

ANNUAL REPORT 2019-2020

SAVE ENVIRONMENT



GO GREEN



**MAHARASHTRA
POLLUTION
CONTROL BOARD**

FOREWORD

Nature has both fundamental value in and out of itself and an instrumental value as the environmental infrastructure which sustains our community and strengthens economy. Thereby, the state of the environment has a profound effect on quality of life and the health of our economy. Reporting on the state of the environment helps us re-evaluate environmental conditions in our state, to identify emerging issues and to take effective action for the environment and ourselves.



It gives me pleasure to present herewith Annual Report of FY 2019-2020 publishing latest happenings of MPCB, who is constantly thriving for sharing information through several means. Our priority is to sensitize each & every concerned associated with activities of MPCB directly or indirectly. This report is a tool for providing wider information on activities carried out and services provided by the Board. In this report, the Board presents information on the status and condition of environmental resources, the associated environmental trends and implications for the environment and other related efforts. In this report, to evaluate the status of environment; the most up-to-date information from a range of data collected through various real-time monitoring stations and sampling is used. Further, every evaluation and assessment completed during a reporting period includes a summary of its findings and conclusion. This report also includes the challenges we have overcome by implementing various action plans, notes the issues we are still working on, and explores emerging challenges.

With a view to have ready information on the activities of Maharashtra Pollution Control Board, an attempt is made to present the relevant and latest statistics about key indicators and parameters e.g. Industries covered under the purview of the environmental legislations, Grant of Consent, Authorization issued under Bio-Medical Waste (Mgmt. and Handling) Rules, 1998 & Municipal Solid Waste (M & H) Rules, 2000, Legal Actions initiated against defaulters, Public Complaints, Central Action Plan, Industrial pollution load, CETP Status, Performance of Regional Offices, Central & Regional Laboratories, environmental Water & Air quality, Organization, Staff Strength etc. Further new developments by the Board during the reporting year are also briefly explained in the report.

*Shri. E. Ravendiran (IAS),
Member Secretary,
Maharashtra Pollution Control Board*



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1 INTRODUCTION

Maharashtra Pollution Control Board (MPCB) was established on 7th September 1970 under the provisions of Maharashtra Water (Prevention and control of Pollution) Act, 1969. The Water (P & C. P) Act, 1974 was adopted in Maharashtra on 1st June 1981 and accordingly Maharashtra Pollution Control Board was formed under the provisions of Section 4 of Water (P & CP) Act, 1974. The Air (P & CP) Act 1981 was adopted in Maharashtra in 1983 and initially some areas were declared as Air Pollution Control Areas on 2nd May 1983. The entire state of Maharashtra has been declared as Air Pollution Control Area since 6th November 1996. The Board also functions as the State Board under Section 5 of the Air (P & CP) Act, 1981.

The MPCB implements various environmental legislations in the State of Maharashtra, including the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and some of the provisions under Environmental (Protection) Act, 1986 and Rules framed there under, from time to time, such as, Bio-Medical Waste Management Rules, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, Solid Waste Management Rules etc. MPCB implements these environmental legislations via its 12 Regional Offices (ROs) in the State and functions under the administrative control of Environment Department, Government of Maharashtra. The Organizational structure of the Board and information of Regional and Sub-Regional offices and staff strength are provided in **Annexures 1A, 1B and 2**.

To deal with depletion of natural resource and environmental degradation, prudent environmental management is necessary. Since environmental problems are diverse, their solutions must be Region-specific. Preparation of Annual Reports is a mandatory requirement, aimed at producing an informative account of the environmental conditions and the action plan to achieve sustainable growth. MPCB has established twelve Regional offices and forty-three Sub-Regional offices across the State to implement various provisions in the acts and rules to safeguard the natural environment and curb pollution with necessary control measures.

The Board has strengthened its monitoring network further for assessing ambient air and water quality. Data on ambient air quality is compiled under the National Ambient Air Monitoring Program (NAMP). Similarly, data on water quality of surface water and groundwater is monitored under the State Water Quality Monitoring Program (SWMP). All related data is compiled and updated regularly on the MPCB website. During festivals, noise levels are



monitored regularly and the data duly analysed is updated on the website to make information available to the public. Efforts are also being made to create awareness to celebrate all festivals in an eco-friendly manner.

To maintain transparency and increase its overall efficiency, the Board, through Integrated Management Information System (IMIS), has computerized its processes and operations. This system includes Consent Management, Laboratory Management, Waste Management, Human Resource and Financial Management. This information is used to determine if pollution control strategies as adopted by implementing authority are giving desirable results and are thereby lowering pollution levels and if new or additional controls are required to achieve desirable levels. The Board has introduced a system for disposal for consent and authorization applications made by industries and other projects under environment protection legislations, in shortest possible time. These steps taken by MPCB have been widely appreciated by industries and developers as the status of their applications can now be easily tracked. Information related to consents and authorizations granted by the Board is also updated on the website in a timely manner.

In the State of Maharashtra there are a total of 262 local bodies, comprising of 27 Municipal Corporations out of which 24 Corporations have obtained authorization from MPCB for Solid Waste Management sites. 11 Municipal Corporations have processing and disposal facilities for solid waste. 62 Municipal Councils have partial processing and disposal facilities.

As a part of Common Infrastructure for Environment Protection, facilities have been established across the State for providing common facilities for treatment and disposal of Hazardous and Bio-Medical Waste. Common Effluent treatment plants are also provided in industrial areas. Common facilities for management of Hazardous Waste have been set up at Taloja, Mahape, Ranjangaon and Butibori. The Board also encourages local bodies to treat and dispose Municipal Solid Waste (MSW) in a scientific and legalized manner. The Board also motivates industries to adopt measures and cleaner technologies for controlling pollution.

For creating general awareness among the people regarding environmental issues, the Board constantly endeavours to conduct various awareness programs involving press, media, NGOs, artists and students throughout the State. As a part of environmental campaigns, street plays are also organized through NGOs, at schools, colleges, and public spaces such as railway stations and these are widely appreciated by the public.



2 CONSTITUTION OF THE BOARD

The Maharashtra Pollution Control Board comprises of Chairman, Members from the categories as shown below and a full time Member Secretary, as Chief Executive Officer as per the Rules under Water (P&CP) Act, 1974 notified by the State Government in 1983.

The composition of the Board is as under:

1. **Chairman:** (Part time or fulltime)
2. **Representatives of the State Government** (not exceeding five)
3. **Representatives of local bodies** (not exceeding five)
4. **Representatives of companies or corporations of the State Government**(two)
5. **Members representing interests of agriculture, fishery or industry or trade etc. (Not Exceeding three)**
6. **Member Secretary (fulltime)**

Government of Maharashtra has powers under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 to constitute State Pollution Control Board (MPCB).

Table 1.0 Constitution of M.P.C. Board during 2019 – 20.

Shri. Sudhir Shrivastava, Retired IAS	Chairman
Principal Secretary, Environment Department, Government of Maharashtra	Member
Additional Chief Secretary Public Health Dept. Government of Maharashtra, Mantralaya, Mumbai	Member
Principal Secretary-II Urban Development Dept., Government of Maharashtra, Mumbai	Member
Principal Secretary Water Supply and Sanitation, Government of Maharashtra, Mantralaya, Mumbai	Member
Secretary Home (Transport) Dept., Government of Maharashtra, Mantralaya, Mumbai	Member
Chief Executive Officer MIDC, Mahakali Caves Road, Andheri (E), Mumbai	Member
Member Secretary (Technical) Maharashtra Jeevan Pradhikaran, Express Towers, Nariman Point, Mumbai	Member
Mr. E. Ravendiran, Member Secretary, MPCB, Mumbai.	Member Secretary



3 MEETINGS OF THE BOARD

1.0 During the reporting year, the 172nd meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below.

A. Installation of Solar panel system to Boards offices for energy generation

Considering the unique importance of generating electricity from new and renewable sources of energy, the Central Government has announced to increase the generation capacity of 175GW by 2022 in the country through such energy sources. This includes 100 GW solar power generations. In this context, the country and states have to undertake electricity generation programs from new and renewable energy sources.

Board discussed in detail and accords its approval to establish Solar Power Station on the roofs of the Headquarter building. Board has authorized the Chairman / Member Secretary to approve the expenditure incurred for setting solar power generation unit to produce energy in the Board's existing and future office and residential buildings as well as laboratory buildings.

➤ **Current status:**

The Board has appointed consultant & architect for selection of solar panels and the same will be installed depending on the feasibility.

2.0 During the reporting year, the 173rd meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below.

A. Performance Audit of Common Hazardous Waste Treatment Storage and Disposal Facility

Board discussed in detail and resolved to accord approval for Performance Evaluation, Audit and monitoring of the Common Hazardous Waste Treatment Storage and Disposal facilities including common Hazardous Waste Incinerators of all four facilities through reputed institute like IIT or NEERI etc. and Board accords approval for activity cost Approx. Rs. 80 Lacks (Approx. 20 Lacks per facility). Member Secretary is authorized to take further course of action.

➤ **Current status:**

Work has been allotted to national institute CSIR-NEERI and the audit has been initiated at all 4 facilities in the State.



B. To conduct the project “Ambient Air Quality Monitoring using Unmanned Aerial Vehicle (UAV) for Maharashtra Pollution Control Board (MPCB)”

Board discussed in detail and resolved to accord approval to the project of “Ambient Air Quality Monitoring using Unmanned Aerial Vehicle (UAV) for at least one Identified Location at the cost of **Rs. 15 Lacks (Fifteen Lacks only)** and applicable GST extra payable by the Board. Member Secretary is authorized to take further course of action.

➤ **Current status:**

Location is identified and ambient air quality is monitored using, Unmanned Aerial Vehicle (UAV) are used to monitor Ambient Air Quality at line sources having very high vehicular moment as identified at 5 routes in Mumbai at peak period and analysis report is prepared.

C. Policy /guidelines for use of Pet Coke and furnace oil for industries who do not have control measures.

In exercise of the powers conferred under of sub-section (2) of section 54 of the (Prevention & Control of Pollution) Act, 1981, the Government of Maharashtra, has formulated the policy for use of pet coke and furnace oil as fuel for industries who do not have pollution control measures. Such units are allowed with a condition that these units shall install the system for 90% recovery of SO₂ emission and unit shall install continuous monitoring system. As per the timeline provided in the policy all units must comply the conditions of policy or they should shift to alternate / cleaner fuel by modifying the technology. In case of non-compliance, the unit shall be closed without any notice after allowing the time as per Table IV of the draft policy.

3.0 During the reporting year, the 174th meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below;

A. Financial provisions for cost towards lifting, transportation, treatment and disposal of illegally dumped hazardous waste.

Board discussed in detail and accorded approval to pay the charges to CHWTSDf in case when the defaulter industries are not identified and / or matter is under investigation. The Board has made a policy decision that board may pay the charges towards collection, transportation, treatment, and disposal of hazardous waste. Further, Authority shall take decision on case-to-case basis.



B. Proposal for Charging Infrastructure in non-attainment cities

Board discussed in detail and accorded approval for 'Deployment of charging infrastructure in non-attainment cities namely, Pune, Nagpur under NCAP'. Also, setup charging infrastructure at Lonavala and Taloja for passenger vehicles with the support of Home (Transport) Department, GoM. Member Secretary (MPCB) is authorized to take further course of actions in the matter.

➤ **Current status:**

Prefeasibility study is in process for Deployment of charging infrastructure in non-attainment cities namely, Pune, Nagpur under NCAP'.

C. Proposal for deployment of micro-mobility solutions in non-attainment cities

Board discussed in detail and accorded approval for 'Deployment of e-2W in non-attainment cities (Pune and Nagpur) under NCAP' subject to outcome of feasibility study from Ernst & Young Global Limited. Member Secretary is authorized to take further course of actions in the matter.

➤ **Current status:**

Feasibility study is in process for deployment of e-2W in non-attainment cities (Pune and Nagpur) under NCAP.

D. Strengthening of Ambient Air Quality Monitoring network through National Air Monitoring Program (NAMP) and State air Monitoring Program (SAMP)

Board discussed in detail and suggested to continue engagement of educational institutes/ Municipal Council/ Municipal Corporation for Manual Ambient Air Quality monitoring program (through NAMP/SAMP) of 126 locations. It is also approved the approximate capital cost of Rs. 11.72 Cores (approximately) + O & M Cost will be around Rs.4.42 crores per year which can be met from Boards fund. Member Secretary is authorized to take further action in the matter.

E. To provide financial assistance for setting up common facility for treatment and disposal of High COD and high TDS stream in the Industrial Estates

Board discussed in detail and accorded approval along with a policy decision to provide 10% of financial assistance to the CETPs/ Industrial clusters/ Group of industries outside MIDC area in Maharashtra subject to submission of the proposal from CETP association/ MIDC /



industries associations for setting up common facility viz. MEE or other proven technology for treatment and disposal of High COD & high TDS stream in the Industrial Estates. It was also decided that MIDC is ready to provide financial assistance up to 55% and industrial associations/ industries shall contribute 25%. The said facility shall cater need of industries at various places.

F. To provide financial assistance for up gradation of sewage Treatment plants of Local Bodies to treat the sewage effluent up to the Drinking Water standards

Board discussed in detail and accorded approval to provide 100% financial assistance for up gradation of one existing Sewage Treatment Plant (STP) to improve the treated effluent quality up to drinking water standards. One Pilot project in Maharashtra may be taken for the same.

➤ **Current status:**

Feasibility along with estimation of CAPEX & OPEX for pilot project is in process.

4 COMMITTEES CONSTITUTED BY THE BOARD

With a view to have smooth functioning of the Board, as provided under section 9 of the Water (Prevention and Control of Pollution) Act 1974 and section 11 of the Air (Prevention and Control of Pollution Act 1981; the Board has constituted various committees for efficient and effective implementation of the Acts and Rules. During the year 2019-20, the following Committees were in existence.

4.1 Consent Appraisal Committee (CAC)

During the reporting year, Consent Appraisal Committee is comprised of following members:

1.	Chairman, MPC Board, Mumbai	Chairman
2.	Principal Secretary, Home (Transport) Dept., Mumbai	Member
3.	Technical Advisor, MIDC, Mumbai (Env.)	Member
4.	Member Secretary, MPCB, Mumbai	Member Secretary
5.	Scientist & Representative, NEERI, Mumbai	Special Invitee

➤ Terms of Reference

The CAC considers the applications for consents/ authorizations under Water (P &CP) Act, 1974, Air (P & CP) Act, 1981 and Hazardous Wastes (M & H) Rules, 1989 as under;

'RED' Category : Projects with capital investment above Rs. 75 Crores

'ORANGE' Category : Projects with capital investment above Rs. 750 Crores

'GREEN' Category : All Projects beyond Rs. 2000 Crores / All Municipal Corporations.

There were 27 Meetings of Consent Appraisal Committee held during the year 2019-20 wherein 1125 CAC applications were discussed, and 976 approvals were granted.

4.2 Consent Committee (CC)

The Consent Committee comprises of following members:

SN.	Members	Designation
1.	Mr. E. Ravendiran, Member Secretary, Maharashtra Pollution Control Board	Chairman
2.	Dr. A.R. Supate, Principal Scientific Officer Maharashtra Pollution Control Board	Member
3.	Mr. P.K. Mirashe Assistant Secretary (Technical), Maharashtra Pollution Control Board	Member
4.	Dr. Y. B. Sontakke Water Pollution Abatement Engineer, Maharashtra Pollution Control Board	Member
5.	Dr. V. M. Motghare	Member

	Air Pollution Abatement Engineer (APAE), Maharashtra Pollution Control Board	
6.	Mr. N. N. Gurav, Regional Officer HQ, Maharashtra Pollution Control Board	Member
7.	Mr. R. G. Pethe Retired Water Pollution Abatement Engineer (WP AE), Maharashtra Pollution Control Board	Member

➤ **Terms of Reference**

The Consent Committee considers the applications for consent/ authorization under water (P & CP) Act. 1974, Air (P & CP) Act, 1981 and Hazardous Wastes (M&H) Rules, 1989 as under;

‘RED ‘Category : Projects with capital investment above Rs.25Crores and up to Rs.75Crores

‘ORANGE ‘Category : Projects with capital investment above Rs. 250Crores and up to Rs.750Crores

‘GREEN Category : Projects with capital investment above Rs. 1000 Crores and up to Rs. 2000Crores

‘Infrastructure Project : Project with capital investment above Rs. 25 Crores and up to Rs.350 Crores

There were 18 meetings of Consent Committee held during the year 2019-20 and total 1199 applications were discussed and 1048 were disposed off.

4.3 Committees formed for Solid Waste Management Rule, 2016

There were 8 meetings of Technical advisory committee held during the year 2019-20 for implementation of SWM in the state & 29 Divisional level committee held during year 2019-20 for monitoring of implementation of SWM in the state.

SN.	Name of Committee	Date of Formation	Division/Area of work
1.	Divisional Level Committee for Monitoring of Implementation of Solid Waste Management in the State of Maharashtra	17/01/2019	Nashik
2.	Divisional Level Committee for Monitoring of Implementation of Solid Waste Management in the State of Maharashtra	20/12/2018	Pune
3.	Divisional Level Committee for Monitoring of Implementation of Solid Waste Management in the State of Maharashtra	17/01/2019	Nagpur

4.	Divisional Level Committee for Monitoring of Implementation of Solid Waste Management in the State of Maharashtra	03/12/2018	Aurangabad
5.	Divisional Level Committee for Monitoring of Implementation of Solid Waste Management in the State of Maharashtra	03/12/2018	Konkan
6.	Committee for scrutiny of authorizations for all Corporations/Councils as per the Municipal Solid Waste (M & H) Rules, 2000, dated 02/04/2014	17/04/2015	Scrutiny of applications for MSW authorizations

During the year 2019-20, Authorization Committee for Scrutiny of applications for MSW Authorizations is comprised of following members:

1.	Shri P.K. Mirashe, Assistant Secretary (Tech) HQ, MPCB, Mumbai	Chairman
2.	Dr. Sneha Palnitkar or Representative, All India Institute of Local Self Govt.	Expert Member
3.	Shri. Bhalchandra P. Patil Ex. Dy. Municipal Commissioner, MCGM	Expert Member
4.	Shri N.N. Gurav, Regional officer, HQ, MPCB, Mumbai	Member Convener

Total 117 applications were discussed by the Committee for Scrutiny of applications for MSW authorizations and 23 were rejected due to non-compliance of MSW Rules and 45 applications were granted/ renewed during the year 2019-20.

4.4 Committees formed for Hazardous & Other Waste (T & M) Rule, 2016 & E-waste Rule, 2016

1.	Committee for implementing liabilities for environmental damages due to handling and disposal of hazardous waste, and penalty	08/08/2017	Head Office level
2.	Committee for implementation of procedure for issuance of grant/renewal of authorization of industrial units possessing environmentally sound management facilities for reprocessing/recycling, and actual users/co-processing/utilization of the hazardous waste and recycling of electronic waste (E-waste)	04/10/2016	Head Office level



During the year 2019-20, Authorization Committee for Environment Sound Management of Hazardous & Other Waste and E-Waste is comprised of following members:

1.	Shri. R.K. Garg, Former Managing Director, Indian Rare Earths Ltd	Chairman
2.	Shree. B. Sharma, Regional Director, Pune, CPCB	Member
3.	Dr. B. R. Naidu, Ex Regional Director, West Zone, CPCB Vadodara.	Member
4.	Shri. Bharat Nimbarte, Ex Joint Director (WPC), MPCB	Member
5.	Shri P.K. Mirashe, Assistant Secretary (Tech) HQ, MPCB, Mumbai	Member
6.	Scientist – 1 or 2, Environment Department, Govt. of Maharashtra	Member
7.	Shri N.N. Gurav, Regional officer, HQ, MPCB, Mumbai	Member Convener

➤ **Terms of Reference**

The Authorization Committee for considering the applications for consents/ authorizations under Water (P &CP) Act, 1974, Air (P & CP) Act, 1981 and Hazardous Wastes (M & H) Rules, 1989 and E-Waste Rules, 2016 as under;

There were 6 Meetings of Authorization Committee for Hazardous waste held during the year 2019-20. During the meeting total number of 193 applications of authorization under HW Rules were discussed; out of which 112 were approved and 36 number of applications for authorization under E-waste Rules, 2016 were discussed and 19 were approved.

4.5 Committee constituted for deciding Guidelines for issuance for Registration to Producer/ Brand Owner / Manufacturer under Plastic Waste Management Rule, 2016 and amendment thereto;

1.	Committee for deciding guidelines for issuance of registrations to producers and brand owners	21/11/2016	Head Office level
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During the year 2019-20, Committee constituted for deciding Guidelines for issuance for Registration under PWM rules, 2016 is comprised of following members:

1.	Joint Director (WPC), MPC Board, Mumbai	Chairman
2.	Representative of ICT, Mumbai- Prof. Shashank Mhaske, HOD, Polymer, ICT, Mumbai	Member
3.	Representative of Environment Dept., GoM	Member
4.	Representative of Urban Development Dept., GoM	Member
5.	Regional Officer (HQ), MPC Board, Mumbai	Member Convener

➤ **Terms of Reference**

- A) For examining application for grant of registration scheme to producer/ Brand-owners under the Plastic Waste Management, 2016
- B) To recommend applications for issuance of grant of Registration scheme to producer/ Brand-owners under the Plastic Waste Management, 2016
- C) For implementation of the procedure for issuance of grant of Registration scheme to producer/ brand-owners under the Plastic waste management, 2016

There are 5 stake holders under PWM Rules, 2016 who are required to obtain registration under PWM rules, 2016 and amendment thereto viz. Producer, Brand-owner, Importer, Manufacturer, Recycler. The concept of Extended Producer's Responsibility is applicable to the Producer/ Importer/ Brand-owners. However, EPR is not applicable to Recyclers as per present rules. Thus, this committee was constituted to decide guidelines and line of action for issuance of registration in view of this impending EPR policy.

Only one meeting of the said Committee was held during the year 2019-20 wherein 319 applications were discussed. As per the minutes of meeting of committee held on 14.2.2019, 66 nos. of recyclers were granted registration under PWM Rules, 2016 during the year 2019-2020.



5 AIR AND WATER MONITORING NETWORK AND PRESENT STATUS OF THE ENVIRONMENT

Air pollution is caused mainly by transportation, fuel combustion in stationary sources, burning of fossil fuels like coal, wood, dry grass, and construction activities. Motor vehicles produce high levels of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NO). Construction activities, bad roads and burning of fossil fuels are responsible for dust (particulate matter) pollution. Residential and commercial activities also contribute to air pollution. Human health is affected due to poor air quality. Principally, air pollution affects the body's respiratory system and the cardiovascular system. Though the individual reactions to air pollutants depend on the type of pollutant a person is exposed to and the degree of exposure, air pollution may cause long term health problems. The health effects caused by air pollutants may range from biochemical and physiological changes like difficulty in breathing, wheezing, coughing and aggravation of existing respiratory and cardiac conditions.

Maharashtra Pollution Control Board has established Ambient Air Quality Network in Maharashtra covering major cities to comply with the mandate of Air (Prevention & Control) Act 1981 and to disseminate information regarding status of air quality prevailing in the State of Maharashtra. Also, monitoring is necessary for evaluation of the effectiveness of control programs and to identify areas in need of prioritization and long-term air quality management. Air quality monitoring is carried out to understand natural scavenging or cleansing processes in the environment through pollution dilution, dispersion, wind movement, dry deposition, precipitation, and chemical transformation of pollutants generated.

Water demand for various consumptive uses, such as drinking, agriculture and industries from groundwater and surface water resources is higher than the availability. Distribution of rainfall is highly uneven in the State and in many areas the soil conditions and topography are unfavorable to groundwater recharge through percolation. Further, over-use and misuse of resources is responsible for water scarcity. Wide disparities exist in sanitation facilities in urban and rural areas. Thus, meeting the increased needs for water supply and sanitation facilities is a challenge for authorities.

5.1 Monitoring Network and Region-wise Air Quality in Maharashtra

Central Pollution Control Board initiated National Ambient Air Quality Monitoring (NAAQM) program in the year 1984 to get spatial and temporal variation of ambient air concentrations

for a wide range of pollutants that are considered relevant for evolving strategic management plans. The program was subsequently renamed as NAMP (National Air Quality Monitoring Program). Under NAMP, three air pollutants viz., Sulphur dioxide (SO₂), nitrogen dioxides (NO₂) and Respirable Suspended Particulate Matter (RSPM/PM₁₀) have been identified for regular monitoring at all the locations. Monitoring of pollutants is carried out for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week, to have 104 observations in a year as per CPCB monitoring protocol.

As per CPCB monitoring protocol, locations are selected to represent different land use categories such as residential, industrial, and commercial, to capture air quality levels under different activity profiles. MPCB, with a presence across the state through its 12 Regional Offices (RO), regularly monitors pollutant levels through a medium of an established network of Ambient Air Quality Monitoring Stations (AAQMS) installed in various regions across Maharashtra. These AAQMS are installed under the National Air Monitoring Program (NAMP) and State Air Monitoring Program (SAMP). In the year 2019- 20, there are 72 active AAQMS in Maharashtra under NAMP (61), SAMP (1) and Continuous AAQMS (CAAQMS) (10). These air quality monitoring stations are operated through educational institutes, local bodies which are having infrastructure to monitor air quality stations as per Central Pollution Control Board (CPCB) monitoring protocol. As these agencies have long agreement with MPCB for operation of monitoring stations their performance is reviewed by the Board. The data generated by these stations are verified at HQ level before forwarding it to CPCB. These stations are connected to the AQI server at CPCB, New Delhi.



Figure.5.1. Continuous Ambient Air Quality Monitoring Stations at Colaba (left) and Kurla (right) in Mumbai.

Air pollution can be effectively tackled only through the support of citizens who are well informed about local and national air pollution problems and about the required mitigation measures. To achieve this, the concept of an Air Quality Index (AQI) was developed and is used by several nations to effectively represent the air quality scenario in their respective countries. AQI is an air quality guide wherein a color index is used to document air quality as represented in **Table 5.24**. The index provides a single number or a set of numbers by transforming the series of multiple values of respective air pollutants recorded over a span of time. It simply transforms the complex datasets into an easy-to-understand range of values which gets depicted in the form of different colors indicating the extent of air pollution. Increase in AQI indicates an increased level of air pollution and respective threats to human health associated with these pollutants. Various international environmental agencies such as United States’ Environment Protection Agency (US-EPA) have developed their own set of mathematical algorithms to determine AQI, which are based on human exposure dose of air pollutants. In India, CPCB in consultation with the Indian Institute of Technology – Kanpur (IIT-K), developed an AQI system after conducting literature review, understanding air quality monitoring procedures and protocols, Indian National Air Quality Standards (INAQS) and dose-response relationships of pollutants with human health.

Air quality in the State is assessed through routine and specific monitoring. To assess the ambient air quality with respect to criteria pollutants as per National Ambient Air Quality standards, data has been collected for the year 2019-20. The data is analysed for SO₂, NO_x and particulate matter (PM₁₀) or respirable suspended particulate matter (RSPM). The locations under different class areas like industrial, residential, and commercial were monitored Region-wise and the observations have been made using NAAQM standards annual average concentration as represented in following sections. Further, Exceedance Factor (E.F. = Annual Average/ Standard Value) has also been calculated for Particulate Matter to understand the data sets and approximate average numbers of samples exceeded the standard limit. To represent the analysis of data, colour coding system is used for identification and comparison as shown in below;

Air Quality classification based on colour coding

Gasses and particulate matter	Colour code use
➤ Locations Within the limit	
➤ Locations Exceeding the limit	
➤ Location having Maximum value	
➤ Location having Minimum value	

5.1.1 Amravati

There are 6 Ambient Air Monitoring Stations under in Amravati Region which include 2 in residential areas, 2 in industrial areas, 1 in a commercial area and 1 in a rural area. The annual average concentration of all the parameters analyzed at all locations is represented in **Figure 5.2**. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.1**.

Table 5.1 Statistical Monitoring of Annual Average Air Quality in Amravati Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Govt. College of Engineering	11	13	70
A-23 MIDC Amravati	12	14	86
Raja Kamal Chowk, Amravati	13	15	93
College of Engineering & Technology (Architecture Branch)	15	15	66
L R College of Engineering	13	14	64
MIDC Water Works	17	17	70

It is depicted from **Figure 5.1** that concentrations of gases are well within the limit in entire region; whereas the PM₁₀ concentration at all the locations viz. Govt. College of Engineering, A-23 MIDC Amravati, Raja Kamal Chowk, Amravati, College of Engineering & Technology (Architecture Branch), L. R. College of Engineering, and MIDC Water Works are above the standards of 60µg/m³, respectively.

The annual average concentration for SO₂ & NO_x was found to be within the NAAQMS whereas for PM₁₀ it was beyond limits for all locations. The minimum and maximum exceedance factors calculated for PM₁₀ as shown in **Table 5.2**.

Table 5.2 Exceedance factor for PM₁₀ for Amravati Region

Exceedance Factor – Amravati	
Min	0.64
Max	0.94

5.1.2 Aurangabad

In the jurisdiction of Regional Office, MPCB, Aurangabad, major air polluting industries are Steel Industries, Re-rolling mills, Stone Crushers, Thermal Power Plant, etc. The main

contributors of environmental pollution are the parameters like SPM/TPM, SO₂ and NO_x. Most of the industries have provided air pollution control systems with adequate height of Chimney.

There are 9 Air Quality Monitoring stations in this Region, 5 in residential areas, 3 in industrial areas and 1 in a rural area. The annual average concentration of the parameters analyzed at all locations is represented in **Table 5.3**. It is observed that, SO₂ concentrations were within the NAAQM standard limits for all locations. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.3**.

Table 5.3 Statistical Monitoring of Annual Average Air Quality in Aurangabad Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
MIDC Walunj, Aurangabad	8	11	80
CADA Office	15	41	77
SBES College	16	43	75
Collector Office, Aurangabad	14	40	74
Jalna Krishna Dhan	10	39	93
Jalna Bachat Bhavan	10	41	96
Terrace of Sidhsheshwar Sahakari Bank	5	17	84
Terrace of Keshavraj Vidyalyaya	5	17	84
MIDC Water Works, Latur	5	17	85

From **Table 5.3**, it is represented that SO₂ concentration in entire region is within the limit. However, PM₁₀ is exceeding the limit at all locations in the region and NO_x is exceeding only at three locations i.e. CADA Office, SBES College, Jalna Bachat Bhavan.

Table 5.4 Exceedance factors for PM₁₀ for Amaravati Region

Exceedance Factor – Aurangabad	
Min	0.74
Max	1.23

5.1.3 Chandrapur

There are 7 Air Monitoring stations in Chandrapur Region, 3 in residential areas, 4 industrial areas and 1 in a commercial area. The annual average concentration of all the parameters analyzed at all locations is represented in **Figure 5.2**.

From **Figure 5.2**, it is evident that concentrations of SO₂ and NO_x were within the NAAQM standard limits at all locations whereas PM₁₀ concentrations is exceeding the prescribed

standards at all locations which might be due to the presence of thermal power plants in the area. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.5**.

Table 5.5 Statistical Monitoring of Annual Average Air Quality in Chandrapur Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Old MIDC Chandrapur	12	17	66
SRO Office, Chandrapur	4	31	68
MIDC Chandrapur	4	27	90
Ghuggus	4	27	203
Rajura	4	27	170
Ballarshah	4	27	116
Tadali MIDC	4	28	117

Table 5.6 Exceedance factors for PM₁₀ for Chandrapur Region

Exceedance Factor - Chandrapur	
PM ₁₀	
Min	0.66
Max	1.86

5.1.4 Kalyan

In this region total sample analyzed were at 9 different locations & average annual concentration observed is as represented in **Figure 5.2**. From the figure it is evident that concentrations of SO₂ at all locations were within the NAAQM standard limits. Concentrations of NO_x and PM₁₀ concentrations exceeded above the standard limits at MIDC Office Dombivali station only. Heavy traffic near sampling locations might be the reason for increased concentration of PM₁₀ & NO_x. Details of average annual concentration of sampling are statistically represented in **Table 5.7**. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.7**.

Table 5.7 Statistical Monitoring of Annual Average Air Quality in Kalyan Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Ambernath	33	41	66
Badlapur	26	57	90
Prematai Hall	32	41	65

IGM Hospital	31	43	66
Dombivali	27	64	93
MIDC Office Dombivali	27	64	93
MPCB RO Kalyan Office	33	41	66
Powai Chowk	26	61	95
Smt. CHM College Campus	21	46	71

The above **Table 5.7** represents that SO₂ Column shown with green colour is less than the standard limit 50 and similarly the orange columns specifying NO_x and PM₁₀ are exceeding the standard limits 40 and 60.

Table 5.8 Exceedance factors for NO_x and PM₁₀ for Kalyan Region

Exceedance Factor - Kalyan		
	NO _x	PM ₁₀
Min	0.52	0.65
Max	0.87	1

5.1.5 Kolhapur

There are 6 Air Monitoring stations in this Region of which 3 are in residential areas, 1 in an industrial area and 2 in rural areas. The annual average concentration of all the parameters analyzed at all locations is represented in **Figure 5.2**.

From **Figure 5.2**. It can be observed that except for PM₁₀, annual average concentration of SO₂ and NO_x concentrations at almost all locations was within the NAAQM standard limits. Sugar industries near sampling locations might be the reason for increased concentration of PM₁₀. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.9**.

Table 5.9 Statistical Monitoring of Annual Average Air Quality in Kolhapur Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Shivaji University	12	21	60
Ruikar Trust	29	53	125
Mahadwar Road	23	40	97
Terrace of SRO-Sangli, Udyog Bhavan	9	36	71
Sangli Miraj Primary Municipal School	11	44	70
Krishna Valley School	10	39	75

Table 5.10 Exceedance factors for NO_x and PM₁₀ for Kolhapur Region

Exceedance Factor - Kalyan		
	NO _x	PM ₁₀
Min	0.27	0.61
Max	0.67	1.26

5.1.6 Mumbai

There are two Ambient Air Monitoring Stations installed in this Region at two different residential locations at Sion and Bandra. The annual average concentration for the three parameters i.e., SO₂, NO_x & PM₁₀ analyzed at these locations is represented in **Figure 5.2**.

From **Figure 5.2**, it is observed that annual average concentration of SO₂ is within the prescribed limit of NAAQM standards. However, NO_x & PM₁₀ concentration of both the locations viz. Bandra and Sion are not within the prescribed limits. Heavy traffic near sampling station might be the reason for higher concentration of pollutants. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.11**.

Table 5.11 Statistical Monitoring of Annual Average Air Quality in Mumbai Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Sion	6	47	195
Bandra	15	48	70

Table 5.12 Exceedance factors for NO_x & PM₁₀ for Mumbai Region

Exceedance Factor – Kalyan		
	NO _x	PM ₁₀
Min	0.59	0.70
Max	0.73	1.95

5.1.7 Nagpur

From **figure 5.2**, it can be observed that SO₂ concentrations at all locations are within the NAAQM standard limits. For NO_x; all locations are within limit except for Hingna road which is slightly exceeding the limits. PM₁₀ concentrations at all locations are beyond the prescribed limits. Heavy traffic and presence of industries might be the reason for higher PM₁₀ concentration. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.13**.

Table 5.13 Statistical Monitoring of Annual Average Air Quality in Nagpur Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Civil Lines, Nagpur	12	37	73
North Ambazari Road	13	38	112
Hingna Road	14	41	117
Sadar	14	40	109

Table 5.14 Exceedance factors for PM₁₀ for Nagpur Region

Exceedance Factor - Nagpur	
Min	0.74
Max	1.18

5.1.8 Nashik

There are 8 AAQMS in this Region of which 5 have been located at residential areas, 2 at industrial areas and 1 at a commercial area. Result of the analyses is represented in **Figure 5.2**.

From **Figure 5.2**. It can be observed that SO₂, NO_x and PM₁₀ (except for KTHM college) concentrations at all locations are within the NAAQM standard limits. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.15**.

Table 5.15 Statistical Monitoring of Annual Average Air Quality in Nashik Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
SRO Office Nashik	9	21	52
KTHM College	5	15	72
MIDC Satpur	9	22	56
RTO Colony	9	23	56
NMC Nashik	10	23	53
MIDC Jalgaon	12	32	57
Girna Water Tank	12	32	56
Old B. J. Market	12	31	57

Table 5.16 Exceedance factors for PM₁₀ for Nashik Region

Exceedance Factor - Nashik	
Min	0.52
Max	0.73

5.1.9 Navi Mumbai

Out of the 6 ambient air quality monitoring stations (AAQMS) in Navi Mumbai Region, 2 are in residential areas, 3 in industrial areas and 1 in a rural area. The air quality analyses are represented in **Figure 5.2**.

It is depicted from the **Figure 5.2**, that the average SO₂ & PM₁₀ (except for Airoli) concentrations at all locations are within the NAAQM standard limits. NO_x concentrations are beyond limit for all locations. This might be due to the presence of industries in the vicinity. Heavy traffic near sampling station might be the reason for higher concentration of pollutants. Details of annual average statistical data recorded throughout the year 2019- 20 are represented in **Table 5.17**.

Table 5.17 Statistical Monitoring of Annual Average Air Quality in Navi Mumbai Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Airoli	42	62	115
Nerul	16	41	53
Rabale	16	45	58
Mahape	17	47	56
Kharghar	16	44	52
MIDC Taloja	16	46	59

Table 5.18 Exceedance factors for NO_x for Navi Mumbai Region

Exceedance Factor - Navi Mumbai	
Min	0.53
Max	1.16

5.1.10 Pune

Pune City has always been appreciated as a “Pensioner's Paradise”. Its salubrious climate and clean air lead to decrease in illness rate which is good but this rate is seemingly deteriorating with time. Air pollution has reached to such an extent that, this metropolis is choking on its own vehicular exhaust. Looking at the continuous increase in air pollution, there are 8 AAQMS in this Region of which 6 are in residential areas, 1 in an industrial and 1 in a rural area. Samples have been analyzed to assess the air quality in entire region for all the areas i.e., residential, rural area & industrial. The annual average concentration of all parameters is represented in **Figure 5.2**.

From **Figure 5.2**. It can be observed that the SO₂ concentrations at all locations are within the NAAQM standard limits. NO_x & PM₁₀ concentrations at almost all locations were beyond the standard limits which might be due to heavy traffic near sampling locations. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.19**.

Table 5.19 Statistical Monitoring of Annual Average Air Quality in Pune Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
PCMC	24	70	72
Karve Road CAAQMS	12	57	79
Nal Stop	22	84	110
Bhosari	22	57	113
Swargate	18	60	140
Solapur	13	74	92
WIT Campus	15	34	73
Saat Rasta	15	34	75

Table 5.20 Exceedance factors for NO_x and PM₁₀ for Pune Region

Exceedance Factor – Pune		
	NO _x	PM ₁₀
Min	0.4375	0.72
Max	1.05	1.41

5.1.11 Raigad

The AAQMS at Panvel Water Supply Plant in this is in a residential area. The annual average concentration of all the parameters analyzed at this location is represented in **Figure 5.2**.

Presented in **Table 5.21**. & it is observed from the table that except for NO_x, concentration of SO₂ and PM₁₀ was within the NAAQM standard limits. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.21**.

Table 5.21 Statistical Monitoring of Annual Average Air Quality in Raigad Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Panvel Water Supply Plant	16	48	53

5.1.12 Thane

There are 3 AAQMS established in this Region, of which 1 is in a residential area, 1 is in an industrial area and 1 is in a rural area. The annual average concentration of all the parameters analyzed at all locations is represented in **Figure 5.2**.

From **Figure 5.2**. It is evident that SO₂ and NO_x concentrations at all locations are within the NAAQM prescribed standards. PM₁₀ concentrations at all locations are beyond the prescribed limits. Details of annual average statistical data recorded throughout the year 2019-20 are represented in **Table 5.22**.

Table 5.22 Statistical Monitoring of Annual Average Air Quality in Thane Region

Location	Parameters		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Balkum/Glaxo	21	36	140
Naupada	26	39	154
Kopri	22	37	149

Table 5.23 Exceedance factors for PM₁₀ for Thane Region

Exceedance Factor – Thane	
Min	1.40
Max	1.55

5.2 Conclusion for Air Quality in the State of Maharashtra

An overview of the AQI for the reading recorded by the AAQMS in Maharashtra has been calculated using three parameters, viz., SO₂, NO_x and RSPM as per the calculation and AQI categories released by CPCB and IIT Kanpur in October 2014. After determining the sub-indices for a region, the highest sub-index from that AAQMS has been considered as the AQI for the area thus represented.

In the year 2019-20, air quality monitoring was done across 69 active AAQMS installed in various regions of Maharashtra. As shown in **Figure 5.3**, around 75.7% observations came under the ‘Good’ and ‘Satisfactory’ categories, as compared to 68.8% in the previous year (2018-19). Thus, an increase in the percentage of non-polluted days by almost 6.9% was recorded. In ‘Moderate’ category, 23.68% observations were recorded this year as compared to 29.4% last year. Decreasing trend was found in ‘Poor’ category, 0.64% in year 2019-20 as compared to 1.38% in year 2018-19. No observations were found in ‘Very Poor’ and ‘Severe’ category, while a very minute part came under ‘No Data’. **Table 5.24** Represents colour codes for various ranges of AQI.

Table 5.24 Legend for reading AQI.

AQI	0-50	51-100	101-200	201-300	301-400	401-500
Remarks	Good	Satisfactory	Moderate	Poor	Very Poor	Severe

Air Quality Index (AQI) is a comprehensive index value calculated by transforming weighted values of impacts of individual air pollutants (e.g., SO₂, CO, NO_x,) into a single number or set of numbers. It reflects air quality of an area in terms of health impacts on the population. This makes it an easy-to-understand parameter of air quality that can be communicated to the masses and can be used by decision makers for devising policies on air pollution abatement. The standard AQI values in India are based on health breakpoints for the following eight pollutants- CO, NO₂, SO₂, PM₁₀, PM_{2.5}, O₃, Pb and NH₃. AQI has diverse uses and applications for policy makers, researchers and the public. It is a key tool in air quality monitoring and regulation. The subsequent sections elaborate the AQI trend in Maharashtra during the year 2019-20.

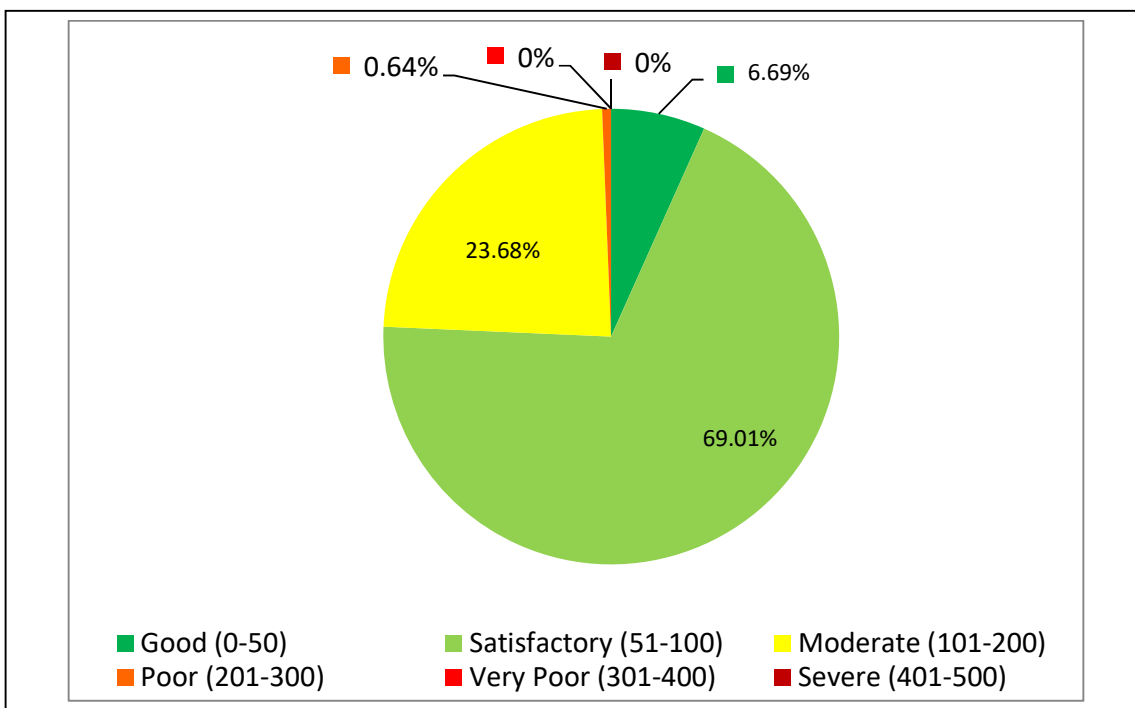


Figure 5.3. Share of AQI categories for air quality of monitored observations across all AAQMS in Maharashtra (2019-20)

5.2.1 Trend Analysis of AQI share over 5 years.

Analysis of the trend of share of mean Air Quality Index between the years 2015 and 2020 was carried out to compare and study the contributions of each AQI category during these years.

Figure 5.4 shows the trends of share of categories of AQI during the years 2015-15, 2016-17, 2017- 18, 2018-19 and 2019-20.

From **Figure 5.4**, it can be observed that, the highest share in 2019-20 is of ‘Satisfactory’ category, which is like that of previous trend. ‘Moderate’ category follows second to the ‘Satisfactory’ category. During all 5 years, the share of the ‘Good’ category was found to be the third most. The share of the AQI categories of ‘Poor’, ‘Very Poor’ and ‘Severe’ was negligible during all years.

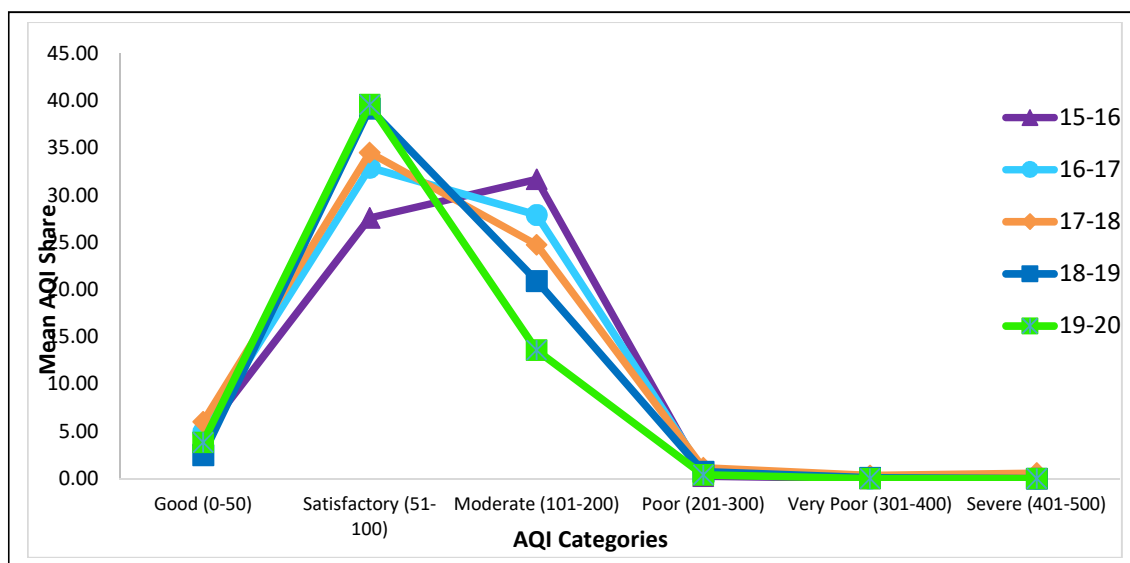


Figure 5.4. Trends in year-wise share of AQI categories

5.3 Ambient Noise Quality at Various Locations in the State of Maharashtra

Sound is usually made up of a wide range of different frequencies. The spread of sound energy across the audible frequency “spectrum” (about 20Hz – 20 kHz) is one factor that helps to make it identifiable to the human ear. The human ear is a very sensitive system with an extensive dynamic range. To accommodate this very large range, sound levels are measured using the decibel (dB) scale.

The sound level limits specified by CPCB represent the general limitation on noise produced by noise sources. Some noises, however, are annoying no matter where or in what kind of

environment they exist. High level impulsive noises represent a special category and consequently are restricted by an absolute limitation.

The Central Pollution Control Board (CPCB) constituted a National Committee of Experts on Noise Pollution Control. The Committee recommended noise standards for ambient air and for automobiles, domestic appliances, and construction equipment, which were later notified under The Environment (Protection) Act, 1986 as given in **Table 5.25**.

Table 5.25 Standards of Noise Levels under EPA (1986) Noise Pollution (Regulation & Control) Rules, 2000

Category of Area	Limits in dB(A) Leq	
	Day time	Night time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Noise monitoring at various locations in the State of Maharashtra was not carried out during the year 2019-20. Therefore, measurements of noise levels are not available for the reporting year. However, MPC Board is monitoring real time noise levels at Mumbai & its suburban areas at 10 locations viz. Bandra, Wadala, Mahape, Vashi, Thane, Govandi, Fort area, Mumbai ASHP, Bisleri Andheri, L&T Powai etc. Further, noise monitoring was carried out during Diwali and Ganesh Festival and detail analysis of the same is presented in Chapter 7 of this report.

5.4 Water Quality in Maharashtra

In 1997, the World Health Organization (WHO) defined water pollution as any change in the physical, chemical, and biological properties of water that has a harmful effect on living things. Water pollution results from various point sources such as industrial effluents and domestic waste, and non-point sources such as fertilizer and pesticide run-offs in rural areas from the agricultural fields. Along with human activities, various microbiological agents also cause water pollution which may cause various water-borne diseases. When toxic substances enter lakes, streams, oceans, and other water bodies, they get dissolved or lie suspended in water or get deposited on the bed. This results in the pollution of water whereby the quality of the water deteriorates, affecting aquatic ecosystems. Further, the pollutants can also seep down and affect the groundwater deposits and aquifers.

The effects of water pollution are not only devastating to humans but also to flora and fauna. Water pollution can also significantly increase the rate of algal blooms which can cause depletion of oxygen in the water affecting the aquatic life. The consumption of water contaminated with pesticides can result in cellular and Deoxyribonucleic Acid (DNA) damage, suppression of immune system, cancers, tumours and lesions on fish and animals, and physical deformities such as hooked beaks in birds and thinning of eggshell can occur in avifauna. The consumption of polluted water may lead to not only poisoning of humans, animals, birds, but also disturbs the fragile aquatic and riparian ecosystem.

Dumping of solid wastes is also an important factor resulting in deterioration of the groundwater quality. Solid waste includes all the discarded solid materials from commercial, municipal, industrial, and agricultural activities.

The quality of water is affected by various factors like rate of monsoon, dilution during monsoon, high evaporation rate during the summers, sporadic pollution loads from various anthropogenic activities, flow rate of water and so on. Hence, there could be varied fluctuations in the quality of water at the same monitoring location leading to seasonal variations.

The Maharashtra Pollution Control Board (MPCB) regularly monitors the water quality across 250 Water Quality Monitoring Stations (WQMS) for both surface and ground water (200 for surface water and 50 for groundwater) under Central Pollution Control Board's project of NWMP. Surface water samples are monitored every month whereas the ground water samples are monitored every six months.

5.4.1 Water Quality Index

A water quality index provides a single number (like a grade) that expresses overall water quality of a certain water sample (location and time specific) for several water quality parameters. The objective of developing an index is to simplify the complex water quality parametric data into comprehensive information for easy understanding. A water quality index based on important parameters provides a simple indicator of water quality and a general idea of the possible problems with the water in the region. Upon determining the Water Quality Index (WQI), water quality is described for easy understanding and interpretation. The modified weights as per Central Pollution Control Board are given in **Table 5.26** and the equations used to determine the sub-index values are given **Table 5.27**.

In 1970, the National Sanitation Foundation, USA developed the Water Quality Index (NSFWQI), a standardized method for comparing the water quality of various water bodies. NSFWQI is one of the most respected and utilized water quality index in the United States. Nine water quality parameters selected for calculating the index include dissolved oxygen (DO), fecal coli forms (FC), pH, biochemical oxygen demand (BOD), temperature change, total phosphate, nitrate, turbidity, and total solids.

5.4.1.1 WQI for Surface Water

Given the parameters monitored in India under the NWMP and to maintain the uniformity while comparing the WQI across the nation, the NSF WQI has been modified and relative weights been assigned by CPCB. The modified weights as per CPCB are given in **Table 5.26** and the equations used to determine the sub-index values are given **Table 5.27** upon determining the Water Quality Index, water quality is described for easy understanding and interpretation. The description used in the report for classifying and the describing the water quality is presented in **Table 5.28**.

Table 5.26 Modified Weights for Computation of WQI Based on DO, FC, pH and BOD.

Parameters	Original Weights from NSF WQI	Modified Weights by CPCB
Dissolved Oxygen (DO)	0.17	0.31
Fecal Coli form (FC)	0.15	0.28
pH	0.12	0.22
BOD	0.1	0.19
Total	0.54	1

Table 5.27 Sub-Index Equation Used to Calculate WQI for DO, FC, pH and BOD.

Water Quality Parameters	Range Applicable	Equation
Dissolved Oxygen (DO) (% Saturation)	0-40	$0.18 + 0.66 \times \% \text{ Saturation DO}$
	40-100	$(-13.55) + 1.17 \times \% \text{ Saturation DO}$
	100-140	$163.34 - 0.62 \times \% \text{ Saturation DO}$
Fecal Coliform (FC) (counts/100 ml)	1 – 103	$97.2 - 26.6 \times \log \text{ FC}$
	103 – 105	$42.33 - 7.75 \times \log \text{ FC}$
	>105	2
pH	02 – 05	$16.1 + 7.35 \times (\text{pH})$
	05 - 7.3	$(-142.67) + 33.5 \times (\text{pH})$
	7.3 – 10	$316.96 - 29.85 \times (\text{pH})$
	10 – 12	$96.17 - 8.0 \times (\text{pH})$
	<2, >12	0
BOD (mg/l)	0 – 10	$96.67 - 7 \times (\text{BOD})$
	10 – 30	$38.9 - 1.23 \times (\text{BOD})$
	>30	2

Table 5.28 Surface Water Classification based on Water Quality Index.

WQI Value	Water Quality	Class by CPCB	Class by MPCB	Remarks	Colour code used in this report
63 – 100	Good – Excellent	A	A -I	Non-Polluted	
50 – 63	Good water	B	Not Prescribed	Non-Polluted	
38 – 50	Poor Water	C	A –II	Polluted	
38 & less	Very Poor water	D, E	A – III, A- IV	Heavily Polluted	

5.4.1.2 WQI for Groundwater

MPCB monitors ground water quality for parameters like pH, total hardness, calcium, magnesium, chloride, total dissolved solids, fluoride, manganese, nitrates, and Sulphates once in six months. Based on the stringency of the parameters and its relative importance in the overall quality of water for drinking purposes each parameter has been assigned specific weight by CPCB. These weights indicate the relative harmfulness when present in water. The relative weights of the nine parameters (pH, Total Hardness, Calcium Hardness, Magnesium Hardness, Chloride, Total Dissolved Solids, Fluoride, Nitrate, Sulphate) have been determined and presented in **Table 5.29**. for water samples monitored by MPCB in the year 2019-20. Based on the absolute value of the index determined from calculations, water quality is classified as presented in **Table 5.30**

Table 5.29 Weights of Each Parameter for WQI of Groundwater

Chemical Parameters	Indian Standards for Drinking Water Quality		Weight (Wi)			
	Acceptable Limit	Permissible Limits	Weight	Relative Weight	Weight w/o Iron, Manganese & Bicarbonate	Relative Weight w/o Iron, Manganese & Bicarbonate
pH	6.5-8.5	No relaxation	4	0.09756	4	0.13333
Total Hardness (TH)	300	600	2	0.04878	2	0.06667
Calcium	75	200	2	0.04878	2	0.06667
Magnesium	30	No relaxation	2	0.04878	2	0.06667
Bicarbonate	244	732	3	0.07317	-	-
Chloride	250	1000	3	0.07317	3	0.10000
Total Dissolved Solids (TDS)	500	2000	4	0.09756	4	0.13333
Fluoride	1	1.5	4	0.09756	4	0.13333
Manganese	0.1	0.3	4	0.09756	-	-
Nitrate	45	No relaxation	5	0.12195	5	0.16667
Sulphate	200	400	4	0.09756	4	0.13333
Total			41	1	30	1

Table 5.30 Groundwater Classification Based on Water Quality Index

WQI Value	Water Quality	Colour code used in this report
<50	Excellent	
50-100	Good water	
100-200	Poor Water	
200-300	Very Poor water	
>300	Water Unsuitable for drinking	

5.4.2 Analysis of Surface Water Quality with Statistical details

As per provisions made by Water Quality Assessment Authority constituted under Sub-Sections (1) and (3) of Section 3 of the Environment (Protection) Act, 1986 (Act No. 29 of 1986) water quality in Maharashtra is monitored by various agencies namely Hydrology Project (SW), Groundwater Surveys & Development Agency (GSDA), Central Pollution Control Board (CPCB), Maharashtra Pollution Control Board (MPCB), Central Water Commission (CWC) and Central Ground Water Board (CGWB). Water quality testing under CPCB's NWMP in Maharashtra is monitored by MPCB (State nodal agency). Maharashtra has the highest number of monitoring stations under NWMP across all states in India. MPCB possesses infrastructure to monitor 44 parameters covering field observations, general parameters, core parameters and trace metals. The samples are monitored at monthly and six-monthly frequencies for surface water and groundwater stations respectively. To have continuous vigilance check on water quality, MPCB has installed WQMS (Water Quality Monitoring Stations) across the State.

Quality of surface water is monitored per month across all stations. The spatial presence of the stations is presented basin wise in the respective sections below. Basin-wise water quality index is presented in this section for the basins of Tapi, Krishna, Godavari, and Coastal basin.

5.4.2.1 Tapi Basin

The performance of the Tapi Basin across the five districts in the Maharashtra is depicted in the **Figure 5.5** In the districts of Akola, Dhule, Jalgaon and Nashik, it can be observed that the water quality index (WQI) value was 'Good to Excellent' during all months of the year 2019-20 and the water quality was recorded as not polluted throughout the year. In Amravati district, WQI value during August 2019 was recorded 'Medium to Good', but later it shifted to 'Good to Excellent'.

5.4.2.2 Godavari Basin 1

Figure 5.5 shows, the monthly trend in WQI along Godavari Basin 1 across 7 districts during the year 2019-20. From the figure it is evident that the WQI of all districts in this basin was recorded as 'Good to Excellent' during the year 2019-20 and the water was unpolluted throughout the year.

5.4.2.3 Godavari Basin 2

Figure 5.5 shows the monthly trend in WQI along Godavari Basin 2 across 3 districts during the year 2019-20. From the figure it is evident that the WQI of all districts in this basin was recorded as 'Good to Excellent' during the year 2019-20 and the water was unpolluted throughout the year.

5.4.2.4 Krishna Basin

Figure 5.5 shows the monthly trend in WQI along Krishna basin across five districts during the year 2018-19. In Kolhapur and Sangli districts, the WQI was recorded as 'Good to Excellent' during all months of the year 2019-20.

In Pune district, the WQI was recorded 'Medium to Good' during April 2019, May 2019, July 2019, August 2019, December 2019, January 2020 and February 2020 resulting in poor water quality during these months. In June 2019, WQI value fell to 'Bad' category which shows polluted water. In the months of September 2019, October 2019, November 2019, and March 2020, the WQI value was recorded 'Good to Excellent' thus showing non polluted water.

In Satara district, the WQI was recorded as 'Good to Excellent' during all months of the year 2019-20 except June 2019 which showed the WQI of 'Medium to Good' category indicating poor quality during that month.

In Solapur district, in months of April 19 and August 19 the WQI was 'Bad' showing pollution in the waters. In months May 2019, June 2019, July 2019, and November 2019 the WQI was 'Medium to Good'. In September 2019, October 2019, December 2019, January 2020, and February 2020, the WQI was 'Good to Excellent' showing no pollution.

5.4.2.5 Coastal Basin

5.4.2.5.1 West Flowing Rivers

The monthly trend of WQI along the basin of west flowing rivers across four districts in Maharashtra during the year 2019-20 is shown in Figure 5.5. In the districts of Raigad, Ratnagiri, and Thane, the WQI was recorded as 'Good to Excellent' during all months of the year 2019-20 and the water quality was recorded as not polluted throughout the year.

In Mumbai, the WQI was recorded as 'Very Poor' during the month of June 2019. In months of October 2019, December 2019, and January 2020, the WQI values were in 'Bad' category indicating pollution. In July-2019, August 2019 and November 2019, the value was between 'Medium to Good'. Only in the month of September 2019 the WQI value was between 'good to excellent'.

5.4.2.5.2 Saline (Sea and Creek) Basin

Figure 5.5 shows, the monthly trend in WQI along the Saline (sea & creek) basin across 4 districts during the year 2019-20. In Raigad and Ratnagiri district, the WQI values recorded fall under the 'Good to Excellent' category. In Mumbai, in the months of April 2019, May 2019 and June 2019 the WQI values were under 'very poor' category indicating pollution in the river. In remaining months, the WQI value was in 'Medium to Good'.

In Thane district, in July 2019, August 2019, September 2019 and October 2019 the values are in 'Good to Excellent' category showing no pollution. In months of April 2019, May 2019, June 2019, November 2019, December 2019, January 2020, and February 2020, the WQI values are between 'Medium to Good' thus not showing pollution. In March 2020, the WQI value fell in 'Poor' showing pollution.

5.4.3 Analysis of Groundwater Quality with Statistical details

In Maharashtra, CGWB (Central Ground Water Board), GSDA (Groundwater Survey and Development Agency) and MPCB monitor the ground water quality across various districts of the State. MPCB has 66 ground water monitoring stations which monitor water quality twice a year for parameters like pH, Nitrate, TDS, Hardness, Fluoride, microbial content, and sulphates. The water quality for groundwater across various Regions in the State is represented in **Table 5.31**.

Legend for WQI for Ground Water in Various Regions

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No Data
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Table 5.31 WQI for Ground Water in Various Region

Station Code	Station name	WQI		Region
		April	October	
2001	Tube well at water treatment plant of M.C. Achalpur near Post Office	NA	NA	GW Tube well Amaravati
2002	Bore well Opp. Gajanan Maharaj Temple at Anjangaon road	71.57	NA	GW Bore well Akola
1993	Dug well at Pandarpur, Gangapur, Aurangabad	NA	249.65	GW dug well Aurangabad
2200	Bore Well at Katpur, Near Z.P. School	NA	71.91	GW bore well Aurangabad
2201	Dug Well at Ranjangaon	NA	NA	GW dug well Aurangabad
2824	Dug Well at Naregaon	NA	NA	GW dug well Aurangabad
2825	Bore Well at Wahegaon, near Zilla Parishad School	NA	162.74	GW bore well Aurangabad
1994	Dug well At TPS Durgapur near Naseeb Kirana general Store	93.96	98.48	GW Dug well Chandrapur
2003	Dug well at Plot No- 4, Street No. 49-C, at Nehru Bal Udyan Azad Maidan, owned by Yavatmal M.C.	142.67	84.54	GW dug well Yavatmal
2828	Dug Well near Jilla Parishad Primary School Visapur	116.12	101.2	GW Dug well Chandrapur
2004	Bore well at Parvati Industrial Estate, Yadrav, Kolhapur	361.97	206.6	GW Bore well Kolhapur
2005	Bore well at Khanjirenagar, Kolhapur	133.84	100.24	GW bore well Kolhapur
2006	Bore well at Shinoli near M/s Aqua Alloy Steel	50.95	63.75	GW bore well Kolhapur
2007	Bore well at Savali, near Gram Panchayat office	270.73	71.27	GW bore well Kolhapur
2008	Dug well at Sambarwadi, owned by Shri. Kishan Hali Rajput	262.16	66.19	GW Dug well Kolhapur
2202	Dug Well at Ghane Kunt, near Awashi, owned by shri Rajendra Amre	58.15	18.61	GW Bore well Kolhapur
2829	Bore Well at MIDC Shiroli near M/s. Pratibha Enterprises	60.92	41	GW Bore well Kolhapur
2830	Bore Well at MIDC Gokul Shirgaon	61.51	53.19	GW Bore well Kolhapur
2831	Dug Well at Sakharali near MIDC Islampur near Krishna Milk Industry		75.6	GW dug well Sangli
2832	Dug Well No.1 at Brahmanwadi-Anjanwel, owned by Shri Vaidya	49.82	18.92	GW dug well Ratnagiri
2833	Dug Well No.1 at Group Gram Panchayat at Arketwadi, near Masjid	46.51	19.86	GW dug well Ratnagiri
2834	Dug Well No.2 at Arketwadi	1338.18	27.08	GW dug well Ratnagiri
2835	Dug Well No.2 at owned by Group Gram Panchayat, Brahmanwadi-Anjanwel	25.55	19.5	GW dug well Ratnagiri
1995	Gram Panchayath Dug well, Near Balaji Gajbhiye House, Khaperkheda	118.17	NA	GW Dug well Nagpur
1996	Gram Panchayath Dug well, Near Jagadamba G M S Mandir Sahakari Sanstha	101.77	NA	GW Dug well Nagpur

1997	Bore well near Primary Health Centre, Raipur (Hingna)	84.37	NA	GW Bore well Nagpur
1998	Gram Panchayat Dug well near Gram Panchayat Office, Brahmni	115.93		GW Dug well Nagpur
1999	Bore well Near Gram Panchayat, Changera	72.86		GW bore well Gondia
2000	Dug well near Sarode Kirana Store, Bhandewadi, Nagpur	NA	NA	GW Dug well Nagpur
2203	Hand Pump in the premises of Z.P. Primary School	NA	57.06	GW hand pump Wardha
2826	Dug Well near Railway Station, Cottaon Market	101.92	60.51	GW Dug well Wardha
2827	Bore Well near Railway crossing at Dongi Buzurg	NA	NA	GW Bore well Bhandara
1990	Bore well at BMW Site, Burudgaon	NA	NA	GW Bore well Ahmednagar
1991	Bore well at MSW Site, Pathardi, Nashik	NA	NA	GW Bore well Nashik
2204	Dug well at Gunjalwadi, Sangamner near Primary Health Care Centre	NA	NA	GW Dug well Ahmednagar
2816	Dug Well of Mr. Sampat Walunj, near M/s. Mahajeet Clayton	NA	NA	GW Dug well Nashik
2817	Bore Well at Chitali near Wagh Vashti	NA	NA	GW Bore well Ahmednagar
2818	Bore Well at M/s. Spectron Ethers Rasegaon near Siddeshwar Mahadev Mandir	NA	NA	GW Bore well Nashik
1989	Bore well at MWML Site at Taloja	42.1	22.85	GW Bore well Raigad
1992	Dug well at MSW Site, owned by Shri.Dattu Kondiba Borate at Borate Vasthi	71.57	58.86	GW dug well Pune
2819	Dug Well Owned by Shri Deshmukh	250.04	293.14	GW dug well Pune
2821	Bore Well at Bale Railway Station Premises Owned by Shri Digambar Joshi	313.32	NA	GW bore well - Solapur
2822	Bore Well near Chincholi	275.43	NA	GW bore well Pune
2823	Bore Well at Shete Vasti near old Tuljapur Road	333.08	NA	GW bore well - Solapur
1984	Bore well at M/s Tata Iron Steel Co. Ltd, S-76	NA	NA	GW Thane Borewell
1985	Dug well at 5 Star Industrial Estate	266.66	88.76	GW Thane Dugwell
1986	Bore well at Motapada	109.78	65.88	GW Thane Borewell
1987	Bore well at Vasai	166.86	70.93	GW Thane Borewell
1988	Bore well at Gharatwadi, Palghar	232.02	264.6	GW Thane Borewell

During 2019-20, 4 groundwater WQMS recorded WQI in the category 'Water Unsuitable for Drinking'. This number has increased from that observed during the previous year 2018-19. These WQMS (2004, 2834, 2821 and 2823) recorded WQI under this category due to high levels of TDS, hardness, calcium, and chlorides.

5.4.4 Conclusion for WQI for Surface Water and Groundwater

In terms of overall river basins, Godavari Basin 1 & 2 recorded the almost all observations in the 'Excellent' category during the year 2019-20. This was followed by Tapi (98%), West Flowing Rivers (93%), Krishna (85%). Saline (Sea and Creek) sub-basin (75%). The overall

basins show 20% improvement in terms of sample observed in polluted category as compared to last year (2018-19) which indicates an improvement in the extent of pollution in this sub-basin.

In terms of Ground Water Quality, during 2019-20, 4 groundwater WQMS recorded WQI in the category 'Water Unsuitable for Drinking'. Comparing this WQO with Last year 2018-19, 1 station is increased and during last year all the 3 located that recorded "Polluted" were in Kolhapur Region. During 2019-20, only 2 regions in Kolhapur along with 2 regions in thane were recorded as 'Water Unsuitable for Drinking'. These WQMS (2004, 2834 and 2821 & 2823) recorded WQI under this category due to high levels of TDS, hardness, calcium, and chlorides.

5.4.5 Trend Analysis of WQI across basins over 5 years

Analysis of the trend of WQI across basins was carried out to study the status and changes in WQI over the period of 5 years between 2015 and 2020. **Figures 5.6., 5.7., 5.8., 5.9., 5.10. and 5.11** shows the graphical representation of the trends in WQI over 4 years in each river basin.

5.4.5.1 WQI Trend analysis for Tapi Basin

Figure 5.6 Shows the trend of WQI over the years 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 for Tapi Basin.

From the **Figure 5.6**, it is observed that during the year 2015-16 the mean WQI was recorded in the 'Poor' category during the months of April and May 2015. The water quality during these months was 'Polluted'. Between June and December 2015 and during February 2016, the mean WQI was recorded in the 'Good' category and the water quality was 'Non-Polluted'. During the months of January and March 2016, the mean WQI was recorded as 'Good to Excellent' and the water quality was 'Non-Polluted'.

During the year 2016-17, the mean WQI was recorded in the 'Good to Excellent' category during all months and the water quality was 'Non-Polluted' throughout the year.

The mean WQI was recorded as 'Good to Excellent' in the months of May, June, September, October 2017 and January and March 2018. The mean WQI was recorded as 'Good' during the months of April, July, August, and November and December 2017 and during February 2018. The water quality was therefore 'Non-Polluted' throughout the year.

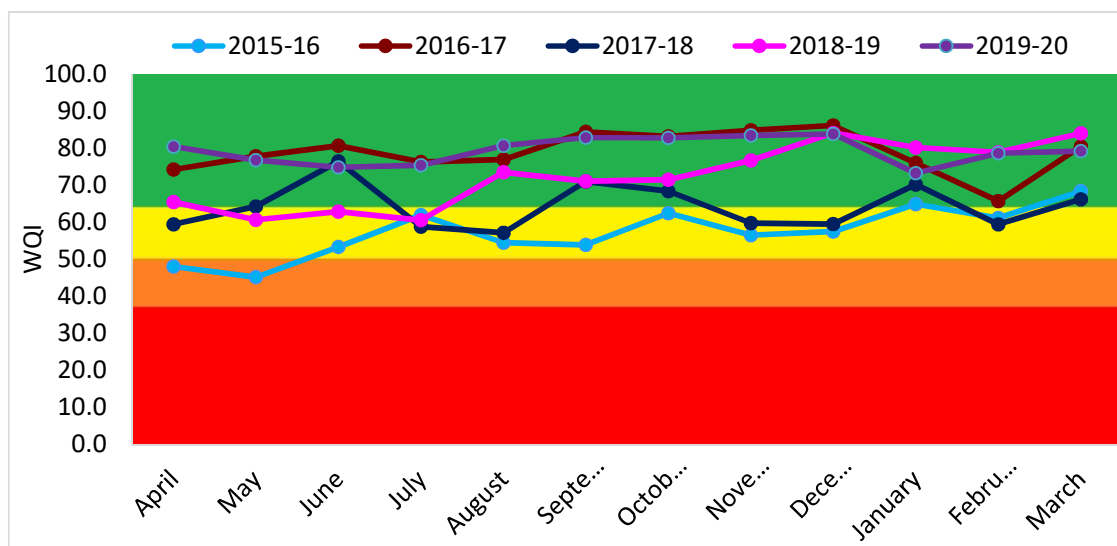


Figure 5.6. Trend Analysis for Tapi Basin

During the year 2019-20, the mean WQI was recorded as ‘Good’ during the months of May, June, and July 2018, and as ‘Good to Excellent’ during the remaining months. The water quality was ‘Non-Polluted’ throughout the year. For the year 2019-20, the mean WQI was recorded in the ‘Good to Excellent’ category during all months and the water quality was ‘Non-Polluted’ throughout the year. Therefore, it can be inferred that the overall water quality was unpolluted in the Tapi basin during all 5 years except during the months of April and May 2015.

5.4.5.2 WQI Trend analysis for Godavari Basin 1

Figure 5.7. Shows the trend of WQI over the years 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 for Godavari Basin 1.

From **Figure 5.7** the overall water quality during all 5 years was non-polluted. During the year 2015-16, the mean WQI was recorded as ‘Good to Excellent’ during all months except in May 2015, when the mean WQI was recorded as ‘Good’. During the years 2016-17 and 2017-18, and 2018-19 the mean WQI was recorded as ‘Good to excellent’ during all months. The mean WQI was recorded as ‘Good’ during the months of May, June, and July 2018 during the year 2019-20, while it was recorded as ‘Good to Excellent’ during the remaining months.

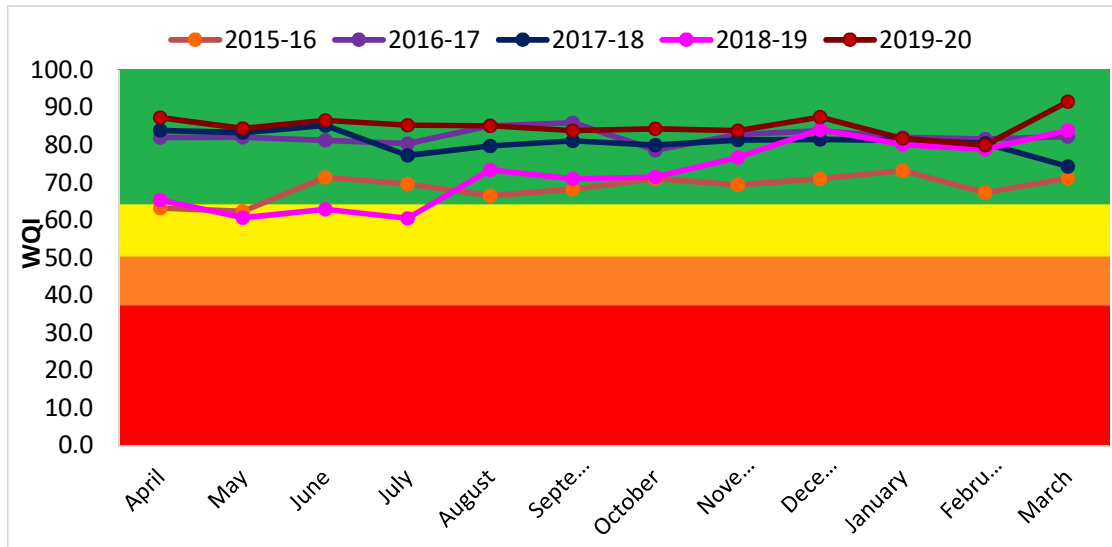


Figure 5.7. Trend Analysis for Godavari Basin 1

5.4.5.3 WQI Trend analysis for Godavari Basin 2

Figure 5.8 shows the trend of WQI over the years 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 for Godavari Basin 2.

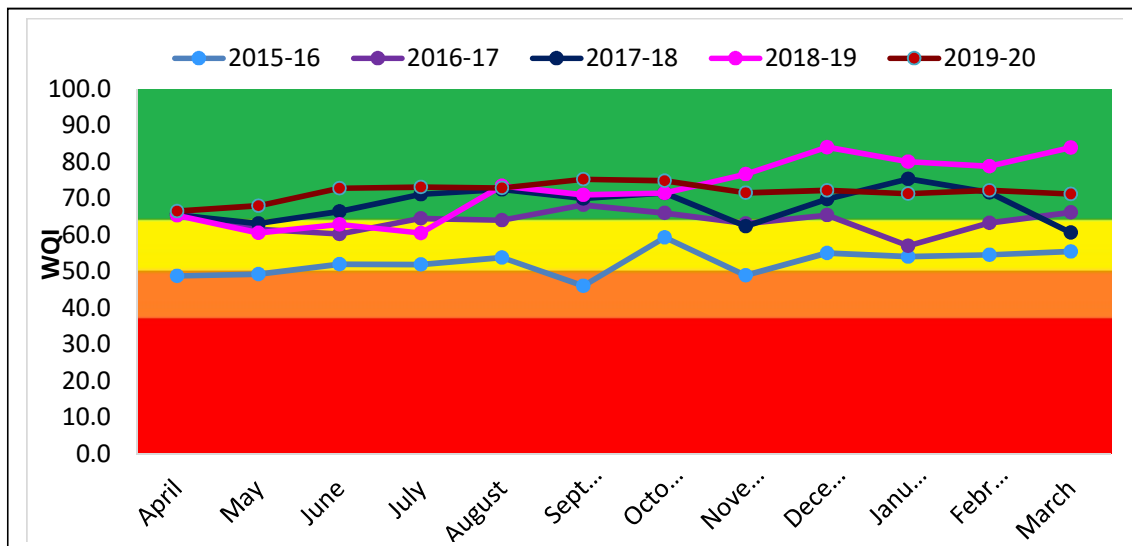


Figure 5.8. Trend Analysis for Godavari Basin 2.

From Figure 5.8, it can be observed that the water quality was non-polluted during the years 2016-17, 2017-18, 2018-19 and 2019-20. During the year 2015-16, the mean WQI was recorded as 'Poor' during the months of April, May, September and November 2015, and the water quality was 'Polluted' during these four months. The mean WQI was recorded as 'Good' during the months of June, July, August, and October and December 2015 and between January

and March 2015. The water quality during these months was ‘non-polluted’.

During 2016-17, the mean WQI was recorded as ‘Good to Excellent’ in all months except during May and June 2016 and January 2017, 2016 when it was recorded as ‘Good’. During the year 2017-18, the mean WQI was recorded as ‘Good’ in the months of November 2017 and March 2018. The mean WQI was recorded as ‘Good to Excellent’ between April and October 2017, during December 2017 and during January and February 2018.

During 2019-20, the mean WQI was recorded in the ‘Good to Excellent’ category during all months and the water quality was ‘Non-Polluted’ throughout the year.

5.4.5.4 WQI Trend Analysis for Krishna Basin

From **Figure 5.9**, during the year 2015-16, the mean WQI was recorded as ‘Poor’ during the months of August, November, December, January, February & March. For the year 2016-17, except for the month of August & November the mean WQI was recorded as ‘Poor’. During 2017-18, the mean WQI was recorded as ‘Good to Excellent’ in all months except during April, May, and June 2017. During the year 2018-19, the mean WQI was recorded as ‘Good to Excellent’ in all the months. During 2019-20, the mean WQI was recorded in the ‘Good to Excellent’ category from September’ 19 to March’ 20 and the water quality was ‘Non-Polluted’ during these months.

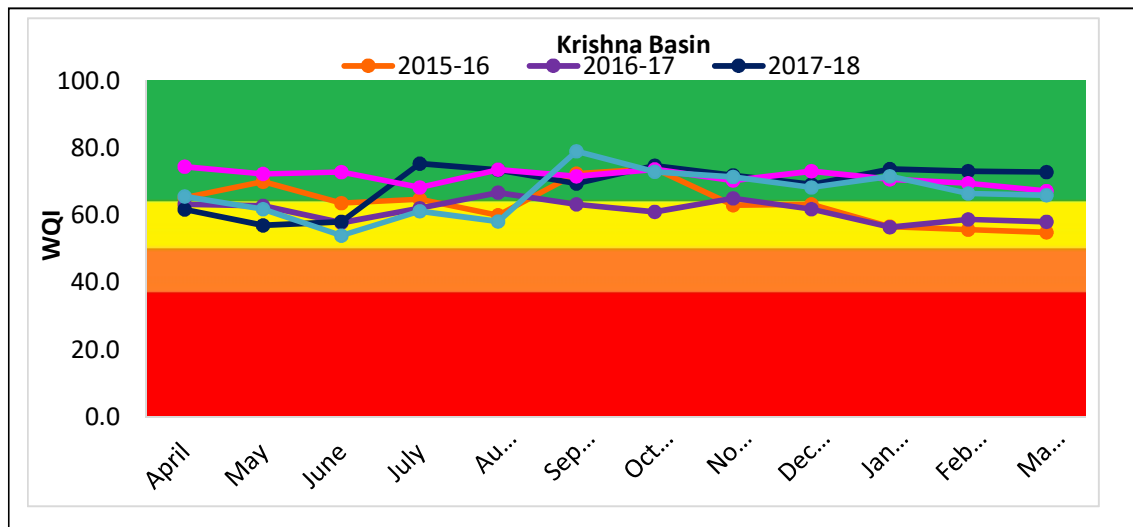


Figure 5.9. Trend Analysis for Krishna Basin.

5.4.5.5 WQI Trend Analysis for West Flowing Rivers

Figure 5.10 shows the trend of WQI over the years 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 for the basin of West Flowing Rivers.

From the above figure it can be observed that during the years 2015-16, 2016-17, 2018-19 and 2019-20, the mean WQI was recorded as 'Good to Excellent' during all months of the year. During the year 2017-18, the mean WQI was recorded as 'Good' during all months except between April and June 2017, where the mean WQI was recorded as 'Good to Excellent'.

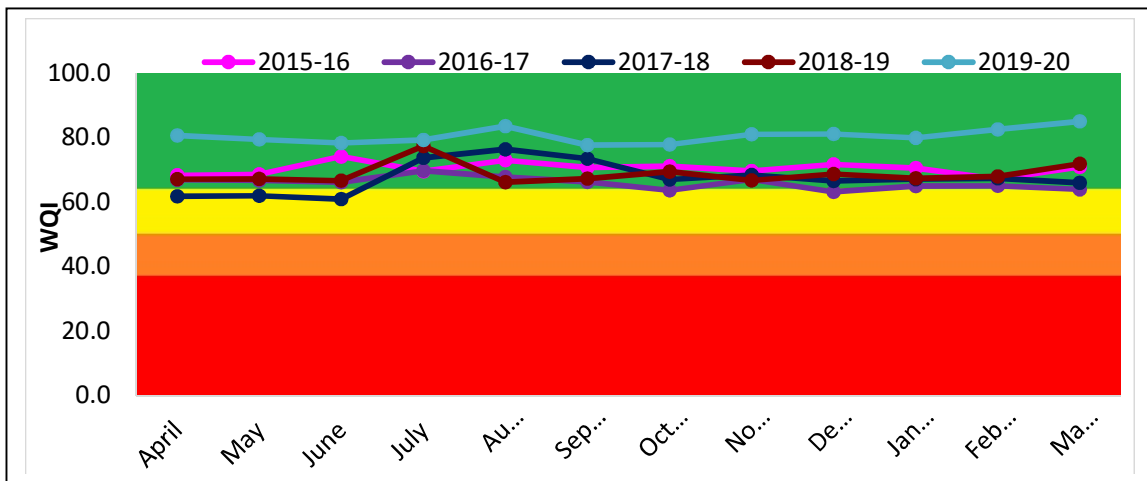


Figure 5.10. Trend Analysis for West Flowing Rivers.

5.4.5.6 WQI Trend Analysis for Saline (sea & creek) sub-basin

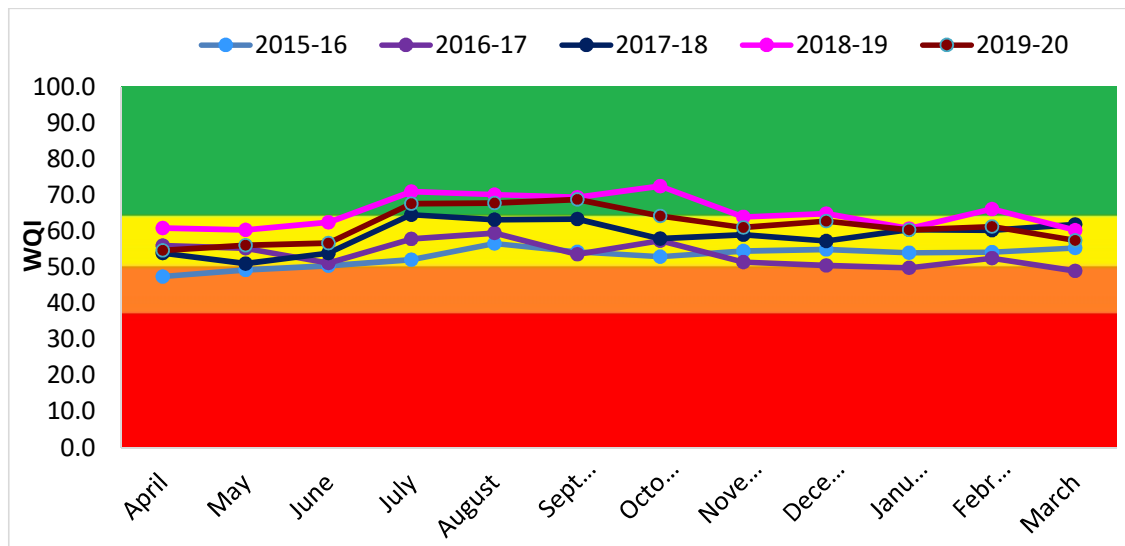


Figure 5.11. Trend Analysis for Saline (Sea and Creek) sub-basin.

From **Figure 5.11** it can be observed that during the year 2015-16, the mean WQI was recorded as 'Poor' during the months of April and May 2015. The water quality during these two months was therefore polluted. The mean WQI was recorded as 'Good' during the remaining months and the water quality was non-polluted.

During the year 2016-17, the mean WQI was recorded as 'Good' between April and December 2016 and in February 2017. The water quality was "Non-Polluted. During the months of January and March 2017, the mean WQI was recorded as 'Poor' and the water quality was therefore polluted.

During the year 2017-18, the WQI was recorded as 'Good to Excellent; during the months of July, August and September 2017. The mean WQI was recorded as 'Good' during the months of April, May, June, October, November and December 2017 and January, February, and March 2018. The water quality was 'Non-Polluted' throughout the year. The mean WQI was recorded as 'Good to Excellent' during the months of July, August, September, October, November and December 2018 and February 2019 during the year 2018-19. The mean WQI was recorded as 'Good' during the months of April, May, June 2018 and January and March 2019. The water quality was non-polluted throughout the year.

During the year 2019-20, the WQI was recorded as 'Good to Excellent; during the months of July, August, September and October. The mean WQI was recorded as 'good' for rest of year. The water quality was 'Non-Polluted throughout the year.

5.5 Industrial Pollution

The Ministry of Environment, Forest, and Climate Change (MoEF & CC) had brought out notifications in 1989, with the purpose of prohibiting/restricting operations of certain industries to protect ecologically sensitive areas. The notifications have introduced the concept of categorization of industries as "Red", "Orange", "Green" and "White" with the purpose of facilitating decisions related to the location of these industries. Subsequently, the application of this concept was extended in other parts of the country not only for the purpose of location of industries, but also for the purpose of Consent management and formulation of norms related to the surveillance/inspection of industries. The process of categorization thus far was primarily based on the size of the industries and consumption of resources. Pollution due to discharge of emissions and effluents and its likely impact on health was not considered as the primary criterion.

Based on brain storming sessions among CPCB, SPCBs and MoEF & CC, the following criteria on "Range of Pollution Index" for the purpose of categorization of industrial sectors have been finalized.

- Industrial Sectors having Pollution Index score of 60 and above - Red category.
- Industrial Sectors having Pollution Index score of 41 to 59 - Orange category.
- Industrial Sectors having Pollution Index score of 21 to 40 - Green category.
- Industrial Sectors having Pollution Index score including and up to 20 - White category.

Maharashtra is one of the most highly industrialized states in India. With a rise in industrial estates in the State, areas like Mumbai, Thane, Navi Mumbai, Kalyan, Nashik, Pune, and Pimpri-Chinchwad that have a large number of pollution-prone industries are facing chronic industrial pollution. In order to maintain a safe distance between industrial units and rivers to avoid discharge of effluent into waterbodies, the State has its policy which also states that no industry will be allowed to establish along a riverbank. Industries are being encouraged to recycle and reuse waste.

Maharashtra Pollution Control Board has 12 Regions viz. Mumbai, Navi Mumbai, Raigad, Thane, Kalyan, Pune, Nashik, Aurangabad, Nagpur, Amaravati, Kolhapur and Chandrapur. The total number of industries under these categories in Maharashtra is 1,01,948. These industries are categorized as red, orange, and green and white, and are further divided into small, large, and medium based on their pollution index. The total number of red industries in Maharashtra is 16,181, orange is 29,421, and green is 46,259. The total number of large industries is 6,163, medium, 2,534, and small, 82,164. The total number of white industries in the State is 10,087. The categorization as well as size of industries within Maharashtra is given in **Table 5.32**.

Table 5.32 Categorization of industries in Maharashtra.

	Large	Medium	Small
Red	3,268	593	12,320
Orange	3,091	1,224	25,106
Green	804	717	44,738
White	10,087		

5.5.1 Analysis and Performance of CETP with Statistical Details

Common Effluent Treatment Plants not only help industries to control pollution with ease but also act as a step towards a cleaner environment and service to the society at large. The concept of CETP has many advantages. Wastewater from few industries often contains a significant

concentration of pollutants and to reduce it to the desired concentration becomes technoeconomically difficult.

- Number and total capacity of CETPs (details of existing/ under construction / proposed) - 26 Nos of CETPs with capacity of 244.85 MLD
- The total number of operational CETPs in Maharashtra is 25
- Status of compliance and operation of the CETPs: 23 CETPs are complied, 2Nos are non-complied and one CETP is shut down

- Numbers of Industries in the state : 92,081
- Nos of water polluting industries in the state : 16,597
- Quantity of effluent generated from the industries : 21 00 MLD
- Quantity of Hazardous Sludge generated from the Industries : 2,738.53TPD
- Number of industrial units having ETPs : 16597
- Number of industrial units connected to CETP : 7856

- Number and total capacity of ETPs (details of existing/ under construction proposed):
No. of ETPs-16,597 with capacity of 2100 MLD
- Compliance status of the ETPs: 16,451 complied and 146 non-complied

Region wise information regarding the number of industries under each category as well as the amount of effluent generated and amount treated along with the performance of CETPs operating in these regions is illustrated below. Standards of 100 mg/l for BOD and 250 mg/l for COD as determined by the CPCB have been considered for evaluation of performance of CETPs.

The tables in the following paragraphs show the minimum and maximum values recorded by individual CETPs for BOD and COD during the year 2019-20 along with the annual mean as well as standard deviation (SD).

5.5.1.1 Amravati

There is one CETP in Amravati Region. The treatment capacity of this CETP is 5MLD. The total industrial effluent received at this CETP was 1.5MLD and all the received effluent was treated during the year 2019-20. The annual performance of the CETP for the year 2019-20 is represented in **Table 33**. The total number of industries in Amravati under each category is demonstrated in **Figure 5.12**.

Table 5.33 Statistical Analysis Data for CETP Performance in Amaravati Region

Parameters		Location	
		Additional Amravati Industrial Area	
Inlet	BOD (mg/l)	Min	113.0
		Max	622.0
		Mean	281.0
		SD	131.5
	COD (mg/l)	Min	288.0
		Max	1552.0
		Mean	700.6
		SD	303.1
Outlet	BOD (mg/l)	Min	3.2
		Max	18.0
		Mean	6.1
		SD	4.0
	COD (mg/l)	Min	12.0
		Max	64.0
		Mean	20.1
		SD	9.7

From **Table 5.33** it can be observed that the inlet BOD at the Additional Amaravati Industrial Area CETP was reduced by 98% whereas the COD was being reduced with about 97% efficiency.

5.5.1.2 Aurangabad

There is one operational CETP provided viz. M/s. Waluj CETP Pvt. Ltd. located at MIDC Area, Waluj with a treatment capacity of 10 MLD. Industrial effluent treated at this CETP during the year 2019-20 was 5 MLD. The total number of industries in Aurangabad under each category is presented in **Figure 5.12** and performance of the CETP is presented in **Table 5.34**.

Table 5.34 Statistical Analysis Data for CETP Performance in Aurangabad Region

Parameters		Location	
		SMS Waluj CETP Pvt Ltd	
Inlet	BOD (mg/l)	Min	35.0
		Max	650.0
		Mean	237.0
		SD	110.7
	COD (mg/l)	Min	212.0
		Max	2416.0
		Mean	841.2
		SD	373.1

Outlet	BOD (mg/l)	Min	17.0
		Max	32.0
		Mean	25.6
		SD	3.0
	COD (mg/l)	Min	72.0
		Max	220.0
		Mean	137.2
		SD	41.1

From **Table 5.34**, it is evident that the CETP at Aurangabad was performing with 89% efficiency in reducing BOD and about 84% efficiency in reducing COD. Also, the post treatment concentration of BOD and COD was within the prescribed discharge limits of 100 mg/l and 250 mg/l respectively.

5.5.1.3 Kalyan

There are 5 operational CETPs in this Region. The collective treatment capacity of these CETPs is 26.55 MLD. The total effluent received by CETPs during the year 2019-20 was 23.7MLD, all of which was treated by these CETPs during the year 2019-20. The total number of industries in Kalyan under each of the categories is demonstrated in **Figure 5.12** and the performance of these CETPs during the year 2019-20 is presented in **Table 5.35**.

Table 5.35 Statistical Analysis Data for CETP Performance in Kalyan Region.

Parameters			Location				
			ACMA - CETP-Co-operative Society Ltd	Badlapur CETP Association	Chikhli-Morivali Effluent Treatment	Dombivali Better Environment System Association	Dombivali CETP (Chemical) (Phase-II)
Inlet	BOD (mg/l)	Min	44.0	190.0	92.0	110.0	38.0
		Max	600.0	950.0	400.0	2100.0	2050.0
		Mean	228.8	518.3	214.4	622.0	573.1
		SD	124.2	176.7	71.8	324.1	348.6
	COD (mg/l)	Min	188.0	604.0	252.0	308.0	80.0
		Max	2112.0	3136.0	984.0	5080.0	6760.0
		Mean	708.6	1573.8	595.8	1673.4	1643.8
		SD	402.8	539.0	174.9	810.9	1071.9
Outlet	BOD (mg/l)	Min	4.0	20.0	10.0	5.0	6.0
		Max	55.0	460.0	110.0	160.0	160.0
		Mean	20.3	120.0	27.5	41.1	45.4
		SD	11.3	106.5	17.5	30.7	32.3
	COD (mg/l)	Min	20.0	56.0	40.0	16.0	20.0
		Max	184.0	1328.0	316.0	376.0	392.0
		Mean	85.0	377.0	113.6	133.8	155.3
		SD	40.3	310.7	54.9	77.2	85.9

From **Table 5.35** it can be observed that the CETP at Badlapur CETP Association was performing at 77% and 76% efficiency in reducing BOD and COD whereas the performance of the rest of the CETPs was more than 85% in BOD and COD reduction. Also, the outlet values at all CETPs were within the prescribed discharge limits of 100 mg/l for BOD and 250 mg/l for COD except for Badlapur CETP Association.

5.5.1.4 Kolhapur

There are 5 operational CETPs in this Region. The collective treatment capacity of these CETPs is 33.5MLD. The total effluent generated and treated by industries in this Region was 15.4 MLD. The total number of industries in Kolhapur under each of the categories is demonstrated in **Figure 5.12.** and performance of CETPs is presented in **Table 5.36.**

Table 5.36 Statistical Analysis Data for CETP Performance in Kolhapur Region

Parameters			Location				
			Ichalkaranji Textile Development Cluster Ltd. (1 MLD)	Ichalkaranji Textile Development Cluster Ltd. (12 MLD)	Kagal-Hatkanangale C.E.T.P.,	L.K. Akiwate Industrial Co Op, Estate Ltd	Lote Parshuram Environment Protection Co-op Society
Inlet	BOD (mg/l)	Min	140.0	260.0	24.0	160.0	110.0
		Max	900.0	900.0	190.0	1600.0	950.0
		Mean	430.5	611.6	58.0	493.2	338.2
		SD	180.8	178.6	36.3	227.4	164.4
	COD (mg/l)	Min	436.0	712.0	116.0	508.0	312.0
		Max	4280.0	4040.0	664.0	6280.0	3232.0
		Mean	1658.6	2364.0	205.5	1896.7	1246.5
		SD	775.0	683.3	109.4	949.7	646.5
Outlet	BOD (mg/l)	Min	14.0	22.0	6.0	24.0	20.0
		Max	115.0	120.0	110.0	95.0	190.0
		Mean	39.7	45.3	23.6	57.0	62.6
		SD	21.8	20.3	16.4	20.4	32.6
	COD (mg/l)	Min	60.0	100.0	24.0	100.0	92.0
		Max	284.0	344.0	356.0	264.0	536.0
		Mean	157.2	167.0	101.2	199.7	208.2
		SD	53.6	51.2	56.2	38.7	87.5

It is evident from **Table 5.36** that Kagal-Hatkanangale CETP was performing with the least efficiency of about 59% in BOD reduction and 51% in COD reduction. The CETP at L.K. Akiwate Industrial Co-op. Estate Ltd. was performing at 88% efficiency in reducing BOD and at 89% efficiency in reducing COD. The Lote Parshuram Environment Protection Co-op.

Society were performing with 81% efficiency in reducing BOD and at 83% efficiency in reducing COD. Both the CETPs at Ichalkaranji Textile Development Cluster Ltd operated at more than 90% efficiency in BOD and COD reduction. The prescribed discharge limits were met at all CETPs.

5.5.1.5 Nagpur

There is one CETP provided in Nagpur Region. The treatment capacity of this CETP is 5 MLD. The total industrial effluent received at the CETP during the year 2019-20 was 4.5 MLD, all of which was treated at this CETP. Total number of industries in Nagpur under each category is presented in **Figure 5.12** and performance of the CETP is presented in **Table 5.37**.

Table 5.37 Statistical Analysis Data for CETP Performance in Nagpur Region.

Parameters		Location	
		Butibori CETP Pvt. Ltd.	
Inlet	BOD (mg/l)	Min	86.0
		Max	1570.0
		Mean	305.0
		SD	258.7
	COD (mg/l)	Min	284.0
		Max	3936.0
		Mean	894.4
		SD	732.6
Outlet	BOD (mg/l)	Min	7.0
		Max	80.0
		Mean	24.7
		SD	13.1
	COD (mg/l)	Min	28.0
		Max	278.0
		Mean	87.0
		SD	45.8

From the table the CETP at Butibori is performing with 91% efficiency in BOD reduction and 90% efficiency in COD reduction. The BOD and COD outlet values after treatment are well within the prescribed limits.

5.5.1.6 Navi Mumbai

There are two operational CETPs in this Region with a collective treatment capacity of 49.5 MLD. The total numbers of industries under each category in this Region are shown in **Figure 5.12**. And performance of the CETPs is shown in **Table 5.38**.

Table 5.38 Statistical Analysis Data for CETP Performance in Navi Mumbai Region.

Parameters			Location	
			Taloja CETP Co Operative Society	Thane-Belapur Association
Inlet	BOD (mg/l)	Min	160.0	50.0
		Max	1900.0	750.0
		Mean	671.3	335.1
		SD	402.7	163.1
	COD (mg/l)	Min	424.0	164.0
		Max	4440.0	2224.0
		Mean	1643.5	991.2
		SD	944.6	451.5
Outlet	BOD (mg/l)	Min	0.0	6.0
		Max	1650.0	130.0
		Mean	336.1	48.8
		SD	304.7	26.9
	COD (mg/l)	Min	116.0	20.0
		Max	3792.0	396.0
		Mean	891.1	166.4
		SD	709.0	76.8

It can be observed from **Table 5.38.** that the CETP at Thane-Belapur Association is performing well with more than 85% efficiency in reducing BOD and at 83% efficiency in reducing COD. The Taloja CETP Cooperative Society has about 49% efficiency in reducing BOD and 45% in reducing COD. However, the outlet values of BOD and COD post treatment were beyond the prescribed limits of 100 mg/l and 250 mg/l respectively at both CETPs.

5.5.1.7 Pune

There are 5 operational CETPs in Pune Region. Their collective treatment capacity is 13 MLD. The total industrial effluent generated in this Region during the year 2019-20 was 6.37 MLD. The total number of industries under each category in this Region is shown in **Figure 5.12.** And performance of the CETPs is shown in **Table 5.39.**

Table 5.39 Statistical Analysis Data for CETP Performance in Pune Region

Parameters			Location				
			Akkalkot Cctp	Greenfield CET Plant P. Ltd	Hydro Air Tectonics (PCD)	Kurkumbh Environment Protection Co-op Society	Ranjangaon CETP
Inlet	BOD (mg/l)	Min	28.0	65.0	0.0	62.0	21.0
		Max	1400.0	410.0	450.0	1850.0	2350.0
		Mean	370.6	239.6	107.3	647.2	218.0

	COD (mg/l)	SD	252.2	75.3	87.5	408.8	383.8
		Min	80.0	33.6	0.0	176.0	60.0
		Max	4320.0	1232.0	1144.0	5840.0	6080.0
		Mean	1051.6	664.4	289.1	1707.4	592.7
Outlet	BOD (mg/l)	SD	760.4	225.5	233.0	1111.7	991.5
		Min	19.0	14.0	0.0	12.5	12.0
		Max	200.0	240.0	140.0	145.0	95.0
		Mean	77.1	46.5	43.9	58.4	34.9
	COD (mg/l)	SD	48.6	42.1	32.7	30.9	19.0
		Min	48.0	32.0	0.0	36.0	28.0
		Max	568.0	424.0	356.0	364.0	256.0
		Mean	214.2	116.3	113.6	150.7	95.0
		SD	143.2	89.6	78.9	73.2	49.7

From **Table 5.39**, it is evident that the CETP at Kurkumbh Environment Protection Co-op. Society is performing at about 91% efficiency. The CETP at Hydro Air Tectonics (PCD) had the performance of about 60% efficiency which is increased as compared to 11% from last year. Akkalkot CETP was performing with 79% efficiency in reducing BOD and COD. The Greenfield CET Plant P. Ltd. was performing at 80% efficiency in reducing BOD and at 82% efficiency in reducing COD. The Ranjangaon CETP was performing with 84% at reducing BOD and with 83% efficiency in reducing COD. The discharge limit for BOD was being met at all CETPs.

5.5.1.8 Raigad

There are 3 operational CETPs in this Region with a collective treatment capacity of 45 MLD. The total amount of effluent generated by industries in this Region during the year 2019-20 was 33 MLD, all of which was treated by these CETPs. The total number of industries under each category in this Region is shown in **Figure 5.12**. And performance of the CETPs is shown in **Table 5.40**.

Table 5.40 Statistical Analysis Data for CETP Performance in Raigad Region.

Parameters			Locations		
			MMA-CETP Co Operative Society Ltd.	PRIA CETP (I) Ltd.	RIA CETP Co-op. Society Ltd.
Inlet	BOD (mg/l)	Min	36.0	5.2	85.0
		Max	440.0	1650.0	1250.0
		Mean	215.6	137.5	423.0
		SD	85.6	315.6	234.7
	COD (mg/l)	Min	108.0	20.0	280.0

		Max	1632.0	3640.0	3344.0
		Mean	697.4	361.5	1350.0
		SD	294.0	706.6	709.2
Outlet	BOD (mg/l)	Min	18.0	5.0	34.0
		Max	120.0	240.0	1000.0
		Mean	44.1	67.5	131.7
		SD	21.8	59.3	147.7
	COD (mg/l)	Min	68.0	40.0	116.0
		Max	380.0	700.0	3312.0
		Mean	169.4	190.0	428.0
		SD	58.6	147.5	483.4

From **Table 5.40**, it is evident that the MMA-CETP Cooperative Society Ltd. was performing very well with 79% efficiency in reducing BOD and with 75% efficiency in reducing COD. The PRIA CETP (I) Ltd. was performing least efficiently with 50% efficiency in reducing BOD and 47% efficiency in reducing COD. The RIA CETP Co-op. Society Ltd. was performing at 68% efficiency. The discharge limits of 100 mg/l BOD and 250 mg/l for COD respectively were being attained at all stations except at RIACETP Co-op. Society Ltd.

5.5.1.9 Thane

There are two CETP (25+25 in Phase II) in Thane Region. The total industrial effluent generated during the year 2019-20 was 20 MLD, all of which was treated at this CETP. The total number of industries under each category in this Region is shown in **Figure 5.12**. And performance of the CETP is shown in **Table 5.41**.

Table 5.41 Statistical Analysis Data for CETP Performance in Thane Region

Parameters			Location	
			Tarapur Environment Protection Society CETP	
Inlet	BOD (mg/l)	Min	230.0	
		Max	2050.0	
		Mean	1027.5	
		SD	459.6	
	COD (mg/l)	Min	540.0	
		Max	6320.0	
		Mean	3231.4	
		SD	1440.2	
Outlet	BOD (mg/l)	Min	20.0	
		Max	1150.0	
		Mean	278.6	
		SD	238.6	
	COD (mg/l)	Min	60.0	
		Max	3000.0	
		Mean	822.0	
		SD	645.5	

From **Table 5.41**. It is observed that the Tarapur Environment Protection Society CETP was performing very well with 73% in reducing BOD and 91% in reducing COD. However, the outlet values of BOD and COD were beyond the prescribed discharge limits of 100 mg/l and 250 mg/l.

5.5.1.10 Mumbai

There is no CETP in this Region at present. Categorization of industries in this Region is given in **Figure 5.12**.

5.5.1.11 Nashik

There presently exists no CETP in this Region. Total number of industries in Nashik under each category is demonstrated in **Figure 5.12**.

5.5.1.12 Chandrapur

There presently exists no CETP in this Region. However, industries are treating their effluent individually within the premises. Therefore, all the effluent generated was treated during the year 2019-20. The total number of industries in Chandrapur under each of the category is demonstrated in **Figure 5.12**.

5.6 Domestic Wastewater Treatment

5.6.1 Analysis of Performance of Sewage Treatment Plants with Statistical Details

Details of STPs according to Regions in the State of Maharashtra are presented in the following sections and the performance of STPs is analyzed based on standards of 10 mg/l for Biochemical Oxygen Demand (BOD) and 20 mg/l for Total Suspended Solids (TSS) as prescribed by CPCB in the Environment (Protection) Rules, 1986 in Schedule – VI.

Sewage generated & treated in urban local bodies of the State during 2019-20;

- **Estimated sewage generation: 9,757.0MLD**
- **Treatment Capacity: 7,747.0MLD**

5.6.1.1 Pune

There are 41 STPs in this region of which 39 are operation during the year 2019-20. The Old Naidu STP is not in operation at present. The STP with treatment capacity of 6 MLD at Shirur is operational; however, results of the sample collected were not received. Also, samples were

not collected at both STPs located at Malkapur. Therefore, the results of STP performance were not available for the above mentioned STPs. The total domestic effluent received at these STPs during the year 2019-20 was 1229.5 of which 392.76 was the total sewage treated. The mean of annual performance and analysis of all STPs provided in Pune Region are represented in **Table 5.42.**

Table 5.42 Mean of Annual Performance of STPs in Pune Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Erandwane STP, S.No. 3 & 4 Erandwane	7.9	-	8.8	-	35	10
Bopodi STP, S.No. 2A, 2B, 2C, 2D & 6 (P) Bopodi	8	-	53.5	-	20	15
S. No. 24, Shivajinagar	8	-	11.5	-	12	12
Bhairoba STP, Final plot No. 330 S. No. 33A, 33B Koregaon Park	8	-	58.3	-	34	34
Mundhwa STP, S. No. 2, 3A, 4 Mundhwa	8.1	-	7.4	-	14	14
Vithalwadi STP, S. No. 20(P) Hingne	7.7	-	11.5	-	-	10
Old Naidu STP, S.No.439 To 444 Pune final Plot No. 98, Kennedy Road	-	-	-	-	-	-
Baner STP, S. No. 221 To 227 Baner	8.2	-	7.5	-	8	8
Kharadi STP, S. No. 74, 75 Kharadi	8.1	-	10	-	12	12
New Naidu STP, S. No. 439 To 444, Pune final Plot No. 98 Kennedy Road	8	-	9	-	8	12
Chikhali Phase I	-	7.7	-	13	-	13.0
Chikhali Phase II	-	7.85	-	11.88	-	10.0
Akurdi	-	7.6	-	7.75	-	14.5
Ravet	-	7.63	-	8.83	-	12.5
Chinchwad Phase I (Bhatnagar)	-	7.85	-	11.88	-	10.5
Chinchwad Phase II	-	7.68	-	8.0	-	8.5
Kasarwadi I	-	7.73	-	7.68	-	14.5
Kasarwadi II	-	7.6	-	10.40	-	14.5
Kasarwadi III	-	7.73	-	6.68	-	9
Charholi Phase I	-	7.58	-	8	-	20.5
Sangvi Phase I	-	7.48	-	12.15	-	9
Sangvi Phase II (Dapodi)	-	7.65	-	8.23	-	10

Pimple Nilakh	-	7.63	-	8.43	-	12.5
Karad Municipal Council, Sr.No.342-B, Baradabari, Shaniwar Peth, Karad, Tal-Karad, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Mahabaleshwar Municipal Council STP No.1 at compartment no. 79 (City Survey no.257/1), behind Karmachari Vasahat, Mahabaleshwar, Tal-Mahabaleshwar, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Mahabaleshwar Municipal Council STP No. 2 at Survey No. 626, near Dhobi Ghat, Mahabaleshwar, Tal-Mahabaleshwar, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Panchgani Municipal Council STP No. 1 at Survey No. 83/2 near Siddharthnagar, Panchgani, Tal-Mahabaleshwar, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Panchgani Municipal Council STP No. 2 at Plot no. 497/4 & 5 near Shivajinagar, Panchgani, Tal-Mahabaleshwar, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Panchgani Municipal Council STP No. 3 at Hindu Crematorium, Panchgani, Tal-Mahabaleshwar, Dist-Satara	Not collected	-	Not collected	-	Not collected	-
Malkapur Municipal Council Gate No 214,215 Mali Nagar Malkapur, Tal-Karad, Dist Satara.	Not collected	-	Not collected	-	Not collected	-
Malkapur Municipal Council Gate No10, A/P Malkapur, Tal-Karad, Dist-Satara.	Not collected	-	Not collected	-	Not collected	-
Degaon STP, Solapur	7.7	7.7	80	5.02	151	8.8
Kumathe STP, Solapur	-	7.72	-	4.78	-	10.4
Pratap Nagar STP, Solapur	-	7.84	-	4.46	-	9.4
Pandharpur Municipal Corporation, Gopalpur STP	8.05	8	221.25	48.375	213.75	29.125

It can be observed from **Table 5.42.** that the outlet values of BOD were greater than the prescribed discharge standard of 10 mg/l at Chikhali Phase I, Chikhali Phase II, Chinchwad phase I, Kasarwadi II Sangvi Phase I, Degaon, Kumathe, Pratap Nagar, Gopalpur, 65 Acre Pandharpur. The outlet values of suspended solids were also observed to be greater than the prescribed discharge standard of 20 mg/l at Bhairoba STP, Pune Cantonment Board, Khadaki Cantonment Board, Chahroli phase I, Degaon.

5.6.1.2 Chandrapur

There are 3 operational STPs in this Region provided by Chandrapur Municipal Corporation. The collective treatment capacity of these STPs is 70.5 MLD. The total quantity of domestic effluent received and treated at these STPs during the year 2019-20 was 36 MLD. The mean of annual performance and analysis of all STPs provided in Chandrapur Region are represented in **Table 5.43**.

Table 5.43 Mean of Annual Performance of STPs in Chandrapur Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Pathanpura, Chandrapur	7.97	8.28	15.54	11.66	43.89	23.25
Rehmat Nagar, Chandrapur	7.85	7.80	106.16	10.86	51.78	19.00
Azad Nagar, Chandrapur	8.13	7.80	23.03	21.37	27	18.83

It is evident from **Table 5.43**, that the outlet values of BOD did not exceed the prescribed standards at any of the STP. The outlet values of suspended solids were not within the prescribed discharge standards at Chandrapur STP.

5.6.1.3 Nagpur

There are six operational STPs in this Region provided by Nagpur Municipal Corporation (NMC). The collective treatment capacity of these STPs is 341.3 MLD. The total effluent received at these STPs was 520 MLD of which 341.3 MLD was treated during the year 2019-20. The mean of annual performance and analysis of all STPs provided in Nagpur Region are represented in **Table 5.44**.

Table 5.44 Mean of Annual Performance of STPs in Nagpur Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Bhandewadi (130CMD)	7.89	7.5	40	7.13	250	14.67
Bhandewadi (200CMD)	8.05	7.5	33	12.4	25.5	15
Mankapur	7.95	7.7	52	18	44	21
Ghat Road Nagpur	9.98	7.26	14	8.1	22	21
Kachiment, Nagpur	7.82	7.4	58	11	42	22
Sonegaon	7.68	7.4	68	20.4	36	24

From **Table 5.44** it can be observed that outlet values for BOD at STPs were within the prescribed standard of 10 mg/l at Bhandewadi -130CMD, 200CMD, Mankapur STP, Ghat road Nagpur STP, Kachiment Nagpur STP, Sanegaon STP. The outlet value at Mankapur STP, Ghat

road Nagpur STP, Kachiment Nagpur STP, Sanegaon STP were greater than the prescribed discharge standard of 20 mg/l.

5.6.1.4 Nashik

There are 12 operational STPs in this Region, 9 which have provided by Nashik Municipal Corporation, one has been provided by Shirdi Municipal Council, Dist. Ahmednagar and One has been provided by Shirpur Municipal Council, Dist. Dhule, and one has been provided by Nandurbar Municipal council, Dist. Nandurbar. The collective treatment capacity of these STPs is 390.5 MLD. The total domestic effluent generated in this Region during the year 2019-20 was 353.94 and all the sewage generated was treated by these STPs. The total quantity of domestic effluent received at the STPs provided at SRO Nashik is not available. However, the total sewage received at Shirdi STP was 10 MLD and the total sewage received at the STPs at Shirpur was 8.64 MLD. The mean of annual performance and analysis of all STPs provided in Nashik Region are represented in **Table 5.45**.

Table 5.45 Mean of Annual Performance of STPs in Nashik Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Panchak 7.5 MLD	NA	7.4	NA	20	NA	64
Panchak 21 MLD	NA	7.4	NA	20	NA	64
Panchak 32 MLD	NA	7.25	NA	12.04	NA	47.8
Chehedi 21 MLD	NA	7.53	NA	12.1	NA	62.75
Chehedi 22 MLD	NA	7.4	NA	19.66	NA	65.66
Tapowan-78 MLD	NA	7.16	NA	18.33	NA	69
Tapowan-52 MLD	NA	7.18	NA	13	NA	45
Agar Takali 70 MLD	NA	7.19	NA	13.52	NA	42.6
Agar Takali 40 MLD	NA	7.29	NA	15.6	NA	52.8
Municipal council Trimbak 1MLD	-	-	-	-	-	-
Shirdi Nagarpanchayat,6 Shirdi, Tal-Rahata Dist- Ahmednagar.	6	7	120	20	200	10
Municipal Council - Shirpur, Tal. Shirpur, Dist. Dhule	7.48	7.3	80	36	60	20
Municipal Council- Nandurbar, Tal & dist Nandurbar	7.14	7.42	34	12	68	23

From **Table 5.45**. It is evident that the outlet values for suspended solids were within the prescribed standard of 20 mg/l at Shirdi Nagarpanchayat.

5.6.1.5 Navi Mumbai

There are 8 operational STPs in Navi Mumbai Region. The collective treatment capacity of these STPs is 459.7 MLD. The total effluent received at these STPs was 462.5 MLD all of which was collectively treated during the year 2018-19 by these STPs. The mean of annual performance and analysis of all STPs provided in Navi Mumbai Region are represented in **Table 5.46**.

Table 5.46 Mean of Annual Performance of STPs in Navi Mumbai Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
CBD Belapur Sector – 12	NC	6.9	NC	4	NC	10
Vashi Sector – 18	NC	6.95	NC	28	NC	15
Nerul Sector – 2	NC	6.8	NC	54	NC	32
Sanpada Sector – 20	NC	6.9	NC	5	NC	12
Seawood Sector – 50	NC	6.8	NC	7	NC	10
Ghansoli Sector – 15	NC	6.8	NC	21	NC	14.7
Airoli Sector – 18	NC	7.3	NC	9.8	NC	12.8
Koparkhairane	NC	7.1	NC	11	NC	17.6

* NC = Not collected

From **Table 5.46** it can be observed that outlet values for BOD were greater than the prescribed discharge standards of 10 mg/l at the STP at Nerul Sector – 2. Outlet values of suspended solids exceeded prescribed limits of 20mg/l at Nerul Sector – 2.

5.6.1.6 Thane

There are 12 operational STPs in Thane Region with a collective treatment capacity of 256.40 MLD. The total quantity of domestic effluent generated in this Region during the year 2019-20 was 186 MLD of which 186 MLD was collectively treated by these STPs. The mean of annual performance and analysis of all STPs provided in Thane Region are represented in **Table 5.47**.

Table 5.47 Mean of Annual Performance of STPs in Thane Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Mumbra	-	6.6	-	12.06	-	20
Kopri	-	6.9	-	9	-	12
Vartak Nagar	-	6.5	-	9.5	-	13.25
Near Garden Court Tower, Bhayander (W)	-	7	-	5	-	12

Jessal Park STP-MBMC	-	6.8	-	130	-	104
Shrushti Complex, Mira Road	-	7.3	-	6	-	10
Mhada- Shanti Garden- Mira Penkarpada Gavthan (Mhada Colony)	-	7.1	-	16	-	11
Shanti Nagar, Nearayappamandir, Mira Road Station.	-	7	-	16	-	10
Shanti Park, Sanghavinagar, Miraroad	-	7.1	-	18	-	12
Kanakia, Mira Road (E)	-	7	-	14	-	12
Ghodbunder- Survey No. 233, Kashigaon, Mashachhapada Bhayander,	-	7.5	-	18	-	11.5
Bolinj Village, Virar (W)	-	6.8	-	115	-	51

Prescribed standard of 10 mg/l for BOD were observed at Mumbra, Jessal Park STP-MBMC, Mhada- Shanti Garden-Mira Penkarpada Gavthan (Mhada Colony), Shanti Nagar Nearayappamandir Mira Road Station, Shanti Park Sanghavinagar Miraroad, Kanakia Mira Road (E), Ghodbunder- Survey No. 233, Kashigaon Mashachhapada Bhayander, Bolinj Village, Virar (W). It is evident from the above table that the outlet values for BOD & Suspended solids were greater than the prescribed standard of 10 & 20 mg/l respectively at Jessal Park STP-MBMC & Bolinj Village, Virar (W).

5.6.1.7 Aurangabad

There are 7 STPs in this Region, 4 of which have been provided by Aurangabad Municipal Corporation. The STPs at Bondar and Elichpur & Sangavi have been provided by the Nanded-Waghala City Municipal Corporation. The total treatment capacity of these STPs is 343MLD. The total domestic effluent received at these STPs during the year 2019-20 was 162.0MLD and 141.0MLD was treated by these STPs. The mean of annual performance and analysis of all STPs provided in Aurangabad Region is represented in **Table 5.48**.

Table 5.48 Mean of Annual Performance of STPs in Aurangabad Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Kanchanwadi, Aurangabad	-	7.9	-	45	-	-
Padegaon, Aurangabad	-	7.5	-	48	-	-
Salim Ali Lake, Aurangabad	-	7.4	-	68	-	-
Zalta, Aurangabad	-	7.2	-	44	-	-
Bondar STP	-	7.2	-	43.74	-	96.5
Elichpur STP	-	7.1	-	35	-	52.75
Sangvi STP	-	7	-	39.3	-	72.4

It can be observed from **Table 5.48**, that the outlet values of BOD were not within the prescribed standards at all STPs. The outlet values of Suspended Solids were not within the prescribed discharge standards at Sangvi STP, Elichpur STP, Bondar STP.

5.6.1.8 Amaravati

There are 3 STPs in this region, two of which are located in Amaravati District while one is located in Buldana district. The total treatment capacity of these STPs is 81.5 MLD and the same quantity of total sewage load was received at these STPs during the year 2019-20. All the received domestic effluent was treated at these STPs. The mean of annual performance and analysis of all STPs provided in Amaravati Region is represented in **Table 5.49**.

Table 5.49 Mean of Annual Performance of STPs in Amaravati Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Lalkhadi, Amaravati STP I	7.91	7.52	160	26	60	20
Lalkhadi, Amaravati STP II	7.90	7.51	176	28	68	24
Shegaon, Buldana	8.15	7.65	28	12	32	18

From **Table 5.49** it is evident that the outlet values for BOD were beyond the prescribed discharge standard of 10 mg/l only at Lalkhadi, Amaravati STP I, Shegaon, Buldhana. The outlet values for suspended solids were beyond the prescribed standard of 20 mg/l only at Lalkhadi, Amaravati STP II.

5.6.1.9 Kolhapur

There are 6 STPs in this Region, the collective treatment capacity of which is 172.7 MLD. The total effluent generated in this Region was 202.0MLD. The total domestic effluent received at these STPs was 191.7MLD of which 135.2MLD was treated during the year 2019-20. The mean off annual performance and analysis of all STPs provided in Kolhapur Region are represented in **Table 5.50**.

Table 5.50 Mean of Annual Performance of STPs in Kolhapur Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Kasaba Bawada	-	7.45	-	9.32	-	16.33
Dudhali	-	7.8	-	5.2	-	13.61
Ichalkaranji	-	7.6	-	6.03	-	14.41
Dhulgaon	--	7.2	--	4	--	13

Miraj	--	7.5	--	18	--	16
100 ft. road	--	7.3	--	6.4	--	14

From the table it can be observed that the outlet values for BOD and suspended solids were within the prescribed discharge standards of 10 mg/l and 20 mg/l respectively.

5.6.1.10 Raigad

There are 8 STPs in this Region which have a collective treatment capacity of 306 MLD. The total sewage generated in this Region was 266.7MLD. The same amount of domestic sewage was received and treated during the year 2019-20. The mean of annual performance and analysis of all STPs provided in Raigad Region are represented in **Table 5.51**.

Table 5.51 Mean of Annual Performance of STPs in Raigad Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Bandar Road, Panvel, Dist. Raigad.	-	6.93		13.8	-	23.6
Sector-16, Kharghar, Tal. Panvel, Dist. Raigad.	-	6.88	-	17.38	-	19.25
Sector-16, Kharghar, Tal. Panvel, Dist. Raigad.	-	6.87	-	24.73	-	15.64
Sector-32, Kamothe, Tal. Panvel, Dist. Raigad.	-	6.73	-	44.86	-	33.71
Sector-12, Kalamboli, Tal. Panvel, Dist. Raigad.	-	6.82	-	30	-	37
Sector-06, Ulwe, Tal. Panvel, Dist. Raigad.	-	7.3	-	6	-	14
Kalundre, Kalundre Gaon, Panvel, Navi Mumbai	-	7.6	-	4	-	10
CIDCO Karanjade	-	7	-	4	-	12

From the **Table 5.51** it can be observed that the outlet values for BOD are within the prescribed standards of 10 mg Sector-06, Ulwe, Tal. Panvel, Dist. Raigad, Kalundre, Kalundre Gaon, Panvel, Navi Mumbai, CIDCO Karanjade. Outlet values for Suspended Solids are within the prescribed limits of 20mg/l at CIDCO STP, Sector - 16, Kharghar, Sector-16, Kharghar, Tal. Panvel, Dist. Raigad, Sector-6, Ulwe, Kalundre, Kalundre Gaon, Panvel, Navi Mumbai.

5.6.1.11 Kalyan

There are 11 STPs in this Region, the collective treatment capacity of which is 232.7MLD. The total domestic effluent received at these STPs was 354 MLD of which 134.2MLD was treated

during the year 2019-20. The mean off annual performance and analysis of all STPs provided in Kalyan Region are represented in **Table 5.52**.

Table 5.52 Mean of Annual Performance of STPs in Kalyan Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Barve STP: Mouje - Barve, Tal. Kalyan	-	7.2	-	9.5	-	21.7
Adharwadi STP: Tal. Kalyan	-	7.1	-	6.8	-	13.7
Chinchapada STP: Mouje- Kate Manivali	-	7.2	-	6.7	-	16.3
Dombivali Thakurli STP: Motagon, Dombivali	Operational					
Titwala (E) STP: Mouje- Manda (E), Tal. Kalyan	-	7.1	-	4	-	12.3
Titwala (W) STP: Mouje- Manda (E), Tal. Kalyan.	-	7.5	-	5.8	-	13
Vadalgaon	6.8	7.4	60	6	30	14
Chikloli	6.8	7.1	64	20	26	12
Badlapur	6.2	6.7	12	4	18	12
Ulhasnagar Vadolgaon	Nil					
Bhiwandi Nizampur City Municipal Corporation, Bhiwandi, Tal.-Bhiwandi, Dist.-Thane	7.35	7.55	125	10	153	23

From **Table 5.52**, it can be observed that the outlet values of BOD were greater than the prescribed discharge standard of 10 mg/l at all STPs Chikloli and Bhiwandi Nizampur City Municipal Corporation. The outlet values of suspended solids exceeded prescribed discharge standard of 20 mg/l at Barve STP: Mouje - Barve, Tal. Kalyan and Barve STP: Mouje - Barve, Tal. Kalyan.

5.6.1.12 Mumbai

There are 8 operational STPs in Mumbai Region. The collective treatment capacity of these STPs is 2717.0 MLD. The total effluent received at these STPs was 2190 MLD of which 2052.1 MLD was collectively treated during the year 2019-20 by these STPs. The mean of annual performance and analysis of all STPs provided in Mumbai Region are represented in **Table 5.53**.

Table 5.53 Mean of Annual Performance of STPs in Mumbai Region.

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Colaba	7.6	7.03	124	89.6	82	64
Worli	7.2	6.98	118	71.5	65	41.6
Bandra	7.7	7.6	190	35	110	24

Varsova	7.3	7.1	172	42	90	38
Bhandup	-	7.3	-	15	-	22
Ghatkopar	-	6.8	-	40	-	30
Malad	6.9	7	250	90	35	18
Charkop	7.5	7.3	80	78	115	16

From **Table 5.53**, it can be observed that outlet values for BOD were greater than the prescribed discharge standard of 10 mg/l at all STPs except Bhandup whereas the outlet values for suspended solids were greater than the prescribed standard of 20 mg/l at Colaba, Worli, Bandra, Varsova, Bhandup and Ghatkopar.

5.7 Solid Waste Management in Maharashtra

Municipal Solid Waste (Management & Handling) Rules, 2000, came into force as per the notification published by Ministry of Environment & Forest, New Delhi on 25.09.2000 is superseded by Solid Waste Management Rules, 2016.

The inventory of solid waste generation and disposal from the state during the year 2019 is presented in following sections. **Table 5.54** shows total number of local bodies and cantonment board in the state responsible for generation of the waste **Table 5.55** represents quantity of solid waste generated from these local bodies whereas **Table 5.56** represents treatment (%) of generated waste.

Table 5.54 Total number of local bodies: 387 and Cantonment Board-07

1.	Municipal Corporations	27
2.	'A' Class Municipal Council	18
3.	'B' Class Municipal Council	70
4.	'C' Class Municipal Council	148
5.	Nagar Panchayat	124
6.	Cantonment Board	07

Table 5.55 Solid Waste Generation

Local Body	No. of ULBs	Qty (MT/Day)	Percentage (%)
Municipal Corporation	27	19050.11	83.02
A Class Municipal Councils	18	1028	4.48
B Class Municipal Councils	70	1267.92	5.53
C Class Municipal Councils	148	1051.96	4.58
Nagar Panchayats	124	450.76	1.96
Total	387	22848.75	
Cantonment Board	07	96.5	0.42
Gross Total	394	22945.25	100

Table 5.56 Solid Waste Treatment

Local Body	No. of ULBs	Qty (MT/Day)	Percentage (%)
Municipal Corporation	27	13488.47	84.11
A Class Municipal Councils	18	588.50	3.67
B Class Municipal Councils	70	925.22	5.77
C Class Municipal Councils	148	727.07	4.53
Nagar Panchayats	124	264.90	1.65
Total	387	15994.16	
Cantonment Board	07	43.1	0.27
Gross Total	394	16037.26	100%

5.7.1 Analysis of Municipal Solid Waste Management with Statistical details (Region-wise)

The detailed report on the quantity of different categories of MSW generated and treated in all the regions in Maharashtra during the year 2019 is given in **Table 5.57**.

Table 5.57 Region-wise Statistical analysis of MSW (Generation & Treatment)

Sn.	Region	MSW Generation (MT)	MSW treated (MT)	Treatment (%)
1.	Aurangabad	1744.06	1185.85	67.99
2.	Nashik	1916.89	1397.89	72.93
3.	Nagpur	1387.44	455.76	32.85
4.	Pune	3811.48	3335.89	87.52
5.	Chandrapur	446.76	304.11	68.07
6.	Amravati	910.07	319.60	35.11
7.	Kolhapur	791.896	551.92	69.69
8.	Raigad	562.82	443.82	78.85
9.	Thane	2172.02	1563.82	71.99
10.	Kalyan	1683.32	309	18.35
11.	Navi Mumbai	761	626.50	82.32
12.	Mumbai	6661	5500	82.57
	Total	22848.76	15994.17	70.01

5.7.2 Trend Analysis of Municipal Solid Waste Generation and Treatment over 4 years

Analysis of the trends of Municipal Solid Waste generation and treatment in all Regions over the years 2016-17, 2017-18, 2018 and 2019 has been carried out to study and compare the trends of generation and treatment of MSW over duration of 4 years. **Figures 5.13** and **5.14** graphically represent the trends of average MSW generation and treatment over the span of 4 years in all regions.

From **Figure 5.13** it can be seen that the generation of MSW shows an increasing trend over

the 4 years in most of the regions in the State. The most striking increase in generation of MSW since the year 2016-17 is observed in the Regions of Aurangabad, Nashik & Thane. However it has to be noted that in Regions such as Mumbai, Amaravati, Chandrapur, Kalyan, Nagpur, Raigad & Nashik has reduced waste generation from last year i.e 2018. In the remaining Regions of Aurangabad, Kolhapur, Navi Mumbai Pune and Thane, the generation of MSW over these 4 years has increased gradually.

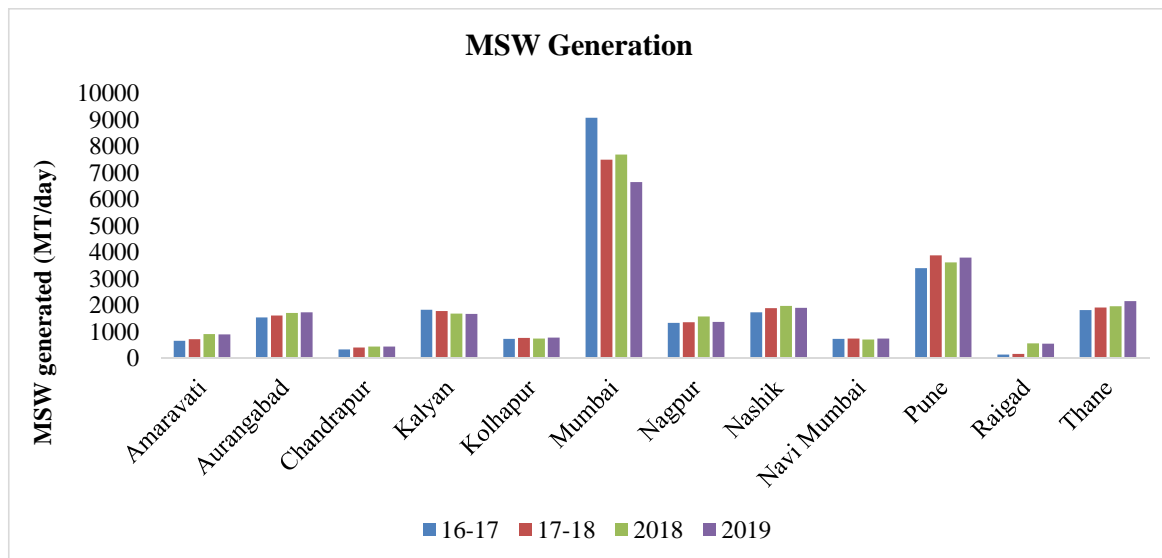


Figure 5.13. Trend Analysis of MSW generation over 4 years.

5.7.3 Trend Analysis of MSW treatment over 4 years

Trend analysis of MSW treatment over past 4 years in the State of Maharashtra reveals, quantity of MSW treated has definitively increased with considerably high differences. In the Region Navi Mumbai & Raigad; the quantity of treated MSW is slightly less than last year i.e. 2018.

In the Regions of Kolhapur, Nagpur, Navi Mumbai, Raigad and Thane, the quantity of MSW treated shows an increasing trend in succeeding years. The most significant increase in quantities of MSW treated can be observed at Mumbai, Pune and Thane and the same is evident in the **Figure 5.14**.

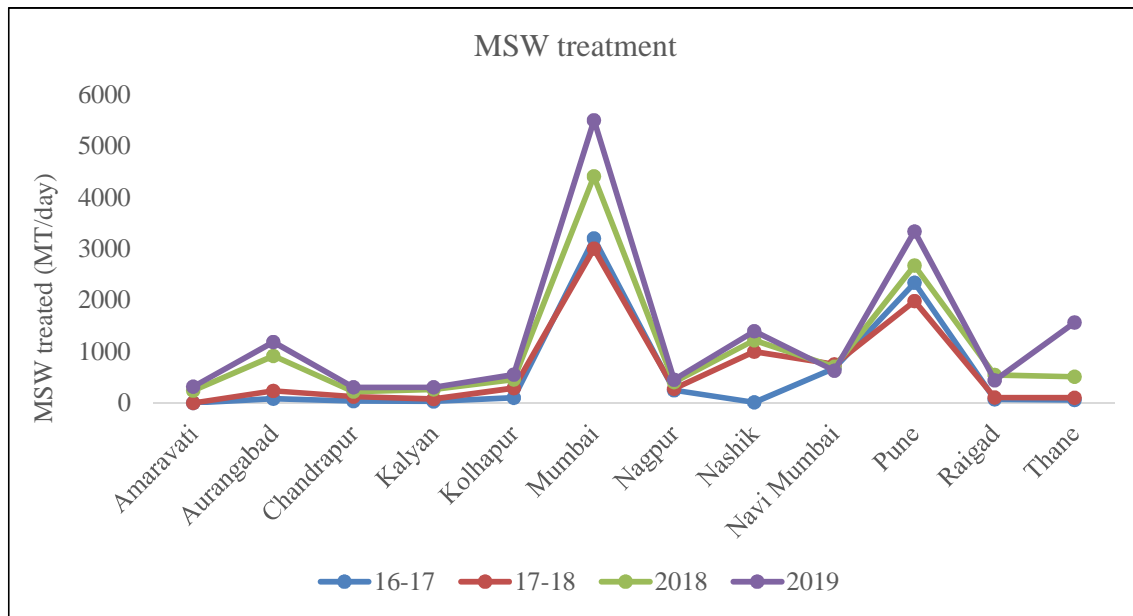


Figure 5.14. Trend Analysis of MSW treatment over 4 years.

5.8 Hazardous Waste Generation during the year 2019-20

Table 5.58 Details on total generation Hazardous Waste during the year 2019-20

Hazardous Waste Inventory							
		Name of the District	Landfillable	Recyclable	Incinerable	Utilizable Qty.	TOTAL
1	137	Ahmednagar	2944.93	36550.47	2168.57	11244.86	52908.83
2	28	Akola	640.69	183.00	275.30	390.58	1489.57
3	49	Amravati	9719.46	99.92	54.54	218.45	10092.37
4	343	Aurangabad	39324.03	29773.64	17409.05	74795.70	161302.42
5	13	Beed	59.40	866.60	117.58	35.90	1079.48
6	25	Bhandara	2061.89	6058.54	105.96	190.49	8416.87
7	15	Buldhana	2057.95	22.30	208.56	268.92	2557.73
8	80	Chandrapur	711.85	1856.99	1667.76	189302.94	193539.53
9	35	Dhule	4928.37	3673.86	562.44	393.90	9558.57
10	2	Gadchiroli	0.00	2.00	0.00	0.00	2.00
11	4	Gondia		403.05	200.00	12.00	615.05
12	5	Hingoli	0.00	1.50	51.00	8.00	60.50
13	99	Jalgaon	4975.21	3368.68	2156.08	68968.98	79468.94
14	26	Jalna	18483.32	118.78	7467.16	17.20	26086.46
15	256	Kolhapur	36368.43	3737.01	5480.85	2389.51	47975.79
16	19	Latur	665.12	13.36	894.93	5.84	1579.24
17	456	Mumbai	38586.37	112981.31	14172.38	11061.73	176801.79
18		Mumbai Suburban					
19	298	Nagpur	17005.17	21428.44	6259.60	8544.22	53237.42
20	17	Nanded	118.34	132.84	10.11	86.40	347.68
21	14	Nandurbar	61.82	6.43	1091.50	100.80	1260.55
22	398	Nashik	14479.65	19586.98	12106.15	24315.68	70488.46

23	16	Osmanabad	247.71	32.26	1130.80	8.70	1419.46
24	723	Palghar	85785.24	73190.10	14635.06	398466.96	572077.37
25	6	Parbhani	0.00	4.70	24.08	0.00	28.77
26	1336	Pune	81423.43	69334.35	72302.24	160548.68	383608.70
27	675	Raigad	194953.81	354235.70	66725.31	65901.50	681816.33
28	106	Ratnagiri	29198.04	7385.32	3063.85	52815.77	92462.98
29	88	Sangli	4151.32	5933.00	19410.68	608.27	30103.27
30	171	Satara	4586.58	5805.50	2599.31	2660.86	15652.25
31	2	Sindhudurg	0.00	1010.00	0.50	0.00	1010.50
32	161	Solapur	5309.88	2257.70	2071.69	140.31	9779.58
33	1598	Thane	111567.34	66236.14	45148.94	89372.72	312325.14
34	27	Wardha	1944.02	2647.66	184.60	98.40	4874.69
35	1	Washim	6.00	7.30	0.00	0.00	13.30
36	28	Yavatmal	2514.78	443.71	46.27	13.00	3017.76
	7257		714880.12	829389.13	299802.84	1162987.25	3007059.34

5.8.1 Status of Common Hazardous Waste Treatment, Storage & Disposal Facility

There are total 4 number of Common Hazardous Waste Treatment, Storage & Disposal Facilities installed and operating successfully in the State of Maharashtra, 2 facilities namely Mumbai Waste Management [MWM], Taloja, Trans Thane Waste Management Association [TTCWMA], Mahape, are located under Navi Mumbai Region, 1 facility namely Maharashtra Enviro Power Ltd [MEPL], Ranjangaon is located under Pune region & Maharashtra Enviro Protection Ltd. [MEPL], Buttibori is located under Nagpur region. Presently around 7,257 industries are member of these 4 facilities and disposing their Hazardous Waste.

Table 5.59 Summary of Individual Capacities of CHWTSDFs.

Name of Facility & Address	M/s. Mumbai Waste Management Limited, Plot No. P-32, MIDC, Taloja,	M/s. Trans Thane Waste Management Association P-128, Shil-Mahape Road, Next to L&T Infotech Ltd.	M/s. Maharashtra Enviro Power Ltd. Ranjangaon	M/s. Maharashtra Enviro Power Ltd. (SPV of M/s. Shaktikumar M. Sancheti Ltd) Buttibori
Capacity of the Facility	SLF- 1,20,000 MT/Year	SLF- 21,600 MT/Year	SLF- 60,000 MT/Year	SLF- 60,000 MT/Year
	1. INC - 1.5 TPH.	INC-No Facility	INC- 3.0 TPH	INC- 3.0 TPH
	2. INC- 1.5 TPH	(Incinerable HW sent to Taloja)		

Table 5.60 Summary of Hazardous Waste Received at disposal sites in 2019-20

Sr. No.	SITE	SLF (MT/A)	INC (MT/A)	TOTAL (MT/A)
1	MWML - TALOJA	180244.00	30284.00	210528.00
2	TTCWMA - MAHAPE	22695.32	-	22695.32
3	MEPL - RANJANGAON	86438.13	21327.24	107765.37
4	MEPL - BUTIBORI	17510.36	2690.58	20200.94
	TOTAL	306887.81	54301.81	361189.63

There are currently 7257 industries that are generating Hazardous Waste in the state. Various methods viz. SLF & INC are used for the treatment of this Hazardous Waste. 306887.814MT/A of HW is treated by SLF method and 54301.82 MT/A by INC method.

In the State of Maharashtra 439 No. of facilities authorized for recycling / utilization of Hazardous & Other Wastes having total authorized capacity of 1384925.6 MT. In the year 2019-20, in Maharashtra state 628720.28 MT Waste is recycled.

Table 5.61 District wise Updation for HW authorizatons

Authorizations- District wise updation as of 31 st March 2020		
Sr. No.	Districts	Total Nos of Units
1	Ahmednagar	137
2	Akola	28
3	Amravati	49
4	Aurangabad	343
5	Beed	13
6	Bhandara	25
7	Buldhana	15
8	Chandrapur	80
9	Dhule	35
10	Gadchiroli	2
11	Gondia	4
12	Hingoli	5
13	Jalgaon	99
14	Jalna	26
15	Kolhapur	256
16	Latur	19
17	Mumbai	456
18	Mumbai Suburban	
19	Nagpur	298
20	Nanded	17
21	Nandurbar	14
22	Nashik	398
23	Osmanabad	16
24	Palghar	723
25	Parbhani	6

26	Pune	1336
27	Raigad	675
28	Ratnagiri	106
29	Sangli	88
30	Satara	171
31	Sindhudurg	2
32	Solapur	161
33	Thane	1598
34	Wardha	27
35	Washim	1
36	Yavatmal	28
Total		7257

5.8.2 Trend analysis of Hazardous Waste received at disposal sites over 5 years

Analysis of the trends of Hazardous Waste received at all disposal sites in the State over the years 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 has been carried out. **Figure 5.15** graphically represents the trend of average Hazardous Waste received over the span of 5 years at disposal sites.

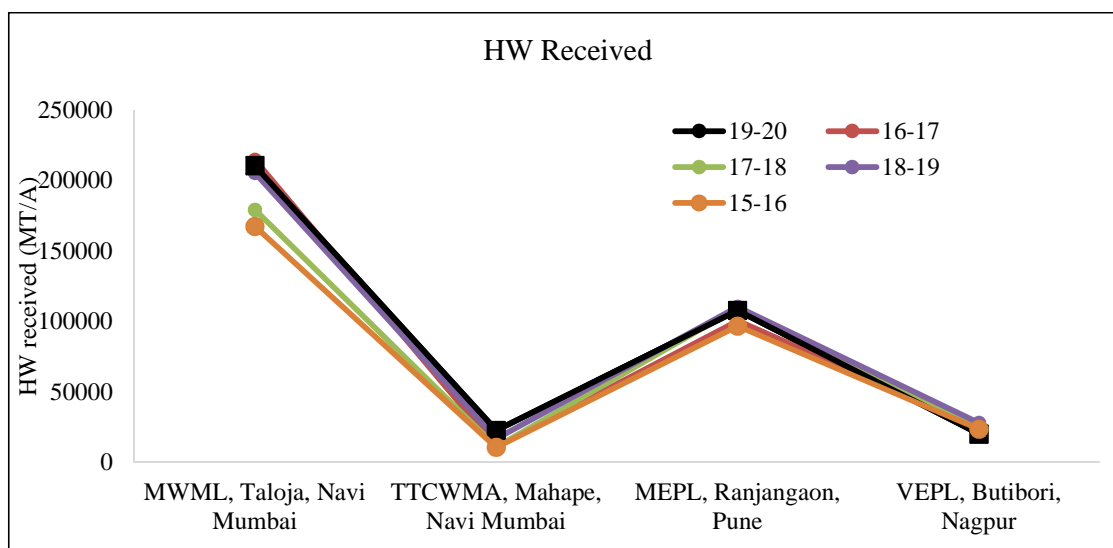


Figure 5.15. Trend Analysis of Hazardous Waste received at disposal sites over 5 years

It can be observed from **Figure 5.15**. That the quantity of Hazardous Waste received at MWML, Talaja was the least during the year 2015-16 followed by the years 2017-18, 2018-19, 2019-20 and the year 2016-17, during which the most quantity of HW was received. At TTCWMA, the quantity of HW received at this site during the years 2015-16, 2016-17 & 2017-18 was almost similar, with a slight increase during the year 2018-19 and 2019-20.

One-time disposable waste received at TTCWMA for DLF is 120331MT in the year 2018-19 at TTCWMA for DLF.

The quantity of Hazardous Waste received at MEPL, Ranjangaon (Pune) and MEPL, Butibori (Nagpur) has been relatively constant over these 5 years with a slight increase in the received quantity during succeeding years

5.9 Bio-medical Waste

5.9.1 Implementation of Biomedical Waste Management Rules, 2016

- The MoEF & CC has notified Biomedical Waste Management Rules, 2016 on 28th March, 2016.
- As per new Biomedical Waste Management Rules, 2016, all hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, blood banks, clinical establishments, research or educational institutions, health camps, medical or surgical camps, vaccination camps, blood donation camps, first aid rooms in schools, forensic laboratories and research laboratories are include under the purview of these rules.
- It is mandatory for all non-bedded HCEs to obtain one time BMW authorization from the Board.
- Under the Government mission of 'Ease of Doing Business' and on account of efforts taken to ensure transparent operation, this office has developed a protocol for an online Consent and BMW authorization. Real-time grant of provisional authorization is subject to online submission of application with necessary documents and fees.
- The Board has been implementing Biomedical Waste Management Rules, 2016 in the State. Presently, there are 30 Common Waste Treatment and Disposal Facilities in operation in the State of Maharashtra.

5.9.2 Status of Bio-medical Waste Treatment Facilities

(1) Total no. of Health Care Facilities/Occupiers: 63,642

(2) Total No. of beds: 2,83,042

(3) Status of authorization

(i) Total no. of occupiers applied for authorization : 20,090

(ii) Total no. of occupiers granted authorization : 21,697



- (iii) Total no. of applications under consideration : 934
- (iv) Total no. of applications rejected : 240
- (v) Total no. of occupiers in operation without applying for authorization : 4,008

(4) Bio-medical waste generation

- (i) Bio-medical waste generated by bedded hospitals: 49,183Kg/day
- (ii) Bio-medical waste generated by non-bedded hospitals: 12,872Kg/day
- (iii) Any other: 200

(5) Bio-medical waste treatment and disposal

(a) By captive bio-medical waste treatment and disposal by Health Care Facilities

- (i) Number of Health Care Facilities having captive treatment and disposal facilities: 176
- (ii) Total bio-medical waste treated and disposed by captive treatment facilities: 568Kg/day

(b) Bio-Medical Waste Treatment and Disposal by Common Bio-Medical Waste Treatment Facilities (CBMWTF)

- (i) Number of CBMWTF in Operation : 31
- (ii) Number of CBMWTF under construction : 1
- (iii) Total bio-medical waste treated by CBMWTF : 61685.18Kg/Day
- (iv) Total treated bio-medical waste disposed through authorized recyclers: 8678.75Kg/day

5.10 Electronic Waste

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution. Electronic scrap components, such as CPUs, contain potentially harmful components such as lead, cadmium, beryllium, or brominated flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.

5.10.1 Implementation of E-waste (Management and Handling) Rules, 2016

- E-Waste (Management) Rules, 2016 notified on 23rd March 2016 and came in to force from 1st Oct. 2016.

- Applicability of these newly modified rules expanded to manufacturer, dealer, refurbisher and Producer Responsibility Organization (PRO)
- Producers are responsible for setting up collection centre on own or in association.
- Obtaining authorization for producers from multiple SPCs is removed. Single EPR authorization for producers from CPCB is introduced.
- Target based approach for collection under EPR is introduced.
- Simplification of permissions by giving only authorizations instead of authorization and registrations.
- Responsibility is fixed on manufacturers to collect E-Waste and channelize it for recycling at authorized site.
- Responsibility is fixed on dealers and refurbishers.
- Responsibility is of the State Industry Department to earmark or allocate industrial space for E-Waste dismantling and recycling facilities.
- Department of Labour is responsible for recognition and registration of workers in dismantling and recycling. Annual monitoring and ensuring safety and health of workers is also the responsibility of the Department.
- State Government to prepare integrated plan for effective implementation of these rules and to submit annual report to MoEF & CC.
- Concept of manifest system for transportation of E-Waste is introduced.
- Concept of liability provisions is introduced.
- Maharashtra Pollution Control Board has constituted a Technical Committee for scrutiny of Applications received for grant / renewal of Authorization for dismantling / recycling / refurbishing of E-Waste under the Chairmanship of Mr R. K. Garg.

Details of authorizations issued under the E-waste (M & H) Rules, 2016 to dismantlers/recyclers/collection /producers are as shown in **Table 5.62**.

Table 5.62 Present Status of E-Waste Generation and Recycling in Maharashtra State

Present Status of E-Waste dismantling and recycling capacity			
1	E-Waste Dismantlers	90	85800.5 MTA.
2	E-waste Recyclers	09	
	Total	99	

5.11 Plastic Waste Management in the State of Maharashtra

The plastic waste generation is 4,43,724 TPA, collected is 3,47,681 TPA and disposal is 2,73,589 TPA as per the information obtained from Urban Local Bodies for financial year 2019-20. Plastic waste used for following main modes of use is given below;

a. Refuse Derived Fuel (RDF)	= 1,08,700 tonnes
b. Co-processing	= 15,857 tonnes
c. Granule making	= 17,981 tonnes
d. Pyrolysis	= 5,579 tonnes
e. Road construction	= 5,515 tonnes
f. Landfilling facility	= 23,482 tonnes

- 66 nos. of Plastic waste Recyclers have been registered with Maharashtra Pollution Control Board under Plastic Waste Management Rules, 2016 and amendment thereto as of 31st March 2020. The list of registered Plastic Waste Recyclers is published and updated on MPCB's website regularly.
- Rule 16 of the PWM Rules, 2016 requires setting up of State Level Advisory Committee for effective implementation of PWM Rules, 2016 in each State. Accordingly, Government of Maharashtra has constituted State Level Advisory Committee vide Govt. Resolution Plastic 2013/ (284/ 2013) dated 4th January 2017 under the Chairmanship of the Principal Secretary, Urban Development Department-II, Govt. of Maharashtra.
- Effective implementation of Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018 has resulted in around 18% reduction in plastic waste generation in the urban local bodies of the state, from 5.01 lakh tonnes in FY 2017-18 to 4.09 lakh tonnes in FY 2018-19.
- Officials from other State pollution control boards such as Tamil Nadu, Madhya Pradesh, Kerala, Bihar etc. have discussed with MPCB about the plastic ban and its implementation in Maharashtra. Some of these states have issued their own notifications for the plastic ban on similar line of Maharashtra's Plastic and Thermocol notification, 2018.
- Effective implementation of concept "Extended Producer's Responsibility (EPR)" is seen as a result of the Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018. Around 450 EPR action plans are

received under EPR for post-consumer plastic waste management from leading brand owners and plastic producers.

- The Board has also constituted EPR scrutiny committee to list criteria/parameters for EPR and scrutiny of submitted EPR plans. According to the directions from Environment Department, the EPR plans have been submitted to Environment Department for further decision.
- Plastic industries/ brand owners are implementing or planning to implement the EPR plan through Producer Responsibility Organizations (PROs).
- To achieve the targets, plastic producers have signed agreements with Producer Responsibility Organizations (PRO's) such as Gem Recycler, IPCA, Shakti Plastic, NEPRA Environmental Solutions Pvt. Ltd., Sampurna Earth Environment Solutions Pvt. Ltd. etc.
- There are 6 major PROs in Maharashtra and as per their Report submitted to Maharashtra Pollution Control Board, the Collection and Processing of Plastic Waste through these PROs is approx. 49,709 MT during FY 2019-20. Out of this, around 15,907 tonnes of waste has been sent to cement plants for co-processing.
- Further, Board has taken initiative to develop online platform for plastic waste management EPR in the state of Maharashtra. Recity Networks Pvt. Ltd. is working with MPCB for the digital platform for plastic EPR monitoring. It has started a pilot scale project in the Pune Municipal Corporation area involving Swach and ITC-major brand owner, where all the stakeholders involved, including producers/brand owners, PROs, regulatory bodies (MPCB) will be on the platform for carrying out their role in the EPR implementation process.

5.12 Construction & Demolition Waste

Annual report in form III submitted by 384 ULBs for the financial year 2019-2020 out of 394 ULBs including Cantonment Boards as represented below;

C & D Waste Abstract of ULBs and Cantonment Boards						
ULBs	Total Qty of C & D waste Generated during whole year in MT	Total Qty of C & D waste processed/re cycled in MT	Total Qty of C & D waste Disposed by landfilling without processing (last	Number of Storage Facilities for C&D Waste	Municipal magistrates appointed for taking penal action for non-	No of Penal action cases registered

			option) or filling low lying area	Storage	compliance with these rules	
Municipal Corporation	4651152.37	34999.25	4616153.12	80	15	137
“A” Class Municipal council	10523.00	543.75	9979.24	41	15	93
“B” Class Municipal council	20347.67	1032.88	19314.78	93	45	48
“C” Class Municipal council	11730.45	1533.52	10196.92	190	95	171
Nagar panchayats	10725.19	5890.28	4834.90	128	62	77
Cantonment Boards	90	4	86	1	1	0
Total	47,04,568.68	44,003.70	46,60,564.97	533	233	526

Total 4704568.68 MT/A Construction & Demolition (C&D) Waste is generated by these ULBs. Total 44003.7053 MT/A Waste processed / recycled by ULBs. The C&D disposed by land filling without processing (last option) or filling low lying area waste quantity is 4660564.97 MT/A. These ULBs having 533 storage facilities to store C&D waste securely. Total 233 Municipal magistrates appointed for taking penal action for non-compliance with these rules by these ULBs and 526 No's of cases were registered under this rules.

Table 5.63 showing operational and proposed plants for processing of Construction and Demolition waste.

Table 5.63 Showing operational plant for processing of Construction and Demolition waste

Sr.No.	Name of Corporation	Plant capacity (TPD)	Present Status
1	Thane Municipal Corporation	300	In operation
2	Pimpri-Chinchwad Municipal Corporation	200	Work order issued Proposed plant
3	Navi Mumbai Municipal Corporation	150	Proposed plant
4	Municipal Corporation of Greater Mumbai	1200	E-Tendered Proposed Plant
5	Pune Municipal Corporation	200	Proposed Plant

5.13 Performance of MPCB Laboratories

Maharashtra Pollution Control Board has established a Central Laboratory at Navi Mumbai and seven Regional Laboratories at Pune, Nashik, Aurangabad, Nagpur, Chiplun, Thane and Chandrapur, under sub-section 2 of Section 17 of the Water (P&CP) Act, 1974 and the Air (P&CP) Act, 1981. These laboratories are equipped and approved by Ministry of Environment, Forest and Climate Change (MoEF & CC), Government of India, Delhi under E (P) Act, 1986. The laboratories are ISO 9001:2015 and OHSAS 18001:2007 certified since 2014.

All MPCB laboratories function as 'Board Laboratories' as defined under Water and Air Act, and Environment (Protection) Act, 1986 and rules made there under to analyze the samples collected by officers authorized to collect samples from respective jurisdictions for analysis of water, air and hazardous waste, Municipal Solid Waste, Biomedical Waste samples and submit the reports to respective authorities for further actions. Regional Laboratory Chandrapur has facility to analyze only air samples. MPCB's laboratories are well equipped with modern sophisticated instruments and equipment UV Spectrophotometer, Gas Chromatograph (GC), Mass Spectrophotometer, Atomic Adsorption Spectrophotometer (AAS), Ion Chromatography (IC), Inductive Couple Plasma (ICP), Absorbable Organic Halide Analyzer (AOx), CHNS Analyzer and others.

Table 5.64 Analysis of Performance of Board Laboratories (2019-20)

Sr. No	Laboratory	Total No. of Samples Analyzed				Total	Total No. of Parameters Analyzed				Total
		Water	Air	H.W	Coal		Water	Air	H.W	Coal	
1	C. Lab.*, Navi Mumbai	7450	1887	42	10	9389	90637	10823	324	20	101804
2	R. Lab.*, Nagpur	2186	814	17	17	3034	30894	1886	167	34	32981
3	R. Lab., Pune	4735	812	18	0	5565	109542	2025	148	0	111715
4	R. Lab., Nashik	1266	1200	2	0	2468	19528	5943	20	0	25491
5	R. Lab., Aurangabad	1676	711	21	0	2408	19144	3686	159	0	22989
6	R. Lab., Chiplun	2751	947	16	0	3714	35202	2276	116	0	37594
7	R. Lab., Thane	894	1019	0	0	1913	6298	5252	0	0	11550
8	R. Lab., Chandrapur	0	1126	0	0	1126	0	2822	0	0	2822
TOTAL		20958	8516	116	27	29617	311245	34713	934	54	346946

(-) Indicates Facility Not Available, C. Lab- Central Laboratory., R. Lab - Regional Laboratory.

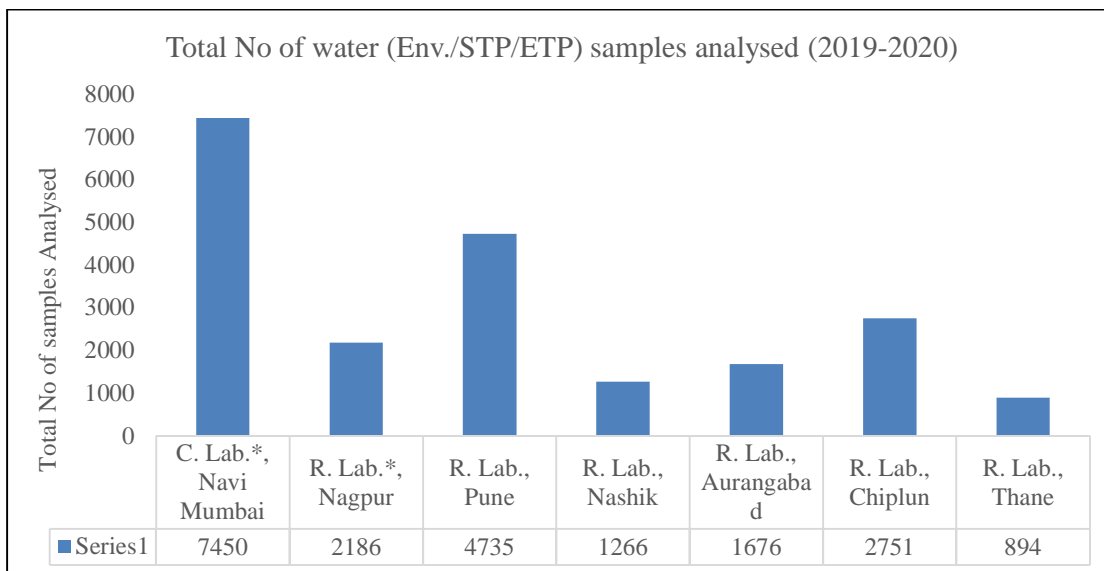


Fig 5.16 Annual total of water samples analyzed at each MPCB laboratory (2019-20)

Note: there was no water sample analysed at Chandrapur Laboratory during year 2019-20

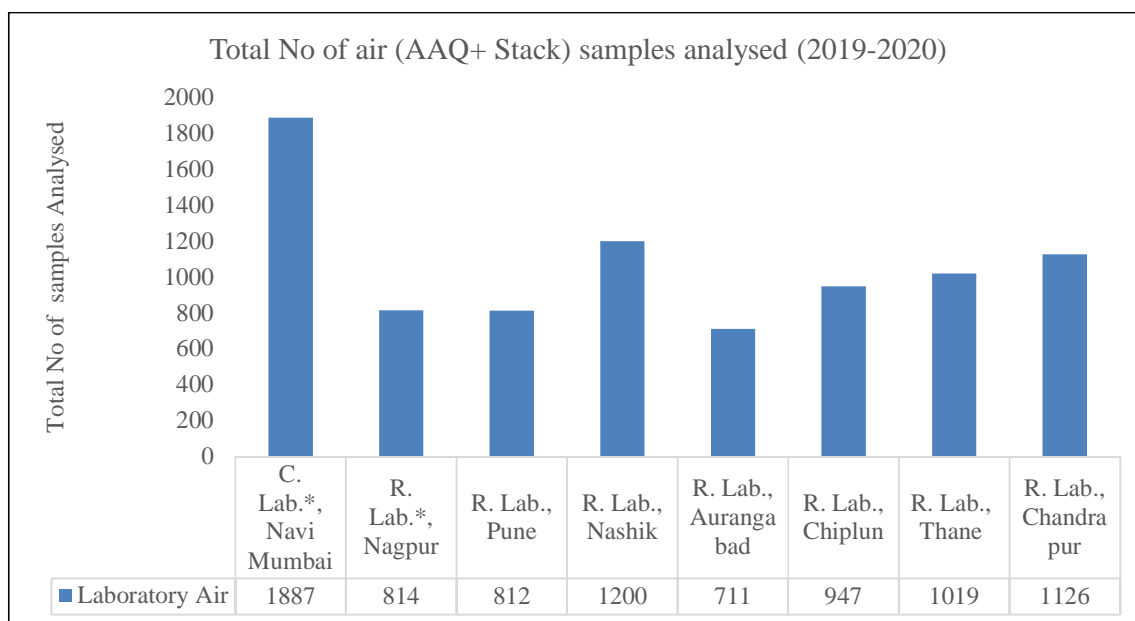


Fig 5.17 Annual total of air samples analyzed at each MPCB laboratory (2019-20)

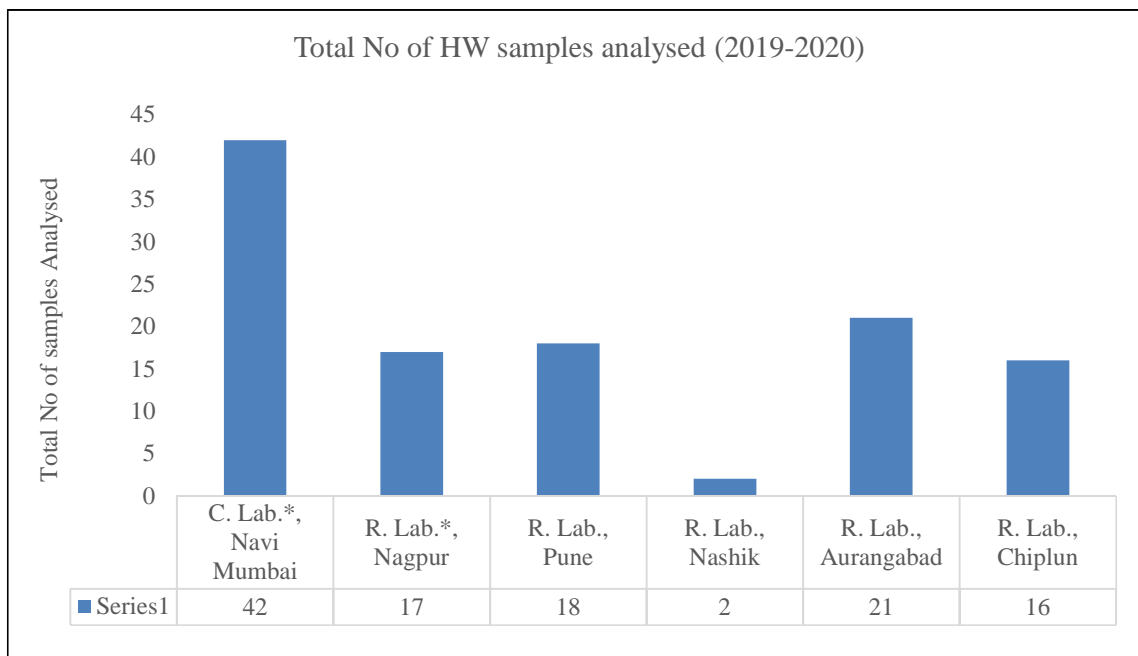


Fig 5.18 Annual total of hazardous waste samples analyzed at each MPCB laboratory (2019-20)

Note: there was no hazardous waste sample analysed at Thane & Chandrapur Laboratory during year 2019-20

6 REGIONAL ENVIRONMENTAL PROBLEMS & CONTROL MEASURES TAKEN IN RESPECTIVE REGIONS

The environmental issues faced by different regions in the State of Maharashtra and the control measures implemented by the Board are described below.

6.1 Amravati

6.1.1 Air Issue

The Municipal Corporation Amravati has population of 6.48lacks and under “D” Class Municipal Corporation. There are 3 NAMP Monitoring Stations in operation within the Corporation Area, viz. Rajkamal Chowk, Govt. Engineering Collage premises and MIDC Amravati. The Government Collage of Engineering Amravati is the agency appointed for operation of these stations. From the Analysis Results of these stations, it is observed that, the parameter RSPM is exceeding the limit particularly during summer and winter session. The Amravati city is under NCAP. The parameter RSPM is observed exceeding due to the construction activities of concrete road in the city.

The Board has already given directions to Municipal Corporation Amravati to take all precautionary measures to minimize the Air Pollution. The site for CAAQMS at Amravati has been identified and Consents for installation has been received from the following agencies as follows:-

1. Government college of Engineering Amravati
2. Divisional Commissioner Office Amravati
3. Sipna College of Engineering Amravati
4. Bhartiya Mahavidyalaya, Amravati

6.1.1.1 Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB has issued work order to IIT Mumbai and NEERI Mumbai to prepare the action plan in respect of Air Quality within the Municipal Corporation area and the Action Plan is at final stage.	MPCB has issued directions to the Municipal Corporation Amravati to minimise the Air Pollution by preventing burning of MSW. Municipal Corporation Amravati has submitted the revised Action Plan regarding NCAP on 21/12/2019 along with timely progress.	MPCB has proposed 3 NAMP stations at Washim to monitor the Ambient Air Quality.

6.1.2 Water Issues

There are around 15 effluent generating industries (including 5 textile processing industries) located in this region. To treat the effluent from these industries 5MLD capacity CETP is provided and around 10 acres of SSHEHS (Soil-Sand High Efficiency Hybrid System) is provided to dispose the treated effluent from CETP. During monsoon the incidence of discharge of effluent along with rain water runoff is observed intermittently. As the location of the SSHEHS is near the low-lying MIDC area, the effluent along with rain water runoff flows towards in Nalla and creates environmental issues.

Further, Purna and Pedhi river stretches in this region are included in the polluted river stretches by CPCB viz. the river stretch from Asegaon Purna to Wathoda Shukleshwar (Amravati District Border) and river stretch from Narayanpur to Bhatkuli etc.

6.1.2.1 Current Status of Action Plan

MPCB has issued directions to the MIDC authorities to take precautionary measures to avoid such incidence & also submitted the action plan to CPCB for restoration of the water quality of the polluted river stretches of Purna, Pedhi & Penganga Rivers. Akola Municipal Corporation has proposed 2 nos. of STP's of 37 MLD capacity. The said STP will be commissioning on December 2020. Special Environment Surveillance Task Force for Amravati & Akola District has been constituted to mitigate the issues related to river water quality.

6.1.3 Solid Waste Issues

The Municipal Solid Waste is dumped on the treatment & disposal site without any segregation as there is no waste processing facility provided by Municipal Corporation at the site.

6.1.3.1 Current Status of Action Plan

MPCB has issued notices/directions to the Municipal Councils in Akola & Amravati to setup a treatment facility for Municipal Solid Waste and they have initiated the process of Establishing waste processing facilities at 3 locations viz. Sukali MSW Site, Akoli Bypass and Badnera.

6.2 Aurangabad

6.2.1 Air Issues

The CPCB has declared Aurangabad, Jalna & Latur cities as non-attainment city out of 17 cities from Maharashtra state. The area of Aurangabad City, MIDC Waluj, MIDC Chikalhana, MIDC Railway station & Paithn Road units are comes in CEPI area.

There are 12 nos of steel units engaged in manufacturing of ingots from M.S. scrap generating air emissions mainly during loading of raw material into the furnace and unloading of molten metal from the furnace. The major industrial pollution is due to fuel burning in the Boiler and dust pollution due to Stone Crusher units, Manufacturing of traditional bricks.

Industrial activities and Urban Air Pollution due to commercial activity, vehicular & construction activity are the other sources of air pollution in the area.

6.2.1.1 Current Status of Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>To control pollution from industries, meeting with industry representative at HQ under the Chairmanship of Member Secretary on 18/10/2019 has been conducted and issued directions for upgradation of existing APCS.</p> <p>In MIDC Jalna area MPCB is taking continuous follow up with the industries to provide adequate capacity of Dust Collector, Bag Filter, and Wet Scrubber & ESP system. The vigilance is kept on pollution due to stone crusher & hot mix activity.</p>	<p>As per NCAP action plan Municipal Corporation has installed fountains near Siddharth Garden. 02 no's of CAAQMS propose at Deogiri College & MPCB, Aurangabad, Latur MC installed fountains in Basweshwar Chowk & Rajiv Gandhi Chowk, 01 no's of CAAQMS is also proposed</p>	<p>Upgradation of existing pollution control system in industrial area, As per the provision of Air act (P&CP) 1981 consent granted to all industries under stipulated conditions, Almost all major industries has provided APC system such as Dust Collector, Bag Filter, Wet Scrubber & ESP etc.& also adopted green fuel technology by using agro base/LPG fuel to reduce air emission in the environment, Most of the stone crusher units has provided water sprinkler system, covered vibrating screen & conveyer belts by tin sheet, wind breaking wall, Metallic road & Massive tree plantation.</p>

6.2.2 Water Issues

1. Ground water contamination is observed at Waluj Industrial area.
2. Godavari River D/S of Paithan to Shahgad (Aurangabad District, Manjra River Latur to Nanded road bridge at Vill, Bhatkeda (Latur District), Godavari River at Gangakhed,

Dist- Parbhani, Bindusara River at Beed & Godavari River at Nanded are identified as Critically Polluted stretches by CPCB.

6.2.2.1 Current Status of Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>NEERI, CGWA and MPCB have conducted detailed survey of Ground Water Quality of Waluj Area & MPCB has formed committee at Board level. Preliminary study and testing has been carried out regarding removal of Chromium in the said area.</p> <p>Task Force Committee was constituted at District levels for follow up and regular meetings are conducted for implementation and execution.</p> <p>During Ganesh & Durga Festivals insisted ULB's to provide artificial ponds for immersion of idols also awareness programmers are conducted by this office to promote use of eco-friendly Ganpati idols</p>	<p>Nanded Waghala Municipal Corporation has submitted proposal of 10 MLD STP for treatment of untreated sewage discharged into Godavari river through 34 Nalls causing river water pollution & said work of STP is expected to be completed by December 2021.</p>	<p>3 STPs are proposed for Paithan, 2 no's of STP of Capacity 32 MLD & 40MLD is proposed by Latur Municipal Corporation, 35MLD STP is under progress at Beed & 5MLD STP is proposed at Gangalhed for treatment of sewage.</p> <p>Nanded Waghala Municipal Corporation has provided 3 STP of capacity- Bondar- 87MLD, Elichpur- 30MLD & Sangvi - 15MLD AMC has provided at 5 STPs having total capacity of 211MLD.</p>

6.2.3 Solid Waste Issues

There is no scientific process for treatment and disposal followed by any of the Municipal Councils/ Nagarpanchayat (alna, Latur, Nanded, Parbhani) except Aurangabad city.

6.2.3.1 Status of Current Action Plan

Nanded Waghala Municipal Corporation has provided door to door MSW collection with segregation & Transportation of MSW is through M/s. R & B Infra Project Pvt. Ltd.

Nanded Waghala Municipal Corporation is Bio-mining 1Lac m³MSW (legacy waste). All other ULB's have been instructed by the Board to provide the scientific treatment facility and accordingly most of the ULB's have prepared & sanctioned DPR's & the installation work will be started very soon.

6.2.4 Noise Issues

Noise pollution due to use of DJ during Shri Ganesh & Durga Pooja festivals.

Noise and Air problems due to fire crackers in Diwali festival.

Noise pollution due to vehicles.

6.2.4.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>Awareness programme, field noise monitoring in major city areas are being carried out by Board offices, if necessary noise monitoring is carried with police dept. as per their request.</p> <p>MPCB is also carrying out AAQM monitoring during the festivals.</p>	<p>Guidelines circulated to local bodies for celebration of eco-friendly Ganesh& Durga festival, Diwali and Holi etc.</p> <p>Awareness campaigns and programs are conducted in the area.</p>	<p>Advertisement on TV and Radio is proposed. Board is conducting monitoring during Diwali festival for controlling of high dB fire cracker through the committee constituting member from DISH & police department to control the noise level.</p>

6.3 Kolhapur

6.3.1 Air Issues

1. Kolhapur & Sangli has been identified as non -attainment cities as per NCAP.
2. Baggase is used as a fuel in most of the Sugar and other industries in the area causing air pollution.
3. Air pollution complaints from Sindhudurg district due to stone quarry & stone crushers.

6.3.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>Air quality monitoring is carried out under National Ambient Air Monitoring Programme (NAMP) in Kolhapur and Sangli city.</p> <p>Action plan for Control of Air Pollution for Kolhapur city is being prepared by NEERI.</p> <p>Industries have been instructed to install adequate APC's to control source and fugitive emissions.</p>	<p>Monitoring of VOC in ambient air is to be carried out and provision of appropriate control measures for VOC levels in Chiplun area to be proposed.</p> <p>Accordingly industries will be directed to install appropriate APC's in Chiplun area.</p>	<p>The installation of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) at 3 different locations in the Kolhapur city.</p>

6.3.2 Water Issues

1. Panchaganga River & Vashishti River from village Dalvatane to Kherdi is categorized in priority-V by CPCB under “Most polluted river stretches in the country”.
2. Marine water pollution at Mirkarwada (fishing harbor), Ratnagiri due to disposal of untreated sewage by Ratnagiri Nagarpalika & disposal of waste by Fisherman at jetty.

6.3.2.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>Increased vigilance of CETP & industrial waste water generating units.</p> <p>Regular follow up with local bodies for completion of sewerage system & installation of new STP.</p> <p>Action plan for rejuvenation of Panchganga River is prepared by the board.</p> <p>The Government has declared River Action Plans/Polluted River Stretches for improvement of River Water Quality of Krishna River & its tributaries; the implementation of said project is in progress.</p>	<p>Implementation of Short-term action plan as proposed in the action plan prepared by the board for rejuvenation of Panchganga river by various stake holders.</p> <p>Implementation of short term action plan as per action plan prepared.</p>	<p>Implementation of Long-term action plan as proposed in the action plan prepared by the board for rejuvenation of Panchganga river by various stake holders.</p> <p>Implementation of Long-term action plan as per action plan prepared.</p> <p>Special Environment Surveillance Task Force has been formed as per the orders of Hon'ble National Green Tribunal.</p>

6.3.3 Solid Waste Issues

1. Unscientific disposal of Solid waste by all the local bodies in the jurisdiction
2. Nagarpalika/ Nagarpanchayat have not provided scientific treatment facilities
2. Part of Solid Waste generated from Sangli, Miraj & Kupwad City Municipal Corporation area is disposed on open dumping yard in an unscientific manner.

6.3.3.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>Kolhapur Municipal Corporation has installed solid waste processing plant of 180 Ton/Day capacity & is converting waste to RDF. Also 2 No's of Biogas plants for treatment</p>	<p>All the local bodies to provide scientific municipal waste collection, segregation & scientific processing facilities.</p>	<p>All the local bodies to provide scientific municipal waste collection,</p>

<p>of organic wet waste is installed.</p> <p>25% of total budget of corporations & councils has been reserved separately for provision of environmental facilities.</p> <p>Directions have been issued to local bodies to identify sites and prepare action plan for setup of solid waste processing facilities.</p>	<p>Implementation of action plan by local bodies</p> <p>The villages on the bank of rivers disposing waste on the bank of rivers are directed to develop solid waste management projects with the help of Z. P. authorities as eco village development point of view.</p>	<p>segregation & scientific processing facilities and same shall operate regularly.</p> <p>Implementation of action plan by local bodies</p>
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6.3.4 Noise Issues

Religious programs are the occasions of causing noise pollution.

6.3.4.1 Status of current action plan

The Sangli, Miraj & Kupwad City Municipal Corporation, Sangli is in process of preparing the action plan for control of Noise Pollution in Sangli city.

The Police department and Municipal Corporation, is being taken effective steps and measures for control of Noise pollution during festivals.

6.4 Navi Mumbai

6.4.1 Air Issues

Smell nuisance complaints from Sector 11 of Kopar Khairane area due to accidental discharge of effluent from Effluent Carrying Pipeline of TTC MIDC, Navi Mumbai.

6.4.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>Directions issued to CETP for control of smell nuisance from Inlet collection sump area, accordingly CETP has covered open inlet collection tank and provided fume extraction system followed by wet scrubber to reduce smell.</p>	<p>Directions issued to MIDC authority for replacement of old pipeline carrying effluent up to discharge point in Creek. Accordingly MIDC has submitted, action plan for replacement of old pipeline and work is in progress.</p>	<p>CETP Taloja expansion and upgradation of existing CETP is under process.</p>

6.4.2 Water Issues

1. Accidental discharge of effluent due to breakdown of effluent carrying pipeline of CETP at some places.
2. Discharge of effluent in to the Alok nalla due to over flow of chambers provided on

MIDC effluent carrying pipeline, discharge of untreated domestic effluent from slum areas in to nallas, CETP etc

3. The JVS analysis reports are not conforming to the outlet standards of CETP

6.4.2.1 Current Status of action Plan

Directions issued to MIDC for maintenance of Pipeline and to take necessary measures to avoid rain water logging problem near inlet CETP collection sump in MIDC, Khairane area.

STP shall be provided for the treatment of domestic effluent generated from Slum area located in MIDC. CETP Taloja expansion and upgradation of existing CETP is under process.

6.4.3 Solid Waste Issues

There are no any problems related to disposal of Municipal solid waste or hazardous waste generated from Local Body and various industries located in the TTC industrial area. NMMC has already developed MSW disposal facility at Turbhe which is already in operation. They had appointed M/s NEERI to study problems and to suggest proper measures. Accordingly, NMMC had installed full-fledged Leachate Treatment plant. Also installed Waste to Compost and RDF plant. M/s TTCWMA has installed site for scientific disposal of hazardous waste generated from the industries located in TTC industrial area.

6.4.3.1 Current status of Action Plan

Uran Municipal Council has proposed MSW Site for treatment and disposal of Municipal waste from Uran Municipal Council.

6.5 Nagpur

6.5.1 Air Issues

- 1) Higher emissions from the Old plant of Koradi Thermal Power Plant, Khaperkheda Thermal Power Plant.
- 2) Vehicular Pollution in the city.

6.5.1.1 Current Status of Action Plan

- NMC has prepared an action plan from the NEERI which is approved by the CPCB which shall be implemented with the co-ordination of the various stakeholders.
- Review meetings were conducted time to time.

- Thermal Power plants conditional consents has been issued for compliance of the MoEF&CC notifications regarding implementation of FGD, Real time ash analyzer etc.
- Encouraged polluting industries to switch over cleaner fuel.

6.5.2 Water Issues

- 1) Fish killing incidents were occurred in Ambazari Lake.
- 2) Issue of polluting river stretches

6.5.2.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB has issued directions u/s 33A of Water (P & CP) Act, 1974 to provide treatment facility for the sewage generation from ULB's, which is near to catchment of river body as per polluted river stretch. Municipal Councils has submitted commitment letter for the installation of STP.	Nil	SRO Nagpur-I -Proposal for installation of STP's is submitted by ULB under polluted starch in Nagpur District.

6.5.3 Solid Waste Issues

- 1) Municipal solid waste disposal.

6.5.3.1 Current status of Action Plan

The Board has issued directions under section of the Environment Act to the Nagpur Municipal Authority vide letter 31/07/2020 for strict implementation of the MSW Rules.

NMC has outsourced agencies for implementation of the management of municipal solid waste and processing.

6.6 Raigad

6.6.1 Air Issues

In the Jurisdiction of RO Raigad falls Major MIDCs viz. Patalganga, Roha, Vilebhagad, Mahad with Panvel, Khopoli and Khalapur industrial estate etc. & many a times there are complaints are received regarding severe air pollution in these areas.

6.6.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB is initiating actions against polluting & defaulting industries and taking follow up to rectify it.	Nil	02 nos. CAAQM stations are proposed to install at Khaghar and Mahad MIDC. Upgradation of existing APC system will be completed within 6 months. Already inform to Panvel Tahsil for shifting of brick kline units

6.6.2 Water Issues

Untreated sewage from Municipal Councils are being discharged into River

Partially treated effluent is also being discharged into rivers as presently RIA CETP; Roha is non-complied CETP.

6.6.2.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Monitoring of CETP every Monday is scheduled Improvement in O & M with upgradation of RIA CETP, Roha. Upgradation in ETP of M/s. Roha Dyechem, MIDC Roha.	To take continuous follow up with local bodies so as to commission the STPs as well as complete drainage network at the earliest. Continuous monitoring on defaulting industries with CETP.	Installation of STPs & achieve standards of treated effluent as per consent conditions and the treated effluent shall be recycled

6.6.3 Solid Waste Issues

Municipal council & 05 Nagarpanchyat are not carrying out scientific MSW processing and treatment.

6.6.3.2. Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB has directed Municipal councils to prepare DPR for MSW management.	Continuous followup with local bodies to get the progress for disposal of solid wastes as per MSW Rule, 2016.	To provide full fledge MSW treatment in time with proper segregation.

6.7 Pune

6.7.1 Air Issues

1. In the Jurisdiction of SRO Satara there are complaints regarding;

2. Fire incidences at MSW dumping site
3. Fire incidences in Hilly Areas.
4. Vehicular pollution in urban areas.
5. Air pollution caused due to stone crusher within cluster area
6. Smell nuisance due to foundry activity in MIDC Satara.

Solapur District-

In the Jurisdictions of SRO Solapur: - Solapur city is considered to be major source of air pollution. Over civilization there is rise in vehicles & inadequate road conditions are the major sources of air pollution in the city.

2. Air pollution problem in Solapur dist. As many Sugar & Chemical Industries in the area are using Baggase as a fuel.

6.7.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>MPCB has taken special task in association with Solapur Municipal Corporation, Solapur and NEERI for reducing air pollution.</p> <p>The air action plan has been prepared and submitted to Government for further approval and necessary action.</p>	<p>Solapur Municipal Corporation has taken short term measures, such as maintenance of roads, cleaning of Municipal Solid waste, banning on open burning of solid waste etc.</p>	<p>The air action plan for Solapur city has been prepared and submitted to government for further approval and necessary action.</p> <p>Considering the industrial development, CAAQMS-Continuous Ambient Air Quality Monitoring Stations to be installed in each MIDC in consultation with MIDC authority.</p>

6.7.2 Water Issues

Untreated domestic effluent is discharged into Pawana, Indrayani & Bhima rivers and at various locations it is resulting in to deterioration of river water quality.

6.7.2.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>In the jurisdiction of this office 17-category industries are provided online continuous effluent quality monitoring systems to their ETP outlets which are</p>	<p>Taking continuous follow up with all local bodies, so as to commission the STPs as well as complete drainage network at the earliest and expecting short term</p>	<p>All these local bodies to have STP so as to strictly achieve standards of treated effluent and the treated effluent should use for recycling.</p>

<p>connected to MPCB & CPCB servers. PCMC has submitted proposed plan for 4 no's of new STP at various locations namely, 1) PCMC Tathavade village STP -10 MLD. 2) PCMC Chilkhali STP-12 MLD 3) PCMC Bhopkhel STP -5 MLD 4) PCMC Pimple Nilakh STP-15 MLD.</p> <p>SRO Solapur Jurisdictions: -- The Government has declared Namami Chandrabhaga Abhiyan Project for improvement of River Water Quality of Bhima river, the implementation of said project is in progress.</p>	<p>measure to treat the Domestic effluent and Operation of existing STP with its full capacity.</p> <p>Necessary follow up has been taken with Solapur Local bodies to adopt good sewage management practices & provide STP of adequate capacities.</p> <p>Necessary follow up has been taken for scientific collection, segregation, treatment & disposal of MSW generated so as to avoid leachate generation mixing the same with storm water & cause water pollution in various areas.</p>	<p>MIDC shall install CETPs at Chakan MIDC phase wise so that maximum trade / domestic effluent can be treated and disposed off scientifically.</p> <p>All local bodies located on the bank of rivers in Solapur district are directed to install adequate capacities of STP's for treatment and disposal of sewage generated from their cities.</p>
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6.7.3 Solid Waste Issues

Municipal Solid Waste collection, segregation and its scientific disposal is major hindrance in this area. Municipal Corporation and other local bodies have not carrying out scientific process to treat the 100% solid waste. MSW dumping site causing smell, water pollution, related nuisance.

6.7.3.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>PMC has MSW dumping ground at Urali Devachi where generated MSW is dumped partly and over all 48 MSW processing plants at various locations are in operation in PMC area.</p> <p>The Municipal council are directed to stop burning of waste immediately. And also instructed to Local bodies to attend the fire incident immediately & undertake spraying of organic deodorants to reduce smell nuisance Board has given conditional</p>	<p>SRO Solapur is in process of short listing villages having population having 5000 & the villages on the bank of rivers flowing in the district to develop various affordable projects to develop solid waste management projects with the help of Z.P. authorities.</p> <p>This is also</p>	<p>PMC has proposed 10 New plants for processing of Mixed Waste. The waste quantity will be treated in this new plant to tone of 1600 MT/day.</p> <p>PCMC has submitted proposal for waste to energy plant having capacity 1000 MTD, Consent to Establish is also granted by the Board office & accordingly, the installation work of Waste to Energy is started.</p> <p>Board has granted Consent to Establish to PCMC for C & D</p>

authorizations to the local bodies for treatment and disposal of solid waste.	considered to be one point from eco village development point of view.	waste management project & work of facility will be started.
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6.8 Chandrapur

6.8.1 Air Issues

Chandrapur is declared as critically polluted area in the year 2009 by CPCB, New Delhi. Thereafter, by proper implementation of CEPI, score was reduced by providing proper APC provisions.

Chandrapur city is listed under Non-Attainment Cities

Activity of coal mines, coal storage, transport & trading (loading & unloading) near to the highways creating air pollution problem.

6.8.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB is Carrying out extensive survey and air sampling Also issued Closure Directions to various coal depots. To reduce air pollution due to transportation & other activities, stakeholders were directed to provide tar roads, to provide & install air sampling machineries, provide adequate water sprinklers, etc.	Providing CAAQMS & manual AAQMS sampling stations additionally at different locations to access the data of air pollution. Directed the stakeholders to provide closed transportation system for coal and form a surveillance team to observe the same. Action completed by WCL authorities. Proposal towards providing underground sewer line till STPs so as to treat 100% sewage & to stop excess discharge into Erai & Zarpat River.	Transportation system to be improved. 100% closed coal transportation system to be implemented. Implementation of District Environment Plan for each district under jurisdiction of RO, Chandrapur

6.8.2 Water Issues

- 100% sewage is not treated by Chandrapur Municipal Corporation as there are no provision of underground sewer line.
- Discharge of excess mine water by WCL into nearby rivers without any treatment.

6.8.2.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
MPCB has formed District Level Committee under the Chairmanship of Hon'ble District Collector, Chandrapur and directed to stakeholders not to	1) Survey & sampling of water polluting industries/activities	Providing underground sewer line till STPs so as to treat 100% sewage & to stop excess discharge into

<p>discharge untreated effluent into nearby rivers. Action Plan was submitted by Chandrapur Municipal Corporation to comply the same. Directions were issued & Bank Guarantees were forfeited & directed WCL authorities to provide settling tanks for mine water treatment & reuse the mine water for sprinkling purpose.</p>	<p>nearby to the rivers. 2) Initially, temporary barriers to be suggested to stop the discharge of sewage directly into rivers.</p>	<p>Erai & Zarpat River. Implementation of District Environment Plan for each district under jurisdiction of RO, Chandrapur</p>
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6.8.3 Solid Waste Issues

1) Non-provision of treatment facility as per MSW Rules, 2016

6.8.3.1 Status of Current Action plan

1. Formation of District Level Committee under the Chairmanship of Hon'ble District Collectors.

Issuing MSW authorizations to ULBs.

2. Initial segregation at source is directed to implement to all the ULBs.

3. Directed to Finalize the MSW sites as per MSW Rules, 2016

6.8.4 Noise Issues

1) Noise Pollution from Handling, Processing and Recycling of End of Life Vehicles (ELVs)

2) Noise pollution due to old vehicles & heavy activities like construction, etc.

6.8.4.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>1) Implementation of CPCB Guideline for “Environmentally sound facilities for Handling, Processing and Recycling of End of Life Vehicles (ELVs)”</p>	<p>Current status was seeking from Regional Transport Department to assess the data towards compliance of Environmentally sound facilities for Handling, Processing and Recycling of End of Life Vehicles (ELVs)</p>	<p>CPCB directed to SPCBs to issue the consent to scrap traders & Environmentally sound facilities for Handling, Processing and Recycling of End of Life Vehicles (ELVs). Implementation of District Environment Plan for each district under jurisdiction of RO, Chandrapur.</p>

6.9 Kalyan

6.9.1 Air Issues

There is no buffer zone between residential and industrial area located in Ph-I and Ph-II MIDC Dombivali area. Around 82 no's of textile units are using coal as a fuel and contributing to air

pollution in the area. In winter due to dispersion, complaints are received regarding air pollution. Also complaints w.r.t gases emissions are received to this office.

6.9.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Most of the unit has provided adequate air pollution control system like dust collector and wet scrubber followed by stack. Vigilance on industry is kept by carrying out air monitoring. Board is perused with the industry to adopt cleaner fuel like PNG.	The road within the MIDC area needs to be improved.	Analysis to switch-over fuel pattern from coal to PNG is in process.

6.9.2 Water Issues

1. Illegal jean wash units were in operation without provision of ETP and untreated effluent was being discharged into Nalla which further meets to creek.
2. Kalyan Dombivali Municipal Corporation are operating their STPs under capacity due to lack of drainage arrangement.
3. Due to incomplete work of underground drainage network, partial quantity of domestic effluent in Kalyan - Dombivali area is also disposed into Nalla which creates water pollution problem.
4. Breakages/leakages of effluent carrying pipeline/Chambers in the MIDC area lead to water pollution.
5. Illegal disposal of unknown tankers in the MIDC area creates air pollution and water pollution

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Board has visited all the jeanwash units and closure directions are already issued. Breakages/leakages are informed to MIDC as well as Corporation authorities and rectified on war footing basis.	Sewage treatment plant of the Corporation will be completed by Dec-2020. Effluent carrying pipeline in the MIDC area needs to be regularly cleaned and maintained properly.	Kalyan Dombivali Municipal Corporation will provide STP from 30 MLD to 57 MLD with underground drainage system under Amrut Scheme which is completed by Dec -2020. The final disposal of treated effluent is to be discharged in to the creek @7.5 KM as per NIO and which will be completed by March-2022.

6.9.3 Solid Waste Issues

Presently in the Kalyan Dombivali Municipal Corporation, most of the waste is dumped at Aadharwadi dumping ground. The solid waste generated in the residential area of MIDC is temporary stored in the plot.

6.9.3.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>KDMC has obtained authorization for scientific disposal of MSW at Umbarde, Barve and Manda wherein there is disposal of 650 MT of MSW. Kalyan Dombivali Municipal Corporation has obtained authorization at 13 various palaces which valid up to 31.01.2022.</p> <p>Umbarde site is partially operated which needs to be operated full fledged. Currently Methenization plant at Umbarde and Aayre is in working condition.</p>	<p>MSW waste shall not be sent to the Aadharwadi dumping ground. Umberde MSW site to make operational fully fledged. 13 bio methanization needs to be in operational at the earliest.</p> <p>MPC Board is following the matter of operation of methenization plant at Barve, Raju Nagar and Kachore Gaon.</p>	<p>13 bio methanization needs to be in operational at the earliest.</p> <p>MPC Board is following the matter of operation of methenization plant at Barve, Raju Nagar and Kachore Gaon.</p> <p>In this regard Board has filed affidavit in the court of law. The unauthorized site at Aadharwadi needs to be close in time bound manner.</p>

6.10 Nashik

6.10.1 Air Issues

Nashik area is declared severely polluted as per CEPI Index. Nashik and Jalgaon cities are declared non-attainment cities due to poor Air Quality.

6.10.1.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<p>1. Air Quality Improvement Action plan is prepared for Nashik City. The MoEF is preparing plan for Nashik under ' Clean Air Project ' (CAP) for Nashik city. Monitoring is carried out through 1 CAQMS at KTHM College Nashik and 4 manual stations at</p> <p>(i) Old NMC Building, main road Nashik (ii) RTO Office old, Sharnapur Road. (iii) VIP Industries Ltd. MIDC Satpur. &</p>	<p>This will be implemented by the concerned stockholders as per Air Action Plan.</p> <p>This office taking continuous follow up or issued notices to industries are not</p>	<p>Industries are suggested to use Green fuel for the Boiler and Modern technology for to minimizing the Air pollution. The use of green fuel for the vehicle and use of E vehicles for public transport.</p>

(iv)Udyog Bhavan, ITI Signal, Nashik. As per population criteria proposed 4 locations of CAQMS are identified. The installation work will be completed within 1 year. 1 No CAAQMS station is proposed for Jalgaon, Dhule &Nagar City each .	operating APC Systems. It is continuous process.	Improvement in Road quality and traffic.
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6.10.2 Water Issues

There is no sewage network and treatment facilities in most of the urban local bodies Municipal councils and Nagar Panchyat resulting into discharge of sewage into river and causing Pollution of Godavari River.

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Nashik Municipal Corporation had provided 9 no's of Sewage Treatment plant on the bank of the Godavari river. During this year one more is commissioned Gangapur STP & another one unit be commissioned soon.	Presently Nashik Municipal Corporation does not have underground drainage network for newly added villages. They have started laying of pipeline for these villages, drainage network coverage 210 KM. Nalla water treatment is proposed by phyto remediation	Upgradation of STPs for achieving new standards is proposed. Construction of STPs for other local bodies like Municipal Councils, Nagar Panchyat

6.10.3 Solid Waste Issues

There are no solid waste treatment facilities available in the most local bodies. Unscientific disposal of MSW Generation from Local Bodies.

6.10.3.1 Status of Current Action Plan

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Some of the Municipal Corporation has provided treatment facilities such as composting, Bio methenization, and RDF plant. Due to implementation of plastic Notification 2018, there is reduction of plastic waste by 35 %. Odour control on MSW processing site is started. Legacy waste processing also started.	MPCB is taking follow up with All local bodies to apply for authorization under Municipal Solid Waste Rule 2018. Collection and segregation of solid waste.	Continuous monitoring and checking of site for scientific processing and disposal of MSW. Provision of solid waste treatment facilities by the local bodies and operate the same.

7 ENVIRONMENTAL STUDIES AND SURVEYS

7.1 Noise Monitoring during Ganesh Festival 2019

Ambient noise monitoring was carried out during the period of Ganesh Festival at 132 locations which are covered under 27 Municipal Corporations all over the State of Maharashtra. Monitoring was carried out for 5 days considering the noise that was generated during the festival. Noise monitoring was carried out for 6 hours between 6PM to 12AM on 2nd, 3rd, 6th, 8th and 12th September, 2019. Noise monitoring was carried out using calibrated Sound Level Meters (Type I). The number of noise monitoring locations in different Municipal Corporations all over Maharashtra is provided in **Table 7.1**.

Table 7.1 Noise monitoring locations in Maharashtra during Ganesh Festival 2019

Region	Number of locations
Amaravati	6
Aurangabad	14
Chandrapur	3
Kalyan	9
Kolhapur	6
Mumbai	25
Nagpur	5
Nashik	17
Navi Mumbai	5
Pune	25
Thane	14
Raigad	3
Total	132

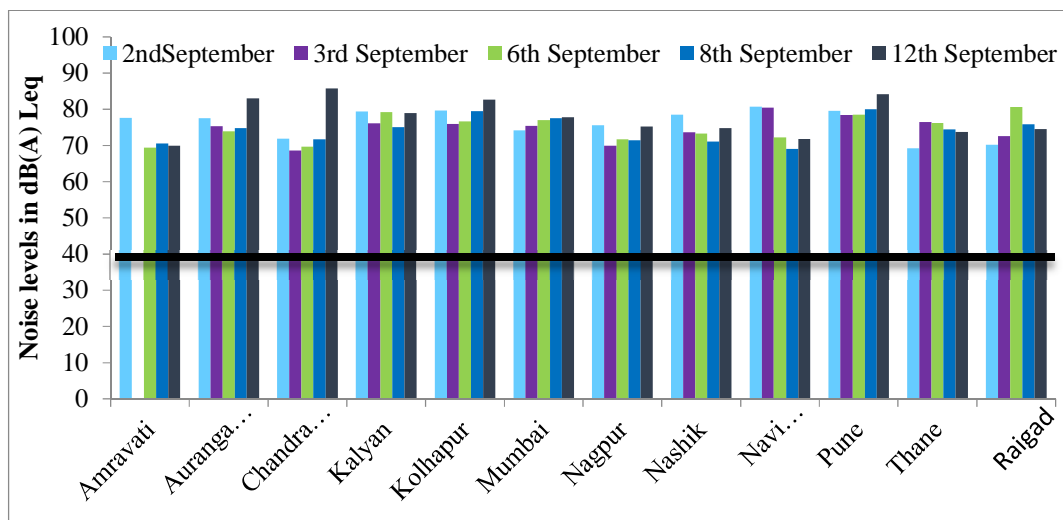


Figure 7.1 Noise levels during Ganesh Festival 2019 at different locations in Maharashtra

From Figure 7.1, it can be observed that the highest mean noise level recorded on 2nd September 2019 was 80.66 dB (A) at Navi Mumbai. On 3rd September 2019, which was the second day of noise monitoring, the highest mean noise level recorded was 80.48 dB(A) at Navi Mumbai. On 6th September 2019, the highest mean noise level recorded was 80.63 dB(A) at Raigad. On 8th September 2019, 80.08 dB(A) was the highest noise level which was recorded at Pune. On the last day of noise monitoring during Ganesh festival, that is on 12th September 2019, the highest noise level was 85.76 dB(A) and was recorded at Chandrapur.

The lowest mean noise level recorded on 2nd September which was the first day of noise monitoring during Ganesh festival, was 69.23 dB(A) at Thane. On 3rd September, which was the second day of noise monitoring, the lowest mean noise levels were 68.63 dB at Chandrapur. On 6th September 69.40 dB (A) was the lowest mean noise level recorded at Amravati On 8th September 2019, 69.02 dB (A) was the lowest mean noise level recorded at Navi Mumbai. On 12th September 2019, 70.00 dB (A) was the lowest mean noise level recorded at Amravati.

7.1.1 Conclusion- Noise Monitoring during Ganesh Festival'2019

This year 132 locations from 27 Municipal Corporation of Maharashtra for 5 days period during Ganesh Festival i.e. on 2nd, 3rd, 6th, 8th& 12th September 2019 for 6 hours from 6 PM to 12 AM for each location which comprise of residential, commercial and silence zone. There was a significant decrease in the noise levels observed in almost all areas.

The noise levels were found to be having a decreasing trend in cities like Kolhapur, Satara, Mumbai, Navi Mumbai, Thane, Aurangabad and Amravati over the last few years. However, some cities like Nagpur, Jalgaon have shown increasing trend in the noise levels. The other cities like Pune and Nashik have shown a comparatively constant trend in the noise levels. There is also a significant variation in the noise levels observed from the period 6.00 p.m. to 10.00 p.m. and 10.00 p.m. to 12.00 p.m. at all the locations and further some cities like Pune have shown a significant variation in noise levels on daily basis also. This is matching the field observations of the celebration activities, particularly on the last day of the Ganesh Festival.

The ambient noise monitoring has been conducted and therefore the observed noise levels are the cumulative result of various urban sources such as traffic, house hold activities, and construction activities besides the festival related noise. Though the contribution of the festival celebration is significant which is reflected in the hourly noise level variations, the exact

contribution of the same is not covered under the scope of work of the present study. However, there is an overall decreasing trend which can be attributed to the public awareness activities carried out by various State Government Agencies and also improved enforcement of the noise regulations.

The ambient noise levels are exceeded the standards specified under the Noise Rules, 2000 and therefore, it is necessary to continue the efforts to create more awareness about the noise pollution and also to take effective steps to reduce the noise levels through various initiatives on a long term basis. The study highlights the continual need of such initiatives in a more prioritized manner.

Despite the awareness regarding the Environment pollution caused due to the festival, there is increase in the Air, Water and noise pollution during the festive period. The effort taken from the officials of Maharashtra Pollution Control Board, police office etc., is really appreciable for control the pollution caused to a maximum extend without hurting the religious customs.

7.2 Noise Monitoring during Diwali 2019.

In order to assess the ambient noise levels in the environment during Diwali festival, the MPCB has taken an initiative to carry out noise monitoring at 158 locations all over Maharashtra for a period of 3 days: before Diwali on 26th October 2019 and during Diwali Festival i.e. on 27th Oct-19(Lakshmi-Pujan) and 29thOct -19(Bhaubeej), for 24 hours at various locations in different cities in Maharashtra. The main aim of the project was to determine the trends and variations of noise levels at various areas in the cities over different land uses and to create awareness about noise pollution through availability of scientific noise level data.

Noise monitoring was carried out using calibrated Sound Level Meters (Type I) kept at fast response mode keeping in view the quickly changing nature of noise levels, and using 'A' filter. The number of noise monitoring locations in different Municipal Corporations all over the State of Maharashtra is provided in **Table 7.2**.

Also from **Figure 7.2**, it is observed that during day time on 26th October the highest mean noise levels of 77.9 dB(A) was recorded at Kolhapur. During day time on 27th October, the highest mean noise level of 80.3 dB (A) was recorded at Pune. Similarly on 29th October, the highest mean noise levels of 77.9 dB (A) was recorded at Kolhapur. The highest mean noise levels of 64.2 dB (A), 71.0dB (A) and 67.2 dB (A) were recorded during night time on 26th,

27th and 29th October at Kalyan, Pune and Kolhapur.

Table 7.2 Noise Monitoring Locations in Maharashtra during Diwali 2019.

Regional Office	Noise monitoring locations
Amravati	6
Aurangabad	14
Chandrapur	3
Kalyan	9
Kolhapur	10
Mumbai	45
Nagpur	10
Nashik	17
Navi Mumbai	9
Pune	21
Raigad	3
Thane	11
Total	158

The lowest mean noise levels of 61.6 dB(A) , 63.3 dB(A) and 63.5 Db(A) were recorded during day time on 26th, 27th and 29th October respectively, at Aurangabad. The lowest mean noise levels of 54.1 dB(A), 52.7 dB(A) and 50.2 dB(A) were recorded during night time on 26th, 27th and 29th October respectively, at Aurangabad.

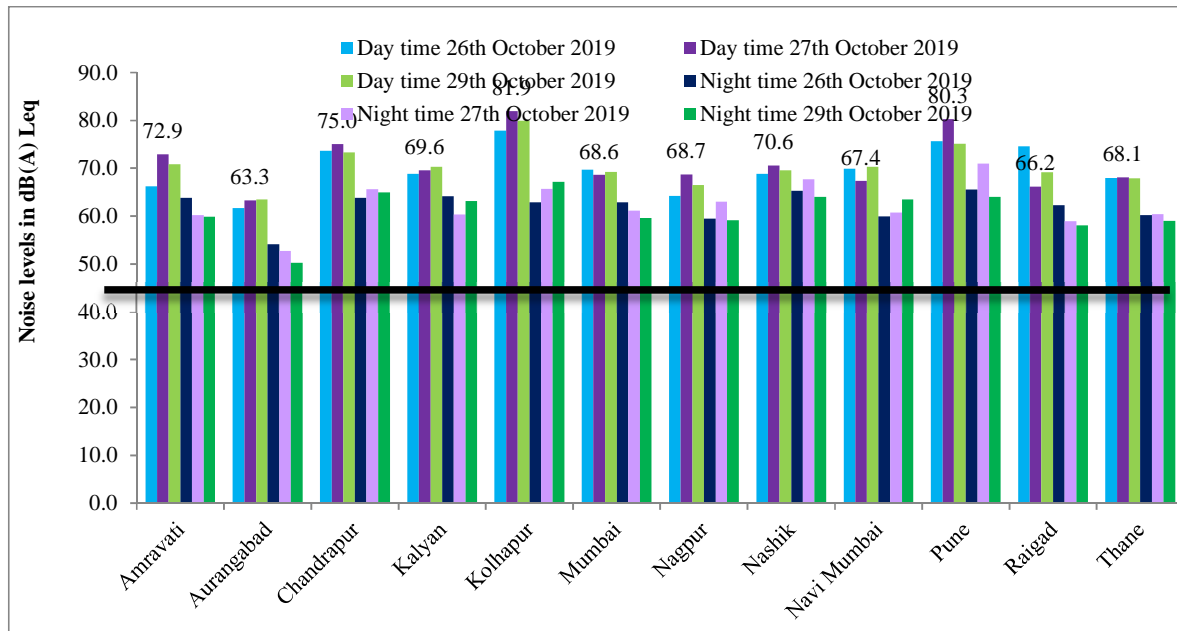


Figure 7.2 Noise levels during Diwali 2019 at different locations in Maharashtra

7.2.1 Conclusion – Noise Monitoring During Diwali’2019

This year 158 locations from 27 Municipal Corporation of Maharashtra for 3 days period during Diwali Festival i.e. on 26th (before Diwali), 27th (Laxmi poojan) and 29th (BhaiDooj) October 2019 for 24 hours for each location which comprise of residential, commercial and silence zone.

In the present study it is concluded that although there was occasional bursting of ear deafening crackers in certain areas and there has been a noticeable decrease in noise levels across the state but decibel levels were definitely lower this year in cities like Mumbai, Thane, Ulhasnagar and Kolhapur. This shows that citizens have become aware of the adverse effect of noise pollution and restricted the bursting of crackers in their respective neighborhood.

However, rise in noise levels in some of the cities is the matter of concern and there is need to create general awareness towards the hazardous effects of noise pollution in these cities. The target area should be educational institutions and more particularly schools. The young children of impressionable age should be motivated to desist from playing with firecrackers, use of high sound producing equipments and instruments on festivals, religious and social functions, family get-togethers and celebrations etc. which cause noise pollution. Holding of special talks and lectures can be organized in the schools to highlight the menace of noise pollution and the role of the children in preventing it. We should also discourage use of fire crackers as child labor is employed in their manufacturing.

Necessary mitigation measures and strict application of laws can also prevent generation and emission of noise pollution.

8 ENVIRONMENTAL TRAINING

Training constitutes an integral and continuous process for any learning and development. Understanding advancements in technology and new provisions in environmental aspects, quality of work, responsibilities in respective fields and overall development in the field of environment and work all boils down to effective training programs imparted to each accountable member of the Staff and Officers of the Board.

It is therefore one of the primary functions of the Board to plan and organize these training programs of varied capacities in different aspects of prevention, abatement and control of pollution. The Board deposes its staff and officers for training of different aspects for knowledge in environment protection and pollution control, cleaner technologies, waste minimization and amendments in respective Acts and Rules to adequately equip them to perform their duties with highest efficiency.

During the year 2019-20, the Board had deputed 939 officers to attend training in technical, scientific and administrative courses organizing 62 training programs during the year. **Table 8.1** shows the total number of training programs conducted with the total number of participants and fees. The various training courses/workshops/seminars/lectures attended by the Staff and the Officers of the Board conducted during this year are summarized in **Annexure 5**.

Table 8.1 Training Abstract for the year 2019-20.

Total Training Programs Conducted	Total Participants
62	939



9 FINANCE AND ACCOUNTS

Annual Accounts of Maharashtra Pollution Control Board for the Financial Year 2019-20 are prepared as per section 40 of the Water (P & CP) Act, 1974 and as per the guidelines given in the Water (P & CP) Rule 1983, in the form Receipt & Payments, Income & Expenditure and Balance Sheet along with schedule of Fixed Assets.

Comptroller & Auditor General of India (CAG) have allotted the statutory audit work of Board to M/s. Kirtane & Pandit LLP, Chartered Accountant. The Audit of Final Accounts was done by M/s. Kirtane & Pandit LLP, Chartered Accountant for the Financial Year 2019-20.

The Audited Final Accounts submitted to the Board for approval and adoption. After approval of the Board same will be submitted to Environment Department, Government of Maharashtra and Account General Maharashtra.

The gist of annual Receipts and Payment Accounts, Income and Expenditure Accounts and Balance Sheet for the year 2019-20 is given in this chapter.

A) Total Income of Board for the year 2019-20 is Rs.400.21 Crores

1. Consent Fees	Rs. 255.63 Crores.
2. Analysis Charges	Rs. 7.27 Crores.
3. Interest on Investment	Rs. 129.03 Crores.
4. Other Income	Rs. 8.28 Crores.

B) Total Expenditure of Board for the year 2019-20 is Rs. 129.78 Crores.

1. Salary & CPF Contribution Expenditure	Rs. 45.41 Crores.
2. Expenditure from Cess Fund	Rs. 4.57 Crores.
3. Expenses on Projects from Cess Fund	Rs. 37.64 Crores.
4. Office Expenditure & Depreciation	Rs. 42.16 Crores.

C) Excess of Income over expenditure for the year Rs. 270.43 Crores.

D) Capital Expenditure Rs. 31.31 Crores.

E) Investment in Fixed Deposits as on 31/03/20 Rs. 2207.71 Crores.

Details of accounts for the year 2019-20 are attached as **Annexure 6**.



10 IMPLEMENTATION OF ACTS & RULES

Maharashtra Pollution Control Board (MPCB) implements various environmental legislations in Maharashtra, including Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and some of the provisions under Environmental (Protection) Act 1986. MPCB functions under the administrative control of Environment Department, Govt. of Maharashtra. The list of various Acts and Rules implemented by MPCB is as follows:

1. Water (Prevention & Control of Pollution) Act, 1974.
2. Air (Prevention & Control of Pollution) Act, 1981.
3. Maharashtra Water (Prevention & Control of Pollution) Rules, 1983.
4. Maharashtra Air (Prevention & Control of Pollution) Rules, 1983.
5. Maharashtra Biodegradable and Non-biodegradable Waste (Control) Act, 2006
6. Environment (Protection) Act, 1986 and Rules & Amended Rules made thereunder, which are as below:
 - (i) The Environment (Protection) Rules, 1986 and (Amendment Rules, 2016).
 - (ii) The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
 - (iii) The Bio-Medical Waste Management Rules, 2016.
 - (iv) The Solid Waste Management Rules, 2016.
 - (v) The Construction and Demolition Waste Management Rules, 2016.
 - (vi) The Plastic Waste Management Rules 2016
 - (vii) The E-waste (Management) Rules, 2016
 - (viii) The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
 - (ix) The Noise Pollution (Regulation and Control) Rules, 2000.
 - (x) The Batteries (Management and Handling) Rules, 2001
 - (xi) The Wetlands (Conservation and Management) Rules, 2010
7. Notifications :
 - (i) Environment Impact Assessment Notification, 2006.
 - (ii) Coastal Regulation Zone Notification, 2011.
 - (iii) Maharashtra Plastic and Thermal Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018 (As amended)

As per these Acts and Rules the following prosecutions have been launched and convictions have been accordingly secured for the year 2019-20.

10.1 Status of Legal Enforcement for the year April 2019- March 2020

I) Status of cases filed before Trial Courts

SN.	Name of the Act	No. of cases filed	No. of cases disposed off	No. of cases pending
1.	Water (P&CP) Act, 1974	30	-	30
2.	Air (P&CP)	Nil	Nil	Nil

	Act, 1981			
3.	Environment (Protection) Act, 1986 & Rules made thereunder	224	-	224

II) Status of Writ Petitions / PILs filed before Hon'ble High Court of Judicature at Bombay Bench at Mumbai/Aurangabad/Nagpur

SN.	No. of Writ Petitions/PILs filed	No. of Writ Petitions/PILS disposed off	No. of Writ Petitions pending
1.	74	62	12

III) Status of cases before the Hon'ble Supreme Court of India

SN.	No. of Special Leave Petitions/PILs filed	No. of Special Leave Petitions/PILS disposed off	No. of Special Leave Petitions pending
1.	21	1	20

IV) Status of Appeals/Applications filed before the National Green Tribunal, Principal Bench, New Delhi and Western Zone, Pune

SN.	No. of Appeals/Applications filed	No. of Appeals/Applications disposed off	No. of Appeals/Applications pending
1.	74	12	62


V) Status of Appeals/Applications filed before the Public Information Officer/Appellate Authority (P&L Divn.), MPCB, Mumbai under the Right to information Act , 2005 during the period from April,2019 to March, 2020

SN.	Particulars	No. of Appeals/Applications filed	No. of Appeals/Applications disposed off	No. of Appeals/Applications pending
1.	Application	20	20	-
2.	Appeals	05	05	-



11 ENVIRONMENTAL AWARENESS & PUBLIC PARTICIPATION

For sustainable development it is necessary to promote and create environmental awareness among communities, businesses and governments. Therefore the Board organizes various environmental awareness programs across the State of Maharashtra. During the year 2019-20 the following programs on environmental awareness were conducted by the Board.

Month	Subject	Details
June 2019	Environmental Short Film Competition and Short Film Festival: M.P.C.B and The Environmental Vigilance Forum jointly organized an environmental short film competition and an environmental short film festival.	The environmental short film competition was held in amateur and professional groups. Approximately 50 short film entries were received in this competition. Dr. Anmol Kothadia, Dr. Sanjeev Shewde, Dr. Percy Awari, Yogesh Soman and Rupali Telwane were the examiners for this competition. The winning contestants were honoured at the World Environment Day celebrations on 5 th June 2019. A three-day environmental short film festival was also organized on the occasion of World Environment Day.
June 2019	World Environment Day celebration: The main function was organized at Yashwantrao Chavan Natya Sankul, Mumbai on the occasion of World Environment Day on 5 th June 2019. Hon. Chief Minister Shri. Devendra Fadnavis, Minister of Environment Shri. Ramdas Kadam, Minister of State for Environment Shri. Pravin Pote Patil, Principal Secretary of Environment Shri. Anil Diggikar and Member Secretary of Maharashtra Pollution Control Board Hon. Mr. E. Ravindran were also present for this function.	The prize giving ceremony of Vasudhara Puraskar competition organized for Industry, Corporation and Municipality and CETP was organized. Prize distribution ceremony for Environmental Vasundhara short film competition was also held during the main ceremony. The competition was held for two groups, professional and amateur. The award ceremony of Photothon 2019 was held at this time. The introductory speech of this program was given by the Member Secretary of Maharashtra Pollution Control Board, Hon. Mr. E. By Ravindran. Hon. Chairman Shri. Sudhir Srivastava, Minister of Environment No. Ramdas Kadam, Yuvasena leader Shri. Aditya Thackeray and Chief Minister of the state Mr. Devendra Fadnavis expressed his thoughts. A three-day environmental short film festival was organized in collaboration with the Environmental Vigilance Forum. It was attended by a large number of environmentalists. Seminars of directors, producers, environmental experts and practitioners were also organized during this time



		
	1. Vasudhara Award was distributed on the occasion of World Environment Day	
June 2019	<p>Awareness article in the newspaper on the occasion of 5th June World Environment Day: An environmental awareness campaign was published on the front page and inside page of the Mumbai edition of Maharashtra Times, Loksatta, Sakal, Lokmat, Saamana, Indian Express</p>	<p>On this occasion, the Times of India, Mid Day, DNA, Hindustan Times, Punyanagari, Pudhari, Nawakal, Navbharat and other leading newspapers in the state had published awareness message. Awareness messages were published at bus stop shelters in Nagpur, Mumbai and Pune. At the same time, an awareness message was published on the BEST buses in Mumbai. Awareness activities were organized in collaboration with Tarun Bharat and Samarth Bharat, Bhambha Foundation. At the same time awareness message was published on 16 lakh telephone bills issued on behalf of MTNL. Awareness messages were also published in India Today, Corporate India, Business Today and Enviro Friend.</p>
July 2019	<p>Paryavarnachi Wari, Pandhrichya Dari: On the occasion of Ashadi Ekadashi, an environmental awareness campaign was organized at the time of Pai Wari from Alandi to Pandharpur</p>	<p>This message was spread through folk art kirtan, bharud, povada which are popular in rural areas. During this fortnight, Sangeet Natak Academy Award winning folk artist, Mrs. Chandabai Tiwadi, famous Shahir Shri. Devanand Mali, Dr. Shivaji Waghmare, Shahir Prasad Vibhute and H.B.P Shri. Dnyaneshwar Maharaj Wable created awareness through Bharud, Povada and Kirtan respectively. This Wari was inaugurated at Pune by Hon'ble Member Secretary of MPCB. Mr. E.Ravinderan and Dr. Prakash Khandge, a keen student of folk art. The Wari concluded on the eve of Ashadi Ekadashi at Pandharpur in presence of Hon'ble Chief Minister Devendra Fadnavis, Mrs. Amrita Fadnavis, Guardian Minister of Solapur Hon'ble Shri Vijay Deshmukh, Minister of Water Supply, Hon'ble Shri Babanrao Lonikar, Minister of State Shri Mahadev Jankar, Member Secretary of the Board Hon. Mr. E. Ravindran and other dignitaries</p>
June 2019	<p>Free distribution of cloth bags to the students of Mumbai Municipal School</p>	<p>The cloth bags were made by the Maharashtra Pollution Control Board with a financial grant to the Women's Economic Development Corporation. All these cloth bags were distributed free of cost to the students of government schools in the state. The launch event was organized at the Municipal School in Santa Cruz with free distribution of cloth bags to the school children of the Municipal School in Mumbai. In this program, Hon. Environment Minister Shri. Ramdasbhai Kadam, Yuvasena leader Hon. Mr. Adityaji Thackeray, Mayor of Mumbai Shri. Vishwanath</p>

		<p>Mahadeshwar, Assistant Secretary of the Board Pundalik Mirashe, Public Relations Officer of the Board Shri. Sanjay Bhuskute were present.</p>
		
	<ol style="list-style-type: none"> 1. Free distribution of cloth bags to school children on the occasion of World Environment Day 2. The Minister of Environment Hon. Ramdas Kadam, Youth Sena Leader Hon. Aditya Thackeray, Mumbai Mayor Vishwanath Mahadeshwar, MAVIM President Jyoti Thackeray, Pundalik Mirashe and Sanjay Bhuskute while distributing free cloth bags to the students of Mumbai Municipal Corporation schools, 3. The book Shivadhanushya on Plastic Ban was published on the occasion of World Environment Day 	
<p>August 2019</p>	<p>Eco-Friendly Dahi Handi: The Eco Friendly Dahihandi Utsav 2019 was jointly organized by IDEAL Book Company and MPCB</p>	<p>In this initiative, noise pollution prevention awareness rally was organized with the help of famous actors of Marathi film industry from the open deck bus of Best Transport Service. The rally was attended by well-known film and TV artists. The rally was organized on the eve of Dahihandi with a street play artist in Dadar, Lalbagh area. Awareness was created through street plays about the serious effects of noise pollution. On the day of Dahihandi, eco-friendly Dahihandi was launched in the presence of young artists from popular series on Zee TV, Star Pravah, Colors Marathi. The soundless eco-friendly Dahihandi was blown up in front of Chhabildas High School in Dadar with the help of artists from Theatre Industry. Public Relations Officer, MPCB was present during this event.</p>

		
	<ol style="list-style-type: none"> 1. Gopalkala team while breaking eco-friendly Dahi Handi 2. Presenting a street play in eco-friendly Dahi Handi initiative 	
<p>September 2019</p>	<p>Funding for the Big Green Ganesh Program organized by 92.7 Big FM and MPCB</p>	<p>The initiative 'Big Green Ganesh' was jointly organized by 92.7 Big FM and MPCB for the city of Mumbai. A special studio was set up at Raja of Lalbagh in Mumbai for a total of 10 days during Ganeshotsav. At this time, Hon'ble Chief Minister of Maharashtra, Hon'ble Minister for Environment, Hon'ble State Minister for Environment and film celebrities spread messages for public awareness.</p>
<p>September 2019</p>	<p>Various public awareness activities to celebrate environmentally friendly Ganesh Utsav</p>	<p>Awareness messages were published at bus stop shelters in Mumbai, Nagpur, and Pune and at Mumbai Airport, Mumbai Metro and BEST Buses in Mumbai to celebrate the environmentally friendly Ganesh Utsav. At the same time, awareness messages were published by M.T.N.L on Bill in Mumbai city.</p>
<p>September 2019</p>	<p>Eco-friendly domestic Ganpati competition organized by MPCB and Loksatta</p>	<p>The eco-friendly domestic Ganeshotsav competition was jointly organized by MPCB and Loksatta at six divisional levels of Mumbai, Pune, Nashik, Nagpur, Ahmednagar and Aurangabad. More than three thousand contestants had participated in this competition.</p>
<p>September 2019</p>	<p>Financial grant for the Times Green Ganesh program</p>	<p>The Times Green Ganesh competition was jointly organized by the MPCB, Department of Environment, Government of Maharashtra and Times of India Group for Mumbai and Pune. An eco-friendly Ganesh competition was organized for the Public Ganeshotsav Mandal and Housing Society in Mumbai. The campaign included awareness at various malls and cinema theaters in Mumbai, Eco-Ganeshmurti workshop for school children. Various activities and cleanliness campaigns were conducted by college students for the eco-friendly Ganesh ambassador during Ganesh idol immersion at Girgaon Chowpati.</p>
<p>September 2019</p>	<p>Environmentally Friendly Ganesh Utsav Competition</p>	<p>A special public awareness campaign was organized by MPCB and ABP Mazha to celebrate eco-friendly Ganeshotsav in housing societies in major cities of the state. A special headline was aired on the eco-friendly Ganeshotsav celebrated in the housing societies of Mumbai, Pune, Nashik</p>

		and Nagpur. This time a special half hour talk show was organized on ABP Mazha. In this initiative, ABP Mazha was presenting a special program on housing societies celebrating environment friendly Ganeshotsav through newsletter. Apart from this, popular Marathi artists Advait Dadarkar and Anita Date had advertised the competition through promos to celebrate eco-friendly domestic Ganeshotsav in the entire state.
September 2019	Ganesh Utsav idol competition organized by MPCB and Loksatta	In the Ganesh Utsav Idol Competition organized by Loksatta, MPCB had participated as a co-coordinator for same. In this competition, a special prize was given to the best eco-friendly Ganesh Murti category.
September 2019	Eco-friendly public Ganesh festival competition organized by MPCB and Dainik Samana	The eco-friendly public Ganeshotsav competition was organized in Mumbai, Pune and Aurangabad in collaboration with Dainik Saamana. Public Ganesh Utsav Mandals were appealed to participate in this competition through comprehensive statements.
September 2019	Eco-friendly public Ganesh Utsav competition organized by MPCB and DNA	On behalf of DNA and MPCB, a housing society and a home environment friendly competition was organized to celebrate the eco-friendly Ganeshotsav. MPCB was involved as a co-ordinator in this initiative by DNA. Well-known artists of Hindi film industry had participated in this initiative.
September 2019	Eco-friendly public Ganpati competition organized by I. B. N. Lokmat and MPCB	An environmentally friendly public Ganeshotsav competition was organized jointly by I.B. N. Lokmat and MPCB. Competitors were invited to participate through special promos. Under this initiative, four special episodes were aired on this channel.
September 2019	Eco-friendly domestic Ganpati competition organized by MPCB and Zee 24 hours	The state level competition 'Domestic Eco Friendly Ganeshotsav Competition 2019' was jointly organized by MPCB and Zee 24 Hours. The competition was well received. Awareness was created through special promos to participate in this competition. On the occasion of this competition, news capsules were broadcast on eminent persons celebrating eco-friendly domestic Ganesh Utsav during the festival.
September 2019	Eco-friendly Ganpati Competition for School Students and Housing Society organized by Sam Marathi and MPCB	Sam TV and MPCB organized eco-friendly Ganpati Competition for housing societies and school students in the state. The competition was well received. Sam TV had appealed for participation in the competition through promos for the event.
September 2019	Eco-friendly Ganesh Utsav competition for Housing Society organized by Jay Maharashtra and MPCB	An eco-friendly Ganesh Utsav competition was organized for housing societies in the state jointly by Jay Maharashtra and MPCB. Jay Maharashtra Vahini had made a wide appeal to participate in this competition through Promos.
September 2019	Awareness campaign on ban on single use plastic	The state government has banned the use of single use disposable plastic items e.g. plastic bags, straws, cups, plastic plates, thermocol plates under the Plastic Prohibition

		Act. In order to create awareness among the citizens about this, the Maharashtra Pollution Control Board and the Department of Environment had organized a massive public awareness campaign wherein display of Hoardings, hoardings at petrol pumps, LED Screen at bus stand of the State Transport Corporation, Best Buses in Mumbai Cities were done. Awareness messages were published at bus stands in Mumbai, Nagpur and Pune. At the same time, there was widespread awareness about the pollution caused by used milk bags
October 2019	92.7 Big FM on single use plastic ban on the occasion of 2nd October Gandhi Jayanti. Janajagruti Abhiyan jointly by MPCB and Project.org Mumbai	On 2nd October 2019, on the occasion of Gandhi Jayanti, 92.7 Big FM and MPCB organized a plastic recycloth on the ban on single use plastics. In this initiative, in collaboration with Mumbai Project.org, an appeal to citizens of Mumbai was made on the radio channel to donate single use plastic, plastic bags available at home. A representative of Mumbai Project.org collected the plastics from households and used them to make benches for school children and public garden benches. In this initiative, plastic waste collected was from about 1.5 lakh households in Mumbai.
October 2019	Exhibition of Single Use Plastic Alternatives on the occasion of 2nd October Gandhi Jayanti	On the occasion of 2nd October Gandhi Jayanti, an exhibition of items used as an alternative to single use plastic was organized at the Trimurti premises of the Ministry. An exhibition of cloth bags, eco-friendly plates and cups, paper straws, various items made from coconut and Areca nut trees was organized. The response to this exhibition was overwhelming.
October 2019	Financial grant to the Environment Conference organized by Nature and Social Environment Pollution Prevention Board	Nature and Social Environment Pollution Prevention Board organized an environmental meeting at Chiplun in Ratnagiri district. The conference included discussions with expert guides on environmental issues, their solutions at the local level, local biodiversity, migration of birds, marine biodiversity. Financial assistance was granted for the same.
November 2019	Pollution Free Diwali Awareness Campaign	In order to celebrate pollution free Diwali, a massive awareness campaign was organized by the MPCB and the Environment Department. Awareness messages for celebration of eco-friendly Diwali were published on bus stands in Mumbai, Nagpur and Pune, digital sign boards and hoardings at airports and metro railways in Mumbai.
November 2019	State level inter-school drama competition organized by Eco Fox and MPCB	Eco Fox and MPCB had jointly organized an environmental green theater festival and an inter-school drama competition. The competition was held in Mumbai, Pune, Nagpur, Aurangabad, Kolhapur and Nashik. The competition was held in two sessions, the preliminary round and the final round. Preliminary rounds were also held at Latur and Nanded for Aurangabad division. More than 300 schools participated in the competition.
January 2020	Exhibition of chariot on 26th January Republic	During the flag waving ceremony held at Shivaji Park, Mumbai on the occasion of Republic Day of India, a chariot

	Day of India	on the subject of global warming was displayed by the MPCB and the Department of Environment
		
	1. Chariot on the subject of Global Warming at the Republic Day program of India	
January 2020	Oath for Prosperous Environment by school children on the occasion of Republic Day of India on 26th January	The oath taking ceremony for a prosperous environment on the occasion of Republic Day of India was held at the Trimurti premises of the Ministry. About 250 students from selected schools in Mumbai participated in this event. At this time, Hon. Deputy Chief Minister Shri. Ajit Pawar, Environment Minister Adityaji Thackeray, other ministers, Minister of State for Environment Shri. Sanjay Bansode, Principal Secretary of Environment Shri. Anil Diggikar, Chairman of Maharashtra Pollution Control Board Shri. Sudhir Srivastava and Member Secretary Shri. E. Ravindran were present for this ceremony. The oath taking ceremony was published in various newspapers viz. Maharashtra Times, Loksatta, Sakal, Saamana, Lokmat, Pudhari, Nawakal, Divya Marathi, Indian Express, Times of India, Hindustan Times, Mid Day were some of the leading newspapers in the state. Also awareness message was broadcast on Zee 24 Hours, ABP Mazha, I.B.N. Lokmat, Sam Marathi, Jai Maharashtra, Doordarshan.
		
	1. Children taking oath for prosperous Environment 2. Minister of Environment Hon. Aditya Thackeray expressing his thoughts at the oath taking in ceremony for prosperous environment	
January 2020	Resolution for Plastic bag free Maharashtra on the occasion of 26th January Republic Day of India	On the occasion of Republic Day of India, resolution for the plastic bag-free Maharashtra was organized through various comprehensive public awareness campaigns. Awareness messages were published in leading newspapers in the state.
March 2020	Photathon	Photathon 2020 is an innovative competition for photographers, in which five photographs of any



		<p>environmental issue are presented in a period of only twenty-four hours. The winners are awarded with special prizes viz. Best Photo, Microscopic Photo and Best Photo. The competition was held at Maharashtra Nature Park, Mahim in March at 12.00 noon. The award ceremony was held at the main event of World Environment Day. The competition was organized in Mumbai, Pune and Nashik</p>
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12 IMPORTANT MATTERS DEALT WITH BY THE BOARD

During the FY 2019-2020 the Board has dealt with various important matters as enlisted and briefly described below;

12.1 E-Governance

As a part of the Business Reforms Action Plan for 2017-18, The Department of Industrial Policy and Promotion (DIPP) has proposed every State to develop and implement a Central Inspection System (CIS) (integrated risk based shared inspection system) covering multiple implementing agencies and compliance behavior of specific business. The State Government has also adopted the Ease of Doing Business practices in accordance to its Make in Maharashtra campaign. MPCB has adopted and implemented 100% business reforms suggested by the DIPP as per the Business Reforms Action Plan for ease of doing business. Amongst all few significant are as below;

- Developed and implementing Centralized Inspection System (CIS) for randomized Risk based inspection & sampling
- Developed Solid Waste Management & Sewage Management online web portal for ULB's to provide solid waste generation and its treatment details
- Established Uniform Integrated Enforcement Policy for Consent Management - First in Maharashtra
- Enforced online monitoring facility for 17 categories of critically polluting industries.
- Scheme of Auto-Renewal of Consent based on self-certification for Red, Orange & Green Category industries- incentivizing complying industries
- Grant of Renewal of Consent to Operate for a minimum period of 5 Yr for Large/ Medium scale and a minimum period of 3Yr for SSI industry excluding Sugar industries
- Updated features of IMIS (Integrated Management Information System) of MPCB
- Integration with MAITRI

12.2 Information & Communication Technology and related activities

- Board has initiated development of Online Surprise Inspection module under Central Inspection System (CIS).
- Board initiated development of Legal Module for online tracking all the legal cases and Directions given by MPCB and is in testing phase. Upon testing completion, it will be made available for use.

- Board developed online web portal for receiving and processing of online applications for the post of Technical Associates.
- Board initiated implementation of Video Firewall for Video Conferencing facility which will facilitate MPCB to conduct VC with any entity which is outside MPCB's VPN network.
- Board initiated implementation of Block Chain technology for secured access of Consent / Authorization Grant Copy and it will be made live from May'2019.
- Board initiated development of Online Confidential Report Module for Establishment Department
- MPCB's E Catalyst :The Board has recently launched their first of its kind mobile application "MPCB E-Catalyst" which will act as a platform for public information system which has digital database & a centralized system wherein various information regarding all environmental concerns are disseminated widely and effectively using digital mediums. In times of digital literacy, E-governance and much aware conscience, it is an essential part of one and all to be updated with the latest affairs of environmental world. The application "MPCB E-Catalyst" can play a significant role in spreading environmental awareness among the nation on its fingertips.
- MPCB's E-Bulletin: The Board has also initiated a new version of knowledge sharing digital platform through E-bulletin publishing various latest happenings of the Board in order to aware each and every individual that is involved with the activities of MPCB directly or indirectly. Digital E- Bulletin shall be reflecting all latest activities, events, achievements, actions taken & proposed, goings-on, deeds & newer endeavors of the Board in brief. It shall also be a platform that will apprise the reader with latest news in environmental field in terms of technology as well as with legal aspects.

12.3 Waste Management

A. Solid waste Management (SWM)

- The Board has timely issued various directions to Urban Local Bodies (ULB's) related to waste-to-energy, minimum provisions related to manpower, machinery, budgetary provisions and for compliance of Hon'ble Nation Green Tribunal (NGT) order
- The Board has Constituted;
 - State Level Technical Advisory Committee for implementation of Solid Waste Management in the State



- Divisional Level Committee for monitoring of Solid Waste Management Rules 2016
 - The Board has timely issued Directions and measures like effective implementation of plastic ban, workshop for local bodies on Swacchha Bharat Mission helped to reduce generation of solid waste and improve solid waste processing quantity in the state
 - The Board has developed online web portal for local bodies wherein local bodies can submit their daily/monthly solid waste processing details. Municipal Corporations & Council would be auto registered in this portal. Also, this data will be made available to citizens/public to achieve data democratization goal

B. Sewage Management

This Portal is developed for Municipal Councils, Corporations & Nagar Panchayats to submit yearly sewage treatment details. Municipal corporations & Council would be auto registered in this portal. Further provision for submission of yearly Sewage generation followed by Sewage collection system, Sewage Treatment System, Quantity of treated water reused are also provided

C. Plastic Waste Management (PWM)

- The Board has successfully carried out “State-Level Consultative Workshop on Swacchh Bharat Mission” on 2nd February, 2019 at Sahyadri Guest House in Mumbai
- Officials from other State pollution control boards such as Tamil Nadu, Madhya Pradesh, Kerala, Bihar etc. have discussed with MPCB about the plastic ban and its implementation in Maharashtra. Some of these states have issued their own notifications for the plastic ban on similar line of Maharashtra’s Plastic notification
- Effective implementation of concept “Extended Producer’s Responsibility (EPR)” is seen as a result of the Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018. Around 450 action plans are received under EPR for post-consumer plastic waste management
- The Board has also constituted EPR scrutiny committee to list criteria/parameters for EPR and scrutiny of submitted EPR plans. According to the directions from Environment Department, the EPR plans have been submitted to Environment Department for further decision
- Due to the said Notification, number of various Producer Responsibility, Organizations have come forward. At present, CPCB has recognized 18 PROs



- Plastic industries/ brand owners are implementing or planning to implement the EPR plan through Producer Responsibility Organizations (PROs)
- To achieve the targets, plastic producers have appointed 4-5 major PRO's such as Gem Recycler, IPCA, Shakti Plastic, NEPRA Environmental Solutions Pvt. Ltd., Sampurna Earth Environment Solutions Pvt. Ltd. etc.
- 66 number of plastic waste recyclers have been registered with the board so far
- Further Board has taken initiative to develop online platform for plastic waste management in the state of Maharashtra

12.4 Restoration of Polluted River Stretches: Implementation of Action plans under Guidance of CPCB to improve the quality of river water.

The Hon'ble NGT Principal Bench issued order on 20th September, 2018 in Original Application No. 673/2018 mentioning report of CPCB **“More River Stretches are now critically polluted: CPCB”**. The report comprises 351 polluted river stretches in India out of that 53 polluted river stretches are in Maharashtra. It has been mandated to prepare Action Plan for River Stretches and make them pollution free. In compliance of the orders of the Hon'ble NGT, the Board has prepared and submitted Action Plans for River restoration of all 53 rivers.

12.5 Technology demonstration on Sewage Treatment

Board has taken initiative for Technology Demonstration Project for sewage treatment using in-situ nallah treatment methodology. The 1st of this kind has been inaugurated at Kotawali village, Chiplun Taluka, Ratnagiri Dist. as a part of Vashishthi River Rejuvenation. The project has been inaugurated on 31st January 2020 at the site & all the details of benefits of technology as well as determinants of success were disclosed to the stakeholders.

12.6 Compliance by Sugar Industries

Continuous efforts made by Board ensure compliance of new standards for sugar industries and around 80% compliance are met by sugar industries.

12.7 National Ambient Air Quality – Non-Attainment cities

The Hon'ble NGT issued order in OA No.681/2018, dt.8-10-2018 about time bound preparation and implementation of the Action Plan for lowering the ambient air pollution in the non-attainment cities. Its main goal is “to meet the prescribed annual average ambient air quality standards at all locations in the country in a stipulated timeframe. Central Pollution

Control Board (CPCB) prepared a list of non-attainment cities/towns based on the Ambient Air Quality (AAQ) data with respect to Particulate Matter Concentration and has identified 17 numbers of non-attainment cities in Maharashtra. As per Hon'ble NGT order, Board has prepared and submitted action plan for all 17 non-attainment cities in the state within stipulated time.

12.8 Comprehensive Environmental Pollution Index (CEPI)

In 2009, the Ministry of Environment & Forests (MoEF), Govt. of India in association with Central Pollution Control Board (CPCB), New Delhi and Indian Institute of Technology (IIT), New Delhi have carried out an environmental assessment of industrial clusters across the country named Comprehensive Environmental Pollution Index (CEPI) with the aim of identifying polluted industrial clusters & prioritizing planning needs for intervention to improve the quality of environment in these industrial clusters and the nation as a whole. The industrial clusters/areas having aggregated CEPI scores of 70 and above were considered critically polluted clusters/areas and those with scores above 60 were classified as Severely Polluted. As per the latest order on October 31, 2019, further detailed investigations were carried out in terms of the extent of environmental damage and formulation of appropriate remedial action plan; aiming to ensure proper environmental management in critically and severely polluted areas, the Indian government's environment ministry has asked all states to develop time-bound action plans within the next three months. Board has prepared and submitted CEPI action plan for 8 industrial areas. Also, Board is taking necessary steps for its effective implementation.

12.9 Mass tree plantation

Board has taken a drive of planting a 50 lacs trees in collaboration with industrial association, educational institutes, corporations and local bodies.

1. GEF-UNIDO MoEF&CC project on environmental sound medical waste management in India
1. Board has provided color coded bins for waste segregation as per BMW category and also provided waste collection trollies
2. Board has provided thermal medical waste disinfection device applying microwave technology to 4 hospitals (2 Government and 2 Private Hospitals).



12.10 Achievements of MPCB

12.10.1 Achievements of MPCB Board Laboratories:

A. ISO 9001:2015 and OHSAS 18001:2007 Accreditation

Maharashtra Pollution Control Board's Central Laboratory and Seven Regional laboratories located in Pune, Nashik, Aurangabad, Nagpur, Chandrapur, Thane and Chiplun upon successful completion of certification audits has awarded certification for Quality and Management Standard (QMS) ISO 9001:2015 and Occupational Health and Safety Assessment Standard OHSAS 18001:2007 from Apave Assessments India Pvt. Ltd.

B. Strong support in Judicial matters

*As per direction of High Court Bombay (No.PIL 17/2011 dated 01/03/2011) and order vide No. MPCB/PSO/B-27 dated 02.03.2011; MPCB laboratories are completing weekly analysis of CETP Joint Vigilance Sample analysis across the state and submitting analysis report well within time for hoisting the performance of CETPs on MPCB web Site

*All laboratories are equipped for Coal Analysis (Ash Content)

C. Special Monitoring of Ambient Air during Diwali Festival-2019

In compliance of Hon'ble Supreme Court Judgment dated 23.10.2018. during Diwali festival MPCB Laboratories analyzed Ambient Air Quality Monitoring Samples be per CPCB protocol with regards to bursting of firecrackers across the state and submitting analysis report well within time this will help in generation of data on pollution caused by bursting of firecrackers.

D. Time bound completion of analysis of samples collected under special projects:

During Ganesh Festival MPCB laboratories analyzes the pre and post immersion environmental samples collected from lakes, rivers, sea and creek and submit analysis report well within time for hoisting on MPCB web site.

E. Special Training to Scientific Officials:

*Awareness Training programme of ISO/IEC 17025 (NABL Accreditation) imparted to Scientific & Field staff across all the laboratories & Regional offices of Board.

12.11 Awards & Recognition

MPCB got 1st Rank in Performance Audit across the country

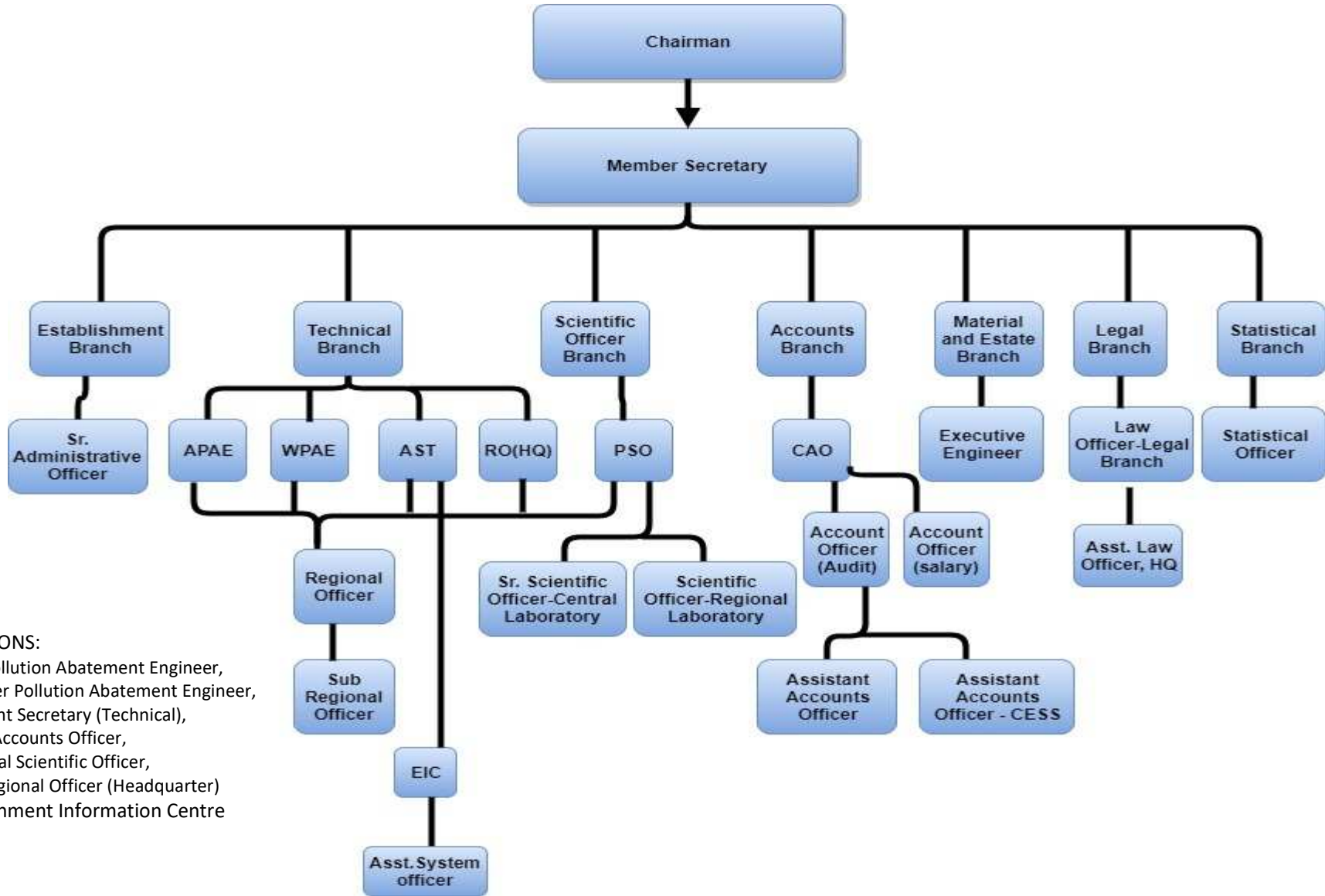


In the first ever rankings based on performance audit conducted by the Central Pollution Control Board (CPCB), The Maharashtra Pollution Control Board (MPCB) bagged the first rank among all the states in the country. MPCB scored 82.93 and stood first among all the state pollution control board & pollution control committees in India. Hon'ble National Green Tribunal (NGT) on January 2019, directed the CPCB to conduct audits in all State Pollution Control Boards and Pollution Control Committees in the country, and submit a report with the NGT. The two-day audit was conducted by an expert panel in May this year for the following parameters: Environmental Quality Monitoring, Enforcement & Regulatory Functions, Data Management & Public Out-reach, Advisory for Decision making & Research, and Development and Training.

ANNEXURES



ANNEXURE 1A – ORGANIZATIONAL STRUCTURE OF THE BOARD

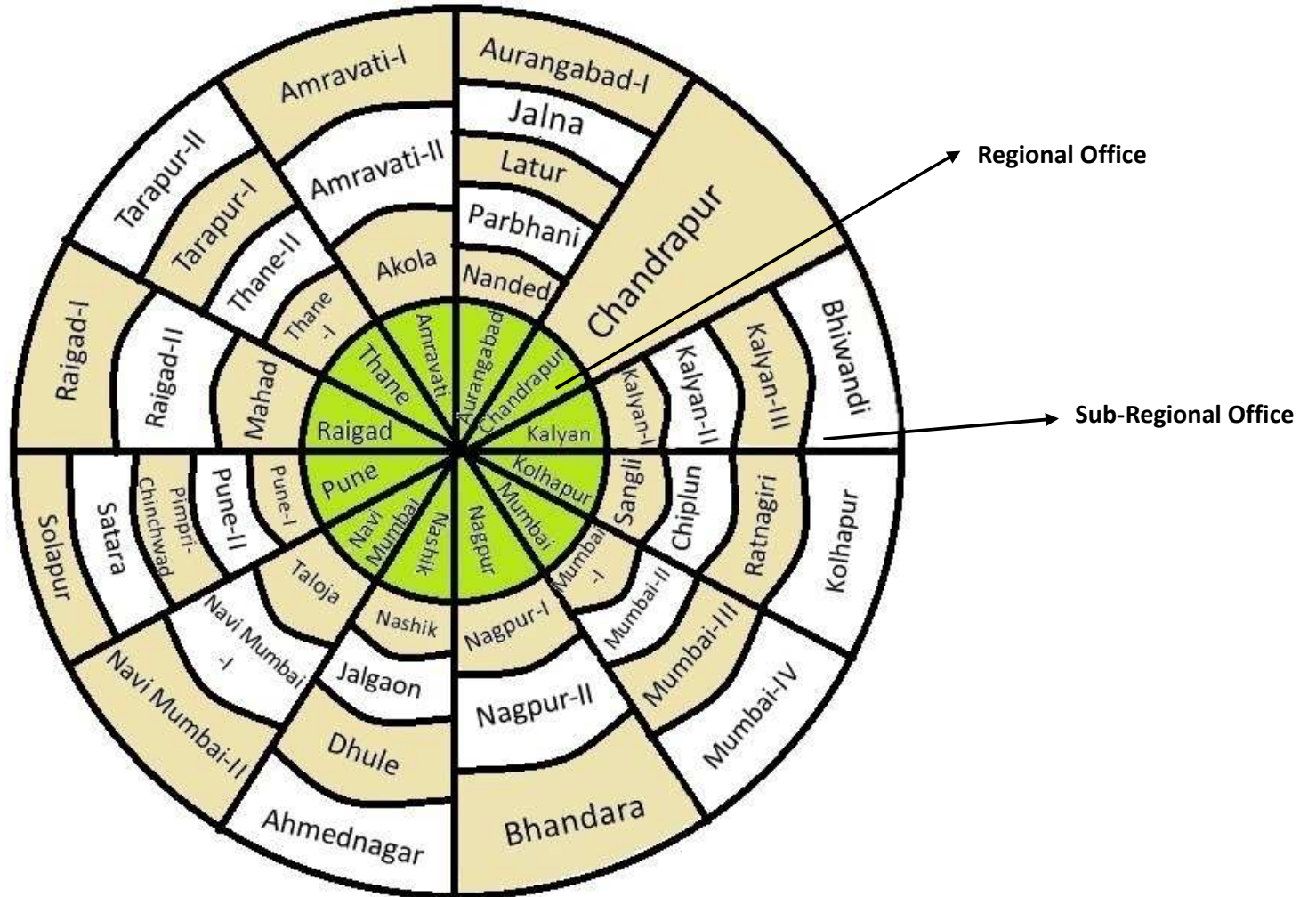


ABBREVIATIONS:

- APAE – Air Pollution Abatement Engineer,
- WPAE – Water Pollution Abatement Engineer,
- AST – Assistant Secretary (Technical),
- CAO – Chief Accounts Officer,
- PSO – Principal Scientific Officer,
- RO (HQ) – Regional Officer (Headquarter)
- EIC – Environment Information Centre

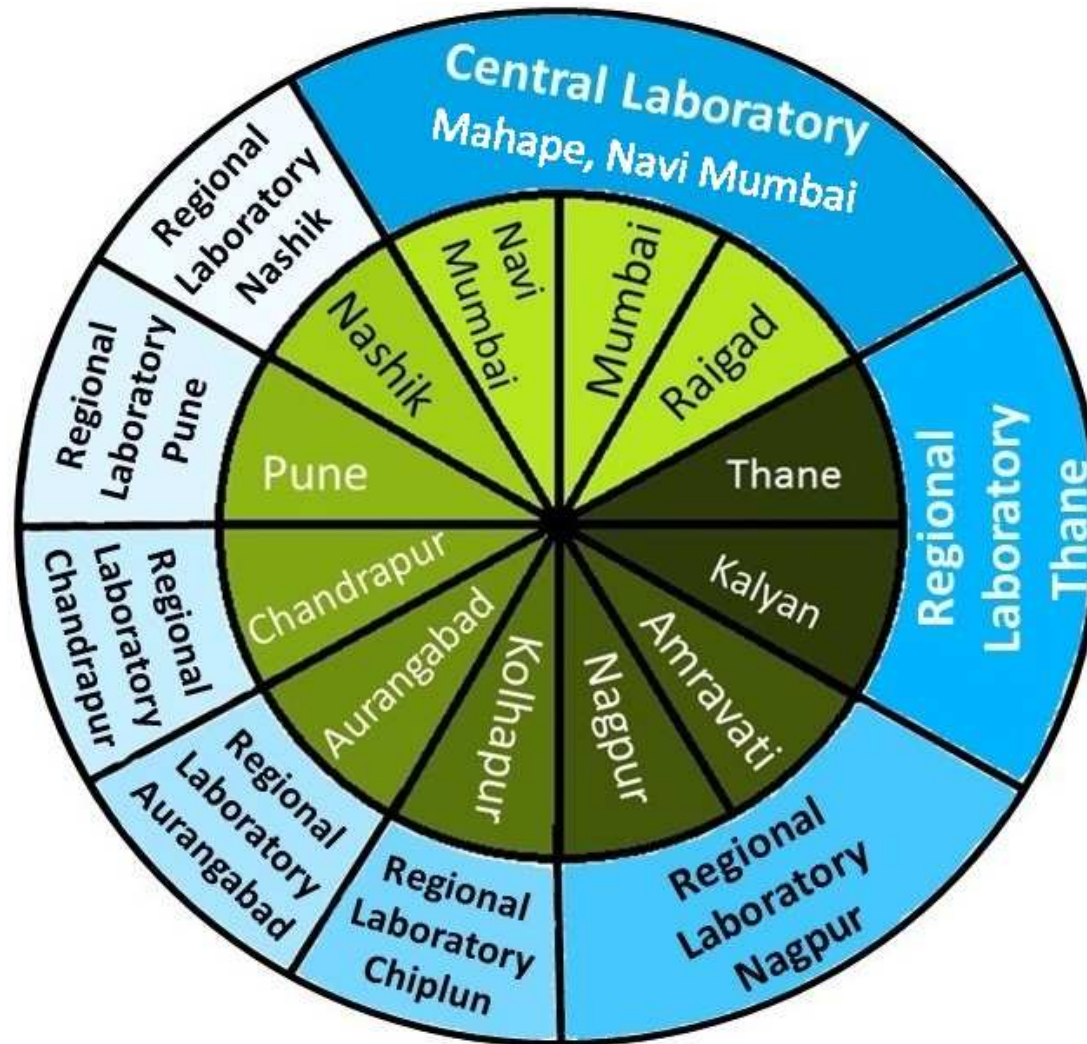


ANNEXURE 1B –CHARTS OF FIELD OFFICES AND BOARD LABORATORIES
FIELD OFFICES CHART





BOARD LABORATORIES CHART



**ANNEXURE 2 - STAFF STRENGTH AS ON 31/03/2020**

Sr.	Posts	Salary Band	Grade	Sanctioned	Filled	Vacant
1	Chairman			1	1	0
2	Member Secretary	(PB-4) 37400-	10000	1	1	0
3	Joint Director (Water)	15600-39100	7600	1	1	0
4	Joint Director (Air)	15600-39100	7600	1	1	0
5	Principal Scientific	15600-39100	7600	1	1	0
6	Chief Accounts Officer	15600-39100	7600	1	1	0
7	Assistant Secretary	15600-39100	7600	1	1	0
8	Senior Law Officer	15600-39100	7600	2	0	2
9	Senior Administrative	15600-39100	6600	1	0	1
10	Executive Engineer	15600-39100	6600	1	1	0
11	Material Officer	15600-39100	6600	1	0	1
12	Regional Officer	15600-39100	6600	15	7	8
13	Law Officer	15600-39100	6600	2	2	0
14	Senior Scientific Officer	15600-39100	6600	3	1	2
15	Sub-Regional Officer	15600-39100	5400	55	53	2
16	Statistical Officer	15600-39100	5000	1	1	0
17	Assistant Secretary (EB)	15600-39100	5000	1	1	0
18	Private Secretary	9300-34800	5000	2	0	2
19	Administrative Officer	15600-39100	5000	1	0	1
20	Scientific Officer	15600-39100	5000	9	6	3
21	Account Officer	15600-39100	5000	2	2	0
22	Junior Scientific Officer	9300-34800	4400	26	20	6
23	Assistant Accounts	9300-34800	4400	11	2	9
24	Assistant Law Officer	9300-34800	4400	3	1	2
25	Deputy Engineer	9300-34800	4400	1	0	1
26	Senior Steno	9300-34800	4400	5	5	0
27	Junior Steno	9300-34800	4300	27	11	16
28	Field Officer	9300-34800	4300	204	161	43
29	Head Accountant	9300-34800	4300	20	15	5
30	Legal Assistant	9300-34800	4300	4	0	4
31	Junior Scientific	9300-34800	4200	40	28	12
32	First Clerk	9300-34800	4200	17	15	2
33	Statistical Assistant	9300-34800	4200	1	0	1
34	Draftsman	5200-20200	2800	1	0	1
35	Field Inspector	5200-20200	2800	42	3	39
36	Senior Clerk	5200-20200	2400	50	39	11
37	Assistant Draftsman	5200-20200	2400	2	0	2
38	Electrician	5200-20200	2400	2	1	1
39	Tracer	5200-20200	2000	6	1	5
40	Laboratory Assistant	5200-20200	2000	7	3	4
41	Junior Clerk	5200-20200	1900	64	51	13
42	Driver	5200-20200	1900	74	53	21
43	Instrument Fitter	5200-20200	1900	1	1	0
44	Daftari	5200-20200	1900	14	1	13
45	Naik	4440-7440	1600	2	0	2



46	Roneo Operator	4440-7440	1600	1	0	1
47	Peons	4440-7440	1300	88	37	51
48	Chowkidar	4440-7440	1300	20	10	10
49	Sweepers	4440-7440	1300	3	3	0
		Total		839	542	297
	Positions filled by taking approval from					
50	Support Program Officer			1	0	1
	Total available position			840	542	298

CONVERTED TEMPORARY ESTABLISHMENT AS ON 31/03/2020

SN.	Posts	Salary Band	Grade salary	Filled In
1.	Junior Scientific Assistant	9400-34800	4200	11
2.	Laboratory Assistant	5200-20200	2000	5
3.	Junior Clerk	5200-20200	1900	3
4.	Driver	4200-20200	1900	1
5.	Peon	4440-7440	1300	3
Total				23



ANNEXURE 3 - DETAILS OF REGIONAL & SUB-REGIONAL OFFICES WITH THEIR JURISDICTIONS

Sr. No.	Name of the Region	Name and address	Jurisdiction	Telephone & Fax No.
1	Head Office	Environmental Information Centre, Maharashtra Pollution Control Board Kalpataru Point, 3rd and 4th floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022		Tel - 022-24010437/24020781
2	Central Lab	Central Laboratory, Maharashtra Pollution Control Board, "Nirmal Bhavan", P-3, MIDC Industrial Area, Mahape, Navi Mumbai- 400 701.		Tel - 02267195031/67195032
Regional Offices, Sub-Regional Offices and Regional Laboratories of the Board				
3	Regional Office Mumbai	Maharashtra Pollution Control Board, Kalpataru Point, 1st floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022	Mumbai Municipal Corporation Area	Tel – 022-24020781
I)	SRO Mumbai - I	Kalpataru Point, 1st floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022	Mumbai Island, Ward No. A.B.C. D.F F(South) F(North) G(South) and G(North)	Tel – 022-24020781
II)	SRO Mumbai - II	Kalpataru Point, 1st floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022	Part Of Mumbai Suburb, Ward No. M(East) M(West), H(East) H(West) and L.	Tel – 022-24020781
III)	SRO Mumbai - III	Kalpataru Point, 1st floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022	Part Of Mumbai Suburb, Ward No. (East) K(West), S, N, and P (South).	Tel – 022-24020781
IV)	SRO Mumbai - IV	Kalpataru Point, 1st floor, Opp. PVR Theatre, Sion (E), Mumbai-400 022	Suburb of Mumbai, Ward No. P(North), R(North), R(South) and T.	Tel – 022-24020781
4	Regional Office Thane	Maharashtra Pollution Control Board, Plot No P-30, 5 th floor Office Complex Building, Near Mulund Checknaka, Thane- 400604.	Part of Thane district as mentioned against the Sub-Regional Offices.	Tel –022 -25802272
	Thane Lab	Plot No. P-30, 5th floor, Office Complex Building Mulund Checknaka, Thane.		Tel - 022- 25829582
I)	SRO Thane - I	Maharashtra Pollution Control Board, Plot No P-	Thane Municipal Corporation Area	Tel – 022 25829582



		30, 5 th floor Office Complex Building, Near Mulund Checknaka, Thane		
II)	SRO Thane - II	Maharashtra Pollution Control Board, Plot No P-30, 5 th floor Office Complex Building, Near Mulund Checknaka, Thane	Thane taluka excluding Thane Municipal Corporation Area) Vasai taluka	Tel –022 25829582
III)	SRO Tarapur - I	MIDC Office Building, Boisar Station, Post Taps, Tarapur, Dist.Thane	Tarapur MIDC and related area.	Tel - 02525 -273314
IV)	SRO Tarapur - II	MIDC Office Building Boisar Station, Post Taps, Tarapur, Dist. Thane	Dahanu, Talasari, Mokhada, Javhar and Vikramgad Taluka and Palghar taluka (Except SRO - Tarapur I jurisdiction).	Tel - 02525 -261581
5	Regional Office Navi Mumbai	Maharashtra Pollution Control Board, Raigad Bhavan, 7th floor, Sector - 11, C.B.D Belapur, Navi Mumbai	Part of Thane and Raigad district as mentioned against the Sub-Regional Offices	Tel – 022-27572739
I)	SRO Navi Mumbai - I	Raigad Bhavan, 7 th floor Sector - 11, C.B.D Belapur, Navi Mumbai	Southward direction of Road in front of CETP (Hills to Pune Highway). The following areas Mahape, Koparkhairne, Sarvali, Ghansoli, Rabale, Dive, Airoli, Dighe (NMMC) AAQM stations, TTC (WMA) activities + Diva Creek	Tel – 022-27572740
II)	SRO Navi Mumbai - II	Raigad Bhavan, 7 th floor, Sector - 11, C.B.D Belapur, Navi Mumbai	North limit Navi Mumbai Municipal Corporation (NMMC) starting with village-Dighe. The areas of Vashi, Borivli, Ravane, Turbhe, Sanpada, Belapur + CETP activities + Vashi Creek.	Tel – 022-27572740
III)	SRO Taloja	Raigad Bhavan, 7 th floor, Sector - 11, C.B.D Belapur, Navi Mumbai	MIDC Taloja and Uran Taluka.	Tel – 022-27572740
6	Regional Office Raigad	Maharashtra Pollution Control Board, Raigad Bhavan, 6th floor, Sector – 11, C.B.D Belapur, Navi Mumbai	Part of Raigad district as mentioned against the Sub-Regional Offices under him.	Tel – 022-27572620
I)	SRO Raigad - I	Raigad Bhavan, 6 th floor, Sector – 11, C.B.D Belapur, Navi Mumbai	Khalapur taluka and Panvel taluka (Except MIDC)	Tel -022-27572739
II)	SRO Raigad - II	Raigad Bhavan, 6 th floor, Sector – 11, C.B.D Belapur, Navi Mumbai	Pen, Karjat, Sudhagad taluka.	Tel – 022-27572739
III)	SRO Mahad	Samaik Suvidha Kendra Bldg., MIDC - Mahad, District Raigad - 402 309	Mahad, Mhasla, Mangaon, Mrwardhan and Poladpur taluka.	Tel – 02145-232372
7	Regional Office	Maharashtra Pollution Control Board,	Kalyan, Bhiwandi, Ulhasnagar, Badlapur, Wada, Murbad and	Tel – 0251-2027343/0251-



	Kalyan	Sidhivinayak Sankul,3rd and 4th Floor, Station Road, Kalyan (West) - 421301	Shahapur talukas of Thane district.	2310212
I)	SRO Kalyan - I	Maharashtra Pollution Control Board, Sidhivinayak Sankul,3rd and 4th Floor, Station Road,Kalyan (West) - 421301	Kalyan taluka.	Tel - 0251 - 2310167
II)	SRO Kalyan - II	Maharashtra Pollution Control Board, Sidhivinayak Sankul,3rd and 4th Floor, Station Road,Kalyan (West) - 421301	Ulhasnagar, Badlapur taluka.	Tel - 0251 - 2310167
III)	SRO Kalyan - III	Maharashtra Pollution Control Board, Sidhivinayak Sankul,3rd and 4th Floor, Station Road,Kalyan (West) - 421301	Wada, Murbad, Shahapur Taluka	Tel - 0251 - 2310167
IV)	SRO Bhiwandi	Maharashtra Pollution Control Board, Sidhivinayak Sankul, 3rd and 4th Floor, Station Road, Kalyan (West) - 421301	Bhiwandi taluka.	Tel – 0251 - 2310167
8	Regional Office Pune	Jog Center, 3rd floor, Mumbai Pune Road, Wakadewadi, Pune - 411 003.	Pune, Satara and Solapur district.	Tel – 020-25811627
	Pune Lab	Jog Center, 3rd floor, Mumbai Pune Road, Wakdewadi, Pune - 411003.		Tel - 020-25811694
I)	SRO Pune - I	Jog Center, 3 rd floor, Mumbai Pune Road, Wakadewadi, Pune - 411 003.	Pune corporation area, Daund, Indapur, Baramati, Purandar, Bhor and Velhe taluka of Pune district.	Tel - 020 -25811694
II)	SRO Pune - II	Jog Center, 3 rd floor, Mumbai Pune Road, Wakadewadi, Pune - 411 003.	Haveli taluka: (excluding Pimpri Chinchwad Corporation Area) Khed, Mulshi, Ambegaon, Junnar, Maval and Shirur taluka of Pune district.	Tel – 020-25816451
III)	SRO Pimpri - Chinchwad	Jog Center, 3 rd floor, Mumbai Pune Road, Wakadewadi, Pune - 411 003.	Pimpri Chinchwad Municipal Corporation area including MIDC Pimpri, Bhosari and Akurdi.	Tel - 020-25810222
IV)	SRO Satara	Sub-Regional Office, Satara New Government Bhavan, 2nd Floor, Near S.T. Sand, Sadar Bazar, Satara - 415 001	Satara district.	Tel - 02162-233527/237789
V)	SRO Solapur	4/B, Bali Block, Civil Lines, Opp. Government Milk Scheme, Saat Rasta, Dist. Solapur - 413003	Solapur district.	Tel - 0217– 2319850
9	Regional Office	Udyog Bhavan, First floor, Trimbak Road, Near	Nashik, Ahmednagar, Jalgaon, Dhule, Nandurbar district.	Tel - 0253-2365150



	Nashik	ITI, Satpur, Nashik - 422 007		
	Nashik Lab	Udyog Bhavan, First Floor, Trimbak Road, Near ITI, Satpur, Nashik - 422007		Tel - 0253-2365161
I)	SRO Nashik	Udyog Bhavan, first floor, Trimbak Road, Near ITI, Satpur, Nashik - 422 007	Nashik district.	Tel - 0253-2365161
II)	SRO Jalgaon	Old Mr Bhikamchand Jain Municipal Market Building, Hall No. A, 3rd floor, Jalgaon - 425 001	Jalgaon district.	Tel - 0257-2221288
III)	SRO Dhule	2 nd floor, Fulchand Plaza, B.C. College Road, Near S.S.V.P.S. Engineering College, Near Vidya Nagari, Devpur, Dhule – 424 001.	Dhule district	Tel - 07184-260629
IV)	SRO Ahmednagar	Savitribai Fule Vyapari Sankul, 1st Floor, Hall No. 2 & 3, Near TV Center, Savedi, Ahmednagar- 414003	Ahmednagar district.	Tel - 0241-2470852
10	Regional Office Aurangabad	Paryavaran Bhavan, A - 4/1, MIDC Area, Chikalthana, Near Seth Nandlal Dhoot Hospital, Jalna Road, Aurangabad - 431 210	Aurangabad, Jalna, Parbhani, Hingoli, Nanded, Beed, Latur, Osmanabad district of Marathawada	Tel - 0240-2473462
	Aurangabad Lab	Paryavaran Bhavan, A - 4/1 , MIDC Area , Chikalthana, Near Seth Nandlal Dhoot Hospital , Jalna Road , Aurangabad - 431 210		Tel - 0240-2473463
I)	SRO Aurangabad - I	Paryavaran Bhavan, A - 4/1, MIDC Area, Chikalthana, Near Seth Nandlal Dhoot Hospital, Jalna Road, Aurangabad - 431 210	Aurangabad district	Tel - 0240-2473463
II)	SRO Latur	Sub-Regional Office Latur, Dev Towers, Opposite Tahasil Office, Plot No. RL-2045, Main Road, Latur - 413512	Latur, Osmanabad district	Tel - 02382-252672
III)	SRO Parbhani	Sub-Regional Office Parbhani, Devkripa Building, 1st Floor, Rangnath Maharaj Nagar, Nandkheda Road, Parbhani - 431401	Parbhani district (part), Hingoli and Parli	Tel - 02452-226687
IV)	SRO Nanded	Sub-Regional Office Nanded, Lahuti Complex, 2nd Floor, Near Shivaji Statue, Vajirabad Nanded- 431601	Nanded District	Tel - 02462-242492



V)	SRO Jalna	Sub-Regional Office, Jalna, plot no. p 3/1 and p 3/2, Phase-2, MIDC Jalna, Near Hotel Aadarsh Palace, Jalna Aurangabad Road - 431203	Jalna District	Tel - 02482-220120
11	Regional Office Nagpur	Maharashtra Pollution Control Board, Udyog Bhavan, 6th floor, Near Sales Tax Office, Civil Line, Nagpur - 440 001	Nagpur, Wardha, Bhandara, Gondia, Chandrapur, and Gadchiroli district.	Tel - 0712-2565308
	Nagpur Lab	Udyog Bhavan , 5th floor , Near Sales Tax Office, Civil Line , Nagpur - 440 001		Tel - 0712-2560152
I)	SRO Nagpur - I	Udyog Bhavan, 5 th floor, Near Sales Tax Office, Civil Line, Nagpur - 440 001	Nagpur Municipal Corporation area, Kamati Katol, Kalmeshwar, Ramtek and Parshivani, Narkhed talukas of Nagpur district.	Tel - 0712-2560152
II)	SRO Nagpur - II	Udyog Bhavan, 5 th floor, Near Sales Tax Office, Civil Line, Nagpur - 440 001	Wardha district, Hingana taluka, (excluding Nagpur Municipal Corporation area) Umred Bhivapur, Kuhi and Nagpur Gramin taluka of Nagpur district.	Tel - 0712-2560152
III)	SRO Bhandara	Sub-Regional Office, Bhandara, Tatya Tope ward near city petrol pump, Miskin Mahal Road, Bhandara-441 904	Bhandara and Gondia District.	Tel - 07184-260629
12	Regional Office Amaravati	"Sahakar Surbhi" Bapatwadi near Vevekanand Colony, Amaravati - 444606	Amaravati, Akola, Buldhana, Vashim and Yavatmal District.	Tel - 0721-2563592/93/94/97
I)	SRO Amaravati – I	Sahakar Surbhi Bapatwadi near Vevekanand Colony, Amaravati - 444606	Amaravati District.	Tel - 0721-2563592/93/94/97
II)	SRO Amaravati – II	Sahakar Surbhi Bapatwadi near Vevekanand Colony, Amaravati - 444606	Yavatmal district, Vashim District.	Tel - 0721-2563592/93/94/97
III)	SRO Akola	ALSI Plot, in front of Hutatma Statue, Nehru Park Square, Akola - 444001	Akola and Buldhana District.	Tel - 0724-2402344
13	Regional Office Kolhapur	Maharashtra Pollution Control Board, Udyog Bhavan Building, Near Collector Office, Kolhapur - 416 002	Sangli, Kolhapur and Sindhudurg district	Tel - 0231-2652952
	Chiplun Lab	Parkar Complex, 1st floor, Behind Nagar Parishad Office, Chiplun Taluka. Chiplun Dist. Ratnagiri - 415 605		Tel - 02355 -261570



I)	SRO Kolhapur	Udyog Bhavan Building, Near Collectorate Office, Kolhapur - 416 002	Kolhapur district.	Tel - 0231 -2652952
II)	SRO Sangli	300/2, Udyog Bhavan, Near Government Rest House, Vishrambaug, Sangli - 416 416	Sangli district.	Tel - 0233-2672032
III)	SRO Ratnagiri	Central Administrative Building No. 2, 2nd Floor, Collectors Office Compound, Ratnagiri – 415 612	Sindhudurga district and Rajapur, Lanja, Ratnagiri, Deorukh and Sangmeshwar taluka	Tel - 02352-220813
IV)	SRO Chiplun	Parkar Complex, 1 st floor, Behind Nagpur Parishad Office, Chiplun Taluka, Chiplun Dist. Ratnagiri	Chiplun, Guhagar, Khed, Dapoli and Mandangad taluka of Ratnagiri district.	Tel - 02355-261570
14	Regional Office Chandrapur	Udyog Bhavan, 1st Floor, Opp. Buss Stand, Railway Station Road, Chandrapur - 442401	Chandrapur, Yavatmal, Gadchiroli district.	Tel -07172-251965
	Chandrapur Lab	Regional Laboratory, MPCB, Block No 13 & 14 New Administrative Building. Mul Road, Chandrapur- 442 401		Tel – (07172) 272416
I)	SRO Chandrapur - I	Udyog Bhavan, 1st Floor, Opp. Buss Stand, Railway Station Road, Chandrapur - 442401	Chandrapur, Yavatmal district.	Tel - 07172-251965



ANNEXURE 4 – INDUSTRY STATISTICS FOR THE YEAR 2019-20

Industrial Statistical Report FY 2019-20														
RO	Green			Green Total	Orange			Orange Total	Red			Red Total	White	Grand Total
	LSI	MSI	SSI		LSI	MSI	SSI		LSI	MSI	SSI			
RO-Amravati	1	11	4775	4787	17	16	2016	2049	41	8	157	206	460	7502
RO-Aurangabad	52	62	5824	5938	100	99	2440	2639	268	35	481	784	157	9518
RO-Chandrapur	4	6	685	695	9	33	447	489	124	32	88	244	130	1558
RO-Kalyan	35	37	1941	2013	97	59	1259	1415	127	66	2038	2231	455	6114
RO-Kolhapur	38	31	7700	7769	73	90	4668	4831	265	63	1198	1526	4001	18127
RO-Mumbai	24	35	2435	2494	593	235	1056	1884	231	21	677	929	45	5352
RO-Nagpur	20	23	2676	2719	123	74	2835	3032	233	25	1065	1323	173	7247
RO-Nashik	80	56	6001	6137	146	101	2944	3191	354	77	1674	2105	2551	13984
RO-Navi Mumbai	74	83	2035	2192	162	94	1157	1413	196	45	1038	1279	419	5303
RO-Pune	413	315	8126	8854	1422	351	4746	6519	1007	142	2498	3647	1523	20543
RO-Raigad	31	33	641	705	102	35	608	745	212	37	427	676	60	2186
RO-Thane	32	25	1899	1956	247	37	930	1214	210	42	979	1231	113	4514
Grand Total	804	717	44738	46259	3091	1224	25106	29421	3268	593	12320	16181	10087	101948

Note –

LSI: Large Scale Industries

MSI: Medium Scale Industries

SSI: Small Scale Industries



ANNEXURE 5 - DETAILS OF TRAINING PROGRAMS ATTENDED BY MPCB OFFICIALS DURING THE YEAR 2019-20.

Sr. No.	Training/Workshop Dates and Period	Training Venue	Subject	No of Participants	Name of Participants
1	25.04.2019 to 26.04.2019	India International, Kamladevi Complex, New Delhi	Health Care Waste Management, Environment & Occupational Health	3	Dr. Supate, PSO, Shri Satpute, SRO, Shri Chetan Sawant, JSA
2	20.05.2019 to 01.06.2019	AEETI Nimli, Rajasthan	Compliance, Monitoring & Enforcement	2	Shri Rakesh Dafade, FO, Shri Arjun Rathod, SRO
3	28.05.2019 to 31.05.2019	Ekonneet Knowledge Foundation, Bandra, Mumbai	Air Quality Data analytics & Modelling	2	Shri Parmeshmar Kamble, SRO Shri Shakeel Shaikh, SRO
4	11.06.2019 to 13.06.2019	Environment Staff College of India, Hyderabad	Air Pollution Monitoring & Modelling using software application using Theory & Practical	3	Shri Mane, SRO Shri P.D. Jagtap, SRO Shri Pravin Patil, FO Shri Deepak Bansod (only three candidate attended)
5	21.11.2019 to 23.11.2019	Hotel Mount View, Sector 10, Chandigarh	Amendment in CCSC Pension Rules, Pensionary Benefit under old pension rule	2	Shri Shyamkumar Patil, CAO Shri Sushil Sawant, AAO
6	19.12.2019 to 21.12.2019	Hotel Royal Plaza, 19, Ashoka Road, New Delhi	Roaster Writing Reservation in services in Government policies for SC, ST, OBC & Physically Handicapped & Recruitment Rules in Government Organization	3	Mrs. Neeta Borade, EB Mrs. Smita Gaikwad, Law Officer
7	31.05.2019	Amby Valley	One day workshop on Pathways towards formulation of IT Linkage with due diligence and environment governance for State of Maharashtra at Amby Valley on 31.05.2019	89	HoD, RO, SRO & FO (89 Nos.)



8	31.05.2019	Amby Valley	- " -	31	Field Officer (31 Nos.)
9	31.05.2019	Amby Valley	- " -	2	Shri Prakash Munde, SRO Shri A.K. Patil, SRO (2 Nos.)
10	25.06.2019 to 27.06.2019	E.S.C.I., Hyderabad	Water Pollution Monitoring & Modelling using Software Application Theory & Practicals	2	Shri Kulkarni, SRO JD(APC) Shri Rathod, SRO JD(APC)
11	15.06.2019	Taj Mahal Palace, Mumbai	One Day workshop on Eco-friendly mobility for clean air	46	AST,JD(AIR), JD(Water), PSO, All RO, All SRO (46 Nos.)
12	24.06.2019 to 27.06.2019	Allvise Grand Resort, Manali	Administrative Vigilance & Disciplinary Rules	2	Mrs. Neeta Borade, EB Mrs. Shobha Naik, Sr. Clerk
13	24.06.2019 to 27.06.2019	Allvise Grand Resort, Manali	Handling of Court Case	2	Mrs. Netra Chaphekar, LO Mrs. Neelam Kubal, ALO
14	17.06.2019	Mapple Room, India Habitat Centre, Delhi	Refresher Course for BAT of Textile Sector	2	Shri Vikrant Bhalerao, SRO Shri Sushil Rathod, SRO
15	08.07.2019 to 12.07.2019	YASHDA, Pune	Refresher Training Programme in E-Governance	13	Mrs. Indira Gaikwad, SRO Mrs. Sanjana Patil, SRO Shri Somnath Kurumude, SRO Shri Venkat Shelke, SRO Shri Pamakar Hajare, SRO Shri Parmeshwar Kamble, SRO Mrs. Seema Dalvi, SRO Ms. Dhanashree Patil, SRO Shri Shripad Kulkarni, SRO Mrs. Sneha Kamble, SRO Shri Karansingh Rajput, SRO Shri Amar Satpute, SRO Shri Navnath Avtade, SRO
16	17.07.2019	Hotel Citadal	One day workshop on Execution of Action Plan for Pollutant River Stretches	3	Dr. Y.B. Sontakke, JD(WPC) Mr. Shripad Kulkarni, SRO Shri Sushilkumar Rathod, SRO
17	08.07.2019 to 12.07.2019	YASHDA, Pune	E-Governance Organized by YASHDA, Pune	2	Mr. Shripad Kulkarni, SRO Shri Sushilkumar Rathod, SRO



18	08.08.2019 to 09.08.2019	BKC, Bandra, Mumbai	Air Quality Data analytics at Ekconnect Knowledge Foundation, Bandra	2	Shri Nikhil More, SRO, JD(APC) Mrs. Sneha Kamble, SRO, JD(APC)
19	08.08.2019	Feesta Conference, 1st Floor, Indra Paryavaran Bhavan, New Delhi	C & D Waste Management Rules	1	Shri Manchak Jadhav, SRO
20	20.08.2019 to 21.08.2019	MPCB & Tata Power	Two days workshop of OCEMS	51	List of 51 Board Officials
21	25.08.2019	Hotel Taj Land, Bandra, Mumbai	AMC-SOCH-Stakeholder outreach Conclave in Health Care	1	Shri Amol Satpute, SRO PSO Section
22	04.09.2019	Nirmal Bhavan, Navi Mumbai	Power Point Presentation for Technical Staff on Grossly Pollution Sector	38	38 Officials
23	04.10.2019	Bombay Exhibition Centre, NESCO, Goregaon	All India Local Self Government for Mumbai and Conference on Indian Infrastructure Readiness for Electrical Vehicles at India Auto Show 2019	90	All HOD, RO, SRO (90 Nos.)
24	16.10.2019 to 17.10.2019	Victor Menezes Convocation Centre (VMCC), IIT, Mumbai	Partnering with Green Chemis Tree, Foundation to organize a one day conference	90	All HOD, RO, SRO & FO
25	17.10.2019 to 19.10.2019	Bombay Exhibition Centre, Mumbai	Organized a Panel (on Environment) at Smart Asia India Expo & Summit 2019	6	Shri Sushilkumar Rathod, SRO Shri Parmeshwar Kamble, SRO Shri Nikhil More, SRO Shri Amol Satpute, SRO Shri Karansingh Rajput, SRO Ms. Dhanashree Patil, SRO
26	12.11.2019 to 15.11.2019	(AAET) Nirali, Dist. Alwar, Rajasthan	Environmental Management in Industries	3	Mrs. Indira Gaikwad, SRO Mrs. Kalyani Kulkarni, FO Mrs. M.M. Joshi, FO
27	18.11.2019 to 22.11.2019	Port Blair	Five days Residential Training Programme on	3	Shri P.K. Mirashe, AST Shri Parmeshwar Kamble, SRO



			Digital Transformation for organization		Shri Vijaykumar Rapole, FO
28	14.11.2019	Nirmal Bhavan, Mahape, Navi Mumbai	Sector wise Grossly polluting industries PowerPoint presentation	90	RO, SRO, AST, JD(APC), JD(WPC), RO(HQ)
29	19.08.2019 to 23.08.2019	E.S.C.I., Campus, Gachi Bowli, Hyderabad	ISO 14001:Lead Auditor Programme	2	Shri Langote, FO Shri M. Igave, FO
30	04.11.2019 to 07.11.2019	National Academy of Human Resource Development , Hradayash SPA Dhikhli near Jim Corbett, Uttarakhand	Administrative Vigilance & Disciplinary Rules	2	Shri Vispute, F.C. Shri Pramod Nandgaonkar, Asstt. Account Officer
31	04.11.2019 to 07.11.2019	National Academy of Human Resource Development , Hradayash SPA Dhikhli near Jim Corbett, Uttarakhand	Establishment Rules	2	Mrs. Neeta Borade, Mrs. Shobha Naik, F.C.
32	26.09.2019 to 27.09.2019	Phonix Park Inn Resort, Candalim, North Goad (NAHRD)	Corporate Social Responsibility	2	Shri Gaikwad, SRO Shri Upendra Kulkarni, SRO
33	23.09.2019 to 27.09.2019	Phonix Park Inn Resort, Candalim, North Goad (NAHRD)	Goods and Service TAX (GST)	2	Shri Subhash Waikar, Jr. Clerk Krishna Lembe, H.A.
34	28.08.2019	Bombay Chamber of Commerce, ruby Tower, Dadar (W)	Corporate Social Responsibility	2	Mrs. Kalyani Kulkarni, FO Shri J.P. Junonkar, FO
35	03.09.2019 to 06.09.2019	CSIR NEERI, Nehru Marg, Nagpur	ETP/CETP - Operation, Maintenance, trouble shooting and Anaytical testing	2	Shri Rajput Vishal, FO Shri Lohiya Abhijeet, FO
36	25.09.2019 to 27.09.2019	Ni-MSME Campus, Hyderabad	Current Requirement in EIA process and Procedure (As per MoEF&CC Guidelines)	3	Shri Tuljapurkar, FO Shri R.R. Injulkar , FO, Shri Nitin Chaudhari, FO
37	24.09.2019	The Leela Ambience	International Conference	2	Shri V.M. Motghare, JD(APC)



		Hotel, New Delhi	and Exhibition on CEMS & CQEMS		Shri Sachin Adkar, SRO
38	18.09.2019 to 20.09.2019	CSIR-NEERI, Nehru Marg, Nagpur	Advance Instrumental Analytical Techniques	2	Shri Mandavkar, JSO Shri Gadhari, JSO
39	12.11.2019 to 15.11.2019	AAET Nirali, Alwari, Rajashthan	Management in Industries Anil Aggarwal Environment Training Institute (AAET)	2	Mrs. Indira Gaikwad, SRO Mrs. Seema Mangulkar, FO
40	18.11.2019 to 22.11.2019	AAET Nirali, Alwari, Rajashthan	5 days Environmental Impact Assessment with Specific Reference to Mining	3	Mrs. Indira Gaikwad, SRO Mrs. Saujanya Patil, SRO Mrs. Hema Deshpande, SRO
41	14.11.2019 to 18.11.2019	Pragati Maidan, New Delhi	India International Trade Port	3	Shri Dinesh Sonavane, ASO Mrs. Seema Dhaval, SRO Shri Yogesh Deshmukh, RO
42	17.11.2019 to 19.11.2019	Country Inn, Mahape, Navi Mumbai	VOC Monitoring, Ozone Precursors (VOCs & Carbonyls)	45	List of Participants - 45 nos.
43	27.11.2019 to 30.11.2019	E.S.C.I. Hyderabad	ISO/IEC 17025:2017 Lab QMS with IA & UM	25	Sushilkumar Shinde Nilesh Marbhal Sanjay More Utkarsh Shingare Sachin Harbad Indira Gaikwad Rohidas Matkar Archana Jagdale Vishwajeet Sorge Anil Sandhansingh Dhanjay Nanekar Vaibhavi Kadam R. P. Raut Annapa Kurule Amol Patil



					Pratap Jagtap Suryakant Shinde Samir Vastre Avinash Kadale Datratray Gavali Uday Yadav Sachin Desai S. C. Kendule Sandip Motegaonkar
44	04.12.2019 to 06.12.2019	Post Graduate Institute of Medical Education, Chandigarh	Indoor & Outdoor Air Pollution Standard & Impact on Human Health	2	Dr. V.M. Motghare, JD(APC) Shri Satish Padval
45	09.12.2019 to	SGGS, Vishnupen, Nanded	Sampling & Analysis of Hazardous & Other Waste	2	Shri Ajit Patil, SRO Shri Mahesh Rakh
46	11.12.2019 to 13.12.2019	TERI Delhi	Air Quality Moderning and Source Apportionment	2	Shri Yogesh Patil, FO Shri Ajay Khamkar, FO
47	09.12.2019 to 11.12.2019	TERI, Delhi	Global Warming Climate Change and Disaster Management	2	Shri Hasabnis, SRO Shri Avinash Kadle, SRO
48	03.03.2020 to 07.02.2020	Indian Statistical Institute, New Delhi	Environmental Data Interpretation Compilation Analysis Presentation and Reporting	3	Shri Juljapurkar, FO Shri Sandip Shinde, FO. Shri Maknikar Bhagwan, FO
49	10.12.2019	National Research Centre for Graphics, Pune	One day workshop to demonstrate scientific methods for sampling of soil, water for pesticide analysis	11	Dr. Supate, PSO Mrs. Rutuja Bhalerao, SRO Shri Sangle, JSO Shri Suryavanshi, FO Shri Bhadne, FO Shri Vasava, FO Shri Mahare, FO Shri Kadale, FO, Mrs. Jadhav Sanjana, FO Shri Pramod Patil, JSA



50	20.12.2019 to 21.12.2020	Institutions of Engineers India, Pune	Two days Training & Workshop on Understanding & Solving Problems of Waste Water Treatment facilities	2	Shri A.G. Kumle, JSA Smt. Sushma Kumbhar Shri Bhagavan Makhanikar Shri Sarjerao J. Bhoi Smt. Rekha Togre, Shri P.M. Bhosale
51	01/01/2020 to 04/01/2020	Engineering Staff College Of India, Gachibowli, Hydrabad, Telangana State- 500 032	ISO/IEC 17025:2017 Laboratory QMS with IA & UM” ” as per NABL accreditation	25	Shri. Padmakar B. Hajare Smt.Snehal Madhavrao Kose Shri. Vishwajit Thakur (Addl. Charge) Shri. V. N. Deshmukh Shri. Mahesh U. Walse Smt.Seema Mangulkar (Saswade) Shri. Gajanan Khadkikar Shri. Ravi Jadhav Smt.Kalyani Anandrao Zadpide Shri.V.P.Shelke Shri Namdeo Pandurang Darsewad Shri Jayant A. Kadam Shri. Rajendra U. Patil Shri. Pankaj B. Bawane Shri. Jitendra B. Sangewar Shri Vinod Ramkishan Pawale Shri Dineshbhai Bhikabhai Vasava Shri Santosh Dattatray Mohare Shri. S. H. Nagare Smt.P.D.Gharade Shri. Santosh G.Kulkarni Shri.Pramod V. Patil (Asthayee Asthapana) Shri. Pramod Shivaji Doke Shri. Prabhakar Nagnath Wavde



52	08/01/2020 to 11/01/2020	Engineering Staff College Of India, Gachibowli, Hyderabad, Telangana State- 500 056	ISO/IEC 17025:2017 Laboratory QMS with IA & UM” ” as per NABL accreditation	25	Smt.Saujanya Patil
					Shri.Hemant Kulkarni
					Shri.Sunil Salve
					Shri. Nitin Zambre
					Smt. Meeta R. Deshamukh (Kum. Mita Sawji)
					Shri. Sunil D. Mohite (Asthayee asthapana)
					Shri P.D.Wankhede (addl. Charge)
					Shri Raviraj Bhausahab Patil
					Shri Rajesh Govindrao Auti
					Smt.Deepali Damodarao Lokhande
					Smt. Yogini A. Balankhe (add Charge)
					Shri.Ravindra G. Kshirsagar
					Shri. Sanjay N. Jirapure
					Shri. Rakesh Daphade
					Shri. Kushal Magnnath Aucharmal
					Shri Manish Arun Mahajan
					Shri. Prakash N. Dhumal
					Shri. Sanjeev Redasani
					Shri. S. K. Baviskar
					Shri.S.D.Mali
Shri. Shailesh Kadam					
Shri Nitin Shinde					
Shri. Chandrakant M. Sabde					
Shri. Somnath M. Kurmude					
Shri Tarachand Annaji Thakare					
Shri. Mahesh Chalwa					
53	15/01/2020 to 18/01/2020	Engineering Staff College Of India, Gachibowli,	ISO/IEC 17025:2017 Laboratory QMS with IA &	25	Shri Nivrutti Ramdas Lokhande
					Shri. Sanjay D. Patil



	Hyderabad, Telangana State- 500 080	UM” ” as per NABL accreditation		Shri Surendra Gajananrao Karandkar Shri Nandkishor Pandurang Patil Shri.A.M.Kare (addl. Charge) Smt. Sheetal Ravikant Ughade Shri Sarang A. Deshpande Shri. Abhijit Wagh (Asthayee asthapana) Smt. Mrudula Ingale (Asthayee asthapana) Smt. Hema M. Deshpande Shri Jitendra Hukumchand Purate Shri Manoj Narayan Vatane Shri.M.D.Bhivapurkar Shri. Arjun V. Rathod Shri Vinod Dharpal Shukla Shri.Balkrishna Sangle (addl. Charge) Shri Ajeet Patil Shri Rajendra Pandurang Suryawanshi Smt. Meena Pawar Shri. Sachin J. Adkar Shri Umesh Shatrughnarao Jadhav Shri. Mahesh Balbhim Chavan Shri. Uttam J. Mane Shri. Auti Shri Jaydeep Jagannath Kumbhar
22/01/2020 to 25/01/2020	Engineering Staff College Of India, Gachibowli, Hyderabad, Telangana State- 500 104	ISO/IEC 17025:2017 Laboratory QMS with IA & UM” ” as per NABL accreditation	25	Shri. Nagesh S. Lohalkar Smt.Priyashri Deepakrao Deshmukh Shri Swapnil Vasant Lingade Shri. Prashant M. Mehre (addl. Charge)



					Shri Santoshkumar Limbraj Chavan Shri Vishal Gajanan Jadhav Shri.B.U.Bhandare Smt. A.S.Sengupta Smt. Aarati A. Thakur Smt. Sharvari S. Charmode Shri. K. P. Pusadkar Shri. Anand N. Katole Shri. A. P. Satphale Shri. M. R. Lad Shri Gajanan S. Nagare Shri.Umashankar Bhadule Shri. Santosh Dnyanoba Dahiphale Shri.J.S.Salunkhe (Addl. Charge) Smt. Rupali Sunil Sonkamble Shri Abhijeet Sundarlal Lohiya Shri Arvind Sakharam Dhapate Shri. Babasaheb M. Kukade Shri Jayant Mahadev Doke Shri Sandeep Vasant Sonawane Shri. Pravin Patil
54	23.01.2020	ITC Grand Central, Parel, Mumbai	One day Training on EIA & Environment Clearance	3	Shri D.P. Koparkar, SRO Shri Rahul D. Mote, SRO Shri Kiran Malbhage, FO
55	23.01.2020	Regional Office, Nagpur	One day Training Programme on Implementation & Accreditation of ISO 9001	20	RO, FO, HA, SRO - Nos. 20
56	28.01.2020	Nirmal Bhavan, Mahape, Navi Mumbai	One day Training Programme on Implementation &	20	RO, FO, HA, SRO - Nos. 20



			Accreditation of ISO 9001		
57	29.01.2020	Nirmal Bhavan, Mahape, Navi Mumbai	One day Training Programme on Implementation & Accreditation of ISO 9001	20	RO, FO, HA, SRO - Nos. 20
58	03.02.2020	The Central Park Hotel, Bund Garden Road, Near Multiplex, Pune	One day Training Programme on Implementation & Accreditation of ISO 9001	20	RO, FO, HA, SRO - Nos. 20
59	04.02.2020	The Central Park Hotel, Bund Garden Road, Near Multiplex, Pune	One day Training Programme on Implementation & Accreditation of ISO 9001	20	RO, FO, HA, SRO - Nos. 20
60	12.02.2020 to 14.02.2020	Grounds Bengaluru organized by Good Governance Foundation	16th International Exhibition & Conference Municipalika	2	Shri Vidyasagar Killedar, SRO Shri Amar Durgule, SRO
61	12/02/2020 to 15/02/2020	Engineering Staff College Of India, Gachibowli, Hyderabad, Telangana State- 500 128	ISO/IEC 17025:2017 Laboratory QMS with IA & UM" " as per NABL accreditation	25	Shri Sandeep Tope Shri. T.G.Yadav Shri. Sandeep Raghunath Patil Shri. S. H. Padwal Shri Sanjay P. Kavare Shri. Sanjay Nanvare Shri. M.G.Igave Shri Shivanand Venkatrao Basavade Shri. Dhanjay B. Patil Shri Sharad Vasantrya Pawar Shri. B. S. Gadhari (addl. Charge) Smt.Neeta Mohire Smt.Archana Lendait Shri.I.H.Thakare Shri Jayprakash Babu Bhusara Shri. Manish Holkar



					Shri. Arjun Jadhav
					Shri. Gajanan Shrirang Pawar
					Shri. Anant N. Harshvardhan
					Shri.K.S.Langote
					Smt.Shrutika Sachin Dalvi
					Shri Indrjeet Deshmukh
					Shri H.D. Gandhe
					Shri Milind Ravindra Thakur
					Shri. Vishalsing Ravindrasing Rajput
62	20.02.2020	VMCC, IIT, Bombay	One day Seminar on Environmental & Social Safeguards Mechanism and Accountability Mechanism in Indian Financial Institute	2	Shri P.K. Mirashe, AS(T) Shri V.M. Motghare, JD(APC)
Total Number of Programs -62				Total Number of Participants -939	



ANNEXURE 6 - FINANCE AND ACCOUNTS FOR THE YEAR 2019-20

MAHARASHTRA POLLUTION CONTROL BOARD
Receipt & Payment Account for the Year 2019-20

Table with columns: Previous Year 2018-19 (Major Head, Sub Head), Receipt (Schedu le No., Amount), Current Year 2019-20 (Amount), Previous Year 2018-19 (Major Head, Sub Head), Payment (Schedu le No., Amount), Current Year 2019-20 (Amount). Includes rows for Opening Balance, Grants Received, Financial Assistance, Receipts, and Payments.

Chief Accounts Officer
Maharashtra Pollution Control Board

Member Secretary
Maharashtra Pollution Control Board

Chairman
Maharashtra Pollution Control Board

Professional stamp of For Kirrane & Pandit LLP Chartered Accountants with handwritten signature and name: Milind Bhavne Partner M. No. 037674



MAHARASHTRA POLLUTION CONTROL BOARD
Income & Expenditure Account for the Year 2019-20

Previous Year 2018-19		Expenditure	Schedule No.	Current Year 2019-20		Previous Year 2018-19		Income	Schedule No.	Current Year 2019-20	
Major Head	Sub Head			Amount	Amount	Major Head	Sub Head			Amount	Amount
34,20,33,466.00		1) SALARY & ALLOWANCES		43,02,29,364.00				1) GRANT RECEIVED			
	32,05,83,525.00	a) Core Activity Segment		40,05,73,662.00		0.00		a) From State Government			0.00
	1,37,93,623.00	b) Cess Activity Segment		1,89,49,418.00		0.00		b) From Government of India			0.00
	76,56,318.00	c) Cess Activity Temp Estb		1,07,06,284.00							
2,00,56,751.00		2) CPF BOARD CONTRIBUTION		2,38,06,818.00		2,22,59,028.00		2) FINANCIAL ASSISTANCE			2,75,26,805.00
	1,89,04,168.00	i) Core Activity Segment		2,21,05,764.00			10,00,000.00	a) From Other State Government			
	11,52,583.00	ii) Cess Activity Segment		17,01,054.00			2,12,59,028.00	b) From Government of India / CPCB		2,75,26,805.00	
20,06,99,620.90		3) OFFICE EXPENDITURE	A	28,42,43,175.40		9,32,77,594.38		3) REIMBURSEMENT OF CESS			
1,08,68,326.00		4) RUNNING EXPENDITURE OF LAB.	B	98,16,783.00				4) REVENUE RECEIPT			2,62,89,64,422.71
1,65,98,716.17		5) EXPENDITURE FOR VEHICLES	C	1,48,61,512.00		2,40,82,06,265.38		a) Consent Fees		2,55,62,79,232.99	
3,55,63,960.00		6) MAINTAINANCE & REPAIRS		3,89,86,242.00			2,32,20,47,352.38	b) Bio Medical Authorisation Fees			
	72,18,792.00	i) Land & Building		1,05,86,172.00			25,734.00	c) Analysis Charges		7,26,85,189.72	
	37,28,633.00	ii) Furniture & Fixture		45,81,437.00			8,61,13,189.00	d) Hazardous Waste Authorisation Fee			
	2,46,16,535.00	iii) S.I. & O.A.		2,38,18,633.00			19,990.00				
3,85,79,846.70		7) EXPENDITURE FROM CESS FUND	D	4,56,76,901.00		6,12,88,082.00		5) OTHER RECEIPT	H		5,52,02,693.78
26,82,40,461.00		8) PROJECTS EXP. From Cess Fund	E	37,63,55,647.00		1,00,17,55,139.50		6) INTEREST ON INVESTMENT			1,29,03,99,230.72
7,99,50,308.17		9) DEPRECIATION	J	7,37,73,415.87							
2,57,41,94,653.32		10) Excess of Income Over Expenditure		2,70,43,43,293.94							
3,58,67,86,109.26				4,00,20,93,152.21		3,58,67,86,109.26					4,00,20,93,152.21

Chief Accounts Officer
 Maharashtra Pollution Control Board

Member Secretary
 Maharashtra Pollution Control Board

Chairman
 Maharashtra Pollution Control Board

For Kirtane & Pandit LLP
 Chartered Accountants
 FRN : 105215W/W100057

 Milind Bhawe
 Partner
 M. No. 047973

