



BAHOUR COMMUNE PANCHAYAT

BAHOUR

***ACTION PLAN FOR
SOLID WASTE MANAGEMENT***

BACKGROUND OF COMMUNE PANCHAYAT

- Bahour is an ancient, historically famous village situated at a distance of 22 Kms., from the town of Puducherry and its Latitude and Longitude is “11.805510” and “79.747210”. In the 8th century A.D. Bahour was a great centre of Sanskrit studies. These villages were endowed to this Sanskrit School during the rule of Pallava King Nirupatunga Varma. Their revenues were to be enjoyed by the residents of this great seat of learning. In the inscriptions, Bahour is known as Vahour and also as Azhagiya Chozha Chatur Vedhi Mangalam. The presiding deity of the temple in this village is called as Sri Mula Nathaswarar, concerted with Sri Vedhanayagi Amman.
- The temple is considered to have been built in the middle part of the 10th century. On the South of Bahour, river Pennaiyar is running west to east can join in the sea, Bay of Bengal. The Bahour lake is the biggest lake in the Union territory of Puducherry irrigating 5420 acres of lands. It is fed by Pennaiyar river through Bangaru Channel.
- As per the Commune Panchayat Act 1973, these village Panchayat will be responsible for the construction and maintenance of public roads within their areas, burial ground, drainage, cleanliness of streets, provision of public latrines, water for drinking and ether purposes and for taking measures to primate public hygiene.

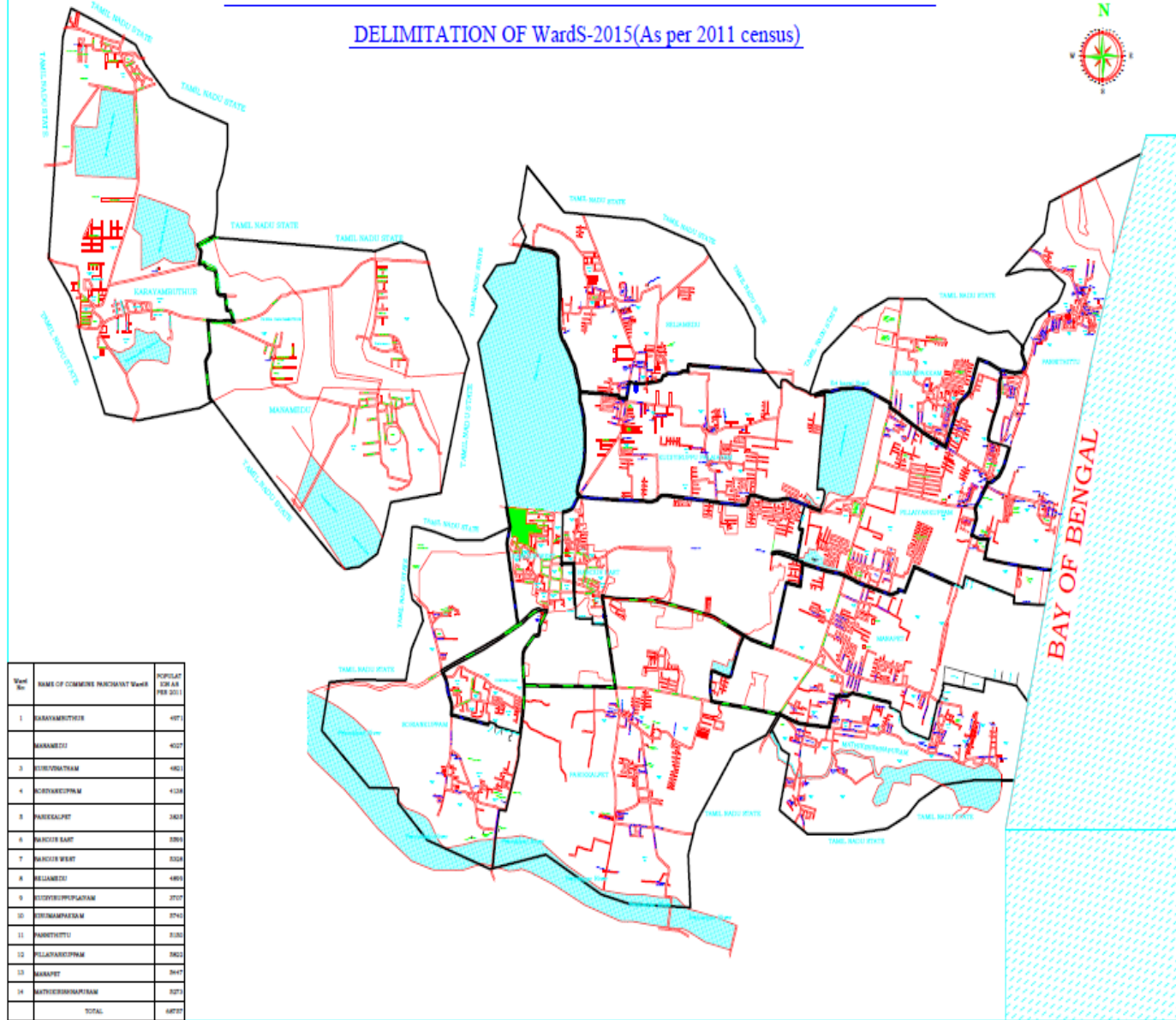
Bahour Commune Panchayat has the following village Panchayat with its **vital statistic** as given in the table below:

Sl.No	Name of the Village Panchayat	Population As per 2011 census	No of House Hold
1	Karayambuthur	4971	1221
2	Manamedu	4027	668
3	Kuruvinatham	4821	1485
4	Soriyankuppam	4138	584
5	Parikalpet	3835	892
6	MathiKrishnavaram	5273	1150
7	Manapet	5447	1178
8	Kudiyiruppupalayam	3707	1054
9	Seliamedu	4899	1006
10	Bahour - East	5328	1091
11	Bahour - West	5599	903
12	Pillaiyarkuppam	5822	1154
13	Kirumampakkam	5740	1217
14	Pannithittu	3965	837
15	Pudhukuppam	1185	735
	Total	68757	15175

It consists of 15 village Panchayat spreaded out in 12km radius, easily reachable within 15 Km from Puducherry city. Its total landscape / geographical area is 55.2 sq.km with demographic statistic population of 68,757 nos.

BAHOUR COMMUNE PANCHAYAT

DELIMITATION OF Wards-2015(As per 2011 census)



CURRENT SOLID WASTE MANAGEMENT PRACTICES IN

BAHOUR COMMUNE PANCHAYAT

This Commune Panchayat has engaged 10 Nos. of Tractor Tippers with 4 Nos of sanitary workers and a driver each on hire basis @ Rs. 1400/- to collect garbages about 2 loads (2.83 cum) per day from various villages. Apart from that during any temple festival / habitual functions / Government functions the major quantity of garbages in the village is being collected by the engagement of tipper lorry with some JCB and the same is being dumped into a centralized dumping yard at Bahour (next to M/s INOX Air Products Ltd.) and the collected garbages are being dumped in this site and frequently the same is being dozed and compacted by the engagement of JCB on hire basis. Once in a year, the same is being transported to the Manure Processing Unit of M/s PASIC at Arasur by engagement tipper lorries and JCB. Likely, the process is being cycled once in year.

Bahour Commune Panchayat generates around 40 tonnes of waste per day, arising from households and commercial establishments. The key purpose of the Commune Panchayat is to handle the waste generated within the Commune limit in a proper manner. The objective is to reduce the amount of waste dumping in landfill by maximizing the recovery of waste. Accordingly, the key priorities and implementation plan have been formulated.

WASTE GENERATION PER DAY - WARD WISE

WARD NO	TOTAL ASSESMENTS	BIO DEGRADABLE (KG)	RECYCLEABLE (KG)	INERT (KG)	TOTAL WASTE (KG)
1	1221	1197	733	1099	3028
2	668	655	401	601	1657
3	1485	1455	891	1337	3683
4	584	572	350	526	1448
5	892	874	535	803	2212
6	1150	1127	690	1035	2852
7	1178	1154	707	1060	2921
8	1054	1033	632	949	2614
9	1006	986	604	905	2495
10	1091	1069	655	982	2706
11	903	885	542	813	2239
12	1154	1131	692	1039	2862
13	1217	1193	730	1095	3018
14	837	820	502	753	2076
15	735	720	441	662	1823
Total	15175	14872	9105	13657	37634

QUANTUM OF WASTE GENERATION PER DAY

DESCRIPTION	QUANTITY
BIO DEGRADABLE WASTE	14872 Kg
RECYCLABLE WASTE	9105 Kg
LANDFILL WASTE	13657 Kg
SILT	2000 Kg
Total	39634 Kg

LEGAL MANDATE FOR SCIENTIFIC SOLID WASTE MANAGEMENT

Solid waste management rules 2016 came into force on 8th May 2016 which applies to all urban local bodies and Commune Panchayats the UT of Puducherry. This rules emphasis on door to door collection from households, shops, commercial establishments, offices, institutional or any other non residential premises and includes collection of such waste from entry gate or a designated location on the ground floor in a housing society, multi-storied building or apartments, large residential, commercial or institutional complex or premises; adopting user fee, imposed by local body on the waste generator to cover the cost of providing solid waste collection, transportation, processing and disposal services.

As per section 4 (1) of the solid waste management rules 2016, every waste generator shall segregate and store the waste generated by them in three separate streams namely bio-degradable, non bio-degradable and domestic hazardous wastes in suitable bins and handover segregated wastes to authorized waste pickers or waste collectors as per the direction or notification by the local authorities from time to time.

Solid Waste Management rules 2016 stipulates vide section 11 (a) that the Secretary (or) Director of Local Administration, shall prepare a state policy in consultation with stakeholders, lay emphasis on waste reduction, reuse, recycling, recovery and optimum utilization of various components of solid waste to ensure minimization of waste going to the landfill and minimize impact of solid waste on human health and environment.

The Commissioners of local bodies as per section 15 (b) of the Solid Waste Management Rules 2016 should arrange for door to door collection of segregated solid waste from all households including slums and informal settlements, commercial, institutional and other non residential premises. From multi-storage buildings, large commercial complexes, malls, housing complexes, etc., this may be collected from the entry gate or any other designated location.

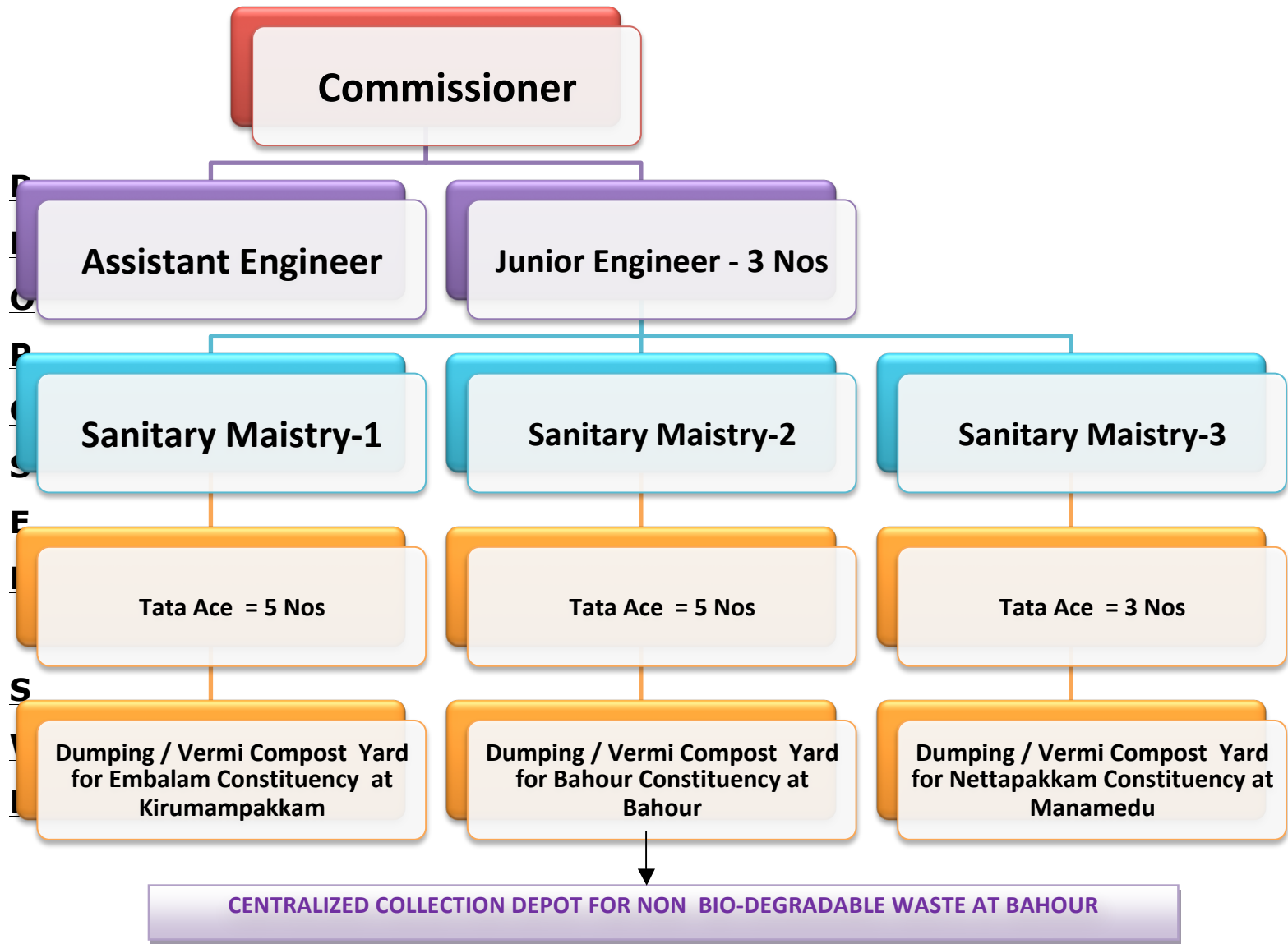
The Commissioners should also take action as per section 15(c) to establish a system to recognize organizations of waste pickers or informal waste collectors and promote and establish a system for integration of these authorized waste-pickers and waste collectors to facilitate their participation in solid waste management including door to door collection of waste, facilitate formation of Self Help Groups, provide identity cards and thereafter encourage integration in solid waste management including door to door collection of waste.

The local body as per 15(b) of the Solid Waste Management Rules 2016 shall create public awareness through information, education and communication campaign and educate the waste generators on the following; namely:-

- (i) not to litter;
- (ii) minimize generation of waste;
- (iii) reuse the waste to the extent possible;
- (iv) Practice segregation of waste in different bins and handover the segregated waste to collection agencies
- (v) Practice home composting, vermi-composting, bio-gas generation or community level composting;
- (vi) wrap securely used sanitary waste as and when generated in the pouches provided by the brand owners or a suitable wrapping as prescribed by the local body and place the same in the bin meant for non bio-degradable waste;
- (vii) pay monthly user fee or charges to waste collectors or local bodies or any other person authorized by the local body for sustainability of solid waste management.

In this regards, policy framework was adopted and it came into effect from 1.8.2018, as per GO no.11/LAS/2018, applicable to all urban local bodies and Commune Panchayats, promoting the awareness of waste management principles among citizens, defining the roles and responsibilities of various stake holders, promoting recovery of value from solid waste through SWM collection and disposal strategies etc., and the policy shall be in force for the period of ten years from the date of notification of the policy.

As per the Solid Waste Management Policy and as per section 15 (a) of the Solid Waste Management Rules 2016, each local body shall prepare a Solid Waste Management action plan within 6 months from the date of notification of policy. Accordingly following Action Plan has been formulated.





HOUSEHOLD



COMMERCIAL/PUBLIC PLACES



NON BIODEGRADABLE WASTE



COMMUNITY BINS



TATA ACE

BIODEGRADABLE WASTE



DUMPING YARD



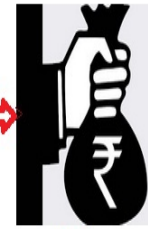
WASTE SEGREGATION



VERMI COPOST YARD



COMPOST GODWEN



SALE

RECYCLABLE WASTE



No Caps or Lids

TRANSPORATION OF RECYCLABLE WASTE TO RECYCLERS



SALE



SEGREGATION YARD



Non recyclable waste



SHREDDER UNIT



BAILING UNIT



TRANSPORATION

NON BIODEGRADABLE WASTE

SWM ACTION PLAN WITH TIMELINES

The time line for implementation of various activities based on solid waste Management rules 2016 and the action taken and to be taken by this Commune Panchayat

SL. No	Activity	Time limit from the date of notification of rules	Action taken/to be taken on the time limit by Commune Panchayat
1	Identification of suitable sites for setting up waste processing facilities	1 Year	Identified
2	Identification of suitable sites for setting up common regional landfill facilities for suitable clusters of local authorities under 0.5 million population	1 Year	Identified
3	Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities.	2 Years	Do not arise
4	Enforcing waste generators to practice segregation of bio-degradable, recyclable combustible, sanitary waste domestic hazardous and inert solid wastes at source	2 Years	Will be enforced within 6 months (Oct 2018 to March 2019)
5	Ensure door to door collection of segregated waste and its transportation in covered vehicle to processing of disposal facilities.	2 Years	Will be ensured within 6 months (Jan 2018 to June 2018)

SL. No	Activity	Time limit from the date of notification of rules	Action taken/to be taken on the time limit by Commune Panchayat
6	Ensure separate storage collection and transportation of construction and demolition wastes	2 years	Will be ensured within 12 month (Oct 2018 to Sep 2019)
7	Setting up solid waste processing facilities by all local bodies having below 10,000 population	3 years	12 months (Oct 2018 to Sep 2019)
8	Setting up common or stand alone sanitary landfills for the disposal of only residual wastes from the processing facilities as well as untreatable inert wastes as permitted under the rules	3 years	12 months (Oct 2018 to Sep 2019)
9	Bio-remediation or capping of old abandoned dump sites	5 years	24 months (Oct 2018 to sep 2020)

RESPONSIBILITY MATRIX OF COMMUNE PANCHAYAT STAFF BASED ON DESIGNATION:

The Bahour Commune Panchayat Health section is having one Assistant Engineer for administering the office. The field team staff consists of one Sanitary Maistry, 3 nos of Sanitary Maistry in-charge for supervision of SWM activities and 17 nos of Sanitary workers for desilting of drains. The responsibility allotted to each category are listed below

SL.NO	NAME & DESIGNATION OF THE STAFF	RESPONSIBILITIES
1	Assistant Engineer	Attendance, Sanitary Workers Leave and Service matter pertaining to Health Section, Preparation of Solid Waste Management Proposals, Bills for contractor.
2	Junior Engineer (3 Nos)	Inspection of Solid Waste Management System and Liquid Waste Management, Attending all complaints related to Health Section.
3.	SANITARY MAISTRIES	Sanitary Maistries are allocated liquid waste management. 15 Wards are divided into 3 Zones; One Maistry is posted in each Zone, and 1 Senior Maistries and 3 maistry in-charge are deputed for the SWM in Bahour

CITIZEN / STAKEHOLDERS ENGAGEMENT

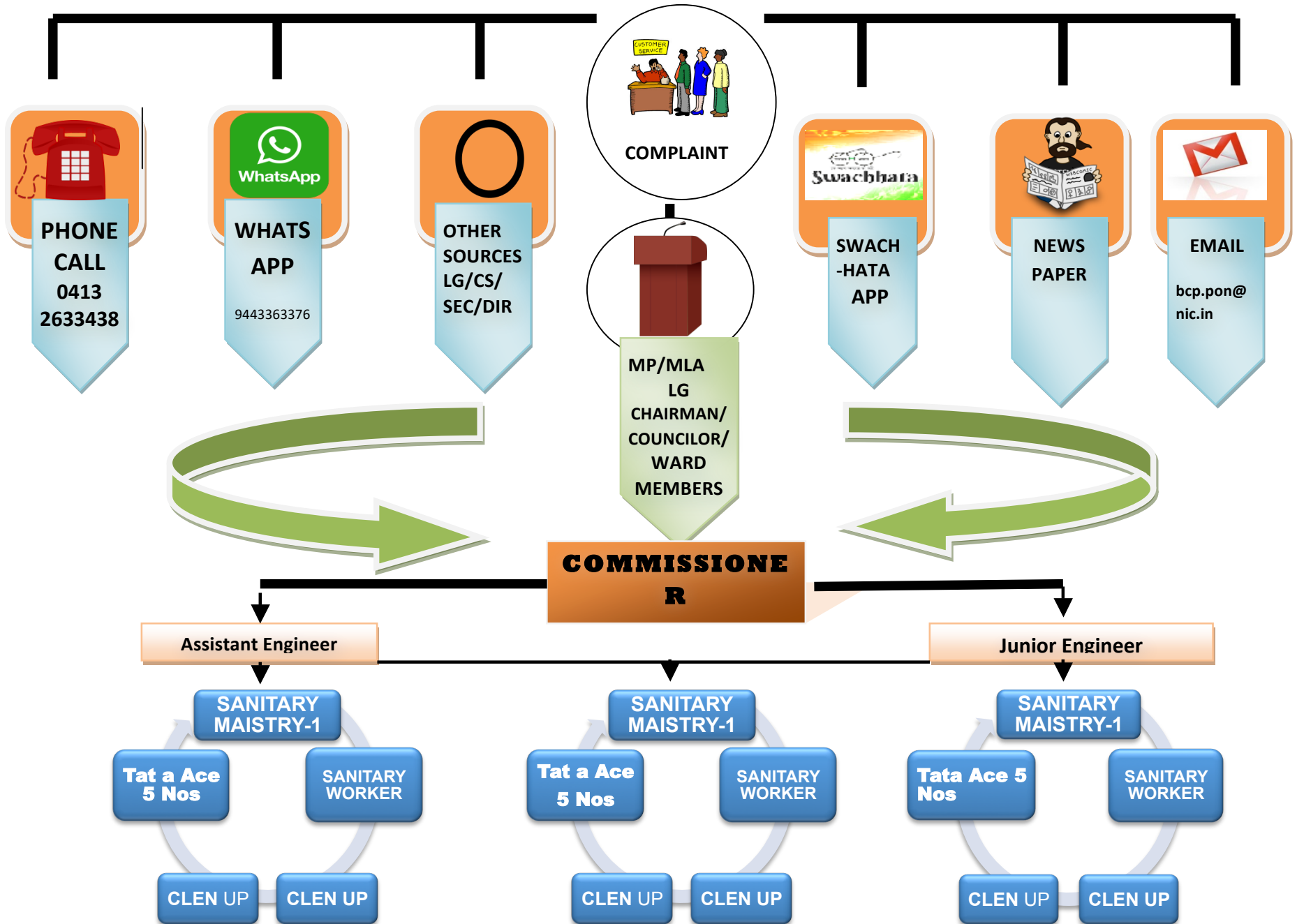
High Power / Low Interest <ul style="list-style-type: none">• Other Govt. Departments	High Power / High Interest <ul style="list-style-type: none">• Supreme and High Courts• National Green Tribunal• CPCB / PPCC• Elected Representatives• LAD• District Administration• Bahour Commune Panchayat
Low Power / Low Interest <ul style="list-style-type: none">• Citizens• RWAs• School / College students• Commercial establishments	Low Power / High Interest <ul style="list-style-type: none">• SWM contractor• Activists• Press / media

RESPONSIBILITY MATRIX OF COMMUNE STAFF BASED ON DESIGNATION

Office Telephone Number-0413 2633438 / Whats-up 9443363376 / email id (BCP.PON@NIC.IN)

Sl. No	Name of the Ward	Name of In-charge (Sanitary Maistry)	Mobile No
1	Karayambuthur	V.Anbarasan	9943461962
2	Manamedu	V.Anbarasan	9943461962
3	Kuruvinatham	M.Chandrasegaran	9962116860
4	Soriayankuppam	M.Chandrasegaran	9962116860
5	Parikalpet	K. Manikandan	9095552359
6	MathiKrishnavaram	M.Chandrasegaran	9962116860
7	Manapet	M.Chandrasegaran	9962116860
8	Kudiyiruppupalayam	S. Sivasankar	9585891855
9	Seliamedu	S. Sivasankar	9585891855
10	Bahour – East	K. Manikandan	9095552359
11	Bahour – West	K. Manikandan	9095552359
12	Pillaiyarkuppam	S. Sivasankar	9585891855
13	Kirumampakkam	S. Sivasankar	9585891855
14	Pannithittu	S. Sivasankar	9585891855
15	Pudukuppam	M.Chandrasegaran	9962116860

GRIEVANCES REDRESSAL ON SOLID WASTE / SANITATION WASTES



ACTION PLAN

- ❖ Village wise Waste Survey
- ❖ Gram Sabha Meeting
- ❖ Passing of Resolutions
- ❖ Door - to- Door supply of printed pamphlets
- ❖ Major IEC Campaign
- ❖ Demonstration about Segregation
- ❖ Cultural Evening
- ❖ Audio Announcement
- ❖ Running of Film Show in each villages
- ❖ Demarcating RRP Boundry
- ❖ Start Construction of RRP
- ❖ Tender Floating and Finalization
- ❖ Working out Finalisation
- ❖ Publication of Bye-laws
- ❖ Commencement of work

SWM BUDGET

PROPOSED SWM SYSTEM IN BAHOUR COMMUNE PANCHAYAT

This Commune Panchayat has proposed to purchase 13 Nos. TATA Ace Mini Tipper for an amount of Rs. 71.50 lakhs and 5 Nos. of tippers have been proposed for door to door collection of garbages from 3 Nos. of Village Panchayats namely 1. Bahour East, 2. Bahour West and 3. Kirumampakkam. Then the remaining 8 Nos. of tippers have been proposed to collect garbages from the dust bins on alternate days to the remaining 12 Nos. of Village Panchayats. Three Nos. of de-centralized RRP centers each at an estimate cost of Rs 42 Lakhs for an amount of Rs. 126 Lakhs are proposed at Bahour, Kirumampakkam and Manamedu Village Panchayats by the DRDA., Puducherry. This estimates inclusive of providing 1. Unloading and segregation yard for 750Sq.ft., 2. Windrow Platform for 5000 Sq.ft., 3. Sieving / storing shed for 500Sq.ft. 4. Office cum, Store Room for 250 Sq.ft., 5. Compound wall for 100Rm., 6. Road for 150Rm., 7. Organic Waste Shredding Machine – 250Kg/ Hr., 8. Compost Sieving Machine 250Kg./Hr. and minimum provision for watch, ward, OHT., fire fighting equipment, tools, equipments & plastic bins for collection and transportation, Greenery, Yard Electrification and Platform Weighing Machine. Apart from that a estimate for providing 1. Plastic Waste Shredding Machine – 100Kgs./Hr., 2. Recyclable Waste Hydraulic Bailer has also been proposed by the DRDA to provide a Common Machinery Capex at the RRP center in Bahour for an amount of Rs. 52 Lakhs. Moreover, a estimate has also been proposed to provide a 1MT Bio-Gas Plant in the RRP Center at Bahour.

Each tipper consists of a driver with 4 Nos. of Green friends and a supervisor and they will collect the garbages. A team of 5 Nos. workers with a supervisor for each RRP center have also been proposed for segregation of garbages and for the production bio-compost.

Since, it is a rural area, the implementation of collection of charges from the commercial establishments and households is being proposed gradually. After reaching of this revenue with the maintenance charges of the RRP centers and the same will be proposed to extend in all village Panchayats concerned.

SWM - BUDGET CAPITAL COST

Infrastructure Capex Statement

Name of Commune Panchayat :	Bahour
Type of RRP:	De-centralised
No of RRP's Required:	3
Waste disposal system:	Windrows Composting
No of Windrows required:	1

RRP Location & Village Covered are as follows:

Sl.No	Location of RRP	Villages Covered
1	Bahour (East) - RRP 1	Bahour (East), Bahour (West), Mathikrishnapuram, Manapet, Parikkalplet, Kuruvinatham and Soriyankuppam (7 village)
2	Kirumampakkam - RRP 2	Kirumampakkam, Pannithittu and Pillaiyarkuppam and Kudiyiruppupalaiyam (5 Villages)
3	Karayambuthhur - RRP 3	Karayambuthur and Manamedu (2 villages)

Typical Capex Statement for each Village Panchayat RRP:

Sl. No	RRP Components	Unit	Rate (in Rs.)	Amount (in Lakhs)
1	Unloading & Segregation Yard	750 sft	700	5.25
2	Windrow platform	5000 sft	200	10.00
3	Sieving / storing shed	500 sq.ft	1000	5.00
4	Office cum store room	250 sq.ft	1500	3.75
5	Watch & ward	LS		0.50
6	Toilet	LS		0.50

Sl. No	RRP Components	Unit	Rate (in Rs.)	Amount (in Lakhs)
7	Compound wall	100 RM	2000	2.00

8	Road laying	150 RM	3500	5.25
9	OHT for water supply with pump and steel structures	LS		0.50
10	Fire fighting equipments	LS		0.50
11	Tools, equipments & plastic bins for collection and transportation	LS		1.00
12	Greenery	LS		0.25
13	Yard electrification	LS		1.50
14	Organic waste shredding m/c - 250 kg/hr	LS	4.00	4.00
15	Compost sieving machine - 250 kgs/hr	1	1.50	1.50
16	Platform weighing machine	LS		0.50
	Total			42.00

Statement of common machinery to be installed in RRP at Bahour East Village Panchayat:

Sl.no	Machineries	Unit	Rate (in lakhs)	Amount (in lakhs)
1	Plastic waste shredding machine - 100 kgs/hour	1	4.00	4.00
2	Recyclable waste hydraulic baler	1	8.00	8.00
3	1 MT Biogas plant with generator	1	40.00	40.00
	Total			52.00

SWM BUDGET

ABSTRACT OF CAPITAL COST

Infrastructures capex per RRP	Rs.42.00 lakhs
No. of RRP:	3 nos
Capex for 3 RRPS:	Rs.126.00 lakhs - A
Common Machinery Capex in one RRP for entire Commune:	Rs. 52.00 lakhs - B
Tata Ace 13 Nos x 5.5 lakhs	Rs. 71.50 lakhs - C

Total Capex (A+B+C)	Rs.249.00 lakhs

Name of Village Panchayat	Population	No of House holds	Generation of wastes		Manpower required for C&T operation				Manpower required in RRP	
			Wet wastes Kg	Dry wastes Kg	No of Green-friends	No of Motivators	No of drivers	No of Supervisors	No of Workers	No of Supervisors
Karayambuthur	4971	1221	1197	1832	4	1	1	1	5	1
Manamedu	4027	668	655	1002						
Kuruvinatham	4821	1485	1455	2228	4	1	1		5	1
Soriayankuppam	4138	584	572	876						
Parikalpet	3835	892	874	1338	4	1	1			
Kudiyiruppalayam	3707	1054	1033	1581						
Seliamedu	4899	1006	986	1509	4	1	1			
Bahour – East	5328	1091	1069	1637						
Bahour – West	5599	903	885	1355	4	1	1		5	1
Pillaiyarkuppam	5822	1154	1131	1731						
Kirumampakkam	5740	1217	1193	1825	4	1	1			
Pannithittu	3965	837	820	1255						
Pudukuppam	1185	735	720	441	4	1	1			
MathiKrishnavaram	5273	1150	1127	1725						
Manapet	5447	1178	1154	1767	4	1	1			
Total	68757	15175	14871	22102				52	13	13

SWM BUDGET RUNNING COST PER ANNUM

Sl. No	Description	Nos. of vehicles	No of workers	Rate per No.	Nos. of Days	Amount in Rs.
1	Green Friends	13	4	300	365	5694000
2	Motivators for TATA Ace	13	1	350	365	1660750
3	Driver	13	1	500	365	2372500
4	Supervisor for C & T of SW		1	350	365	127750
5	RRP worker for 3 Nos of RRP centres	3	5	300	365	1642500
6	Supervisor @ 1No/RRP Centre	3	1	350	365	383250
7	Diesel @ 5 lit/vehicle/day	13	5	80	365	1898000
Total						1,37,78,750

ABSTRACT OF SWM BUDGET PER ANNUM

<u>Sl.No.</u>	<u>Description</u>	<u>Amount in Lakhs.</u>
<u>1</u>	Capital Cost	249.50
<u>2</u>	Recurring cost	137.78
Total		387.28
SWM CHARGES (Revenue)		-NIL-

The project is generating revenue from the sale of compost and recyclable waste by Bahour Commune Panchayat. User charges is being proposed to collect from commercial and households and this would definitely make the project financially more sustained in coming days. Moreover, the septage management project proposed in RRP will also fetch considerable revenue to the Municipality when in use in future. Livelihood opportunities as Green Friends are provided, particularly to the people belonging to socially and economically backward class. Widows and persons who were rag picking for their livelihoods earlier have also been absorbed as our field staff and their self-esteem, status and respect amongst the society are found improved.

IEC activities are bringing in positive behavioral change amongst the people and their littering habits found mitigated. Currently, the organic waste is converted to compost and the recyclable waste is also recovered. The project is being further scaled up with the proposals of recovering energy from waste and reclamation of historical waste in the exiting dump yard via bio-mining, which would lead to the project being more sustainable.

Institutions, educational bodies, high rise apartments are being motivated to handle the organic waste on their own so that the quantum of waste reaching the RRP can be minimized. Special training programs are being conducted by the NGO, to handle the organic waste within campus/ premise.

Achieving the target of **“Clean and Green Bahour”** and reduction in the environmental degradation is the key motivation behind our work. The project also provides livelihood opportunities to more than 200 families and they earn a regular decent income for their daily bread through this initiative. Door to door campaigning at households by Motivators has resulted in efficient segregation of waste at source.

The implementation of solid waste management needs enormous patience, and maintenance of good rapport with all the stakeholders is essential. Attitudinal and behavioral changes do not happen overnight and requires consistent counseling and training. A collective effort from all stakeholders is the key to the project success. An ownership of the project amongst the community has to be insisted for sustainability. User fee mode of operation and a penalty collection system will enhance the efficiency of operation.

**COMMISSIONER
BAHOUR COMMUNE PANCHAYAT**