

MAHARASHTRA POLLUTION CONTROL BOARD



Annual Report
2018-19



ANNUAL REPORT

FOREWORD

It gives me great pleasure to present the Annual Report of the Maharashtra Pollution Control Board for the year 2018-19. This annual report is a tool for providing wider information on activities carried out and services provided by the MPCB. The information in this report should allow



stakeholders, the community and other public to assess how local authorities have performed during the year in relation to stewardship of community assets, and the efficiency, effectiveness and cost-effectiveness of operations. The annual report highlights regional environmental issues and a path forward. It also displays interesting ways of representing data and features technically sound reporting and scientific interpretation. For providing an analysis of performance, the MPCB possesses a set of appropriate measures and robust systems to collect the results that are interpreted and translated into action plans.

For effective implementation of environmental legislations, the Board has taken various steps such as fast clearance of Consents/Authorization, Joint Vigilance Sampling, Legal actions under Sec. 33A of Water Act and 31A of Air Act, environment improvement programs at religious places, conducting mass awareness, augmenting frequency of monitoring of point sources, fugitive sources, area sources for air and water, strengthening of laboratories, and development of infrastructure and decentralization of powers at the level of subordinate offices. An attempt has been highlighted for maximum information dissemination through website. With a view to provide ready information on the activities of MPCB, this report presents the relevant and latest statistics about key indicators and parameters.

**Mr. E. Ravendiran,
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**.

In order to deal with depletion of natural resource and environmental degradation, prudent environmental management is necessary. Since environmental problems are diverse, their solutions have to 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 so as 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 (NAMAP). 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 analyzed is updated on the website so as to make information available to the public. Efforts are also being made to create awareness to celebrate all festivals in an eco-friendly manner.

In order 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 sold 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 endeavors 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 full time)
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** (full time)

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. Constitution of M.P.C. Board during 2018 – 19.

Mr. Milind Mhaiskar, IAS Additional Chief Secretary, Environment Dept., Government of Maharashtra,	Chairman, (Additional Charge) (01/4/2018 to 14/6/2018)
Mr. Sudhir Shrivastava, Retired IAS	Chairman 15/06/2018 to 31/03/2019
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

Dr. P. Anbalagan Member Secretary, MPCB, Mumbai.	Member Secretary (upto 23/09/2018)
Mr. E. Ravendiran, Member Secretary, MPCB, Mumbai.	Member Secretary 24/09/2018 till date

3. MEETINGS OF THE BOARD

During the reporting year, the 169th meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below.

1. Support to Research and Development in the field of Environmental Technologies and pollution control through award of fellowship for Master's and doctoral research students in reputed educational institutes and institutionalization of Chair Professorship at IIT Mumbai and VNIT Nagpur.

The function of the Board as specified in section 17 of Water Act 1974 and Air Act, 1981 Clearly include "encourage, conduct and participate in investigations and research related to the problems of water and air pollution". It also includes other functions which necessarily include promotion of R & D based initiatives including appropriate and clean technologies, environmental baseline data collection, analysis and interpretation of the data etc. MPCB being a most proactive Board need to take initiative for research at the advanced level in the field of environmental technologies and pollution control at the reputed institutions of the State.

M.P.C. Board in its 151st Meeting has approved a proposal for sponsorship for M.Tech, Ph.D. and Chair Professor at the renowned educational institutes in the state. Board further resolved that Chairman/Member Secretary are authorized to take further actions including signing of MoU etc. The expenditure for this purpose may be spent from the Cess funds. The standard MoU of IIT Bombay was taken as base documents for the purpose. MoUs with the institutes are finalized on 5th June, 2011.

The Board has discussed the agenda item regarding extension of the time period for further five years for financial assistance for M.Tech/ M.E. and PhD fellowships for Chair professor to IIT(B), Mumbai. M.E. / M. Tech. to VNIT, Nagpur, WCE, Sangli. The Board has felt necessary to encourage and participate in investigations and research related to the problems of Environment Pollution. As per discussion following resolution was made.

"The Board in principally approved the extension of institutions for M. Tech/ M.E. and Doctoral Fellowships including Chair Professor for IIT(B), Mumbai which also includes Chair Professor for further five years. The Board also in principal approved the Master's Degree in Environmental Engineering/ Environmental Technology/ Ph.D. in Environmental Sciences. Number of students for the institutional support shall be limited to 02 Students / Year for M.E./M. Tech/ Ph.D per institution. However, Member Secretary is authorised to take further decision on number of student looking into quality of project & its research. The MPC Board will constitute a Committee of HODs like

JD(APC), JD(WPC), PSO, AS(T) for scrutinizing the research project and further submission. Member Secretary is authorised to take further decision for the approval of the research project. The amount of fellowship shall be as per the UGC guidelines/ norms as per the prevailing guidelines.

Sr. No.	Name of Institutes	No. of course for which fellowships is offered
1	COEP Pune	M.E. / M. Tech
2	KIT Kolhapur	M.E. / M. Tech
3	Dr. B.A.M.U., Aurangabad	Ph. D. in Environmental Science
4	WIT Solapur	M.E. / M. Tech
5	Savitribai Phule Pune University, Pune	M.E. / M. Tech / Ph.D
6	ICT Matunga, Mumbai.	M.E. / M. Tech / Ph. D

2. Proposal for sanction of 5% subsidy for upgradation and expansion Project of 12.5 MLD capacity of RIA CETP.

The Ministry of Environment, Forests and Climate Change, Govt. of India has published guidelines for the centrally sponsored scheme of common effluent treatment plants on 05/03/2012. The Common Effluent Treatment Plants were introduced with an enthusiastic approach to solve the problem of pollution caused by effluent discharged by small scale industries. These industries lack technical expertise and are not financially viable for implement and maintain pollution control system. The main objective of CETP is to solve the problem of cost, lack of trained staff and space to reduce, the problems of monitoring and to organize the disposal treated waste and sludge.

The central assistance (subsidy) will be restricted to 50% of the total project cost of the modified ratio proposed in respect of central share : state share : project proponent share will be 50:25:25. The state share includes 20% from Maharashtra Industrial Development Corporation and 5% from Maharashtra Pollution Control Board subsidy provided. The Board has considered same principle while releasing subsidy to the CETPs.

M/s. RIA CETP Co-op. Society Ltd., has approached to MPCB to grant financial assistance for their CETP upgradation and expansion by additional 12.5 MLD in a existing 10 MLD plant. The total capacity of plant is 22.5 MLD; considering the variation in the inlet effluent characteristics in CETP and to enable the industries to expand their productions and setting up new industries in MIDC Roha. RIA CETP has prepared Detailed Project Report for 12.5 MLD expansion and upgradation project. NEERI, Mumbai Zonal Office has awarded its technical approval to the said DPR vide letter dated 04/05/2013. RIA CETP has got the Financial Appraisal conducted by M/s. Indbank, Chennai an independent financial institution. The above scheme is under ASIDE scheme i.e. assistance to the State for development of export infrastructure and allied activities.

The matter was discussed in length and as per discussion following resolution was made. The Board accorded in principal approval for release of 5% subsidy of the total cost (Rs. 2447 Lakhs) for upgradation and expansion of the CETP Roha project is Rs.122.35 Lakhs to RIA CETP, Roha, Dist: Raigad. The subsidy can be released after obtaining completion certificate from the competent authority and release of MIDC share to RIA CETP, Roha, Raigad.

During the reporting year, the 170 th meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below.

1. Strengthening of Ambient Air Quality Monitoring network by installing Continuous Automatic Ambient Air Quality Stations (CAAQMS) at District level (27 Corporations).

Strengthening of Ambient Air Quality Monitoring Network has been envisaged to comply with the monitoring network as per the protocol of monitoring air quality. Displaying Air Quality Index requires Real Time data generated through CAAQMS at selected locations in the State of Maharashtra. CPCB has requested the MPCB to strengthen NAMP monitoring in Maharashtra to cover all districts. The following proposal was placed before the Board.

1.1. 25 New CAAQMS

Installation of new CAAQM stations to be carried out at major Corporation cities: 3 stations at Thane, 3 at Kolhapur, 2 at Amaravati, 1 at Akola, 1 at Mira-Bhayander, 3 at Pimpri Chinchwad, 1 at Virar, 1 at Bhiwandi – Nijampur, 1 at Nanded, 1 at Ulhasnagar, 1 at Sangli, 1 at Malegaon, 1 at Jalgaon, 1 at Latur, 1 at Dhule, 1 at Parbhani, 1 at Panvel, and 1 at Ahmednagar.

1.2. Strengthening of CAAQMS Network

Strengthening of the existing CAAQMS monitoring by installing 15 additional CAAQMS to cover inadequacy of the monitoring network on the basis of spatial distribution. The additional CAAQMS will be installed as follows: 4 stations in Mumbai, 3 at Nagpur, 2 at Pune, 2 at Aurangabad, 2 at Solapur, and 2 at Nashik. The exact site selection (latitude and longitude position) shall be considered for installation of these CAAQMS as per guidelines provided by the CPCB.

The Board has noted the agenda item and principally approved the strengthening of Ambient Air Quality monitoring program by installing 40 CAAQMS in Maharashtra. However, the JD(APC) division shall provide detailed plan regarding site selection as per CPCB guidelines and phase-wise installation of CAAQMS to Member Secretary/ Chairman for further decisions in this matter.

2. Approval for carrying out monitoring and analysis as well as reporting as recommended by the Committee constituted for Compliance of Order of Hon'ble NGT (WZ), through outsourcing.

As per order of the Hon'ble NGT with directions to complete the work of monitoring samples, analysis and report preparation in Mahul, Chembur and Ambapada, and health impacts on the residents of these areas, the same shall be completed within a period of three months period. The Hon'ble NGT has also directed to carry out extensive monitoring for all such areas, in terms of air and water pollution for creating a robust database for effective environmental governance. In this regard the Board has outsourced the monitoring of odor pollution at the above locations to J. M. Environed Pvt. Ltd. at the cost of Rs. 18 lakhs excluding GST as applicable for odor survey.

The Board has resolved that carrying out monitoring, analyzing and reporting as recommended by the Committee constituted for Compliance of order of Hon'ble NGT (WZ) dated 17/07/2018 will incur an expenditure of Rs. 18 Lakh excluding GST as applicable for odor survey. In the event of increase in expenditure, Member Secretary and Chairman have power to sanction the above expenditure, which may be granted.

3. Approval for carrying out monitoring and analysis as well as reporting as recommended by the Committee constituted for Compliance of order of Hon'ble NGT (WZ).

In the matter of Mr. Charudatt Koli vs. M/s. Sea Lord Containers & Ors. vide Execution Application No. 05 of 2018 in Application No. 40 of 2014 disposed on 18/12/2015 is before the Hon'ble NGT, (WZ), Pune. The matter deals with nuisance of volatile organic compounds in Mahul, Chembur and Ambapada and their impact on the health of residents in these areas. A statement shows the directions issued by the Hon'ble NGT and compliance made by the Maharashtra Pollution Control Board.

Taking into consideration the time constraint, as per the order of the Hon'ble NGT dated 30/08/2018 the Committee formed vide order dated 17/07/2018 is directed to complete its work and submit a report within 90 days from 17/07/2018. Considering the emergency, it is necessary to award the work immediately so as to start and complete monitoring in the stipulated time. It is therefore requested to complete technical and financial approval for 320 samples of ambient air VOC of amount Rs. 19,950 (8 hours sampling) each i.e. Rs. 69,82,500, ambient air –VOC screening (GC MS Scan) which costs Rs. 18,000 (8 hours sampling) per sample and other parameters like ambient air H₂S which costs Rs. 2,000 per sample, Ambient Air Cl₂ which costs Rs.2,000 per sample, Ambient air Ammonia which costs Rs. 2,000 per sample, Ambient Air Methyl Herceptin which costs Rs. 8,000 per sample, Ambient Air-Ethyl Herceptin which costs Rs. 8,000 per samples. The total amount would be approximately Rs. 85,68,000 and additional taxes-18% GST will be charged on the total billing amount. Sampling quantity of the parameters such as Ambient Air H₂S, Ambient Air Cl₂, Ambient Air

Methyl Herceptin, and Ambient Air-Ethyl Herceptin will be decided after the report is received from JM Environed Pvt. Ltd. of odor survey and mapping.

In this regard, the Board has resolved that, considering the recommendation of the Committee constituted for Compliance of NGT (WZ) order dated 17/07/2018 and Hon'ble NGT mandate, a work order to M/s. SGS Laboratories (L-2) will be issued for carrying out monitoring and analysis for total VOC samples with 320 additional samples (if required) as per the quoted negotiated rate of Rs. 85.68 lakhs. In the event of increase in expenditure, Member Secretary and Hon'ble Chairman will have power to sanction the expenditure as the case may be.

During the reporting year, the 171st meeting of the Maharashtra Pollution Control Board was held. The major decisions taken in the meeting are as below.

1. Procurement of additional Office premises for HQ at Kalpataru Point, Sion, Mumbai

The Board has noted the agenda item regarding procurement of additional office premises at HQ Kalpataru Point, Sion, and Mumbai from M/s. Bizscape Business Centre, the owner of the property situated on the 1st floor. After detailed deliberation, the Board has passed the following resolution.

The Board has approved the proposal of procurement of additional office premises from M/s Bizscape Business Centre's fully furnished office premise of around 7,158 sq. (6488 sq. carpet) on the 1st floor at Kalpataru Point, Sion, Mumbai- 400022, at the cost of Rs. 18,00,000 (Eighteen lakhs only) with additional property tax and maintenance charges per month for the said premises and 6 car parking spaces for a period of 3 years as per the agreement. Member Secretary is authorized to take further course of action.

2. Streamlining of consent mechanism as per CPCB direction u/s 18 (1) (b) of Water (P&CP) Act, 1974 and Air (P&CP) Act, 1981 dated 02/11/2018.

The Board discussed CPCB's directions issued under Section 18(1) (b) regarding streamlining consent and also noted the directions from Hon'ble High Court, New Delhi in this matter and the following resolution has been passed. The Board noted that the Hon'ble High Court, Delhi stayed the direction issued by the CPCB in regard to deemed Consent for EC projects. Therefore the Board has decided that the decision about implementation of CPCB direction towards deemed consent may be taken after the judgment of the Hon'ble High Court, Delhi. Further, the Board has suggested referring the matter to Environment Department for guidance, if any.

3. Proposal for sanction of 5% subsidy against approved DPR of 50 MLD project of TEPS CETP, Plot No. OS-30, MIDC Tarapur, Dist. Palghar.

The Board has resolved that considering the above proposal, 5% subsidy (Rs. 5.99 Crs) of the actual cost of Rs. 119.83Cr. which is to be spent on the 50 MLD project, be released proportionate to the work done. Presently 69% of CETP work is completed. Therefore, proportionately 5% subsidy on 69%

percent work completed amounts to Rs. 4.13 Crs. to be released. Member Secretary is authorized to take further course of action.

4. Strengthening of MPCB Laboratory infrastructure and enhancement of Authorization.

The Board has discussed the agenda item regarding strengthening of MPCB laboratory infrastructure and enhancement of authorization in detail and passed the following resolution.

The Board has accorded its approval for strengthening MPCB Laboratory infrastructure, enhancement of Automation i.e. procurement of new Laboratory Information Management System (LIMS), improvement of accreditation of laboratories as per ISO/IEC 17025:2017, and procurement of instruments and equipment for MPCB's existing and proposed laboratories in phased manner. Member Secretary is authorized to take further course of action.

5. Preparation of Action Plans to improve the Ambient Air Quality in Maharashtra as suggested in National Clean Air Program.

The Board has approved implementation of National Clean Air Program (NCAP) in the State of Maharashtra by preparing Action Plans of non-attainment cities as suggested in NCAP guidelines.

The Board has noted the above proposal regarding implementation of National Clean Air Program in the State of Maharashtra and has approved the budget of Rs. 232.7 Crs. Member Secretary is authorized to take further course of action.

6. Procurement of Sonic Detection and Ranging (SODAR) System.

The Board has principally agreed to the procurement of 6 SODAR systems and has sanctioned the budget of Rs.1.2 Cr. Member Secretary is authorized to take further course of action.

7. Replacement of old CAAQMS, Bandra, Mumbai.

The Board has approved the agenda item regarding replacement of old CAAQMS at Bandra, Mumbai with a new one under buy-back scheme. The Board has noted the above proposal of procurement of one CAAQMS to be installed at Bandra under buy-back mode by calling e-Tender. The budget of Rs.1.5 Cr. for procurement has also been approved. Member Secretary is authorized to take further course of action.

8. Preparation of Action Plans to improve the Ambient Air Quality in non-attainment cities in Maharashtra (7 Cities).

The Board has noted the agenda item regarding preparation of Action Plans for additional 7 cities in the line of cities which are already under finalization from IIT - Mumbai and NEERI. The Board has noted the above proposal regarding conducting source apportionment study of 7 cities through reputed National R & D Government Institute and Educational Institute (NEERI & IIT - Mumbai) and

has approved the budget of Rs. 10 Crs. Member Secretary is authorized to take further course of action.

9. Accreditation of Maharashtra Pollution Control Board to qualify for ISO Certification.

The Board has accorded its approval to the proposal of initiating ISO accreditation as proposed for MPCB IMIS system. Member Secretary is authorized to take further course of action.

10. Action Plan for abatement and control river water pollution due to sewage and solid waste disposal from B & C Class Municipal Councils, Nagar Panchayats and Gram Panchayats for reducing polluted stretches in compliance with Hon'ble NGT, Principal Bench, directions w.r.t "more river stretches are now critically polluted" and Hon'ble Supreme Court of India directives.

The Board has resolved that there is need of treatment of sewage and solid waste from smaller towns where local bodies do not have the technical as well as financial capability in the 332 local bodies and 50 Gram Panchayats. Financial assistance of Rs. 461.42 Crores for components such as DPR preparation, treatment facility for sewage and solid waste is to be utilized in the next three years by forming a committee under the Chairmanship of Member Secretary consisting of representatives from MJP, RDD and UD which will approve the ToR and will also carry out the mode of disbursement of financial assistance to urban local bodies and Grampanchayants. (A) Grampanchayat Rs. 1 Crs, (B) Rs. 1.5 Crs to "C" Class Municipal Council, (C) Rs. 2 Crs for "B" class and (D) Rs. 2.5 Crs for "A" class Municipal Councils shall be given as an interest-free loan and 25% of the same share shall be borne by the concerned Gram Panchayat and Municipal Council. Member Secretary is authorized to take further course of action.

11. Research and development project on in-situ/ex-situ treatment for technology demonstration of polluted river stretches: Appraisal to the Board.

The Board has resolved that considering the requirement of in-situ/ex-situ treatment through technology demonstration projects for confirmation of appropriate river water treatment technology to reduce the pollution from river, the cost for in-situ/ex-situ treatment for Kasardi river for 1 MLD at two locations would amount to Rs.136 lakhs and O & M for one year would amount to Rs. 55 lakhs. Also, Indrayani and Vashisthi river rejuvenation project for 1 MLD will amount to Rs. 1.3 Crs and O & M for 1 year will cost Rs.3.6 lakhs. Member Secretary is authorized to take further course of action.

12. Lapse period consent fee and delayed payment charges with respect to grant of Consent/authorizations under various Environmental Laws and Environmental Compensation charges for Environmental damage.

The Board has resolved to formulate a Committee under the Chairmanship of Member Secretary to alleviate the concern of HODs with solutions for various types of violations of levy of fines and implementation after the approval of Chairman, MPCB.

13. Revision of staffing pattern of MPCB.

The Board has resolved that the proposed staffing pattern of the MPCB is approved and has decided to re-submit to the Government for seeking necessary sanction. Member Secretary of the Board is authorized to submit the proposal to the Government. Also, the Member Secretary of the Board is authorized to outsource the required manpower through reputed agencies, third party or reputed institutions as and when required. It is also resolved that the Board will accord the administrative and financial approval for the additional expenses will be met from the Board's revenue. Recruitment Rules as amended have also been approved and the Member Secretary is authorized to initiate the recruitment process. The Board has also authorized the Member Secretary to review and approve the job roles for the revised staffing pattern.

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 2018-19, 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 14 Meetings of Consent Appraisal Committee held during the year 2018-19 wherein 1034 CAC applications were discussed and 1025 approvals were granted.

4.2 Consent Committee (CC)

The Consent Committee comprises of following members:

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 Air Pollution Abatement Engineer (APAE)	Member

	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 (WPAAE) 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.75 Crores
- ‘ORANGE’ Category : Projects with capital investment above Rs. 250 Crores and up to Rs. 750 Crores
- ‘Green’ Category : Projects with capital investment above Rs. 1000 Crores and up to Rs. 2000 Crores
- ‘Infrastructure Project’ : Project with capital investment above Rs. 25 Crores and up to Rs. 350 Crores

There were 14 meetings of Consent Committee held during the year 2018-19 and total 1229 applications were discussed and 882 were disposed off.

4.3. Committees formed for Solid Waste Management Rule, 2016

Sr. No.	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

4.4. Committees formed for Hazardous & other Waste (T & M) Rule, 2016 and 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

4.5. Committees formed for Plastic Rule, 2016

1.	Committee for deciding guidelines for issuance of registrations to producers and brand owners	21/11/2016	Head Office level
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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 2018- 19, 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.



Fig. 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. In order 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. In order 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 2018-19. The data is analyzed 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 as represented in following sections.

5.1.1 Amaravati

There are 6 Ambient Air Monitoring Stations under in Amaravati 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**.

From **Figure 5.2.** it can be observed that the average SO₂ and NO_x concentrations at all locations were within the NAAQM standard limits. However, PM₁₀ concentrations at all locations were beyond the standards. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.1.**

Table 5.1. Statistical Monitoring of Annual Average Air Quality in Amaravati Region.

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
Govt. College of Engineering	14	16	77
Raj Kamal Chowk, Amaravati	18	19	119
College of Engineering & Technology, Akola	14	14	74
LR College of Engineering	13	14	72
MIDC Water Works	16	17	79
Godhadiwala Private Limited	16	17	109

It is observed from **Table 5.1.** that minimum SO₂ concentration of 13 $\mu\text{g}/\text{m}^3$ was found at LR College of Engineering. The minimum NO_x concentration of 14 $\mu\text{g}/\text{m}^3$ was found at College of Engineering & Technology and LR College of Engineering. The maximum SO₂ concentration of 18 $\mu\text{g}/\text{m}^3$ and maximum NO_x concentration of 19 $\mu\text{g}/\text{m}^3$ was found at Raj Kamal Chowk, Amaravati. Minimum PM₁₀ concentration of 72 $\mu\text{g}/\text{m}^3$ was found at LR College of Engineering and the maximum concentration of 119 $\mu\text{g}/\text{m}^3$ was found at Raj Kamal Chowk, Amaravati. The minimum and maximum exceedance factors for PM₁₀ are shown in **Table 5.2.**

Table 5.2. Exceedance factors for PM₁₀ for Amaravati Region.

Exceedance factor - Amaravati	
PM ₁₀	
Min	1.2
Max	1.98

5.1.2 Aurangabad

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 all the parameters analyzed at all locations is represented in **Figure 5.2.**

From **Figure 5.2.** it is observed that SO₂ concentrations at all locations were below NAAQM standard limits. NO_x concentrations at all locations except Jalna- Krishna Dhan were below NAAQM standard limits. PM₁₀ concentrations at all locations were greater than the standard limits. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.3.**

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
C.A.D.A. Office	14	36	69
SBES College	15	38	70
Collector Office	11	30	63
Jalna- Krishna Dhan	11	42	97
Jalna - Bachat Bhavan	10	40	104
Ganj Golai - Siddheshwar Bank	5	22	89
Keshawraj Vidyalaya	5	21	89
MIDC Water Works, Latur	5	22	87
Aurangabad CAAQMS	6	19	74

From **Table 5.3.** it is observed that minimum SO₂ concentration of 5 $\mu\text{g}/\text{m}^3$ was found at Ganj Golai – Siddheshwar Banks, Keshawraj Vidyalay and MIDC Water Works, Latur. The minimum NO_x concentration of 19 $\mu\text{g}/\text{m}^3$ was found at Aurangabad CAAQMS. Minimum PM₁₀ concentration of 63 $\mu\text{g}/\text{m}^3$ was found at Collector Office. Maximum SO₂ concentration of 15 $\mu\text{g}/\text{m}^3$ was found at SBES College and maximum NO_x concentration of 42 $\mu\text{g}/\text{m}^3$ was found at Jalna- Krishna Dhan. Maximum PM₁₀ concentration of 104 $\mu\text{g}/\text{m}^3$ was found at Jalna – Bachat Bhavan. The exceedance factor for NO_x for Aurangabad Region is 1.05. The exceedance factors for PM₁₀ for this Region are shown in **Table 5.4.**

Table 5.4. Exceedance factors for PM₁₀ for Aurangabad Region.

Exceedance factor – Aurangabad	
PM ₁₀	
Min	1.05
Max	1.73

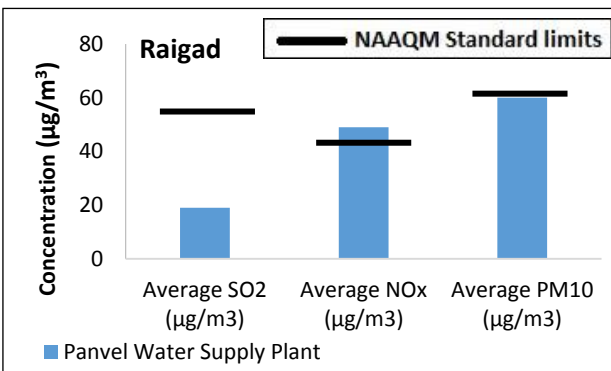
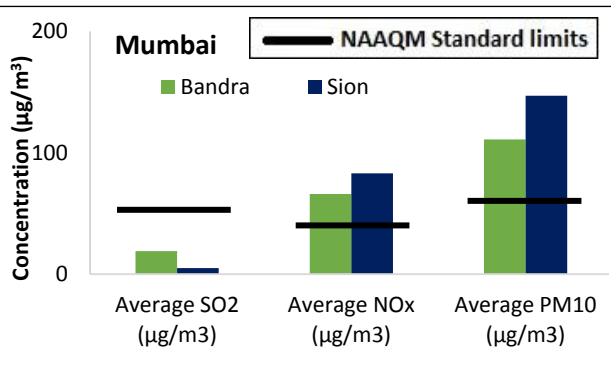
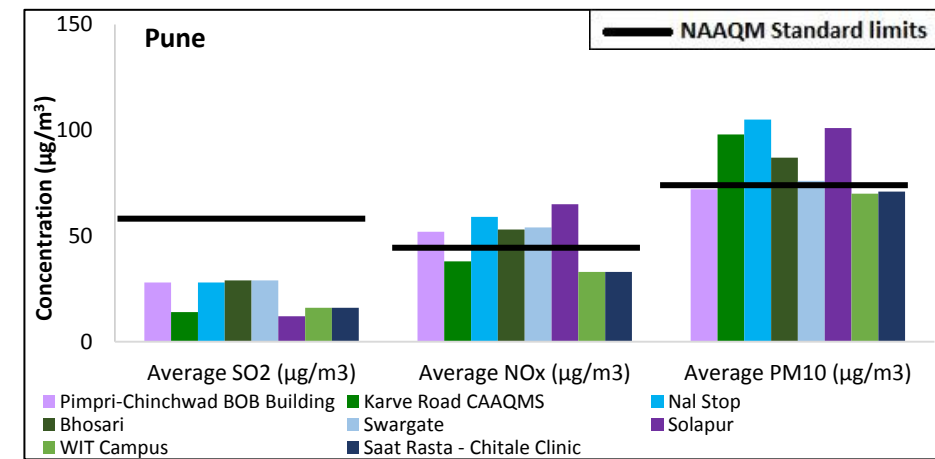
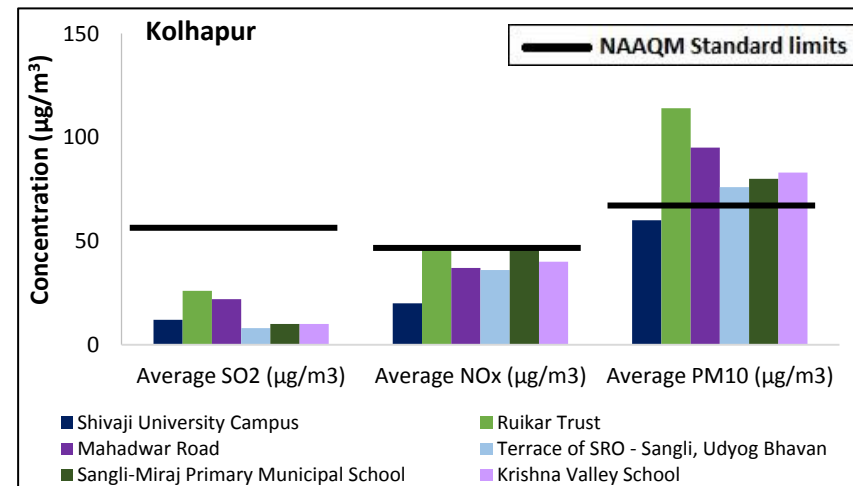
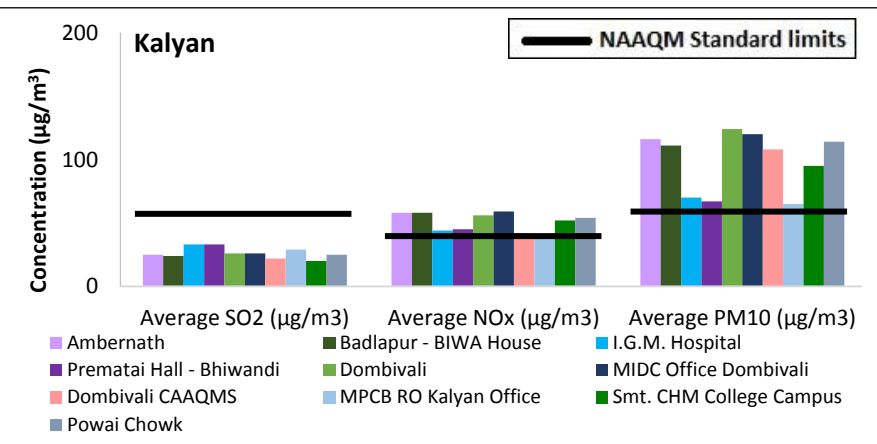
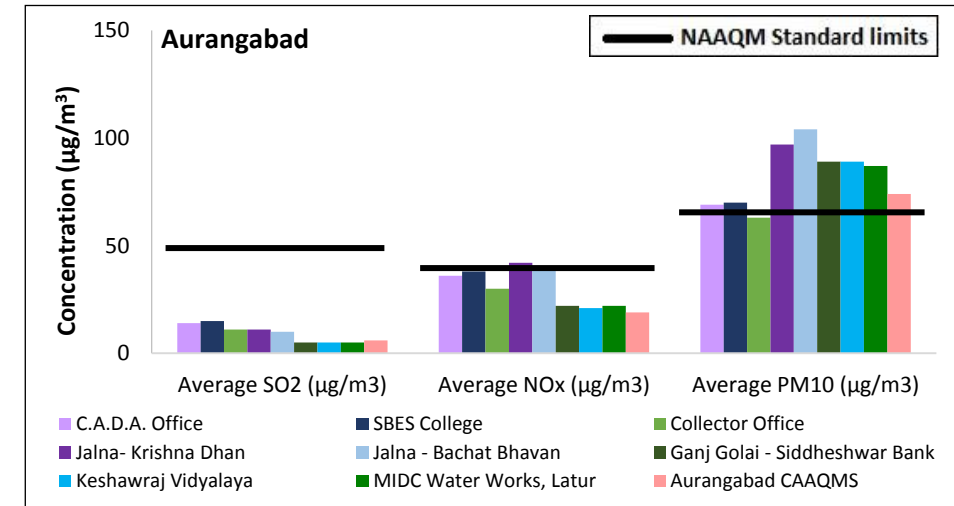
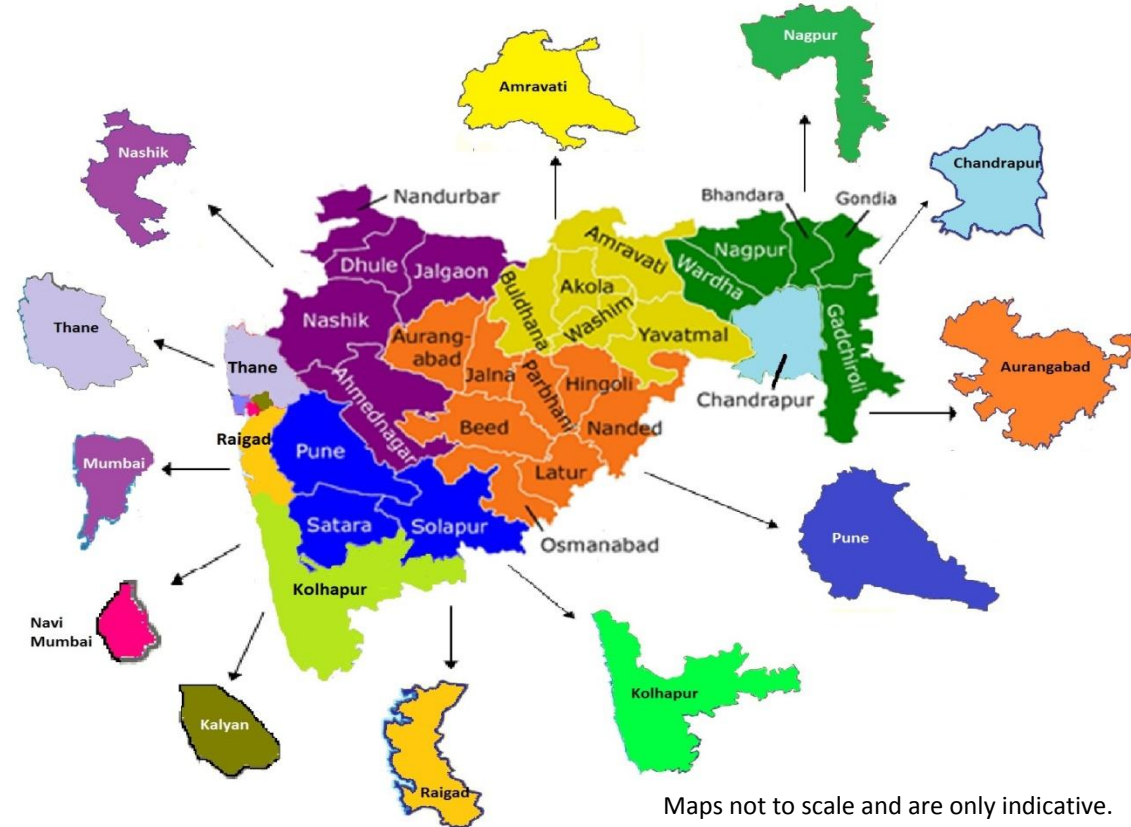
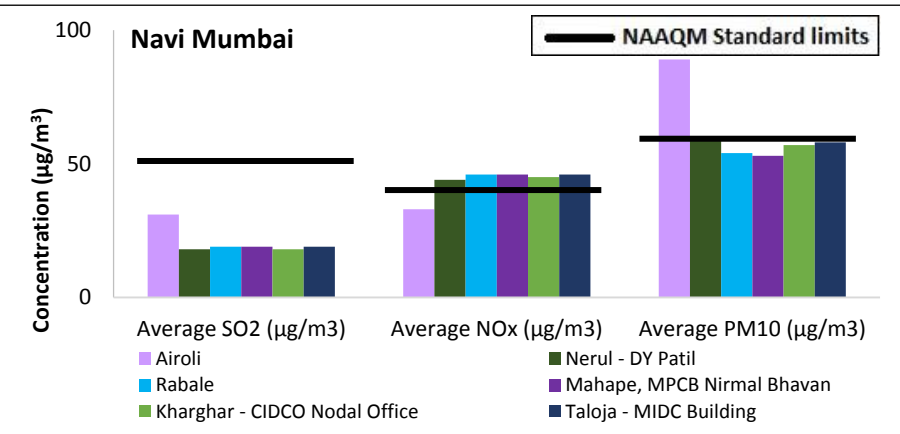
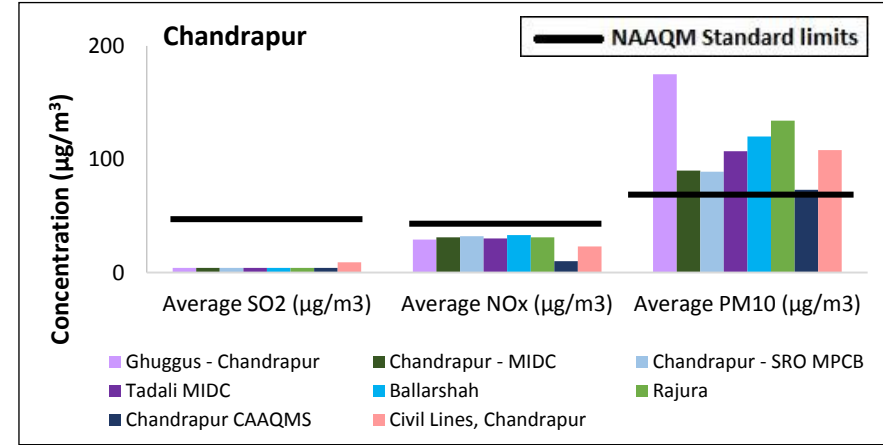
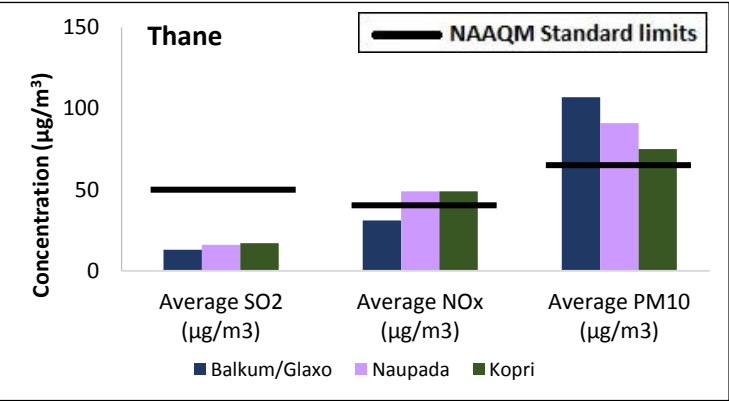
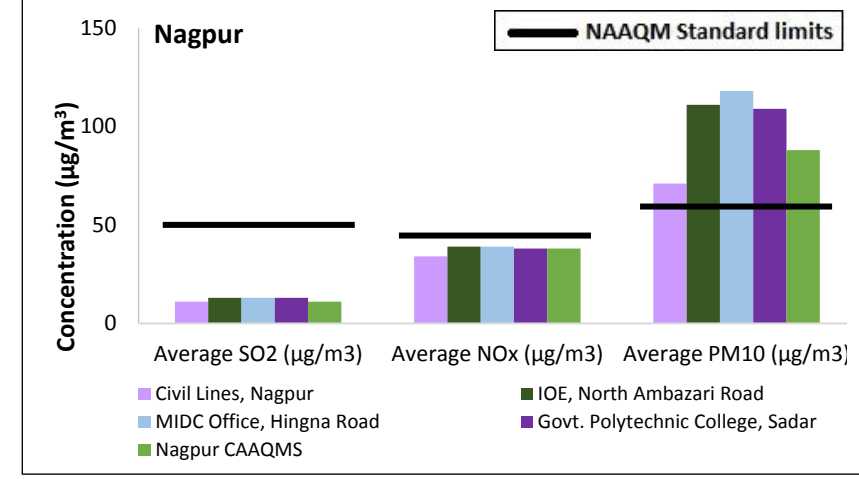
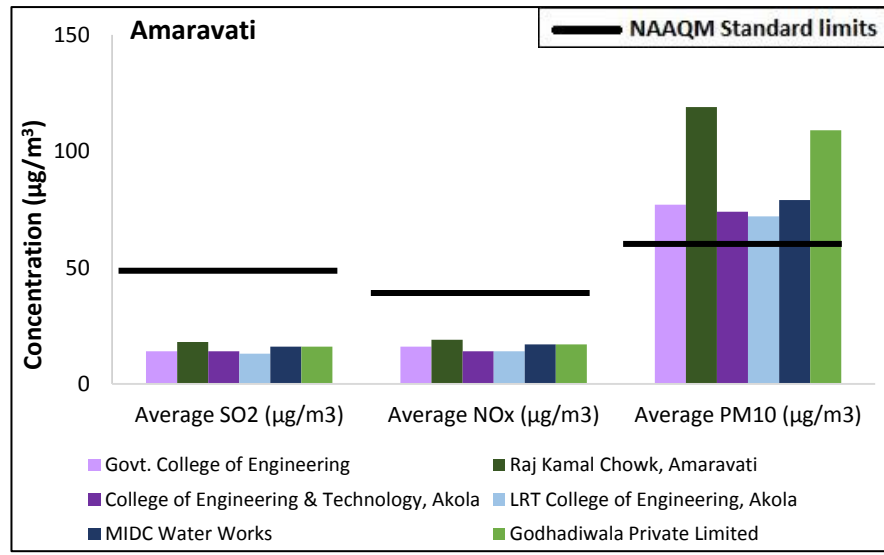
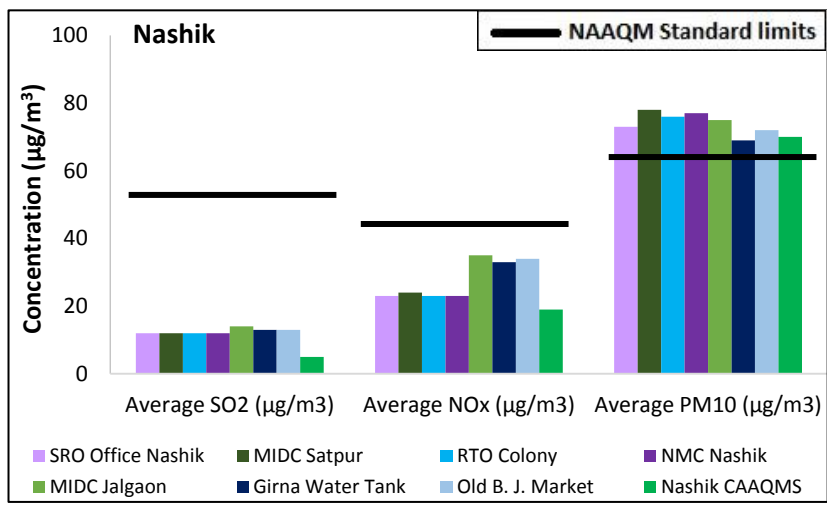


Fig. 5.2. Air monitoring results in regions in Maharashtra during 2018-19.

5.1.3 Chandrapur

There are 8 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 at all locations were beyond the prescribed standards. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.5**.

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
Ghuggus - Chandrapur	4	29	175
Chandrapur - MIDC	4	31	90
Chandrapur - SRO MPCB	4	32	89
Tadali MIDC	4	30	107
Ballarshah	4	33	120
Rajura	4	31	134
Chandrapur CAAQMS	4	10	73
Civil Lines, Chandrapur	9	23	108

It can be observed from **Table 5.5**, that minimum SO₂ concentration of 4 $\mu\text{g}/\text{m}^3$ was recorded at all locations except Civil Lines, Chandrapur where the maximum SO₂ concentration of 9 $\mu\text{g}/\text{m}^3$ was found. Minimum NO_x concentration of 10 $\mu\text{g}/\text{m}^3$ and minimum PM₁₀ concentration of 73 $\mu\text{g}/\text{m}^3$ was recorded at Chandrapur CAAQMS. Maximum NO_x concentration of 33 $\mu\text{g}/\text{m}^3$ was found Ballarshah. Maximum PM₁₀ concentration of 175 $\mu\text{g}/\text{m}^3$ was recorded at Ghuggus. The exceedance factors for PM₁₀ for Chandrapur Region are shown in **Table 5.6**.

Table 5.6. Exceedance factors for PM₁₀ for Chandrapur Region.

Exceedance factor – Chandrapur	
PM ₁₀	
Min	1.22
Max	2.92

5.1.4 Kalyan

There are 10 Air Monitoring stations in Kalyan Region, 5 in rural areas, 3 industrial areas and 2 in commercial areas. 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 at all locations was within the NAAQM standard limits. Concentrations of NO_x and PM₁₀ concentrations were beyond the standard limits at all locations. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.7**.

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
Ambarnath	25	58	116
Badlapur - BIWA House	24	58	111
I.G.M. Hospital	33	44	70
Prematai Hall - Bhiwandi	33	45	67
Dombivali	26	56	124
MIDC Office Dombivali	26	59	120
Dombivali CAAQMS	22	42	108
MPCB RO Kalyan Office	29	41	65
Smt. CHM College Campus	20	52	95
Powai Chowk	25	54	114

From **Table 5.7.** it is observed that minimum SO₂ concentration of 20 $\mu\text{g}/\text{m}^3$ was found at Smt. CHM College Campus. The minimum NO_x concentration of 41 $\mu\text{g}/\text{m}^3$ was found at MPCB RO Kalyan Office. The minimum PM₁₀ concentration of 67 $\mu\text{g}/\text{m}^3$ was found at Prematai Hall - Bhiwandi. The maximum SO₂ concentration of 33 $\mu\text{g}/\text{m}^3$ was found at I.G.M. Hospital and Prematai Hall. The maximum NO_x concentration of 59 $\mu\text{g}/\text{m}^3$ was found at MIDC Office Dombivali. Maximum PM₁₀ concentration of 124 $\mu\text{g}/\text{m}^3$ was found at Dombivali. The exceedance factors for NO_x and PM₁₀ for Kalyan Region are shown in **Table 5.8.**

Table 5.8. Exceedance factors for NO_x and PM₁₀ for Kalyan Region.

Exceedance factor – Kalyan		
	NO _x	PM ₁₀
Min	1.025	1.12
Max	1.48	2.06

5.1.5 Kolhapur

There are 6 Air Monitoring stations in this Region of which 3 are located 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 SO₂ concentrations at all locations was within the NAAQM standard limits. NO_x concentrations at all locations except Ruikar Trust and Sangli-Miraj Primary Municipal School were within the prescribed limits. PM₁₀ concentrations at all locations except Shivaji University were beyond the prescribed standards. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.9.**

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60

Shivaji University Campus	12	20	60
Ruikar Trust	26	46	114
Mahadwar Road	22	37	95
Terrace of SRO - Sangli, Udyog Bhavan	8	36	76
Sangli-Miraj Primary Municipal School	10	47	80
Krishna Valley School	10	40	83

It is evident from **Table 5.9.** that minimum SO₂ concentration of 8 µg/m³ was found at Terrace of SRO-Sangli, Udyog Bhavan. Minimum NO_x concentration of 20 µg/m³ and the minimum PM₁₀ concentration of 60 µg/m³ was found at Shivaji University. The maximum SO₂ concentration of 26 µg/m³ and maximum PM₁₀ concentration of 114 µg/m³ was found at Ruikar Trust. The maximum NO_x concentration of 47 µg/m³ was found at Sangli-Miraj Primary Municipal School. The exceedance factors for NO_x and PM₁₀ for Kolhapur Region are shown in **Table 5.10.**

Table 5.10. Exceedance factors for NO_x and PM₁₀ for Kolhapur Region.

Exceedance factor – Kolhapur		
	NO _x	PM ₁₀
Min	1.15	1.26
Max	1.17	1.9

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 of all the parameters analyzed at all locations is represented in **Figure 5.2.**

From **Figure 5.2.** it can be observed that the average SO₂ concentrations at Sion and Bandra were well within the NAAQM standard limits whereas concentrations of NO_x and PM₁₀ at both locations were beyond the standards. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.11.**

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

Location	Parameters [µg/m ³]		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Bandra	19	66	111
Sion	5	83	147

From **Table 5.11.** it is observed that minimum SO₂ concentration of 5 µg/m³ was found at Sion and a maximum of 19 µg/m³ was found at Bandra. Minimum NO_x concentration of 66 µg/m³ was found at Bandra and a maximum of 83 µg/m³ was found at Sion. Minimum PM₁₀ concentration of 111 µg/m³ was found at Bandra whereas maximum PM₁₀ concentration of 147 µg/m³ was found at Sion. The exceedance factors for PM₁₀ for Mumbai Region are shown in **Table 5.12.**

Table 5.12. Exceedance factors for NO_x & PM₁₀ for Mumbai Region.

Exceedance factor – Mumbai

	NO _x	PM ₁₀
Min	1.65	1.85
Max	2.08	2.45

5.1.7. Nagpur

Out of the five AAQMS in this Region, 2 are located in residential areas, 1 in an industrial area, 1 in a commercial and 1 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 can be observed that SO₂ and NO_x concentrations at all locations are within the NAAQM standard limits. PM₁₀ concentrations at all locations are beyond the prescribed limits. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.13**.

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
Civil Lines, Nagpur	11	34	71
IOE, North Ambazari Road	13	39	111
MIDC Office, Hingna Road	13	39	118
Govt. Polytechnic College, Sadar	13	38	109
Nagpur CAAQMS	11	38	88

From **Table 5.13**, it can be observed that minimum SO₂ concentration of 11 $\mu\text{g}/\text{m}^3$ was recorded at Civil Lines, Nagpur and Nagpur CAAQMS. Minimum NO_x concentration of 34 $\mu\text{g}/\text{m}^3$ and minimum PM₁₀ concentration of 71 $\mu\text{g}/\text{m}^3$ was recorded at Civil Lines, Nagpur. Maximum SO₂ concentration of 13 $\mu\text{g}/\text{m}^3$ was recorded at IOE, North Ambazari Road, MIDC Office - Hingna Road and Govt. Polytechnic College, Sadar. Maximum NO_x concentration of 39 $\mu\text{g}/\text{m}^3$ was recorded at IOE, North Ambazari Road and MIDC Office - Hingna Road. Maximum PM₁₀ concentration of 118 $\mu\text{g}/\text{m}^3$ was recorded at MIDC Office - Hingna Road. The exceedance factors for PM₁₀ for Nagpur Region are shown in **Table 5.14**.

Table 5.14. Exceedance factors for PM₁₀ for Nagpur Region.

Exceedance factor – Nagpur	
PM ₁₀	
Min	1.18
Max	1.97

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. 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 SO₂ and NO_x concentrations at all locations are within the NAAQM standard limits. PM₁₀ concentrations at all locations are beyond the prescribed limits.

Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.15**.

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
SRO Office Nashik	12	23	73
MIDC Satpur	12	24	78
RTO Colony	12	23	76
NMC Nashik	12	23	77
MIDC Jalgaon	14	35	75
Girna Water Tank	13	33	69
Old B. J. Market	13	34	72
Nashik CAAQMS	5	19	70

From **Table 5.15**, it can be observed that minimum SO₂ concentration of 5 $\mu\text{g}/\text{m}^3$ and minimum NO_x concentration of 19 $\mu\text{g}/\text{m}^3$ was recorded at Nashik CAAQMS. Minimum PM₁₀ concentration of 69 $\mu\text{g}/\text{m}^3$ was recorded at Girna Water Tank. Maximum SO₂ concentration of 14 $\mu\text{g}/\text{m}^3$ and maximum NO_x concentration of 35 $\mu\text{g}/\text{m}^3$ was recorded at MIDC Jalgaon. Maximum PM₁₀ concentration of 78 $\mu\text{g}/\text{m}^3$ was recorded at MIDC Satpur. The exceedance factors for PM₁₀ for Nashik Region are shown in **Table 5.16**.

Table 5.16. Exceedance factors for PM₁₀ for Nashik Region.

Exceedance factor – Nashik	
PM ₁₀	
Min	1.15
Max	1.3

5.1.9. Navi Mumbai

Out of the 6 AAQMS in Navi Mumbai Region, 2 are located in residential areas, 3 in industrial areas and 1 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 can be observed that the average SO₂ concentrations at all locations are within the NAAQM standard limits. NO_x concentrations at all locations except Airoli are beyond the standard limits. PM₁₀ concentrations at all locations except Nerul – DY Patil were within the prescribed standards. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.17**.

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

Location	Parameters [$\mu\text{g}/\text{m}^3$]		
	SO ₂	NO _x	PM ₁₀
	Standards ($\mu\text{g}/\text{m}^3$)		
	50	40	60
Airoli	31	33	89
Nerul - DY Patil	18	44	60

Rabale	19	46	54
Mahape, MPCB Nirmal Bhavan	19	46	53
Kharghar - CIDCO Nodal Office	18	45	57
Taloja - MIDC Building	19	46	58

From **Table 5.17**, it can be observed that minimum SO₂ concentration of 18 µg/m³ was found at Nerul – DY Patil. Minimum NO_x concentration of 33 µg/m³ and minimum was recorded at Airoli. Minimum PM₁₀ concentration of 53µg/m³ was found at Mahape, MPCB Nirmal Bhavan. Maximum SO₂ concentration of 31µg/m³ was found at Airoli. Maximum NO_x concentration of 46µg/m³ was found at Rabale, Mahape, MPCB Nirmal Bhavan and Taloja – MIDC Building. Maximum PM₁₀ concentration of 89µg/m³ was found at Airoli. The exceedance factor for PM₁₀ was 1.48. The exceedance factors for NO_x for Navi Mumbai Region are shown in **Table 5.18**.

Table 5.18. Exceedance factors for NO_x for Navi Mumbai Region.

Exceedance factor – Navi Mumbai	
	NO _x
Min	1.1
Max	1.15

5.1.10. Pune

There are 8 AAQMS in this Region of which 6 are located in residential areas, 1 in an industrial and 1 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 can be observed that the SO₂ concentrations at all locations are within the NAAQM standard limits. NO_x concentrations at all locations except Karve Road CAAQMS, WIT Campus and Saat Rasta – Chitale Clinic were beyond the standard limits. PM₁₀ concentrations at all locations were beyond the standard limits. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.19**.

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

Location	Parameters [µg/m ³]		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Pimpri-Chinchwad BOB Building	28	52	72
Karve Road CAAQMS	14	38	98
Nal Stop	28	59	105
Bhosari	29	53	87
Swargate	29	54	76
Solapur	12	65	101
WIT Campus	16	33	70
Saat Rasta - Chitale Clinic	16	33	71

From **Table 5.19**, it can be observed that minimum SO₂ concentration of 12 µg/m³ was found at Solapur. Minimum NO_x concentration of 33 µg/m³ was found at WIT Campus and Saat Rasta – Chitale Clinic. The minimum PM₁₀ concentration of 70 µg/m³ was found at WIT Campus. Maximum

SO₂ concentration of 29 µg/m³ was found at Bhosari and Swargate. Maximum NO_x concentration of 65 µg/m³ was found at Solapur. Maximum PM₁₀ concentration of 105 µg/m³ was found at Nal Stop. The exceedance factors for NO_x and PM₁₀ for Pune Region are shown in **Table 5.20**.

Table 5.20. Exceedance factors for NO_x and PM₁₀ for Pune Region.

Exceedance factor – Pune		
	NO _x	PM ₁₀
Min	1.3	1.67
Max	1.63	1.75

5.1.11. Raigad

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

From **Figure 5.2**, it can be observed that the concentration of SO₂ was within the NAAQM standard limits whereas the concentrations of NO_x and PM₁₀ were beyond the standard limits at this AAQMS. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.21**. The exceedance factor for NO_x for Raigad Region was 1.225.

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

Location	Parameters [µg/m ³]		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Panvel Water Supply Plant	19	49	60

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 concentrations at all locations are within the NAAQM prescribed standards. NO_x concentrations at only Balkum/Glaxo are within the standard limits. PM₁₀ concentrations at all locations are beyond the standard limits. Details of annual average statistical data recorded throughout the year 2018-19 are represented in **Table 5.22**.

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

Location	Parameters [µg/m ³]		
	SO ₂	NO _x	PM ₁₀
	Standards (µg/m ³)		
	50	40	60
Balkum/Glaxo	13	31	107
Naupada	16	49	91
Kopri	17	49	75

It can be observed from **Table 5.22**, that minimum SO₂ concentration of 13 µg/m³ was found at Balkum/Glaxo while the maximum SO₂ concentration of 17 µg/m³ was found at Kopri. Minimum NO_x concentration of 31 µg/m³ was found at Balkum/Glaxo while the maximum NO_x concentration of 49

$\mu\text{g}/\text{m}^3$ was found at Naupada and Kopri. Minimum PM_{10} concentration of $75 \mu\text{g}/\text{m}^3$ was found at Kopri while the maximum PM_{10} concentration of $107 \mu\text{g}/\text{m}^3$ was found at Balkum/Glaxo. The exceedance factors for NO_x was 1.23. The exceedance factor for PM_{10} for Thane Region are shown in **Table 5.23**.

Table 5.23. Exceedance factors for PM_{10} for Thane Region.

Exceedance factor – Thane	
	PM_{10}
Min	1.25
Max	1.78

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., SO_2 , 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 2018-19, air quality monitoring was done across 72 active AAQMS installed in various regions of Maharashtra. As shown in Figure No.17, around 68.8% observations came under the 'Good' and 'Satisfactory' categories, as compared to 65% in the previous year (2017-18). Thus, an increase in the percentage of non-polluted days by almost 4% was recorded. There was a very slight change in the 'Moderate' category, with 29.4% observations recorded this year compared to 30% in 2017-18. A decreasing trend was observed in the 'Poor' category by more than 2%, from 3% to 1.38% in 2018-19. A similar trend was observed in the 'Very Poor' 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

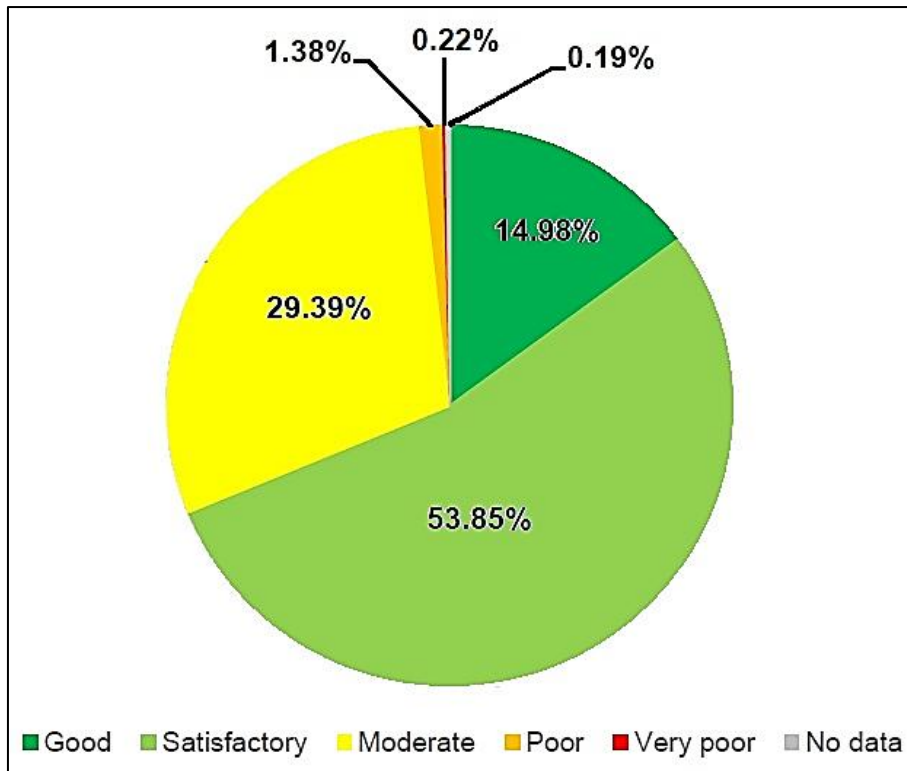


Figure 5.3. Share of AQI categories for air quality of monitored observations across all AAQMS in Maharashtra (2018-19).

5.2.1. Trend Analysis of AQI share over 4 years

Analysis of the trend of share of mean Air Quality Index between the years 2015 and 2019 was carried out in order 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 and 2018-19.

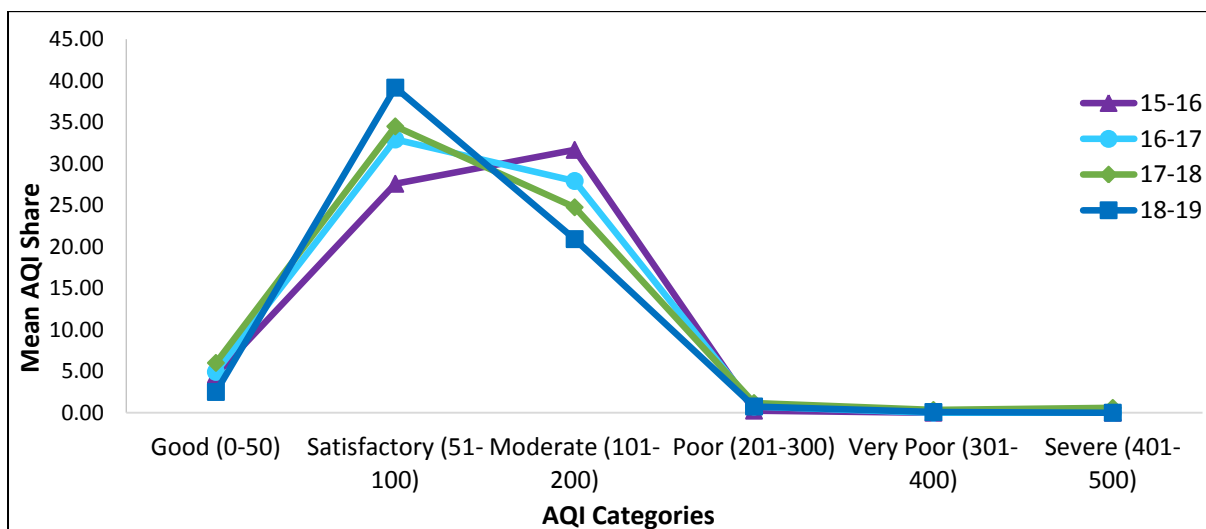


Figure 5.4. Trends in year-wise share of AQI categories.

From Figure 5.4. it can be observed that during the year 2015-16, the highest share was of the 'Moderate category of AQI, followed by the share of the 'Satisfactory' category. During rest of the years, the share of the 'Satisfactory' category of AQI was the greatest, followed by the 'Moderate' category. During all 4 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.

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 at metropolitan cities in the State of Maharashtra was not carried out during the year 2018-19. 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.

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 egg shell 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 coliforms (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 Coliform (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 NSF WQI for DO, FC, pH and BOD.

Water Quality Parameters (units)	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 2018-19. Based on the absolute value of the index determined from calculations, water quality is classified as presented in **Table 5.30.**

Table 5.29 Relative 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,	Relative Weight w/o Iron,

					Manganese & Bicarbonate	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. In order 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 intra-basin performance of Tapi Basin across six districts in the Maharashtra is depicted in **Figure 5.5**. It can be observed that the water quality index (WQI) in Dhule district was 'good to excellent' during the months of June, August, September, October and December 2018 and February and

March 2019. During July 2018, the WQI was recorded as 'good'. The water quality during all these months was not polluted. In the month of April, May, November 2018 and January 2019 WQI was not recorded as locations were dry and sample couldn't be collected.

In Amaravati district, the WQI was recorded as 'good to excellent' during the months of April, May, July, October, November, December 2018 and January, February and March 2019. The water quality was not polluted. During the months of June and August 2018 the WQI was found to be 'good' and the water was not polluted. The WQI was recorded as 'poor' in the month of September 2018 and the water was polluted.

In Akola district, the WQI was 'very poor' in the month of April 2018 and the water was heavily polluted. The WQI was recorded as 'poor' in the month of June 2018 and the water was polluted. During the months of May, July, August, September and October 2018, the WQI was found to be 'good' and the water was not polluted. The WQI was recorded as 'good to excellent' only in the month of November 2018 and the water was not polluted.

In Jalgaon district, the WQI was recorded as 'good to excellent' during the months of April, August, September, October, November, December 2018 and January, February and March 2019 and the water was not polluted during these months. The WQI was found to be 'good' in the months of May and July 2018 and the water quality was not polluted.

In the district of Nandurbar, the WQI was recorded as 'good to excellent' during the months of April, June, July, August, September, November 2018 and January 2019 and the water quality during these months was not polluted. The WQI was recorded as 'good' in May 2018 and the water was not polluted. . In the month of October, December 2018 & February, March 2019 WQI was not recorded as locations were dry and sample couldn't be collected. In Nashik district, the WQI was recorded as 'good to excellent' in the months of August and September 2018 and the water was not polluted during these months. During the period April to July 2018, October to December 2018, and January to March 2019 WQI was not recorded as locations were dry and sample couldn't be collected.

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 2018-18. From the figure it is evident that the WQI of all districts in this basin was recorded as 'good to excellent' during the year 2018-19 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 5 districts during the year 2018-19. In Bhandara district the WQI was recorded as 'good to excellent' during the months of July, August, September, November 2018 and January and March 2019. The water quality during these months was not polluted. During the months of April, May, June, December 2018 and February 2019, the WQI was recorded as 'good' and the water was not polluted. The WQI was found to be 'very poor' during in October 2018 and the water was highly polluted.

The WQI of Chandrapur district was recorded as 'good to excellent' throughout the year 2018-19 and the water was unpolluted. In Nagpur district the WQI was found to be 'good to excellent' during all months except May 2018 when the WQI was recorded as 'good'. The water was unpolluted throughout the year.

In the district of Wardha the WQI was recorded as 'good to excellent' during the months of July, August, September, October, November, December 2018 and January, February and March 2019. The WQI was recorded as 'good' during April 2018. The water was unpolluted during these months.

During May and June 2018 WQI was not recorded as locations were dry and sample couldn't be collected. In Yavatmal district the WQI was recorded as 'good to excellent' throughout the year 2018-19 and the water was unpolluted.

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 district the WQI was recorded as 'good to excellent' during all months of the year 2018-19 except during July 2018 when the WQI was found to be 'good'. The water quality was unpolluted throughout the year.

In Pune district, the WQI was recorded as 'good' during the months of April, May, June, July, August, September, October and November 2018. The water was unpolluted during these months. The WQI was recorded as 'poor' during the months of December 2018 and January, February and March 2019 and the water was polluted.

In Sangli and Satara districts, the WQI was found to be 'good to excellent' throughout the year and the water was unpolluted during the year 2018-19.

In Solapur district the WQI was recorded as 'good to excellent' during the months of April, June, July, August, October, December 2018 and January 2019. The WQI was recorded as 'good' during the months of May, September and November 2018. Water quality was unpolluted throughout the year.

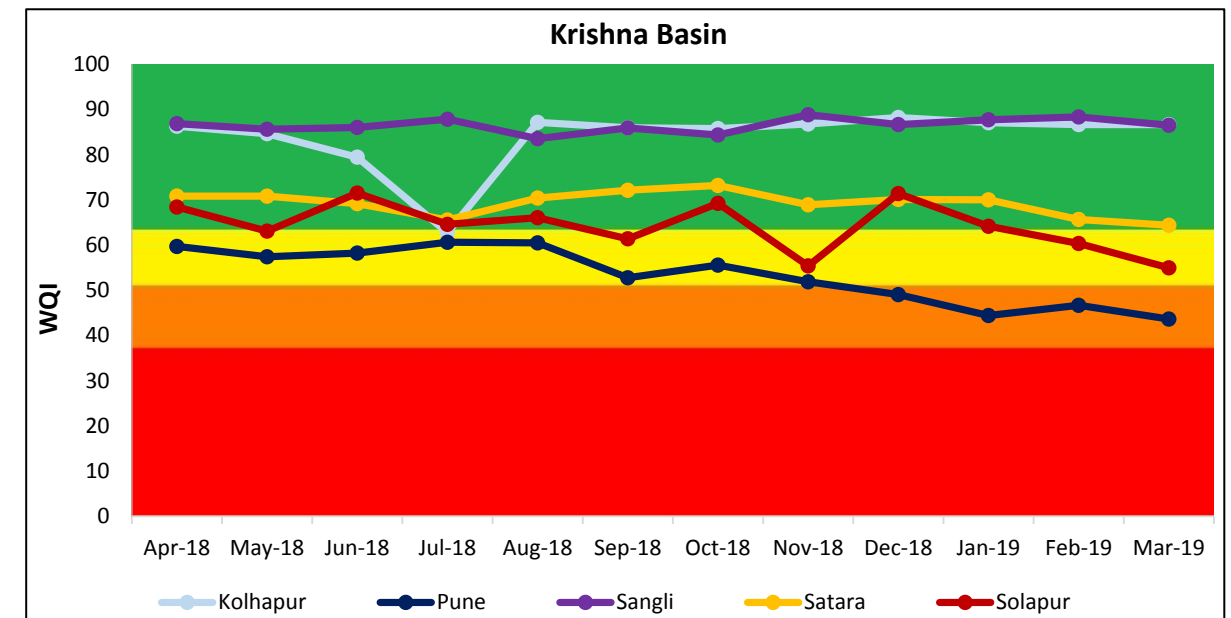
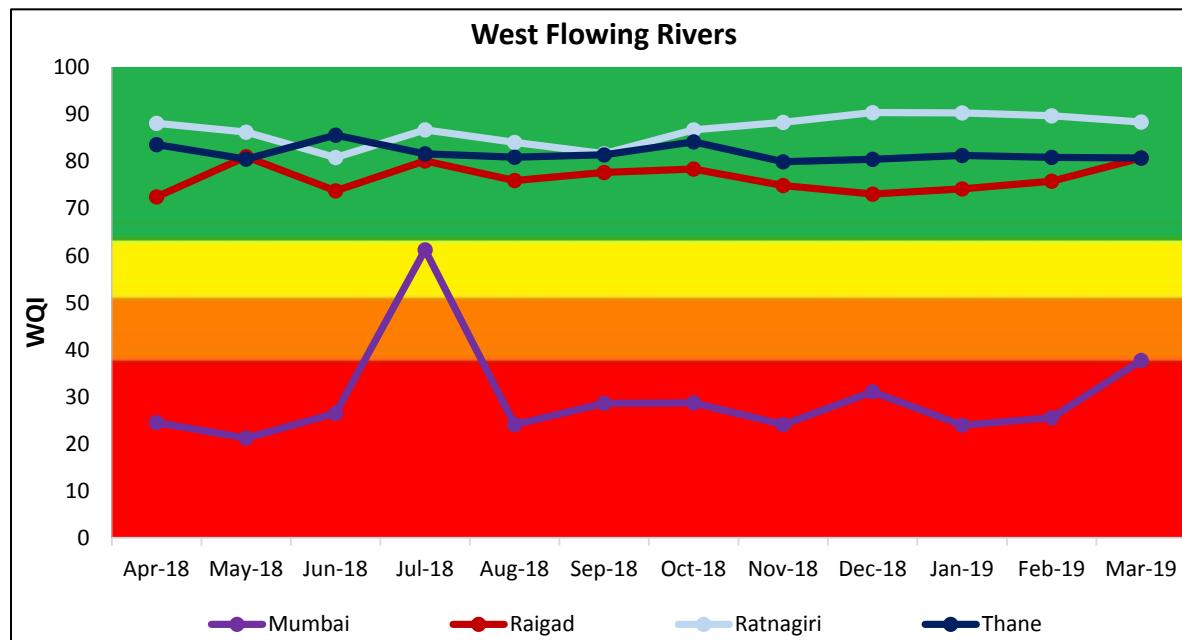
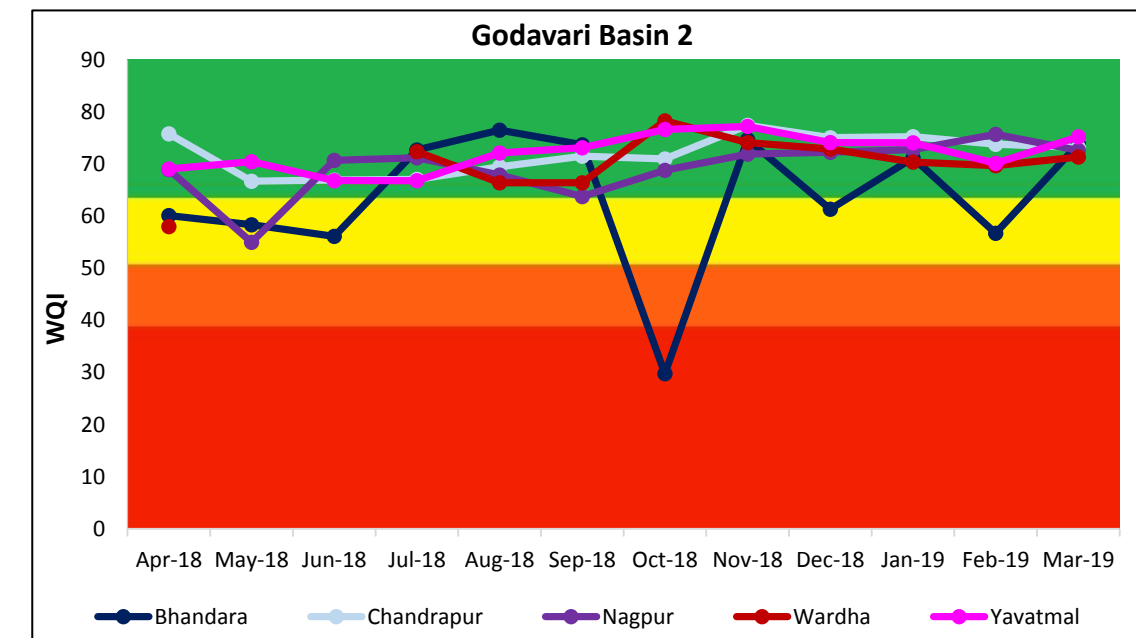
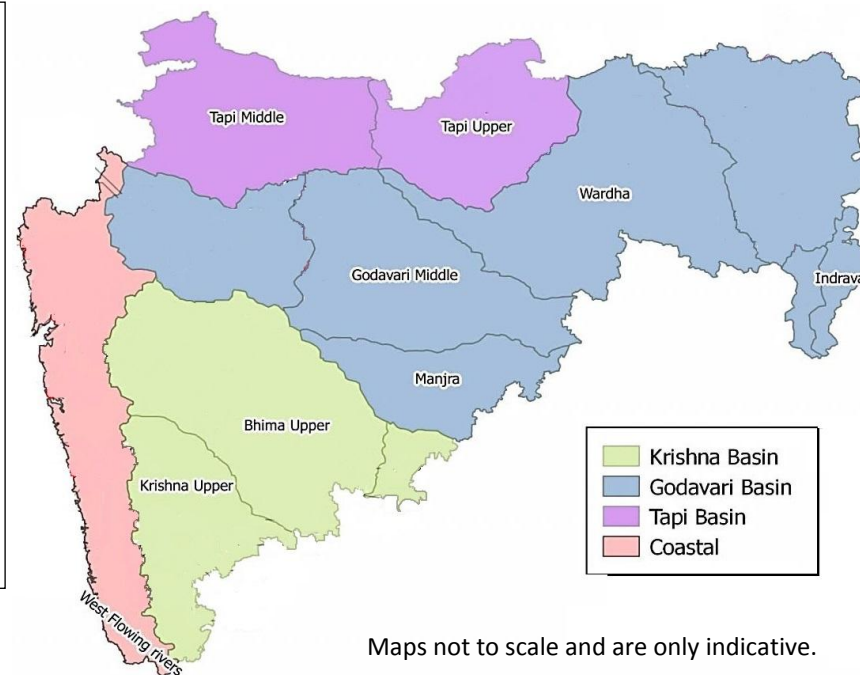
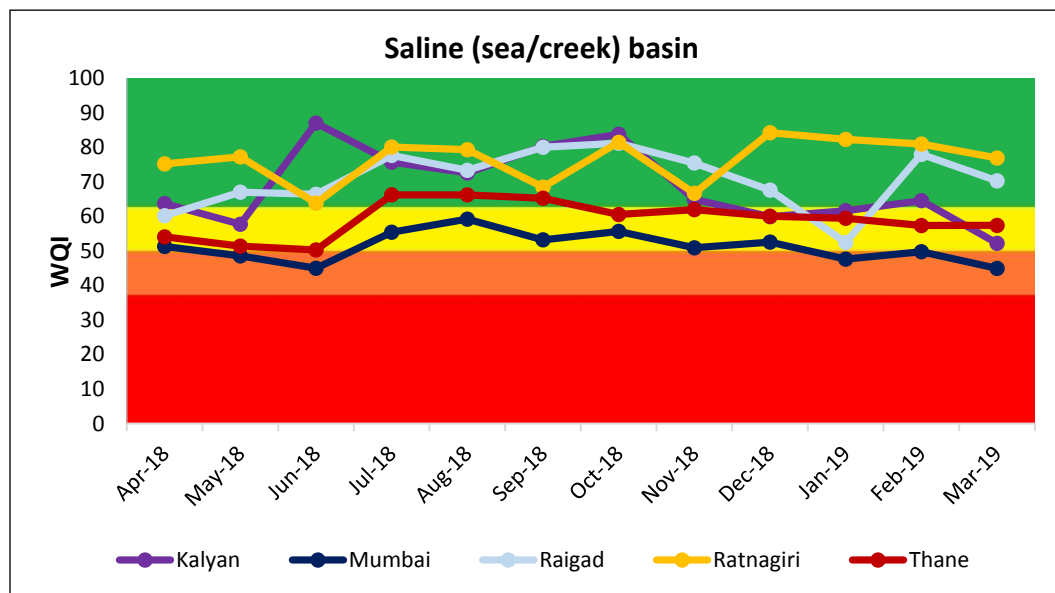
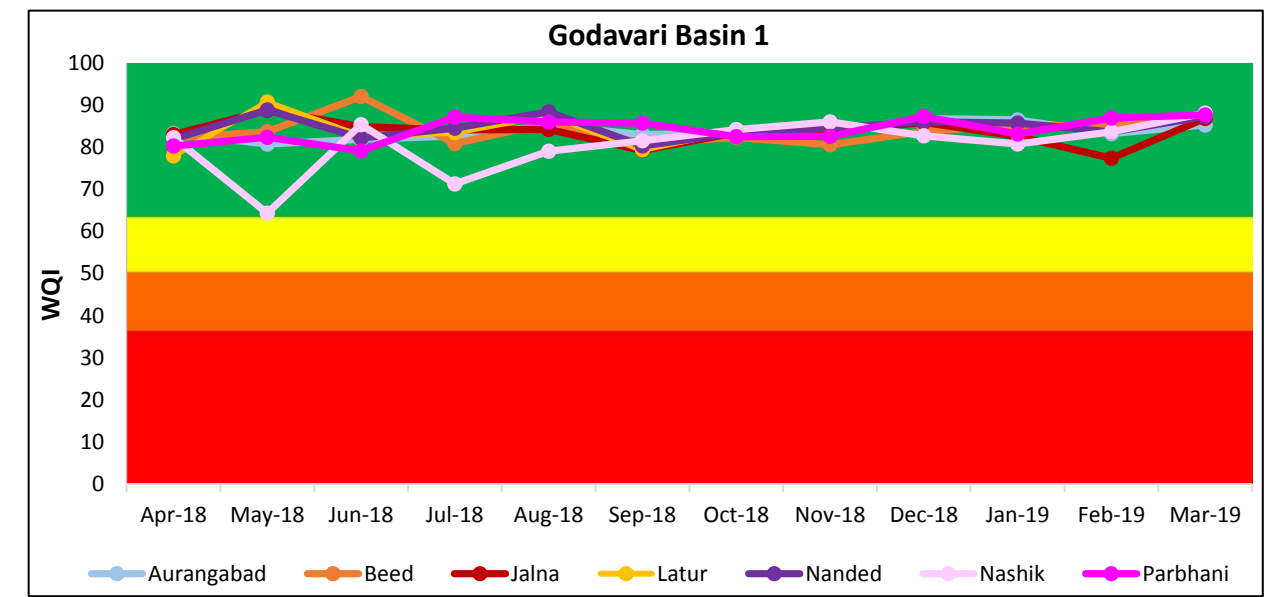
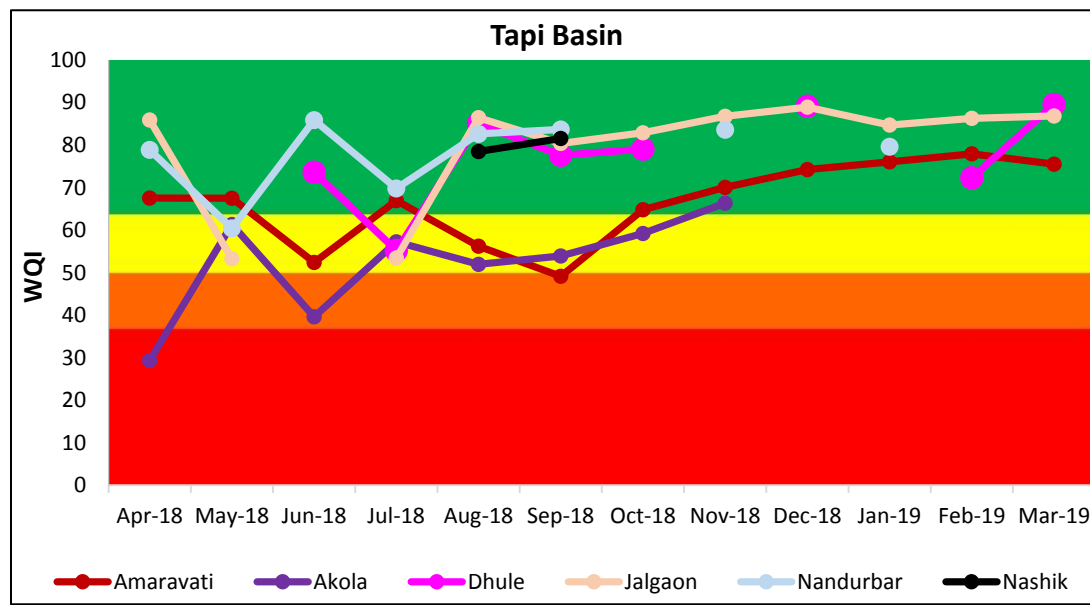


Fig. 5.5. Monthly trends of WQI across districts in sub-basins of Maharashtra.

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 2018-19 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 2018-19 and the water quality was recorded as not polluted throughout the year. In Mumbai, the WQI was recorded as 'very poor' during the months of April, May, June, August, September, October, November, December 2018 and January and February 2019 and the water was heavily polluted during these months. In the month of July 2018, the WQI was observed to be 'good' and the water was unpolluted.

5.4.2.5.2. Saline (Sea and Creek)

Figure 5.5. shows the monthly trend in WQI along the Saline (sea & creek) basin across 5 districts during the year 2018-19. In Kalyan, the WQI was recorded as 'good to excellent' during the months of June, July, August, September, October, November 2018 and February 2019. In the months of May and December 2018 and January and March 2019, the WQI was recorded as 'good'. The water was unpolluted throughout the year.

In Mumbai, the WQI was recorded as 'good' during the months of April, July, August, September, October, November, December 2018 and February 2019 and the water was unpolluted during these months. The WQI was recorded as 'poor' during the months of May, June 2018 and January 2019 and the water was polluted during these months.

In Raigad district the WQI was recorded as 'good to excellent' during the months of May, June, July, August, September, October, November and December 2018 and February and March 2019. The WQI was recorded as 'good' during the months of April 2018 and January 2019. The water was unpolluted throughout the year.

In Ratnagiri district, the WQI was recorded as 'good to excellent' during all months of the year 2018-19 and the water was unpolluted throughout the year. In Thane district, the WQI was recorded as 'good to excellent' during the months of July, August and September 2018. During the months of April, May, June, October, November, December 2018 and January, February and March 2019, the WQI was recorded as 'good' and the water quality was not polluted throughout the year.

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 Regions.

Apr-18	79	80						114	104	105
Oct-18		71						145	122	140
Station Code	2001	2002	1993	2200	2201	2824	2825	1994	2828	2003
Region	Amaravati		Aurangabad				Chandrapur			



Apr-18	262	207	64	484	231	54	282	91	180	46	323	351	40
Oct-18	186	96	44	75	120	28	70	110	171	28	36	50	46
Station Code	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835
Region	Kolhapur												

Apr-18	25	208	104	106	109		181	29	138	194
Oct-18	81	207					162	56	209	194
Station Code	1992	2819	2821	2822	2823	1984	1985	1986	1987	1988
Region	Pune					Thane				

Apr-18	122	122		109	124			117	
Oct-18	106		101	129	97		113	106	
Station Code	1995	1996	1997	1998	1999	2000	2203	2826	2827
Region	Nagpur								

Apr-18		68					200
Oct-18							40
Station Code	1990	1991	2204	2816	2817	2818	1989
Region	Nashik						Navi Mumbai

5.4.4. Conclusion for WQI for Surface Water and Groundwater

In terms of overall basins, Godavari Basin 1 recorded the maximum observations in the 'non-polluted' category (98%) during the year 2018-19. This was followed by Godavari Basin 2 (94%), West Flowing Rivers (93%), Saline (Sea and Creek) sub-basin (75%) and Krishna (70%). In the Saline (Sea and Creek) sub-basin, only 21% of the observations were made in the 'polluted' category, as compared to 54% of observations in the 'polluted' category which were made during the year 2017-18. This indicates an improvement in the extent of pollution in this sub-basin.

The Mithi river was polluted throughout the year except in the month of July 2018, when the water quality was in the 'non-polluted' category which indicates the effect of dilution in pollutants due to rainfall during monsoon. As per CPCB, major polluted rivers such as Chandrabhaga, Koyna, which were recorded under Priority IV as on September 2018 were shifted to Priority V as on January 2019. The rivers, Krishna and Tapi were similarly shifted from Priority III to Priority IV. Kundalika river which was recorded under Priority I was shifted to Priority III whereas Pawana river which was shifted from Priority II to Priority III. These shifts indicate an improvement in water quality.

During 2018-19, 3 groundwater WQMS recorded WQI in the category 'Water Unsuitable for Drinking'. This number has neither reduced nor increased from that observed during the year 2017-18. These WQMS (2007, 2833 and 2834) 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 4 years

Analysis of the trend of WQI across basins was carried out to study the status and changes in WQI over the period of 4 years between 2015 and 2019. **Figures 5.6., 5.7., 5.8., 5.9., 5.10. and 5.11.** show 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 and 2018-19 for Tapi Basin.

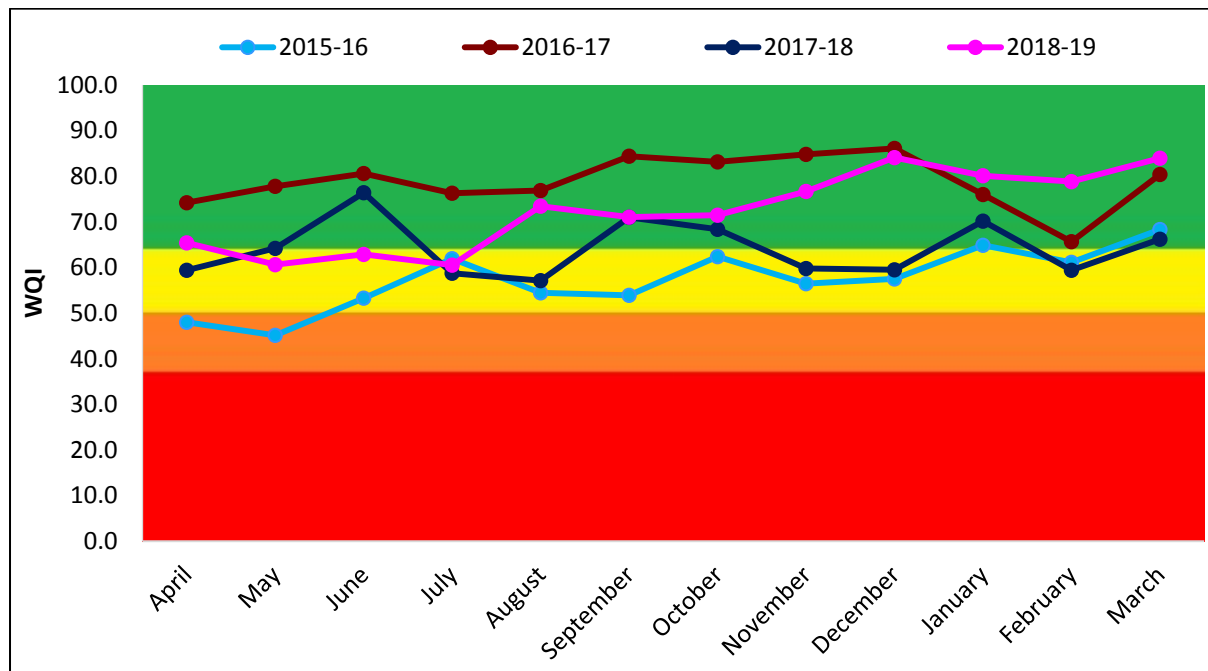


Figure 5.6. Trend Analysis for Tapi Basin

From the figure 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, November and December 2017 and during February 2018. The water quality was therefore 'non-polluted' throughout the year.

During the year 2018-19, 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.

Therefore it can be inferred that the overall water quality was unpolluted in the Tapi basin during all 4 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 and 2018-19 for Godavari Basin 1.

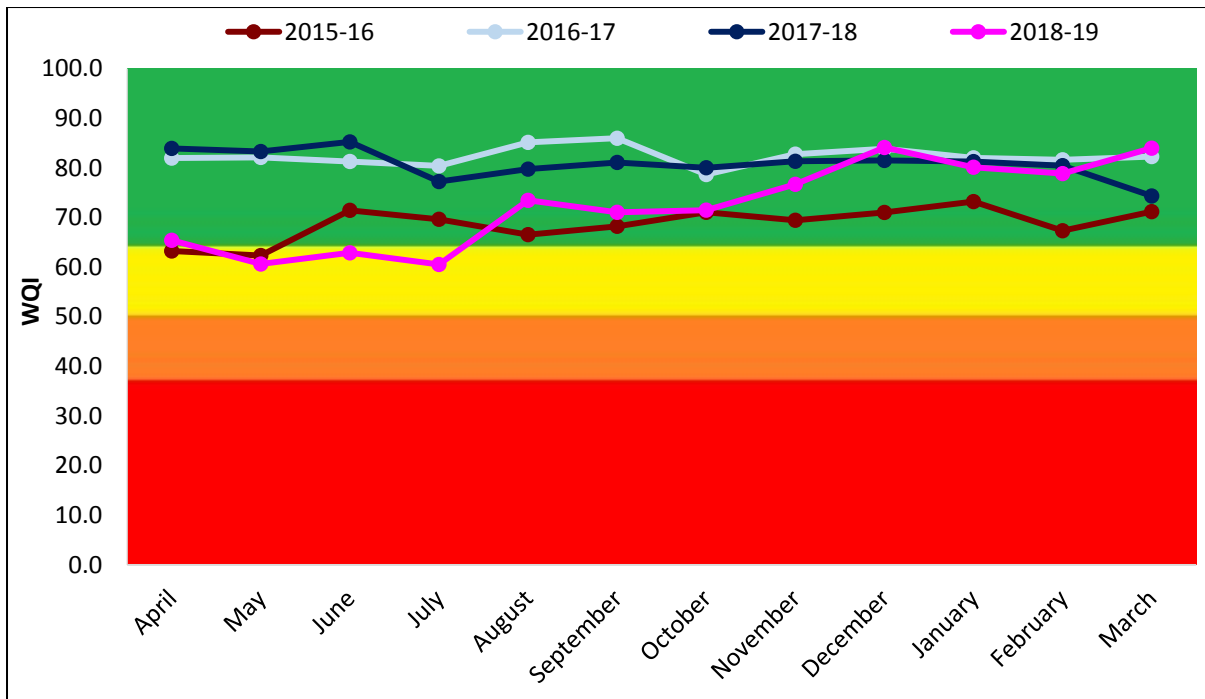


Figure 5.7. Trend Analysis for Godavari Basin 1

From **Figure 5.7.** it can be seen that the overall water quality during all 4 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, 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 2018-19, while it was recorded as ‘good to excellent’ during the remaining months.

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 and 2018-19 for Godavari Basin 2.

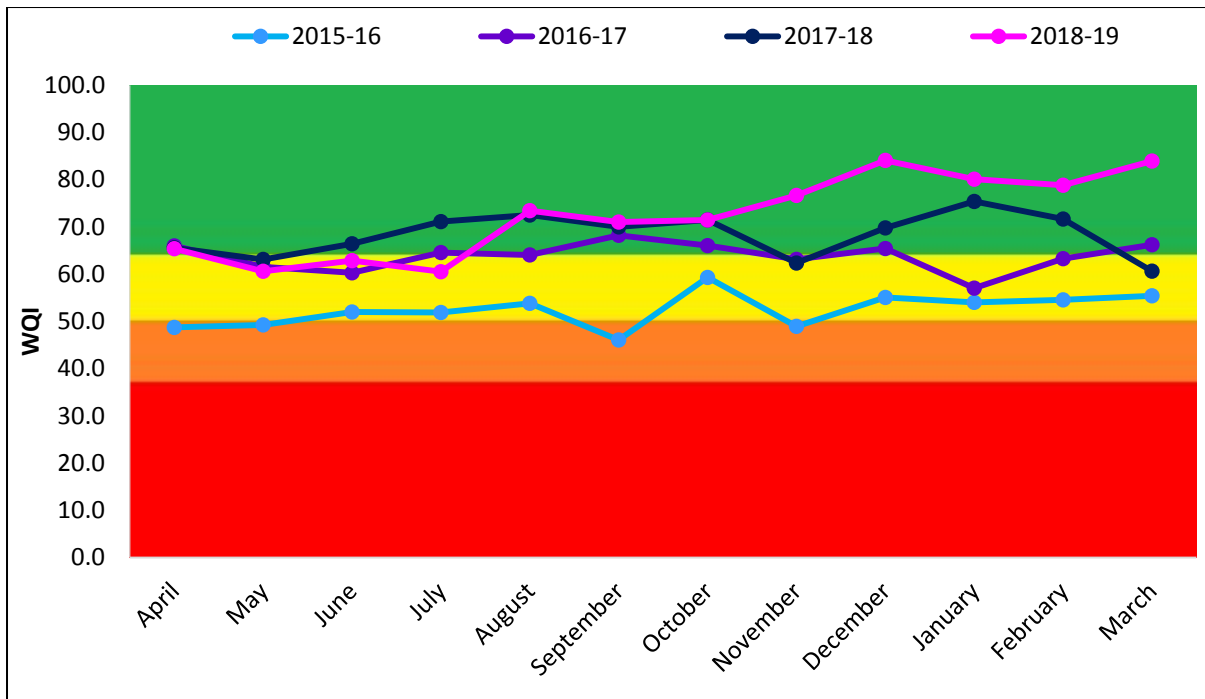


Figure 5.8. Trend Analysis for Godavarin Basin 2.

From **Figure 5.8.** it can be observed that the water quality was non-polluted during the years 2016-17, 2017-18 and 2018-19. 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, 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.

The mean WQI was recorded as ‘good’ during the months of May, June and July 2018 in 2018-19. The mean WQI was recorded as ‘good to excellent’ during the remaining months of the year.

5.4.5.4. WQI Trend Analysis for Krishna Basin

Figure 5.9. shows the trend of WQI over the years 2015-16, 2016-17, 2017-18 and 2018-19 for Krishna Basin.

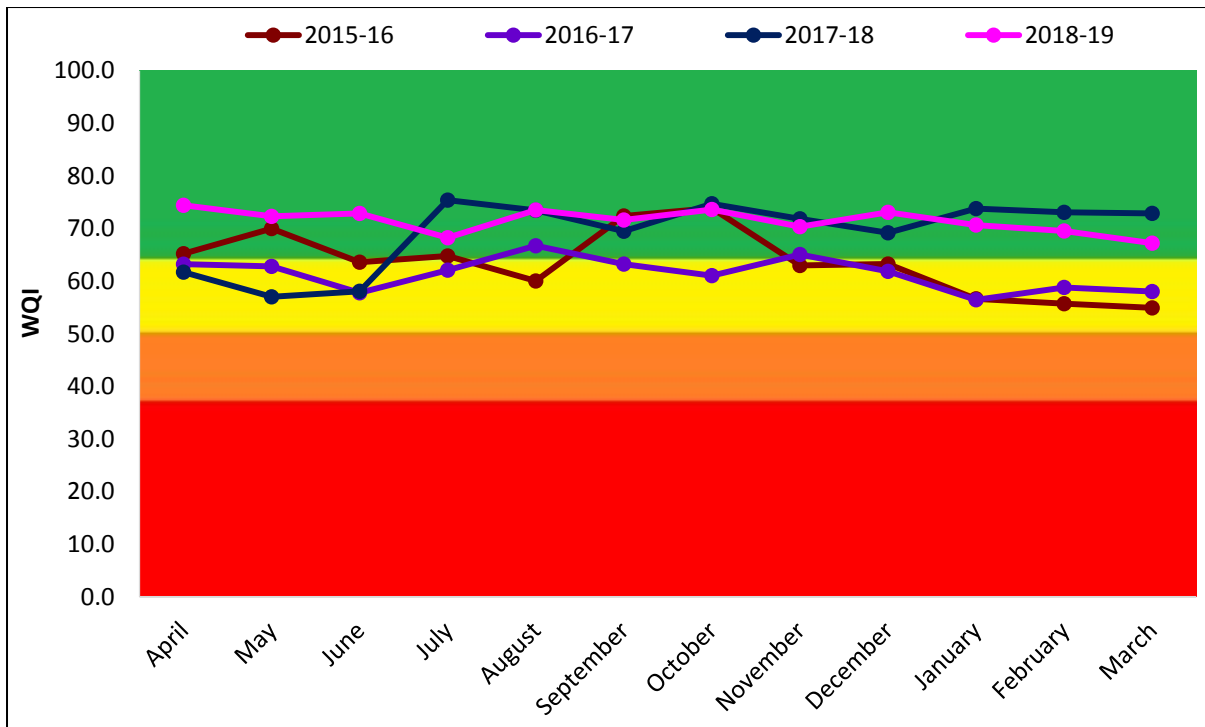


Figure 5.9. Trend Analysis for Krishna Basin.

It is evident from **Figure 5.9.** that the overall water quality was non-polluted during all the 4 years. During the year 2015-16, the mean WQI was recorded as ‘good to excellent’ in the months of April, May, June, July, September, October and December 2018. The mean WQI was recorded as ‘good’ in the months of August and November 2018 and January, February and March 2019.

During the year 2016-17, the mean WQI was recorded as ‘good to excellent’ during the months of April, August, September and November 2018. The mean WQI was recorded as ‘good’ during the months of May, June, July, October, December 2018 and January, February and March 2019.

The mean WQI was recorded as ‘good to excellent’ between July 2017 and March 2018 during the year 2017-18. The mean WQI was recorded as ‘good’ during the months of April, May and June 2018. In the year 2018-19 the mean WQI was recorded as ‘good to excellent’ throughout the year.

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 and 2018-19 for the basin of West Flowing Rivers.

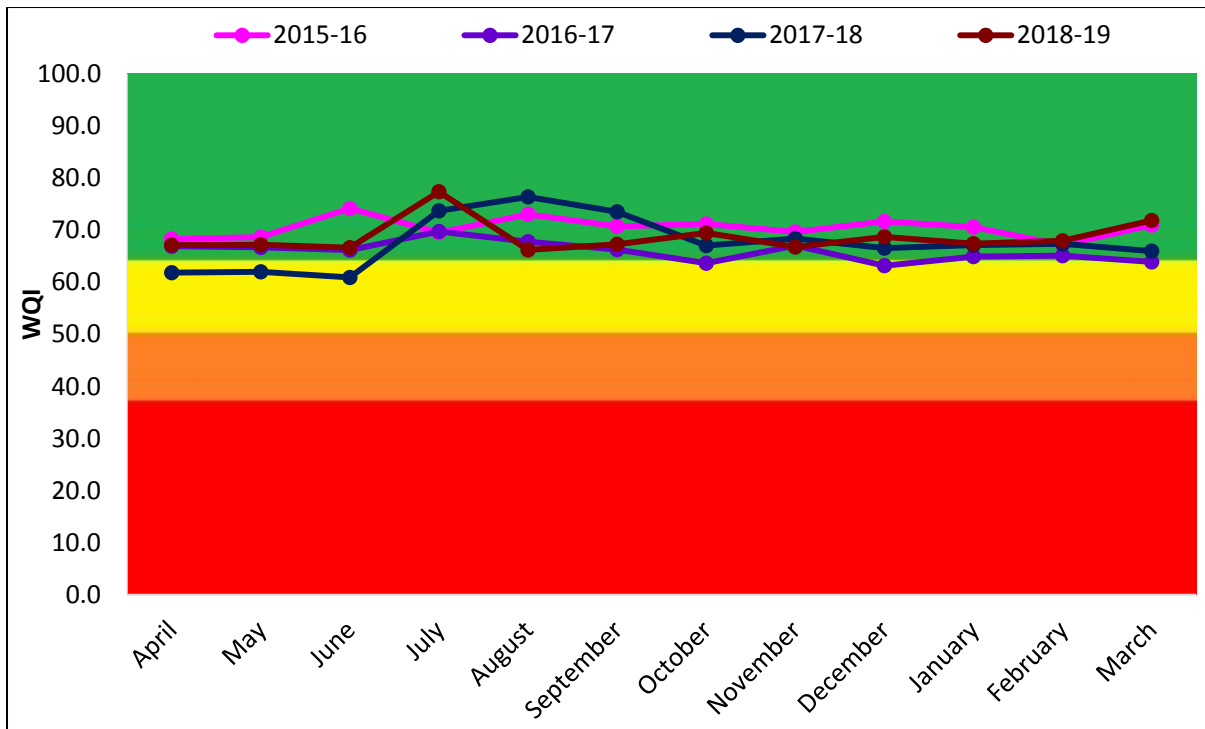


Figure 5.10. Trend Analysis for West Flowing Rivers.

From the above figure it can be observed that during the years 2015-16, 2016-17 and 2018-19, 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'.

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

Figure 5.11. shows the trend of WQI over the years 2015-16, 2016-17, 2017-18 and 2018-19 for the sub-basin of Saline (sea and creek).

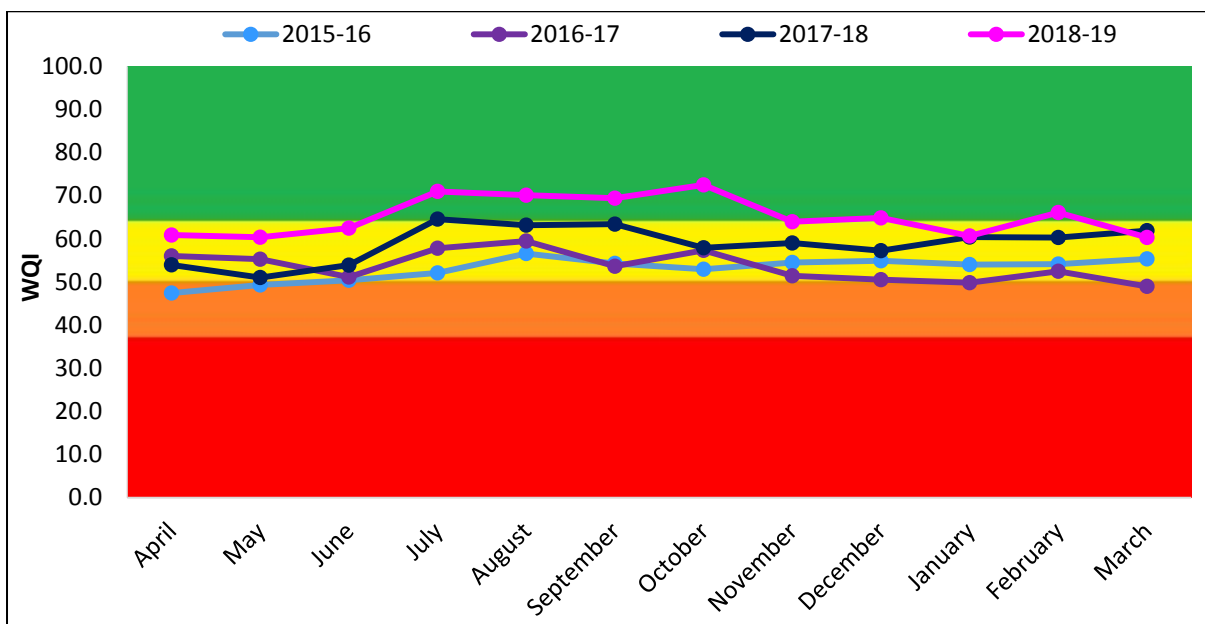


Figure 5.11. Trend Analysis for Saline (Sea and Creek) sub-basin.

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.

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 water bodies, the State has its policy which also states that no industry will be allowed to establish along a river bank. 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 92,081. These industries are categorized as red, orange, 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 13,936, orange is 27,719 and green is 42,884. The total number of large industries is 6,248, medium, 2,119 and small, 76,172. The total number of white industries in the State is 7,542. 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	2747	488	10,701
Orange	2801	968	23,950
Green	700	663	41,521
White	7542		

To monitor compliance of Consent conditions, performance of ETP, ECS and other measures, the Board officials inspect industries regularly. There are 506 industries identified under “Highly Polluting Industries”. **Table 5.33** shows region-wise details of these highly polluting industries.

Table 5.33. Highly Polluting Industries as on 31/3/2019

Industry Category	No. of units
Sugar	225
Pulp & Paper	2
Distillery	100
Fertiliser	10
Oil Refinery	2
Pharmaceutical	85
Petro-Chemical	4
Pesticide	12
Cement	8
Thermal Power Plant	32
Tannery	1
Aluminium	0
Zinc	0
Chlor Alkali	0
Copper	0
Iron and Steel	9
Dye & Dye	16
Total	506

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. Waste water from few industries often contains a significant concentration of pollutants and to reduce it to the desired concentration becomes techno-economically difficult. The total number of operational CETPs in Maharashtra is 24.

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 total industrial effluent generated in the State of Maharashtra during the year 2018-19 was 403.69 MLD of which 402.29 MLD was treated by CETPs in the regions in consideration. The tables in the following paragraphs show the minimum and maximum values recorded by individual CETPs for BOD and COD during the year 2018-19 along with the annual mean as well as standard deviation (SD).

5.5.1.1. Amaravati

Total amount of effluent generated and treated in this Region during the year 2018-19 is 0.3 MLD. There is one CETP in Amaravati Region. The treatment capacity of this CETP is 5 MLD. The total industrial effluent received at this CETP was 1.7 MLD and all the received effluent was treated during the year 2018-19. The annual performance of the CETP for the year 2018-19 is represented in **Table 5.34**. The total number of industries in Amaravati under each category is demonstrated in **Figure 5.12**.

Table 5.34. Statistical Analysis Data for CETP Performance in Amaravati Region.

Parameters (mg/l)		Location	
		Additional Amaravati Industrial Area	
Inlet	BOD (mg/l)	Min.	4
		Max.	252
		Mean	132
		SD.	103
	COD (mg/l)	Min.	18
		Max.	778
		Mean	407
		SD.	271
Outlet	BOD (mg/l)	Min.	4
		Max.	266
		Mean	43
		SD.	91
	COD (mg/l)	Min.	0
		Max.	760
		Mean	110
		SD.	246

From **Table 5.34**, it can be observed that the reduction in BOD at the CETP at Additional Amaravati Industrial Area was 67% whereas the COD was being reduced with about 73% efficiency. The parameters for the treated effluent were within the prescribed discharge standards of 100 mg/l and 250 mg/l for BOD and COD respectively. At present the CETP is not discharging treated industrial effluent on land. The CETP is being operated on ZLD principle.

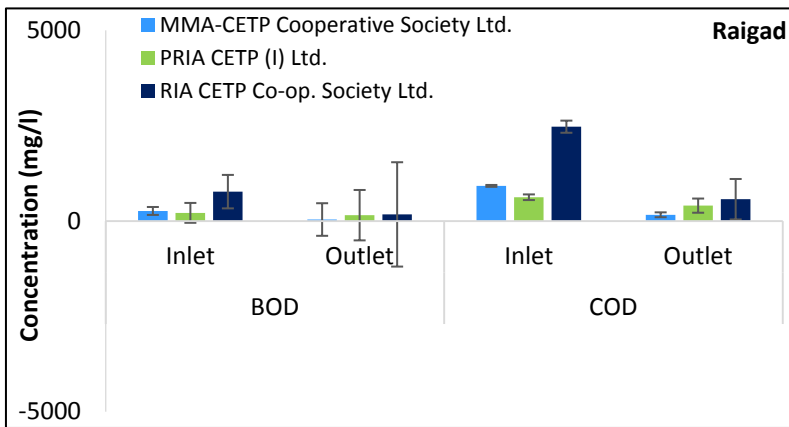
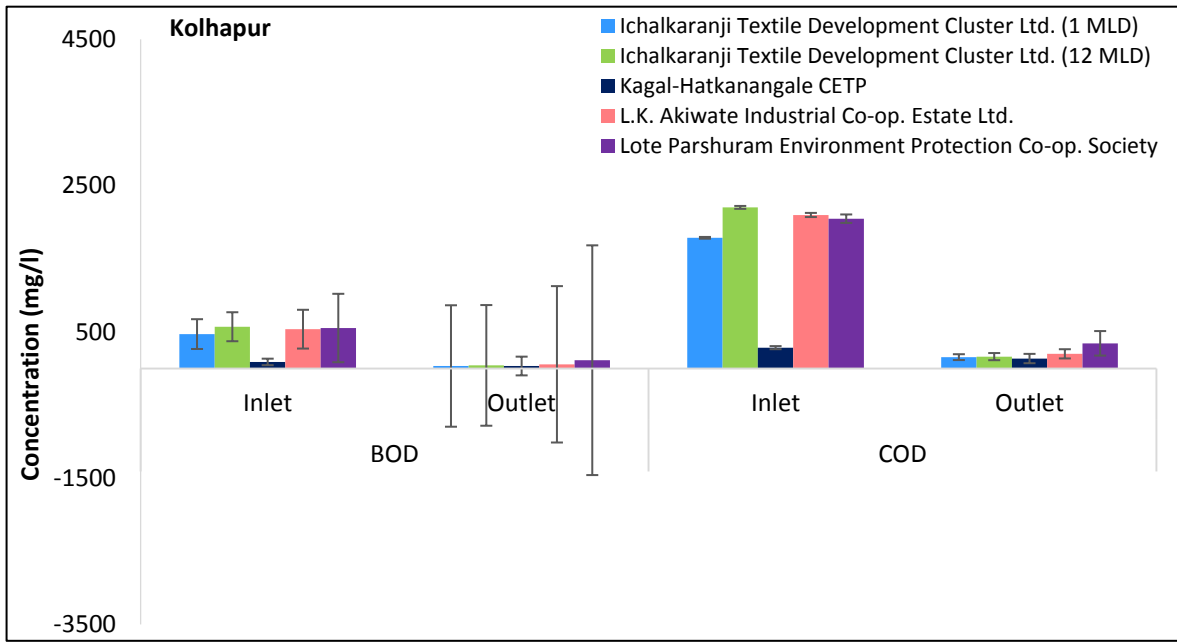
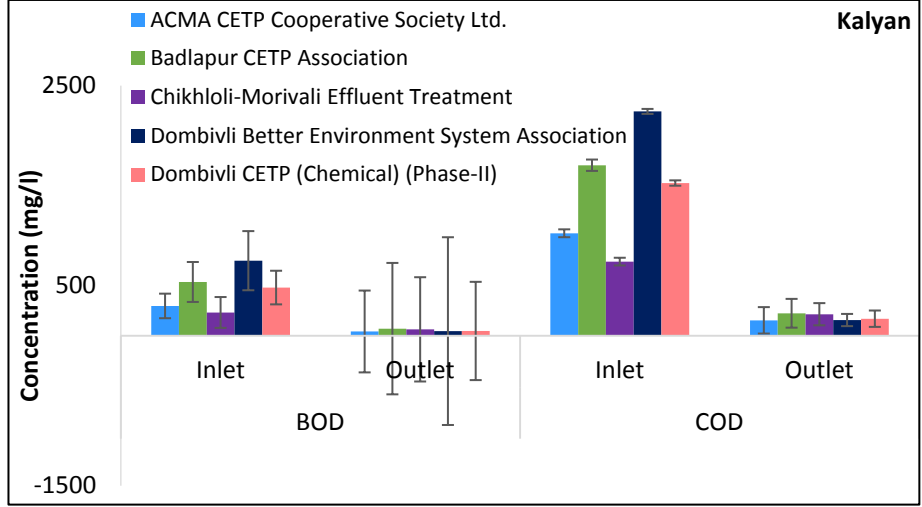
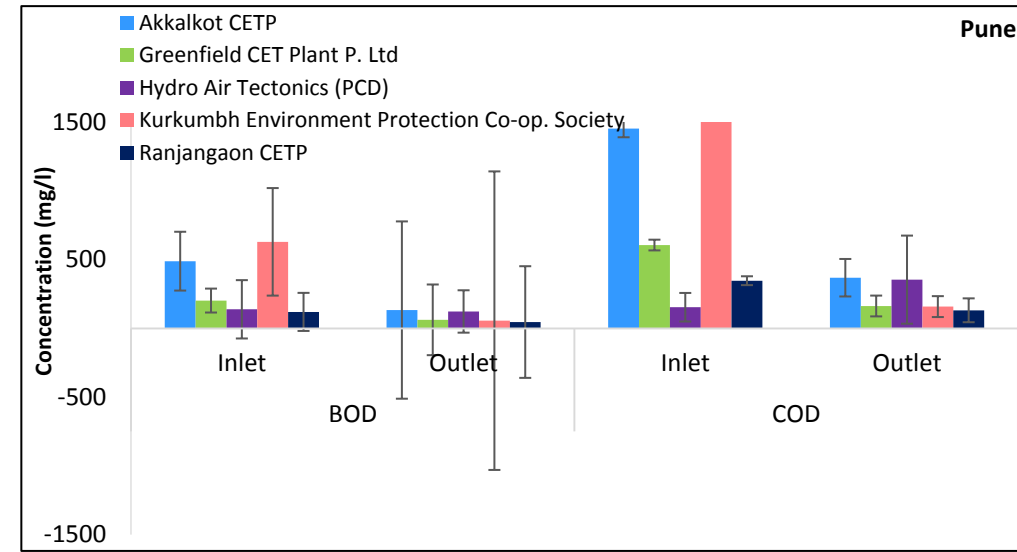
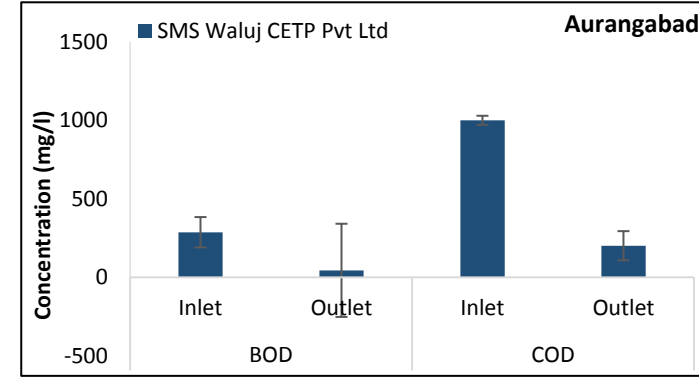
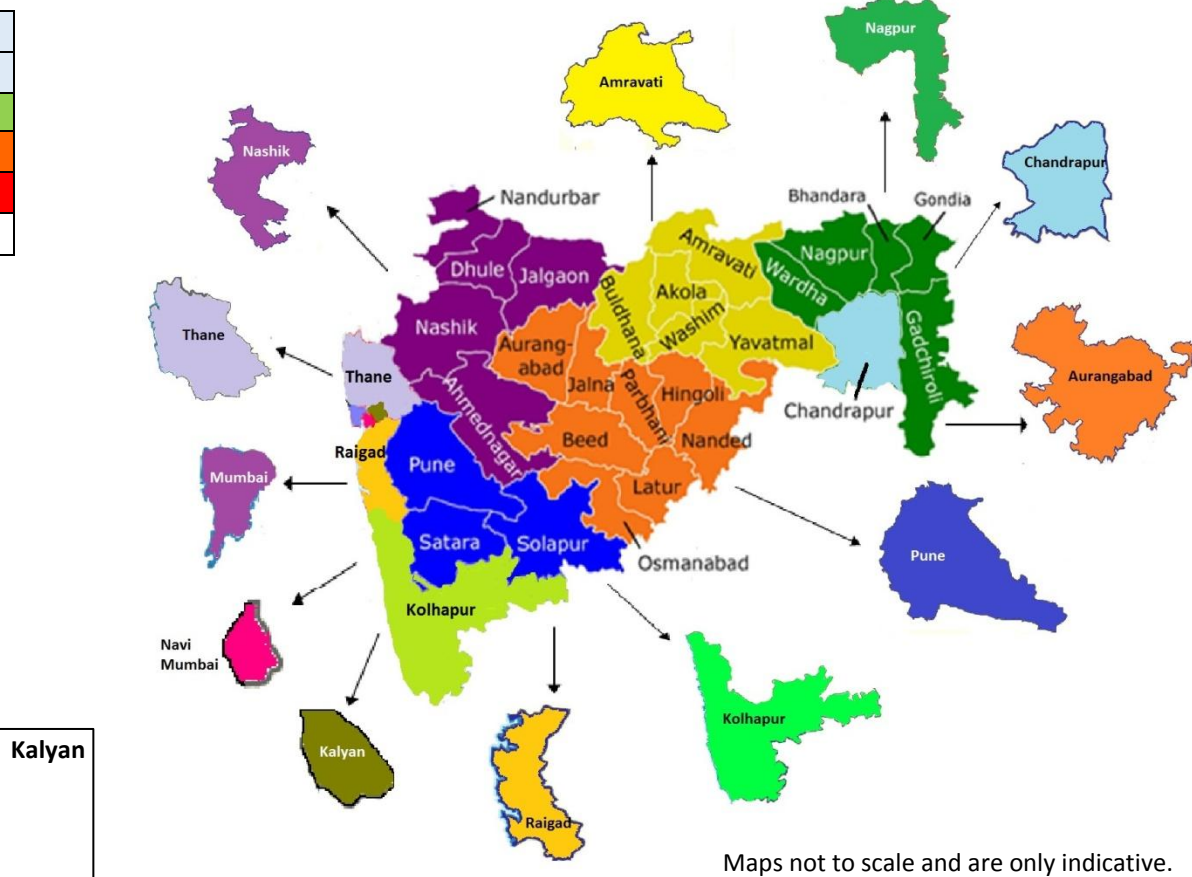
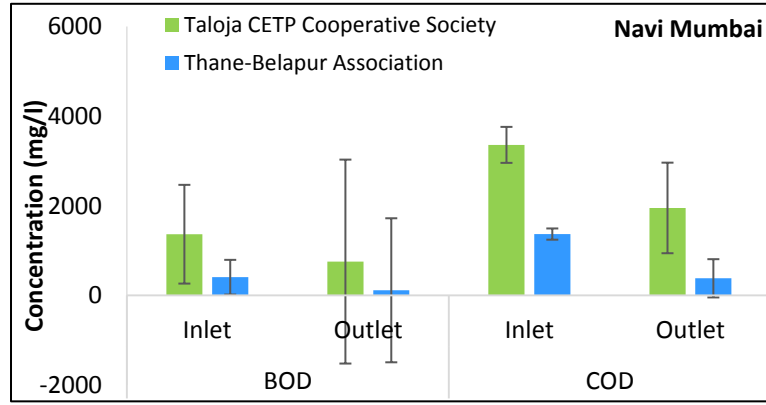
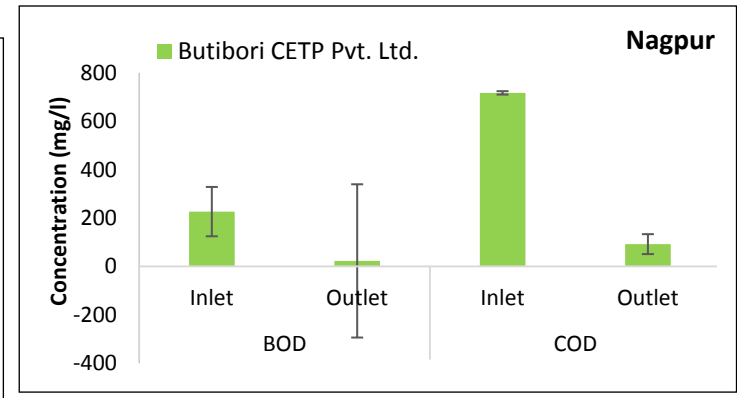
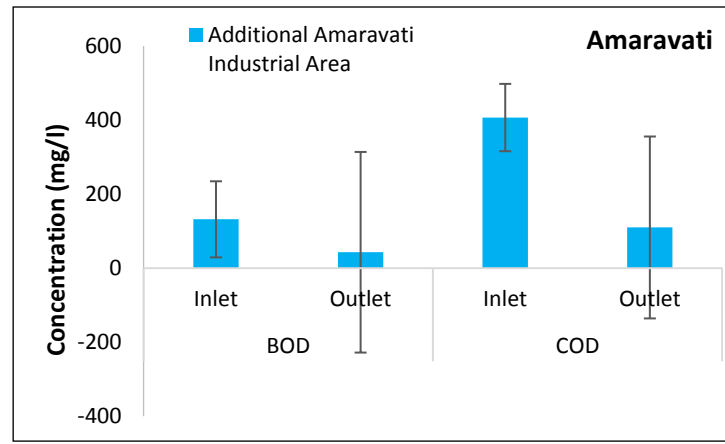
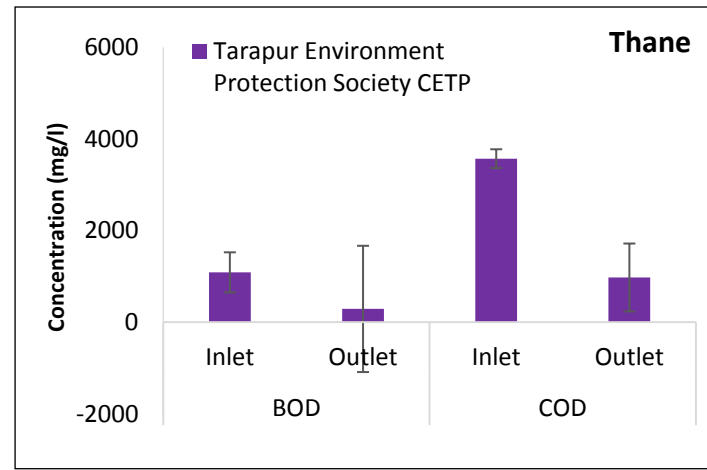
Amaravati		
LSI	MSI	SSI
1	9	3853
12	12	2834
40	6	188
White - 318		

Aurangabad		
LSI	MSI	SSI
31	41	5464
73	84	2238
233	25	396
White - 83		

Chandrapur		
LSI	MSI	SSI
4	6	602
9	13	431
93	10	73
White - 83		
221	54	1114
White - 3425		

Kalyan		
LSI	MSI	SSI
31	34	1768
90	51	1168
95	63	1746
White - 225		

Mumbai		
LSI	MSI	SSI
31	100	2447
585	155	751
148	20	605
White - 23		



Nagpur		
LSI	MSI	SSI
10	14	2561
123	52	2727
215	13	845
White - 139		

Nashik		
LSI	MSI	SSI
128	54	5847
136	82	2667
293	61	1302
White - 1896		

Navi Mumbai		
LSI	MSI	SSI
53	74	1868
148	86	1034
178	43	1090
White - 274		

Pune		
LSI	MSI	SSI
335	269	7541
1224	284	4355
857	132	2225
White - 955		

Raigad		
LSI	MSI	SSI
21	25	587
93	29	516
184	33	375
White - 46		

Thane		
LSI	MSI	SSI
29	17	1669
230	34	867
190	28	742
White - 75		

Fig. 5.12. CETP Performance and Industrial statistics for regions in Maharashtra in 2018-19.

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. The collective amount of effluent generated by industries in Aurangabad was 5 MLD. Industrial effluent treated at this CETP during the year 2018-19 was 4 to 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 5.35.**

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

Parameters (mg/l)			Location
			SMS Waluj CETP Pvt. Ltd.
Inlet	BOD (mg/l)	Min.	125
		Max.	530
		Mean	286
		SD.	97
	COD (mg/l)	Min.	480
		Max.	1840
		Mean	999
		SD.	297
Outlet	BOD (mg/l)	Min.	22
		Max.	136
		Mean	44
		SD.	29
	COD (mg/l)	Min.	100
		Max.	520
		Mean	201
		SD.	93

From **Table 5.35.** it is evident that the CETP at Aurangabad was performing with 85% efficiency in reducing BOD and about 80% 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. Chandrapur

The total amount of effluent generated from industries in this Region was 258.24 MLD and there is no CETP provided in this Region. However industries are treating their effluent individually within the premises. Therefore all the effluent generated was treated during the year 2018-19. The total number of industries in Chandrapur under each of the category is demonstrated in **Figure 5.12.**

5.5.1.4. 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 2018-19 was 8.54 MLD, all of which was treated by these CETPs during the year 2018-19. The minimum and maximum SD. was found at Dombivli Better Environment System Association for inlet COD and outlet BOD respectively. 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 2018-19 is presented in **Table 5.36.**

Table 5.36. Statistical Analysis Data for CETP Performance in Kalyan Region.

Parameters (mg/l)			Location				
			ACMA CETP Cooperative Society Ltd.	Badlapur CETP Association	Chikhli-Morivali Effluent Treatment	Dombivli Better Environment System Association	Dombivli CETP (Chemical) (Phase-II)
Inlet	BOD (mg/l)	Min.	80	190	60	190	90
		Max.	700	1150	950	1450	900
		Mean	297	537	232	749	481
		SD.	123	200	154	296	168
	COD (mg/l)	Min.	272	604	196	580	312
		Max.	2208	4560	3072	5120	2464
		Mean	1024	1704	740	2242	1526
		SD.	409	657	521	939	491
Outlet	BOD (mg/l)	Min.	4	10	10	12	10
		Max.	165	280	135	160	110
		Mean	42	70	63	45	47
		SD.	39	57	39	25	27
	COD (mg/l)	Min.	20	32	40	72	44
		Max.	588	668	428	376	360
		Mean	153	224	214	156	169
		SD.	132	144	111	61	82

From **Table 5.36.** it can be observed that the CETP at Dombivli Better Environment System Association was performing at more than 93% efficiency in reducing BOD and COD whereas the performance of the rest of the CETPs was more than 85% in BOD and COD reduction with the exception of the Chikhli-Morivali Effluent Treatment where the efficiency in reducing both BOD and COD was 73% and 71% respectively. 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.

5.5.1.5. Kolhapur

There are 5 operational CETPs in this Region. The collective treatment capacity of these CETPs is 29.8 MLD. The total effluent generated and treated by industries in this Region was 19.8 MLD. The total industrial effluent received and treated at these CETPs during the year 2018-19 was 19.8 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 5.37.** The minimum SD. was found at Ichalkaranji Textile Development Cluster Ltd. (1 MLD) whereas the maximum SD. was found at Lote Parshuram Environment Protection Co-op. Society.

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

Parameters (mg/l)			Location				
			Ichalkaranji Textile Development Cluster Ltd. (1 MLD)	Ichalkaranji Textile Development Cluster Ltd. (12 MLD)	Kagal-Hatkanangale C.E.T.P.	L.K. A kiwate Industrial Co-op. Estate Ltd.	Lote Parshuram Environment Protection Co-op Society
Inlet	BOD (mg/l)	Min.	120	180	36	56	140
		Max.	900	900	260	1600	3600
		Mean	470	570	89	537	553

Outlet	COD (mg/l)	SD.	204	198	45	265	468
		Min.	376	528	124	236	224
		Max.	4280	4240	744	6280	11840
		Mean	1786	2202	284	2098	2048
	BOD (mg/l)	SD.	830	825	128	1069	1570
		Min.	14	20	8	16	20
		Max.	90	100	110	170	290
		Mean	34	42	33	57	113
	COD (mg/l)	SD.	12	20	21	28	58
		Min.	60	64	36	44	108
		Max.	248	284	356	468	880
		Mean	155	162	136	200	344
		SD.	40	49	64	63	168

It is evident from **Table 5.37.** that Kagal-Hatkanangale CETP was performing with the least efficiency of about 52% in COD reduction and 63% in BOD reduction. The CETP at L.K. Akiwate Industrial Co-op. Estate Ltd. was performing at 89% efficiency in reducing BOD and at 90% efficiency in reducing COD. The Lote Parshuram Environment Protection Co-op. Society were performing well with 80% efficiency in reducing BOD and at 83% efficiency in reducing COD. Both the CETPs at Ichalkaranji Textile Development Cluster Ltd operated at more than 91% efficiency in BOD and COD reduction. The prescribed discharge limits were met at all CETPs except at Lote Parshuram Environment Protection Co-op. Society.

5.5.1.6. Mumbai

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

5.5.1.7. 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 2018-19 was 4.8 MLD, all of which was treated at this CETP. 2MLD CETP is proposed at Hingna MIDC area. Total number of industries in Nagpur under each category is presented in **Figure 5.12.** and performance of the CETP is presented in **Table 5.38.**

Table 5.38. Statistical Analysis Data for CETP Performance in Nagpur Region.

Parameters (mg/l)		Location	
		Butibori CETP Pvt. Ltd.	
Inlet	BOD (mg/l)	Min.	84
		Max.	920
		Mean	259
		SD.	171
	COD (mg/l)	Min.	284
		Max.	3136
		Mean	850
		SD.	539
Outlet	BOD (mg/l)	Min.	8
		Max.	42
		Mean	22
		SD.	7
	COD (mg/l)	Min.	32
		Max.	244

		Mean	87
		SD.	39

From the table it is clear that 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.

5.5.1.8. Nashik

There presently exists no CETP in this Region. However, Consent to Establish for a CETP at Nashik Metal Finishers Ltd., Plot No. P30, MIDC Ambad, District – Nashik has been obtained. Satpur MIDC CETP is under construction for capacity 0.5MLD. Total number of industries in Nashik under each category is demonstrated in **Figure 5.12.**

5.5.1.9. Navi Mumbai

There are two operational CETPs in this Region with a collective treatment capacity of 49.5 MLD. The total effluent generated in Navi Mumbai Region and received at the CETPs during the year 2018-19 was 44 MLD of which 43.5 MLD was being treated in these CETPs. The minimum SD. was found at Thane Belapur Association and the maximum SD. was found at Taloja CETP Cooperative Society. 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 5.39.**

Table 5.39. Statistical Analysis Data for CETP Performance in Navi Mumbai Region.

Parameters (mg/l)			Location	
			Taloja CETP Cooperative Society	Thane-Belapur Association
Inlet	BOD (mg/l)	Min.	180	0
		Max.	6000	2600
		Mean	1366	407
		SD.	1101	387
	COD (mg/l)	Min.	468	0
		Max.	11200	10960
		Mean	3359	1369
		SD.	2275	1607
Outlet	BOD (mg/l)	Min.	90	13
		Max.	1750	700
		Mean	755	115
		SD.	401	125
	COD (mg/l)	Min.	232	60
		Max.	4960	2480
		Mean	1952	382
		SD.	1010	427

It can be observed from **Table 5.39.** that the CETP at Thane-Belapur Association is performing well with more than 71% efficiency in reducing BOD and at 72% efficiency in reducing COD. The Taloja CETP Cooperative Society has about 45% efficiency in reducing BOD and 42% 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.

5.5.1.10. 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 2018-19 was 4.85 MLD. The quantity of effluent received and treated at these CETPs during the year 2018-19 was 4.45 MLD. The minimum and maximum SD. was found at Kurkumbh Environment Protection Co-op. Society for inlet COD and outlet BOD respectively. 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 Pune Region.

Parameters (mg/l)			Location				
			Akkalkot CETP	Greenfield CET Plant P. Ltd	Hydro Air Tectonics (PCD)	Kurkumbh Environment Protection Co-op. Society	Ranjangaon CETP
Inlet	BOD (mg/l)	Min.	135	65	20	65	2
		Max.	1400	490	1550	1850	580
		Mean	489	203	139	630	120
		SD.	214	87	212	391	139
	COD (mg/l)	Min.	348	180	40	484	60
		Max.	4320	1488	888	5840	1744
		Mean	1453	606	297	1807	347
		SD.	645	257	154	1086	406

Outlet	BOD (mg/l)	Min.	42	15	13	13	13
		Max.	440	240	480	170	125
		Mean	134	62	123	56	46
		SD.	63	39	104	29	32
	COD (mg/l)	Min.	116	56	36	36	36
		Max.	808	424	1432	512	364
		Mean	369	163	355	159	132
		SD.	136	76	320	76	87

From **Table 5.40.** it is evident that the CETP at Kurkumbh Environment Protection Co-op. Society is performing very well at about 91% efficiency. The CETP at Hydro Air Tectonics (PCD) had the lowest performance with about 11% efficiency. Akkalkot CETP was performing with 73% efficiency in reducing BOD and 75% efficiency in reducing COD. The Greenfield CET Plant P. Ltd. was performing at 69% efficiency in reducing BOD and at 73% efficiency in reducing COD. The Ranjangaon CETP was performing with 61% at reducing BOD and with 62% efficiency in reducing COD. The discharge limit for BOD was being met at all CETPs except at Hydro Air Tectonics (PCD) and Akkalkot CETP. The limit for COD was being attained at all CETPs except at Akkalkot CETP and Hydro Air Tectonics (PCD).

5.5.1.11. 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 2018-19 was 30 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 5.41.** The minimum SD. was found at MMA-CETP Cooperative Society Ltd. while the maximum SD. was found at RIA CETP Co-op. Society Ltd.

Table 5.41. Statistical Analysis Data for CETP Performance in Raigad Region.

Parameters (mg/l)			Location		
			MMA-CETP Cooperative Society Ltd.	PRIA CETP (I) Ltd.	RIA CETP Co-op. Society Ltd.
Inlet	BOD (mg/l)	Min.	36	15	85
		Max.	480	1250	2200
		Mean	264	214	771
		SD.	104	261	439
	COD (mg/l)	Min.	108	48	280
		Max.	2336	2912	6600
		Mean	922	624	2474
		SD.	427	661	1368
Outlet	BOD (mg/l)	Min.	18	25	42
		Max.	180	370	1000
		Mean	40	154	174
		SD.	25	74	159
	COD (mg/l)	Min.	68	72	216
		Max.	496	728	3312
		Mean	164	404	573
		SD.	64	186	531

From **Table 5.41.** it is evident that the MMA-CETP Cooperative Society Ltd. was performing very well with 85% efficiency in reducing BOD and with 82% efficiency in reducing COD. The PRIA CETP (I) Ltd. was performing least efficiently with 28% efficiency in reducing BOD and 35% efficiency in reducing COD. The RIA CETP Co-op. Society Ltd. was performing at 77% efficiency. The discharge limits of 100 mg/l BOD and 250 mg/l for COD respectively were being attained only at MMA-CETP Cooperative Society Ltd.

5.5.1.12. Thane

There is one CETP in Thane Region. A CETP with treatment capacity of 50 MLD is proposed to be installed at MIDC Tarapur. The total industrial effluent generated during the year 2018-19 was 28 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 5.42.**

Table 5.42. Statistical Analysis Data for CETP Performance in Thane Region.

Parameters (mg/l)			Location
			Tarapur Environment Protection Society CETP
Inlet	BOD (mg/l)	Min.	230
		Max.	2450
		Mean	1088
		SD.	437
	COD (mg/l)	Min.	540
		Max.	7840
		Mean	3568
		SD.	1378
Outlet	BOD (mg/l)	Min.	20
		Max.	900
		Mean	290
		SD.	206

	COD (mg/l)	Min.	60
		Max.	3088
		Mean	976
		SD.	741

From **Table 5.42.** it is observed that the Tarapur Environment Protection Society CETP was performing very well with 73% in reducing BOD and COD. However, the outlet values of BOD and COD were beyond the prescribed discharge limits of 100 mg/l and 250 mg/l.

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. Currently there are 112 operational STPs in the State of Maharashtra. The total quantity of domestic effluent received by STPs during the year 2018-19 was 6121.95 MLD while the total quantity of domestic effluent treated by STPs during this year was 5592.28 MLD. Standard deviation for STP performance has not been included in this report on account of unavailability of flow values corresponding to the outlet values for each STP.

5.6.1.1. 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 2018-19. 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 5.43.**

Table 5.43. 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	8.20	7.40	36	7.4	135	10
Lalkhadi, Amaravati STP II	7.90	7.30	39.5	25.5	14	11
Shegaon, Buldana	7.62	7.82	48.16	27	46	42

From **Table 5.43** It is evident that the outlet values for BOD were within the prescribed discharge standard of 10 mg/l only at Lalkhadi, Amaravati STP I. The outlet values for suspended solids were beyond the prescribed standard of 20 mg/l only at Shegaon, Buldana.

5.6.1.2. Aurangabad

There are 7 STPs in this Region, 5 of which have been provided by Aurangabad Municipal Corporation. The STPs at Bondar and Elichpur have been provided by the Nanded-Waghala City Municipal Corporation. The total treatment capacity of these STPs is 343 MLD. The total domestic effluent received at these STPs during the year 2018-19 was 134 MLD and all of it was treated by these STPs. The mean of annual performance and analysis of all STPs provided in Aurangabad Region is represented in **Table 5.44.**

Table 5.44. 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	-	7.7	-	43	-	-
Padegaon, Aurangabad	-	7.3	-	48.6	-	-
Salim Ali Lake, Aurangabad	-	7.7	-	71	-	-
Zalta, Aurangabad	-	7.6	-	45	-	-
Bondar STP	-	7.6	-	32	-	20
Elichpur STP	-	7.1	-	35	-	18
Sangvi STP	-	8.2	-	82	-	90

It can be observed from **Table 5.44.** 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.

5.6.1.3. 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 2018-19 was 66.5 MLD. The mean of annual performance and analysis of all STPs provided in Chandrapur Region are represented in **Table 5.45.**

Table 5.45. 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	7.64	8.01	12	7.07	34	20
Rehmat Nagar, Chandrapur	7.97	7.87	13.10	4.53	34.67	22
Azad Nagar, Chandrapur	7.65	8.22	34.6	3.8	96	18

It is evident from **Table 5.45.** 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 Rehmat Nagar, Chandrapur STP

5.6.1.4. Kalyan

There are 10 STPs in this Region, the collective treatment capacity of which is 229 MLD. The total domestic effluent received at these STPs was 348 MLD of which 95.5 MLD was treated during the year 2018-19. The mean off annual performance and analysis of all STPs provided in Kalyan Region are represented in **Table 5.46.**

Table 5.46. 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	-	21.4	-	20.5
Adharwadi STP: Tal. Kalyan	-	7	-	24.4	-	16.9
Chinchapada STP: Mouje- Kate Manivali	-	7.3	-	22	-	22.8
Dombivali Thakurli STP: Motagon, Dombivali	Operational					
Titwala (E) STP: Mouje- Manda (E), Tal. Kalyan	-	7.1	-	9	-	14
Titwala (W) STP: Mouje- Manda (E), Tal. Kalyan.	-	7.2	-	22.1	-	17.7
Vadalgaoon	7.4	7.4	97.5	36	96	36
Chikloli	6.5	6.7	40	11	48	18

Badlapur	7	7.2	93.8	32.4	66	44
Bhiwandi Nizampur City Municipal Corporation, Bhiwandi, Tal.Bhiwandi, Dist. Thane	6.7	6.95	117	15.5	66	16

From **Table 5.46.**, it can be observed that the outlet values of BOD were greater than the prescribed discharge standard of 10 mg/l at all STPs except at Titwala (E) STP, Chikloli and Bhiwandi Nizampur City Municipal Corporation. The outlet values of suspended solids exceeded prescribed discharge standard of 20 mg/l at Chinchapada STP, Vadalgaon and Badlapur.

5.6.1.5. 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 191.7 MLD. The total domestic effluent received at these STPs was 191.7 MLD of which 152.7 MLD was treated during the year 2018-19. The mean off annual performance and analysis of all STPs provided in Kolhapur Region are represented in **Table 5.47.**

Table 5.47. 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	7.4	71	7.3	64	17.9
Dudhali	7.2	7.4	67	4	53	13.7
Ichalkaranji	6.6	7.2	127	5.3	131.5	16
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.

5.6.1.6. Mumbai

There are 8 operational STPs in Mumbai Region. The collective treatment capacity of these STPs is 2906.8 MLD. The total effluent received at these STPs was 2279 MLD of which 2052.1 MLD was collectively treated during the year 2018-19 by these STPs. The mean of annual performance and analysis of all STPs provided in Mumbai Region are represented in **Table 5.48.**

Table 5.48. 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	6.6	7.2	110	18	60	18
Varsova	6.6	6.9	110	45	90	28
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 5.48.**, it can be observed that outlet values for BOD were greater than the prescribed discharge standard of 10 mg/l at all STPs except Bandra and Bhandup whereas the outlet values for

suspended solids were greater than the prescribed standard of 20 mg/l at Colaba, Worli, Varsova, Bhandup and Ghatkopar.

5.6.1.7. Nagpur

There are four operational STPs in this Region provided by Nagpur Municipal Corporation (NMC). The collective treatment capacity of these STPs is 340 MLD. The total effluent received at these STPs was 505 MLD of which 340 MLD was treated during the year 2018-19. The mean of annual performance and analysis of all STPs provided in Nagpur Region are represented in **Table 5.49**.

Table 5.49. 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)	7.37	7.2	40.7	2.8	250	2.8
Bhandewadi (200CMD)	7.5	7.1	150	8.5	220	12.5
Mankapur	7	7.5	95	20	130	40
Mokshdham	6.9	7.3	115	25	132	20

From **Table 5.49**, it can be observed that outlet values for BOD at STPs were within the prescribed standard of 10 mg/l at Bhandewadi -130CMD and 200CMD. The outlet value at Mankapur STP were greater than the prescribed discharge standard of 20 mg/l.

5.6.1.8. 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 two have been provided by Shirpur Municipal Council, Dist. Dhule. The collective treatment capacity of these STPs is 367.14 MLD. The total domestic effluent generated in this Region during the year 2018-19 was 360.14 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 9 MLD and the total sewage received at the STPs at Shirpur was 12.5 MLD. The mean of annual performance and analysis of all STPs provided in Nashik Region are represented in **Table 5.50**.

Table 5.50. 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	7.6	NA	13.32	NA	41.6
Panchak 21 MLD	NA	7.6	NA	13.32	NA	41.6
Panchak 32 MLD	NA	7.73	NA	10.08	NA	40
Chehedi 20 MLD	NA	7.73	NA	12.75	NA	37.75
Chehedi 22 MLD	NA	7.62	NA	14.75	NA	39.25
Tapowan-78 MLD	NA	7.39	NA	31	NA	73
Tapowan-52 MLD	NA	7.29	NA	22.66	NA	94
Agar Takali 70 MLD	NA	7.48	NA	15.9	NA	69.25
Agar Takali 40 MLD	NA	7.54	NA	12	NA	75.33
Shirdi Nagarpanchayat, Shirdi, Tal-Rahata Dist-Ahmednagar.	8.5	7.4	250	6	200	10
Municipal Council - Shirpur, Tal. Shirpur, Dist. Dhule	7.42	7.19	90	12	68	23
	7.3	7.26	38	12	140	122

From **Table 5.50** It is evident that the outlet value for BOD is within prescribed discharge standard of 10 mg/l at Shirdi Nagarpanchayat only while the outlet values for suspended solids were within the prescribed standard of 20 mg/l at Shirdi Nagarpanchayat

5.6.1.9. Navi Mumbai

There are 8 operational STPs in Navi Mumbai Region. The collective treatment capacity of these STPs is 456.7 MLD. The total effluent received at these STPs was 456.7 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 5.51**.

Table 5.51 Mean of Annual Performance of STPs in Navi Mumbai Region. * NC = Not collected

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
CBD Belapur Sector – 12	NC	NC	NC	NC	NC	NC
Vashi Sector – 18	NC	7.1	NC	10	NC	10
Nerul Sector – 2	NC	6.8	NC	35.5	NC	54.5
Sanpada Sector – 20	NC	6.9	NC	4	NC	12
Seawood Sector – 50	NC	NC	NC	NC	NC	NC
Ghansoli Sector – 15	NC	7.00	NC	5.1	NC	15.20
Airoli Sector – 18	NC	7.10	NC	5	NC	13.5
Koparkhairane	NC	7.30	NC	7.60	NC	20.00

From **Table 5.51**, 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.

5.6.1.10. Pune

There are 38 STPs in this region of which 33 are operation during the year 2018-19. The Old Naidu STP is not in operation at present. The STP at Lonavala is currently undergoing renovation to enhancing its treatment from 4 MLD to 6 MLD. 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 2018-19 was 1561.65 of which 1468.14 MLD was the total sewage treated. The mean of annual performance and analysis of all STPs provided in Pune Region are represented in **Table 5.52**.

Table 5.52. 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	-	7.6	-	8.2	-	10
Bopodi STP, S.No. 2A, 2B, 2C, 2D & 6 (P) Bopodi	-	7.5	-	14.8	-	15
S. No. 24, Shivajinagar	-	7.5	-	12.3	-	12
Bhairoba STP, Final plot No. 330 S. No. 33A, 33B Koregaon Park	-	7.6	-	8.2	-	34
Mundhwa STP, S. No. 2, 3A, 4 Mundhwa	-	7.5	-	8.6	-	14
Vithalwadi STP, S. No. 20(P) Hingne	-	7.8	-	7.2	-	10
Old Naidu STP, S.No.439 To 444 Pune final Plot No. 98, Kennedy Road	-	-	-	-	-	-

Baner STP, S. No. 221 To 227 Baner	-	7.6	-	8.4	-	8
Kharadi STP, S. No. 74, 75 Kharadi	-	7.6	-	5.7	-	12
New Naidu STP, S. No. 439 To 444, Pune final Plot No. 98 Kennedy Road	-	7.6	-	9.5	-	12
Chikhali Phase I	-	7.6	-	11.17	-	10.0
Chikhali Phase II	-	7.80	-	13.67	-	10.0
Akurdi	-	7.53	-	6.17	-	8.0
Ravet	-	7.53	-	5.40	-	8.0
Chinchwad Phase I (Bhatnagar)	-	7.67	-	8.83	-	11.33
Chinchwad Phase II	-	7.63	-	8.0	-	8.0
Kasarwadi I	-	7.7	-	6.7	-	14.0
Kasarwadi II	-	7.53	-	9.70	-	10.0
Kasarwadi III	-	7.6	-	6.9	-	7.3
Charholi Phase I	-	7.57	-	8.83	-	12.0
Sangvi Phase I	-	7.33	-	12.7	-	9.33
Sangvi Phase II (Dapodi)	-	7.60	-	7.47	-	10.67
Pimple Nilakh	-	7.63	-	10.10	-	12.0
Karad Municipal Council, Sr.No.342-B, Baradabari, Shaniwar Peth, Karad, Tal-Karad, Dist-Satara	Not collected	7.7	Not collected	17	Not collected	22
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	7.6	Not collected	225	Not collected	398
Mahabaleshwar Municipal Council STP No. 2 at Survey No. 626, near Dhobi Ghat, Mahabaleshwar, Tal-Mahabaleshwar, Dist-Satara	Not collected	7.5	Not collected	175	Not collected	94
Panchgani Municipal Council STP No. 1 at Survey No. 83/2 near Siddharthnagar, Panchgani, Tal-Mahabaleshwar, Dist-Satara	Not collected	6.8	Not collected	58	Not collected	126
Panchgani Municipal Council STP No. 2 at Plot no. 497/4 & 5 near Shivajinagar, Panchgani, Tal-Mahabaleshwar, Dist-Satara	Not collected	6.7	Not collected	130	Not collected	266
Panchgani Municipal Council STP No. 3 at Hindu Crematorium, Panchgani, Tal-Mahabaleshwar, Dist-Satara	7.7	7.3	520	35	832	60
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 5.52.** that the outlet values of BOD were greater than the prescribed discharge standard of 10 mg/l at Bopodi STP, S. No. 24, Shivajinagar, Chikhali Phase I, Chikhali Phase II, Sangvi Phase I, Pimple Nilakh, Karad Municipal Council, Mahabaleshwar Municipal Council STP No. 1, Mahabaleshwar Municipal Council STP No. 2, Panchgani Municipal Council STP No. 1, Panchgani

Municipal Council STP No. 2 Panchgani Municipal Council STP No. 3 and Pandharpur Municipal Corporation, Gopalpur STP. The outlet values of suspended solids were greater than the prescribed discharge standard of 20 mg/l at Bhairoba STP, Mahabaleshwar Municipal Council STP No.1, Mahabaleshwar Municipal Council STP No.2, Panchgani Municipal Council STP No. 1, Panchgani Municipal Council STP No. 2, Panchgani Municipal Council STP No. 3 and Pandharpur Municipal Corporation.

5.6.1.11. Raigad

There are 6 STPs in this Region which have a collective treatment capacity of 279 MLD. The total sewage generated in this Region was 215 MLD. The same amount of domestic sewage was received and treated during the year 2018-19. The mean of annual performance and analysis of all STPs provided in Raigad Region are represented in **Table 5.53**.

Table 5.53. 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
CIDCO STP, Sector - 16, Kharghar	6.9	6.92	23.5	7.4	20	15.6
CIDCO STP, Sector - 16, Kharghar	6.9	6.88	5.67	39	12.67	15.33
CIDCO STP, Sector - 12, Kalamboli	6.5	6.88	110	14	112	22
CIDCO STP, Sector - 32, Kamothe	6.5	6.76	110	39.2	70	30.8
PMC STP, Panvel	7.1	6.9	8	15.625	12	26.5
CIDCO STP, Sector-6, Ulwe	-	7.3	-	6	-	14

From **Table 5.53**, it can be observed that the outlet values for BOD are within the prescribed standards of 10 mg/l at CIDCO STP, Kharghar and Sector – 16 and CIDCO STP, Sector – 6, Ulwe. Outlet values for Suspended Solids are within the prescribed limits of 20mg/l at CIDCO STP, Sector - 16, Kharghar and CIDCO STP, Sector-6, Ulwe

5.6.1.12. Thane

There are 12 operational STPs in Thane Region with a collective treatment capacity of 261.4 MLD. The total quantity of domestic effluent generated in this Region during the year 2018-19 was 261.4 MLD of which 170 MLD was collectively treated by these STPs. The quantity of domestic effluent received at these STPs is not available. The mean of annual performance and analysis of all STPs provided in Thane Region are represented in **Table 5.54**.

Table 5.54. 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	5.4	7.5	123.75	10	123	12.2
Kopri	6.9	7.2	40.4	5	52.2	11.8
Vartak Nagar	6.7	7	-	12	72	10
Zone-4 STP-MBMC-Golden Nest	-	6.9	-	20	-	64
Jessal Park STP-MBMC	-	6.8	-	130	-	104
Shruti STP-MBMC	-	7.3	-	6	-	10
6-C STP MBMC Shanti Nagar	-	6.7	-	70	-	30
6-A STP MBMC Shanti Park	-	7.1	-	12	-	25
zone-5 STP-MBMC-Kanakiya	-	7	-	22	-	28

Zone-8 -Ghodbunder-Kashigaon, Mashachha pada Mira-road Hatkesh to Highway, Survey No. 233	-	6.9	-	6	-	10
Zone-2-Bhayander (W) near Garden Court Tower	-	7	-	18	-	31
VVCM- Bolinj STP	-	6.9	-	125	-	60

It is evident from the above table that the outlet values for BOD were greater than the prescribed standard of 10 mg/l at Vartak Nagar, Zone-4 STP, Jessal Park STP-MBMC, 6-C STP MBMC Shanti Nagar, 6-A STP MBMC Shanti Park, zone-5 STP-MBMC-Kanakiya, Zone-2-Bhayander (W) near Garden Court Tower and VVCM- Bolinj STP. The outlet values for suspended solids were greater than the prescribed standard of 20 mg/l at Zone-4 STP-MBMC-Golden Nest, Jessal Park STP-MBMC, 6-C STP MBMC Shanti Nagar, zone-5 STP-MBMC-Kanakiya, Zone-2-Bhayander (W) near Garden Court Tower and VVCM- Bolinj STP.

5.7. Solid Waste Management in Maharashtra

Solid waste is classified into four different types depending on their source. The first category of solid waste is Municipal Solid Waste (MSW). It consists of household waste, construction and demolition debris (C & D), sanitation residue, and waste from streets, generated mainly from residential and commercial complexes. As per MoEF & CC it includes commercial and residential waste generated in municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated Bio-Medical Wastes. The second category of solid waste is Hazardous Solid Waste (HSW) which is also termed as industrial waste. It may contain toxic substances which are corrosive, highly inflammable, or which react when exposed to certain elements e.g. gases. The third category of solid waste is biomedical waste (BMW) or hospital waste. It is usually infectious waste that may include waste like sharps, soiled waste, disposables, anatomical waste, cultures, discarded medicines, chemical wastes usually in the form of disposable syringes, swabs, bandages, body fluids, human excreta, etc. These can be a serious threat to human health if not managed in a scientific and discriminate manner. The fourth category of waste is electronic waste or e-waste and includes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered e-waste.

Major waste treatment and disposal methods for MSW include thermal treatment, dumps and landfills, and biological waste treatment. There are various processes used to treat BMW viz. chemical processes, thermal processes, mechanical processes, irradiation processes and biological processes. Treatment technologies for HSW have been categorized as physical, chemical, biological, thermal, or stabilization / fixation. The two methods for proper treatment of e-waste are recycling and refurbishing.

Municipal Solid Waste generated in Maharashtra State is treated in 56 common facilities provided by either Corporations or Municipal Councils. 4 Common Hazardous Waste Treatment Facilities are provided to treat hazardous waste generated in the State. 3 Common Waste Treatment Facilities are provided to treat biomedical waste generated. Details of waste generation, facilities and treatment provided are elaborated in the following sections of the report.

5.7.1. Analysis of Municipal Solid Waste Management with Statistical details

The detailed report on the quantity of different categories of MSW generated and treated in all the Regions in Maharashtra during the year 2018-19 is given below.

5.7.1.1. Amaravati

- Quantity of Municipal Solid Waste generated - 915.77 MT/day of which 240.75 MT/day was treated.
- Only about 26% of Municipal Solid Waste was treated.

5.7.1.2. Aurangabad

- Quantity of Municipal Solid Waste generated - 1722.56 MT/day of which 915.3 MT/day was treated.
- About 53% of Municipal Solid Waste was treated.

5.7.1.3. Chandrapur

- Quantity of Municipal Solid Waste generated - 452.1 MT/day of which 221.87 MT/day was treated.
- 49% of Municipal Solid Waste was treated.

5.7.1.4. Kalyan

- Quantity of Municipal Solid Waste generated - 1692.07 MT/day of which 266 MT/day was treated.
- Only about 15% of Municipal Solid Waste was treated.

5.7.1.5. Kolhapur

- Quantity of Municipal Solid Waste generated - 753.63 MT/day of which 458.61 MT/day was treated.
- About 61% Municipal Solid Waste was treated.

5.7.1.6. Mumbai

- Quantity of Municipal Solid Waste generated - 7,700 MT/day of which 4,407 MT/day was treated.
- About 57% Municipal Solid Waste was treated.

5.7.1.7. Nagpur

- Quantity of Municipal Solid Waste generated - 1594.97 MT/day of which 407.64 MT/day was treated.
- Only about 26% of Municipal Solid Waste was treated.

5.7.1.8. Nashik

- Quantity of Municipal Solid Waste generated - 1986.04 MT/day of which 1218.11 MT/day was treated.
- 61% of Municipal Solid Waste was treated.

5.7.1.9. Navi Mumbai

- Quantity of Municipal Solid Waste generated - 711 MT/day of which 704 MT/day was treated.
- 99% of Municipal Solid Waste was treated.

5.7.1.10. Pune

- Quantity of Municipal Solid Waste generated - 3627.82 MT/day of which 2672.85 MT/day was treated.
- About 74% of Municipal Solid Waste was treated.

5.7.1.11. Raigad

- Quantity of Municipal Solid Waste generated – 580.74 MT/day of which 546.3 MT/day was treated.
- 94% of Municipal Solid Waste was treated.

5.7.1.12. Thane

- Quantity of Municipal Solid Waste generated – 1970.85 MT/day of which 512.6 MT/day was treated.
- Only 26% of Municipal Solid Waste was treated.

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 2015-16, 2016-17, 2017-18 and 2018-19 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.

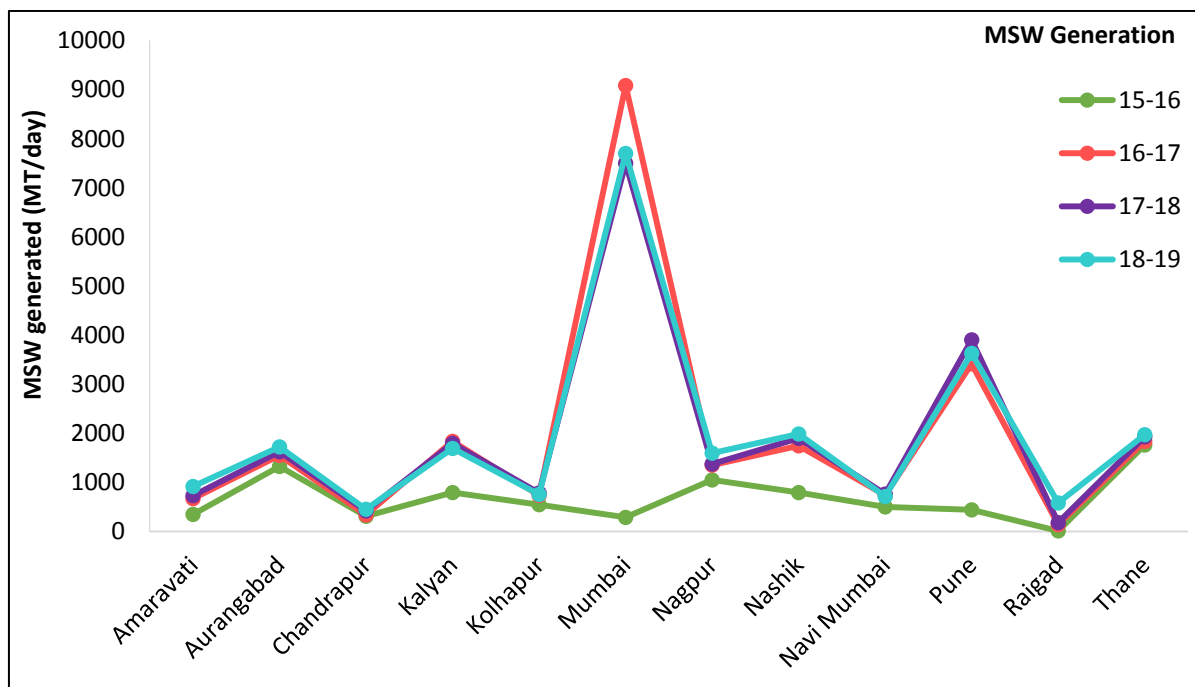


Figure 5.13. Trend Analysis of MSW generation over 4 years.

From **Figure 5.13.** it can be seen that the generation of MSW shows an increasing trend over the 4 years in all Regions in the State. In regions such as Kalyan, Nashik and Pune, the generation of MSW during the years 2016-17, 2017-18 and 2018-19 has increased more than twice the amount that was generated in these Regions during the year 2015-16. The most striking increase in generation of MSW since the year 2015-16 is observed in the Regions of Mumbai and Raigad. In the remaining Regions of Aurangabad, Chandrapur, Kolhapur, Nagpur, Navi Mumbai and Thane, the generation of MSW over these 4 years has increased without drastically high differences.

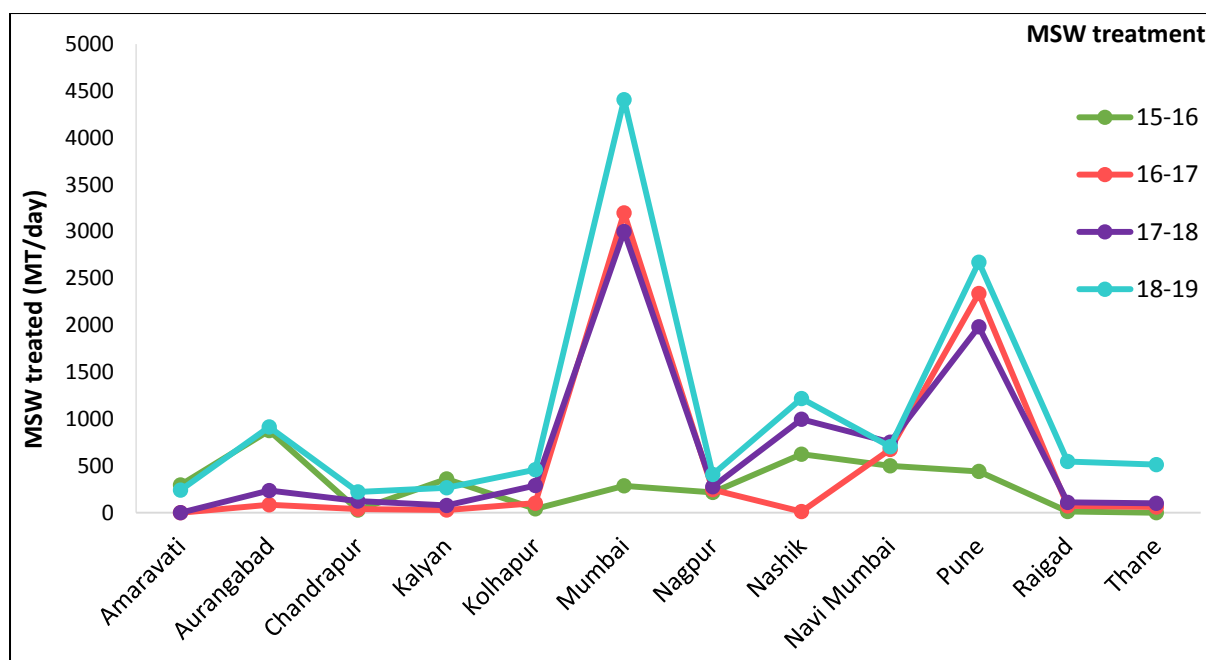


Figure 5.14. Trend Analysis of MSW treatment over 4 years.

From Figure 5.14, it can be observed that the amount of MSW treated in the State of Maharashtra has not definitively increased in succession over the 4 years. In the Regions of Aurangabad, Chandrapur, Kalyan and Nashik, the MSW treated during the year 2016-17 was lesser than the quantity treated during the preceding year and the quantity treated during the 2017-18 and 2018-19 was greater than the quantity treated during the previous two years. In Amaravati Region, data on quantity of MSW treated during the years 2016-17 and 2017-18 is unavailable, while the quantity treated during 2018-19 was lesser than that treated during 2015-16.

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 and Pune and the same is evident in the above figure. In Mumbai and Pune, the quantity of MSW treated in the year 2017-18 was lesser than that treated during 2016-17 and 2018-19, but greater than the quantity treated during the year 2015-16.

5.8. Hazardous Waste Generation during the year 2018-19.

Details on total generation Hazardous Waste during the year 2018-19 in the State of Maharashtra is shown below in Table 5.54.

Table 5.54. Region-wise generation of hazardous waste during 2018-19.

Region	SLF (MT/A)	RCL (MT/A)	INC (MT/A)	Total (MT/A)
Kalyan	81756.2198	44509.4981	36570.044	39066.03
Raigad	125888.763	155454.394	18322.276	85571.68
Navi Mumbai	56766.93668	60576.399	25811.2715	63634.8
Thane	74081.743	269963.3647	12114.9835	265410.26
Pune	86052.51	74429.35	83546.9	402502.77
Nashik	38045.36	16618.7	27421.35	83427.79
Nagpur	35738.75	9250.14	51278.45	4078.71
Mumbai	40304.72	13252.36	117952.65	5773.88



Kolhapur	55091.66	18773.92	16272.87	8873.25
Chandrapur	3382.04	51746.05	2917.3	49473.6
Aurangabad	43434	77609.19	32451.19	57262.93
Amravati	11071.97	480.46	364.68	734.45
Total	651614.6725	792663.8258	425023.965	1065810.15

* SLF – Secured Landfill, RCL – Reclaimed Landfill, INC- Incineration, UTL - Utilisation

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

There are 4 Common Hazardous Waste Treatment, Storage & Disposal Facilities (CHWTSDF) installed and operating successfully in the State of Maharashtra. 2 facilities namely Mumbai Waste Management (MWM), Taloja and Trans Thane Waste Management Association (TTCWMA), Mahape, are located under Navi Mumbai Region; 1 facility namely Maharashtra Enviro Power Ltd (MEPL), Ranjangaon is located in Pune Region and Vidharbha Enviro Protection Ltd. (VEPL), Butibori Industrial Area is located in Nagpur Region. Presently 6459 industries are members of these 4 facilities and are disposing their hazardous waste. Individual capacities of CHWTSDFs have been shown in **Table 5.55**. Summary of hazardous waste received and individual capacities of CHWTSDFs are presented in **Table 5.56**.

Table 5.55. Summary of Individual Capacities of CHWTSDFs.

Name of Facility	M/s. Mumbai Waste Management Limited	M/s. Trans Thane Waste Management Association	M/s. Maharashtra Enviro Power Ltd.	M/s. Vidharbha Enviro Protection Ltd.
Address of Facility	Plot No. P-32, MIDC, Taloja	P-128, Shil-Mahape Road, next to L&T Infotech Ltd.	Ranjangaon	SPV of M/s. Shaktikumar M. Sancheti Ltd., Butibori
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 - 2.5 TPH.	INC - No Facility	INC - 3.0 TPH	INC - 3.0 TPH
	2. INC- 2.5 TPH	(Incinerable HW sent to Taloja)		

Table 5.56. Summary of Hazardous Waste Received at disposal sites during 2018-19.

Site	DLF* (MT/A)	LAT* (MT/A)	INC* (MT/A)	Total (MT/A)
Total participant industries – 6,459				
MWML, Taloja, Navi Mumbai	29712.0	144711.0	31007.00	205430.00
TTCWMA, Mahape, Navi Mumbai	9321.87	7436.41	---	16758.28
MEPL, Ranjangaon, Pune	43481.13	41094.95	25712.35	110288.43
VEPL, Butibori, Nagpur	15174.60	9913.43	2983.91	28071.94
Total	97689.6	203155.8	59703.26	360548.7

* DLF- Direct Land Filling, LAT- Landfilling After Treatment, INC- Incineration

There are 6,459 industries that generate hazardous waste. Various methods such as DLF, LAT, INC and onsite hydroclave are used for the treatment of hazardous waste. 97,689.6 MT/A HW was treated with DLF method, 203155.8 MT/A by LAT method and 59703.26 MT/A by INC method. One-time disposable waste received at TTCWMA for DLF is 120331 MT in the year 2018-19. **Table 5.57** shows the number of units in each Region that has been granted authorization to generate HSW.

Table 5.57. No. of units in each Region that is given authorization to generate HSW.

Region	Total No. of Units
Amaravati	82
Aurangabad	366
Chandrapur	128
Kalyan	911
Kolhapur	373
Mumbai	412
Nagpur	370
Nashik	534
Navi Mumbai	724
Pune	1349
Raigad	403
Thane	807
Total	6459

5.8.2. Trend analysis of Hazardous Waste received at disposal sites over 4 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 and 2018-19 has been carried out. **Figure 5.15.** graphically represents the trend of average Hazardous Waste received over the span of 4 years at disposal sites.

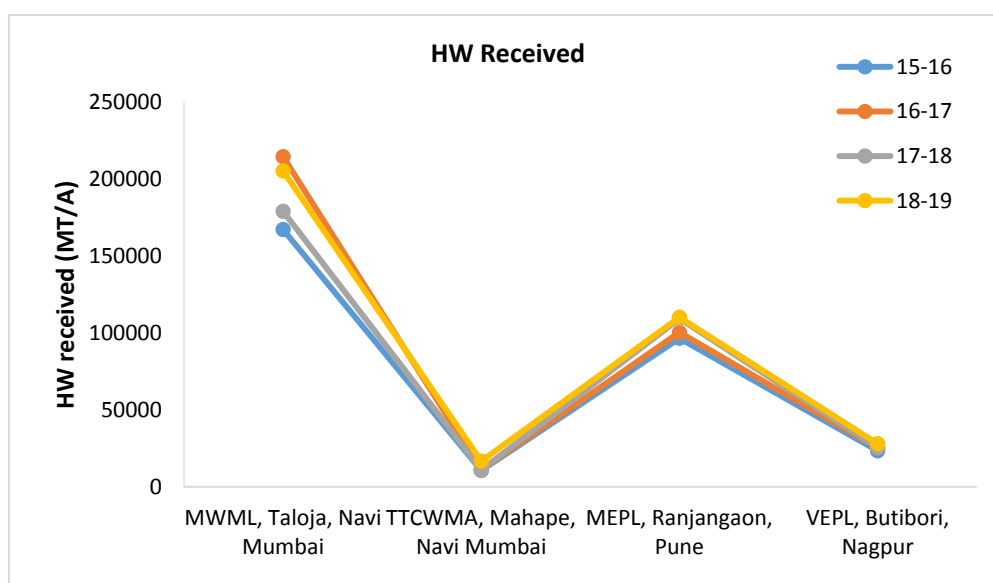


Figure 5.15. Trend Analysis of Hazardous Waste received at disposal sites over 4 years.

It can be observed from **Figure 5.15.** that the quantity of Hazardous Waste received at MWML, Taloja was the least during the year 2015-16 followed by the years 2017-18, 2018-19 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 the year 2018-19. One-time disposable waste received at TTCWMA for DLF is 120331 MT in the year 2018-19 at TTCWMA for DLF. The quantity of Hazardous Waste received at



MEPL, Ranjangaon (Pune) and VEPL, Butibori (Nagpur) has been relatively constant over these 4 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: 60,410

(2) Total No. of beds: 2,76,985

(3) Status of authorization

(i) Total no. of occupiers applied for authorization: 15,939

(ii) Total no. of occupiers granted authorization: 17,037

(iii) Total no. of applications under consideration: 867

(iv) Total no. of applications rejected: 258

(v) Total no. of occupiers in operation without applying for authorization: 62,418

(4) Bio-medical waste generation

(i) Bio-medical waste generated by bedded hospitals: 50,440 kg/day

(ii) Bio-medical waste generated by non-bedded hospitals: 11,793 kg/day

(iii) Any other: 185 kg/day

(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: 218

(ii) Total bio-medical waste treated and disposed by captive treatment facilities: 2,257 kg/day

(b) BMW treatment and disposal by Common BMW Treatment Facilities

(i) Number of Common Bio-Medical Waste Treatment Facilities in Operation: 31

(ii) Number of Common Bio-Medical Waste Treatment Facilities under construction: 1

(iii) Total bio-medical waste treated by Common BMW Treatment Facilities: 59,877 kg/day

(iv) Total treated bio-medical waste disposed through authorized recyclers: 14,851 kg/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.

➤ **Implementation of E-waste (Management and Handling) Rules, 2011**

- 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.
- E-Waste Collection Target (Weight)

Sr. No.	Year	E-Waste Collection Target (Weight)
(i)	2017-2018	10% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(ii)	2018-2019	20% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(iii)	2019-2020	30% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(iv)	2020-2021	40% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(v)	2021-2022	50% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(vi)	2022-2023	60% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.
(vii)	2023 onwards	70% of the quantity of waste generation as indicated in Extended Producer Responsibility Plan.

- 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, 2011 to dismantlers/recyclers/ collection/producers are as shown in **Table 5.58**.

Table 5.58. Present Status of E-Waste Generation and Recycling in Maharashtra State

Types of Authorizations/Registrations granted by the Board	Authorizations/Registrations granted by the Board (number)	Capacity of E-Waste generation/collection/dismantling/recycling (MT/A)	Quantity of E-waste received for dismantling and recycling (MT)	Quantity of E-waste handled by dismantler and recycler (MT)
Dismantlers	62	63879	9475.00062	9139.036
Recyclers	11			
Total	73			

5.11. Plastic Waste Management in the State of Maharashtra

Urban local bodies in the Maharashtra state are generating around 4.1 lakh tonnes of plastic waste in year 2018-19.

Plastic Waste (Management & Handling) Rules, 2011, came into the force as per the notification published by Ministry of Environment & Forest, New Delhi on 4.2.2011 has been superseded by the Plastic Waste Management Rules, 2016 notified on 18.3.2016.

Government of Maharashtra under the provisions of Maharashtra Non-biodegradable Garbage (Control) Act, 2006 has published new notification named Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018 for regulating manufacture, usage, sale, storage, transport of the products made from plastic and thermocol on 23.3.2018 and amendments dated 11.4.2018, 30.06.2018.

There are two committees constituted under the provisions of this notification namely i) the Expert Committee under chairmanship of Principal Secretary, Environment Department for technical guidance in the matters of Maharashtra Plastic and Thermocol Notification, to the Government and ii) Empowered Committee under chairmanship of Hon'ble Minister (Environment) to decide necessary amendments and review implementation of the said notification. So far several meetings of Expert Committee and Empowered Committee have been conducted and thereafter necessary amendments in the Notification have been issued.

Following are the details of the Notification:

- As per said notification the manufacture, usage, transport, distribution, wholesale & retail sale and storage, import of the plastic bags with handle without handle, and the disposable products

manufactured from plastic and thermocol (polystyrene) such as single use disposable dish, cups, plates, glasses, fork, bowl, container, disposable dish/bowl used for packaging food in hotels, spoon, straw, non-woven polypropylene bags, cups/pouches to store liquid, packaging with plastic to wrap or store the products, packaging of food items and food grain material etc. is banned. Also use, purchase plastic and thermocol used for decoration purpose is banned.

- Use, purchase, sale, storage and manufacture of PET or PETE bottles made up of high quality food grade virgin Bisphenol-A free material and printed on it with predefined buy back price shall be allowed subject to certain conditions. This notification is applicable for the whole of Maharashtra.
- Under Section 9 of Maharashtra Non-biodegradable Garbage (Control) Act, 2006, the provision for penalty for offences is as below:

First Offence	Rs. 5000/-
Second Offence	Rs. 10000/-
Third Offence	Rs. 25000/- and three months imprisonment

- Regular surveys have been carried out jointly by local body authorities and MPCB officials within Corporation limits and separately by MPCB officials for industries, to implement the said notification. The status of fine collected post Maharashtra Notification upto March, 2019 is as below:

No. of Shops Visited	Action initiated against no. of shops	Total fine collected (Rs.)	Total Qty of banned items seized (MT)
1,56,086	6265	4,06,85,588/-	Plastic-934.598 + Non-woven bags-8.572

No. of Industrial units Visited	No. of Industrial units issued Proposed Directions	No. of Industrial Units issued Closure directions	Total fine collected (Rs.)	Total Qty of banned items seized (MT)
1074	328	272	4,15,000	238.67

- As per the Plastic Waste Management Rules, 2016 and amendment thereto "Every local body shall prepare and submit an annual report in Form –V to the concerned Secretary-in-charge of the Urban Development Department under intimation to the concerned State Pollution Control Board or Pollution Control Committee; Each State Pollution Control Board or Pollution Control Committee shall prepare and submit an annual report in Form VI to the CPCB on the implementation of these rules". Accordingly, local bodies and Maharashtra Pollution Control Board have submitted their Annual Reports.

The region-wise information on plastic waste generation, collected and disposal upto March, 2019 obtained from ULB's Annual Report is represented as below:

Regions	ULBs	Quantity of plastic waste generated (TPA)	Quantity of plastic waste collected (TPA)	Quantity of plastic waste channelised for recycling (TPA)	Quantity of plastic waste channelised for use (TPA)
Amravati	42	9742.281	2359.461	1566.25	1472.6
Aurangabad	81	11135.9	9407.96	1975	1472.3
Chandrapur	44	75821.76	53960.07	52622.29	3356.08
Kalyan	7	58133	50825	29785	1231
Kolhapur	37	6991.65	6983.4	3778	1205
Mumbai	1	98550	9855	9855	0
Nagpur	44	12421.202	11957.461	5860.181	4376.001
Nashik	59	55693.52	51374.15	33301.49	19211.54
Navi Mumbai	2	9608	9596	9308	9308
Pune	45	41595.22	37722.63	13781.77	1794.22
Raigad	15	6684.92	6672.38	4527.07	4019.38
Thane	9	23251	23205	5682.5	4463
Grand Total	386	409628.453	273918.512	172042.551	51909.121

- As per the provisions of Plastic Waste Management Rules, 2016 and Maharashtra Plastic and Thermocol Items Notification, 2018 and amendment thereto, Producers/ Brand-owners are obligated to prepare and implement EPR plan on their own or by engaging agency / Producer Responsibility Organisations (PROs). Hence, a number of Producers and Brand-owners have appointed PROs to prepare their EPR plan and implement the same. The scenario of collection and disposal of Plastic Waste by PROs is as below:
- Collection of Plastic Waste by PROs during (Oct 2018 to March 2019)

PRO Name	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Total
GEM Enviro				80.52	75.62	109.72	265.86
IPCA		569.90	767.50	820.80	200.40	705.20	3063.80
NEPRA				907.95	821.06	1027.73	2756.74
Saahas		9.02	8.02	7.65	135.69	59.13	219.51
Shakti Plastic	310.76	843.39	1550.65	486.75	415.86	464.40	4071.80
Sampurn(e)arth	308.07	308.07	308.07	308.07	308.07	308.07	1848.42
Grand Total	618.83	1730.38	2634.24	2611.74	1956.70	2674.25	12226.13

- Processing of Plastic Waste by PRO's during (Oct 2018 to March 2019)

PRO Name	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Total
IPCA		559.88	559.88	559.88	559.88	559.88	2799.40
Saahas		9.02	8.02	136.24	7.1	59.13	219.51
Sampur(e)arth	261.56	261.56	261.56	400.70	550.87	663.78	2400.02

Shakti	794.552	794.552	794.552	557.127	550.127	557.127	4048.04
NEPRA				904.42	824.41	1027.71	2756.54
Grand Total	1056.11	1625.01	1624.01	2558.37	2492.39	2867.63	12223.51

- Under Plastic Waste Management Rules, 2016 and amendment thereto 12 nos. of Plastic waste Recyclers have been registered with Maharashtra Pollution Control Board. The list of registered Plastic Waste Recyclers has been published and updated in MPCB's website regularly.

➤ **Construction and Demolition Waste Management**

Annual report in form III submitted by 158 ULBs for the financial year 2018-2019 out of 384 ULBs. Total 1658864.258 MT/A C&D Waste is generated by these ULBs. Total 27401.945 MT/A Waste processed / recycled by ULBs. The C&D disposed by landfilling without processing (last option) or filling low lying area waste quantity is 1428011.13 MT/A. These ULBs having 206 storage facilities to store C&D waste securely. Total 49 Municipal magistrates appointed for taking penal action for non-compliance with these rules by these ULBs.

C & D Waste Abstract of ULBs					
ULBs	Total Qty of C & D waste Generated during whole year in MT	Total Qty of C & D waste processed/ recycled in MT	Total Qty of C & D waste Disposed by landfilling without processing (last option) or filling low lying area	Number of Storage Facilities for C&D Waste Storage	Municipal magistrates appointed for taking penal action for non-compliance with these rules.
Municipal Corporation	1641937.97	26802	1416143.4	119	11
"A" Class Municipal council	4627.75	511	4791	6	0
"B" Class Municipal council	5895.4	76.23	4623.99	26	11
"C" Class Municipal council	3596.703	10.12	1857.35	38	17
Nagar panchayats	2806.435	2.595	595.39	17	10
Total	1658864.258	27401.945	1428011.13	206	49

Table showing operational plant for processing of Construction and Demolition waste.

Sr.No.	Name of Corporation	Plant capacity (TPD)	Present Status
1	Thane Municipal Corporation	600	In operation.

Following action has been taken for the compliance of the 2018 Notification.

- An empowered Committee is constituted to monitor the implementation of these regulations and will regularly review the implementation of the said Policy. This committee will also help in resolving any difficulty faced by implementing authorities during implementation and if required also carry out any amendment in these regulations with an aim to reduce the volume of non-biodegradable garbage generation in the State.
- An expert Committee is constituted under these regulations which will suggest the recommendations including amendment required, if any in the regulations to the Empowered Committee for effective implementation of the regulations and solutions to reduce the non-biodegradable garbage.
- MPC Board has issued closure directions to 384 number of defaulting plastic industries in the State of Maharashtra as of 2019.
- The local bodies and Maharashtra Pollution Control Board are jointly carrying out the survey. Total fine of Rs. 4.21 Crore has been collected from the shops who have not complied with the Plastic ban Notification, 2018 in the jointly carried out drive by MPCB and local bodies. Around 1200 tonnes of banned plastic items have been seized from the shops and plastic industries as of 2019.

5.12. 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 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 laboratories are well equipped with modern sophisticated instruments and equipment viz. UV Spectrophotometer, Gas Chromatograph (GC), Mass Spectrophotometer, Atomic Adsorption Spectrophotometer (AAS), Ion Chromatography (IC), Inductive Couple Plasma (ICP), Adsorbable Organic Halide Analyzer (AOx), CHNS Analyzer and others. Analysis of performance of Board laboratories for the year 2018-19 is as shown in **Table 5.59**. and is represented graphically in **Figures 5.16., 5.17. and 5.18.**

Table 5.59. Analysis of Performance of Board Laboratories (2018-19).

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.*, Mahape, Navi Mumbai	7020	3422	88	1	10531	88538	16428	464	2	105432
2	R. Lab.*, Nagpur	2322	1126	92	41	3581	32883	3937	935	82	37837
3	R. Lab., Pune	4754	830	5	0	5589	60783	3075	25	0	63883

4	R. Lab., Nashik	1930	1436	3	0	3369	25336	6784	18	0	32138
5	R. Lab., Aurangabad	2103	790	41	1	2935	22549	3011	278	2	25840
6	R. Lab., Chiplun	3133	1082	21	2	4238	36906	2869	136	4	39915
7	R. Lab., Thane	1432	829	0	0	2261	10272	4075	0	0	14347
8	R. Lab., Chandrapur	0	818	0	0	818	0	2202	0	0	2202
TOTAL		22694	10333	250	45	33322	277267	42381	1856	90	321594

*C. Lab – Central laboratory, R. Lab - Regional Laboratory

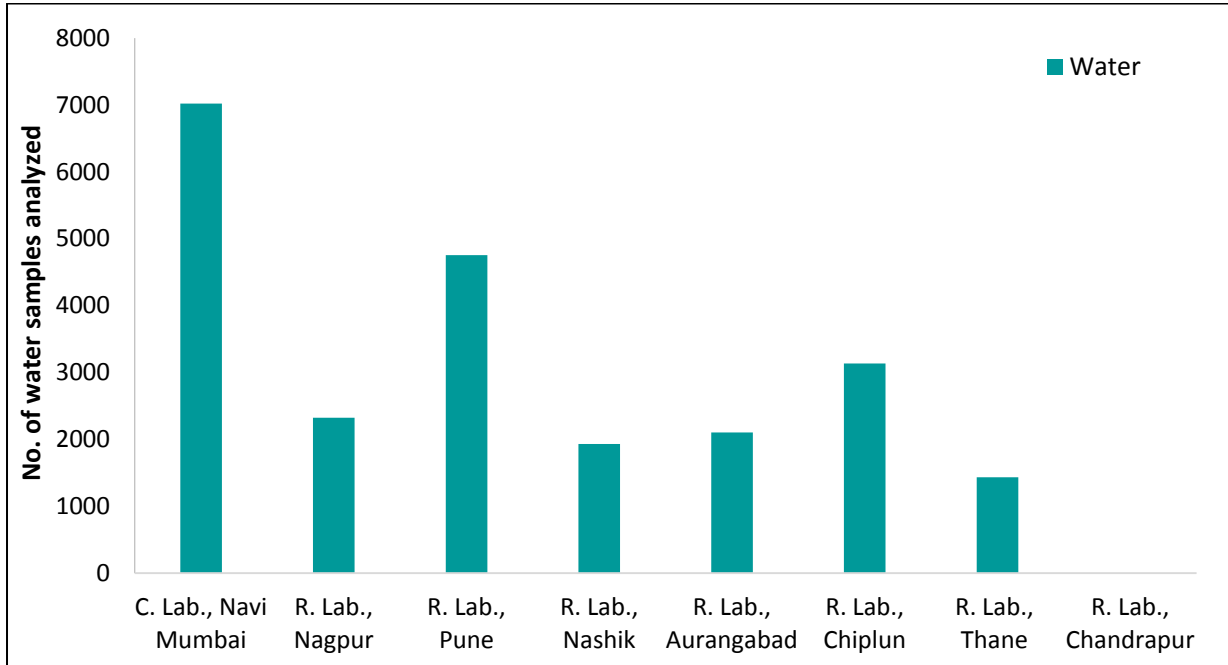


Fig 5.16. Annual total of water samples analyzed at each MPCB laboratory (2018-19).

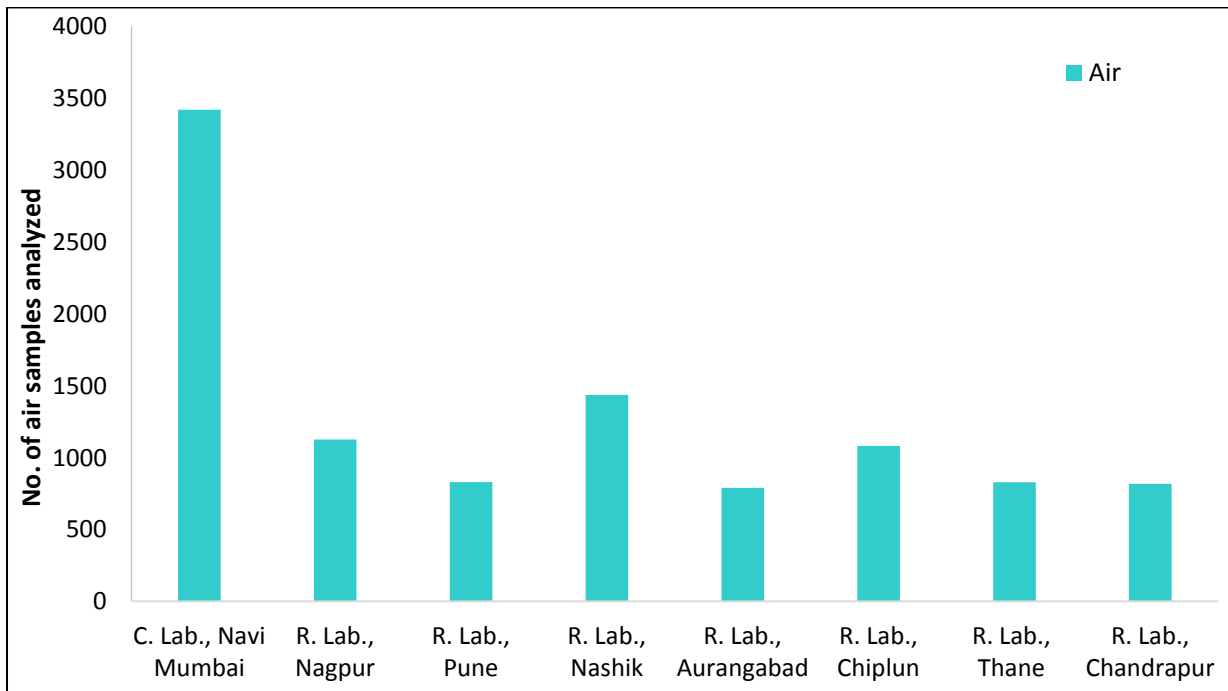


Fig 5.17. Annual total of air samples analyzed at each MPCB laboratory (2018-19).

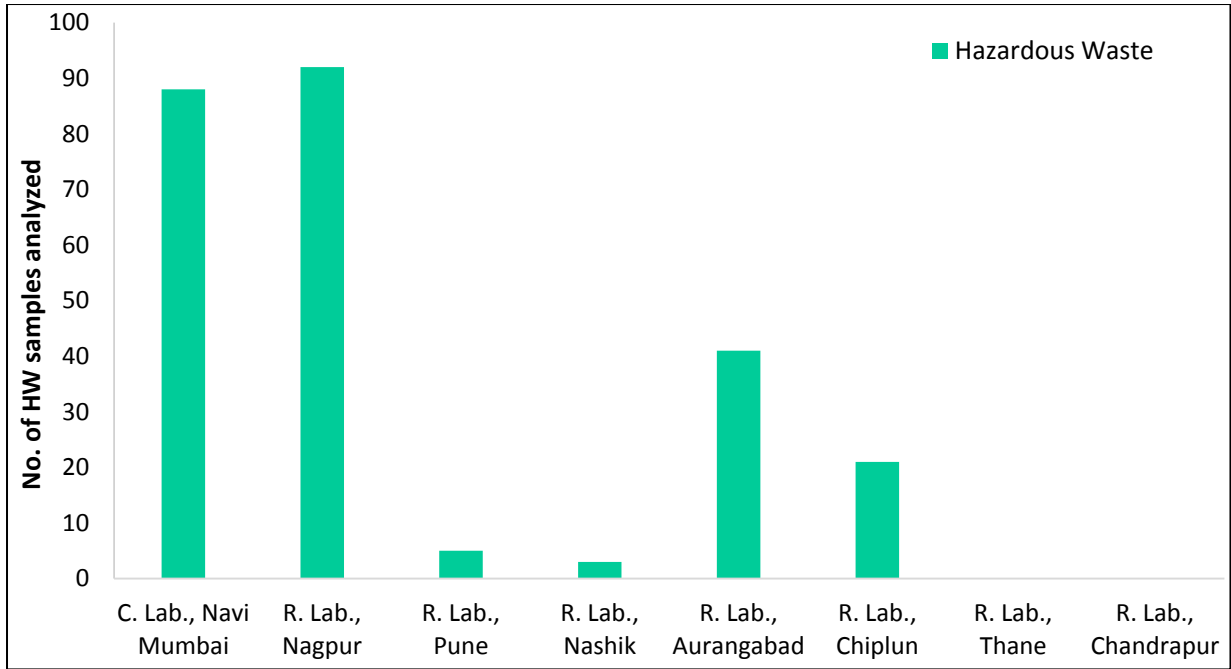


Fig 5.18. Annual total of hazardous waste samples analyzed at each MPCB laboratory (2018-19).

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. Amaravati

6.1.1. Air

6.1.1.1. Issues

The Municipal Corporation of Amaravati has a population of 6.48 lacs and falls under “D” Class Municipal Corporation. There are 3 NAMP Monitoring Stations in operation within the Corporation Area at Rajkamal Chowk, Govt. Engineering Collage premises and MIDC Amaravati. The Government College of Engineering Amaravati is the agency appointed for the operation of these stations. From the analysis results of these stations it is observed that the RSPM is exceeding the prescribed limit, particularly during summer and winter sessions.

There are 12 air polluting industries located in the Akola MIDC and Buldana District. All these industries have provided Air Pollution Control Systems.

6.1.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
The MPCB has directed IIT Mumbai & NEERI to prepare Air Quality Action Plan. SRO Akola has installed 3 NAMP stations at Akola to monitor the Ambient Air Quality.	The MPCB has directed Amaravati Municipal Corporation to reduce air pollution by preventing burning of MSW.	The MPCB has directed IIT Mumbai & NEERI to prepare Air Quality Action Plan. The MPCB has proposed 3 NAMP stations at Washim to monitor Ambient Air Quality.

6.1.2. Water

6.1.2.1. Issues

During monsoon the incidence of discharge of effluent along with rain water runoff takes place intermittently. As the location of the SSHEHS is near the low-lying area of the MIDC area, the effluent along with rain water runoff flows towards the nallah and causes environmental problems.

The Purna, Pedhi and Penganga river stretches are included in the polluted river stretches by the CPCB. The river stretch from Asegaon Purna to Wathoda Shukleshwar (Amaravati District Border) and river stretch from Narayanpur to Bhatkuli are included in the polluted river stretches.

6.1.2.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
The MPCB has issued directions repeatedly to MIDC authorities to take precautionary measures to avoid such incidences. The MPCB has submitted the action plan to	The MPCB has issued directions repeatedly to MIDC authorities to take precautionary measures to avoid such incidences. The	The MPCB has issued directions repeatedly to MIDC authorities to take precautionary measures to avoid such incidences. The

<p>CPCB for restoration of the water quality of the polluted river stretches of Purna, Pedhi and Penganga rivers. Akola Municipal Corporation has proposed 2 STPs with capacity of 37 MLD. Construction of new STP at Shiloda has been initiated. Commissioning of this STP will take place on December 2019.</p>	<p>MPCB has submitted the action plan to CPCB for restoration of water quality of the polluted river stretches of Purna, Pedhi and Panchganga rivers</p>	<p>MPCB has submitted the action plan to CPCB for restoration of water quality of the polluted river stretches of Purna, Pedhi and Panchganga rivers</p>
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6.1.3. Solid Waste

6.1.3.1. Issues

Municipal Solid Waste is only dumped on the site without any segregation, leading to environmental problems. The Municipal Corporation has not provided waste processing facility at the disposal site.

6.1.3.2. Current status of Action Plans

The MPCB has issued notices/directions to the Municipal Corporation to setup a treatment facility for MSW. The Municipal Corporation has communicated that they are in the process of establishing waste processing facilities at Sukali MSW Site, Akoli Bypass and Badnera.

6.1.4. Noise

6.1.4.1. Issues

The MPCB has carried out noise mapping program within the Amaravati Municipal Corporation area through NEERI Nagpur. The MPCB is conducting the noise level monitoring during the festival season. The results of noise level monitoring show that noise level exceed the standard limits during festival season.

6.1.4.2. Current status of Action Plans

Police authorities have been conducting noise level monitoring during festival season. Action has been taken by police authorities where violation of noise rules has been observed.

6.2. Aurangabad

6.2.1. Air

6.2.1.1. Issues

The CPCB has declared Aurangabad, Latur and Jalna Cities as non-attainment cities out of 17 cities from Maharashtra State

During manufacturing ingots from mild steel scrap there are air emissions, mainly during loading and unloading of furnace.

In the jurisdiction of SRO Nanded, the source of air pollution is industrial activity and urban air pollution is being caused due to commercial activity, vehicular and construction activity, burning of

agro-waste before post-harvesting, and burning of MSW in open spaces. Major industrial pollution is due to fuel combustion in boilers and dust pollution is due to stone crusher units, and traditional brick manufacturing.

Heavy dust emissions have been observed in the Parbhani City Municipal Corporation area due to unscientific construction of tar/cement road without plantation. In Parali (V), Dist. Beed, the fly ash generated from the thermal power station is responsible for dust emissions.

6.2.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<ul style="list-style-type: none"> • CPCB has approved the Action Plan submitted by AMC to improve air quality within Corporation area. • MPCB has directed Existing APCS operation and raw material use change • Latur Clean Air Action Plan – 2017 has been approved by CPCB. Implementation is in progress. • Follow up has been carried out by MPCB with industries for adequate capacity for APC systems and timely directions for air pollution control. • Proper road construction is required at Parbhani. 	<ul style="list-style-type: none"> • As per non-attainment city Action Plan • Operating existing pollution control devices round the clock is required. • Latur Clean Air Action Plan – 2017 has been approved by the CPCB. Implementation is in progress. - NWCMC will be instructed to reduce urban and industrial air pollution. 	<ul style="list-style-type: none"> • As per non-attainment city Action Plan. • Jalna Clean Air Action Plan - 2017 has been approved by CPCB. Implementation is in progress. • Latur Clean Air Action Plan – 2017 has been approved by CPCB. Implementation is under progress. - APC systems have been installed by industries as per MPCB directions. Fuel quality has been changed. Stone Crusher units have provided APC systems. • Clean Air Action Plan is to be prepared by Municipal Corporation, Latur and MPCB. Detailed study will be carried out by IIT Pawai and NEERI for Parali Thermal Power Station.

6.2.2. Water

6.2.2.1. Issues

Ground water at Waluj Industrial area is contaminated. Latur City Municipal Corporation, Latur and Parbhani City Municipal Corporation, Parbhani have not provided STPs for treatment of domestic effluent generated from their jurisdictions. The major source of river water pollution is the discharge of untreated sewage into the river through various nallahs. The other source water body pollution is the immersion of idols and waste (nirmalya) during Ganesh and Navratri festivals.

6.2.2.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
<ul style="list-style-type: none"> • Remediation plan has been approved by MPCB Technical Committee. • "AMRUT" Sewerage Scheme has been submitted and sanctioned. Municipal 	<ul style="list-style-type: none"> • Rainwater harvesting has been directed to MIDC Waluj industries • "AMRUT" Sewerage Scheme has been submitted & sanctioned. Municipal 	<ul style="list-style-type: none"> • As per remediation plan. • "AMRUT" Sewerage Scheme has been submitted & sanctioned. Municipal Councils of Osmanabad and Udgir are in the process of

<p>Councils of Osmanabad and Udgir are in the process of providing STPs.</p> <ul style="list-style-type: none"> • STPs have been provided at Bondar, Elichpur and Sangvi. ZLD system has been adopted. Artificial ponds have been created for Ganesh idol immersion. Environmental awareness programs are conducted by SRO Nanded. 	<p>Councils of Osmanabad and Udgir are in the process of providing STPs.</p> <ul style="list-style-type: none"> • Nallahs will be diverted to existing pipelines. Budget for STP O&M has been provided. 	<p>providing STPs.</p> <ul style="list-style-type: none"> • DPR for new sewerage pipeline is prepared. Budget for STP O&M has been provided.
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6.2.3. Solid Waste

6.2.3.1. Issues

MSW is being unscientifically collected, stored, treated and disposed at Aurangabad, Jalna, Latur, Nanded, Parbhani.

6.2.3.2. Current status of Action Plans

Processing and follow up of MSW sites at Chikalhana, Harsool, Padegaon and Kanchanwadi are being conducted by MPCB committee. Follow-up of DPR, site visits and meetings are being conducted for MSW Rule, 2016 by this committee. Bioremediation/bio-mining of old dumped MSW at dumping site is being carried out.

6.2.4. Noise

6.2.4.1. Issues

Noise pollution is due to sound systems, fire-crackers during festivals. Noise Rules are being violated.

6.2.4.2. Current status of Action Plans

Awareness programs and campaigns are being conducted. Noise level monitoring is carried out by MPCB during festivals. Training is imparted to Police department.

6.3. Kolhapur

6.3.1. Air

6.3.1.1. Issues

The cities of Kolhapur and Sangli have been declared as non-attainment cities. Chiplun, Ratnagiri and Sangli are facing industrial and urban air pollution and smell nuisance.

6.3.1.2. Current status of Action Plans

Action plan for Control of Air Pollution for Kolhapur and Sangli has been prepared and submitted to the Government. Industries have been instructed to use smell abatement systems. Monitoring of VOCs in ambient air is to be carried out.

6.3.2. Water

6.3.2.1. Issues

Panchganga and Vashishti Rivers have been identified as Priority V rivers by CPCB. Mirkarwada and Malvan are facing marine water pollution. Krishna river water pollution is being caused due to discharge of untreated sewage.

6.3.2.2. Current status of Action Plans

Action Plans have been prepared for Krishna, Panchganga and Vashishti Rivers by the MPCB. Textile industries have been directed to curtail effluent generation. An STP has been provided at Malvan. Local bodies have been instructed for installing adequate capacities for STPs.

6.3.3. Solid Waste

6.3.3.1. Issues

MSW is being improperly and unscientifically handled, disposed and treated.

6.3.3.2. Current status of Action Plans

Conversion of MSW to RDF at MSW processing plant at Kolhapur and 2 biogas plants have been setup for organic waste treatment. MPCB has directed scientific collection, segregation and disposal of generated MSW. Local bodies have been directed to prepare MSW action plan and to develop MSW sites. Development of eco-village is being considered.

6.3.4. Noise

6.3.4.1. Issues

Noise pollution is being caused due to religious programs in Sangli city.

6.3.4.2. Current status of Action Plans

The Sangli, Miraj and Kupwad City Municipal Corporation, Sangli is in process of preparing the action plan for control of Noise Pollution in Sangli city. Awareness programs and campaigns are being conducted. Noise level monitoring is carried out by MPCB during festivals. Training is imparted to Police department.

6.5. Mumbai

6.5.1. Air

6.5.1.1. Issues

Vehicular air pollution as well as industrial air pollution with emission of VOCs.

6.5.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Action plan has been prepared and submitted to the CPCB. Regular PUC checking is being carried out. Cycle tracks development is being carried out. RMC plants are to be shifted out of MMRDA.	BS II & BS III bus scrapping policy has been developed. 425 BS II vehicles will be scrapped by 2021. Wayu systems have been approved and implemented at Chembur. Green belt development is being carried out. Industrial inspection and surveillance is being ensured. APC systems upgradation has been advised. Traffic congestion mitigation repairing roads and strengthening of public transportation is to be carried out.	Awareness should be created through exhibitions and workshops. Commuter Choice Program has been planned for Mumbai City. BEST CNG buses are being introduced. Electric buses are proposed to be inducted. Health Impact Studies will be carried out. Clean fuel use on buses is being encouraged. Road widening and obstruction removal will be carried out as per RTO directions. Safe closure for Deonar dumping ground is directed.

6.5.2. Water

6.5.2.1. Issues

Water pollution of Mithi, Dhaisar, Oshiwara & Poisar Rivers.

6.5.2.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
O&M of ETPs/STPs is being carried out. Public toilets have been installed to prevent open defecation. Improved collection and transfer of sewage and industrial effluent has been provided. Accumulated silt in nallahs is being removed.	Flood mitigation and management is required. Existing STPs are required to be upgraded. Mechanical agitation/aeration is required upstream of river stretches for maintaining desirable DO level. Ensuring zero disposals of solid waste and runoffs into river is required. Cluster development based on typical / representative generators of particular types of wastes is needed. Zero discharge policy for automobile washing and service centres should be adopted. Greenbelt and nature trails should be developed along riparian zones.	7 new STPs have been proposed. Existing STPs are required to be upgraded. Exploration, development and augmentation of groundwater resources and groundwater monitoring is required.

6.5.3. Solid Waste

MSW is being dumped at Deonar dumping ground without treatment. Safe closure for Deonar dumping ground is directed.

6.5.3.2. Action Plans prepared: Nil

6.5.4. Noise

6.5.4.1. Issues

Approximately 60 cases have been filed for violation of Noise Regulations. Awareness programs and campaigns are being conducted. Noise level monitoring is carried out by MPCB during festivals. Training is imparted to Police department.

6.5.4.2. Action Plans prepared: Nil

6.6. Nagpur

6.6.1. Air

6.6.1.1. Issues

Urban and industrial air pollution during winter.

6.6.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Nagpur City Ambient Air Quality report prepared CSIR-NEERI, Nagpur has been approved by CPCB. Workshop/meetings were conducted by RO Nagpur on World Environment Day. MPCB has directed industries to initiate immediate usage of clean raw materials.	Implementation will be as per Ambient Air Quality report. The MPCB has directed industries to improve existing APC systems	Implementation as per Ambient Air Quality report. The MPCB has directed industries to provide secondary fumes collection and treatment facility.

6.6.2. Water

6.6.2.1. Issues

Water quality and the ecosystem of the Nag River is deteriorating due to discharge of untreated sewage.

6.6.2.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
CETPs have been directed to restrict discharge of untreated effluent into river. MPCB has directed Municipal Councils and NMC to provide treatment plant with adequate treatment capacity.	ULBs have been directed by MPCB to provide primary treatment of sewage.	NMC will collaborate with JICA (Japan) for rejuvenation of Nag river. ULBs have been directed by MPCB to provide primary treatment of sewage. Nag River Action plan has been submitted to CPCB by NMC.

6.6.3. Solid Waste

6.6.3.1. Issues

MSW generated is dumped without segregation and processing.

6.6.3.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Contract for bio-mining of MSW has been given to Zigma Global Environ Solution Pvt. Ltd. by NMC. ULBs have been directed by the MPCB for collection of MSW, segregation at source, providing processing facilities for MSW and sanitary landfill sites.	Contract for bio-mining of MSW has been given to Zigma Global Environ Solution Pvt. Ltd. by NMC. ULBs have been directed to comply with MSW Rules, 2016.	Contract for bio-mining of MSW has been given to Zigma Global Environ Solution Pvt. Ltd. by NMC. ULBs have been directed to comply with MSW Rules, 2016.

6.6.4. Noise

6.6.4.1. Issues

7 cases under Noise Rules have been filed in JMFC Nagpur.

6.6.4.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Study report has been prepared by NEERI as per NGT directions and has been submitted to MPCB for approval.	Will be conducted as per approved action plan.	Will be conducted as per approved action plan.

6.7. Nashik

6.7.1. Air

6.7.1.1. Issues

Urban air pollution.

6.7.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Installation of 4 CAAQMS will be completed within 1 year.	Will be implemented by the concerned stakeholders as per Air Action Plan.	Will be implemented by the concerned stakeholders as per Air Action Plan

6.7.2. Water

6.7.2.1. Issues

Godavari River water pollution.

6.7.2.2. Current status of Action Plans

Nashik Municipal Corporation has provided 9 STPs on the bank of the Godavari River.

6.7.3. Solid Waste

6.7.3.1. Issues

Unscientific disposal of MSW.

6.7.3.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Plastic waste has reduced by 35% due to implementation of Plastic Notification 2018.	Plastic waste has reduced by 35% due to implementation of Plastic Notification 2018.	Plastic waste has reduced by 35% due to implementation of Plastic Notification 2018.

6.8. Navi Mumbai

6.8.1. Air

6.8.1.1. Issues

Areas in Koparkhairane, Kharghar, Kalamboli, Kamothe and Taloja are facing smell nuisance. SPM level rise is being caused due to traffic and construction.

6.8.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Fume extraction system and wet scrubber have been provided by CETPs to reduce smell nuisance. MPCB has directed CETPs to prevent chamber overflow. MPCB has issued Proposed Directions to 90 air pollution prone industries. Regular vigilance is in progress. MPCB has directed the Industrial Association to prevent smell nuisance caused due to pollutant emissions.	Action plan for replacement of old pipeline is submitted by MIDC. Cleaner fuel has been introduced. CAAQMSs are being digitized.	Development and improvement of public infrastructure is proposed. Performance of ECS is being evaluated.

6.8.2. Water

6.8.2.1. Issues

The effluent carrying pipeline from CETP has been leaking and overflowing. There is runoff from CETP collection sump area into adjacent nallah during monsoon. Domestic and industrial effluent is being discharged into Alok nallah.

6.8.2.2. Current status of Action Plans

Current Action Plan	Long Term Action Plan
MIDC, NMMC and CETP have been directed to maintain pipelines, monitor industries for compliance of consent conditions, conduct Health Impact Assessment Study, monitor groundwater, install online systems for flow, pH, BOD, COD & S.S., and curtail effluent	Modifications in CETP effluent collection sump in MIDC are to be made for rainwater run-off and to avoid water logging and overflow from inlet sump. Provision of STP for treating sewage from slum area in MIDC. Monitoring of nallah water. Follow-up on directions is to be carried

generation by 40%.	out.
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6.8.3. Solid Waste

6.8.3.1. Issues

Uran Municipal Council has not provided scientific MSW landfill site.

6.8.3.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
1. Directions are issued by the Board from time to time. 2. Monitoring of ground water at MSW/TSDF site. 3. Health Impact Assessment Study.	Monitoring of ground water at MSW/TSDF site at regular intervals.	Scientific Disposal of hazardous waste and Bio-medical Waste

6.8.4. Noise

6.8.4.1. Issues

There is noise pollution during festivals such as Ganesh Chaturthi, Diwali and Dashera.

6.8.4.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Conducting awareness programs during Ganesh and Diwali festivals. Fire cracker testing during Diwali.	Regular awareness programs with industry association and NGOs.	Conducting awareness programs during Ganesh and Diwali festivals. Fire cracker testing during Diwali.

6.9. Pune

6.9.1. Air

6.9.1.1. Issues

There is industrial air pollution in Pune City and PCMC, and Industrial and urban air pollution at Solapur. There have been fire incidences at Satara and vehicular urban air pollution is also prevalent.

6.9.1.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action
Air pollution control plan implementation. Stack air monitoring and ambient air monitoring. Initiating actions against industries and follow up. Provision of firefighting arrangements at all MSW dumping sites. Air action plan for improvement of air quality in Solapur prepared and submitted to the Government for approval and action.	Provision of scientific processing and landfilling arrangements at MSW site. Creating awareness in Solapur for air pollution mitigation. Road maintenance, MSW clean-up, ban on open burning of MSW has been implemented.	6 CAAQMS have been proposed at PMC and PCMC areas. Provision of scientific processing and landfilling at MSW site. Creating public awareness.

6.9.2. Water

6.9.2.1. Issues

Water quality of Mula, Mutha, Bhima and Sina Rivers had deteriorated due to discharge of untreated sewage. There have been fish kill incidents at Nira river. Ground and surface water pollution is being caused due to discharge of untreated sewage.

6.9.2.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
River water sample analysis is being carried out. Plans for 11 new STPs in PMC area and 5 new STPs in PCMC are submitted. Budget has been sanctioned under JICA project. Local nallahs in Phaltan are to be diverted for agricultural use. Namami Chandrabhaga Abhiyan Project has been declared by the Government for improving water quality of Bhima river.	Follow up with PMC for commissioning of STPs and completion of drainage network. Encouraging farmers to use sewage for irrigation. Arresting sewage flow by constructing bunds.	Installation of all proposed STPs. Achieving standards of treated effluent as per consent conditions. Follow up to ensure proper use of treated sewage.

6.9.3. Solid Waste

6.9.3.1. Issues

MSW is being unscientifically collected, segregated and disposed at Pune and Solapur.

6.9.3.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Proposal for waste to energy plant has been submitted by PMC. Initiative for upgradation of MSW Treatment and disposal facilities as per NGT orders taken up by MPCB.	Ensuring implementation of MSW Rule 2016 by local bodies under PMC and PCMC. Eco-village development considered by SRO Solapur.	10 new plants proposed by PMC for processing mixed waste. Bio-mining undertaken by PMC. Waste to energy plant proposal submitted by PCMC. Follow-up with local bodies.

6.9.4. Noise

6.9.4.1. Issues

Noise pollution during festival and processions at SRO Satara and Solapur.

6.9.4.2. Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Action on industries without acoustic measures. Ban on Dolby sound systems. Loud sounds banned between 10 pm and 6 am. Silence zones declared. Awareness programs	Effective steps taken by Police department and Solapur Municipal Corporation for noise	Awareness and sensitization of people. Preparation of Noise Pollution Control Action Plan by Solapur Municipal

conducted. Noise Pollution Control Action Plan preparation is in process of implementation by Solapur Municipal Corporation.	pollution control during festivals.	Corporation.
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6.10. Raigad

6.10.1. Air-related issues: Air pollution problems are registered in Panvel, Roha and Mahad MIDC. Complaints related to smell nuisance in Panvel/Kharghar area is due to Taloja MIDC.

Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
SRO has been initiating actions against defaulting industries, and has been taking follow up to rectify it.	Upgradation of APC units of individual industries in MIDC area.	5 AAQM stations have been installed under NAMP. CAAQM stations at two locations (Panvel and Roha area) have been proposed.

6.10.2. Water-related issues: River water pollution is due to discharge of untreated sewage.

Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
Committee has been constituted under the chairmanship of Raigad Collector for development of river pollution. DPR for Improvement in O & M of RIA CETP has been prepared.	Continuous follow up with local bodies, for commission of STPs as well as complete drainage network at the earliest. Follow up with industries and CETP for better performance.	Installation of STPs and achieving standards as per norms and usage of treated effluent for recycling.



6.10.3. Solid Waste related issues: Hazardous waste is being dumped illegally.

Current status of Action Plans

Current Action Plan	Mid Term Action Plan	Long Term Action Plan
A committee has been constituted under the chairmanship of Raigad Collector for development of MSW.	Continuous follow up with local body for implementation of MSW Rule 2016.	Follow up with local body for implementation of MSW Rule 2016 in respect of funds (25% budget provision)

7. ENVIRONMENTAL STUDIES AND SURVEYS

7.1. Noise Monitoring during Ganesh Festival 2018.

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 6 PM to 12 AM on 13th, 14th, 17th, 19th and 23rd September, 2018. Noise monitoring was carried out using calibrated Sound Level Meters (Type II) 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 Maharashtra is provided in **Table 7.1**.

Table 7.1. Noise monitoring locations in Maharashtra during Ganesh Festival 2018.

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
Raigad	3
Thane	14
Total	132

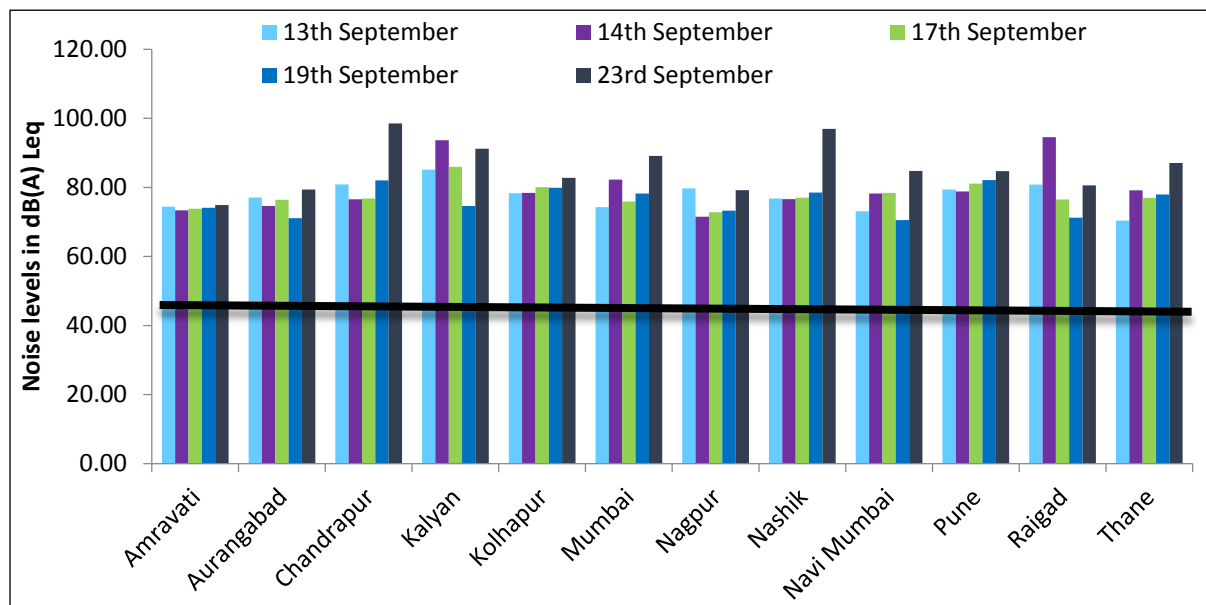


Fig 7.1. Noise levels during Ganesh Festival 2018 at different locations in Maharashtra.

From **Figure 7.1.**, it can be observed that the highest mean noise level recorded on 13th September 2018 was at Kalyan at 85.14 dB(A). On 14th September 2018, which was the second day of noise monitoring, the highest mean noise level recorded was 94.53 dB(A) at Raigad. On 17th September

2018, the highest mean noise level recorded was 85.98 dB(A) at Kalyan. On 19th September 2018, 82.11 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 23rd September 2018, the highest noise level was 98.50 dB(A) and was recorded at Chandrapur.

The lowest mean noise level recorded on 13th September which was the first day of noise monitoring during Ganesh festival, was 70.41 dB(A) at Thane. On 14th and 17th September, the lowest mean noise levels were 71.52 dB(A) and 72.82 dB(A) respectively, and were recorded at Nagpur. On 19th September 70.54 dB(A) was the lowest mean noise level recorded at Navi Mumbai. On 23rd September 2018, 74.88 dB(A) was the lowest mean noise level recorded at Amaravati.

7.1.1. Conclusion

During the year 2018-19, noise levels were monitored at 132 locations under 27 Municipal Corporations in Maharashtra over 5 days during Ganesh festival on the dates 13th, 14th, 17th, 19th and 23rd September, 2018 for a duration of 6 hours between 6 PM and midnight for each location comprising of residential, commercial and silence zones. The average noise levels were observed to be higher than the prescribed standards.

The most common source of noise at all locations was dhol, banjo and Puneri dhol. The crowds that had gathered for Ganesh idol immersion in turn increased the traffic and also contributed to the increase in noise level. The noise pollution awareness has increased within the public through different media like newspaper and television. Many people celebrate an eco-friendly Ganesh Festival to control environmental pollution.

Municipal Corporations like Mumbai, Thane, Nashik, Aurangabad, and Nagpur showed lesser noise levels in some of the locations selected. The MPCB has taken a good initiative for measuring the noise level every year during the period of the festival and this data is published and is readily available to the public on the Board's website. People have become more aware about the pollution that they create, which has helped in the reduction in use of firecrackers and to some extent the reduction of usage of dhols and loud speakers during Ganesh festival.

7.2. Noise Monitoring during Diwali 2018.

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 1st November 2018 and during Diwali Festival i.e. on 7th (Lakshmi-Pujan) and 9th (Bhaubeej) November, 2018 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.**

Table 7.2. Noise Monitoring Locations in Maharashtra during Diwali 2018.

Region	Number of locations
Amaravati	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

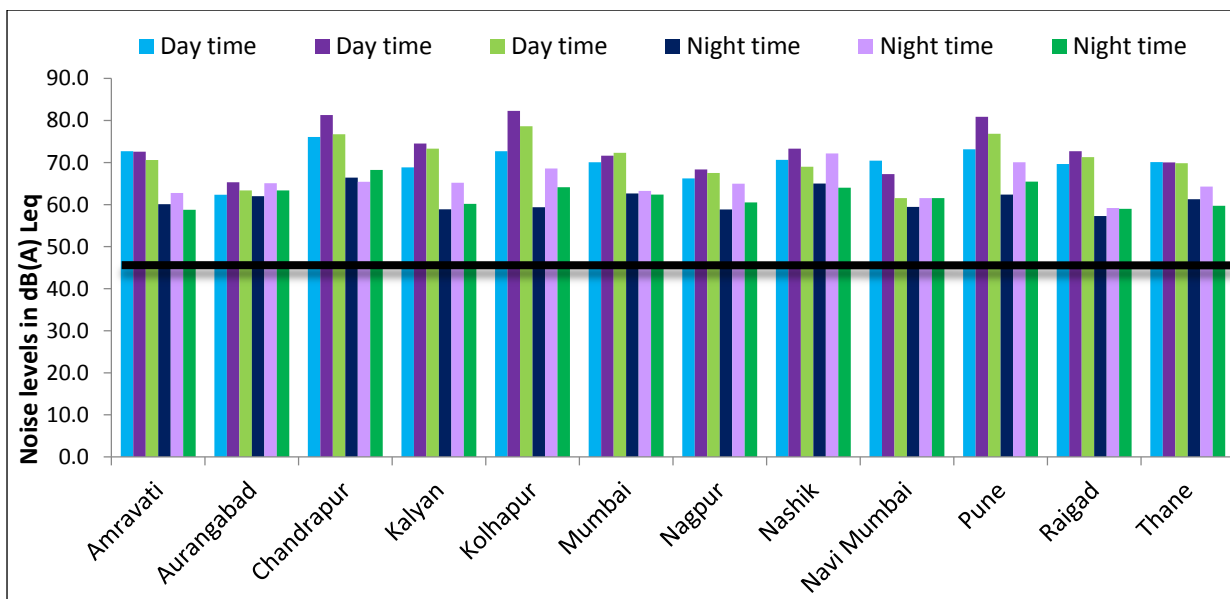


Fig 7.2. Noise levels during Diwali 2018 at different locations in Maharashtra.

From **Figure 7.2.** it is observed that the mean highest mean noise levels of 76.1 dB(A) and 81.3 dB(A) were recorded during day time on 1st and 7th November respectively at Chandrapur. During day time on 9th November, the highest mean noise level of 78.6 dB(A) was recorded at Kolhapur. The highest mean noise levels of 66.4 dB(A) and 68.2 dB(A) were recorded during night time on 1st and 9th November at Chandrapur, while during night time on 7th November, the highest mean noise level of 72.2 dB(A) was recorded at Navi Mumbai.

The lowest mean noise levels of 62.4 dB(A) and 65.3 dB(A) were recorded during day time on 1st and 7th November respectively, at Aurangabad. The lowest mean noise level of 61.5 dB(A) was recorded during day time on 9th November at Navi Mumbai. The lowest mean noise levels of 57.3 dB(A) and 59.2 dB(A) were recorded during night time on 1st and 7th November respectively at Raigad. During night time on 9th November, the lowest mean noise level of 58.8 dB(A) was recorded at Amaravati.

7.2.1. Conclusion

During the year 2018-19, noise levels were monitored at 158 locations under 27 Municipal Corporation in Maharashtra over 3 days during Diwali on 1st, 7th and 9th November 2018 for a

duration of 24 hours at each location comprising of residential, commercial and silence zones. The average noise levels observed were higher than the prescribed standards. Noise pollution is at its peak during Diwali. Firecrackers do not only burn bright and cause deadly smoke, but also create a sudden rise in noise pollution. This is especially a problem for the old people, students, animals and sick people. The noise is highly disturbing to animals who are worst affected.

Celebration during Diwali should not be spoiled by polluting the environment and incurring health problems. We must remember that this trivial act of ours is becoming a cause of global concern. It contributes to global warming which is one of the greatest threats to the environment. Prudent behavior and a refrain from using firecrackers is the need of the present.

7.3. Air Quality Index during Diwali Festival 2018

Monitoring of ambient air quality during Diwali Festival was carried out by MPCB at selected locations. The data of ambient air quality in the form of Air Quality Index (AQI) during pre-Diwali (5th November, 2018), Diwali (6th – 8th November, 2018) and post-Diwali (9th October, 2018) was compiled and the results are shown graphically in **Figure 7.3**. The legend for reading AQI values is provided in **Table 7.3**.

Table 7.3. Legend for AQI.

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

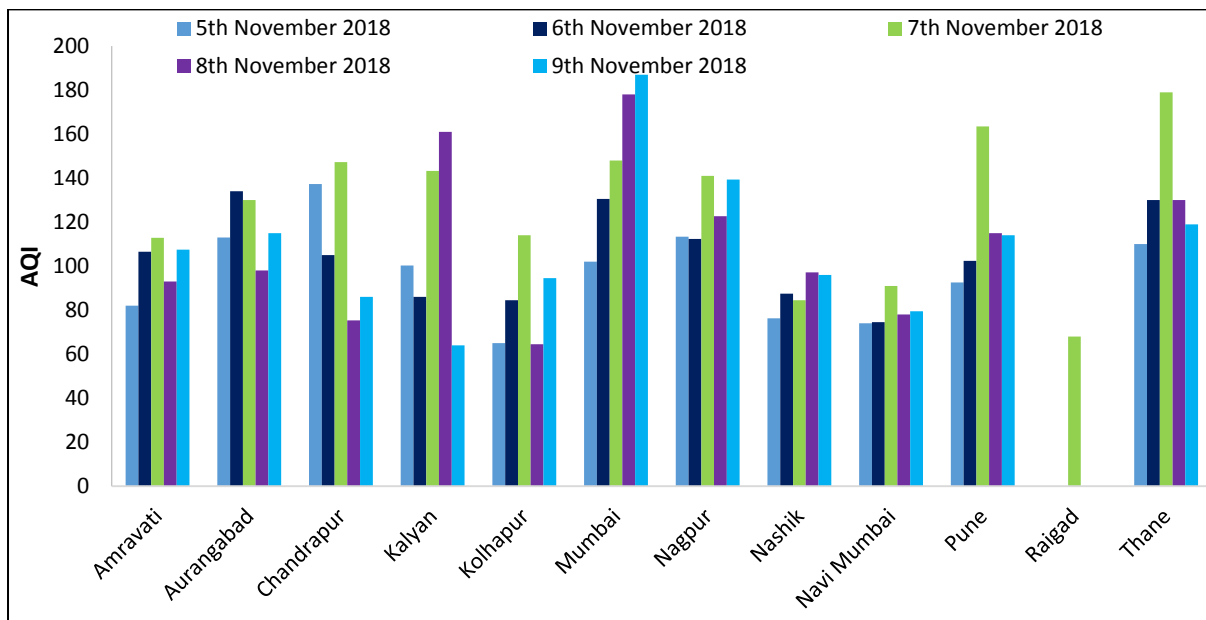


Fig 7.3. AQI during Diwali 2018 at different regions in Maharashtra.

From **Figure 7.3**, it can be observed that the highest AQI recorded on 5th November, 2018 pre-Diwali was 137 at Chandrapur. Therefore the air quality on this day was ‘Moderate’. The highest AQI observed during the three day long Diwali period was 179 at Thane on 7th November, 2018 and the air quality was therefore recorded as ‘Moderate’. The maximum AQI recorded on 9th November, 2018 post-Diwali was 187 at Mumbai and the air quality was recorded as ‘Moderate’. The highest indices during the Diwali (6th, 7th and 8th November, 2018) were recorded at Aurangabad, Thane and Mumbai respectively.

The minimum AQI of 74 was recorded pre-Diwali on 5th November at Navi Mumbai. The air quality on this day was therefore recorded as ‘Satisfactory’. During the three day long Diwali festival, the minimum AQI of 65 was recorded on 8th November at Kolhapur and the air quality on this day was ‘Satisfactory’. Post-Diwali, the lowest AQI of 64 dB(A) was recorded on 9th November at Kalyan and the air quality was recorded as ‘Satisfactory’.

The average air quality in Nashik and Navi Mumbai was ‘Satisfactory’ while that in the remaining regions was recorded as ‘Moderate’. This shows that celebrations and bursting of fire crackers made a lesser impact as compared to other sources of air pollution in the cities where air quality was monitored. The overall range of AQI during Diwali 2017 in these regions in Maharashtra shows that the air quality during Diwali Festival 2017 ranged from ‘Satisfactory’ to ‘Moderate’.

7.3.1. Comparison between AQI during Diwali 2017 and Diwali 2018.

The share of categories of AQI during Diwali festival 2017 and 2018 are shown diagrammatically in **Figure 7.4**.

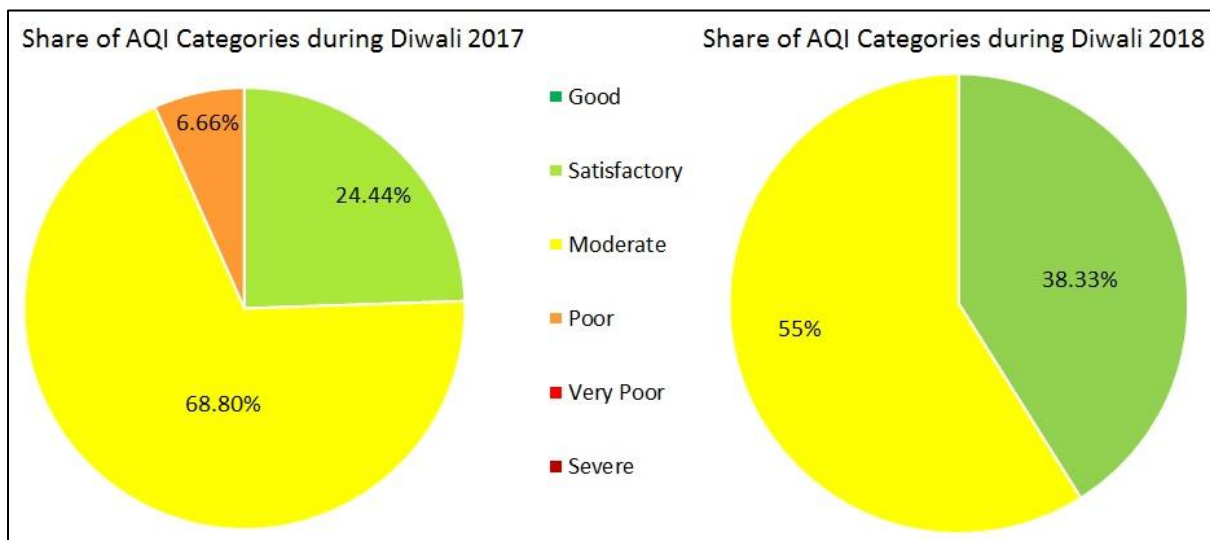


Fig. 7.4. Comparison between percentage share of AQI during Diwali Festival 2017 and 2018.

From **Figure 7.4**, it can be observed that during Diwali Festival 2018, the share of the ‘Moderate’ category of AQI was 55%, whereas during Diwali 2017, the share of the ‘Moderate’ was 68.8%. This was followed by 38.33% contribution of the ‘Satisfactory’ category of AQI during Diwali 2018, whereas during Diwali festival 2017, the contribution of this category was 24.44%. During Diwali 2018, AQI under the category ‘Poor’ was not recorded, while the share of this category was 6.66% in Diwali 2017.

It is evident from this comparison that the air quality during Diwali festival 2018 was better than Diwali 2017. Although the share of ‘Moderate’ category was category higher during Diwali 2018 than during Diwali 2017, the share of the ‘Satisfactory’ category was lesser during Diwali 2017 than in Diwali 2018. Also, the AQI in the ‘Poor’ category was not recorded during Diwali 2018, while the ‘Poor’ category had a share of 6.66% during Diwali 2017.

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 2018-19, the Board had deputed 557 officers to attend training in technical, scientific and administrative courses organizing 60 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 2018-19.

Total Training Programs Conducted	Total Participants
60	557



9. FINANCE AND ACCOUNTS

Annual Accounts of Maharashtra Pollution Control Board for the Financial Year 2018-19 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 Mfs. Om Prakash S. Chaplot & Co., Chartered Accountant. The Audit of Final Accounts was done by Mfs. Om Prakash S. Chaplot & Co., Chartered Accountant for the Financial Year 2018-19.

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

The gist of annual Receipts and Payment Accounts, Income and Expenditure Accounts and Balance Sheet for the year 2018-19 is given in this chapter.

- A) Total Income of Board for the year 2018-19 is Rs.358.68 Crores.
- | | |
|---------------------------|--------------------|
| 1. Consent Fees | Rs. 232.20 Crores. |
| 2. Analysis Charges | Rs. 8.62 Crores. |
| 3. Interest on Investment | Rs. 100.18 Crores. |
| 4. Reimbursement of Cess | Rs. 9.33 Crores. |
| 5. Other Income | Rs. 8.35 Crores. |
- B) Total Expenditure of Board for the year 2018-19 is Rs. 101.27 Crores.
- | | |
|--|-------------------|
| 1. Salary Expenditure | Rs. 34.20 Crores. |
| 2. Expenditure from Cess Fund | Rs. 3.86 Crores. |
| 3. Expenses on Projects from Cess Fund | Rs. 26.82 Crores. |
| 4. Office Administration Expenditure | Rs. 36.39 Crores. |
- C) Excess of Income over expenditure for the year Rs. 257.41 Crores.
- D) Capital Expenditure Rs. 13.27 Crores.
- E) Investment in Fixed Deposits as on 31/03/19 Rs. 2083.73 Crores.

Details of accounts for the year 2018-19 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 2018-19.

1. Status of Legal Enforcement for the year April 2018- March 2019

I) Status of cases filed before Trial Courts

A)	Name of the Act	No. of cases filed	No. of cases disposed off	No. of cases pending
1.	Water Act	9	-	9
2.	Air Act	Nil	Nil	Nil
3.	EP Act	170	-	170

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

Sr. No.	No. of Writ Petitions/PILs filed	No. of Writ Petitions/PILS disposed off	No. of Writ Petitions pending
1.	113	38	75

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

Sr. No.	No. of Special Leave Petitions/PILs filed	No. of Special Leave Petitions/PILS disposed off	No. of Special Leave Petitions pending
1.	28	3	25

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

Sr. no.	No. of Appeals/Applications filed	No. of Appeals/Applications disposed off	No. of Appeals/Applications pending
1.	68	9	59

V) Status of Appeals/Applications filed before the Public Information Officer/Appellate Authority under the Right to information Act , 2005 during the period from April,2018 to March, 2019

Sr. no.	Particulars	No. of Appeals/Applications filed	No. of Appeals/Applications disposed off	No. of Appeals/Applications pending
1.	Application	4	-	4
2.	Appeals	-	-	-

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 2018-19 the following programs on environmental awareness were conducted by the Board.

Month	Subject	Details
May 2018	Maharashtra Mango Festival: Financial assistance for environmental awareness during Mango Festival 2018 organized at Kalyan and Dombivali.	Ajinkya Pratishthan had organized the Mango Festival at Kalyan and Dombivali. During the Mango Festival, public awareness regarding plastic ban was carried out. For this, information about banned products was made public through illustrations.
May 2018	Financial assistance for environmental awareness on the occasion of the golden jubilee anniversary of Lokshaheer Patthe Bapurao at Karad.	On the occasion of the golden jubilee anniversary of Lokshaheer Patthe Bapurao, an All India Folk Art Conference was organized at Karad. Awareness regarding plastic ban was carried out comprehensively in this conference.
May 2018	Financial assistance for the 'Paryavaranchi Pustakbaag 2018' program.	The 'Paryavaranchi Pustakbaag' program was organized at Mahad District, Raigad by the organization called Rangasugandh. This year the program was organized between 8 th April and 1 st May, 2018. 500-600 students participated in this program daily. In the 'Paryavaranchi Pustakbaag' program, participant students were informed about the environment on different levels through various media such as residential camps, lectures providing interesting information about the environment, handwriting workshops, slide shows, theater, nature trails, forest and bird watching, calligraphy workshops, drawing, storytelling, elocution, essay writing, mural making, quizzes and various games. To carry out extensive public awareness regarding plastic ban, activities such as distribution of cloth bags, street plays, preparation of bags from old sarees were organized. This program is organized free of cost jointly by Rangasugandha and MPCB for school students. The 'Paryavaranchi Pustakbaag' program has been organized with assistance from MPCB for increasing environmental awareness in school students during summer vacations and this program had received great response from school students.
June 2018	On occasion of World Environment Day, 5 th June 2018, financial assistance granted for environmental short film competition organized by the Environment Vigilance Forum.	An environmental short film competition and festival were organized jointly by the MPCB and the Environment Vigilance Forum. The environmental short film competition was organized for amateur and professional groups. About 60 short film entries were received in this competition. For this competition, Mr. Santosh Pathare, Mr. Mangesh Satpute, Mr. Dnyanesh Zoting, Mr. Sagar Talshilkar, Mr. Santosh Shintre and Dr. Nagesh Tekale served as judges. The winners of the competition were awarded during the World Environment Day program on

		5 th June, 2018.
June 2018	Funding for World Environment Day with assistance from Environment Vigilance Forum.	The main event was organized at Yashwantrao Chavan Auditorium at Mumbai on 5 th June 2018, World Environment Day. Hon'ble State Environment Minister, Mr. Ramdas Kadam, State Minister for Environment, Mr. Pravin Pote Patil, Additional Principal Secretary of Environment Department, Mr. Satish Gavai and Hon'ble Member Secretary of the MPCB, Dr. P. Anbalagan attended this event. During this event, the prize distribution ceremony for the Vasundhara Award competition organized for industries, Municipal Corporations and CETPs was conducted. This competition was organized for professional and amateur groups. During this event the prize distribution ceremony of Photothon 2018 was also conducted. The introductory speech of this event was given by Hon'ble Member Secretary of MPCB, Dr. P. Anbalagan. Also the Short Film festival arranged by the Environment Vigilance Forum was co-organized by the MPCB and the Environment Department of the Government of Maharashtra on 5 th , 6 th and 7 th June, 2018. Environmentalists attended this program in large numbers. Seminars with film directors, producers, environment experts and researchers were also organized during this program.
June 2018	Public awareness messages on MTNL bills on occasion of World Environment Day.	Public awareness messages were printed on MTNL bills on occasion of World Environment Day. For creating extensive public awareness regarding the Prevent Plastic Pollution theme of this year's World Environment Day, and implementation of plastic ban by the State Government, these public awareness messages were made public.
June 2018	Financial assistance for displaying public awareness messages about plastic ban at bus stops in Nagpur city on occasion of World Environment Day.	Public awareness messages about plastic ban were displayed at bus stops in Nagpur City on occasion of World Environment Day.
June 2018	Financial assistance for displaying public awareness messages about plastic ban at bus stops in Pune city on occasion of World Environment Day.	Public awareness messages about plastic ban were displayed at bus stops in Pune City on occasion of World Environment Day.
June 2018	Financial assistance for public awareness program organized by Bhamla Foundation on occasion of World Environment Day, 5 th June, 2018.	On occasion of 5 th June, 2018, World Environment Day, the Bhamla Foundation had organized environmental awareness programs, canvas painting of environmental messages, brainstorming on public awareness and other various activities at Bandra. Veteran film artists and sportspersons attended this program.
June 2018	Financial assistance for displaying public awareness	On occasion of World Environment Day, public awareness messages related to plastic ban were displayed on Times

	messages related to plastic ban on Times OOH bus stop shelters on occasion of World Environment Day.	OOH bus stop shelters in Mumbai city.
June 2018	Publishing public awareness messages on 5 th June, World Environment Day 2018 in newspapers such as DNA, Hindustan Times and Midday.	A one page public awareness column was published in newspapers such as DNA, Hindustan Times and Midday Mumbai on 5 th June, World Environment Day 2018
June 2018	Publishing public awareness messages on 5 th June, World Environment Day 2018 in newspapers such as Times of India and Maharashtra Times.	On 5 th June, 2018 – World Environment Day, Times of India published a special one page section in the Mumbai edition. Maharashtra Times published a special public awareness message on the front and inside page in the Mumbai, Pune, Nagpur and Nashik editions. An envelope with public awareness messages about plastic ban was enclosed and distributed for the first time in the South Mumbai section of the Mumbai edition of Maharashtra Times.
June 2018	Organizing a plastic ban exhibition on occasion of 5 th June, 2018 World Environment Day.	In keeping with the theme “Prevent Plastic Pollution” for World Environment Day, an exhibition related to alternatives for plastic bags was organized on 3 rd , 4 th and 5 th June, 2018 at Mantralaya. An exhibition of paper and cloth bags, plates prepared from sugarcane waste and eco-friendly products made by Mahila Bachat Groups from the State was organized. The exhibition was inaugurated by the Hon’ble Environment Minister, Mr. Ramdasbhai Kadam. Hon’ble State Minister for Environment, Mr. Pravin Pote-Patil, Additional Chief of the Environment Department, Mr. Satish Gavai and other dignitaries were in attendance.
June 2018	Publishing public awareness messages in newspapers such as Loksatta, Indian Express and Lokmat on 5 th June, 2018, World Environment Day.	Public awareness messages were published on occasion of 5 th June, 2018, World Environment Day in the Mumbai, Pune, Nagpur, Ahmednagar, Aurangabad and Delhi editions of Loksatta, in the Mumbai, Pune, Nagpur and Delhi editions of Indian Express and on the front and inside pages of the Mumbai, Nagpur and Aurangabad editions of Lokmat.
June 2018	Publishing public awareness messages in magazines such as India Today, Corportate India, Tarun Bharat, Business Outlook, Jeevandhara, Vivek, Evo and Enviro Friend on 5 th June, 2018, World Environment Day.	Public awareness messages were published in magazines such as India Today, Corportate India, Tarun Bharat, Business Outlook, Jeevandhara, Vivek, Evo and Enviro Friend on 5 th June, 2018, World Environment Day.
June 2018	Publishing public awareness messages in newspapers such as Dainik Saamana, Dainik Sakaal and Dainik Divya Marathi on 5 th June, 2018, World Environment Day.	On 5 th June, 2018, World Environment Day, public awareness messages were published in the Mumbai, Pune and Aurangabad editions of Dainik Saamana, on the front page jacket and inside page of the Mumbai edition of Dainik Sakaal and as a special single page in the Pune and Nashik editions of Dainik Sakaal and in the Aurangabad,

		Nashik, Jalgaon, Solapur, Ahmednagar, Akola and Amaravati editions of Dainik Divya Marathi.
July 2018	Financial funding for the environmental awareness campaign, 'Paryavaranachi Waari, Pandharichya Daari'	An environmental public awareness campaign namely 'Paryavaranachi Vaari Pandharichya Daari' was organized on the occasion of Aashadhi Ekadashi and the foot pilgrimage to Pandharpur. As environmental issues are equally detrimental to urban and rural areas, fundamental messages such as plastic waste removal, proper use of water, electricity and natural resources, use of limited electrical power for agriculture, use of organic fertilizers, proper waste management of wet waste and dry waste were given. These messages were made public through folk art, popularly known as Kirtan, Bharud, and Povada. In this 15 day long pilgrimage, Sangeet Natak Academy award winner, Smt. Chandabai Tiwari, famous Shahir Shree Devanand Mali, Bharudkar Lakshman Rajguru and Hari Bhakta Parayan Mr Dnyaneshwar Maharaj Wabale created public awareness through Bharud, Povada and Kirtan respectively. This year's Pandharpur pilgrimage was inaugurated at Pune in the august presence of Hon'ble Member Secretary, Dr. P. Anbalagan, Regional Officer, Pune, and Dr. Prakash Khandge, a well-known researcher of folk arts. The conclusion of this pilgrimage was organized at Pandharpur on the eve of Aashadhi Ekadashi in the presence of Hon'ble Minister of Water Resources, Mr. Girish Mahajan, Hon'ble Minister of Transport, Mr. Divakar Ravate, Hon'ble Cabinet Minister (Solapur), Mr. Vijay Deshmukh, Hon'ble Co-operation, Marketing and Textiles Minister, Mr. Subhash Deshmukh, Hon'ble Minister of Water and Sanitation, Mr. Babanrao Lonikar, Hon'ble Senior Cabinet Minister, Mr. Mahadev Jankar, Hon'ble Cabinet Minister, Mr. Diliprao Kamble, and Hon'ble Member Secretary of MPCB, Dr. P. Anbalagan. Folk artists created awareness regarding climate change, the changing environment, plastic pollution, water scarcity and management, and tree plantation through the medium of folk art.
July 2018	Display of hoardings regarding ban on plastic and Thermocol at Airport Road, Nagpur for creating extensive public awareness.	On occasion of the monsoon session of the State Legislative Assembly, hoardings regarding ban on plastic and Thermocol were displayed at Airport Road, Nagpur for creating extensive public awareness.
August 2018	Eco-friendly Dahi Handi Celebration.	Eco Friendly Dahi Handi Festival 2018 was organized in association with IDEAL Book Company and MPCB. In this program, anti-noise pollution awareness rally was organized by famous Marathi film industry celebrities on the Open Deck Bus Service of Best Transport Service. Notable film and TV celebrities were present at this rally. On the eve of Dahi Handi, this rally was organized in the presence of street-play celebrities in Dadar, Lalbagh area. Public awareness regarding the serious health effects of

		<p>noise pollution was created through street plays. Eco-friendly Dahi Handi was smashed in the presence of young celebrities from Zee TV and ETV. At the time, in front of Chhabildas High School in Dadar, the noise-free eco-friendly Dahi Handi was smashed in the presence of celebrities from the television. The event was organized by the District Environment Officer, Mumbai.</p>
		<p>celebrities from the television. The event was organized by the District Environment Officer, Mumbai.</p>
<p>1. Television artist inaugurates rally at Environment Department on 3rd September 2018</p>		<p>Dadar</p>
<p>2. Women Squad celebrating environmental Dahi Handi at Dadar on 3rd September 2018</p>		
<p>September 2018</p>	<p>Funding for public awareness program for an eco-friendly Ganesh Festival on TV9 channel.</p>	<p>An eco-friendly Ganesh competition was organized for school students as a joint venture between TV9 and MPCB. A eco-friendly Ganesh workshop was arranged for this event. A special 30 minute program was organized for this competition. The award distribution of this competition was held at the TV9 channel studio.</p>
<p>September 2018</p>	<p>Funding for the Big Green Ganesha Program organized by 92.7 Big FM</p>	<p>The Big Green Ganesha activity was co-organized by 92.7 Big FM and MPCB in the city of Mumbai. During Ganesh festival a special studio was set up at Lalbaghcha Raja in Mumbai city for 10 days. 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 2018</p>	<p>Approval of financial grant for Household Eco-Friendly Ganesh Festival Competition 2018 organized by Loksatta and MPCB.</p>	<p>Eco-friendly household Ganesh festival decoration competition was organized jointly by MPCB and Loksatta at 6 divisions of Loksatta newspaper at Mumbai, Pune, Nashik, Nagpur, Ahmednagar and Aurangabad. More than 3000 people competed in this event. Prize distribution of this competition took place at Yashwantrao Chavan Pratishthan at the hands of Hon'ble Minister for Environment, Mr. Ramdas Kadam, Hon'ble Principal Secretary (Department of Environment), Mr. Anil Diggikar, and Hon'ble Member Secretary of MPCB, Mr. E. Ravendiran. A special column regarding this event was published in all editions of Loksatta newspaper.</p>

September 2018	Financial grant for the Times Green Ganesha program organized by Times of India.	Eco-Green Ganesha competition was organized jointly by Environment Department of MPCB, Government of Maharashtra and Times of India group for public Ganesh festival organizations and housing societies in Mumbai and Pune. During this campaign, public awareness activities were conducted in various malls, movie theatres and colleges. Eco-friendly Ganesh festival workshops were conducted for school students. Various activities and cleanliness campaigns were conducted by college students for the eco-friendly Ganesh ambassador during Ganesh idol immersion at Girgaon Chowpati. The campaign was launched by film actor Varun Dhavan and actress Anushka Sharma at Oberoi Mall, Goregaon. The award distribution ceremony was conducted at Sahyadri State Guest House in the presence of Hon'ble Minister for Environment, Mr. Ramdas Kadam and Hon'ble Member Secretary of MPCB, Mr. E. Ravendiran. A special section on this program was published in all editions of Maharashtra Times.
September 2018	Funding for Household Ganesh Festival Competition organized by Zee 24 Taas and MPCB.	The Eco-friendly Ganesh Festival Competition 2018 was organized jointly by the MPCB and Zee 24 Taas. The competition received a stellar response. Participation in this competition was advertised through special promos. News capsules with celebrities celebrating an eco-friendly Ganesh festival were broadcast on occasion of the competition.
September 2018	Funding for Public Ganesh Festival competition organized by IBN Lokmat and MPCB.	A public Ganesh Festival competition was organized by IBN Lokmat and MPCB. Participation in this competition was advertised through special promos. In this program, 5 special episodes were broadcast by this channel.
September 2018	Funding for Eco-friendly Ganesha Public Awareness Campaign organized by DNA and MPCB.	To celebrate an eco-friendly Ganesh festival, a household eco-friendly competition was organized in housing societies by DNA and MPCB. MPCB played the role of co-convenor in this campaign organized by DNA. Prominent celebrities from the Hindi film industry participated in this campaign.
September 2018	Funding for Eco-Ganesha Public awareness campaign organized by Dainik Saamana and MPCB.	Eco-friendly public Ganesh festival was organized at Mumbai, Pune and Aurangabad with assistance from the newspaper, Dainik Saamana. The prize distribution event was conducted in the presence of Hon'ble Minister for Environment, Mr. Ramdasbhai Kadam and Hon'ble Member Secretary, MPCB, Mr. E. Ravendiran. A special section about this program was published in all editions of Dainik Saamana at Mumbai, Pune and Aurangabad.
September 2018	Financial grant for displaying public awareness messages regarding eco-friendly Ganesh festival on bus stop shelters in Pune city.	Public awareness messages regarding eco-friendly Ganesh festival were displayed on bus stop shelters in Pune city.
September 2018	Financial grant for displaying public awareness messages	Public awareness messages regarding eco-friendly Ganesh festival were displayed on bus stop shelters in Nagpur city.

	regarding eco-friendly Ganesh festival on bus stop shelters in Nagpur city.	
September 2018	Financial grant for eco-friendly Ganesh festival public awareness campaign by Jai Maharashtra TV channel.	An eco-friendly Ganesh festival competition was organized for housing societies by Jai Maharashtra TV channel and MPCB.
September 2018	Financial assistance for displaying public awareness messages related to an eco-friendly Ganesh festival on Times OOH bus stop shelters.	Public awareness messages related to an eco-friendly Ganesh festival were displayed on Times OOH bus stop shelters in Mumbai city.
September 2018	Financial assistance for eco-friendly Ganesh festival by ABP Maza.	Public awareness campaign was organized by MPCB and ABP Maza in housing societies in major cities in the State for celebrating an eco-friendly Ganesh festival. The celebration of eco-friendly Ganesh festival in housing societies in cities such as Mumbai, Pune, Nashik and Nagpur was made public by ABP Maza in their newspaper through a designated column. A 30 minute talk show was organized on ABP Maza television channel. Special programs were organized through the newsletter on ABP Maza from this channel to housing societies celebrating environment-friendly Ganesh festival. Also, popular celebrities from the Marathi film industry, Dr. Amol Kolhe and Prajakta Gaikwad advertised the competition through promos for the purpose of celebrating Ganesh festival in the entire State. MPCB's certificate and prasad were presented to the winners from this competition at their respective homes. At this time, the celebrities visited the MPCB Headquarters. ABP Maza broadcast a special news section on this campaign.
October 2018	Funding for the tandem cycling program for plastic ban organized by The Blind Welfare Association from Shirdi to Mumbai.	Funds have been granted for the tandem cycling program for plastic ban organized by The Blind Welfare Association from Shirdi to Mumbai.
October 2018	Financial grant for Environment Convention 2018 organized by Nature and Social Environment Pollution Prevention Board.	An environmental convention was organized by Nature and Social Environment Pollution Prevention Board at Ralegan Siddhi, District Ahmednagar. Financial assistance was granted for the same.
November 2018	Funding for public awareness messages for an eco-friendly Diwali displayed on bus stop shelters in Nagpur city.	Public awareness messages for an eco-friendly Diwali were displayed on bus stop shelters in Nagpur city.
November 2018	Public awareness messages regarding a pollution-free Diwali 2018 from Hon'ble Chief Minister, Hon'ble Minister of Environment and Hon'ble Cabinet Minister broadcast by various TV channels.	Diwali festival 2018: Public awareness messages regarding a pollution-free Diwali 2018 from Hon'ble Chief Minister, Hon'ble Minister of Environment and Hon'ble Cabinet Minister were broadcast by ABP Majha, Zee 24 Taas, IBN Lokmat, TV9, Jai Maharashtra, Saam TV and Mumbai Doordarshan.

November 2018	Broadcasting of a 16 minute episode on the Pollution-free Diwali Resolution 2018 program.	A 16 minute episode on the Pollution-free Diwali Resolution 2018 program was broadcast on TV channels such as ABP Majha, Zee 24 Taas, IBN Lokmat, Jai Maharashtra, Saam TV and Mumbai Doordarshan.
November 2018	Broadcasting of a Pollution-free Diwali Resolution Campaign Pledge 2018 from various TV new channels.	Pollution-free Diwali Resolution Campaign Pledge 2018 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. Live telecast of this event was broadcast on leading news channels in the State.
November 2018	Publishing news on a Pollution-free Diwali Resolution Campaign 2018 in Maharashtra Times.	Pollution-free Diwali Resolution Campaign Pledge 2018 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. News about this event was published in all editions of the newspaper, Maharashtra Times.
November 2018	Publishing news on a Pollution-free Diwali Resolution Campaign 2018 in Lokmat.	Pollution-free Diwali Resolution Campaign Pledge 2018 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. News about this event was published in the Mumbai, Aurangabad and Nagpur editions of Dainik Lokmat.
November 2019	Public awareness messages on the occasion of an eco-friendly Diwali displayed on MTNL bills.	Public awareness messages were displayed on MTNL bills messages on the occasion of an eco-friendly Diwali.
November 2019	Publishing public awareness messages during Diwali celebration in India Unbound Magazine.	Public awareness messages regarding the functioning of the MPCB were published in the India Unbound magazine during Diwali celebration.
November 2018	Publishing public awareness messages regarding the Pollution-free Diwali Resolution Campaign 2018 in leading newspapers.	Pollution-free Diwali Resolution Campaign Pledge 2017 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. News about this event was published in leading newspapers in the State.
November 2018	Organizing Pollution-free Diwali Resolution Campaign 2018.	Pollution-free Diwali Resolution Campaign Pledge 2017 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged

		by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. Hon'ble Environment Minister, Mr. Ramdas Kadam, Hon'ble Minister of Public Works, Mr. Chandrakant Dada Patil, Hon'ble State Minister of Water Supply, Mr. Babanrao Lonikar, Hon'ble Minister of Water Resources, Mr. Girish Mahajan, Hon'ble State Minister of Environment, Mr. Pravin Pote Patil, Hon'ble Cabinet Minister, Mr. Ram Shinde, Hon'ble State Minister of Water Resources, Mr. Vijay Shivtare, Hon'ble State Minister of Animal Husbandry, Mr. Mahadeorao Jankar, Hon'ble Principal Secretary, Mr. Pravin Pardeshi, Hon'ble Principal Secretary (Department of Environment), Mr. Anil Diggikar, and Hon'ble Member Secretary of MPCB, Mr. E. Ravendiran were present for this program. Students from various colleges in Mumbai were also present for this program. News about this program was broadcast by leading TV news channels and was published by leading newspapers in the State.
November 2018	Publishing special public awareness messages regarding the Pollution-free Diwali Resolution Campaign 2018 in the newspapers, Dainik Saamana, Dainik Sakaal and Dainik Divya Marathi.	Pollution-free Diwali Resolution Campaign Pledge 2017 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. News about this program was published by the newspapers, Dainik Saamana, Dainik Sakaal and Dainik Divya Marathi as a special section.
November 2018	Financial grant for environmental awareness at the Konkan Festival organized by the Mee Kanjurkar Pratishthan.	A festival showcasing the culture of Konkan was organized by the organization, Mee Kanjurkar Pratishthan. The MPCB participated in this festival for creating extensive public awareness regarding the environment and pollution in the Konkan region.
November 2018	Funding for broadcasting public awareness messages to promote a pollution-free Diwali on leading radio channels in the State.	The public awareness message saying 'Celebrate a pollution-free Diwali' by Hon'ble Chief Minister, Hon'ble Environment Minister and Hon'ble State Minister for Environment was broadcast by FM radio channels.
November 2018	Financial grant for displaying public awareness messages for promoting celebration of a pollution-free Diwali 2018 on bus stop shelters in Mumbai city.	Public awareness messages for promoting celebration of a pollution-free Diwali 2018 were displayed on bus stop shelters in Mumbai city.
November 2018	Funding for publishing a section on the Pollution-free Diwali Resolution Campaign in the newspaper Dainik Loksatta.	Pollution-free Diwali Resolution Campaign Pledge 2017 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Mr Devendra Fadnavis. News about this

		event was published by the newspaper Dainik Loksatta.
December 2018	Funding for the Environmental Conference organized by Mumbai Marathi Patrakar Sangh and MPCB.	A one-day Environmental Conference was jointly organized by Mumbai Marathi Patrakar Sangh and MPCB.
December 2018	Interschool environmental drama competition was organized by Eco-Folks.	An Interschool environmental drama competition was organized by Eco-Folks and MPCB at the Environmental Green Theater Festival in the cities of Mumbai, Pune, Nagpur, Aurangabad, Kolhapur and Nashik. This competition was held in two rounds, preliminary and final. The preliminary round was also conducted at Latur and Nanded in the Aurangabad division. More than 300 schools participated in this competition.



1. School student playing in an environmental inter-school theater competition.
2. Winners were awarded prizes at the Inter-School Drama competition.

December 2018	International Mountain Day Marathon	11 th December is celebrated as the International Mountain Day. Urgent steps to protect and conserve forest resources and wildlife of the mountain ranges is required. Green Aiders and MPCB co-organized the Mountain Marathon at hill stations to create environmental awareness among the public. 200 contenters participated in the marathon.

12. IMPORTANT MATTERS DEALT WITH BY THE BOARD

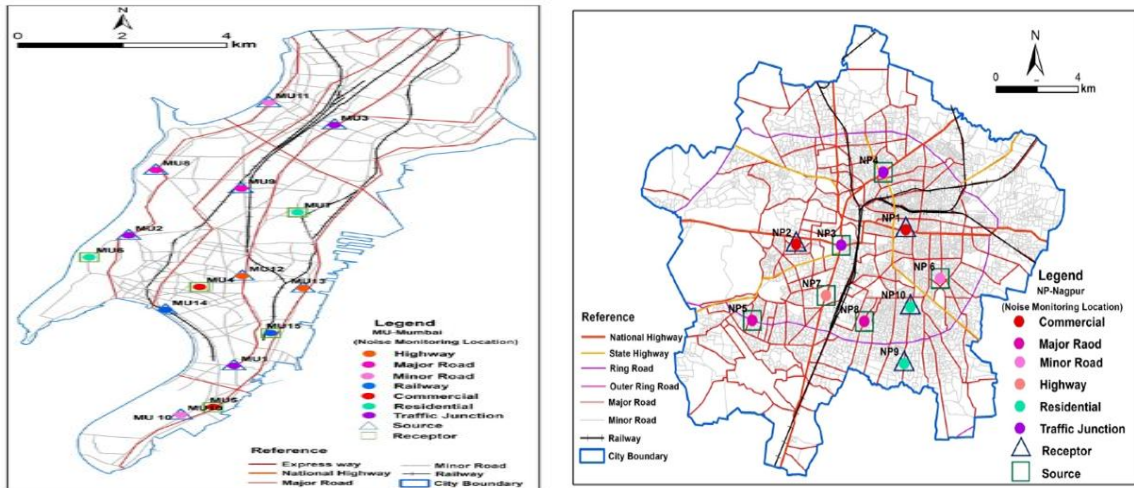
1. Research & Development studies for urban noise

As per the directives of Hon'ble High Court, Mumbai, MPCB and NEERI has undertaken a research study based on the Noise Mapping carried out by the Board and NEERI for 27 Corporation cities in the State of Maharashtra. The study is envisaged for characterization of urban noise levels considering various noise pollution generating scenarios during working and non-working days at source and receptors. The proposed action plan for research studies is divided into three categories, namely:

- Assessment and characterization of urban noise (traffic, speed, honking, roads, construction, railway etc.)
- Design and development of device, barrier and management information system
- Study on impact of urban noise on human health

Further the study, Mumbai and Nagpur cities have been selected for conducting research studies for urban Noise pollution, considering the different scenario existence in these two cities. Under the proposed study, the following activities are proposed:

1. Development of GIS based noise information system:
 - Preparation of various thematic layers namely administrative boundary of city, zone, wards, road network, rail network, previous noise monitoring locations has been done.
 - GIS based noise information system is developed for Mumbai and Nagpur city.
 - This system will be open source and easily installable for dissemination.
 - Development of GIS based noise information system for remaining 25 cities is in progress.
2. Design and Development of Noise ATM:
 - First prototype of Noise ATM has been developed.
 - This device will help in regulating number of time a vehicle honks and will help in reducing noise pollution due to unnecessary honking
3. Impact of urban noise on human health:
 - The study for assessing impact of urban noise on human health will be carried out with the help from KEM hospital, Mumbai.
 - The action plan is finalised and the study will commence once the administrative formalities between NEERI and KEM hospital are completed.
4. Characterization of assessment Traffic noise:
 - Monitoring of existing heterogenic traffic noise with emphasises on unnecessary honking and vehicle noise levels emerging from of heavy-Medium-light vehicles.
 - The locations identified for assessment in Mumbai and Nagpur city is depicted in following figures:



2. Air Quality Control Measures initiated by the Board.

- Board has strengthened the ambient air quality monitoring network by installing continuous ambient air quality monitoring stations (CAAQMS) at 14 locations in Mumbai and its suburban area for monitoring all notified parameters as per National Air Quality Standards, 2019. All these monitoring stations are connected to AQI server at National level. Also AQI is displayed at MPCB web-site for disseminating the information to public at large.
- Preparation of action plans for 17 nos. of non-attainment cities, identified by CPCB, is completed and reports are submitted to Central Pollution Control Board. The three member committee at CPCB has approved these action plans for implementation. Board has communicated these action plans to respective Municipal Corporations, Namely: Akola, Amravati, Aurangabad, Badlapur, Chandrapur, Jalgaon, Jalna, Kolhapur, Latur, Mumbai, Nagpur, Nashik, Navi Mumbai, Pune, Sangli, Solapur & Ulhasnagar. Board is taking follow-up with the respective Corporations for its effective implementation and submission of status report.
- Implementation of **NCAP** in the State of Maharashtra: MoEF & CC has formulated National Clean Air Program (NCAP) as a long term time bound National level strategy to tackle the increasing Air Pollution Problem across the country in comprehensive manner. The main objective of the NCAP is to meet the prescribed annual average standard as per Ambient Air Quality Standard- 2009.

Board is initiated the study through Sir J.J. group of Hospitals, Mumbai, for conducting health impact due to urban air and noise pollution

3. Achievements from Waste Management Division:

Development of online portal for Hazardous Waste Manifest:

- As State of Maharashtra is striving to achieve Ease of Doing Business and bring transparency in the Government systems. MPC Board has taken a great initiative to achieve the said goals by developing online portal for hazardous waste manifest system i.e. form 10 as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.



- Online Manifest system for the Hazardous Waste serves the purpose of simplifying the process of manual filling of the forms and eases of data availability for all the stakeholders and assists in environmental sound management of the Waste.

One Day Interaction program to create awareness and sensitization on H&OW Rules 2016 for spent solvent generation/utilization:

- Experts from Environment field were called for delivering lectures in order to create awareness with respect to standard operating procedures and minimum requisite facility for utilization of spent solvent.
- Also some of the success stories were highlighted to make the stakeholders aware of the good practices that can be adopted to run the facilities in environmental friendly manner.
- Followed by the above two a discussion session took place where the practical difficulties faced by the stakeholders were addressed.

One Day Workshop of newly formed Nagar Panchayats on Waste Management

- MPC Board in association with Swaccha Maharashtra Mission successfully arranged the One-day workshop at Divisional Level i.e. Nashik and Pune in order to create awareness about Solid Waste Management.

Online portal for collecting ward-wise data for Municipal Solid Waste from local bodies:

- Board has developed online portal for collecting ward-wise data from local bodies to ensure segregation of waste at source and encourage efficient waste management by the local bodies.
- The portal is used on pilot basis as of now and the data is continuously monitored by the Board and subsequent directions are given to the local bodies.

Maharashtra Plastic Notification-2018

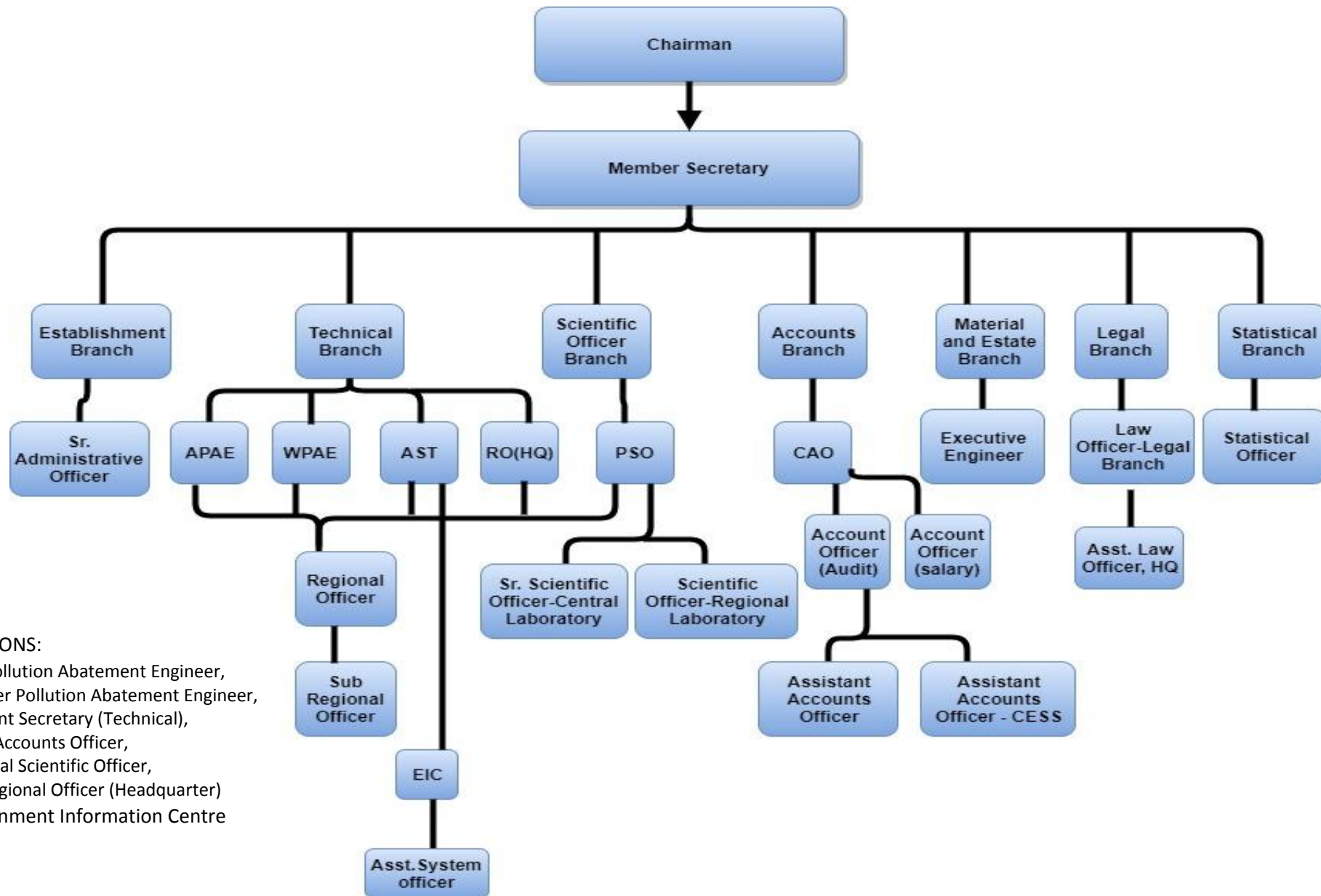
- Board has played an active role in bringing the new plastic notification -Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification,2018.
- The notification has come up with innovative and stringent rules, for e.g. banning of manufacture, usage, transport, distribution, wholesale & retail sale and storage, import of the plastic bags with handle and without handle, and the disposable products manufactured from plastic & Thermocol (polystyrene) such as single use disposable dish, cups, plates, glasses, fork, bowl, container, disposable dish/ bowl used for packaging food in hotels, spoon, straw, non-woven polypropylene bags, cups/ pouches to store liquid, packaging with plastic to wrap or store the products, packaging of food items and food grain material etc.
- Also the fines imposed were such that the habit of using plastic will be curtailed to a great extent as it has become an integral part of human's daily activities where the use is not regulated.
- MPC Board in collaboration with the local bodies have collected a fine of Rs 6 crores for using banned plastic in the State of Maharashtra.



ANNEXURES



ANNEXURE 1A – ORGANIZATIONAL STRUCTURE OF THE BOARD

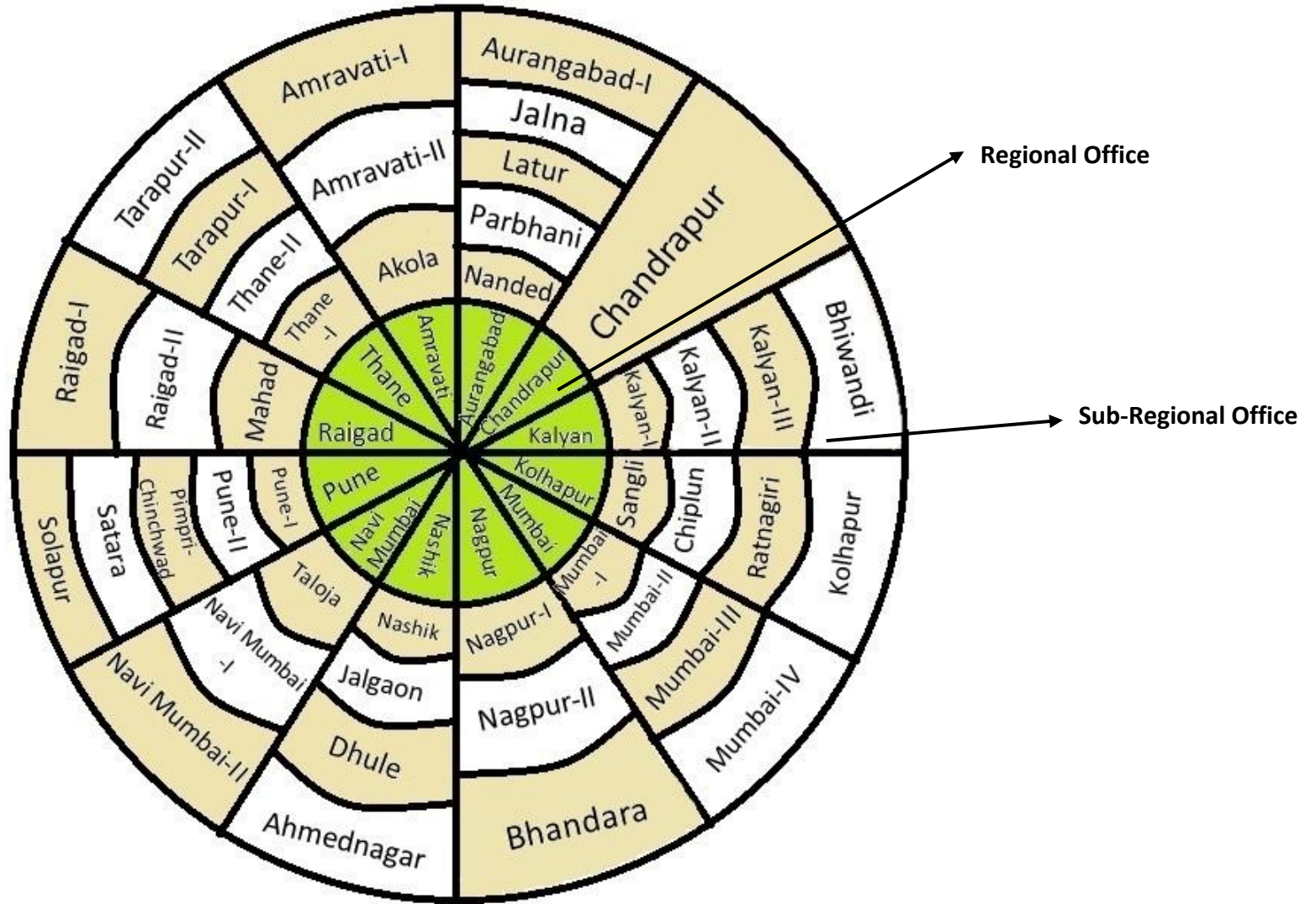


ABBREVIATIONS:

- 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

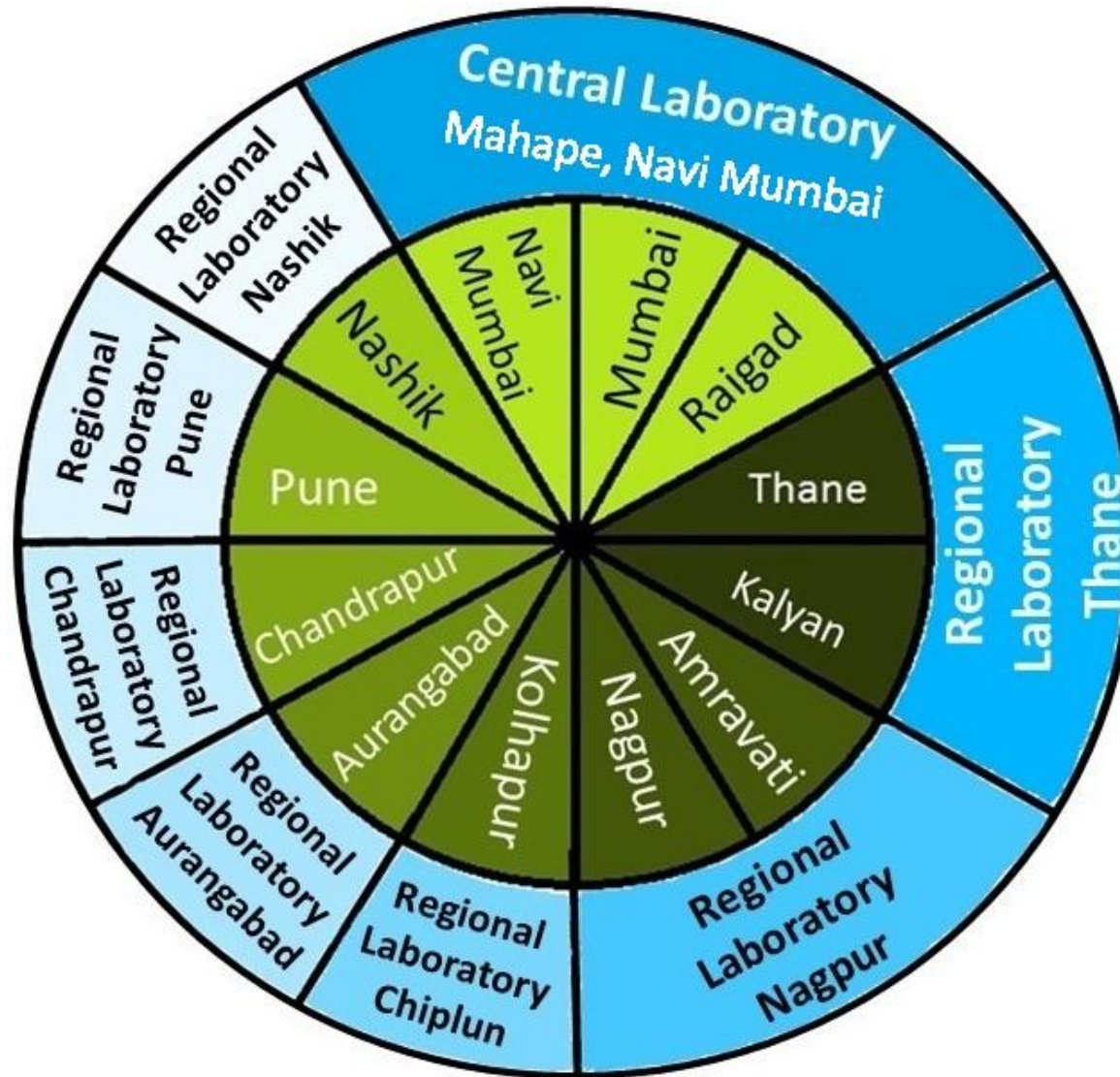
ANNEXURE 1B –CHARTS OF FIELD OFFICES AND BOARD LABORATORIES

FIELD OFFICES CHART





BOARD LABORATORIES CHART



**ANNEXURE 2 - STAFF STRENGTH AS ON 31/03/2019**

Sr. No.	Posts	Salary Band	Grade salary	Sanctioned	Filled In	Vacant
1	Chairman			1	1	0
2	Member Secretary	(PB-4) 37400-67000	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 Officer	15900-39100	7600	1	1	0
6	Chief Accounts Officer	15900-39100	7600	1	1	0
7	Assistant Secretary (Technical)	15900-39100	7600	1	1	0
8	Senior Law Officer	15900-39100	7600	2	0	2
9	Senior Administrative Officer	15900-39100	6600	1	0	1
10	Executive Engineer	15900-39100	6600	1	1	0
11	Material Officer	15900-39100	6600	1	0	1
12	Regional Officer	15900-39100	6600	15	9	6
13	Law Officer	15900-39100	6600	2	2	0
14	Senior Scientific Officer	15900-39100	6600	3	2	1
15	Sub-Regional Officer	15900-39100	5400	55	54	1
16	Statistical Officer	15900-39100	5000	1	1	0
17	Assistant Secretary (EB)	15900-39100	5000	1	1	0
18	Private Secretary	9300-34800	5000	2	0	2
19	Administrative Officer	15900-39100	5000	1	1	0
20	Scientific Officer	15900-39100	5000	9	6	3
21	Account Officer	15900-39100	4400	2	2	0
22	Junior Scientific Officer	9300-34800	4400	26	21	5
23	Assistant Accounts Officer	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	4	1
27	Junior Steno	9300-34800	4300	27	14	13
28	Field Officer	9300-34800	4300	204	161	43
29	Head Accountant	9300-34800	4300	20	13	7
30	Legal Assistant	9300-34800	4300	4	0	4
31	Junior Scientific Assistant	9300-34800	4200	40	28	12
32	First Clerk	9300-34800	4200	17	16	1
33	Statistical Assistant	9300-34800	4200	1	0	1
34	Draftsman	5200-20200	2800	1	0	1



35	Field Inspector	5200-20200	2800	42	7	35
36	Senior Clerk	5200-20200	2400	50	40	10
37	Assistant Draftsman	5200-20200	2400	2	0	2
38	Electrician	5200-20200	2400	2	1	1
39	Tracer	5200-20200	2000	6	2	4
40	Laboratory Assistant	5200-20200	2000	7	3	4
41	Junior Clerk	5200-20200	1900	64	48	16
42	Driver	5200-20200	1900	74	57	17
43	Instrument Fitter	5200-20200	1900	1	1	0
44	Daftari	5200-20200	1900	14	1	13
45	Naik	440-7440	1600	2	0	2
46	Roneo Operator	440-7440	1600	1	0	1
47	Peons	440-7440	1300	88	46	42
48	Chowkidar	440-7440	1300	20	11	9
49	Sweepers	440-7440	1300	3	3	0
	Total			839	566	273



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, Bhore 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 distrct.	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, Taty Tope ward near city petrol pump, Miskin Mhal 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 2018-19

RO Office	Green			Green Total	Orange			Orange Total	Red			Red Total	White	White Total	Grand Total
	LSI	MSI	SSI		LSI	MSI	SSI		LSI	MSI	SSI				
RO Amaravati	1	9	3853	3863	12	12	2834	2858	40	6	188	234	318	318	7273
RO Aurangabad	31	41	5464	5536	73	84	2238	2395	233	25	396	654	83	83	8668
RO Chandrapur	4	6	602	612	9	13	431	453	93	10	73	176	83	83	1324
RO Kalyan	31	34	1768	1833	90	51	1168	1309	95	63	1746	1904	225	225	5271
RO Kolhapur	26	20	7314	7360	78	86	4362	4526	221	54	1114	1389	3425	3425	16700
RO Mumbai	31	100	2447	2578	585	155	751	1491	148	20	605	773	23	23	4865
RO Nagpur	10	14	2561	2585	123	52	2727	2902	215	13	845	1073	139	139	6699
RO Nashik	128	54	5847	6029	136	82	2667	2885	293	61	1302	1656	1896	1896	12466
RO Navi Mumbai	53	74	1868	1995	148	86	1034	1268	178	43	1090	1311	274	274	4848
RO Pune	335	269	7541	8145	1224	284	4355	5863	857	132	2225	3214	955	955	18177
RO Raigad	21	25	587	633	93	29	516	638	184	33	375	592	46	46	1909
RO Thane	29	17	1669	1715	230	34	867	1131	190	28	742	960	75	75	3881
Grand Total	700	663	41521	42884	2801	968	23950	27719	2747	488	10701	13936	7542	7542	92081

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 2018-19.

Sr. No.	Training/Workshop Dates and period	Training venue	Subject	Name of Participants
1	14 th May, 2018	The Royal Plaza 19, Ashoka Road, New Delhi – 110001	Workshop on “National Clean Air Program (NCAP) to provide inputs for strengthening NCAP”	1. Mr. Arjun V. Rathod FO, SRO, Bhandara 2. Mr. Pramod Lone, FO, JD (APC) Section, Mumbai 3. Mr. Manish Mahajan, FO, SRO, Nashik 4. Mr. Umesh Jadhav , FO, SRO, Navi Mumbai-I
2	2 nd to 5 th June, 2018	Vigyan Bhavan, New Delhi	Exhibition on “Environment to Celebrate the World Environment Day 2018”	1. Dr. B. N. Patil, Director, Environment Department 2. Mr. P. K. Mirashe, AS (T), MPCB 3. Dr. Y.B. Sontakke, JD (WPC), MPCB 4. Mr. N.N. Gurav, RO-HQ, MPCB 5. Mr. Sanjay Sandanshiv, Add. Secretary, Environment Department 6. Mr. Ajit R. Suryawanshi, FO, MPCB 7. Mr. Yogesh Deshmukh, FO, MPCB 8. Mr. Sandeep Tope, FO, MPCB
3	6 th and 7 th June, 2018	The St. Regis Hotel, Lower Mumbai	National Conference on "Water, Wastewater Treatment and Solid waste Management"	1. Dr. Yashwant Sontakke, JD (WPC) 2. Mr. N.N. Gurav, RO-HQ, MPCB 3. R.O. Officers - Amaravati, Aurangabad, Kolhapur, Nagpur, Nashik, Chandrapur, Pune 4. All SROs
4	9 th June, 2018	The Deccan Sugar Technologies Association (INDIA), [DSTA], Pune.	"Environment Management in Sugar and Distillery Industry"	1. Mr. P.K. Mirashe, AS (T) 2. Dr. Y. B. Sontakke, JD (WPC), MPCB, Mumbai
5	15 th June, 2018	Hotel Claridges, New Delhi, Organized by Swiss Agency for Development and Cooperation (SDC), New Delhi.	"Scoping Study on Clean Air in India"	1. Dr. V.M. Motghare, JD (APC), MPCB, Mumbai 2. Mr. Ashok M. Kare, I/c. RO, MPCB, Nashik 3. Dr. H.D. Gandhe, I/c. RO, MPCB, Pune 4. Mr. Shashikant R. Patil, FO, SRO, MPCB, Nashik 5. Mr. Sameer S. Vastre, FO, SRO-II, MPCB, Pune
6	2th July, 2018	Kalpataru Point, 2nd -4th Floor, Opp. Cine Planet	"Government E-Market Place (GeM) Portal"	1. Mr. P. K. Mirashe, AS (T), MPCB 2. Dr. V.M. Motghare, JD (APC), MPCB, Mumbai.



		Cinema, Near Sion Circle, Sion (E), Mumbai - 400022.		<ul style="list-style-type: none"> 3. Dr. Y.B. Sontakke, JD (WPC), MPCB 4. Dr. Amar Supate, PSO, Mumbai 5. Mr. Shyamkumar R. Patil, CAO, Mumbai 6. Mr. Bhalchandra R. Jagtap, Executive Engineer, Mumbai 7. Mr. Nandkumar N. Gurav, RO, HQ 8. Mr. A.H. Padavi, AO 9. Mr. D.M. Sonawane, ASO 10. Mr. S.V. Bhosale, I/c. C. Lab 11. Smt. Ragini Butale, SO, I/c. R. Lab, Thane 12. Dr. R. B. Desai, IT Manager, Mumbai 13. Mr. Neeta Borade, Assistant AO, Mumbai 14. Mr. S.C. Kollur, Adviser AOC Section 15. Mrs. S. Giri, Store Superintendent, Mumbai 16. Mr. Krishna Lembe, HA, Account Department 17. Mr. Sandeep Rane, Electrician 18. Mr. Subhodh Waikar, Clerk, Account D 19. Mr. Mahesh Lokhande, Clerk, Account D 20. Mrs. Bharti Pol, Clerk, Account D 21. Mrs. Nutan Kuveskar, Clerk, EIC D 22. Mr. Subhash Karande, Clerk, EIC D
7	5 th and 6 th July, 2018	The Constitution Club of India in New Delhi.	5th edition of the Oil Spill India-International Conference & Exhibition	<ul style="list-style-type: none"> 1. Mr. Vidyasagar V. Kiledar, SRO, Thane - II 2. Mr. Yogesh Deshmukh, FO, AST Section, Mumbai
8	August 1 st to 4 th , 2018	Anil Agarwal Environment Training Institute (AATI), Nimli, Rajasthan.	"Environmental Audit for Sustainable	<ul style="list-style-type: none"> 1. P.K. Mirashe, AS (T), HQ, Mumbai 2. Mr. Nandkumar N. Gurav, RO, HQ, Mumbai of MPC Board.
9	27 th to 31 st August, 2018	Engineering Staff College of India, Old Bombay Road, Gachi Bowli, Hyderabad - 500032.	"ISO 14001:2015 EMS - Lead Auditor Training"	<ul style="list-style-type: none"> 1. Dr. Amar R. Supate, PSO, Mumbai 2. Mr. Kishor V. Gavankar, JSO, Central Lab, Navi Mumbai.



10	16 th August, 2018 to 28 th September, 2018	Conference Hall, Kalpataru Point, 4th Floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai - 400022	"Water Pollution, Air Pollution, Waste Management, Bio-Medical Waste, Common Facilities, Legal Aspects, Administration, Accounts & Online Processing, etc."	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO
11	23 rd to 25 th August, 2018.	IIT Bombay, Powai, Mumbai - 400076.	"Resource recovery options, Managing the Quality of Water, Health Effects of Air Pollution, Waste to Energy, Risk Analysis & Uncertainty Modelling Wastewater Treatment, Industrial Effluent Treatment for Promoting Recycling and Reuse, Air Resource Management, Action Plan for Air Pollution Mitigation, Framework, Regulations and Technologies for integrated Solid Waste Management, etc."	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO
12	3 rd to 7 th September 2018	Omex India Pvt. Ltd., Omnex, 304, Konark Icon, near Seasons Mall, Magarpada, Pune-411028	"ISO 9001:2015 Lead Auditor"	<ol style="list-style-type: none"> 1. Dr. Amar R. Supate, PSO, Mumbai 2. Mr. V.R. Thakur, Senior SO, R. Lab, Nagpur 3. Smt. Ragini Butale, SO & I/c. R. Lab, Thane 4. Smt. Vidya Pednekar, SO, C. Lab, Mahape



13	29 th to 31 st August, 2018	National Environmental Engineering Research Institute, Neharu Marg, Nagpur - 440020.	"Advance Instrumental Analytical Techniques (AAS, ICP, XRF, GC, GC-MS, HPLC, IC, EC/ OC, TOC etc.)"	1. Mr. S.H. Nagare, SO, R. Lab., Nashik, MPCB
14	30 th August, 2018.	CSIR-NEERI Nagpur	"Slaughterhouse and Dairy & Milk Processing Industries"	1. Dr. Yashwant Sontakke, JD (WPC), Mumbai 2. Mr. Rahul M. Wankhede, RO, Nagpur 3. Mrs. Hema Deshpande, SRO Nagpur-I
15	4 th to 7 th September, 2018.	Bhopal	"Compliance, monitoring & enforcement practices in India and Sweden"	1. Smt. Saujanya S. Patil, SRO Jalgaon 2. Smt. Indira T. Gaikwad, SRO Ratnagiri, MPCB
16	29 th August, 2018.	MWRRA, World Trade Centre, Cuffe Parade, Mumbai	"Urban Waste Water Recycling and Reuse"	1. Mr. J.B. Sangewar, RO, Mumbai. 2. Mr. Sanjay Bhosale, SRO Mumbai-I
17	8 th September, 2018.	Institute of Chemical Technology (ICT), Matunga, Mumbai - 400019.	"Process Calculations, Heat and Mass Transfer, Chemical Reaction Engineering including Multiphase Reactors, Gas-Liquid Absorption including Reaction absorption for emission control, Separation Processes: Distillation & Extraction with focus on solvent recovery, minimizing effluent load, Effluent Management & Sustainability., etc.,"	1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO
18	25 th to 27 th September, 2018	National Environmental Engineering Research Institute, Neharu Marg, Nagpur - 440020.	"Accidental Spill - Emergency Response and Environmental Impact Assessment-Future Perspective"	1. Pramod R. Mane, SRO-Mumbai-III, Mumbai 2. Dr. H.D. Gandhe, SRO-Pune-II, Pune
19	15 th September, 2018	Dadar, Chowpaty	"One day Beach clean-up activities"	1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO



				<ul style="list-style-type: none"> 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO
20	17 th September, 2018	Mumbai	"Area Level Pollution Response Exercise POLREX-18 - Off Mumbai.	<ul style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO
21	September 24 th to 28 th , 2018.	Anil Agarwal Environmental Training Institute (AATI), Nimli, Rajasthan.	"Smart and Affordable System for Environmental"	<ul style="list-style-type: none"> 1. Mr. Amar Durgule, SRO Kalyan-I
22	December 4 th to 7 th , 2018	Anil Agarwal Environmental Training Institute (AATI), Nimli, Rajasthan.	"Approach of Hazardous Waste Management"	<ul style="list-style-type: none"> 1. Mr. Nilesh Marbal, FO, JD (WPC) Section, Mumbai
23	December 11 th to 14 th , 2018	Anil Agarwal Environmental Training Institute (AATI), Nimli, Rajasthan.	"Cleaner Brick Production"	<ul style="list-style-type: none"> 1. Mr. Nitin Shinde, SRO, Pune - I 2. Mr. Chandrakant Shinde, FO, JD (APC) Section, Mumbai 3. Mr. Vikram H. Mane, FO, JD (WPC) Section, Mumbai
24	January 21 st to 25 th , 2018	Anil Agarwal Environmental Training Institute (AATI), Nimli, Rajasthan.	"Development of Environmental Management Plan for Polluted Areas"	<ul style="list-style-type: none"> 1. Mr. Pradeep Khuspe, FO, JD (WPC) Section, Mumbai



25	19 th to 21 st September, 2018.	Bombay Exhibition Centre, Goregaon (East), Mumbai - 400063.	"Exhibit at Municipalika 2018"	<ol style="list-style-type: none"> 1. Mr. J.S. Salunkhe, RO, Raigad 2. Mr. Tanaji Yadav, SRO, Navi Mumbai-II 3. Mr. Amar Durgule, SRO, Kalyan-I 4. Mr. Ajit Suryawanshi, FO, RO, Kalyan 5. Mr. Vishal Mundhe, FO, SRO Kalyan-I 6. Mr. Ulhas Kanade, FO, RO, Navi Mumbai 7. Mrs. Sunil Sonkamble, FO, SRO, Taloja
26	19 th September, 2018	BPCL, Mahul, Chembur, Mumbai.	"Odour Monitoring to be conducted"	<ol style="list-style-type: none"> 1. Mr. P.K. Mirashe, AS (T) Section, Mumbai 2. Dr. V.M. Motghare, JD (APC), Mumbai 3. Mr. Yogesh Deshmukh, FO, AST Section, Mumbai 4. Mr. R.K. Injulkar, FO, AST Section, Mumbai 5. Mr. V.M. Mane, FO, JD (WPC) Section, Mumbai 6. Mr. Sagar Warhekar, FO, RO-HQ Section, Mumbai 7. Mr. Ashok Jadhav, FO, JD (APC) Section
27	4 th to 6 th October, 2018	National Environmental Engineering Research Institute, Nehru Marg, Nagpur - 440020.	"Taxonomical Identification of Macro Invertible in Biological Testing"	<ol style="list-style-type: none"> 1. Mrudula Ingale, JSA, R. Lab., Nagpur 2. Smt. Anjana Sengupta, JSA, R. Lab., Nagpur
28	24 th to 26 th October, 2018	Department of Chemical Engineering, India Institute of Technology, Guwahati - 781039.	"Cleaner Technologies & Waste Minimization for Prevention of Industrial Pollution and Four R's - Reduce, Reuse, Recycle and Recover - Case Studies"	<ol style="list-style-type: none"> 1. Mr. Uday Yadav, FO, SRO Pune-II 2. Mr. Swapnil V. Lingade, SRO Amaravati-I, MPCB
29	October 10 th to 12 th , 2018	National Institute of Occupational Health (NIOH), P.B. No. 2031, Meghani Nagar, Ahmedabad - 380016.	"Occupational Health & Safety Management System (QHSMS) 18001: 2007 Awareness and Audit Training"	<ol style="list-style-type: none"> 1. Smt. H.V. Khalokar, JSO, C. Lab., Navi Mumbai 2. Smt. Sumitra Mahajan, JSO, R. Lab., Thane
30	8th October, 2018 to 11th November, 2018	Field Offices.	"Newly appointed 12 Nos. of Sub-Regional Officers for the training at Field Offices"	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO, 2. Mr. Parmeshwar Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rathod, SRO



				<ul style="list-style-type: none"> 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandrao Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr.Sripad Ramkrishnarao Kulkarni, SRO 10. Mr.Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Mr. Nikhil J. More., SRO 13. Smt. Jayshree Junonkar, FO 14. Mr. Madhukar G. Igave, FO 15. Smt. Kalyani Kulkarni, FO 16. Mr. Prakash Dhumal, FO 17. Mr. Upendra Kulkarni, FO 18. Mr. Kishore Kerlikar, FO 19. Smt. Aruna Jadhav, FO 20. Mr. Rajendra Jadhav, FO 21. Mr. Pradip Wankhede, FO 22. Mr. Pravin Patil, FO 23. Mr. Sanjay More, FO 24. Mr. Tukaram Deokamble, FO
31	14 th to 16 th October, 2018	Engineering Staff College of India, ESCI Campus, Gachibowli, Hyderabad-500032	“Design, Operation, Maintenance and Performance of STP, CETP, CBMWTFs”	<ul style="list-style-type: none"> 1. Mr. Sameer, FO, SRO Pune-II, Pune 2. Mr. Gopal Kadam, JSA, PSO Division, Mumbai
32	14 th to 16 th November, 2018	Bengaluru, Karnataka, under National Hydrology Project	“Design, organize and management of water quality monitoring”	<ul style="list-style-type: none"> 1. Mr. Vijaykumar Rapole, FO, JD (WPC) Section, Mumbai 2. Mr. Vikram M. Mane, FO, JD (WPC) Section, Mumbai
33	13 th to 19 th October, 2018	Sweden	“Best Practices in Environmental Governance”	<ul style="list-style-type: none"> 1. Mr. Pundlik Kisan Mirashe, AS (T), HQ, Mumbai 2. Mr. Uday Dilip Yadav, FO, SRO Pune-II, Pune



34	20 th to 22 th November, 2018	Punjab University, Chandigarh	“Biological Monitoring, Analysis & Testing (Microbiology, Bio-Assay & Biomonitoring), SOPs, Data Interpretation and Quality Assurance”	1. Smt. Smita Wagh, JSO, R. Lab, Thane 2. Smt. Swapna Satam, JSA, C. Lab, Mahape
35	1 st November, 2018	Bombay Exhibition Centre, Goregaon (East), Mumbai – 400 063	“Waste Management Sector”	All concerned Head of Departments/Regional Officers/Sub- Regional Officers and Field Officers nominated as per Annexure-I
36	1 st to 3 rd , November, 2018	Bombay Exhibition Centre, Goregaon (East), Mumbai – 400 063	Envirotech Asia 2018 Exhibition”	1. Mr. Raj Kamat, FO, CAC Cell, HQ. 2. Mr. Yogesh Deshmukh, FO, AST Section, HQ 3. Mr. Sandeep Tope, FO, RO, Mumbai 4. Mr. Ajit Suryawanshi, FO, RO, Kalyan 5. Mr. Kiran Malbhage, FO, SRO Kalyan-III 6. Mr. Sagar Warhekar, FO, RO (HQ), Mumbai.
37	26 th to 28 th November, 2018	EPTRI, Hyderabad	“Global Warming, Climate Change and Disaster Management – Future Perspective”	1. Smt. Madhurima Joshi, FO, JD (APC), Mumbai 2. Smt. Varsha Kadam, FO, RO, Kolhapur
38	21 st to 23 rd November, 2018.	Western Coalfields Ltd. (HQ), MDI, HRD Department, Nagpur- 440 001	“Environmental Laws, EIA Notification, Environment Management in UG & OC Coal Mines, CMPDI Environmental Lab, New Initiatives of WCL & related topics with respect to Mining”	1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Nikhil J. More, SRO 13. Pranav Pakhale, SRO

39	26 th to 28 th November, 2018	CSIR-National Institute of Oceanography (CSIR-NIO), Dona Paula, Goa- 403 004	<p>Fresh 13 Nos. of Sub-Regional Officers. Training for these 13 officials of MPC Board has been organized on “Coastal Environment and related topics like Marine Pollution, Planktonic Ecology-Scenario of Indian Coast, EIA Studies- Biodiversity and Benthic Ecology, Marine Biological studies, Heavy Metal Pollution-specification of metals and related toxicity in marine environment, Oceanographic data collection onboard research vessel, Nutrient biogeochemistry, Behavior of Coastal Oxygen Minimum Zone, Oil pollution, toxicity & modelling in coastal environment, Coastal modelling and impact assessment and Analytical instrumentation essential for Marine Environmental studies, Past environment and Paleo-proxies to study the marine environment, Studies of CRZ hydrodynamics and sediment transport, Marine EIA- The microbiological aspects, Coral</p>	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO. 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Mr. Nikhil J. More, SRO 13. Mr. Pranav Pakhale, SRO
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			reef ecology & Indian scenario, and Techniques for microbiological studies”	
40	5 th to 7 th December, 2018	PGIMER, Chandigarh	“Indoor & Outdoor Air Pollution, Standards and Impact on Human Health - Case Studies”	1. Dr. Gajanan D. Khadkikar, FO, Sub-RO, Aurangabad 2. Mr. Vishal G. Jadhav, FO, Sub-RO, Amaravati-II
41	12 th to 14 th December, 2018	National Productivity Council, Chennai	“Planning, Designing, Monitoring and Inspection of Waste Water Treatment Plants and APC Measures”	1. Mr. Ajit Suryawanshi, FO, RO, Kalyan 2. Mr. Sandip Tope, FO, RO, Mumbai
42	4 th to 6 th December, 2018	TERI Retreat, Gual Pahari Campus, Gurgaon, Haryana	“Future Perspective in Environmental Bio-technologies”	1. Dr. P. D. Khadkikar, JSO, R. Lab., Nashik, 2. Mr. Sunil Salve, JSA, R. Lab., Aurangabad 3. Mr. Surendra G. Karankar, FO, Sub-RO, Chandrapur
43	4 th and 5 th December, 2018	IIT Madras, Chennai, Tamilnadu	“Minamata Convention and Inventorization of Mercury in India”	1. Mr. Shankar L. Waghmare, Sub-RO, Raigad-II 2. Mr. D. P. Koparkar, Mumbai-IV
44	From 6 th to 8 th February, 2018	Auto Cluster Exhibition Centre, Pune	“Online Continuous Monitoring System”	1. Mr. Kiran Hasabnis, SRO, Pimpri Chinchwad 2. Mr. S.C. Kollur, Advisor, JD (APC) Section 3. Mr. Rajaram K. Injulkar, FO, AST Section 4. Mr. Anirudha P. Varale, FO, AST Section 5. Mr. Abhijit Kasbe, FO, RO Pune 6. Mr. Vikram Mane, FO, JD (WPC) Section 7. Mr. Akshay Patil, Software Engineer
45	6 th and 7 th December, 2018	Hotel Park Plaza, Near CPCB, Delhi	“Ozone Precursors (VOCs and Carbonyls) Monitoring”	1. Dr. A.R. Supate, PSO, Mumbai 2. Mr. K.V. Gavankar, JSO, C. Lab., Mahape

46	17 th and 18 th December, 2018	Engineering Staff College of India, Gachi Bowli, Hyderabad – 500032	"Training on ISO/IEC 17025 (General Requirements for the Competence of Testing and Calibration Laboratories)"	1. Dr. A.R. Supate, PSO, Mumbai
47	19 th and 20 th December, 2018	Engineering Staff College of India, Gachi Bowli, Hyderabad – 500032	"Uncertainty Measurement"	1. Mrs. S.M. Satam, JSA, C. Lab, Mahape 2. Mrs. S.C. Bhirud, JSO, C. Lab, Mahape 3. Mrs. Arti Umberkar, JSA, R. Lab, Pune 4. Mr. A.B. Patil, JSA, R. Lab, Pune 5. Mr. S.D. Mali, JSO, R. Lab, Pune 6. Mr. S.D. Mohite, JSA, R. Lab, Aurangabad 7. Mr. A. N. Sandansingh, JSA, R. Lab, Chiplun
48	21 st to 23 rd January, 2019	The Energy and Resources Institute (TERI), 6C, Darbari Seth Block, India Habitat Center Complex, Lodhi Road, New Delhi- 110003.	"Monitoring of Notified Air Pollutants as per revised NAAQS 2009"	1. Mr. B.S. Gadhari, SO, PSO Division Mumbai 2. Mr. B.U. Bhandare, JSO, R. Lab, Nagpur
49	14th December, 2018.	Coastal and Marine Biodiversity Centre, Airoli	"Mangroves & their importance, Identification of different Mangrove species, Activity of Mangrove Cell, Laws & Regulations pertaining to Mangroves, Familiarization with Coastal Regulation Zone (CRZ) Rules "	1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr. Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Nikhil J. More, SRO 13. Pranav Pakhale, SRO



50	11 th to 13 th January, 2019	Visvesvaraya National Institute of Technology, VNIT, Nagpur	“Fly Ash Utilization – GREENASHCON 2019”	<ol style="list-style-type: none"> 1. Dr. V.M. Motghare, JD (APC) 2. Mr.R.R. Vasave, RO, Chandrapur 3. Mr. Anant Katole, SRO, Nagpur-II 4. Mr. S.D. Patil, I/c. RO, Amaravati 5. Mr. Atul Satphale, FO, SRO, Chandrapur
51	21 st to 25 th January, 2019.	CSIR-National Environmental Engineering Research Institute (NEERI), Nehru Marg, Nagpur- 440 020	“Environmental Chemistry, Monitoring & analysis of baseline environment (Air, Water, Soil, etc.), Environmental Science Engineering, Wastewater management & Effluent treatment, Integrated Waste Management for MSW, Industrial waste and Hazardous waste, Env. System Modelling & Optimization, Climate Change, EIA, Techno legal aspects, and Environment Management”	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO. 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr.Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Nikhil J. More, SRO 13. Pranav Pakhale, SRO
52	18th to 19th January, 2019	Koradi Training Centre, Koradi, Nagpur-441 111	“Environment Protection in Power Station”	<ol style="list-style-type: none"> 1. Smt. Dhanashree Gopinath Patil, SRO 2. Mr. Parmeshwer Vishambhar Kamble, SRO 3. Mr. Shakeel Suleman Shaikh, SRO 4. Mr. Sushilkumar Sahebrao Rahod, SRO 5. Mr. Karansingh Amarsingh Rajput, SRO 6. Smt. Seema Jayram Dhawal, SRO 7. Mr. Amol Anandro Satpute, SRO 8. Smt. Rutuja Bharat Bhosale, SRO 9. Mr. Sripad Ramkrishnarao Kulkarni, SRO 10. Mr.Vikrant Hemant Bhalerao, SRO 11. Smt. Sneha Digambar Kamble, SRO 12. Nikhil J. More, SRO 13. Pranav Pakhale, SRO



53	28 th to 30 th January, 2019	Department of Technology, Savitribai Phule, Pune University, Ganeshkhind, Pune - 411 007.	"Carbon Sequestration Estimation and Nitrogen Footprint Assessment"	1. Mr. Sunil Sonkamble, FO, SRO, Taloja 2. Mr. Dayeshwar V. Tuljapurkar, FO, SRO, Mumbai – III, MPCB
54	11 th to 13 th February, 2019	Environment Hydrology Division, National Institute of Hydrology, Roorkee-247 667, Uttarakhand.	"Water Quality Monitoring of Surface, Ground, Waste Water/ Effluents, Data Interpretation & Quality Assurance"	1. Mr. B. N. Sangale, JSO, R. Lab., Chandrapur, MPCB
55	4 th to 6 th February, 2019	Indian Statistical Institute; 7, S.J.S. Sansanwal Marg, New Delhi - 110 016.	"Environmental Data Interpretation, Compilation, Analysis, Presentation and Reporting Hands-on Training and Case Study"	1. Mr. D.G. Tare, JSO, C. Lab., Mahape 2. Mr. Sarang Deshpande, JSA, R. Lab., Nagpur, MPCB
56	4 th to 8 th February, 2019	Department of Technology, Savitribai Phule, Pune University, Ganeshkhind, Pune - 411 007.	"Evolution of Environmental Governance in India, Challenges faced, Water Pollution, Air Pollution, Noise Pollution, Waste Management, Environmental Audit, etc."	1. Mr. Vidyasagar V. Killedar, SRO, Thane-II 2. Mr. Manchak N. Jadhav, SRO, Kalyan-II 3. Mrs. Indira Gaikwad, SRO, Ratnagiri 4. Mr. Prashant Gaikwad, SRO, Kolhapur 5. Mr. Sachin J. Adkar, SRO, Raigad-I 6. Mrs. Saujanya S. Patil, SRO, Dhule 7. Mr. Pratap D. Jagtap, SRO, Chandrapur 8. Mr. Somnath M. Kurmude, SRO, Jalgaon 9. Mr. Ajit V. Patil, SRO, Ahmednagar 10. Mr. Venkat p. Shelke, SRO, Jalna 11. Mr. Padmakar Hajare, SRO, Parbhani 12. Mr. Parmeshwar V. Kamble, AST-Section HQ 13. Mr. Shakil S. Shaikh, SRO, AST-Section HQ 14. Mrs. Seema U. Dalvi, SRO, AST-Section HQ 15. Mr. Pranav P. Pakhale, SRO, AST-Section HQ 16. Ms. Dhanashree G. Patil, SRO, RO HQ Section 17. Mrs. Rutuja B. Bhosale, SRO, RO HQ Section



				<p>18. Mr. Mrpad R. Kulkarni, SRO, JD (WPC) Section HQ 19. Mr. Sushilkumar S. Rathod, SRO, JD (WPC) Section HQ 20. Mr. Nikhil J. More, SRO, JD (APC) Section HQ 21. Smt. Sneha D. Kamble, SRO, JD (APC) Section HQ 22. Mr. Karansingh A. Rajput, SRO, IJD (APC) Section HQ 23. Amol A. Satpute, SRO, PSO- Section HQ 24. Mr. Vikrant H. Bhalerao, SRO, Hon'ble Chairman Section 25. Mr. Raj S. Kamat, FO, CAC Cell</p>
57	4 th to 6 th February, 2019	National Law School of India University, Nagarbhavi, Banglore - 560 072.	"Environmental Legislations, Interpretation, enforcement, Legal and Statutory Requirements - Case Studies"	<p>1. Mr. Kartikeya Langote, FO, RO Navi Mumbai 2. Mr. Manoj N. Watane, FO, SRO Nagpur-II</p>
58	26 th February to 1st March, 2019	Anil Agarwal Environment Training Institute (AAETI), Nimli, Dist. Alwar, Rajasthan,	"Emission Norms for Coal Power Plants - Implementation, Monitoring and Compliance"	<p>1. Vikrant Bhalerao, SRO, Chairman Section 2. Mrs. Ratuja Bhalerao (Bhosale), SRO, RO-HQ Section 3. Mr. Atul Satphale, FO, SRO, Chandrapur 4. Mr. Kishore P. Pusadkar, FO, SRO, Nagpur-I, MPCB</p>
59	15 th February, 2019	Hyatt Hotel, New Delhi.	"One National Conference of MoEF&CC, CPCB and GIZ on Sustainable Environment Friendly Industrial Production (SEIP)	<p>1. Dr. V. M. Motghare, JD (APC), Mumbai</p>
60	12 th to 16 th March 2019	Environment Protection Training and Research Institute (ETPRI) ,91/4, Gachibowli, Hydrabad, Telangana, India	USE OF GC-MS/MS IN ANALYSIS OF VARIOUS ENVIRONMENTAL POLLUTANTS	<p>1. Mr. K.V. Gavankar, JSO, C. Lab, Mahape 2. Mr. S. M. Taide, JSA, C. Lab, Mahape 3. Smt. Swapna Satam, JSA, C. Lab, Mahape</p>



ANNEXURE 6 - FINANCE AND ACCOUNTS FOR THE YEAR 2018-19

1

**MAHARASHTRA POLLUTION CONTROL BOARD
Receipt & Payment Account for the Year 2018-19**

Previous Year 2017-18		Receipt	Schedule No.	Current Year 2018-19		Previous Year 2017-18		Payment	Schedule No.	Current Year 2018-19	
Major Head	Sub Head			Amount	Amount	Major Head	Sub Head			Amount	Amount
15,81,20,095.95		OPENING BALANCE									
	15,80,20,427.50	i) Cash at Bank		13,41,65,562.43		4,16,01,438.00		II CAPITAL EXPENDITURE			
	99,668.45	ii) Cash in Hand		3,17,051.45				Fixed Assets Purchased	J		13,27,30,660.70
0.00		III GRANT RECEIVED				32,68,18,366.00		III REVENUE EXPENDITURE			
	0.00	a) From State Government		0.00		30,69,19,387.00		II SALARY & ALLOWANCES			34,20,33,466.00
	0.00	b) From Government of India		0.00		1,25,94,542.00		i) Core Activity Segment		32,05,83,525.00	
5,22,20,268.00		II FINANCIAL ASSISTANCE				73,04,437.00		ii) Cess Activity Segment		1,37,93,623.00	
	0.00	a) From Other State Government		10,00,000.00				iii) Cess Activity Temp Estb		76,56,318.00	
	5,22,20,268.00	b) From Government of India / CPCB		2,12,59,028.00		1,95,53,208.00		II CPF BOARD CONTRIBUTION			2,00,56,751.00
11,01,67,191.00		III REIMBURSEMENT OF CESS				58,70,061.00		i) Core Activity Segment		1,89,04,168.00	
2,15,20,85,390.77		IV REVENUE RECEIPT				8,35,856.00		ii) Cess Activity Segment		11,52,583.00	
	2,10,22,42,945.77	a) Consent Fees		2,32,20,47,352.38				III GRATUITY FROM CESS FUND			58,90,995.00
	35,750.00	b) Bio Medical Authorisation Fees		25,734.00		20,92,47,741.54		IV OFFICE EXPENDITURE	A		20,06,99,620.90
	4,98,06,695.00	c) Analysis Charges		8,61,13,189.00		66,65,706.00		II RUNNING EXPENDITURE OF LAB.	B		1,08,68,326.00
		d) Hazardous Waste Authorisation Fee		19,990.00		1,50,65,666.00		III EXPENDITURE FOR VEHICLES	C		1,65,98,716.17
4,06,50,230.00		II OTHER RECEIPT	II			2,73,91,014.00		IV MAINTAINANCE & REPAIRS			3,55,63,960.00
1,01,25,02,578.81		III INTEREST ON INVESTMENT						i) Land & Building		72,18,792.00	
1,23,500.00		IV PROFIT ON SALE OF ASSETS				6,12,88,082.00		ii) Furniture & Fixture		37,28,633.00	
78,23,172.00		V MISCELLANEOUS ADVANCES				3,42,69,389.00		iii) S.I. & O.A.		2,46,16,535.00	
13,31,99,17,406.10		VI INVESTMENT (MATURED)				19,36,27,577.00		III EXPENDITURE FROM CESS FUND	D		3,85,79,846.70
42,54,749.50		II SUNDRY PAYABLES				15,83,25,89,446.91		IV PROJECTS EXP. From Cess Fund	E		26,82,40,461.00
13,56,624.00		III CREDITORS				92,48,776.80		II INVESTMENT (New)			15,55,04,43,973.28
0.00		II Amount Received for Plastic Awareness on behalf State Government				5,49,605.00		III MISCELLANEOUS ADVANCES			1,05,43,195.00
0.00		III From MIDC for Furniture						II SECURITY DEPOSIT WITH OTHERS			1,10,41,500.00
0.00		IV Fund from Cess Accounts				22,39,097.00		III SUNDRY PAYABLES			26,11,274.50
0.00		II Fund for VOC Monitoring				1,500.00		IV CREDITOR			2,26,325.00
16,85,92,21,206.13		III Fund for Health Impact Asses. Study						II Fund for Health Impact Asses. Study			21,24,000.00
		II Amount Paid for Plastic Awareness on Behalf of State Government						III Amount Paid for Plastic Awareness on Behalf of State Government			9,65,81,390.00
		III Fund for VOC Monitoring						II Fund for VOC Monitoring			33,04,000.00
		II Cash at Bank						CLOSING BALANCES			
		II Cash in Hand						II Cash at Bank	F	29,18,13,615.24	
								II Cash in Hand	G	1,28,932.45	
											17,04,00,81,008.94

Chief Accounts Officer
 Maharashtra Pollution Control Board

Member Secretary
 Maharashtra Pollution Control Board

Chairman
 Maharashtra Pollution Control Board

M/s Om Prakash S. Chaudhary & Co
 Chartered Accountants

Yash Punjani
 M. No. - 415552

As per an report of even date attached.




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MAHARASHTRA POLLUTION CONTROL BOARD
Income & Expenditure Account for the Year 2018-19

Previous Year 2017-18		Expenditure	Schedule No.	Current Year 2018-19		Previous Year 2017-18		Income	Schedule No.	Current Year 2018-19	
Major Head	Sub Head			Amount	Amount	Major Head	Sub Head			Amount	Amount
32,68,18,366.00		1) SALARY & ALLOWANCES		34,20,33,466.00				1) GRANT RECEIVED			
	30,69,19,387.00	a) Core Activity Segment		32,05,83,525.00		0.00		a) From State Government			0.00
	1,25,94,542.00	b) Cess Activity Segment		1,37,93,623.00		0.00		b) From Government of India			0.00
	73,04,437.00	c) Cess Activity Temp Estb		76,56,318.00							
1,95,53,208.00		2) CPF BOARD CONTRIBUTION		2,00,56,751.00		5,22,20,268.00		2) FINANCIAL ASSISTANCE			2,22,59,028.00
	1,87,17,352.00	i) Core Activity Segment		1,89,04,168.00				a) From Other State Government		10,00,000.00	
	8,35,856.00	ii) Cess Activity Segment		11,52,583.00				b) From Government of India / CPCB		2,12,59,028.00	
20,92,47,741.54		3) OFFICE EXPENDITURE	A	20,06,99,620.90		11,01,67,191.00		3) REIMBURSEMENT OF CESS			9,32,77,594.38
66,65,706.00		4) RUNNING EXPENDITURE OF LAB.	B	1,08,68,326.00				4) REVENUE RECEIPT			2,40,82,06,265.38
1,50,65,666.00		5) EXPENDITURE FOR VEHICLES	C	1,65,98,716.17		2,15,20,85,390.77		a) Consent Fees		2,32,20,47,352.38	
2,73,91,014.00		6) MAINTAINANCE & REPAIRS		3,55,63,960.00				b) Bio Medical Authorisation Fees		25,734.00	
	81,77,219.00	i) Land & Building		72,18,792.00				c) Analysis Charges		8,61,13,189.00	
	49,50,836.00	ii) Furniture & Fixture		37,28,633.00		2,10,22,42,945.77		d) Hazardous Waste Authorisation Fee		19,990.00	
	1,42,62,959.00	iii) S.I. & O.A.		2,46,16,535.00		35,750.00					
3,42,69,389.00		7) EXPENDITURE FROM CESS FUND	D	3,85,79,846.70		4,06,50,230.00		5) OTHER RECEIPT	H		6,12,88,082.00
19,36,27,577.00		8) PROJECTS EXP. From Cess Fund	E	26,82,40,461.00				6) INTEREST ON INVESTMENT			1,00,17,55,139.50
4,82,38,016.22		9) DEPRECIATION	I	7,99,50,308.17		1,01,25,02,578.81		7) PROFIT ON SALE OF ASSETS			0.00
2,48,68,72,474.82		Excess of Income Over Expenditure		2,57,41,94,653.32		1,23,500.00					
3,36,77,49,158.58				3,58,67,86,109.26		3,36,77,49,158.58					3,58,67,86,109.26

As per our report of even date attached


Chief Accounts Officer
Maharashtra Pollution Control Board


Member Secretary
Maharashtra Pollution Control Board




Chairman
Maharashtra Pollution Control Board


M/s Om Prakash S. Choptia & Co
Chartered Accountants
Tushar Pawar
M. No. - 155001
Partner



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**MAHARASHTRA POLLUTION CONTROL BOARD
Balance Sheet at the Year End 31st March, 2019**

Previous Year 2017-18		Liability	Sche- dule	Current Year 2018-19		Previous Year 2017-18		Assets	Sche- dule	Current Year 2018-19	
Major Head	Sub Head			Amount	Amount	Major Head	Sub Head			Amount	Amount
1,42,95,65,520.48		A) CAPITAL FUND		1,54,29,27,939.18				1) WORKS (Form K-IV)			
		1) Grant received from Govt. for capital expenditure (including capital value of assets transferred from Ex Directorate to MSWPIC & WHO Delhi)				44,02,28,074.19		2) FIXED ASSETS	J		
	1,38,79,64,082.48	Amount utilised up to previous year (Opening Balance)		1,42,95,65,520.48		5,69,21,286.26		a) Land & Building			43,04,55,022.06
	4,16,01,438.00	Add:- Transfer from Excess of Income over Expenditure for Capital Expenses		11,33,62,418.70		3,66,63,544.48		b) Laboratory Equipments			4,61,05,691.90
0.00						9,11,97,992.40		c) Vehicle			3,35,58,455.98
		B) CAPITAL RECEIPT from MoEF		0.00		7,95,92,395.32		d) Furniture & Fixture			6,27,26,041.58
								e) Scientific Instruments			16,59,05,862.66
2,26,10,522.50	61,62,003.50	C) Fund from UNIDO		2,26,10,522.50		18,43,82,69,031.90		3) INVESTMENT	K		20,83,73,40,221.28
	2,00,00,000.00	Add:- Amount Received		0.00		15,76,06,958.61		4) CURRENT ASSETS			
	35,51,481.00	Less :- Expenditure		9,96,398.00			2,13,24,769.73	a) MISCELLANEOUS ADVANCES	L	1,90,78,983.87	
1,35,39,433.50		D) CURRENT LIABILITIES		10,70,75,804.10			17,99,575.00	b) SECURITY DEPOSIT WITH OTHER	M	1,28,41,075.00	
	1,21,82,809.50	1) Sundry Payables / Deposits	N	1,18,56,268.50				c) Amount Paid for Plastic Awareness on behalf State Government		6,37,57,341.00	
	13,56,624.00	2) Creditors	O	14,17,532.00				d) CLOSING BALANCES			
		3) Fund From Cess Account		9,38,02,003.60				i) Cash at Bank	F	29,18,13,615.24	
								ii) Cash in Hand	G	1,28,932.45	
2,26,62,60,768.82		E) RESERVES		2,42,64,47,489.09							
	2,22,96,81,644.73	1) Pension Fund	P	2,38,57,59,360.00			13,41,65,562.43				
	3,65,79,124.09	2) Gratuity Fund	Q	4,06,88,129.09			3,17,051.45				
1,20,66,800.00	1,20,66,800.00	F) Fund from Health Impact Assessment Study		1,20,66,800.00							
	0.00	Less :- Expenditure		33,04,000.00							
		G) For for VOC Monitoring		1,04,16,335.00							
		Less :- Expenditure		21,24,000.00							
15,55,64,36,237.86		G) INCOME & EXPENDITURE APPROPRIATION ACCOUNT	R	17,84,85,90,751.15							
19,30,04,79,283.16				21,96,37,11,243.02		19,30,04,79,283.16					21,96,37,11,243.02

Significant Accounting Policies and Notes on Accounts Schedule S

Chief Accounts Officer
Maharashtra Pollution Control Board

Member Secretary
Maharashtra Pollution Control Board



Chairman
Maharashtra Pollution Control Board

M/s Om Prakash S. Chartered Accountants
As per our report of even date attached.



MAHARASHTRA POLLUTION CONTROL BOARD

Kalpataru Point, Sion [E], Mumbai- 400022
website: www.mpcb.gov.in