

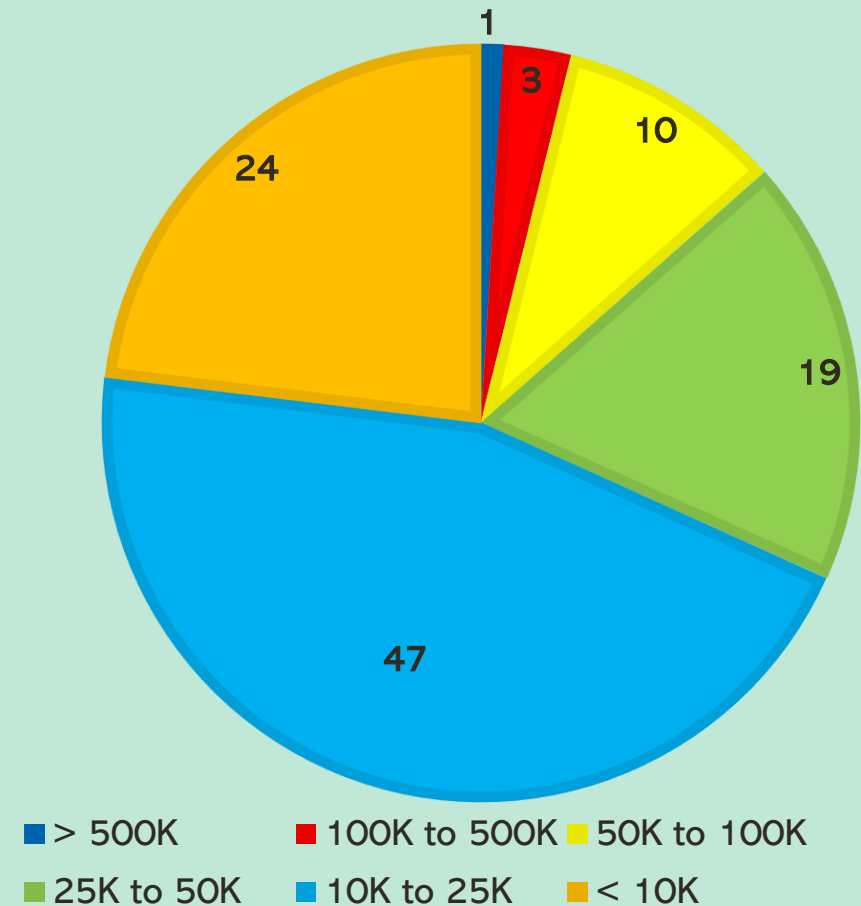
# Compliance to NGT Directions OA 606/2018

## 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:** 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

1001

# **Solid Waste Management**

# 3 Pronged SWM Approach in Assam<sup>1002</sup>

Million + City – GMC

- Adequate SWM facility under construction for 400 TPD Wet Waste.
- RTS and MRF under construction for 335 TPD Dry Waste.
- Bio-methanation plant for Wet Waste disposal.

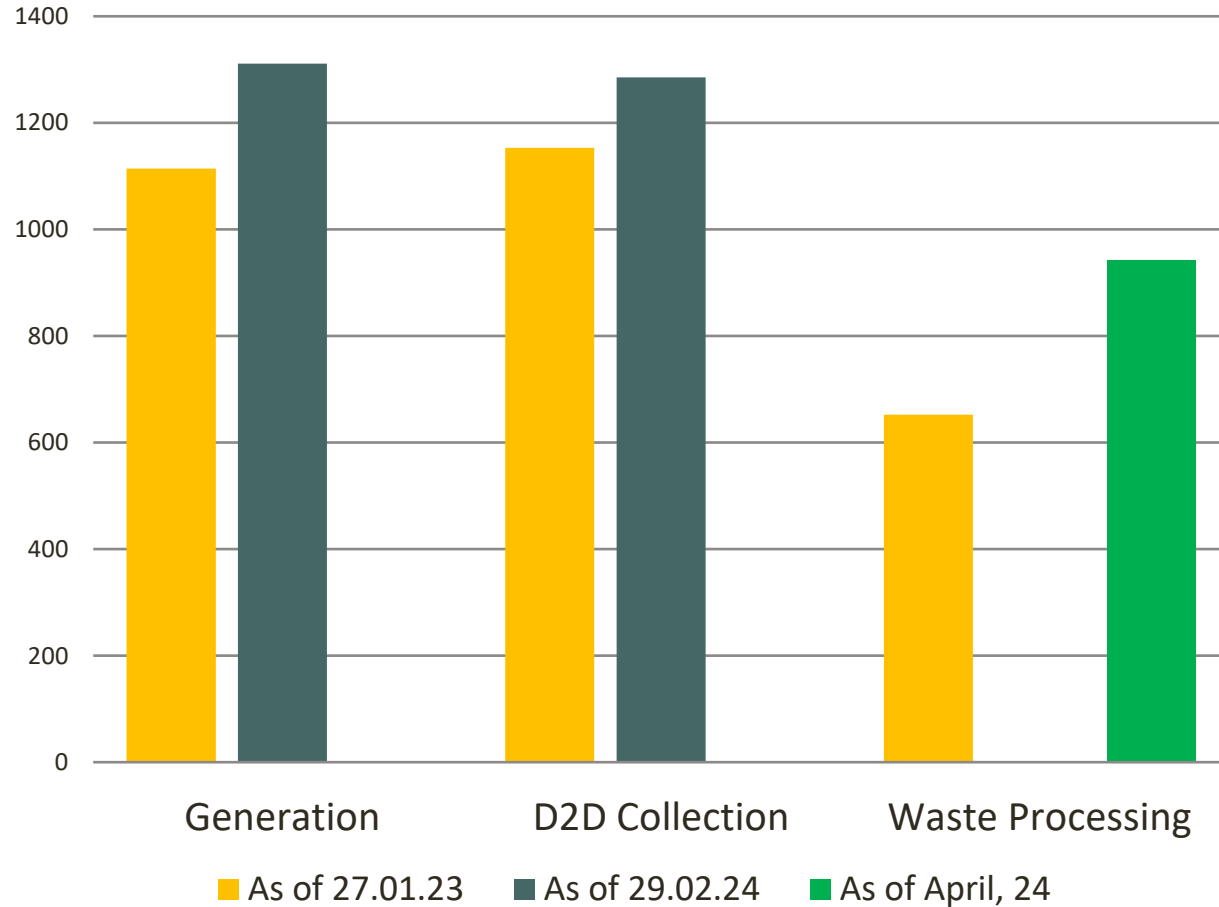
Population more than  
25,000 – 32 ULBs

- Windrow and pit composting for Wet Waste Disposal.
- MRF for Dry Waste management and Resource Recovery.
- CBG plant in 4 ULBs.
- Scientific Landfill for Inert Waste Management

Population less than  
25,000 – 71 ULBs

- Emphasis given on backyard composting.
- Decentralized pit composting for managing Wet Wastes.
- MRFs for Dry Waste Management and Resource Recovery.
- Scientific Landfill for Inert Waste Management.

# 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)

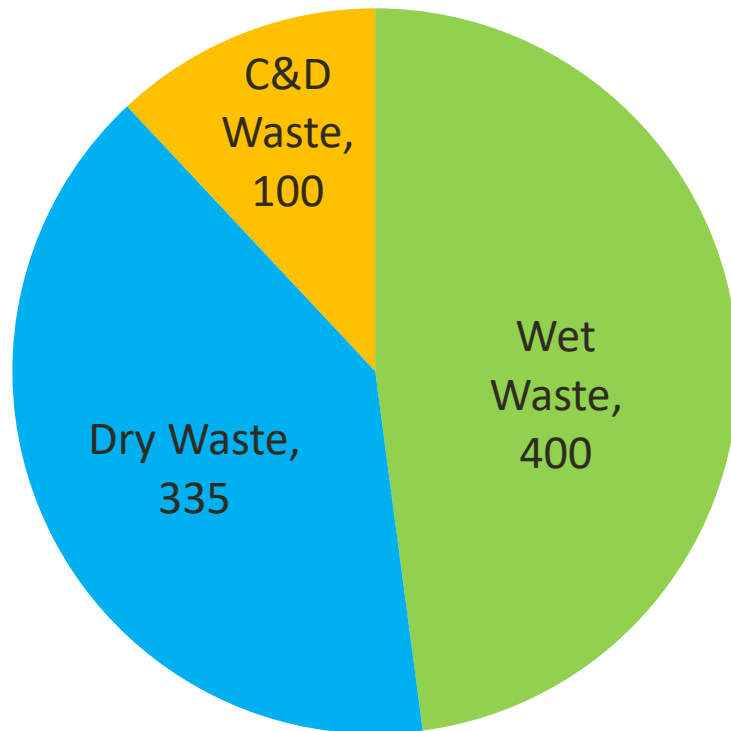
\*150 TPD Waste to Compost Plant to be operational in GMC in April, 24

\*\*10 TPD MRF operational in GMC since 12.03.2024

\*\*\* 100 TPD MRF will be operational from April,24

# Processing Facility of Solid Waste in Guwahati

Guwahati Municipal Corporation generates 550 TPD solid waste at present. Projected waste generation in 2030 will be 835 TPD which includes 100 TPD of C&D Waste. The processing infrastructure planned for is shown below:



## Wet Waste

- i. 2.5 TPD Organic Waste Converter.
- ii. 5 TPD Bio-methanation plant
- iii. 75 TPD CBG plant OIL (MoU signed).
- iv. 150 TPD RDF cum Compost plant (under construction).
- v. 200 TPD RDF cum Compost Plant under CITIIS 2.0 project.

## Dry Waste

- i. 10 TPD MRF at Adabari (functional)
- ii. 150 TPD RTS cum 100 TPD MRF at Adabari under construction.
- iii. 150 TPD RTS cum 100 TPD MRF at Old Jail, Fancy Bazar under construction.
- iv. 75 TPD RTS cum 25 TPD MRF at Mathgharia (work order issued).
- v. 25 TPD RTS cum 10 TPD MRF at Purabi Dairy Campus under Tendering process.
- vi. 150 TPD RTS cum 100 TPD MRF under CiTIIS 2.0.

## C&D Waste

- 100 TPD C&D waste management plant under CITIIS 2.0.

# Processing Facility of Solid Waste 1005 in Guwahati



**MRF at Guwahati**



**Waste Management Plant construction at Guwahati**



**Bag composting facility at Guwahati**



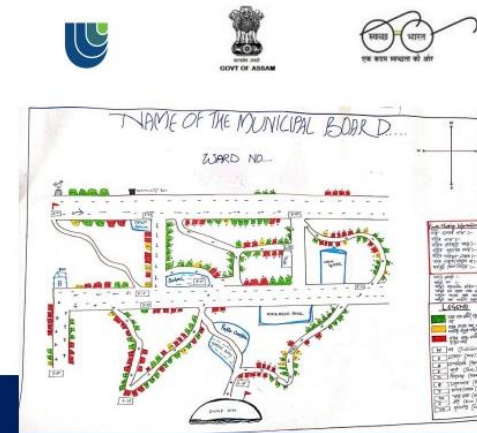
**Waste Handling Station at old jail campus**

# MRF Construction Started in 10 ULBs

SI No	ULB Name	Wet Waste Capacity (TPD)	Dry Waste Capacity (TPD)	Total Capacity (TPD)
1	Nalbari MB	10	10	20
2	Chapar MB	10	5	15
3	Kokrajhar MB	10	10	20
4	Barpeta Rd MB	10	10	20
5	Sarupathar MB	7.25	7.25	14.5
6	Barapathar MB			
7	Nagaon MB	40	30	70
8	N Lakhimpur MB	15	10	25
9	Silchar MB	55	45	100
10	Sibasagar MB	10	10	20
	Total	167.25	137.25	304.5

# Progress in Source Segregation and Collection

- 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.



**Manual on Route Rationalization for Effective Waste Collection and Transportation**  
February 2024  
Swachh Bharat Mission-Urban  
Government of Assam



**Comprehensive Guide for Efficient Door-to-Door Solid Waste Collection in ULBs**  
February 2024  
Swachh Bharat Mission-Urban  
Government of Assam



ONE YEAR ACTION PLAN FOR SOLID WASTE MANAGEMENT, BONGAIGANJ MB									
Strategy	Action No.	Action	Measure	Start Date	End Date	Responsibility	City/Ward	Mandatory/ Essential/ Desirable	Status
Strategy 1: System Reform	1	Develop list of waste generators	Survey of all lanes based on a questionnaire (parameters include existing service status, awareness need assessment, willingness to pay etc.) to identify service level and reasons for not segregating solid waste.	11-Sep	28-Sep	ULB	City	Mandatory	Completed
			Prepare a route map with locations of all waste generators including BWMs (hand drawn). Mark source segregating waste generators in green, non segregating but handing over waste to DZDC in orange and non participating waste generators in red.	11-Sep	28-Sep	ULB	City	Mandatory	In progress
	2	Enhance Occupational Health and Safety (OHS)	Provide Uniform (Saree/Shirt-pant) to all SWM staff with logo of BMB	15-Nov	30-Nov	ULB	City	Mandatory	
			Provide PPE (once every two months by BMB or based on wear and tear whichever is earlier). Replace the existing rubber gloves with a PVC safety gloves. This provides better fit and enhanced safety.	02-Oct	31-Mar	ULB	City	Essential	
3	Issue notices and collect penalties/fines for non compliance of SWM Rules 2016	Notify a dedicated flying squad through an office order to enable fortnightly fines collection drives by the flying squad	02-Oct	15-Oct	ULB	City	Mandatory		
		Issue notices to the identified Bulk Waste Generators (BWG) and gated communities to manage waste in their own premises or contact BMB for SWM services	01-Oct	30-Nov	ULB	City	Mandatory		
4	Provide Health support to sanitation workers	Organise health camps every 3 months for sanitation workers including staff that are not permanent employees of the ULB	01-Sep	31-Mar	ULB	City	Mandatory		
		Assist the permanent and non-permanent sanitation workers to enroll in social security schemes of the state and central government. Eg. Aadhaar card, bank account, insurance etc. Swachhta Pakhwada is a good opportunity.	02-Oct	30-Nov	ULB	City	Mandatory		
			Re-notify the revised user charges rates and penalties in local newspaper	15-Sep	30-Sep	ULB	City	Essential	

# Progress in Source Segregation and Collection

- 218 nos. of Auto Trippers with separate chambers (Green & Blue) distributed to ULBs on 3<sup>rd</sup> 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

1009

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.



# '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**.



# Wet Waste to CBG Plant

1011

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 Sivasagar 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)**

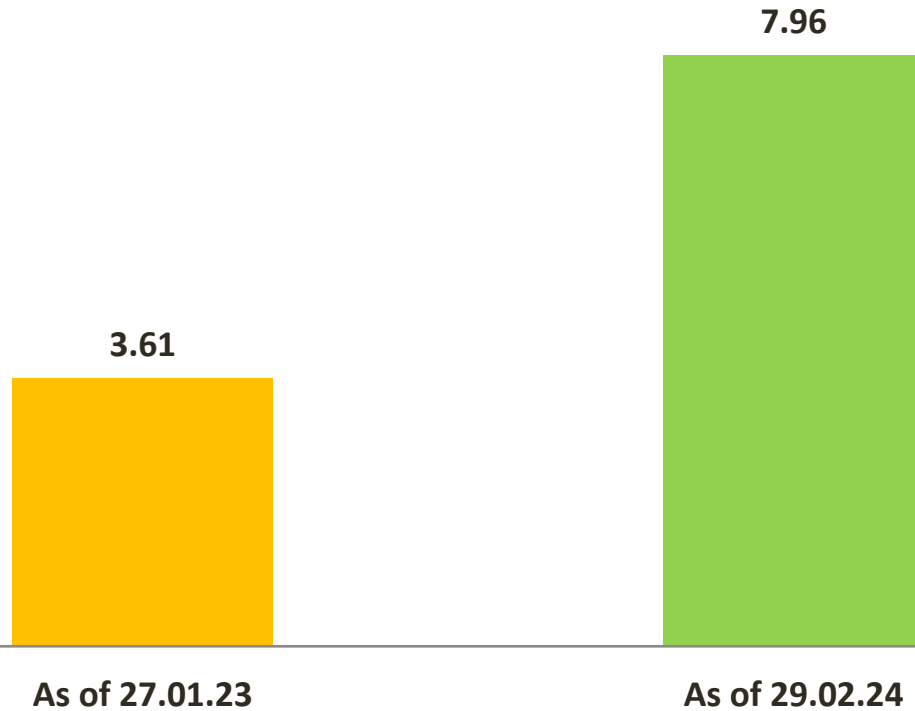


**MoU signing between Tinsukia MB and OIL**

# Legacy Waste Remediation

## Legacy Waste Remediation

■ As of 27.01.23 ■ As of 29.02.24



### *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 dumpsite 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 Municipal

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 entrusted 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 Remediation<sup>1013</sup>

- In last one year **7.96 Lakh MT** of legacy waste has been remediated
- **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	Remediated Qty	Progress Status	Present Status
1	N Lakhimpur MB	39,000 MT	100% remediated	<b>67 bighas</b> of land reclaimed
2	Mariani MB	10,560 MT	100% remediated	
3	Tinsukia MB & Makum MB	50,000 MT	100% remediated	
4	Doomdooma MB	18,000 MT	100% remediated	
5	Digboi MB	19,200 MT	100% remediated	
6	Margherita MB	25,000 MT	100% remediated	
7	GMC	5,86,960 MT	39% remediated	Remediation work going on
8	Jorhat MB	47,661 MT	33% remediated	
Total Processed (A)		<b>7,96,381 MT</b>		

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

1014

➤ **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 <sup>1015</sup>

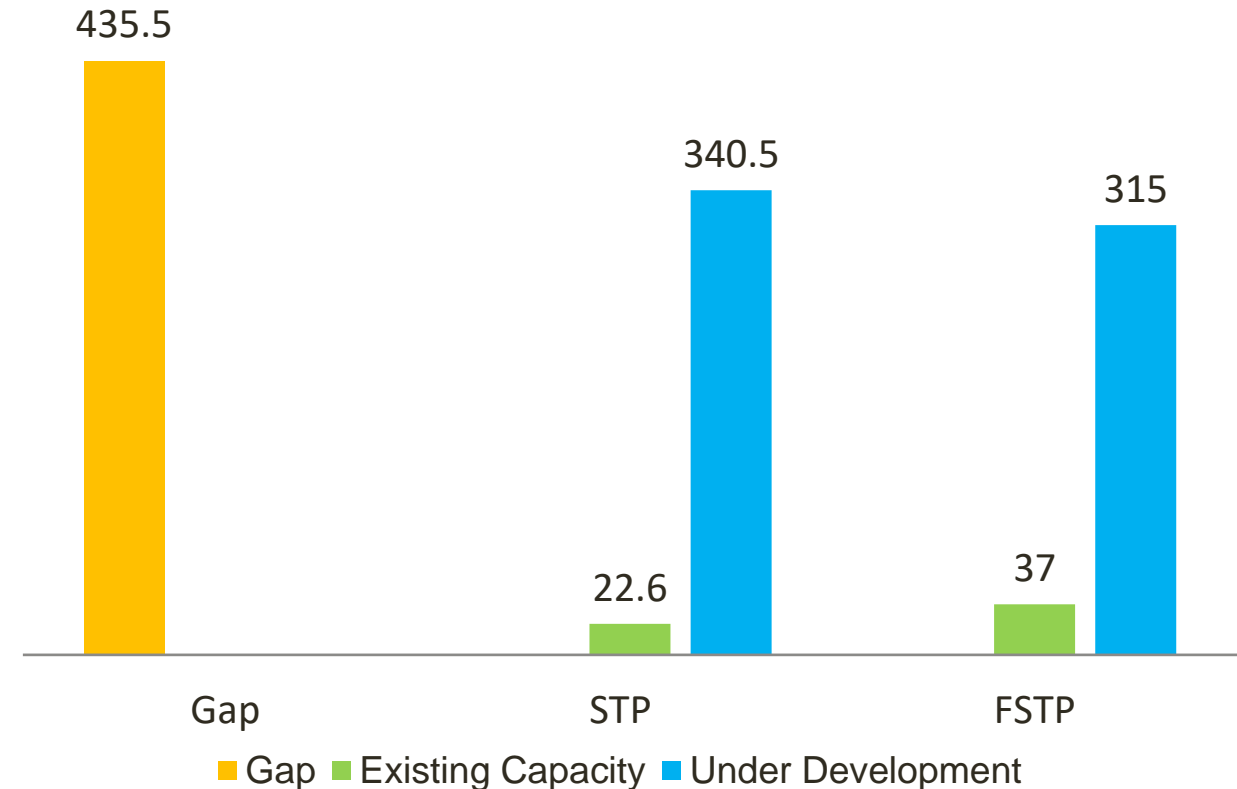
## Hon'ble NGT had following observation regarding Used Water Management (pt 33):

- 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 Management 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.**

## Used Water Treatment Facility



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"> <li>Rupees 1460.37 Crore has been approved by GoA for 3 STPs to be implemented with assistance from JICA in Guwahati.</li> <li>1 STP of 2 MLD to start from October, 24 at Borsola.</li> </ul>
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		
Total	435.5	361.5		

# In Situ STPs by private organizations in Guwahati<sup>1018</sup>



- 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.

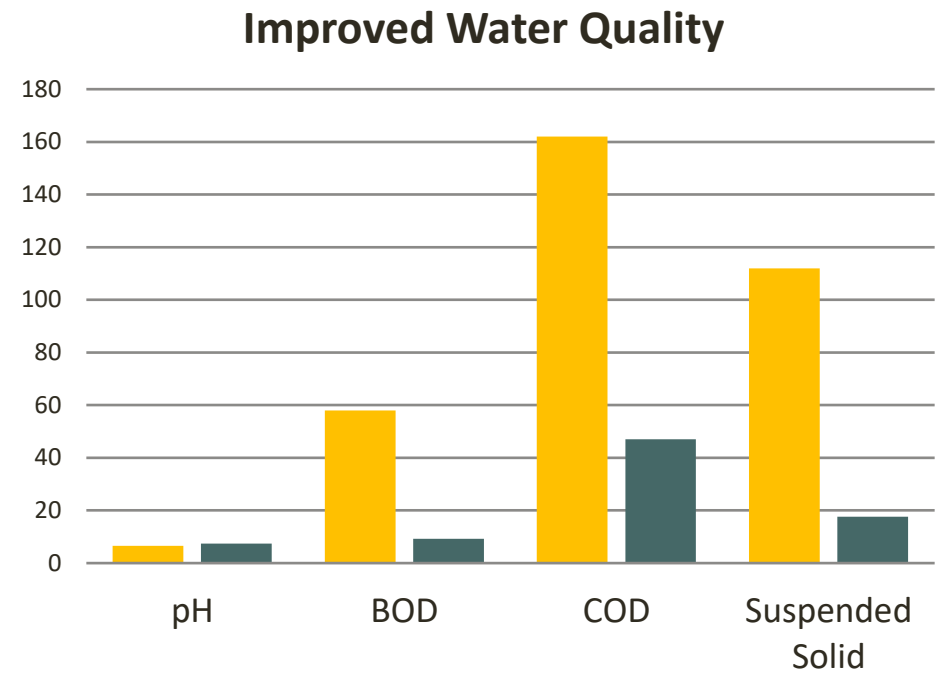


**Silsako Beel**

# Improvement in Water Quality Parameters

1020

Parameter	Unit	Before	After	Test Method
Physico-chemical parameter				
pH @ 25C	-	6.52	7.42	APHA 23 <sup>rd</sup> 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 <sup>rd</sup> edition; 2540-D: 2017



■ Before Treatment ■ After Treatment



Bio-dosing



Bio-remediating Plants



Coir barriers



Floating Aeration

# Faecal Sludge & Septage Management

- Construction of FSTPs in **32 ULBs** on cluster basis are taken up with technical assistance from **UNICEF** with earmarking **39.11 Cr** from 15<sup>th</sup> 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 10<sup>th</sup> 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

1022

- 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

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"> <li>➤ <b>1.24 Cr</b> released by state govt. for legacy waste remediation in Jorhat</li> <li>➤ DoNER has approved <b>70.52 Cr</b> for Legacy waste Remediation in <b>39 ULBs</b>.</li> </ul>
2	Sewerage & Septage Management	446.4	<ul style="list-style-type: none"> <li>➤ <b>2.44 Cr</b> for remediation of water bodies in Guwahati.</li> <li>➤ <b>0.60 Cr</b> fund allocated for Borsola STP</li> <li>➤ <b>3.99 Cr</b> allocated for FSTP in Guwahati.</li> <li>➤ <b>2.47 Cr</b> released to AUWS&amp;SB for STP in Nagaon.</li> </ul>
	Total Commitment	1014.18	<b>10.74 Cr.</b> 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

1025



Door to Door IEC Campaign



Door to Door Waste Collection



Promoting Backyard Composting



Workshop with Swachhta Prahari



Swachh Holi Campaign



Model Ward Campaign

1026

**Thank You**