

# District Environment Plan



Prepared By



Environment Department, Government of Maharashtra



Maharashtra Pollution Control Board

Thane

## 1.0 Preamble

Hon'ble National Green Tribunal vide order dated 26/09/2019 in O.A. No. 360 of 2018 filed by Shree Nath Sharma Vs Union of India and Others directed that CPCB shall facilitate the District Magistrates in preparation of District Environmental Plan by placing Model plan on its website. This model plan may be adopted as per local requirements by all Districts under supervision of District Magistrate.

The said Order also directs that Department of Environment in respective States / UTs should collect district plans to prepare State Environment Plan, which shall be monitored by respective Chief Secretaries of State/UT by 15/12/2019.

Based on State Environmental plans, CPCB and Ministry of Environment, Forest & Climate Change shall prepare National Environmental Plan, under the supervision of Secretary, MoEF&CC and Chairman, CPCB by 31/01/2020. The National Action Plan needs to be submitted before Hon'ble NGT 15/02/2020.

In compliance to above directions, CPCB has prepared a model District Environment Plan (DEP) that covers following thematic areas;

In compliance to above directions and as per the model DEP prepared by CPCB, Environment Action plan for Thane District is prepared.

## 2.0 Introduction

Thane (also known as Thana, the official name until 1996) is a metropolitan city in Maharashtra, India. Thane city coincides entirely within Thane taluka, one of the seven talukas of Thane district; also, it is the headquarter of the namesake district. With a population of 1,841,488 distributed over a land area of about 147 square kilometres (57 sq mi), Thane city is the 16th most populated city in India with a population of 1,890,000 according to the 2011 census. The city is also called "City of Lakes" as the city is surrounded by 35 lakes.

General Thane district profile is presented in the **Table 1** and location is shown in **Figure 1**.

**Table 1 Thane District Profile**

<b>Description</b>	<b>Details</b>
Average Climate	Summer: 40 °C. Winter : 12 °C. Rainfall: 2000–2500 mm.
Geographical Location	The Sahyadri mountain ranges to the east and the Arabian sea to the west, the dense forest section of the Gujarat state on the north, and the south of Mumbai.
Area	9558 Sq. km.
Boundaries	Gujarat state on the North, Sahyadri mountain ranges to the East, Mumbai on South, Arabian sea to the West.
Languages Spoken	Marathi, Hindi, English are major languages but all Indian languages are spoken. Some of the East Indian families in the Khatri ward of Thane still speak Portuguese.
Population	Total: 11,060,148; 2434980Male: 5865078 Female: 5195070 [According to 2011 Census Report] <i>Population shared in Excel sheet is not matching with District Population disclosed in 2011 Census</i>
Population Density	1157 Per Sq. km.
Literacy Rate	84.53
Rivers	Masunda Talao, Upvan Lake, Kacharali Talao, Makhamali Talao, Siddheshwar Talao, Bramhala Talao, Ghosale Talao, Railadevi Talao
ULBs	10 Numbers
Municipal Corporations	6 Numbers 1. Thane Municipal Corporation 2. Navi Mumbai Municipal Corporation 3. Kalyan Dombivli Municipal Corporation 4. Bhiwandi Nizampur Municipal Corporation 5. Ulhasnagar Municipal Corporation 6. Mira BhayanderMunicipal Corporation
Sub districts	5 Numbers
Villages	1721 Numbers
Statutory Towns	12 Numbers
Tahsils	8 Numbers Ambarnath, Bhiwandi, Kalyan, Murud, Shahapur, Thane, Ulhasnagar, Vasai
Pin code	400601

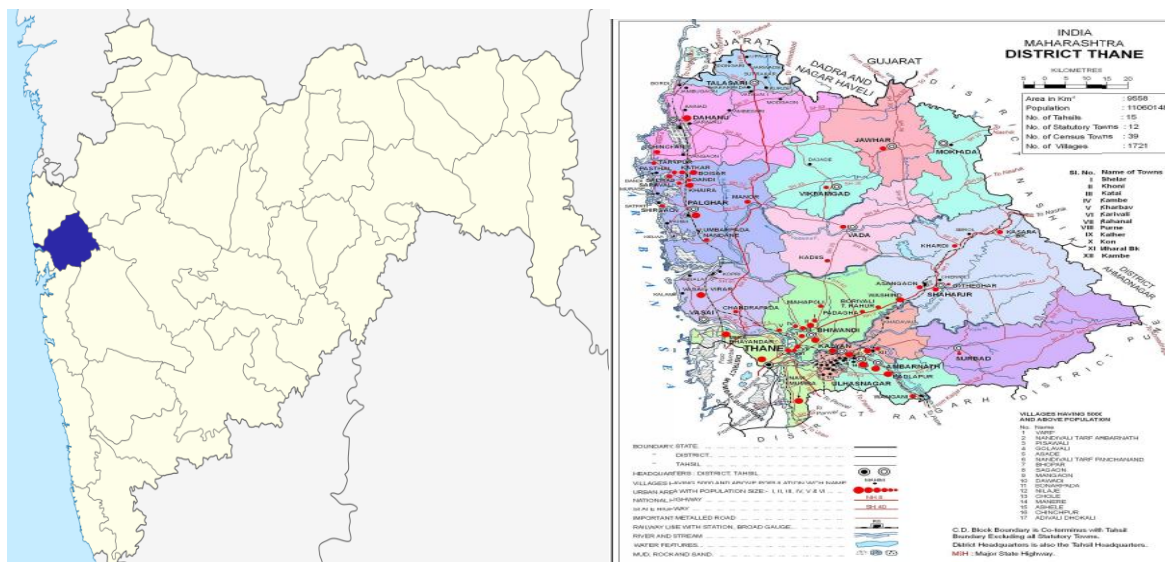


Figure 1 Location of Thane District in Maharashtra state

### 3.0 Waste Management Plan

Urban India is facing an ever increasing challenge of providing for the incremental infrastructural needs of a growing urban population. According to the 2011 census, the population of India was 1.21 billion; of this 31% live in cities. It is further projected that by 2050 half of India’s population will live in cities. With this increasing population, management of Municipal Solid Waste (MSW) in the country has emerged as a severe problem not only because of the environmental and aesthetic concerns but also because of the sheer quantities generated every day.

Solid waste management is among the basic essential services provided by municipal authorities in the country to keep cities clean. In Thane city primary sources of solid waste are local households, commercial establishments, hospitals, hotels, restaurants, and markets. Local Bodies are responsible for collection, storage, segregation, transportation and disposal of all solid waste generated in the city. There are 10 Urban Local Bodies [ULBs]. in Thane district. **Table 2** represents the list of ULBs along with population. Following section gives insight about waste management of Thane districts.

**Table 2 Thane District Profile**

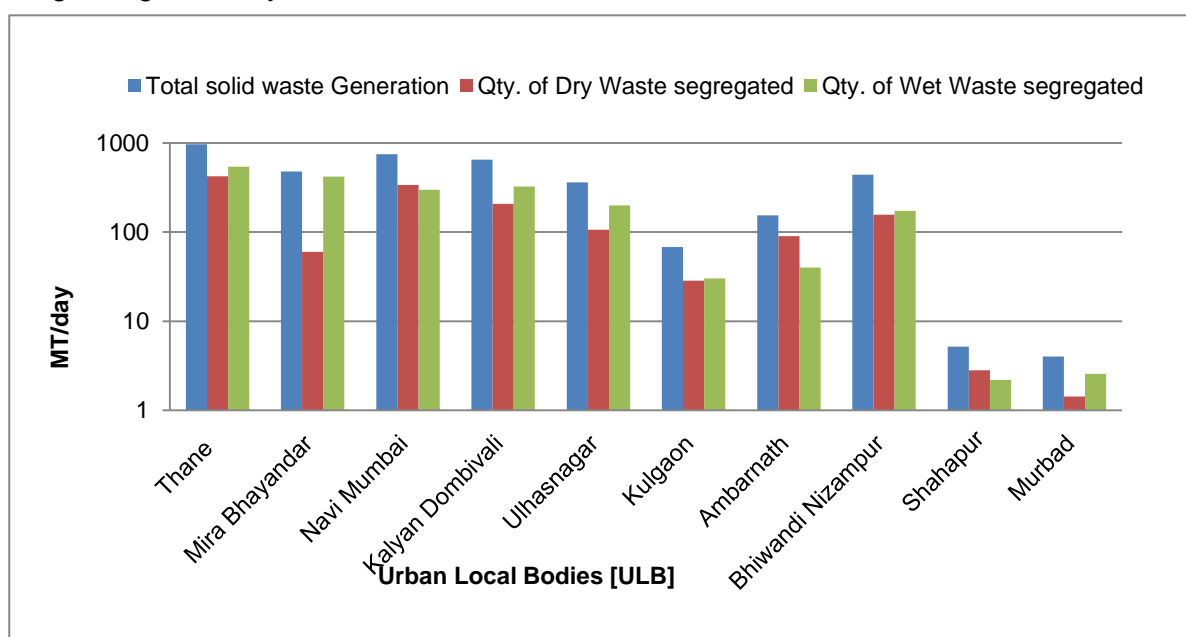
Sr. No.	Urban Local Bodies	Population
1.	Thane Municipal Corporation	2300000
2.	Mira Bhayandar Municipal Corporation	814786
3.	Navi Mumbai Municipal Corporation	1120547

Sr. No.	Urban Local Bodies	Population
4.	Kalyan Dombivali Municipal Corporation	1247180
5.	Ulhasnagar Municipal Corporation	506098
6.	Kulgaon Badlapur Municipal Council	174226
7.	Ambarnath Municipal Council	253475
8.	Bhiwandi Nizampur Municipal Corporation	709965
9.	Shahapur Nagarpanchayat, Shahapur	11623
10.	Murbad Nagarpanchayat	21080

### 3.1 Domestic Solid Waste Management Plan

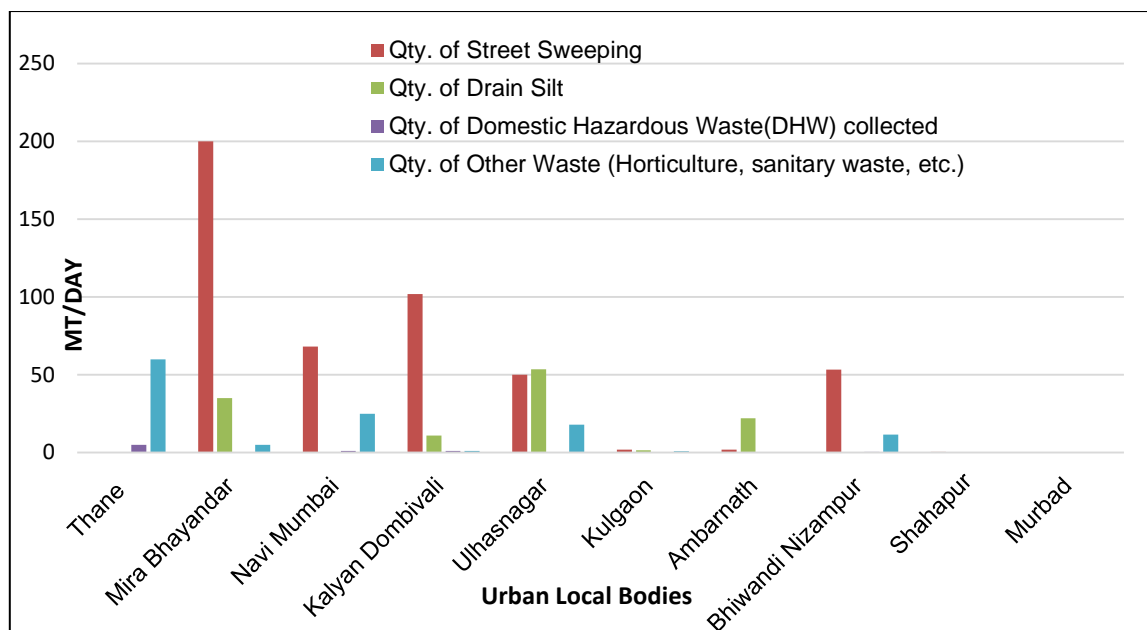
Thane district is having 10 ULBs with 214 Wards. Thane Municipal Corporation contributes the highest Population i.e. 23,00,000 and Shahapur Nagarpanchayat, Shahapur contributes lowest population i.e. 11,623

Fig 1.1 indicates the total solid waste generation of 11 ULB's of Beed district further categorizing it into dry and wet waste of each ULB



**Figure 2 Solid Waste Generation of Thane District**

- Thane District constitutes of Total 10 ULB's. Total Solid Waste generated from Thane District is 4343.62MTD out of which, Dry waste is 1954.35MTD and Wet waste is 2388.65MTD which is segregated every day.
- It seems that Wet waste comprises of approximately 55% of total waste generated of the district and Dry waste contributes 45%.



**Figure 3 Other waste Generation**

As per the data presented in the **Figure 3**, details of other types of waste generation is presented as below;

**A] Street Sweeping Waste:** Thane district generates 478.14MTD of Street Sweeping Waste. Maximum quantity of Street Sweeping Waste is generated by Mira Bhayandar Municipal Corporation with total quantity of 200MTD and Murbad Nagar Panchayat stands lowest with 0. 1MTD. Though Thane Municipal Corporation is largest corporation in Thane district, data of Street Sweeping Waste is not estimated

**B] Drain Silt Waste:** Total quantity of Drain Silt Waste generated is 123.23MTD. It seems that maximum quantity of Drain Silt Waste is generated by Ulhasnagar Municipal Corporation with total quantity of 53.62MTD followed by Mira Bhayandar Municipal Corporation with 35MTD. Murbad Nagar Panchayat stands lowest with 0.01MTD. However, it is observed that quantity of Drain Silt waste is not estimated by other ULBs like Thane, Navi-Mumbai & Bhiwandi.

**C] Domestic Hazardous Waste (DHW):** Total DHW quantity generated is 8.05MTD. Maximum quantity of DHW is generated by Thane Municipal Corporation with total quantity of 5MTD whereas, Murbad Nagar Panchayat stands lowest with 0.01MTD.

**D] Other Waste (Horticulture, sanitary waste, etc.):** Total Quantity of Horticulture, Sanitary and other waste is 121.4MTD. Maximum quantity of Other Waste is generated by Thane Municipal Corporation with total quantity of 60MTD and Shahapur Nagar Panchayat,

Murbad Nagar Panchayat stands lowest with 0.01MTD. As per the available data it is observed that Ambarnath Municipal Council don't generates any kind of other waste.

### **3.1.1 Compliance in Segregated Waste Collection**

Total Waste generation from Thane district is 4464.84MTD and almost all waste is being segregated.

#### **A] Waste Management Operations**

##### **Door to Door Collection**

Out of 10 ULBs, 9 of them have provided 100% door to door collection facility. Only Ulhasnagar Municipal Corporation has provided 82% door to door waste collection facility respectively.

##### **Mechanical Road Sweeping**

In Thane district, almost each ULB has 100% Manual sweeping process for sweeping. Whereas, in line with mechanical sweeping process some of the ULBs has initiated the method where Kalyan Dombivali Municipal Corporation has the process limited to its

#### **B] Segregated Waste Transport**

Almost 100% of waste is being transport through segregated waste transport system whereas, at Ulhasnagar Municipal cooperation waste is partially segregating.

#### **C] Digesters [Biomethanation]**

In Thane district, Thane Municipal cooperation is has installed 3 digesters while Kalyan Dombivali Municipal Corporation have installed 5 digesters for Biomethanation process. Ulhasnagar Municipal Corporation have Aerobic Composting process. The remaining 6 ULB's have not yet initiated the Process of Biomethanation yet.

#### **D] Composting Operation**

Thane district generates approximately 2030.19MTD of wet waste. ULBs are partially initiated the Composting operation in Thane District.

#### **E] MRF Operation**

Out of 10 ULBs, 5 ULBs is using Multi Re Use Facility to separate and prepare recyclable material. Thane Municipal Cooperation & Kalyan Dombivali Municipal Corporation have 10 & 5 MRF installed.

**F] Use of Sanitary Landfill**

Navi Mumbai Municipal Corporation is treating 20% of its waste in its sanitary landfills, while remaining ULBs don't use the sanitary landfill.

**G] Reclamation of old dumpsites**

Except Mira Bhayandar Municipal Corporation all other ULBs have initiated the process of Reclamation.

**H] Linkage with Waste to Energy Boilers / Cement Plants**

Each ULBs have initiated linkage with waste to energy boiler / cement plant

**I] Linkage with Recyclers**

Each ULBs have linkage with recycler to recycle the waste.

**J] Authorization of waste pickers**

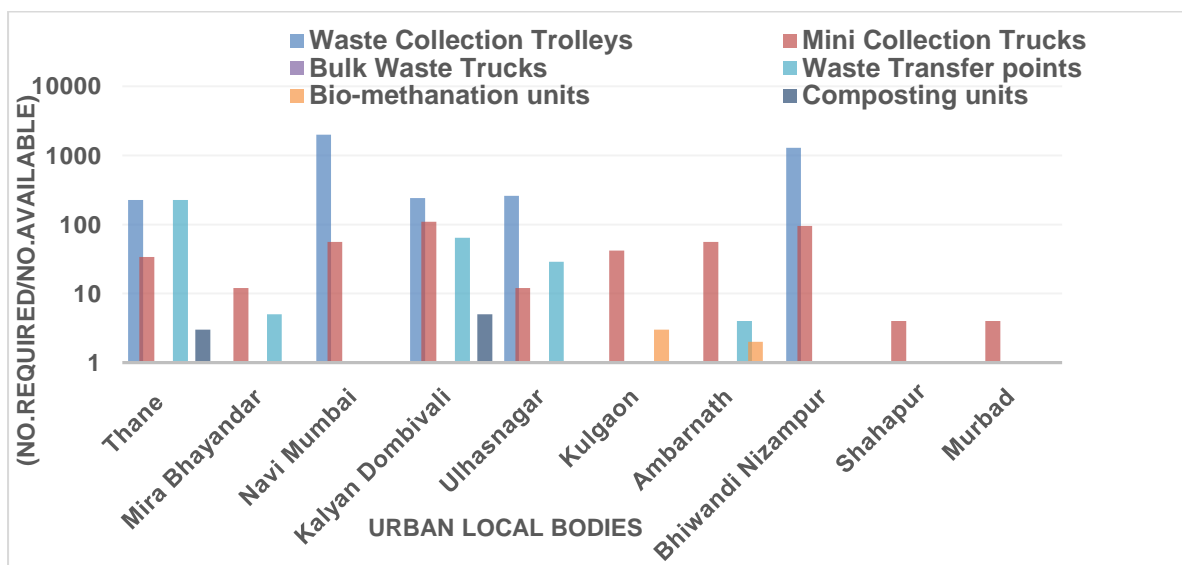
All ULBs have issued authorization to the waste pickers

**K] Linkage with TSDF / CBMWTF**

Except Navi Mumbai Municipal Corporation, Ulhasnagar Municipal Corporation other ULBs have linkage with TSDF/ CBMWTF.

**3.1.2 Adequacy of Infrastructure**

Availability of infrastructure to handle the waste generated from the Thane district is presented in **Figure 4**.



**Figure 4 Adequacy of SW Infrastructure**



Above graph depicts that in Thane District Thane Municipal Corporation have 227 waste, Navi Mumbai Municipal Corporation have 1984 trolleys, Ulhasnagar Municipal Corporation have 260 waste trolleys. Among each ULBs of Thane district each ULB have Mini collection truck facility comprises of Trippers, Tractors etc. Thane Municipal Corporation have 227 nos. of Bulk waste trucks. Except 4ULBs other ULBs have waste transfer points in their locations. There are in total 126 Composting units among 10 ULB's maximum at Kalyan Dombivali Municipal Corporation. It can be concluded that some of the ULB's in The Thane district requires refuse dry waste [RDF] facility.

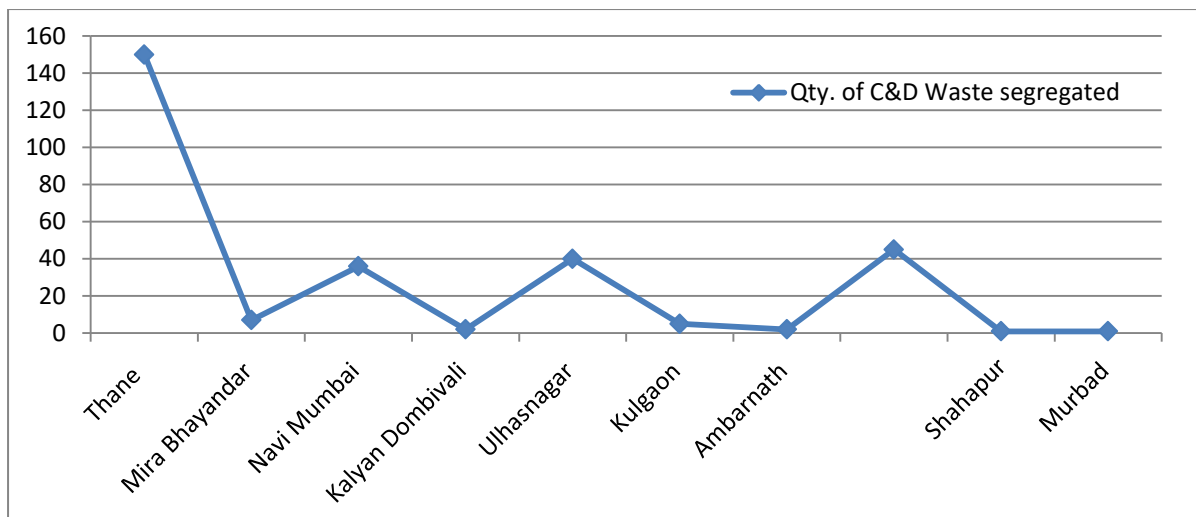
Navi Mumbai Municipal Corporation have 90000MT capacity of Landfill while Kalyan Dombivali Municipal Corporation have 700MT capacity of Landfill which is in Progress. No other ULBs have Sanitary Landfill options available.

Each ULB's in Thane district ensure the implementation of applicable by-laws.

### **3.2 C&D Waste Management Plan**

The Construction and Demolition Waste [C&D Waste] generated by Thane district is about 2005.04MTD. C&D Waste generated by each ULBs is presented in **Figure 5**. Again being with most populated corporation, Thane Municipal Corporation contribute maximum share of C&D waste to the tune of 1873.37MTD. Least C&D waste is generated by Kalyan Dombivali Municipal Corporation with the quantity of 0.002MTD. Non availability of data will not help in preparing ingenious and executable plan for waste management of the district hence local bodies must ensure proper sampling and factual measurement of the various types of waste being generated.

District is implementing all By-laws related to C&D Waste management. Thane Municipal Corporation have established recycling plant of capacity 300TPD. Navi Mumbai Municipal Corporation sent 150TPD waste to its shared facility for recycling.

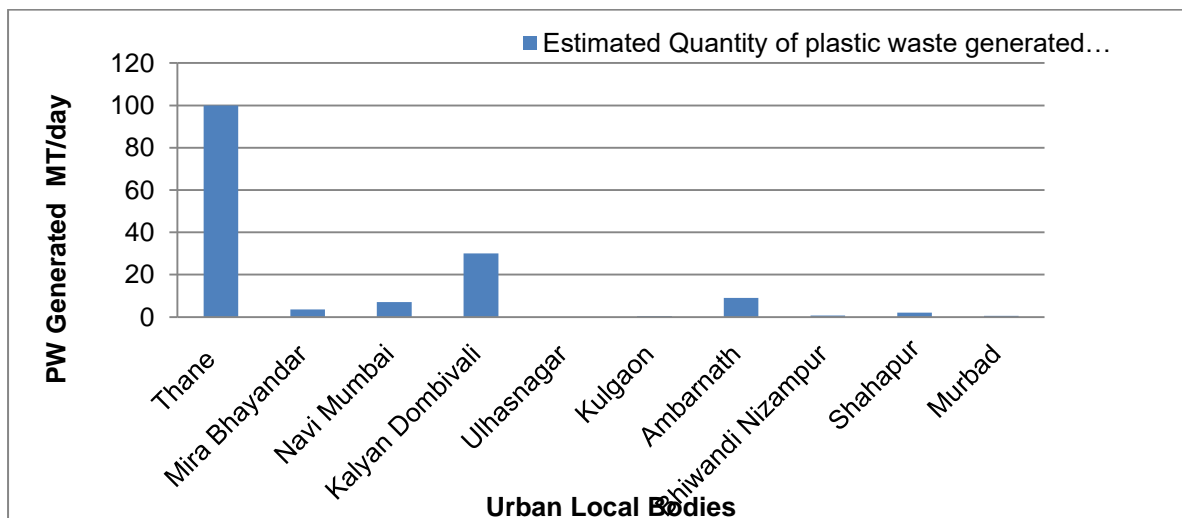


**Figure 5 C&D Waste Generation of Thane District**

### 3.3 Plastic Waste Management

Total Plastic waste generated by Thane district is 168.09MTD. With 10.13MTD quantity, Mira Bhayandar Municipal Corporation is the highest plastic waste generator and Shahapur Nagar Panchayat generates 0.025MTD of plastic waste.

In almost all ULBs, door to door collection and segregation system is implemented with 23 nos. of Plastic Waste Collection Centre. There are 432 Plastic Waste Pickers with the authorization for waste collection. District has 48 Plastic Manufacturer and 52 Waste recyclers where major contributor is TMC. For Treatment and recycling of generated plastic waste, there are 2 Pyrolysis Oil Plant. 3MT/Month is being treated in the Pyrolysis Oil Plant. PW Management Rules, 2016 is partially implemented in some of the ULBs whereas Navi-Mumbai, Mira Bhayandar have not implemented the Rules.



**Figure 6 Details of Plastic Solid Waste Generation**

### 3.4 Biomedical Waste Management

Bio-medical waste refers to any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining there to or in the production or testing of biological or in health camps, etc. Fig 7 shows the graphical representation of Inventory of Bio medical waste generation.

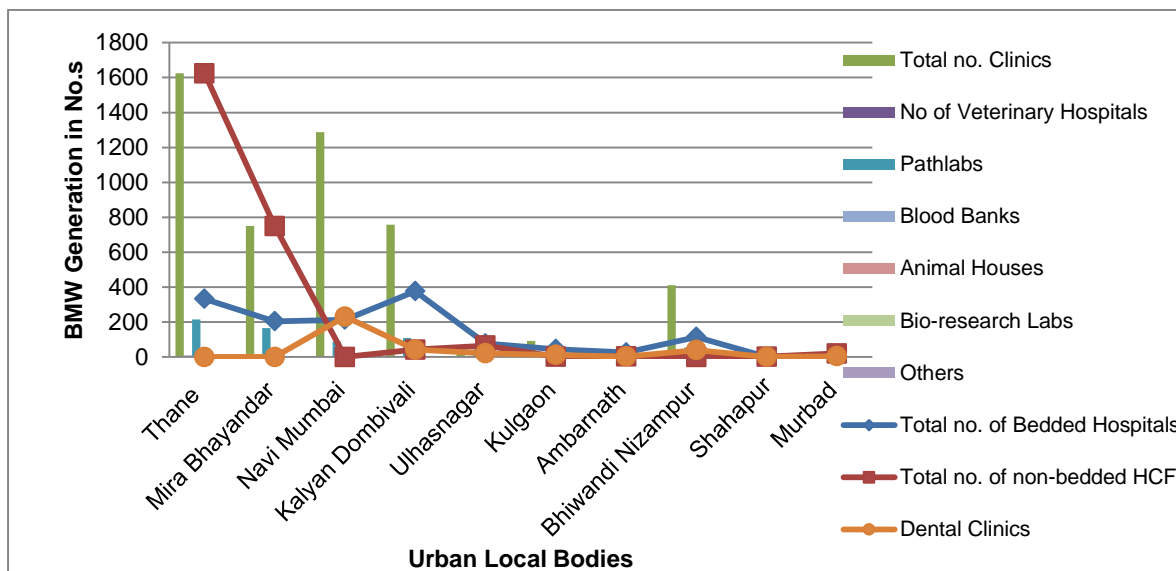


Figure 7 Details of Plastic Solid Waste Generation

Total BMW generated in Thane district is 3110kg/D for which treatment facility is provided. It can be concluded that there are about 1403 bedded hospitals in among all the 10 local bodies in Thane district whereas, 2508 nos. of non-bedded hospitals. There are in total 5003 nos. of clinics where maximum nos. are in Thane Municipal Council. Thane district do have 355 nos. of Dental Clinics in its eight Municipal councils followed by 696 Pathology laboratories including some Private. Maximum covering in TMC.

Authorization has been done for HCFs by SPCBs / PCCs for all the local bodies.

District have its Common Biomedical Waste Treatment and Disposal Facilities (CBMWTFs). Thane district doesnot have any Linkage with other CBMWTFs for disposal of Bio-medical waste.

TMC CBMWTFs requires its Modernization. District do not have its Captive Disposal Facilities of HCFs.

Some ULBs have partial Barcode tracking system installed. 1822 Kg/D BMW waste is lifted from TMC, 5000Kg/D waste is lifted from Navi-Mumbai Corporation and 650kg/D waste is

lifted from Kalyan Dombivali Municipal Corporation. While other ULBs are lifted by Third party.

In Thane District Hospitals hand over waste with proper segregation in each of its ULBs.

### **3.5 Hazardous Waste Management**

1021 Number of industry is established generating 31604.86MT/Annually out of which 4002.84MT is Incinerable 28709.31MT is of land fillable HW. One Common Treatment Storage Disposal Facility is present at MWML, Thane and all industries are members of CHWTDSF.

### **3.6 E Waste Management**

91 Collection Centres are established by ULBs and 6 are established by Producer under EPR scheme. There are 22 number of authorized E-Waste recyclers / Dismantler and 14 numbers are Authorized E-Waste collectors. Thane District has conducted 200 Awareness Campaigns whereas Producers and PROs have conducted 40 Awareness Campaigns.

### **3.7 Action Plan**

As per the above mentioned observation, it seems that almost all ULBs are handling solid waste generated as per the Municipal Solid Waste Management Rules, however there are certain issues that needs to be addressed for 100% implementation of the rules as mentioned in **Table 3**.

**Table 3 Action Plan for Solid Waste Management**

<b>Sectors</b>	<b>Gaps</b>	<b>Action Points</b>	<b>Priority</b>
<b>Domestic Solid Waste</b>			
Quantification	<ul style="list-style-type: none"> <li>▪ Methodology for solid waste quantification should be ascertained</li> <li>▪ Quantification based on Income group, culture affluence and technology to be considered</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mechanism for graded weighing system either through intermediate transfer station or at the common receiving station to be created. Usually one weigh bridge at any treatment / disposal location required</li> <li>▪ Quadrate sampling methodology to be adopted in order to reduce</li> </ul>	Immediate

Sectors	Gaps	Action Points	Priority
		quantity as well as quality	
Collection System & Transport System	<ul style="list-style-type: none"> <li>▪ Some of the places, efficiency of the collection system is not up to the mark</li> <li>▪ Almost 4343MTD of waste is not collected at door to door</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ideally most proven method of SWM is 3 Tier System with door to door, community and transfer station approach</li> <li>▪ 100% efficiency to be achieved</li> <li>▪ Intermediate</li> <li>▪ Approximately 869 Ghanta Gadi would be required</li> </ul>	Short to Mid Term
Infrastructure	<ul style="list-style-type: none"> <li>▪ Mostly composting is the main treatment methodology with about 80% coverage</li> <li>▪ MRF facility is also available but limited to few</li> <li>▪ Sanitary landfill are limited to 1 ULBs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Intermediate / Transfer station based decentralized waste treatment facility to be evaluated</li> <li>▪ Additional 20% alternative treatment such as bio-Methanation can be explored</li> </ul>	High
Plastic Waste	<ul style="list-style-type: none"> <li>▪ Lack of SOP for not only quantification but also life cycle analysis [LCA]</li> <li>▪ Limited understanding / interpretation of EPR / PRO</li> <li>▪ Only two ULBs lacking implementation of PW notification</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strengthening surveillance of life cycle assessment for type and quantity of Plastic Waste</li> <li>▪ Effective EPR Policy</li> <li>▪ Initiation of 100% compliance to PW Rules at the earliest</li> </ul>	High & Immediate
C&D Waste	<ul style="list-style-type: none"> <li>▪ ULBs need to establish C&amp;D Waste management system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Minimum 1 such facility at each of the ULB to be established</li> <li>▪ System for utilization of recovered material and processed C&amp;D waste to be effectively implemented and monitored</li> </ul>	High
Biomedical	<ul style="list-style-type: none"> <li>▪ Rooting and effective</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regular Inventorization through</li> </ul>	Very High

Sectors	Gaps	Action Points	Priority
Waste	<p>collection within 48hrs from the time of generation to be effectively handled</p> <ul style="list-style-type: none"> <li>▪ Treatment facility lacks implementation of 2016 Notification in line with CPCB audited report</li> <li>▪ Limited Inventorization</li> </ul>	<p>automatic / digital platform to be developed</p> <ul style="list-style-type: none"> <li>▪ Up-gradation of existing facility to meet 2016 CPCB norms</li> <li>▪ Additional at least 1-2 facilities to cover the of umbrella zone along with increasing burden on the existing coverage area to be planned</li> <li>▪ Collection mechanism to be strengthen with additional vehicles to cover vast area and scattered HCF [miniscule quantity ]</li> </ul>	& Immediate
Hazardous Waste	<ul style="list-style-type: none"> <li>▪ Domestic HW being mixed with solid waste posing threat</li> <li>▪ No separate handling of domestic HW</li> <li>▪ Not effective segregation at source</li> </ul>	<ul style="list-style-type: none"> <li>▪ Either decentralized 4 - 5 step segregation practices to be initiated or at least advisory for intermittent storage and collection of domestic HW to be initiated</li> <li>▪ Inventory to be initiated and maintained</li> </ul>	Very High & Immediate
E Waste	<ul style="list-style-type: none"> <li>▪ Lack of inventory</li> <li>▪ Limited understanding of E waste rule and management</li> <li>▪ Neither segregation nor separate transfer / handling facility</li> </ul>	<ul style="list-style-type: none"> <li>▪ Detailed inventory for domestic e waste under 26 different categories</li> <li>▪ Mass awareness campaign</li> <li>▪ Every ULB to have at least one E waste management centre and minimum one collection / drop centre in a radius of 25-30km</li> <li>▪ Atleast one e waste processing unit in a district</li> </ul>	Very High & Immediate

#### 4.0 Water Quality Management Plan

There are 6 Rivers in Thane district with 452km in length. With respect to the data collated about 450.7MLD of untreated /partially treated sewage flows in to the riverine length thereby [posing challenge for attaining clean water in the river.

The 18 ULBs generate about 862.5MLD of sewage with an existing capacity of 546.5MLD of STP leaving a deficit of 37%. On the other hand, most of the deficit is accounted due to lack of sewage conveyance system [Sewer Network of 1078km] which in most of the ULBs. However, it is also many a time the deficit as a representative of treatment capacity / capability. Even though MPCB has been eying to formulate policy w.r.t. reuse treated sewage as a regulation, lack of reuse conveyance system and more often than not due to the limited options of reutilization of treated sewage worsened with consistent output quality of treated sewage only leads to complicated disposal options.

Industrial effluent is much more regulated wherein 62.94MLD from 113 numbers of industry, limited to some of the ULBs are made to treat almost the entire effluent to the best possible norms as stipulated by their permits, monitored effectively and regularly with the aid of final disposal / treatment in the 6 number of CETP.

All the above needs to be combined with the effort of sensitization and awareness at all level in order to formulate and implement successful water quality management strategy though the same is limited to ULBs as of now & a detailed Issue based management action plan is provided in **Table 4**.

**Table 4 Action Plan for Water Quality Management**

Sectors	Gaps	Action Points	Priority
Water Resources	<ul style="list-style-type: none"> <li>▪ Limited information available on mapping of surface water resources in terms of quantity</li> <li>▪ Limited Inventorization of quantity, usage, availability exploitation etc.</li> <li>▪ Limited Rejuvenation / remediation of water bodies</li> <li>▪ Solid waste dumping i the river bodies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Thorough Mapping of resources to be taken up</li> <li>▪ Extensive assessment of quality to be done</li> <li>▪ Criticality indicators to be established for each water body/resource</li> <li>▪ Extend water quality monitoring network to include representativeness</li> <li>▪ Based on the criticality initiate Rejuvenation / remediation</li> </ul>	High

		<ul style="list-style-type: none"> <li>▪ Online Monitoring system for surface water bodies to be established</li> <li>▪ Protection methods to be developed for creative stoppage of dumping of solid waste in the surface water bodies</li> </ul>	
Domestic	<ul style="list-style-type: none"> <li>▪ Correlation between generation and treatment often misleading</li> <li>▪ Water budgeting exercise often missing</li> <li>▪ Computation of water footprint missing</li> <li>▪ Surveillance /Inventorization in cradle to grave approach absolutely never applied</li> <li>▪ Limited collection system and treatment facility especially in remote area</li> <li>▪ Often polluting water resources</li> <li>▪ No established reuse options / reuse network</li> </ul>	<ul style="list-style-type: none"> <li>▪ Digital Platform to accommodate water budgeting / reuse potential</li> <li>▪ Approximately 900MLD of STP needed</li> <li>▪ In situ treatment for River stretches to be developed</li> <li>▪ Strengthen the sewage collection network to cover 100% Population</li> <li>▪ Policy for reuse / recycle of treated wastewater</li> </ul>	Very high & Immediate
Industrial	<ul style="list-style-type: none"> <li>▪ Limited information of industries discharging wastewater in to the river</li> <li>▪ Performance of CETP is questionable</li> </ul>	<ul style="list-style-type: none"> <li>▪ CETP performance to be more effective in line with various orders of regulatory bodies / courts</li> <li>▪ Digital compliance methodology to be developed</li> <li>▪ Disposal system to be under constant surveillance</li> </ul>	High

## 5.0 Air Quality Management

As it is Thane district being one of the most vibrant and outgrowing areas in Maharashtra, Air quality assessment and sectoral management needs are ought to be essentially planned and executed. Both CPCB & MPCB through their NAMP & SAMP programme has set up 13 manual & 3 CAAQM stations across the district.

It seems that PM10 is Ambient Air is one of the prime reason of the concern and historically Thane has been in the centre of controversy with regards its air quality management. An exceedance factor reveals as per the monitored data that needs immediate attention as is



the case in most of the areas of India. In view of the same the priamafece of every ULB shall be to establish at least one such Ambient Air Monitoring Station and coordinate / collaborate with other monitoring organisation to provide for advisory to general public towards health associations and risk of exposure.

Inventory and policy formulation action plan is stated in **Table 5**.

**Table 5 Action Plan for Air Quality Management**

<b>Sectors</b>	<b>Gaps</b>	<b>Action Points</b>	<b>Priority</b>
Air	<ul style="list-style-type: none"> <li>▪ Most of the places PM10 seems to exceed by a factor of around 2 - 4</li> <li>▪ Limited CAAQMS to establish / corroborate inferences</li> <li>▪ Sectoral action plans not effectively established</li> </ul>	<ul style="list-style-type: none"> <li>▪ Emission inventory and source apportionment supported with dispersion and health based iterative process for science based AQM strategy to be established</li> <li>▪ Each ULB to have atleast one urban and one rural CAAQMS or three manual stations at least to include criteria pollutants with minimum one location to include parameters of 2009 CPCB notification and meteorological data including cloud cover</li> <li>▪ Fugitive emission control system for hot spot emission control to be installed</li> <li>▪ Green barriers / Photo catalyst options to be evaluated</li> <li>▪ Capacity building to be enhanced</li> </ul>	High

## **6.0 Mining Activity Management plan**

No any Mining activity is carried out in Thane District.

## **7.0 Noise Action Plan**

Other than event base monitoring and special projects related / orders monitoring, MPCB carries out annual noise monitoring at 5 locations. Noise quality reveals mainly source specific non-compliance such as traffic related in most of the kerb side analysis. Though zoning categories and regulations therein are particularly specified, in limitation of noise regulations has always been challenge to the regulatory authority. **Table 6** spells potential management plan that could be taken up on priority by each of the ULBs.

**Table 6 Action Plan for Noise Pollution Management**

<b>Sectors</b>	<b>Gaps</b>	<b>Action Points</b>	<b>Priority</b>
Noise	<ul style="list-style-type: none"> <li>▪ Most of the source related noise areas show exposure beyond compliance</li> <li>▪ Excessive exposure during noise generating potential events/ festivals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Noise mapping to be carried out for zonation purposes</li> <li>▪ At source control using physical or natural attenuation methods to be adopted</li> <li>▪ In the path noise control methodologies using noise absorbers creating zone of inhibition / silence zone to be done</li> <li>▪ End of the pipe measures such as PEs acoustic enclosures etc. to be adopted</li> <li>▪ Event based noise control policy to be effectively implemented</li> </ul>	High

## 8.0 Conclusion

There seems to be vast data gaps and a detailed exercise to collate and validate data gathered through this process needs to be urgently taken up in addition to the adopting a holistic & inclusive consultative process of gathering information, collating & converging it in order to be able to device strategies of future. Also, it is equally important that projection for at least next 20 years be done in order to evaluate management plans for futuristic view to meet the objective of such vast exercise. Digital data availability needs to be one of the prime tasks of government & methods of its validation be created with scope for improvement in near future. The practise needs to be a continual one to be updated regularly in order to monitor progress and effectiveness of this process & shall be linked with financial allocations being designed to be promoted by government of the day. With regards to action plans, the priorities shall be aligned based on sustainability objectives.