

Compliance Report on Solid and Sewage Management in respect to OA 606/2018 of NGT.

1. Background

In OA 606/2018's last hearing, Chief Secretary of Assam presented the existing status on state's Solid and Liquid (Sewage) management to Hon'ble NGT on 27.01.2023. Hon'ble NGT found gap of 752 TPD in waste processing, 435.5 MLD gap in used water management and 33 Lakh tones of legacy waste in Assam.

In last one year, Assam has undertaken following measures to provide sustainable sanitation service to the urban population:

A. Solid Waste Management:

Serious measures has been adopted for processing of solid waste generated, door to door collection, source segregation and backyard composting through community participation and systemic and scientific intervention through professional agencies. So far, out of the identified **gap of 752 TPD** by Hon'ble NGT in the last hearing on 27/01/2023, an RDF cum Compost plant with a capacity of **150 TPD funded under SOPD will be operational from April, 2024 in Guwahati** (GMC), a **10 TPD MRF** through CSR initiative has already been made operational in GMC. **MRF capacity of 100 TPD** at Guwahati to be operational from April,2024.

Out of a total 95 DPRs prepared, works for 10 ULBs with a capacity **63 TPD** has already started on ground. Process is also underway for the rest of the ULBs to have MRFs constructed.

B. Used Water Management:

As per Hon'ble NGT's directions, state of Assam, in order to fill up the gap in remediation of the generated sewage, Sewage Treatment Plant with an overall total capacity of **340.50 MLD inter alia the gap of 435.5 MLD observed by Hon'ble NGT**, has been planned and now are under various stages of development.

15 MLD of sewage is being bio remediated at Silsako Beel before release into Brahmaputra by GMDA

7.59 MLD of waste water generators by hospitals/hotels etc are now being treated in situ.

3 FSTPs constructed in **Goalpara (7 KLD), Titabar (10 KLD) and Tinsukia (20 KLD)** are already operational and another one FSTP at Guwahati (20 KLD) will be operational from **April, 2024**.

28 more FSTPs will be constructed on cluster basis with technical assistance from **UNICEF. This will have a capacity of 352 KLD in total.**

C. Legacy Waste Management:

Out of a total of **33 lakh MT of legacy** waste as identified by hon'ble NGT for remediation, **7.96 lakh MT** have already been remediated in GMC, North Lakhimpur, Jorhat, Tinsukia, Digboi, Doomdooma, Mariani and

Margherita leading a progress **of 23.4%** till date. **38 Bighas** of land have already been reclaimed in these ULBs.

Moreover, **EIMC, DoNER has** approved INR **70.52 Cr** to remediate **8.3 Lakh MT** of legacy waste in **39 ULBs** where tendering to begin shortly.

As directed by Hon'ble NGT, six monthly compliance reports have been submitted at regular intervals:

1. First report submitted on 27/07/2023
2. Second report submitted on 17/02/2024

2. Directions

The Tribunal passed following major directions on actions required to be taken for solid and liquid waste management and ring-fencing amount for management of the same :

Solid Waste Management: Directions were given to undertake measures for filling up the gap of 752 TPD in waste processing and emphasis was given Segregation of the Solid Waste at source, adequate composting /vermi composting/bio-methanation and development of Plastic waste and Construction & demolition processing plants

Legacy Waste Management : A total 33 lakh MT of legacy waste were directed to be remediated in accordance with guidelines/SOPs laid down by CPCB and expeditious execution of the remediation works.

Used Water Management : Based on the data presented by the Chief Secretary showing a gap of About 435.5 MLD generation and treatment of sewage, Hon'ble NGT has directed that appropriate treatment of such waste cost-effective methods has to be undertaken ensuring that no faecal contaminants are discharged into water streams/ponds/rivers. Sanctity and significance of natural storm water drains were directed to be maintained. Directions were given for STPs to have Co-treatment facilities of septage rather than having isolated FSTPs.

Making funds available out of Ring fenced amount: From the State commitment of a total ring fenced amount of Rs. 1014.18 Cr., an amount of Rs. 10.74 Cr has already been made available to the ULBs / Agencies.

A detailed compliance report of the above directions has been incorporated in the following paragraphs :

3. City and Town wise Information: *Details at Annexure-A*

4. Sewage Management-

- i) Sewage Generation – 435.5 MLD
- ii) Existing Sewage Treatment and the gap –
 - a) **Existing treatment capacity, current utilization capacity, reasons for under utilization: 22.59 MLD**

- **15 MLD of sewage** is being bio remediated at Silsako Beel before release into Brahmaputra by GMDA
- **7.59 MLD** sewage is present which is generated in the Hospitals, Hotels, Apartments in Guwahati city are being treated in-situ.

b) **Gap** – 413.11 MLD.
To mitigate the gap, 340.5 MLD sewage treatment capacity is planned as detailed below.

4.1 Executable and Time bound plan to complete the Gap is attached below:-

Location	Generation (MLD)	Planned STP (MLD)	Remarks
Guwahati	125.88	189	<ul style="list-style-type: none">• Approval has been accorded by Govt of Assam for an amount of Rs,1460.37 Cr for 3 Nos of STPs to be implemented under JICA assistance is underway. Process of onboarding of PMC has started.• 1. No of STP of 2 MLD capacity by GMDA at Borsola is expected to be operational by October,2024
Nagaon MB	14.53	2	<ul style="list-style-type: none">• Partial commissioning to be done after Model Code of Conduct is over
Dibrugarh MB	16.83	6	<ul style="list-style-type: none">• Tendering process to start shortly subject to the approval of SLMC, AMRUT
Silchar M.B.	22.24	2	<ul style="list-style-type: none">• Tendering process to start shortly subject to the approval of SLMC, AMRUT
6 ULBs (Bongaigaon, Dhubri, Mangaldai, Tezpur, Jorhat & Tinsukia)	52.89	19.5	<ul style="list-style-type: none">• Tender floated by SBM 2.0. for 6 ULBs

6 ULBs (Marghera, Mariani, Karimga, Nalbari, Sibsagar&Golaghat)	27.73	16.1	<ul style="list-style-type: none">DPRs prepared and 5 DPRs shared with ULBs as well as MoHUA by SBM 2.0
15 ULBs	66.76	33.9	<ul style="list-style-type: none">DPRs under preparation.
16 ULBs	27.59	16.5	<ul style="list-style-type: none">EOI floated for adopting low cost nature based technologies as these ULBs are having population less than 20,000.
49 ULBs	83.97	57.75	<ul style="list-style-type: none">CSAP has been prepared.

4.2 Faecal Sludge and Septage Management :

- Construction of FSTPs in 32 ULBs of capacity of 352 KLD are taken up with technical assistance from UNICEF. An amount of Rs. 39.11 Cr. is earmarked under 15th FC for the same. Out of the same –
- Two FSTPs at **Titabar MB(10 KLD)** , **Goalpara MB (7KLD)** are already operational and inauguration of another one FSTP at **Tinsukia (20 KLD)** was done on **10.03.2024**.
- One FSTP with a capacity of **20 KLD will be operational in Guwahati** from **April, 2024**.
- Construction of another 6 FSTPs with a total capacity of 50 KLD **is in advanced stages** in Kokrajhar, Golaghat, N Lakhimpur, Dhemaji, Bokakhat and Mariani around 50%.
- The rest 22 FSTPs with capacity of 265 KLD is under various stages of construction.

4.3 Remediation of water bodies in Guwahati City:

As per point no.38 of the Hon’ble NGT’s directions in its hearing dated 27.01.2023 and to address the adverse effect of such used water and to improve the water quality, several actions has been taken viz: Rejuvenation, Remediation of the Beels and river channels, setting up of STPs, cleaning and distillation works of the river channels.

The five major river channels that carry used water in the city viz Basistha, Bahini, Mora Bhoralu, Bhoralu and Lakhimijan. There are three major water channels/bodies through which most of the used water of Guwahati city drains into Brahmaputra river. These are DeeporBeel, Bhoralu river and Silsakobeel

For remediation of these water bodies following steps has been taken:

- i. De-silting and rejuvenation projects taken in **Silsako beel after which the water quality has improved significantly as shown below:-**

Parameter	Value as on 2019	Value as on January, 2024
pH (Mg/Litre)	7.2	7.42

BOD (Mg/Litre)	46.2	9.2
COD (Mg/Litre)	170.4	47.0

- ii. Work started for a STP of 2 MLD capacity at **Borsola Beel**.
- iii. Cleaning and de-silting activities done for five major river channels namely **Bahini, Bharalu, Mora Bharalu, Lakhimijaan and Basistha** in Guwahati. *Details at Annexure-B*

4.4 Making funds available out of Ring fenced amount:

From the state commitment of a total ring fenced amount of Rs. 1014.18 Cr., an amount of 10.74 Cr. has already been made available to the ULBs/Agencies.

4.5 Following measures has been taken by SBM(U), Assam to fast-track the construction of STPs:

- a. Land for setting up STP and FSTP has been expediently provided by the District Magistrates through personal intervention of Chief Secretary, Assam
- b. SBM(U), Assam has floated tenders for 6 ULBs centrally to avoid lag in STP construction completion timeline
- c. To minimize the time in DPR preparation and Construction of STPs, SBM(U), Assam has floated EoI Notification to empanel efficient agencies for STP construction in EPC mode.
- d. Support obtained from MoHUA for DPR/Tendering documents to prevent retendering/delay.

5.0 Solid Waste Management:

- (i) **Waste Generation**-1311 TPD (assessed based on per capita).
 - Plastic Waste Generated- 272 TPD
 - C&D Waste Generated- 96.10 TPD.
- (ii) **Waste Collection**- 1285 TPD.
- (iii) **Waste Processed**- 941* TPD. (681+260 as mentioned below)

Sl. No.	Available wet waste processing facilities	Processing Capacity available (TPD)
1	Organic Waste Converter	27.5
2	Drum Composting	3
3	Windrow Composting	100
4	Bio Methanation	5
5	Bed Composting/Pit composting	83.14
6	Windrow Composting (Tezpur)	50
Total		268.64

About the existing processing facility :

- An MRF of **10 TPD capacity constructed in GMC** under HDFC's CSR is operational from **12th March, 2024**.
- An RDF plant with capacity of **150 TPD in Guwahati** is to be operationalized from April, 2024 that will reduce the gap in processing by 20%.
- MRF facility with a capacity of **100 TPD** to be operational from April, 2024 in Guwahati.
- One Waste to Energy plant is operation at Chatribari, Guwahati of a capacity of 5 TPD with an output of 800 units of power and 450 Kgs of manure.
- Most of the ULBs of Assam are in peri urban in nature, therefore more emphasis is given in in house composting such as backyard/pit composting rather than centralized processing of waste.
- Through a model ward initiative in all 103 ULBs of Assam, The state has created 6800 Nos. of backyard compost pits with active participation from 82 NGOs, 398 SHGs and 677 informal waste pickers.
- However, in few ULBs waste is getting processed in existing MRFs.
- In rest of the ULBs, waste is directly getting transported to the dumpsites.

5.1 Measures taken to fill the gap of waste generated and processed:

Hon'ble NGT has observed a Gap of **752 TPD** of waste to be processed. In response to that SBM(U), Assam has planned for processing being future ready and has undertaken following measures to achieve the same :

- i) A RDF cum waste to compost plan with a capacity of **150 TPD will be operational from April , 2024** in Guwahati as developed by GMC
- ii) An MRF of **10 TPD capacity constructed in GMC** under HDFC's CSR Initiative.
- iii) An **MRF of capacity 100 TPD** will be operational by April, 2024 in Jail Road, Guwahati.
- iv) Guwahati has been selected in top 18 ULBs **for CITIIS 2.0 under NIUA**. A dedicated **C&D waste management plant (100 TPD)** will be constructed as a part of this project along with **1(one) 200 TPD Waste to Compost(or similar) plant, 1(one) RTS of 100 TPD and 1(one) MRF of 100 TPD capacity**. Further, a **Guwahati circulatory repository** for innovation and engagement in waste management will also be set up
- v) out of total 48 Detailed Project Reports (DPRs) approved , **10 work orders have already been issued in Nagaon, Nalbari, Chapar, Kokrajhar, Barpeta road, Sarupathar-Borpahar, North Lakhimpur, Silchar, Silapathar with a capacity of 63 TPD in total** and tenders have also been floated for another 30 ULBs where work will start immediately after the Model Code of Conduct is over. Apart from this, DPRs for 46 more ULBs have been shared with the ULBs and MoHUA for verification.
- vi) MoU has been signed with OIL/NRL for development of **Compressed Bio Gas Plant (CBG)** by **GMC (75 TPD), Sivsagar MB(60 TPD) and Tinsukia MB (50 TPD)** and the same is in pipeline for **Jorhat (60TPD)**

- and **Silchar (60TPD)**. This will be over and above the backyard composting drive created in the ULBs.
- vii) On-boarded well equipped and professional agencies for which intense campaign for Door to door collection and source segregation through policy formation, vehicle route map preparation, IEC activities and capacity building is being done. **A sample city action plan prepared in this regard is attached as sample.**
 - viii) **Started Model Ward initiative by SBM (U) in all 103 ULBs of Assam.** In this initiative **6800 backyard compost pits** and **124 central compost pits** were created for wet waste processing
 - ix) **218 nos.** of Auto Trippers with separated storage chambers distributed to ULBs on **3rd July, 2023** for Door to Door Collection at primary level. **113 e-vehicles** being distributed to ULBs for primary collection.
 - x) Existing primary collection vehicles were mapped and retrofitted as per **Swachh Survekshan Toolkits.**
 - xi) Floated EoI Notification to empanel efficient agencies for MRF Operation, Door to Door IEC Activities, promoting source segregation and backyard composting.
 - xii) Periodic IEC activities undertaken in major festivals like Swachh Holi. Swachh Biswakarma Puja, Swachh Durga Puja, Swachh Diwali and Swachh Saraswati Puja. ULBs also actively participated in each central and state IEC activities like Indian **Swachhata League 2.0, Swachhata hi Seva, SwachhTeerth Campaign** etc.
 - xiii) **‘Swachh School Swachh Shehar’** campaign launched with Akshar Foundation in Guwahti to promote source segregation and sense of sanitation among school children.
 - xiv) Task Force constituted at ULB level and District level for better Municipal Solid Waste Management.

6. Progress in Legacy Waste Remediation since last hearing

Out of total of **33 Lakh MT** of Legacy Waste as observed in Assam by Hon’ble NGT in last hearing, **7.96 Lakh MT** Legacy Waste in GMC, Tinsukia, Jorhat North lakhimpur MB, Doomdooma MB, Margherita MB and Mariani MB has been remediated and **67 bighas of land reclaimed**. A **progress of 24%** is attained since the last hearing of Hon’ble NGT .

Sl	ULB Name	Present Qty(MT)	Remediated Qty(MT)	progress	Present Status
1	N Lakhimpur MB	39000	39000	100%	67 Bigha land reclaimed.
2	Doomdooma	18000	18000		
3	Margherita	25000	25000		
4	Mariani	10560	10560		
5	Tinsukia & Makum	50000	50000		
6	Digboi	19200	19200		
7	GMC	1500000	586960	39%	Remediation work going on.
8	Jorhat	158870	47661	30%	
Total remediated			796381		

- **EIMC, DoNER** approved INR **70.52 Cr** to remediate **8.3 Lakh MT** of legacy waste in **39 ULBs**. Tendering to begin shortly.

7.0. Points of Consideration :

(i) State Budget including Ring Fenced and coverage under other Centrally assisted programs :

Sl no	Compon ent	Particulars	Budgetary provision in state budget for ongoing and proposed projects in Rs. Crore	Central Provision Like SBM 2.0/AMRUT/NESID/EAP (Rs. in Crore)	Total (Central + State)
1	Solid Waste Managem ent	Waste to Compost (GMC)	17.25	--	17.25
2		Wet/Dry/Inert processing facilities for 96 ULBs	233.99	118.3 (SBM 2.0)	363.35
3		Landfill for GMC	11.06		
4		Legacy waste management for GMC	172.5	102.73 (Proposed under NESID)	275.23
5		Legacy waste management for Jorhat MB	10	---	10.00
6		Additional Sum for Legacy Waste Management	122.98		122.98
Total			567.78	221.03	798.81
7	Used Water Managem ent	Guwahati Borsola STP	15.99	---	15.99
8		Nagaon STP	12.56	---	12.56
9					
10		Guwahati 3 Nos(Silsako, Borsola and Pachim Boragaon) of 187 MLD	--	2365.00 (EAP)	2365.00
11					
12		STP for 92 ULBs	417.85	350.78 (SBM 2.0)	768.63

13		2 ULBs (Silchar MB &Dibrugarh MB)	---	54.036 (AMRUT 2.0)	54.036
					reclaime d
Total			446.40	2769.816	3216.21 6
Grand Total			1014.18	2990.846	4005.02 6

(ii)	Technical assistance at District level	An online platform for updation of data regarding compliance of Hon’ble NGT guidelines/directions is being developed. Stakeholders/line Departments will be provided with login ID for updation of data corresponding to their respective Department/District
(iii)	SWM measures taken in small ULBs	<ul style="list-style-type: none">Assam took Model Ward initiative in all 103 ULBs of Assam. In this initiative 6800 backyard compost pits were created and 82 NGOs,308 SHGs and 677 Informal Waste-workers participated.Engaged efficient agencies for Door to Door IEC Activities, Promoting Source Segregation and Promoting Backyard Composting , route mapping and retrofitting of waste collecting vehicles initiated. A sample copy of the action plan prepared is attached along.MRFs and SLFs being developed in 95 ULBs for sustainable management of Municipal Solid wastes generating from the ULBs. 10 Projects have already started.

	UWM measures taken in small ULBs.	To explore Nature Based low cost Technologies to minimize the CAPEx and OPEx in ULBs having less than 20,000 populations EoI notification published for empaneling efficient agencies for setting up STPs on EPC mode.
(iv)	Support from MoHUA	Support taken from MoHUA for model DPRs/Bid documents to avoid delay in tendering process.
(v)	Emphasis to maximize use of treated sewage water.	<ul style="list-style-type: none"> • SBM-(U), Assam has given emphasis in reusing the treated water. • Dedicated policy for reutilization of treated water being drafted by UNICEF. • SBM-(U), Assam is also focusing on reusing treated water in ULBs to become Water+.
(vi)	Utilization of Legacy Waste Remediation by-products	<ul style="list-style-type: none"> ➤ MoU signed for sending Refused Derived Fuels generated due to remediation of Legacy Wastes from GMC to cement plant for co-processing. ➤ MoUs signed in Margherita and Doomdooma ULB with cement factory for co-processing the RDFs. ➤ Inerts generating from Legacy Waste Remediation in N Lakhimpur MB were used for low land filling using Geo-mats.
(vii)	Innovative Ideas/initiatives undertaken	A dedicated cadre of 103 “Assam Urban Administrative Service” officers have been created wherein the 1 st batch of Executive Officers have been recruited through APSC.
		Most Outstanding District Initiative (MODI) has been introduced by the Govt of Assam to award the best performing district with an amount of R. 100Cr based on assessment of existing sanitation infrastructure and preparedness for providing the same.
		As per directions of Hon’ble NGT, exposure visit was made by officials from DoHUA to the State of Odisha to study the Nature Based Technologies used in the existing STPs in Odhisa and the same was used for floating EOI for empanelling agencies to construct STPs in small ULBs having less than 20,000 populations has been floated
		Govt. of Assam has approved a unique initiative of “Doh Sahar Ek Rupayan” to hand hold 10 major ULBs of the State to attain visible cleanliness.

=====

953

Waste Generated

in the ULBs of Assam

ANNEXURE-A

Sl. No.	ULB Name	Waste Generated	Waste Collected	Waste Processed
1	G.M.C	550	550	137.5
2	Silchar M.B.	85	84	70
3	Jorhat M.B.	51	50	44
4	Nagaon MB	55	54	51
5	Tinsukia M.B.	46	45	43
6	Bongaigaon M.B.	23	22	19
7	N. Lakhimpur M.B.	18	17	14
8	Dibrugarh M.B.	56	55	52
9	Goalpara M.B.	18	17	14
10	Haflong MB	14	13	10
11	Karimganj M.B.	14	13	9
12	Mangaldoi M.B.	9	8	4
13	Naharkatia MB	4.5	4.1	2
14	Sivasagar M.B.	22	21	18
15	Kharupetia MB	10	9	6
16	Golaghat M.B.	13.75	12	9
17	Rangia M.B.	6.2	5	2
18	Rangapara MB	7	6	3
19	Howly MB	6.3	5.4	2.6
20	Doom Dooma MB	6	4.8	2
21	Dhekiajuli M.B.	10	8.7	6
22	Kajalgaon MB	5	4	1.9
23	Dhubri M.B.	10	9	7
24	Barpeta M.B.	10	9	7
25	Bilasipara MB	5.76	4	2
26	Dergaon M.B.	5.72	4	2
27	N.Guwahati MB	6.6	5	3
28	Tezpur M.B.	27	26	24
29	Morigaon M.B.	11	10	8
30	Raha MB	3.1	2.7	1.7
31	Digboi MB	6	5	3.03
32	Bihpuria MB	4	3.24	1.34
33	Udalguri MB	4	3.1	1.4
34	Nazira M.B.	3.1	2.7	1
35	Tihu MB	3	1.8	0.18
36	Sonai MB	4	3.6	2
37	Gohpur MB	2.5	2.2	0.6
38	Margherita MB	6	4.3	2.8
39	Kokrajhar M.B.	10.4	9.9	8.4
40	Moriani MB	7	6.5	5
41	Hojai M.B.	6	4.4	3
42	Lakhipur MB (G)	3.7	3.3	1.9
43	Dhemaji MB	4.2	3	1.64
44	Amguri MB	5	4.8	3.5
45	Sapatgram MB	1.82	1.6	0.33
46	Narayanpur MB	3.2	2.88	1.76
47	B. Chariali M.B.	3.5	2.6	1.5
48	Chapakhowa MB	2	1.6	0.5
49	Namrup MB	3	1.4	0.3
50	Barpeta Rd. M.B.	6	5.1	4
51	Dhakuakhana MB	3	2	0.93

954

Waste Generated

in the ULBs of Assam

Sl. No.	ULB Name	Waste Generated	Waste Collected	Waste Processed
52	Tangla MB	3.6	2.2	1.2
53	Teok MB	4	3	2
54	Nalbari M.B.	9	7	6
55	Abhayapuri MB	4	3	2
56	Basugaon MB	4.38	3	2
57	Makum MB	4.4	3	2
58	Sonari M.B.	1.4	1.2	0.2
59	Bokajan MB	2.9	2.6	1.7
60	Titabar MB	2.2	1.8	0.9
61	Bokolia MB	2.65	1.7	0.8
62	Chabua MB	4.2	3.4	2.5
63	Sorbhog MB	1.8	1.7	0.8
64	Gauripur MB	3.9	2.8	1.95
65	Lanka M.B.	5	3.8	3
66	Chapar MB	4.05	3.6	2.87
67	Gossaigaon MB	2.5	1.9	1.2
68	Simaluguri MB	2.1	1.7	1
69	Lala MB	3	1.8	1.2
70	Moran MB	1.1	0.8	0.2
71	Pathsala MB	1.2	1.1	0.5
72	Barpathar MB	1.5	1.2	0.6
73	Sarupathar MB	1.5	1.2	0.6
74	Silapathar MB	3	1.6	1.04
75	Mahur MB	1.75	1.6	1.05
76	Sarthebari MB	1.2	0.8	0.3
77	Hailakandi M.B.	4	3.7	3.2
78	Lakhipur M.B. (C)	3.8	3.5	3
79	Maibang MB	1.83	1.54	1.14
80	Dhing MB	1.4	1	0.6
81	Umrangshu MB	1.6	1.2	0.8
82	Lumding M.B.	1.6	1.4	1
83	Dokmoka MB	0.75	0.52	0.3
84	Diphu MB	4	3.6	3.4
85	Doboka MB	2.4	2	1.8
86	Demow MB	1.7	1.4	1.2
87	Palasbari M.B.	1.3	1	0.8
88	Howraghat MB	0.66	0.41	0.25
89	Goreswar	0.53	0.32	0.2
90	Bijni MB	2.04	1.85	1.74
91	Kampur MB	2	1.3	1.2
92	Bokakhat MB	1.3	1	0.9
93	Hamren MB	0.7	0.5	0.4
94	Donkamakum MB	1.3	1	0.98
95	Patacharkuchi MB	1.2	0.5	0.5
96	Badarpur MB	0.31	0.28	0.28
		1311.1	1285.24	681.111

Data Source: MIS Feb'2024

End of Report

Annexure-B

(Desilting and cleaning of Water Bodies)

a) Silsakoo Beel : The rejuvenation, bioremediation, and sustainable conservation works at Silsakoo Beel are ongoing. To increase the retention capacity of the beel, excavation work is in progress. The encroachments in the main channel area have been successfully removed, and fencing work has been implemented to prevent further encroachment. Along the length of Silsako Beel, an outer periphery drain is being excavated with embankments to divert wastewater and facilitate water treatment through bioremediation.

b) Borsola Beel: Construction work of 2 MLD STP at Borsola Beel started.

c) Bahini River, Bharalu River, Mora Bharalu Channel, Lakhimijaan and Basistha rivers:

- Illegal encroachments are being remedied by various organizations including GMC, GMDA etc.
- Action is under taken on unauthorized bridges and removal of encroachment by District Authority and GMC from time to time. Communication has been made to DC, Kamrup Metropolitan office to carry out eviction of encroachment for widening of the Bahini river at 17 locations and also to ensure the right way to remove the desilted material
- Removal of encroachment and demarcation along the Bahini river was undertaken.
- 19 out of 25 bridges have been demolished or partially demolished as per the order of Hon'ble High Court. The Chairman, DDMA/ DC Kamrup (Metro) had issued orders for demolition of additional 06 bridges over the Bahini River and out which 04 bridges have already been demolished and the rest 02 are to be demolished as soon as possible.
- Planning branch, GMC surveyed 99 numbers of plots along the side of Bahini river. Notices served to all of these.
- Survey has been completed by respective Divisions for widening of Bharalu river and Lakhimijann channel.
- Cleaning and de-silting of 05(five) major river channels: Bahini River, Bharalu River, Mora Bharalu Channel, Lakhimijaan and Basistha river undertaken. More than 95% physical progress for cleaning & desilting have been achieved for almost for all the rivers.
- Super sucker is being used for desilting of drains at Dispur Rotary point, near Vishal Mega Mart, Hengrabari and at Fakruddin Ali Ahmed Road, Juripar.
- Cleaning and De-silting of 143(one hundred forty-three) Drains has been completed. Remaining drains are being cleaned by engaging departmental or hired labour.
- Low Cost Technology as directed by Hon'ble NGT being proposed in ULBs with generation less than 1.0 MLD.

- Under SBM 2.0, infrastructure for co-treatment of fecal sludge at STP are proposed and 12 Nos. of DPRs are under preparation.
- Inspection of Hospital/RWA/Commercial establishments for STPs as per Building bye laws has regularly been done.

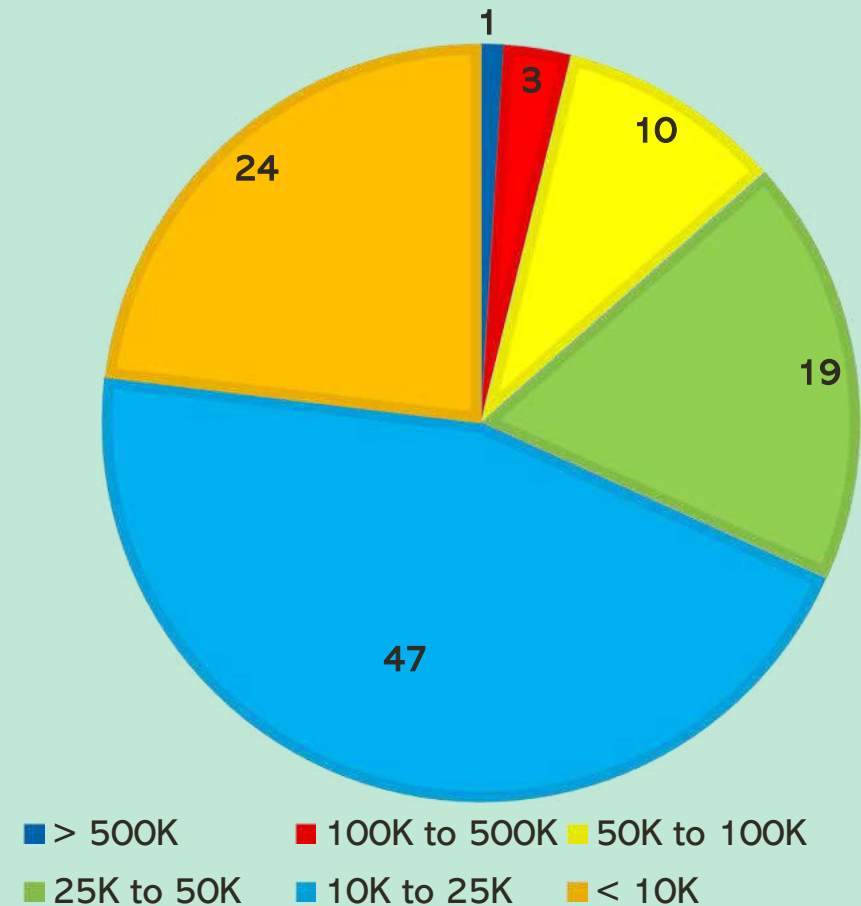
Compliance to NGT Directions OA 606/2018

Assam

Demographic details of urban Assam

Urban Local Bodies :	104
Number of Municipal Corporation :	1 (Guwahati)
Number of Municipal Boards :	103
Urban population (Census 2011) :	4.3 million
GMC population (Census 2011) :	9.77 Lakhs
Urbanization Level of Assam :	14% (India 31.2%)

Distribution of Urban Local Bodies in Assam based on population (Census 2011)



Direction of Hon'ble NGT on OA 606/2018 on 27.01.2023

In OA 606/2018's last hearing, Chief Secretary of Assam presented the existing status on state's Solid and Liquid (Sewage) management to Hon'ble NGT on 27.01.2023. Hon'ble NGT found gap in the followings:

- a. **Solid Waste Processing:** Gap of 752 TPD in waste processing,
- b. **Used Water Management:** Gap of 435.5 MLD in used water management.
- c. **Legacy Waste Management:** 33 Lakh tones of legacy waste was found in 45 ULBs of Assam.
- d. Ring Fencing of an amount of INR 1014.18 Cr for mitigate the gaps observed by Hon'ble NGT in above mentioned components.

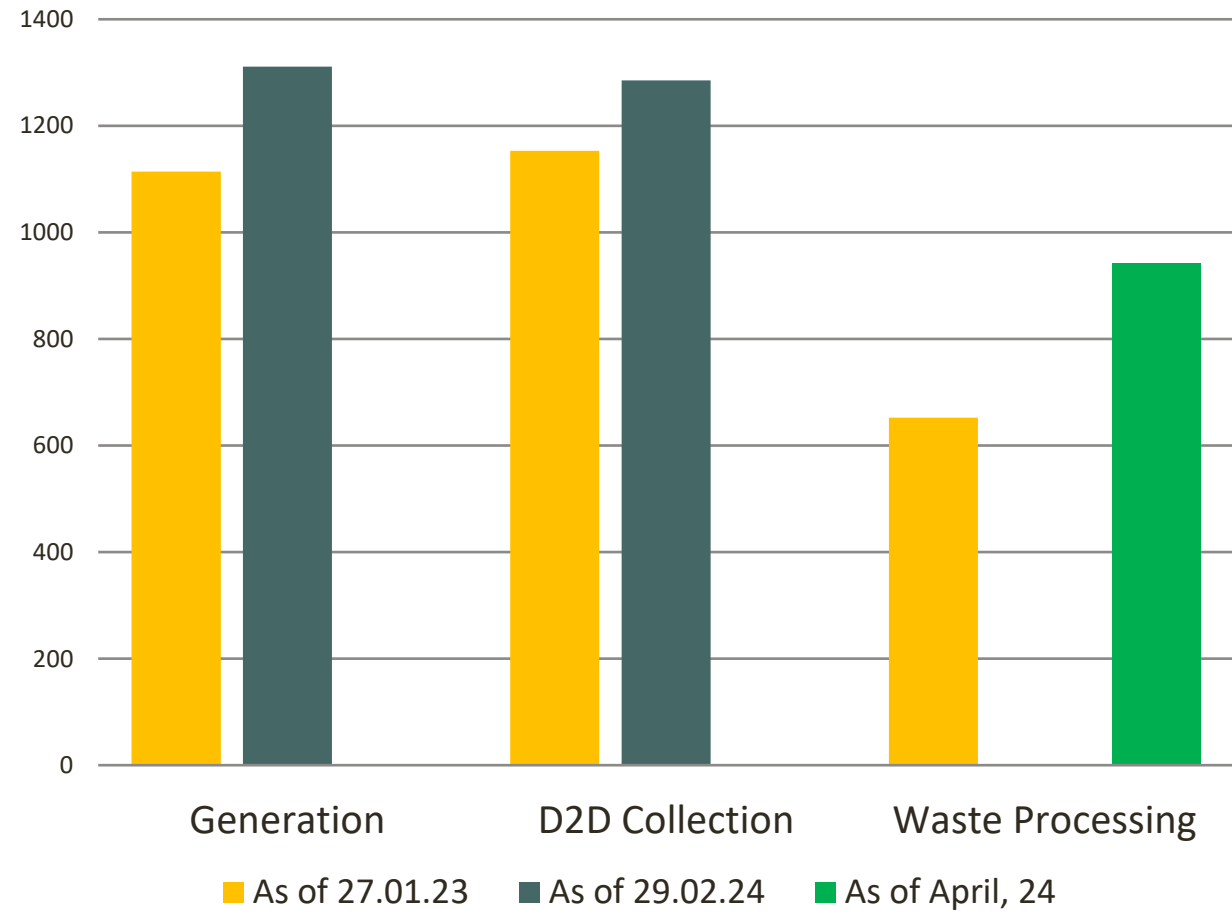
Six monthly compliance report has been submitted on regular intervals :

- i. First report submitted on 27/07/2024
- ii. Second report submitted on 17/02/2024

Solid Waste Management

961

Progress in Solid Waste Management in last one year



Total Wards	Wards with Door to Door Collection	Wards with Source Segregation
1214	1153 (95%)	541 (45%)

Particulars	As of 27.01.2023	As of 29.02.2024
Generation	1114 TPD	1311 TPD
Source Segregation	463 wards (38%)	541 wards (45%)
Door to Door Collection	1153 wards (95%)	1175 wards (97%)
Waste Processing	652 TPD	941 TPD* (As in April, 2024)

*150 TPD Waste to Compost Plant to be operational in GMC in April, 24
**10 TPD MRF operational in GMC since 12.03.2024
*** 100 TPD MRF will be operational from April,24

Additional Processing Facility of Solid Waste 962



MRF at Guwahati



Waste to Compost Plant construction at Guwahati



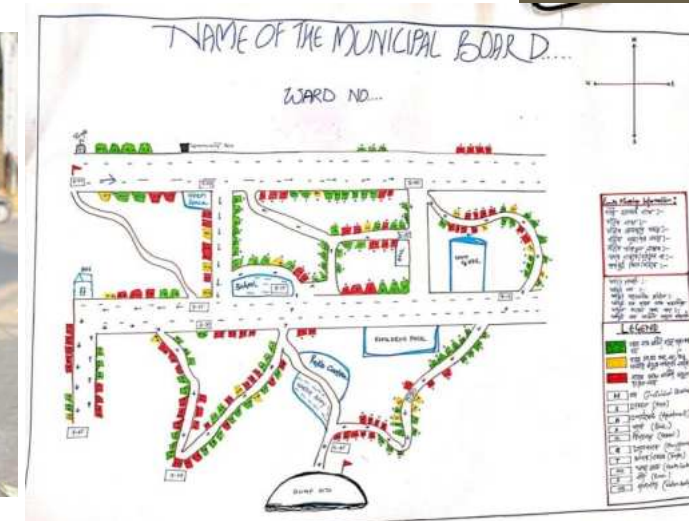
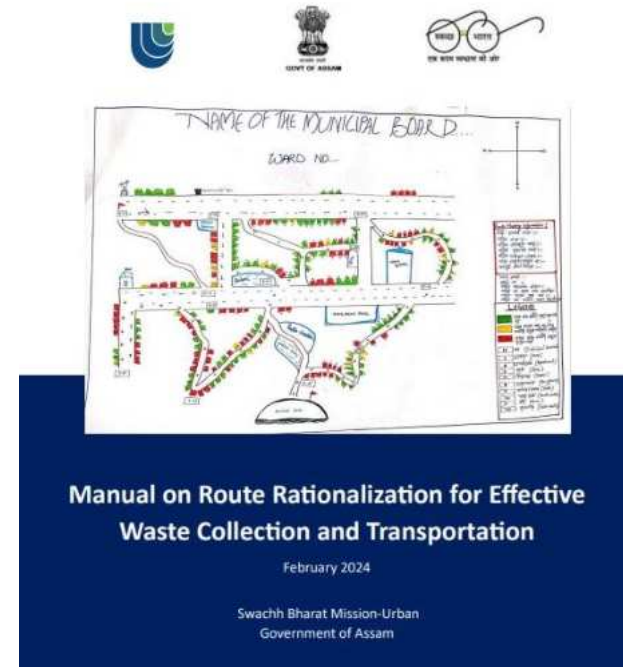
Bag composting facility at Guwahati



Waste to Compost plant at old jail campus

Progress in Source Segregation and Collection 963

- SBM(U), Assam has on-boarded a reputed NGO namely **Urban Management Center**. UMC has prepared the followings:
- Manuals for **Solid Waste Management**
- **Vehicle route maps**
- **City Action Plans 14 ULBs. (population >50,000)**
- UMC has also done handholding for these ULBs and stakeholders to strengthen the waste management scenario in the ULBs.
- Leading NGOs like **SAAHAS, SEEDS, Midway Journey & Akshar Foundation** engaged to promote Source Segregation, Green Events, Resource Recovery, IEC and Capacity Development in ULBs.



Progress in Source Segregation and Collection 964

- **218 nos.** of Auto Trippers with separate chambers (Green & Blue) distributed to ULBs on **3rd July, 2023**.
- **113 e-vehicles** being distributed to ULBs for primary collection.
- Existing primary collection vehicles were mapped and retrofitted as per **Swachh Survekshan Toolkits**.



Source Segregation of waste



D2D Vehicle retrofitted



Segregated transportation of waste



Composting of Solid Waste

965

For efficient processing the Municipal Solid Wastes generating from ULBs following steps have been taken:

- **Model Ward initiative** was taken by SBM(U), Assam in November 2022 which was later scaled up in additional two stages after January, 23.
- **6800 backyard compost pits and central pits** were created which are being operated and monitored.
- **124 central compost pits** are being monitored regularly.
- EoI floated to empanel efficient agencies for MRF Operation, Door to Door IEC Activities, promoting source segregation and backyard composting.
- Special emphasize being given on backyard composting in small ULBs.



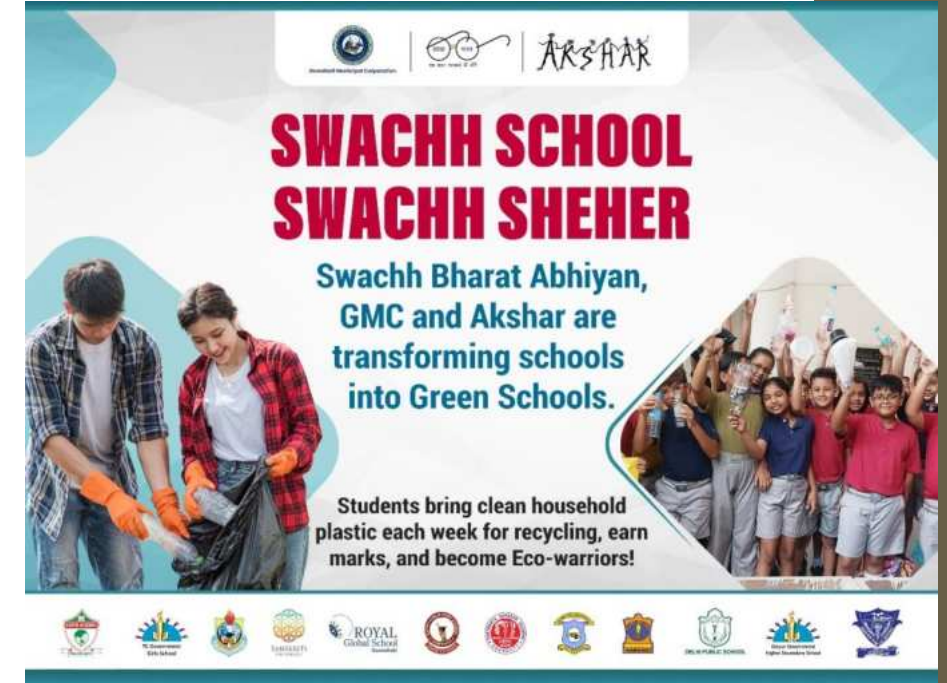
Digboi, Assam, India

GPS Map Camera

‘Swachh School Swachh Sheher’ Initiative for Plastic Waste

MoU signed **Akshar Foundation** for ‘**Swachh School Swachh Sheher**’ Initiative. This initiative emphasizes on

- ✓ Building awareness about source segregation among school children.
- ✓ Collecting segregated plastic wastes in schools
- ✓ Recycling of collected plastic into usable products.
- **1,563 kgs of Plastic Waste** has been collected by this initiative.
- Initially this program started in **12 schools** which will be scaled up in its next phases.
- **Akshar Foundation** is associated with school for under-privileged children where students bring plastic as their **school fees**.



For constructing Bio-methanation Plant following steps have been taken:

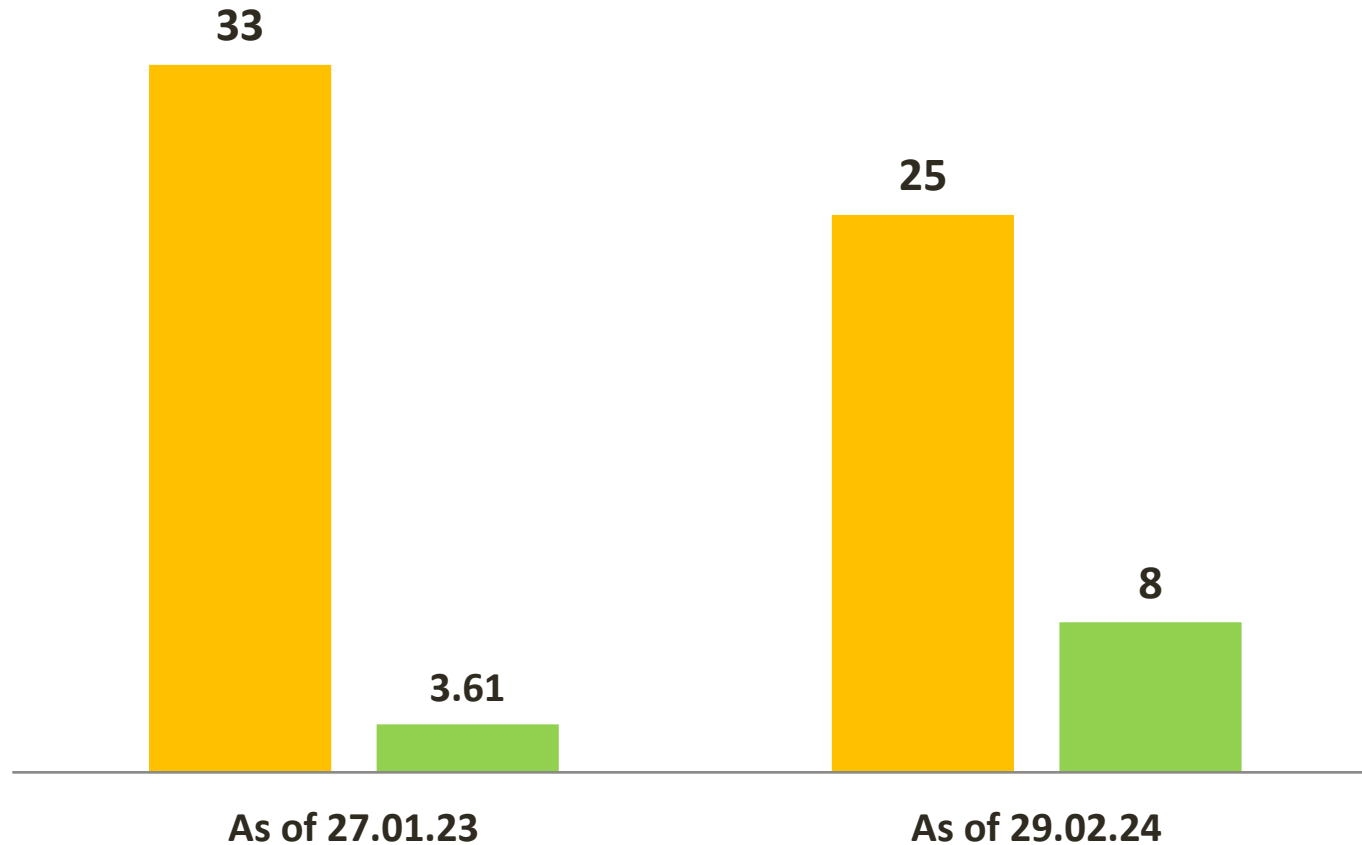
- ✓ 1 plant is operational at **Chetribari**, Guwahati of Capacity **5.0 TPD**. Output-800 unit of power and **450 kgs** of manure.
- ✓ MoU signed between GMC & NRL India Ltd for **CBG** Plant at **Adabari. (75 TPD)**
- ✓ MoU signed between Sibasagar MB & OIL India Ltd for **CBG** Plant **(50 TPD)**
- ✓ MoU signed between Tinsukia & OIL India Ltd for **CBG** Plant **(50 TPD)**
- ✓ MoU between Jorhat MB & OIL India Ltd for **CBG** Plant is under development. **(60 TPD)**
- ✓ MoU between Silchar MB & OIL India Ltd for **CBG** Plant is under development. **(60 TPD)**



MoU signing between Tinsukia MB and OIL

Legacy Waste Remediation

■ Legacy Waste Qty (Lakh MT) ■ Remediated Qty (Lakh MT)



Tinsukia in Assam becomes first district in NE to be legacy waste-free

GUWAHATI MAR 11: Tinsukia District Administration in coordination with five Municipal Boards in the district viz Tinsukia, Doomdooma, Digboi, Margherita & Makum Municipal Board had started an ambitious initiative of making the district legacy waste free in the month of March, 2023.

The first project was started by pooling in Oil India Limited CSR fund for bio-mining of Legacy Waste of Tinsukia and Makum Municipal Board. 75,000 Metric Ton (MT) of waste has been treated in the dump-site at Tingrai, Tinsukia since then. This has been an emotional issue for the people of the region since a long time, as people were not able to pass the area in Tinsukia Dulaijan Road due to bad smell and filthy flies buzzing all around.

Additionally, in Doomdooma Munic-

ipal Board 18,000 Metric Ton (MT) has been treated while in Digboi and

Agenda in line with the guidelines issued by the NGT. The agency trusted to execute these projects in all the ULBs is M/s Call And Fix.

Swapneel Paul, District Commissioner, Tinsukia has stated that treatment of waste in all the sites combined have yielded more than 80 Bighas of reclaimed land near the Urban Centres of the district which can now be used for developmental activities.

He has also mentioned that an MoU was executed with Dalmia Cement where refuse-derived fuel (RDF) coming out as a by-product of the process are sent to the cement factories for their utilization. This initiative has made Tinsukia a model district in reclamation of land through biomining of legacy wastes.

Margherita 25,000 and 30,000 Metric Ton (MT) of wastes respectively have been processed utilising the bio-mining technique, making the district total of 1.53 Lakh Metric Ton (MT) within the span of a year.

It marks the commitment of Assam government in fulfilling its Green



3. Legacy Waste Remediation⁹⁶⁹

Hon'ble NGT pointed out presence of 33 Lakh MT of Legacy Waste distributed in 45 ULBs.

In last one year **8.2 Lakh MT** of legacy waste has been remediated leading to a progress of **24%** reduction in legacy waste quantity.

➤ **IMC, DoNER** approved INR **70.52 Cr**, to remediate **8.3 Lakh MT** of legacy waste in **39 ULBs**. Tendering to begin shortly.

SI No	ULB Name	Legacy Waste Qty	Remediated Qty	Progress Status	Present Status
1	N Lakhimpur MB	39,000 MT	39,000 MT	100% remediated	67 bighas of land reclaimed
2	Mariani MB	10,560 MT	10,560 MT	100% remediated	
3	Tinsukia MB & Makum MB	50,000 MT	50,000 MT	100% remediated	
4	Doomdooma MB	18,000 MT	18,000 MT	100% remediated	
5	Digboi MB	19,200 MT	19,200 MT	100% remediated	
6	Margherita MB	25,000 MT	25,000 MT	100% remediated	
7	GMC	15,00,000 MT	5,86,960 MT	39% remediated	Remediation work going on
8	Jorhat MB	1,58,877 MT	47,661 MT	33% remediated	
Total Processed (A)			7,96,381 MT		

Bio-remediation of Legacy Wastes in North Lakhimpur M.B

- **39,000 MT** legacy waste has been processed and **16 Bighas** land has been reclaimed.



Before



Legacy Waste Quantification



Machines Engaged



After



Reclaimed Land



Trommel Operation

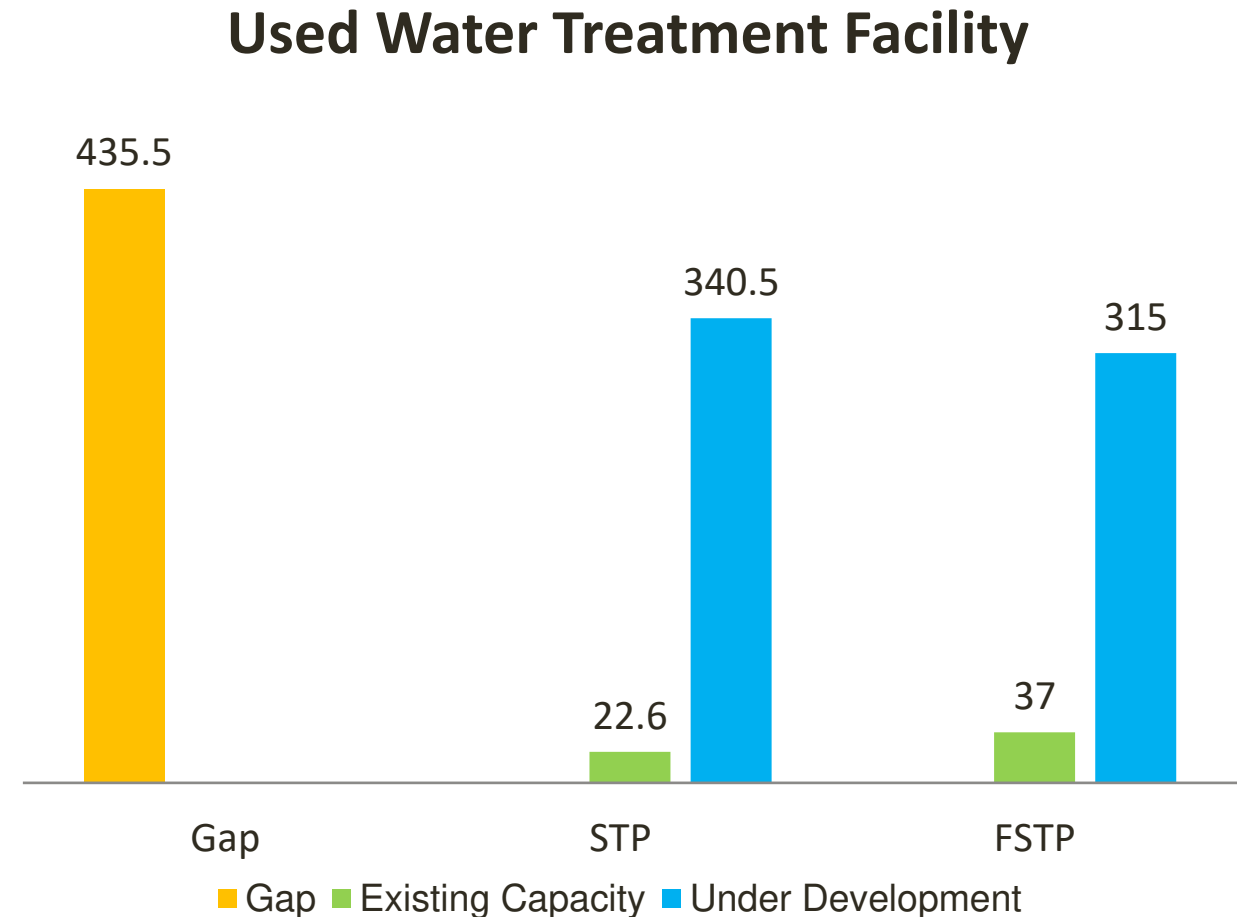
NGT's Observation on Used Water Management

Hon'ble NGT had following observation regarding Used Water Management (pt 33):

- a. Existing infrastructure gap to treat 435.35 MLD waste water generating from ULBs.
- b. Sewage be processed by cost-effective methods at least at several identified locations
- c. Sanctity and significance of natural storm water drains needs to be maintained.
- d. Efforts for utilization of treated sewage water.
- e. Corporates may be involved to utilize treated sewage and render assistance in sewage and solid waste management utilizing Corporate Social Responsibility (CSR).
- f. SBM-U 2.0 provides co-treatment of faecal sludge at STPs with sewage for which exclusive funding provisions are made under ring fenced accounts.
- g. Responsibility of the State is to have comprehensive time bound plan with tied up resources to control pollution which is its absolute liability.

Progress in Liquid Waste Management⁹⁷² in last one year

- a. **7.59 MLD** of waste water are now being treated in situ in hotels, shopping complexes, hospitals etc.
- b. **15 MLD** water being bio-remediated at **Silsako Beel** by GMDA before releasing into Brahmaputra.
- c. **2 FSTPs** are operational in **Goalpara (7 KLD)**, **Titabar (10 KLD)**. **1 FSTP** at **Tinsukia (20 KLD)** will be commissioned on 08.03.2024.
- d. 1 FSTP of **20 KLD** in **Guwahati (Belortol)** to be commissioned by April, 24.
- e. **29 more FSTPs** under various stages of development on cluster basis with technical assistance from **UNICEF**. **This will have a treatment capacity of 352 KLD in total.**



Continued...

Steps to Mitigate present gap in Sewage Management

Locations	Sewage Generated MLD	Capacity of STP in MLD	Source of Fund	Status
1 (Nagaon)	14.53	2.0	State Budget	To be commissioned partially in April, 24
Guwahati	125.88	189	State Budget	<ul style="list-style-type: none">Rupees 1460.37 Crore has been approved by GoA for 3 STPs to be implemented with assistance from JICA in Guwahati.1 STP of 2 MLD to start from October, 24 at Borsola.
Dibrugarh	16.83	6	AMRUT 2.0	Tendering to start after approval of DPR by SLMC.
Silchar	22.24	2		
6 (Bongaigaon, Dhubri, Mangaldoi, Tezpur, Jorhat, Tinsukia)	52.89	38.5	SBM 2.0	Tender Floated
6 ULBs (Margherita, Mariani, Sivasagar, Golaghat, Karimganj, Nalbari)	27.73	16.1		DPR Prepared and shared with ULBs.
15 ULBs	66.76	33.9		15 DPRs under preparation and EoI floated for rest 16 ULBs to follow nature based low cost technology on EPC mode.
16 ULBs	27.59	16.5		
49 ULBs (Tranche 4)	83.97	57.5		CSAP Prepared by SUWASI Project Team
Total	435.5	361.5		

In Situ STPs by private organizations in Guwahati



- Photographs of In Situ STPs set up by Pvt. Hospitals in Guwahati

Remediation of Natural Water Channels in Guwahati

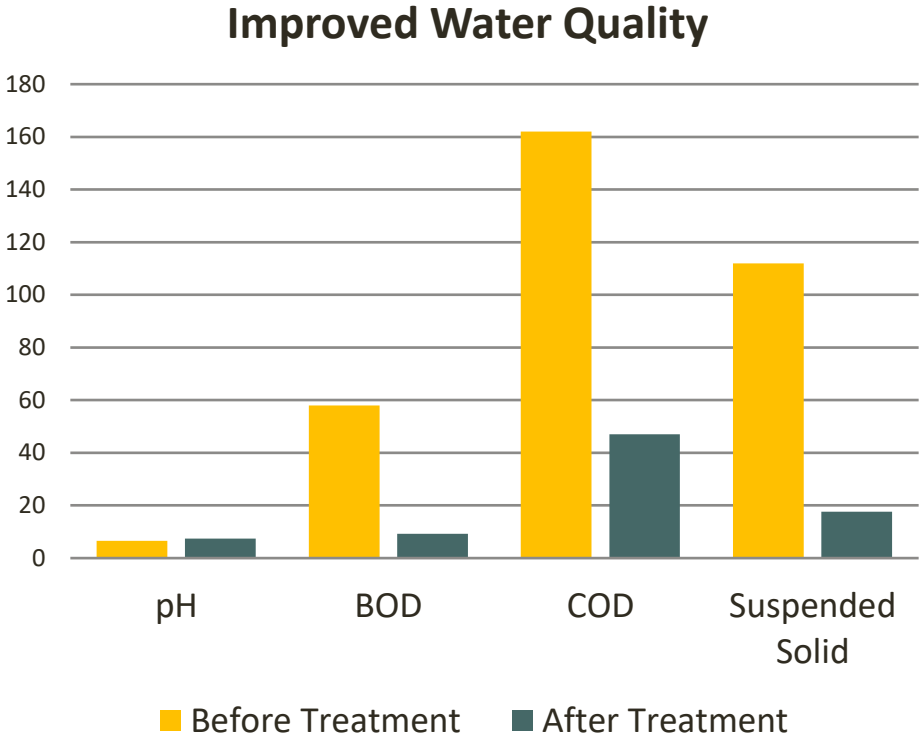
- a. There are five major river channels that carries used water in the city viz **Basistha, Bahini, Mora Bhoralu, Bhoralu** and **Lakhimijan**.
- b. There are three major water bodies through which most of the used water of Guwahati city drains into Brahmaputra river. These are **Deepor Beel, Bhoralu Mukh and Silsako beel**.
- c. The point of dosing is set up at Silsako beel and all the upstream drain upto one km in length. The major drains falling in the Silsako Beel are **Hengrabari drain Juripar drain, F.A. Ahmed Road Drain, Diversion of Bahini River drain from PIBCO point to Silsako Beel and, Satgaon drain**.
- d. GMDA has started rejuvenation, bioremediation, and sustainable conservation works at Silsako Beel. The Bioremediation works at Silsako consist of the following components;
 - Construction of 8-15 M wide x 6000 M long and peripheral channel around the beel to prevent dirty water to the beel.
 - The flow in the outer peripheral channel is **13-15 cubic meter** in no rain season.
 - Total length of the Bioremediation channel is around 5 Km. The work is taken up on pilot basis with the funding from the Govt. of Assam.
 - Encroachments on the beel are removed.



Silsako Beel

Improvement in Water Quality Parameters

Parameter	Unit	Before	After	Test Method
Physico-chemical parameter				
pH @ 25C	-	6.52	7.42	APHA 23 rd edition; 4500-H+B: 2017
BOD	mg/l	58	9.2	IS: 3025 (part 44): 1993
COD	mg/l	162	47.0	IS: 3025 (part 58): 2006
Suspended Solid	mg/l	112.0	17.6	APHA 23 rd edition; 2540-D: 2017



Bio-dosing



Bio-remediating Plants



Coir barriers



Floating Aeration

Faecal Sludge & Septage Management⁰⁷⁷

- Construction of FSTPs in **32 ULBs** on cluster basis are taken up with technical assistance from **UNICEF** with earmarking **39.11 Cr** from 15th FC.
- 1 Project at **Titabor MB (10 KLD)** and 1 Project at **Goalpara MB (7 KLD)**.already commissioned and functioning efficiently.
- 1 FSTP at **Tinsukia MB (20 KLD)** inaugurated on 10th March, 2024.
- 1 FSTP of **20 KLD** in **Guwahati (Belortol)** to be commissioned in April, 24
- Rest **28 FSTPs** are in different stages of development.



Goalara FSTP



Titabar FSTP



Tinsukia FSTP

State's Commitment for ensuring Sustainable Sanitation Practices

- SBM(U), Assam has on-boarded a reputed NGO namely **Urban Management Center. UMC** has done intensive field study in 14 major ULBs and adjoining minor ULBs to identify gaps in existing **SWM value chain** and prepared **vehicle route maps, roadmap for source segregation and efficient primary waste collection**. UMC has also done handholding for these ULBs and stakeholders to strengthen the waste management scenario in the ULBs.
- **Most Outstanding District Initiative (MODI)** launched to assess the sanitation infrastructure and districts' preparedness in providing sustainable sanitation to citizen.
- **Hon'ble Cabinet** approved '**Doh Sahar Ek Rupayon**' Program to strengthen the sanitation infrastructure in 10 major ULBs of Assam.
- EoI Notification published to empanel efficient agencies for promoting source segregation, backyard composting, IEC activities, MRF operations and resource recovery.
- Dedicated Portal created for effective monitoring of SWM projects in each ULBs.
- Team of officers from Assam visited Odisha on January, 2024 to observe the decentralized low-cost waste-water treatment methodologies.

Continued...

Making Fund Available from Ring-fenced Amount

979

Sl. No.	Component	State Commitment (Cr.)	Status of Fund
1	Solid Waste Management (waste processing, scientific landfill site development & legacy waste management)	567.78	<ul style="list-style-type: none"> ➤ 1.24 Cr released by state govt. for legacy waste remediation in Jorhat ➤ DoNER has approved 70.52 Cr for Legacy waste Remediation in 39 ULBs.
2	Sewerage & Septage Management	446.4	<ul style="list-style-type: none"> ➤ 2.44 Cr for remediation of water bodies in Guwahati. ➤ 0.60 Cr fund allocated for Borsola STP ➤ 3.99 Cr allocated for FSTP in Guwahati. ➤ 2.47 Cr released to AUWS&SB for STP in Nagaon.
	Total Commitment	1014.18	10.74 Cr. already made available

Sr. No	Initiatives	Objectives
1	'Swachhata ke Dorang' Campaign	Engaging school students for promoting Source Segregation, integration of NGOs, SHGs, NCC, NSS etc in awareness generation. Compartmentalization of C&T vehicles.
2	Indian Swachhata League	Plog run, cleanliness drives, social awareness in all ULBs
3	Swachhat hi Seva	Citizen centric cleanliness drives in all ULBs of Assam.
4	Swachhata Pledge in Schools	38,13,367 students of 43,265 nos. schools across the State took pledge to keep their school campus and Home clean in a single day (27th Sept, 2023).
5	Women Led Sanitation Campaign	Increase awareness on Source Segregation through involvement of SHGs at ward level
6	Toilets 2.0 Campaign	Cleanliness drive of CT/PTs and awareness generation for using public toilets.
7	Swachh Swaraswati Puja	Promoting plastic free pandals, using organic materials for decoration, entrance gate made of banana plants, biodegradable cutleries from banana leaves and stems..
8	Swachh Holi Celebration	Promotion of plastic free Holi celebration under zero waste event, bamboo made pichkaris and organic colours made from traditional organic materials
9	Clean Toilet Campaign	All public toilets were assessed with the help of SHGs to provide sustainable sanitation to citizens.
10	Swachh Festivals	Zero Waste and Plastic Free events were organized to promote source segregation and proper disposal of wastes.
11	RRR Centers	280 RRR centers built in the ULBs for promoting resource recovery.
12	Recruitment of 103 Administrative Cadres through APSC	Newly recruited officers will be taken to exposure visits in several cities with best sustainable sanitation practices for better implementation of the same in Assam.

IEC Activities in Assam

981



Door to Door IEC Campaign



Door to Door Waste Collection



Promoting Backyard Composting



Workshop with Swachhta Prahari



Swachh Holi Campaign



Model Ward Campaign

Thank You