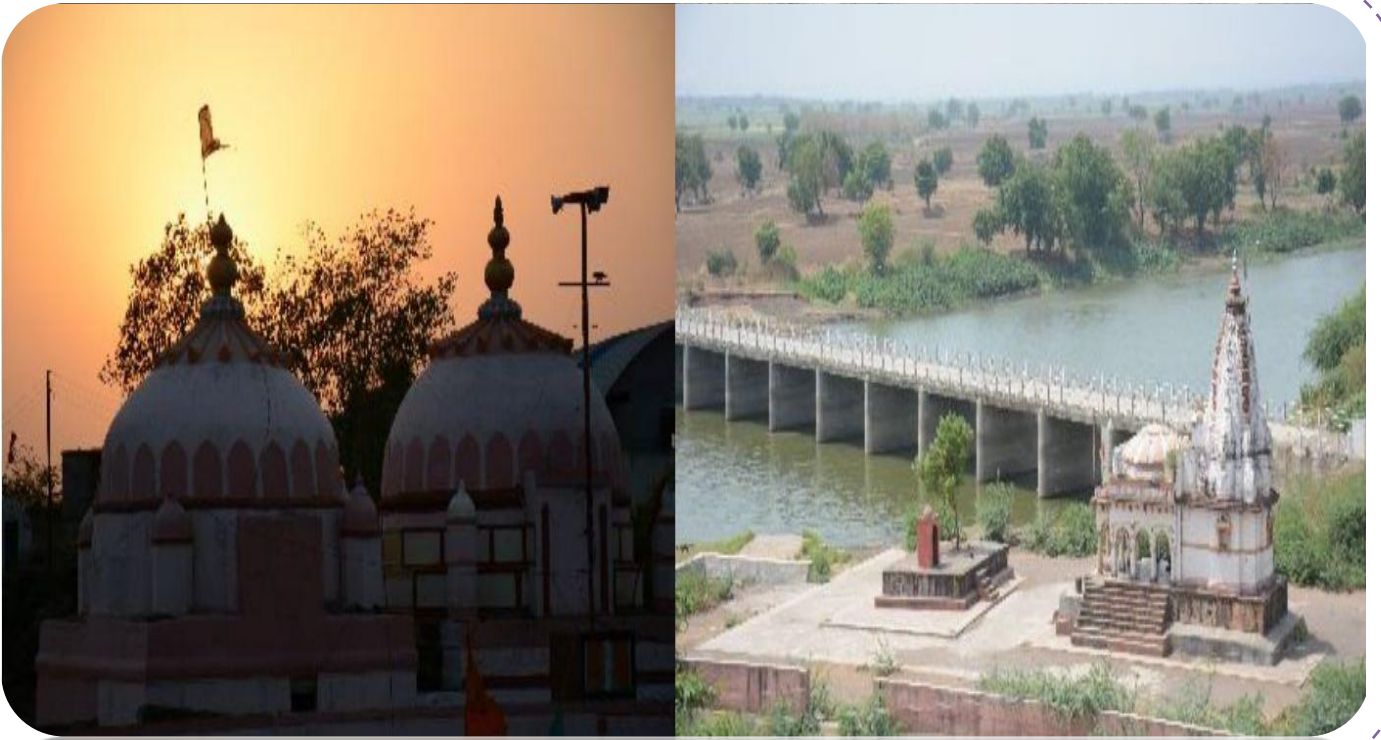


District Environment Plan



Prepared By



Environment Department, Government of Maharashtra



Maharashtra Pollution Control Board

Nandurbar

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 and as per the model DEP prepared by CPCB, Environment Action plan for the district is prepared.

2.0 Introduction

Nandurbar is a city and a municipal council in Nandurbar district in the Indian state of Maharashtra. Nandurbar Municipal Corporation is the first municipal corporation. Nandurbar is an administrative district in the northwest corner of (Khandesh region) of Maharashtra. On 1 July 1998 Dhule was bifurcated as two separate districts now known as Dhule and Nandurbar

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

Table 1 Nandurbar District Profile

Description	Details
Average Climate	Summer: 22°C To 41°C. Winter :8°C TO 25°C. Rainfall: 767 mm.
Geographical Location	It lies between 21.37° North Latitude and 74.25° East Longitude. It has an average elevation of 210 metres (688 feet). It has mainly hilly region and have 'Toranmal' which is 2nd hill station after Matheran in Maharashtra.
Area	307713 Sq. km.
Boundaries	Nandurbar district has two border boundaries. Gujarat is on the northwestern border of the state, while on the northeast border of the state of Madhya Pradesh
Languages Spoken	Marathi, Hindi, English are major languages but all Indian languages are spoken
Population	Total: 1,648,295; Male: 833,170 Female: 815,125 [According to 2011 Census Report]
Population Density	277 Per Sq. km.
Literacy Rate	64.38
Rivers	Narmada
Municipal Corporations	1 Numbers 1. Shahada Municipal Corporation
Sub districts	3 Numbers

Description	Details
Villages	943 Numbers
Statutory Towns	4 Numbers
Tahsils	6 Numbers Akkalkuwa, Akrani, Talode, Shahade, Nandurbar and Nawapur
Pin code	425412

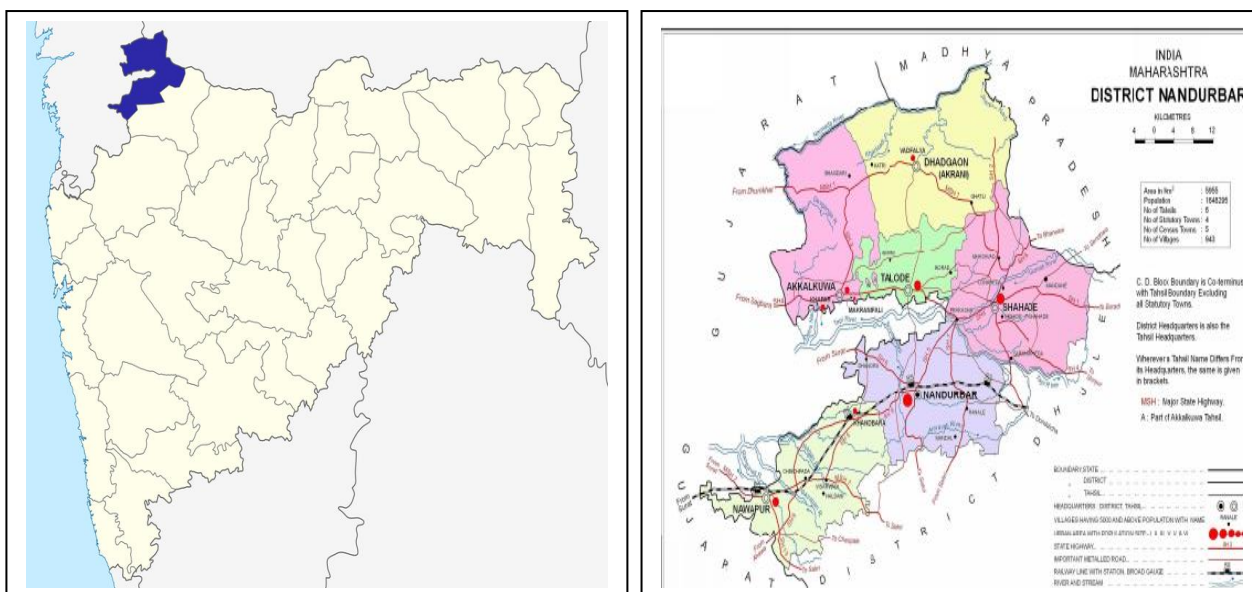


Figure 1 Location of Nandurbar District

3.0 Waste Management Plan

Solid waste management is among the basic essential services provided by municipal authorities in the country to keep cities clean. 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 5 Urban Local Bodies [ULBs] in the district. **Table 2** represents the list of ULBs along with population.

Table 2 Name of ULBs with Population

Sr. No.	Urban Local Bodies	Population
1.	Nandurbar Municipal Council	111,037
2.	Shahada Municipal Council, Shahada	111,037
3.	Navapur Municipal Council	61,376
4.	Taloda Municipal Council	34,212
5.	Nagar Panchayat Dhadgaon-Wadfhalya-Roshmal BK	26,363

3.1 Domestic Solid Waste Management Plan

There are total 5 ULBs with 68 Wards in the district. Details of Domestic Solid Waste including Dry & Wet waste of each ULBs is given in the **Figure 2** whereas **Figure 3** represent details of Other Types of Waste for ease of understanding. Overall domestic solid

waste generation from the district is 60.6MTD out of which 27.65MTD is Dry Waste and 29.9MTD is Wet waste.

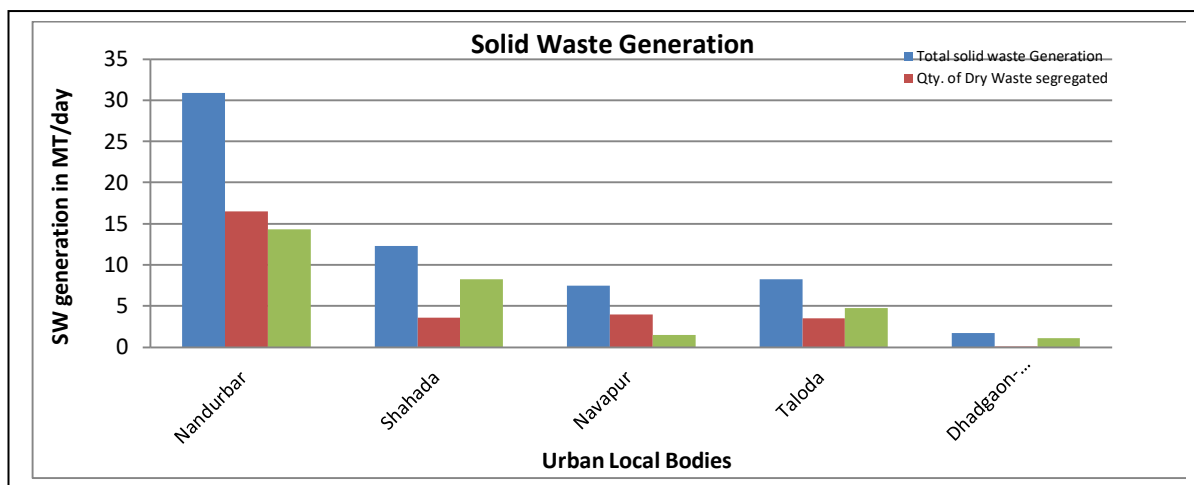


Figure 2 Details of Domestic Solid Waste Generation

Nandurbar city generates maximum quantity i.e. 30.9MTD out of which dry waste is of 16.5MTD and wet waste is 14.3MTD. Dhadgaon- Wadfhalya - Roshmal BK Nagar Panchayat generates lowest quantity i.e. 1.7MTD with dry and wet waste of 0.08MTD and 1.07MTD respectively. 1Bulk Waste Generator with 1 number of onsite treatment facility.

Quantification of Other types of waste is presented as below;

- A] **Street Sweeping Waste:** Total generation of Street Sweeping Waste is 0.88MTD.
- B] **Drain Silt Waste:** Overall quantity of Drain Silt Waste is 3.4MTD.
- C] **Domestic Hazardous Waste (DHW):** Domestic HW generation of districts seems very low with total quantity of 0.07MTD.
- D] **Other Waste (Horticulture, sanitary waste, etc.):** Total Quantity of Horticulture, Sanitary and other waste is 0.09MTD.

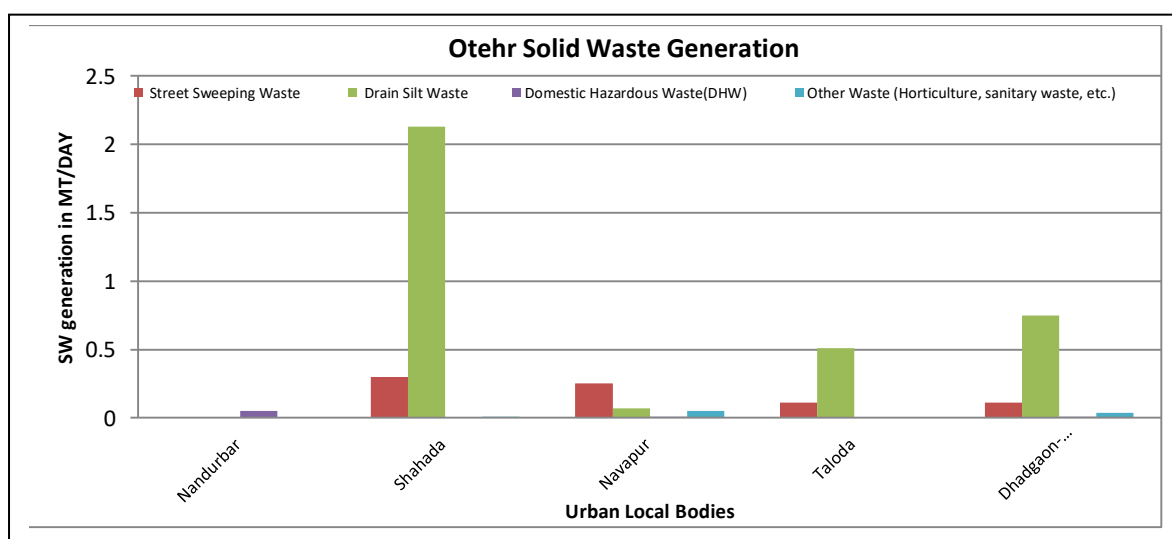


Figure 3 Details of Other Waste Generation

3.1.2 Adequacy of Infrastructure

Door to door collection system has implemented 100% in all ULBs. There are 5 numbers of old dump sites with total stored material of 48,2116MT. Reclamation of old dump sites have initiated by all ULBs. Details of treatment facilities provided across the district is presented in **Figure 4**.

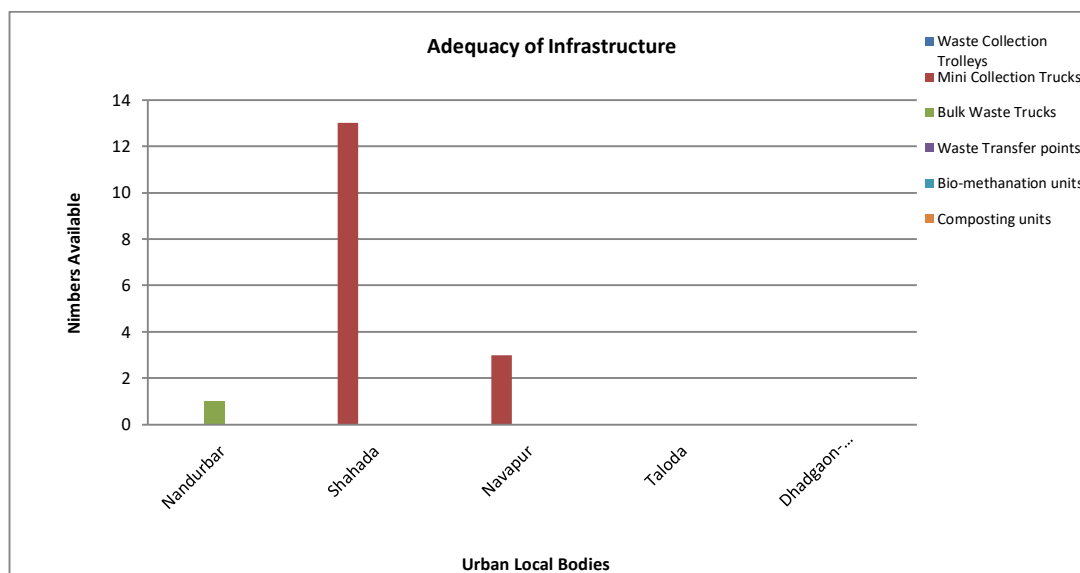


Figure 4 Adequacy of Solid Waste Infrastructure

It is observed that only 2 ULBs have provided mini collection trucks for collection and transportation of solid waste. 2 Sanitary Landfill sites are available with capacity of 75MT. However all ULBs have provision of Composting units [1 for each] but there is no provision of Bio-Methanation plant. Most of the wet waste is treated through composting. District authorities has implemented Solid Waste Management Rules in all the ULBs.

3.2 C&D Waste Management Plan

District generates 0.88MTD of C&D Waste out of which 035MT is generated by Taloda Municipal Council alone. All ULBs excluding Navapur Municipal Council have identified Deposition Points for deposition of C&D waste however till date, no facility is installed for recycling of C&D waste.

3.3 Plastic Waste Management

Overall Plastic waste generated in district is 0.56MTD. Nandurbar Municipal Council generates maximum waste i.e. 0.511MTD. There are no Collection Centre across the district. However there are 26 authorized Plastic Waste Pickers and. Plastic Pyrolysis is done by two ULB with total quantity of 2MT. Plastic is use in road making but quantity is not mentioned. ULBs have established linkage with 3 NGOs. PW Management Rules, 2016 is implemented in all the 5 ULBs. However no information is available related to programme conducted for mass awareness of public regarding plastic waste.

3.4 Biomedical Waste Management

There are total 475 Health Care Facilities including bedded, non bedded hospitals, Veterinary hospitals, Pathology Labs, Clinics and Blood banks etc. Authorization is taken by 25 HCFs i.e. only by bedded hospital. Total BMW generation from all HCFs are 553kg/day. There is no Common Facility and Captive Disposal Facilities are available in the district. It seems that 78% pre segregation of waste is being done. Details of HCFs are mentioned in **Figure 5**.

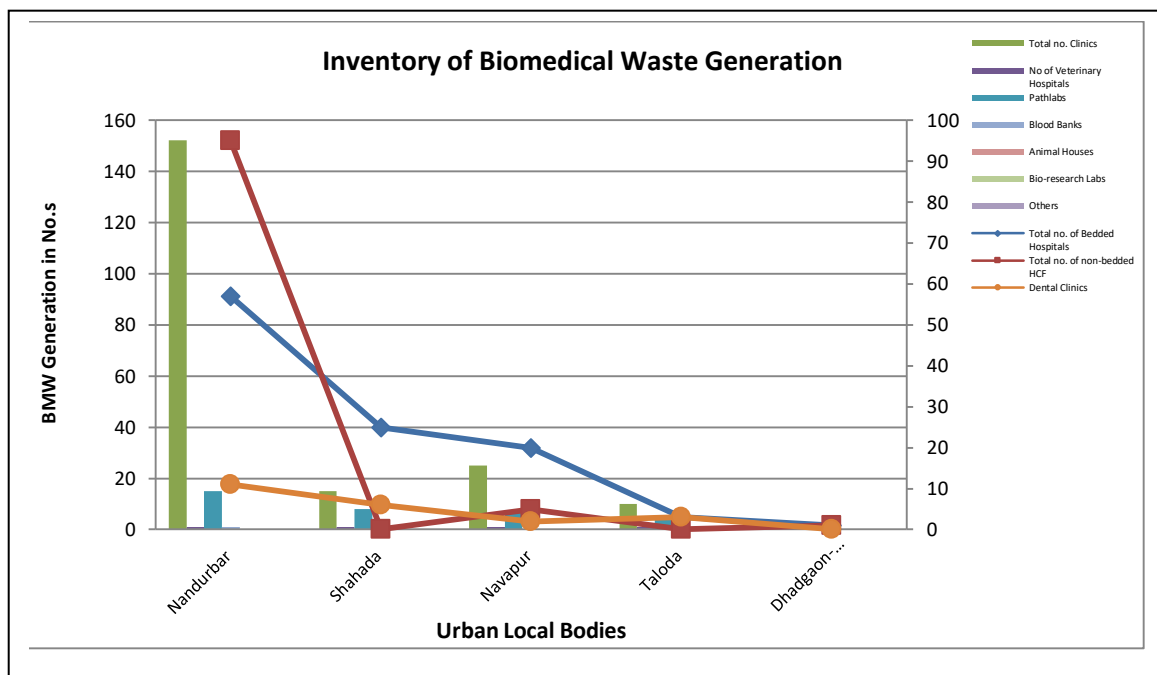


Figure 5 Inventory of BMW Generating Units

3.5 Hazardous Waste Management

There are 13 industries which generates Hazardous Waste to the tune of 1,727.12 MT/Annually. Out of which 1,079.55 MT is sent for incineration, 597.1MT is sent for land filling and 50.47MT is processed for recovery of recyclable/realizable materials. All units have taken authorization and all are members of Common HW Facility. There is No Common Hazardous Waste TSDF within the district hence all generated HW is sent to the other facility present within the State.

3.6 E Waste Management

According to the E Waste Rules, 4 ULBs out of 5 has established Collection Centres under EPR scheme. There are 2 authorized E-Waste recyclers / Dismantler.

3.7 Action Plan

As per the above data it is observed almost all ULBs are handling & disposing generated solid waste as per the Solid Waste Management Rules, however certain practices needs to be strengthen and can be improved by adopting precise and excitable action plan as mentioned in **Table 3**.

Table 3 Action Plan for Solid Waste Management

Sectors	Gaps	Action Points	Priority
Domestic Solid Waste			
Quantification	<ul style="list-style-type: none"> ▪ Methodology for solid waste quantification should be ascertained ▪ Quantification based on Income group, culture affluence and technology to be considered 	<ul style="list-style-type: none"> ▪ 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 ▪ Quadrate sampling methodology to be adopted in order to reduce quantity as well as quality 	Immediate
Collection, handling & Transport System	<ul style="list-style-type: none"> ▪ Some of the places, efficiency of the collection system is not up to the mark ▪ Waste Collection Trolley is not available in any of the ULBs ▪ Out of 5 ULBs, Mini Collection Truck is available at only 2 ULBs ▪ No provision of Bulk Truck ▪ No Waste transfer points 	<ul style="list-style-type: none"> ▪ Ideally most proven method of SWM is 3 Tier System with door to door, community and transfer station approach ▪ At least 10 Collection Trolley are required [2 for each ULBs] ▪ Need to procure additional 3 Mini Collection Truck ▪ About 5 Bulk Trucks shall required ▪ At least one waste transfer point should be identified 	Short to Mid Term
Infrastructure	<ul style="list-style-type: none"> ▪ Mostly composting is the main treatment methodology with about 95% coverage ▪ No provision of Bio-Methanation though there are 2 composting units ▪ Sanitary landfill is not installed 3ULBs ▪ Bio - Methanation unit is not installed though major treatment of wet is through composting ▪ No RDF Facility installed in entire district 	<ul style="list-style-type: none"> ▪ Intermediate / Transfer station based decentralized waste treatment facility to be evaluated ▪ Existing 2 composting unit need to augment with Bio-Methanation provision and additionally 3 composting plant required for rest of 3 ULBs ▪ Need to install additionally 3 SLF ▪ Option for RDF can be explored for each ULB 	High
Plastic Waste	<ul style="list-style-type: none"> ▪ Lack of SOP for not only quantification but also life cycle analysis [LCA] ▪ Limited understanding / interpretation of EPR / PRO 	<ul style="list-style-type: none"> ▪ Strengthening surveillance of life cycle assessment for type and quantity of Plastic Waste ▪ Effective EPR Policy ▪ Initiation of 100% compliance to PW Rules at the earliest ▪ Mass awareness through ULBs 	High & Immediate

Sectors	Gaps	Action Points	Priority
	<ul style="list-style-type: none"> ▪ Involvement of PROs is lacking ▪ At source, segregation is done only 86% 	<ul style="list-style-type: none"> ▪ Need to involve PROs ▪ Need to strengthen the at source segregation to achieve 100% segregation 	
C&D Waste	<ul style="list-style-type: none"> ▪ No facility for C&D Waste Recycling Plant 	<ul style="list-style-type: none"> ▪ Minimum 1 such facility at each of the ULB to be established ▪ System for utilization of recovered material and processed C&D waste to be effectively implemented and monitored 	High
Biomedical Waste	<ul style="list-style-type: none"> ▪ Rooting and effective collection within 48hrs from the time of generation to be effectively handled ▪ Treatment facility lacks implementation of 2016 Notification in line with CPCB audited report ▪ Limited Inventorization ▪ Zero Compliance w.r.t. provision of barcode ▪ Pre-segregation is of BMW is 78% ▪ Linkage with CBMWTFs is only 60% 	<ul style="list-style-type: none"> ▪ Regular Inventorization through automatic / digital platform to be developed ▪ Up-gradation of existing facility to meet 2016 CPCB norms ▪ Additional at least 1 facility to cover the of umbrella zone along with increasing burden on the existing coverage area to be planned ▪ Collection mechanism to be strengthen with additional vehicles to cover vast area and scattered HCF [miniscule quantity] ▪ Process of Monitoring and review of onsite handling of BMW handling should be stringent and digital surveillance measures can be adopted to achieve 100% compliance ▪ Closure direction along with imposing environmental compensation should be initiated immediately in case of non compliance 	Very High & Immediate
Hazardous Waste	<ul style="list-style-type: none"> ▪ Domestic HW being mixed with solid waste posing threat ▪ No separate handling of domestic HW ▪ Not effective segregation of DHW at source 	<ul style="list-style-type: none"> ▪ 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 ▪ Inventory to be initiated and maintained 	Very High & Immediate

Sectors	Gaps	Action Points	Priority
E Waste	<ul style="list-style-type: none"> ▪ Lack of inventory ▪ Limited understanding of E waste rule and management ▪ Neither segregation nor separate transfer / handling facility ▪ No Awareness programme conducted by ULBs & PROs 	<ul style="list-style-type: none"> ▪ Detailed inventory for domestic e waste under 26 different categories ▪ Mass awareness campaign ▪ Every ULB to have at least one E waste management centre and minimum one collection / drop centre in a radius of 25-30km ▪ Atleast one e waste processing unit in a district 	Very High & Immediate
Noise	<ul style="list-style-type: none"> ▪ Most of the source related noise areas show exposure beyond compliance ▪ Excessive exposure during noise generating potential events/ festivals 	<ul style="list-style-type: none"> ▪ Noise mapping to be carried out for zonation purposes ▪ At source control using physical or natural attenuation methods to be adopted ▪ In the path noise control methodologies using noise absorbers creating zone of inhibition / silence zone to be done ▪ End of the pipe measures such as PEs acoustic enclosures etc. to be adopted ▪ Event based noise control policy to be effectively implemented 	High

4.0 Water Quality Management Plan

There are 5 notified Rivers flows within the district with 9.94km in length and 8 drain / nalla are identified meeting the river. Total number of bore-well are 102 with permission from CWGA for withdrawing water. Water quality of the region is monitored through water sampling and analysis for multiple parameters throughout the years and also represented digitally in form of WQI on various platform.

Overall 79MLD sewage is generated from 5ULBs and there is no STP installed for treatment of the same. 100% of sewage i.e. 79MLD is left untreated which is a serious threat to the water resources and immediate requirement of at least 80MLD STP to treat the entire generated sewage of the district and prevent river pollution.

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. 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"> ▪ Limited information available on mapping of surface water resources in terms of quantity ▪ Limited Inventorization of quantity, usage, availability exploitation etc. 	<ul style="list-style-type: none"> ▪ Thorough Mapping of resources to be taken up ▪ Extensive assessment of quality to be done ▪ Criticality indicators to be established for each water 	High

Sectors	Gaps	Action Points	Priority
	<ul style="list-style-type: none"> ▪ Limited Rejuvenation / remediation of water bodies ▪ Solid waste dumping i the river bodies 	<ul style="list-style-type: none"> body/resource ▪ Extend water quality monitoring network to include representativeness ▪ Based on the criticality initiate Rejuvenation / remediation ▪ Online Monitoring system for surface water bodies to be established ▪ Protection methods to be developed for creative stoppage of dumping of solid waste in the surface water bodies 	
Domestic	<ul style="list-style-type: none"> ▪ Correlation between generation and treatment often misleading ▪ Water budgeting exercise often missing ▪ Computation of water footprint missing ▪ here is no STP installed within the district and entire sewage is being discharged in to the river without treatment ▪ Surveillance /Inventorization in cradle to grave approach absolutely never applied ▪ Limited collection system and treatment facility especially in remote area ▪ Often polluting water resources ▪ No established reuse options / reuse network 	<ul style="list-style-type: none"> ▪ Digital Platform to accommodate water budgeting / reuse potential ▪ Approximately 80MLD of STP needed ▪ In situ treatment for 196km stretches of Rivers to be developed ▪ Need to construct sewage collection network to cover 100% Population ▪ Policy for reuse / recycle of treated wastewater 	Very high & Immediate
Industrial	<ul style="list-style-type: none"> ▪ Performance of CETP is questionable 	<ul style="list-style-type: none"> ▪ Need to explore option for provision of at least one CETP within the district ▪ Digital compliance methodology to be developed ▪ Disposal system to be under constant surveillance 	High

5.0 Air Quality Management

Both CPCB & MPCB through their NAMP & SAMP programe has set up 8 monitoring station in Nashik region. Out of which 7 comes under NAMP and 1 comes under CAAQM. Air quality details of Nandurbar district is taken from the Nashik Region based on the Regional Offices / Areas declared by the MPCB and as Nandurbar city comes under Nashik region.

From the **Figure 6** it seems that PM₁₀ concentration is above the standard limits at almost all monitored locations. An exceedance factor 1.6 is observed for PM₁₀ that needs immediate

attention. Whereas in case of SO₂ & NO_x, it is within the permissible limit of NAAQS. In view of the same the primafacea of every ULB shall be to establish at least 1 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.

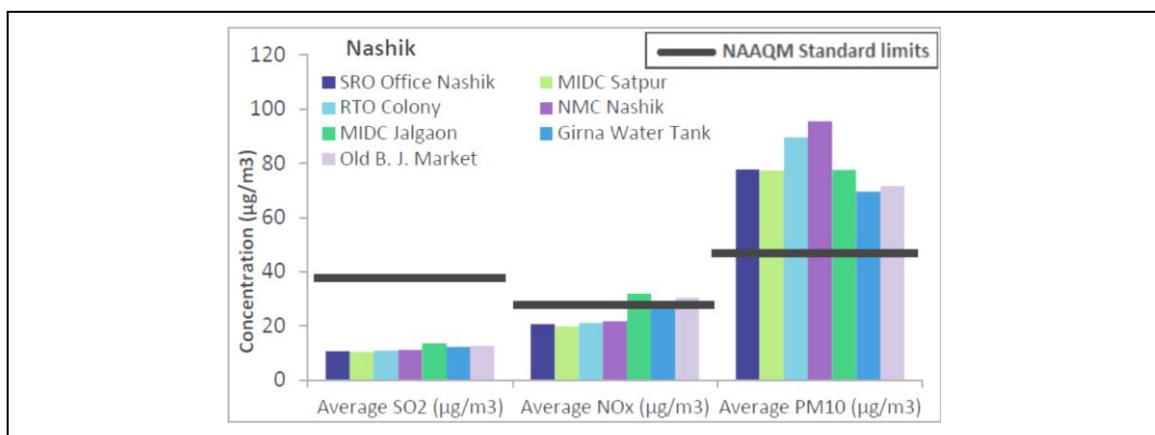


Figure 6 Details of Air Quality

Gap identified and action plan to be adopted with its priority for air quality of the district is presented in **Table 5**.

Table 5 Action Plan for Air Quality Management

Sectors	Gaps	Action Points	Priority
Air	<ul style="list-style-type: none"> ▪ Most of the places PM₁₀ seems to exceed by a factor of 1.6 ▪ Limited CAAQMS to establish / corroborate inferences ▪ Sectoral action plans not effectively established ▪ No details / inventory of coverage of vehicle pollution check centres across the ULBs ▪ No provision for dust suppression vehicles 	<ul style="list-style-type: none"> ▪ Emission inventory and source apportionment supported with dispersion and health based iterative process for science based AQM strategy to be established ▪ 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 ▪ Fugitive emission control system for hot spot emission control to be installed ▪ Action against industries violating air emission norms under Polluter Pay Principle ▪ Installation of at least one vehicle pollution check centre to meet 100% coverage ▪ Provision of atleast one dust suppression vehicles per ULB ▪ Green barriers / Photo catalyst options to be evaluated 	High

Sectors	Gaps	Action Points	Priority
		▪ Capacity building to be enhanced	

6.0 Mining Activity Management plan

No data is estimated on mining activity for Nandurbar District.

7.0 Noise Action Plan

Other than event base monitoring and special projects related / orders monitoring, MPCB carries out annual noise monitoring at few 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. Monitoring results spells potential management plan that could be taken up on priority by each of the ULBs. There is no complaint received in last one year related to the noise pollution.

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.