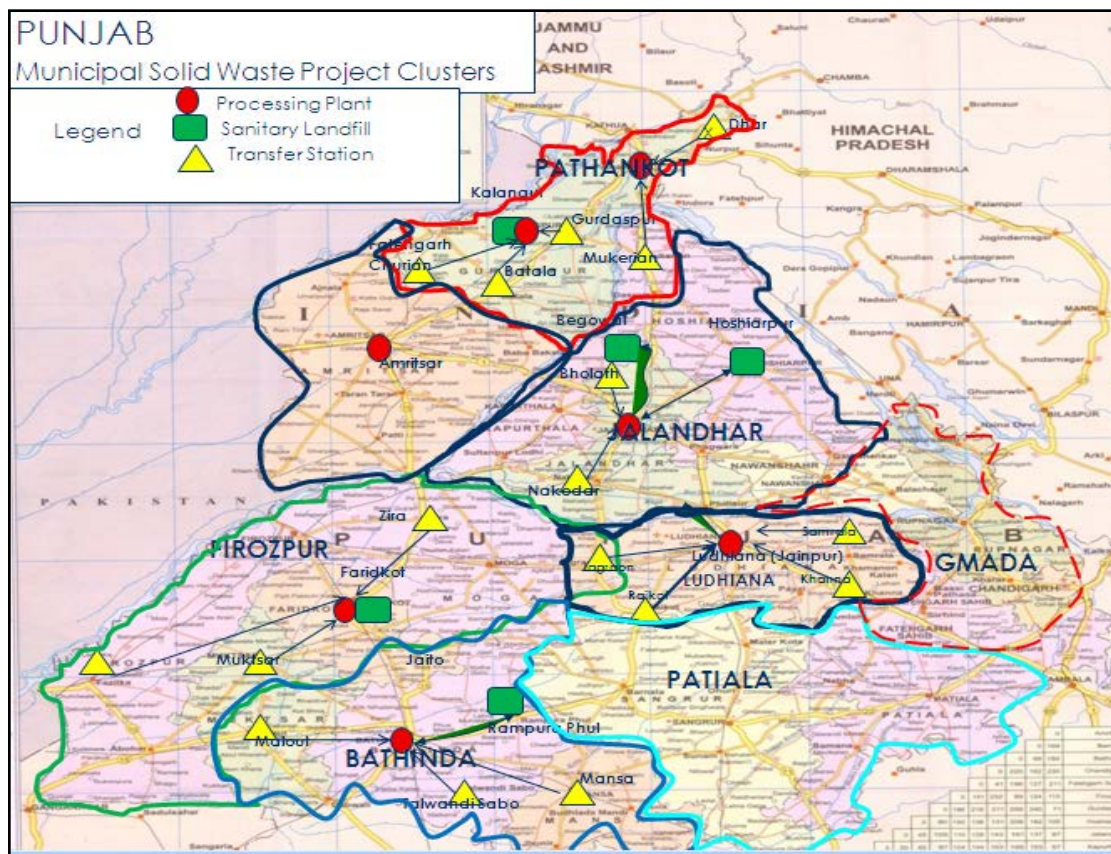
GOVERNMENT OF PUNJAB

DEPARTMENT OF LOCAL GOVERNMENT



(UPDATED)

PUNJAB MODEL MUNICIPAL SOLID WASTE MANAGEMENT PLAN- 2014



CHANDIGARH

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1. BACKGROUND

There are 146 Urban Local Bodies in Punjab generating approximately 4250 tons of Municipal Solid Waste (MSW) every day. As a pioneering approach and for the first time in India, the Department of Local Government Punjab has followed a unique cluster approach and formed eight clusters comprising of 8 to 26 Urban Local Bodies (ULBs) in each cluster covering all the ULBs in the State. Department of Local Govt., Punjab has planned to develop these clusters on Public-Private-Partnership (PPP) basis and the solid waste management will be carried out in all the urban local bodies in the state as per the Punjab Model MSW Plan-2014, designed centrally at state level with local adaptations at the cluster level. The Private Partners have been selected in four clusters namely Jalandhar, Bathinda, Ludhiana and Ferozepur; rest of the four clusters i.e. Amritsar, GMADA, Patiala and Pathankot are under the implementation stage. The following principles and strategies are followed for the successful implementation of these 8 clusters.

2. OBJECTIVES

Objectives of Punjab Solid Waste Management Plan are as under:

- The objective of solid waste management is to achieve high standards of cleanliness in the towns and cities of Punjab for achieving healthy, hygienic and liveable environment.
- Environmental Improvement through minimization of; land, water and soil pollution.

3. MANAGEMENT PRINCIPLES OF PUNJAB MSW PLAN

The Punjab Municipal Solid Waste Plan is based on following principles and these are adopted during the implementation of Punjab MSW:

- Effective segregation at source as well as during processing, collection and transportation.
- Maximum resources recovery
- Effective treatment
- Safe disposal



- Polluters to pay

4. SALIENT FEATURES OF THE PUNJAB MSW MANAGEMENT PLAN THROUGH PPP:

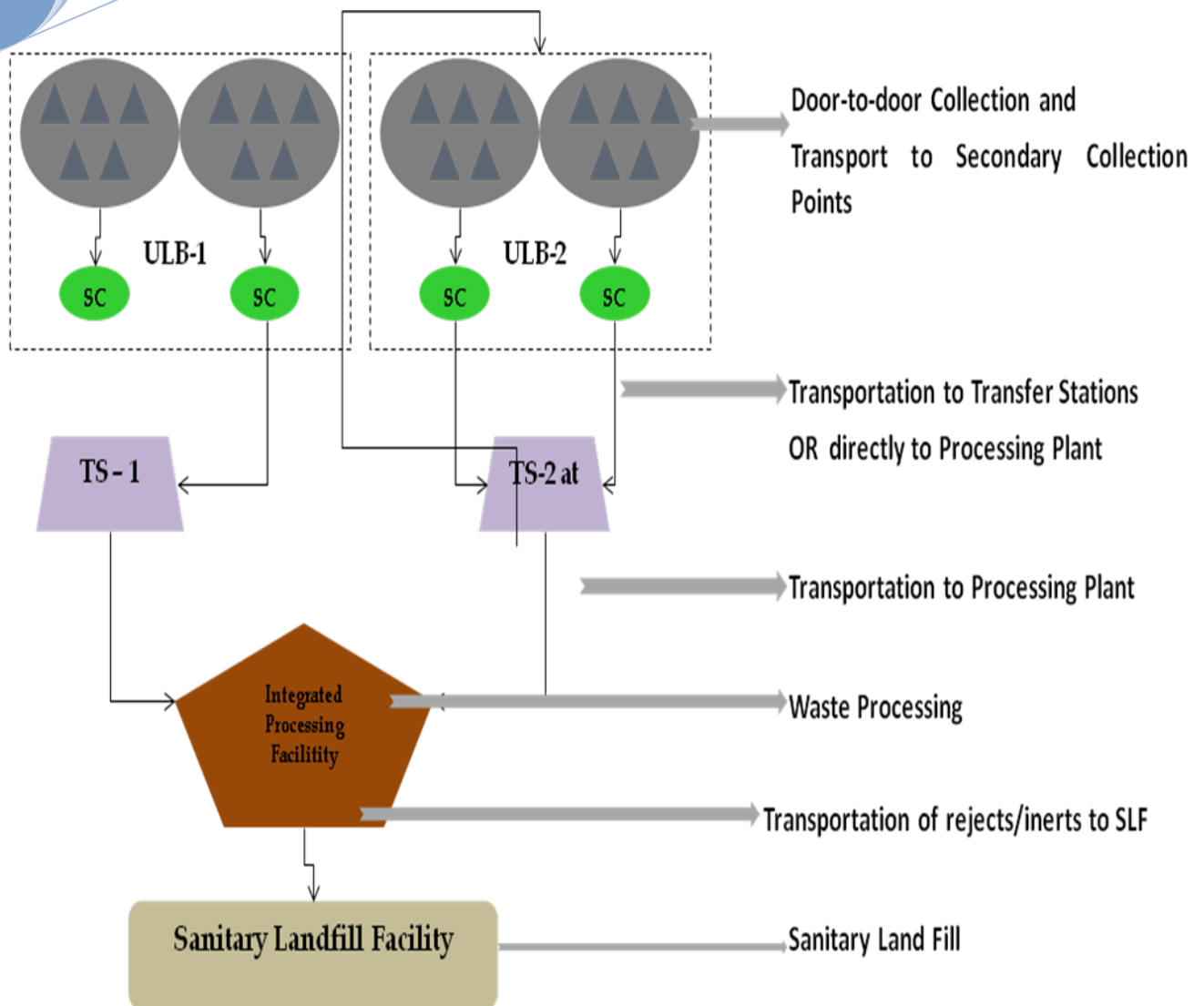
- Daily Door to Door Collection of waste.
- Segregation at source into Bio-degradable and Non-Biodegradable waste through two bin system to be preferred.
- Bin Free system to be adopted wherever feasible.
- Latest technology involving Incineration, Waste To Energy, Refuse Derived Fuel (RDF), composting etc. would be employed.
- Not more than 20-25% waste would be allowed to be disposed of in the Engineered Sanitary Land Fill (SLF) sites.
- Adopting polluters to pay principle, each and every household would have to pay for MSW services and violators would be fined. A special fund would be created at State level for implementation of the project.
- Multi tier management system: Monitoring committees and implementation cells at State, cluster and local level; an independent expert agency and an independent engineer to monitor the projects.

5. THE PUNJAB MSW OPERATION PLAN:

Broadly, the Punjab MSW Operation Plan involves:

- Door to door collection and segregation of MSW at Source;
- Transportation;
- Segregation and Processing;
- Scientific Disposal in Sanitary Landfill Facility.

The schematic diagram for the Comprehensive MSW Management Plan is as under:



The details of the procedures involved in the above said steps are as under:

5.1 Door to door collection and segregation of MSW at Source:

- 5.1.1 The households (HH) will be provided with two separate bins/containers, one each for biodegradable waste /wet waste (green color) and non-biodegradable/dry waste (white color).
- 5.1.2 Primary Segregation has to be done by waste generator at source and then by the waste collector at processing facility.
- 5.1.3 The waste from HH will be collected through tricycle rickshaws, auto-rickshaws, vehicles like LCV etc. having compartmentalized containers.
- 5.1.4 The entire city would be divided into zones and the zones should be further divided into beats.
- 5.1.5 The door to door collection will be done from 7.30 AM to 1.30 PM. However, the exact timings will be decided mutually by the Concessioneing Authority (Municipal Corporation) and the Bidder.
- 5.1.6 Depending upon the population of the city and no. of commercial/ institutional establishments, approximately 200-400 no. of litter bins

of capacity 20 litres to 50 litres will also be placed at designated locations for keeping the waste generated from street sweepings.

- 5.1.7 Depending upon the population of the city approximately 300-500 workers will be deployed by the Company for carrying out the above mentioned work of door to door collection and transportation of waste up to the processing facility.
- 5.1.8 The above quantities may vary depending upon the actual working design, routing and scheduling finalized mutually by the Concessioneing Authority and the Concessionaire (Bidder).
- 5.1.9 The fleet of vehicles covering cycling rickshaws equipped with 4 to 6 bins of about 30 to 40 litre capacity would be covering approx. 250 houses, Tata Ace or Auto tipper about 700 to 800 Litre capacity covering approx. 1200 houses depending on the workload.
- 5.1.10 Max 10% Community bins/; secondary collection points would be installed, if no door to door collection is possible in certain areas like congested narrow lanes or slums residents would be made aware of putting their wastes into the bins in segregated manner as specified.
- 5.1.11 Wherever it is feasible Container Free / Bin-less system will be adopted by eliminating the secondary collection points and transporting door to door MSW to efficient MSW fleet like Refuse Compactor with a carrying capacity of 8-11 tonne/ vehicle, as per the city then directly transporting the MSW to Transfer Station/Processing Site as the case may be.

5.2 Regulatory Measures for Waste Generators

5.2.1 Residents

Following would be regulated by existing Municipal law and penal action against all the waste generators including households, restaurants, hotels shops offices, institutions, workers will be levied, in case of defaults. The Govt. Of Punjab will regulate the following activities:

- They will not throw any solid waste in their neighbourhood, on the street, open spaces and vacant plots or into drains.
- They will (a) keep the food waste / bio-degradable as and generated, in any type of domestic waste container, with a cover, and (b) keep dry / recyclables wastes in bags or sacks.
- Wet waste will not be disposed of in plastic carry bags.

5.2.2 **Vegetable/Fruit Market Waste**

- Large size closed containers with lid or skips would be used for storage of waste in vegetable/fruit market.
- Waste from the shops/fruit market/vegetable market would be removed on a daily basis through Private party selected through MSW-PPP mode.
- Large closed containers kept in the fruit and vegetable markets would be removed during night time or non-peak hours and the waste from meat and fish markets would also be collected in closed containers and picked up by engaging a private party by the local body.

5.2.3 **Marriage Hall/Kalyan Mandaps/Community Halls**

- Suitable containers with lids which may match with the primary collection or transportation system of Private Party would be provided by these establishment at their cost and would be directly transported to a finalized place by Private party till the processing facility is not operational. Collection of Waste from marriage halls kalyan mandaps, community halls, etc. would be made on a daily basis on a full-cost recovery basis. The cost of such collection would be built into the charges for utilizing such halls/ collected by Private Party from such halls on the charges fixed by Urban Local Body.
- However On-site bio-digesters for food waste/ processing of food wastes by Bio-Methanation and composting would be encouraged.

5.2.4 **Hospital/Nursing Homes/Pathological laboratories/Health Care Centres**

These establishments produce bio-medical as-well-as ordinary waste. The management of Bio-medical waste is handled by the Punjab Pollution Control Board (PPCB) as per 'Biomedical Waste (Management and Handling) Rules 1999' (with subsequent amendments as the case may be). The PPCB has directed:

- These establishments shall refrain from throwing any bio-medical waste on the streets or open spaces as well as into municipal dust bins or domestic waste collection sites.
- They shall refrain from throwing any ordinary solid waste on footprints, streets or open spaces.

- They are required to store waste in colour –coded bins or bags as per the directions of the Govt. of India. Ministry of Environment Bio-medical Waste (Management & Handling) Rules 1998, and follow the directions of Central Pollution Control Boards and State Control Boards from time to time for the handling, transportation, treatment and disposal of biomedical waste.

5.2.5 **Construction & demolition Wastes**

- Construction & Demolition Waste would be collected separately from MSW.
- The Charges/ rates per tonne for C&D collection waste would be fixed and would be levied from the person, who is producing C&D.
- C&D waste from small quantity generators (<2 Tonne) arising from repair/minor renovation/small construction work may be transported to designated locations in the city and the charges may be collected by MSW C&T PPP service provider at a volumetric rates fixed by ULB. Waste Generators have to pay directly to PPP service provider. Large quantity generators or their demolition/construction contractors can transport the waste at their own cost and pay per tonne charges to MSW-C&D PPP service provider at the rates fixed by Local Body.
- A separate site would be designated for collection of C&D Waste.
- Looking at the generation of C&D waste in all the ULBs of Punjab, a separate agency (s) for collection & management of C&D waste may be selected and accordingly Processing Plants for C&D Waste may be planned.

5.2.6 **Garden Waste**

- Horticulture waste would be collected in separate vehicles
- Wherever the waste quantity is high, separate charges for Horticulture waste would be fixed and charged from the private gardens/lawn plots.
- Private party would collect the horticulture waste and would be allowed to run a compost plant.
- In case of private parks, gardens and lawn plot etc., it would be stored in the premises and kept ready for handing over to the MSW-PPP party and the waste be processed accordingly.

5.2.7 **Dairy and Cattle-Shed Waste**

- The dairies and cattle breeders having sheds within the city limits are already being moved outside the city limits through formulation of Dairy Schemes.

5.2.8 Provision of Litterbins on Streets in Public Places

- With a view to ensure that streets and public places are not littered with waste materials such as used cans, cartons of soft drinks, used bus tickets, wrappers of chocolates or empty cigarette cases and the like generated while on a move. Litter bins would be provided on important streets, markets, public places, tourist spots, bus and railway stations, large commercial complexes etc. at a distance ranging from 100 meters to 250 meters depending on the local condition.
- Similar bin for disposal of animal droppings would be placed in posh areas.
- Removal of waste from these litterbins would be done by MSW-C&T PPP partner.
- Advertisement rights on the bins for a specified period or by allowing them to put their names on the bins as a sponsor may be given to the Private Partner.
- Litterbins would be put in push as well as poor area in the proportion decided by allocation plan of Private Partner and Urban Local Bodies.

5.3 Management of Storage Points in the city

- All the wastes collected through Primary Collection System from the households shops and establishments would be taken to the processing or disposal site either directly necessitating a large fleet of vehicles and manpower or through cost effective systems which are designed to ensure that all the waste collected from the sources of waste generation is transported within reasonable time.
- Out of 100 %, maximum of 10% of Storage Depots/Secondary Collection Points in a city would be allowed, where direct transferring of door to door waste to the larger fleet is not feasible. The storage facilities/ secondary collection point must not create unhygienic and unsanitary conditions around the waste bins. This means that it would be:
 - Out of reach of stray animals.
 - would not obstruct the traffic of spread on road.



- Easily accessible in terms of distance for the user.
- Fully covered and not exposed.
- Able to hold the expected waste generated, depending on the size and population of the area.
- Concrete / pucca structure with roofing, to prevent Vector and bird menace, under and adjoining areas of dustbins at Secondary Collection Points
- Aesthetically acceptable.
- Designed to be easy to operate, handle, transfer and transport.

5.4 TRANSPORTATION OF MUNICIPAL SOLID WASTE

- Segregated transportation of segregated MSW would be ensured.
- Based on the requirement and availability of space, transfer stations would be planned and provided.
- Transportation of the waste at waste storage depots/ secondary collection points (which would be maximum 10%) is essential through covered vehicles to ensure that no garbage bin/container overflows and waste is not seen littered on streets.
- Waste would be transported in covered vehicles like Refuse compactor /dumper placer etc. The waste collected by Primary Collection vehicles would be directly transported to these covered vehicles at Waste Shifting Points.
- A route Plan for Primary and Secondary Collection System would be made
- Daily Transportation of Litter bins, before they start overflowing; if required twice or thrice a day.
- No. of vehicles and number of trips would depend on the quantity, type of waste, number of containers, type of vehicle etc. The approximate vehicle requirement for transportation of MSW for a city having one million population is illustrated in table below:

A city having one million population	Proposed Vehicle Requirement			
	Type of Vehicle			
	Tricycle Rickshaw	Tipper/ LCV	Refuse Compactor	Dumper Placer
	150	125	15	20

5.5 Manpower Requirement

Manpower Requirement for Proposed Collection & Transportation System for a city having one million population			
Sr. No	Particulars	Details	Requirement
1	Primary Collection		
	Containerized Tricycles	One worker per Rickshaw plus 15% absentees	173
		Supervisors (One for 15 workers)	17
	LCV	Driver	125
		Helper /Worker (One for each)	125
		Supervisors (One for 20 Vehicles)	6
	2	Secondary Collection & Transportation	
Dual Dumper Placer Vehicles		Drivers(One for each)	20
		Helper /Worker (One for each)	20
		Supervisor (One)	1
Refuse Compactor		Drivers (One for each)	15
		Helper /Worker (One for each)	15
		Supervisor	1
Total			518

5.6 Scientific MSW Processing and Safe disposal of MSW in Punjab

5.6.1.1 The Waste would be processed and disposed of as per the characterization and quantity of waste in the respective cluster.

- MSW-PPP will adopt suitable technology or combination of such technologies to make use of wastes so as to minimize the burden on landfills.
- The biodegradable wastes shall be processed by composting, vermin-composting, anaerobic digestion or any appropriate biological processing for stabilization of wastes as per the standards.



- Mixed waste containing recoverable resources will follow the route of recycling or other appropriate technologies.
- Land filling would be restricted to non-biodegradable, inert waste and other waste that are not suitable either for recycling or for biological processing.
- Maximum 20-25% of the total Waste reaching to the Processing Site would be land filled.

5.6.1.2 MSW PROCESSING/ TREATMENT TECHNIQUES

The Processing technology for each cluster varies as per the quantification of waste and waste characterization in each cluster. For selection of suitable processing technology several parameters are considered namely Indian experience, quantity and quality of waste, capital investments, scale of operation, Recurring expenditure, environmental impact etc.

RECOMMENDED INTEGRATED WASTE PROCESSING TECHNOLOGY

Based on the above criteria, Integrated MSW processing facility for the clusters will comprise of:

- a) Compost plant
- b) RDF Plant
- c) Waste to Energy facility (WTE)

- (a) **Compost Plant:** It is envisaged that processing rejects would be generated from the RDF plant which would further comprise of organic rejects which will be used for composting by Windrow method.
- (b) **Pelletisation/Refuse Derived Fuel (RDF):** The raw MSW is processed for concentrating the combustible fraction of it by segregating the non-combustible portion. The complete process involves drying. Removal of non-combustibles by air separation (density separation, grinding or shredding of combustible fraction usually by a hammer mill, mixing and production of pellets under high pressure. The pellets can be transported easily and stored for many months without any disintegration. These pellets could be used for heating in the boilers and the generated steam, in turn, is used to produce power. Pellets also, can be used along with conventional fuels for industrial operations.

(c) Waste to Energy Plant

MSW will be processed for energy recovery before disposal into the landfill site. Only inert or processing rejects are to be land filled in the range of 20-25 percent of total waste transported to the site. The processing scheme would comprise of the following:

- i. MSW Pre-Processing section
- ii. Waste to Energy plant
- iii. Ash handling plant
- iv. Flue gas treatment plant

(i) Bio-methanation Plant: The green waste will be treated by Bio-methanation plant (more commonly called Anaerobic Digestion). In this method, the waste is treated in closed vessels where, in the absence of oxygen, microorganisms break down the organic matter into a stable residue, and generate a methane- rich biogas in the process. This biogas can then be used as a source of renewable energy to produce electricity, which can be sold to help balance the cost of operating the Bio-methanation plant. The solid residue, which remains after Bio-methanation, comprises solid/fibrous material and liquid represents an effective organic material, which can be sold as 'manure' or blended into organic compost. The aqueous liquor is a nutrient-rich fertilizer, which can be used to recycle nutrients back to agricultural land.

(ii) Incineration

- It is a controlled combustion process for burning solid waste in presence of excess air (oxygen) at high temperature of about 1000⁰C and above to produce gases and residue containing non-combustible material.
- One of the most attractive features of the incineration process is that it can be used to reduce the original volume of combustible MSW by 80-90%.
- In some of the newer incinerators designed to operate at temperatures high enough to produce a molten material before cooling it may be possible to reduce the volume to about 5% or less.
- MSW can also be co-fired as an additional source in coal-based power plants.



(iii) Incineration with Heat recovery

The incineration process which is used for volume reduction, may also lead to heat recovery.

5.7 Sanitary Landfill Site

5.7.1.1 **Common sanitary waste disposal facility** would be planned for the safe disposal of processing rejects and non-biodegradable components of solid waste and it is envisaged that common sanitary landfill site would receive/accommodate about 5-10% of processing rejects and inerts per day from the total MSW processed at processing plant.

5.7.2 Sanitary Land Fill Facility:

Development of landfill site should be subjected to rigorous planning. Key elements in developing a common scientific landfill site for a cluster would comprise:

- Site Clearance,
- Sub-division of site into major operational phases,
- Progressive excavation for landfill earthworks,
- ordered development of operational phases in working land filling cells,
- advance preparation of the lining system on the landfill base,
- sequential infilling of land filling cells and operational phases and early and timely capping of land filled cells.

The following sections explain the broad specifications of developing each of the landfill components:

5.7.3 Buffer Zones:

A vegetative cover comprising of trees and shrubs will have to be provided as buffer zone between landfill site and the nearby localities. In addition to the buffer zone a compound wall/rigid fencing all round the land fill site to a height of 3m or as suitable, shall also to be constructed, to totally seclude the site from outside activities.

5.7.4 Containment of Potential Pollutants: Containment measures such as composite liners at the bottom and lateral sides of the landfill, and surface capping after the land filling is completed, are required to control the pollutants and mitigate subsequent impacts on environment.

5.7.5 Surface Capping: To minimize the ingress of water into the site after completion, it is proposed to form an engineered capping layer. This will comprise a multi layer system.

5.7.6 Leachate Collection and Removal

The leachate collection shall be achieved through the following measures:

- a. Gravity drainage and grading of the floor of the landfill cell to fall into a sump, located at the lowest point of the cell. The gradients shall be 2 per cent for main drainage with 1 per cent cross fall.
- b. Installation of leachate drainage blanket above the basal mineral liner over the floor of each cell and partially up the side walls, constructed of free drainage coarse granular fill comprising of graded 50mm crushed rock laid to a depth of 400mm with a permeability of 1×10^{-4} cm/sec.
- c. Inclusion of perforated HDPE pipes in the drainage blanket to facilitated leachate flow with pipes laid on a typical spacing of 50m.
- d. Overlaying granular drainage blanket with 100m thick free draining fine granular fills of medium to coarse sand to act as a filter and protective layer.
- e. Removal of leachate is effected by leachate collection chambers built up with successive lifts of waste and side slope risers located on the site perimeter.
- f. The submersible pumps or adductor pumps should be used to remove leachate from the sumps and the collection chambers should be linked by permanent pipe work to the treatment plant.
- g. The precise methods and degree of treatment shall accommodate the fluctuations in leachate generation.

5.7.7 Landfill Gas and Management

The primary measures to restrict the uncontrolled migration of landfill gas from the site will comprise,

- Low permeability containment layers and systems installed on the base and side walls
- Permeable gas drainage blanket of 0.3m thickness laid beneath the capping layer and
- Vertical gas vents and extraction wells.

5.7.8 Surface Restoration

The landfill will be brought up to its pre-settlement level in stages and capped off in a program of progressive restoration, to limit the ingress of water into the site and to facilitate the control of landfill gas. The capping will be a composite structure comprising of four layers of an engineered seal designed to prevent water ingress and egress of landfill gas and an agricultural cap comprising of subsoil drainage layer.

A suitable vegetative cover will have to be established on the closed site to ensure slow surface runoff, promote evapo-transpiration of rainfall, retain moisture in the cap and enhance the formation of a soil structure in the agriculture soil.

5.7.9 Other Measures

Specific attention shall be paid to mitigate the following undesirable and potentially deleterious effects of:

- a) Litter blown from the disposal / tipping area
- b) Scavenging animals and insects attracted to the sites
- c) Flies and Bird attraction
- d) Odour arising out of waste deposition and degradation
- e) Dust from landfill operations
- f) Mud generated from waste, cover, capping materials and site excavation works
- g) Fire and smoke control and
- h) Noise of operating plant.

These effects can be minimized by providing local litter, arrestor, fencing, strategically placed in relation to the discharge point, erecting site security fencing for excluding scavenging animals, bird scaring techniques for avoiding bird nuisance, etc.



6. MANAGEMENT ASPECTS

A Private partner in relation to collection, transportation, processing and disposal of all waste, including workshop facilities, would be selected by competitive bidding process. The private Partner would be responsible for collection waste and debris and vehicle deployment and maintenance. The agency would work as per MSW (Handling and Management) Rules, 2000 and the latest rules amended time to time. Advanced work schedule would be prepared and followed every month.

6.1 Financial Management

Solid Waste management (SWM) is the responsibility of ULBs under the Constitution of India. Any solid waste management system will require provision of financial resources. For the smooth running of solid waste management system, following provisions are made:

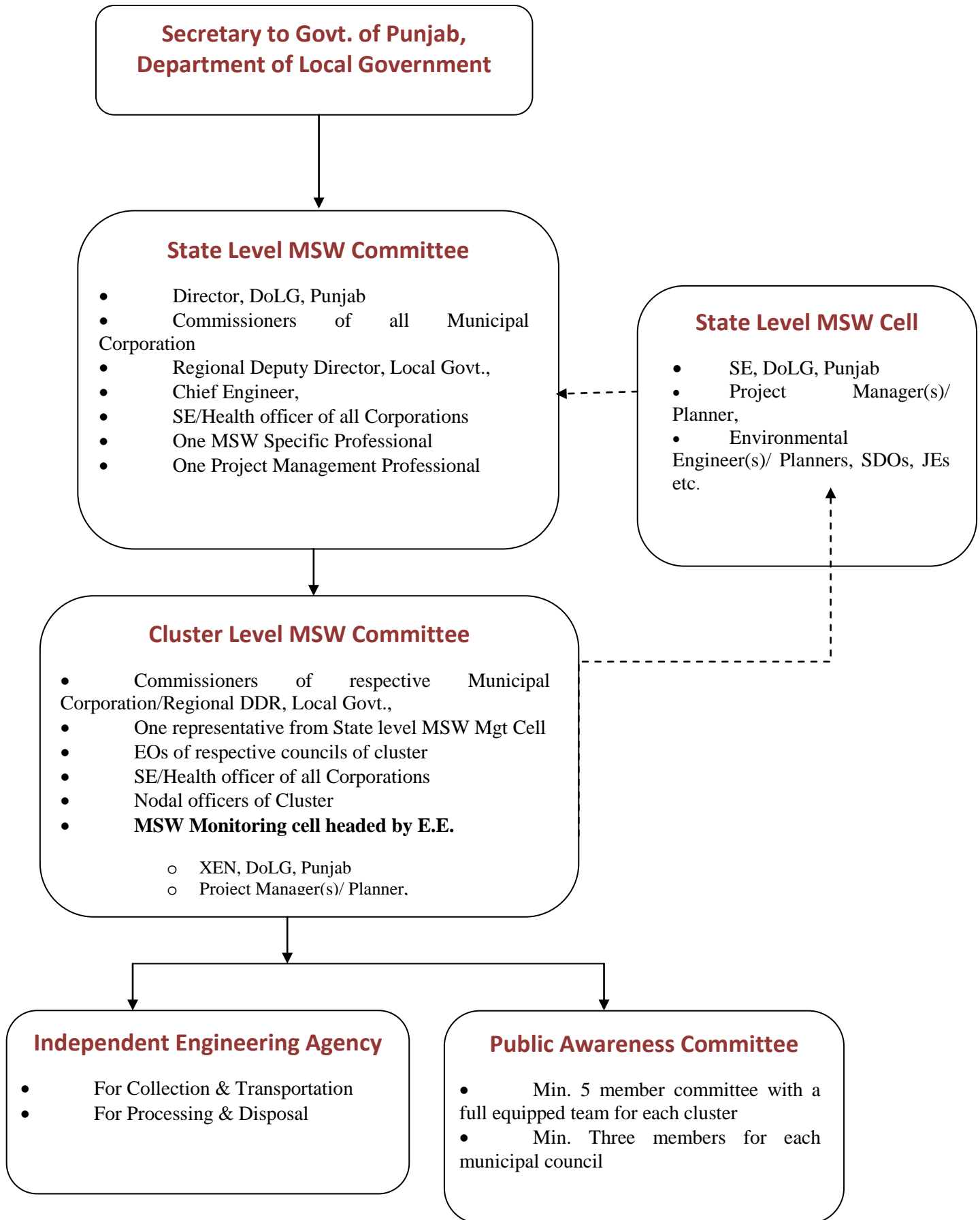
- a) Private partner would charge a Tipping Fee. Tipping Fee is the amount, which he quotes per tone for the collection, transportation, processing and disposal (CTP &D) of MSW. There is a provision of increase of Tipping Fee for every two years starting from the Financial Year of completion date of CTP&D. The whole system is performance based and appropriately framed with in-built monitoring and penalty mechanisms.
- b) State level fund would be created, which would be under the preview of Director, DoLG, Govt. of Punjab. This fund would be utilized to manage the expenses of monitoring cell formed at State level and Cluster Level, payment of Independent Agency at each cluster, would give loan to cluster ULBs (for the payment of Tipping Fee of MSW-PPP operator).
- c) Provision of creation of Tipping Fee Fund in each municipality is made for smooth functioning of the project, which should be an amount equivalent to the amount payable to the Concessionaire/MSW- PPP for three months for the collection & Transportation or Collection, Transportation, Processing & Disposal as the case may be. .
- d) Beneficiaries also share the responsibility of waste management following the 'Polluters pay principle'. Following User Charges as per the plot size are defined and charged from each household:
- e) Department of Local Govt., Punjab is in the process of making arrangements to collect these user charges by collecting it with Electricity Bills, through outsourced agencies.



SI	Category No	Category Type	Area	RATES per Month
1	R1	Residential	Slum Areas	10
2	R2		Upto 50 sq mtr	20
3	R3		51-150 sq mtr	30
4	R4		above 150 sq mtr	50
7	C1	Hotel	Upto 5 rooms	500
8	C2		5-20 rooms	1000
9	C3		above 21 rooms	2000
10	C4	Restaurant	upto50 sq.ft	500
11	C5		51-200 sq.ft.	1000
12	C6		above 200 sq.ft.	1000
13	C8	<i>Factory / Production & Trading houses</i>	up to 1000 sq. ft.	50 RS PER SQ.YD
14	C9		above 1000 sq. ft	
15	C10	<i>Shopping Mall</i>	Upto 50 shops	200. RS PER SHOP
16	C11		51-100 shops	
17	C12		above 101 shops	
18	C21	<i>Marriage Places / Banquet Halls</i>	Upto 500 sq.yard	8000 PER YEAR
19	C22		501-1000 sq.yard	12000 PER YEAR
20	C23		above 1000 sq yard	25000 PER YEAR
21	C24	<i>Schools</i>	Primary & Play group	100
22	C25		Matric	200
23	C26		Senior Secondary school	1000
24	C27	<i>Colleges</i>		3000
25	C28	<i>Educational Institutes</i>		250
26	C29	<i>University</i>		25000
PS: All above rates are for single lifting in a day				

6.2 Institutional Framework

The following Institution set up would be created to implement and monitor the efficient MSW management.



6.3 Mobile Sanitation Courts

It is the tendency of the public to take their civic responsibilities lightly. It is therefore necessary that while on one hand people are motivated to participate effectively in keeping the cities clean, there should be a fear of punishment if they fail to discharge their civic obligations. Provision of Mobile Sanitation Courts is therefore very useful to ensure stopping littering on roads/ public places and compliance of other legal provisions in this regard. The mobile sanitation court would be able to generate funds to be used for MSW management from the fines that may be imposed by the court.

6.4 Redressal of Public Grievances

Website/ electronic /Online Complaint redressal system along with complaints registration to the concerned office is formed for the better efficiency of the system, where the complaint is resolved within 24 hours from time to time of registering the complaints. In case of non-redressal of complaint, penalty mechanism is also formed.

6.5 Other Standard procedures to be adopted

- A manual of standardized procedure would be established for the activities of the entire MSWM system.
- These procedures would be mandatory and established for each default. The same penalties should apply whether the system is operated directly by a ULB or by an external contractor.
- A surveillance mechanism would be created to investigate every instance of non-compliance reported to the ULBs using fast and modern communication means such as SMS by mobile to the authorities.
- The staff responsible for solid waste management would be professionally qualified and trained.
- The operation manual would be available to each staff.
- Each staff member would be given responsibility in terms of specific activity along with date time in writing.
- The duty assignment records would be maintained in a Master File which would be checked by officers of Nodal office on regular basis.
- Training of the MSWM staff would be planned and implement properly.
- Penalty would be levied in case of default.
- Project Engineer and nodal officer would submit a monthly report including duty performed by him and how it is matching with the assignment given to him.
- In case of deviation, sufficient reason would be recorded.



- Every ward would be monitored for its cleanliness and satisfaction of the citizen.
- The monitoring results would be compiled on monthly basis and submitted to the Nodal office in the form of a monthly report.
- The report would be reviewed by the Commissioner. In case of any problem in SWM system, the Project Engineer would discuss it with Commissioner of the Municipal Corporation and suggest remedial measures.
- There would be a quarterly meeting of the Private Partner and Municipal Corporation to discuss the problem and remedial measures.
- The outcome of the meeting would be recorded in form of minutes and communicated to State Level Committee within 15 days of the meeting.
- There would be a separate cell at State Level for Monitoring management of MSWM System in the State.
- This cell would constantly interact with the Project Engineer/ Nodal Officer on performance of MSWM System and other related issues.
- In case of unsatisfactory observations, the cell should issue notice to the Private Partner under EPA, 1986.
- An annual report on the performance of city wise MSW System record would be prepared city-wise and submitted to the State Boards highlighting all the important points including deficiencies and annual expenditure.
- It may be useful to involve local communities in monitoring the functioning of the entire MSWM System.
- It is necessary to have a cadre of professional staff in municipalities headed by technically qualified chief executives for planning and implementation of MSWM System

To further strengthen the institutional arrangements for the purpose of management of Municipal Solid Waste, a dedicated MSW Division at state level as well as local level would be constituted. This cell shall be involved in activities related to, inter alia, program development support, program monitoring at state level as well as cluster level, coordination with ULBs, monitoring of MSW activities as per the Solid Waste Management (Handling and Disposal) Rules, 2000, provide guidance to all ULBs, creating public awareness through Non-Government Organizations, etc.



7. THE CURRENT STATUS OF PUNJAB MSW PLAN IS AS UNDER:

S.No	Project Cost & Cluster ULBs	Current Status	Capacity\Site
1	Ludhiana		
	<ul style="list-style-type: none"> Project Cost: INR 104.54 Crores ULBs: 14 	<ul style="list-style-type: none"> Project was awarded in Nov, 2011 to M/s. A2Z Infrastructure Limited. The successful bidder started the work of lifting of MSW in the cluster ULBs from August, 2012. The final EIA Clearance has been obtained. Construction of Processing Plant will start shortly. 	<ul style="list-style-type: none"> Project Capacity: 1100 Tonnes per day (TPD) Processing Facility: About 55 acre of site at Jamalpur, Ludhiana is available. Sanitary Landfill Facility: The same site at Jamalpur, Ludhiana would be utilised for SLF.
2	Jalandhar		
	<ul style="list-style-type: none"> Project Cost: INR 133.33 Crores ULBs: 27 	<ul style="list-style-type: none"> Project was awarded to the consortium of M/s. JITF Urban Infrastructure Limited, New Delhi (JINDAL Group); and M/s Ladurner Impainti s.r.l., Italy in January, 2012. Collection and transportation of solid waste could not be started till date. The implementation of the project is held up due to resistance from the Local Safai Unions. The Project has got the requisite EIA Clearances. 	<ul style="list-style-type: none"> Project Capacity: 750 TPD Processing Facility: Approx. 20 acre of site at village Jamsher near Jalandhar Sanitary Landfill Facility: Approx. 21 acre of site at Village Piplanwala, Hoshiarpur.
3	Bathinda		
	<ul style="list-style-type: none"> Project Cost: INR 66.46 Crores ULBs: 16 	<ul style="list-style-type: none"> Project was awarded to consortium of M/s. JITF Urban Infrastructure Limited, New Delhi (JINDAL Group); and M/s Ladurner Impainti s.r.l., Italy in Nov.,2011; Collection and transportation of MSW is operational since Jan, 2012. The Project has got the requisite EIA Clearances from SEAC. However against the EIA Clearance on the Mansa Road site, Capt. Mal Singh and others have approached this Hon'ble Tribunal in Appeal No. 70 of 2012 and Hon'ble Tribunal has ordered to maintain the status quo. 	<ul style="list-style-type: none"> Project Capacity 350 TPD Processing Facility: Approx. 20 acre at Mansa Road, Bathinda Sanitary Landfill Facility: Approx 36.11 acre at village Mandi Khurad
4.	Ferozpur		
	<ul style="list-style-type: none"> Project Cost: INR 66.46 	<ul style="list-style-type: none"> Project was awarded to M/s. JITF Urban Infrastructure Limited, New 	<ul style="list-style-type: none"> Project Capacity: 300TPD



S.No	Project Cost & Cluster ULBs	Current Status	Capacity\Site
	<p>Crores</p> <ul style="list-style-type: none"> ULBs: 18 	<p>Delhi (JINDAL Group); and M/s Ladurner Impainti s.r.l., Italy In Dec.,2011;</p> <ul style="list-style-type: none"> Collection & Transportation of MSW is operational since Jan.,2012. The EIA Clearance is in the process. After obtaining the clearance, the Processing Plant would be constructed. 	<ul style="list-style-type: none"> Processing Facility: Approx. 20 acre of site at Village Beer Chahal, Faridkot. Sanitary Landfill Facility: The same site at Village Beer Chahal, Faridkot would be utilized for SLF.
5	Amritsar		
1.	<ul style="list-style-type: none"> Project Cost: INR 116.00 Crores ULBs: 8 	<ul style="list-style-type: none"> RFP document was released to the short-listed parties on 17th June 2011 and bids were invited for the project by Municipal Corporation, Amritsar. Hon'ble Supreme Court in Writ Petition no. 2032/2006 and W.R.P. no. 12188/2010, had given direction on 26.08.2011 to maintain the 'status-quo' in the matter. Now the Hon'ble Court has issued the final orders in this case on 23-7-13 in favour of the Municipal Corporation, Amritsar and has desired to award contract to the Private Partner. Commissioner, MC Amritsar has engaged IL&FS and already started the bidding process. Two bids have been received and the bids are under evaluation. The EIA Clearance is at Final Stage. Final EIA Report is submitted and meeting by SEIAA is awaited. 	<ul style="list-style-type: none"> Project Capacity: 650 TPD Processing Facility: Approx. 21 acres Site is available at Bhagatanwala within Municipal Limits. Sanitary Landfill Facility: The same site at Bhagatanwala would be utilized for phase-I SLF.
6	GMADA		
	<ul style="list-style-type: none"> Project Cost: INR 80 Crores (approx.) ULBs: 18 	<ul style="list-style-type: none"> The EIA Clearance for Processing and Sanitary Landfill Site at Village Samgouli is obtained from MOEF. Recently the land acquisition process by the GMADA in village Samgouli has been quashed by the Apex Court. The copy of the order is yet to be received The bidding process would be initiated soon after the clarity on land acquisition process. 	<ul style="list-style-type: none"> Project Capacity: 350 TPD Processing Facility: Aprox. 50 acre of site at Village Samgauli is allocated for MSW project. Sanitary Landfill Facility: The same site at Village Samgauli would be utilized for SLF.
7	Patiala		
	<ul style="list-style-type: none"> Project Cost: INR 95 Crores (approx.) 	<ul style="list-style-type: none"> Approx. 20.0 acre of land of Gram Panchayat, Dudhar is finalized for this project and possession taken thereof. The Project is under the development 	<ul style="list-style-type: none"> Project Capacity: 500 TPD Processing Facility:

S.No	Project Cost & Cluster ULBs	Current Status	Capacity\Site
	<ul style="list-style-type: none"> ULBs: 25 	process.	<p>Aprox. 20 acre of site at Village Dudhar is allocated for MSW project.</p> <ul style="list-style-type: none"> Sanitary Landfill Facility: The same site at Village Samgauli would be utilized for SLF.
8	Pathankot		
	<ul style="list-style-type: none"> Project Cost: INR 55.00 Crores (aapprox.) ULBs: 13 	<ul style="list-style-type: none"> Approx. 40 acre of land at village Deriwal is identified for MSW Project. The Project is under the development process. 	<ul style="list-style-type: none"> Project Capacity: 250 TPD Processing Facility: Village Deriwal would be allocated for MSW project. Sanitary Landfill Facility: The same site at Village Deriwal would be utilized for SLF.