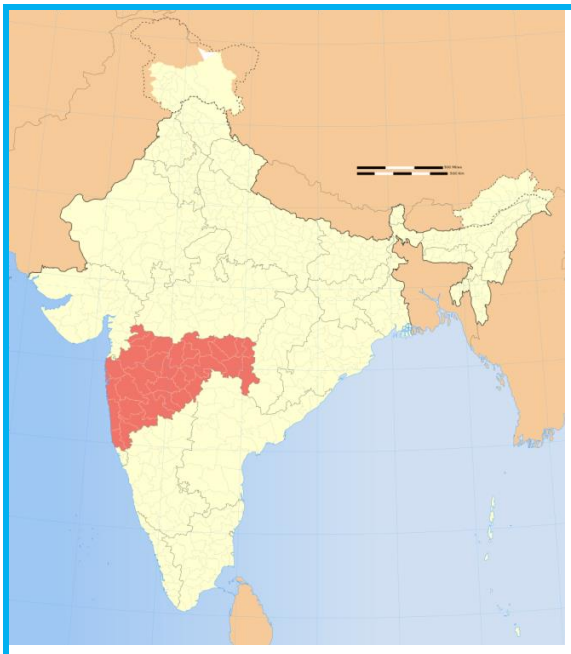
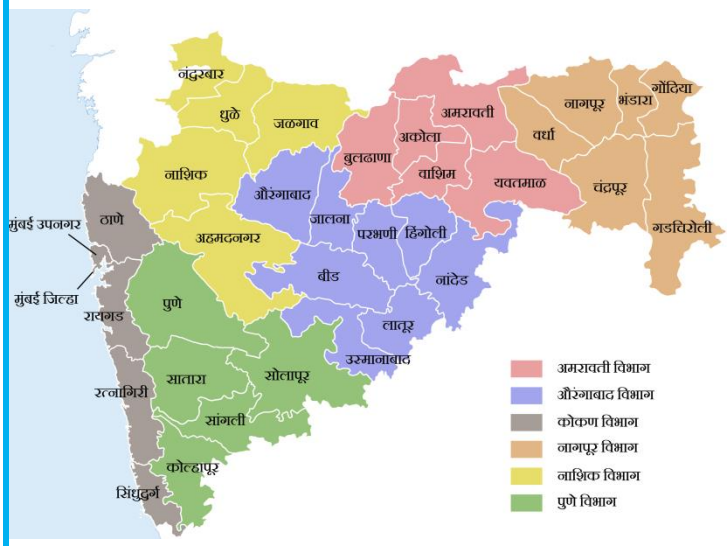
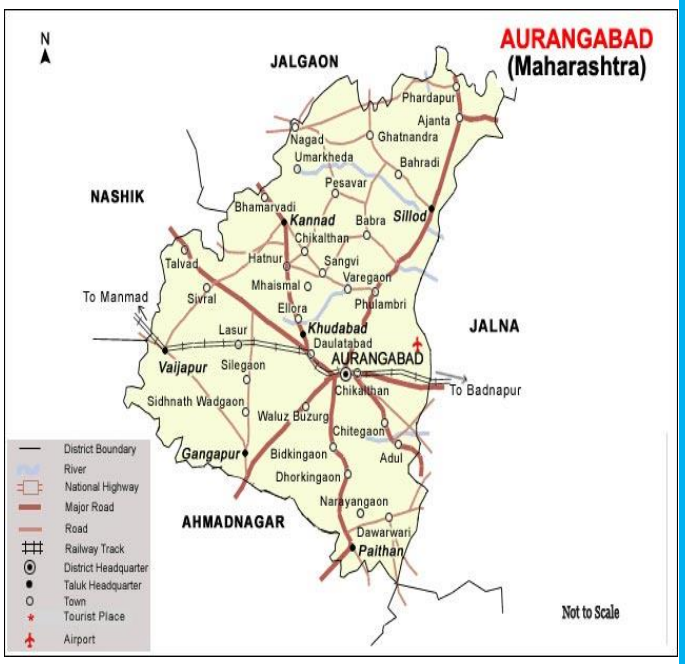


R-2

Revised Action Plan for Industrial Cluster in Severally Polluted Areas

औरंगाबाद Aurangabad





MAHARASHTRA

Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

July-2020

A. PREAMBLE:

In 2009, the Ministry of Environment & Forests (MoEF), Govt. of India in association with Central Pollution Control Board (CPCB), New Delhi and Indian Institute of Technology (IIT), New Delhi have carried out an environmental assessment of industrial clusters across the country named Comprehensive Environmental Pollution Index (CEPI) with the aim of identifying polluted industrial clusters & prioritizing planning needs for intervention to improve the quality of environment in these industrial clusters and the nation as a whole. For this, CPCB has selected 88 industrial clusters in country out of which 43 Nos. of industrial clusters in 16 states.

The industrial clusters/ areas having aggregated CEPI scores of 70 and above were considered critically polluted clusters/ areas and those with scores above 60 were classified as Severely Polluted; further detailed investigations were carried out in terms of the extent of environmental damage and formulation of appropriate remedial action plan.

Again in year 2017-2018 CPCB carried out monitoring and found that, number of identified polluted areas in country went up to 100. The said number included 38 Critically Polluted (CEPI Score above 70), 31 Severely Polluted (CEPI Score between 60-70) and reaming 31 as Other Polluted (CEPI Score below 60).

In identified 100 polluted areas Maharashtra having 9 Nos. of area namely Tarapur (CEPI Score 93.69), Chandrapur (CEPI Score 76.41), Aurangabad (CEPI Score 69.85), Dombivali (CEPI Score 69.67), Nashik (CEPI Score 69.49), Navi Mumbai (CEPI Score 66.32), Chembur (CEPI Score 54.67), Pimpri-Chinchwad (CEPI Score 52.15) & Mahad (CEPI Score 47.12).

Government of Maharashtra, under Chairmanship of Principal Secretary, Environment Department, GoM constituted State Level Committee and one local committee at Regional Officer level at each regions. Also Member Secretary of Board conducted several review meetings with all stakeholders at a regular interval to review the status of implementation of CEPI action plans

Earlier CEPI score calculated by CPCB in 2009-2010 Aurangabad was comes under Critically Polluted Area with overall CEPI score 77.44, but after effective implementation CEPI action plans overall all CEPI score came down as per monitoring done by CPCB in 2017-2018 and now Aurangabad identified as Severely Polluted industrial area with overall CEP Score below 70. The proposed action plan will help to reduce Air CEPI score below 60.

B. Aurangabad:

i. Area Details including brief history (background information)

Aurangabad city was founded by Malik Ambar in 1610 A.D. From ancient times, Aurangabad has been a place of great importance due to its location on the famous Silk Route that traversed across the breadth of Asia to reach Europe. The city occupies an important place on the tourist's map of the world. The city is festooned all around with an amazing variety of monuments such as rock-cut temples in the mountain ravines of Ellora and Ajanta, strategic forts such as the one at Daulatabad and mosques and mausoleums with their minarets and domes such as Bibi-Ka-Maqbara. Hence it deserves the epithet as tourist district of India.

Aurangabad city typifies the landscape and the climatic conditions of the entire Marathwada region and is the Divisional Head Quarters of the Marathwada Region.

ii. Location

Aurangabad District is located mainly in the Godavari River Basin and partly in the Tapi River Basin. The district is from 19 to 20 degrees north longitude and 74 to 76 degrees east latitude. Aurangabad city is situated on the bank of river Kham a tributary of the Godavari River. The entire city is situated at the latitude of $19^0$53'50" N and longitude of $75^0$22'46" E. It is located 512

meters above Sea Level. The city is surrounded by hills of the Vindhya Ranges and the river Kham passes through it.

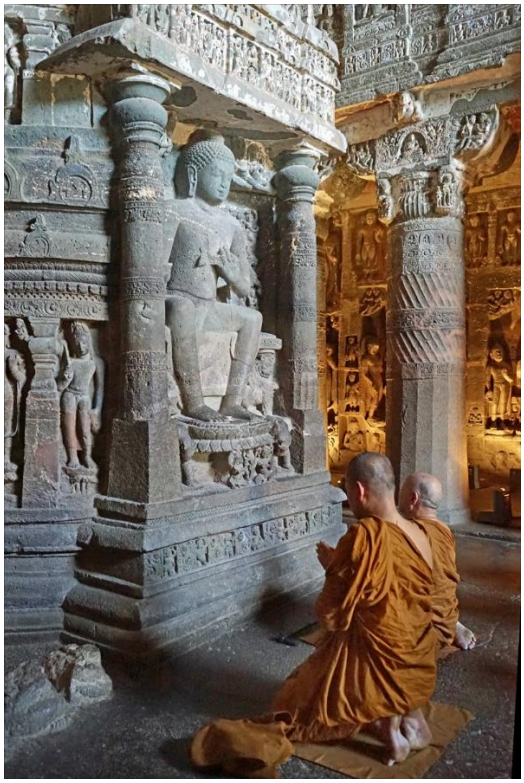
iii. Total Population and sensitive receptors (hospitals, educational institutions, courts, etc.) residing in the area comprising of geographical area of the cluster and its impact zone

The Aurangabad Municipal Council was formed in 1936 when the geographical area of the town was 54.40 sq.km. In 1982, the Council was converted into Municipal Corporation including 18 nearby villages measuring 138.5 sq.km. area. Due to the rapid industrialization and urbanization, the city emerged as an educational hub, commercial center, tourist attraction etc. Aurangabad has diverse economic activities ranging from industries, services to tourism and education. There is a drastic change in the city population and Aurangabad city emerged as the fastest growing city in Asia. The population in 2001 was about 8,72,667, which represents a decadal growth of 79.32. (Source: Census of India 2001 & D.P. Report, Aurangabad).

Daulatabad Fort.

Temple of Kailash, at Ellora, Aurangabad

Buddhist shrines carved in 6th-7th century

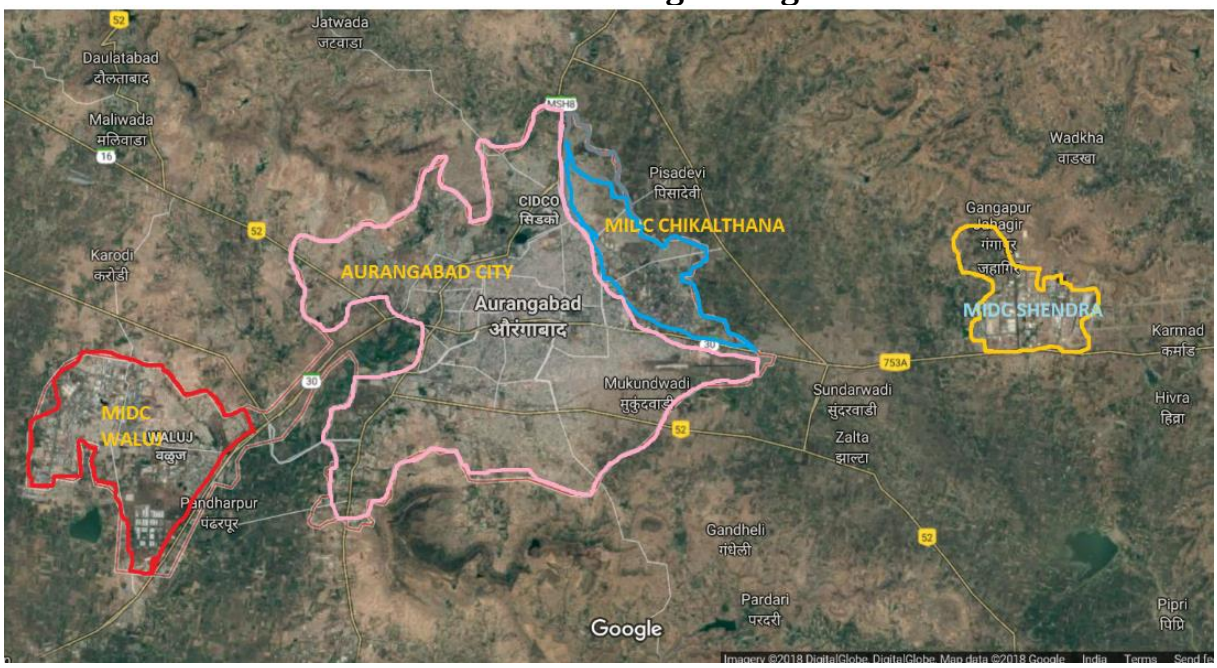


Ajanta Cave

iv. Digitized Map with Demarcation of Geographical Boundaries and Impact Zones

Municipal Corporation Aurangabad and adjacent polluted industrial area Waluj is roughly identified for preparing the Development of Comprehensive Environmental Pollution Abatement Action Plan. In the limit of Corporation area there is one Old Industrial Cluster at Chikalthana and another very small as well as sick industrial area near the Railway Station. A digitized map is prepared on a map of 50000:1. The impact zone with most of the details are marked on it.

Aerial View-Google image



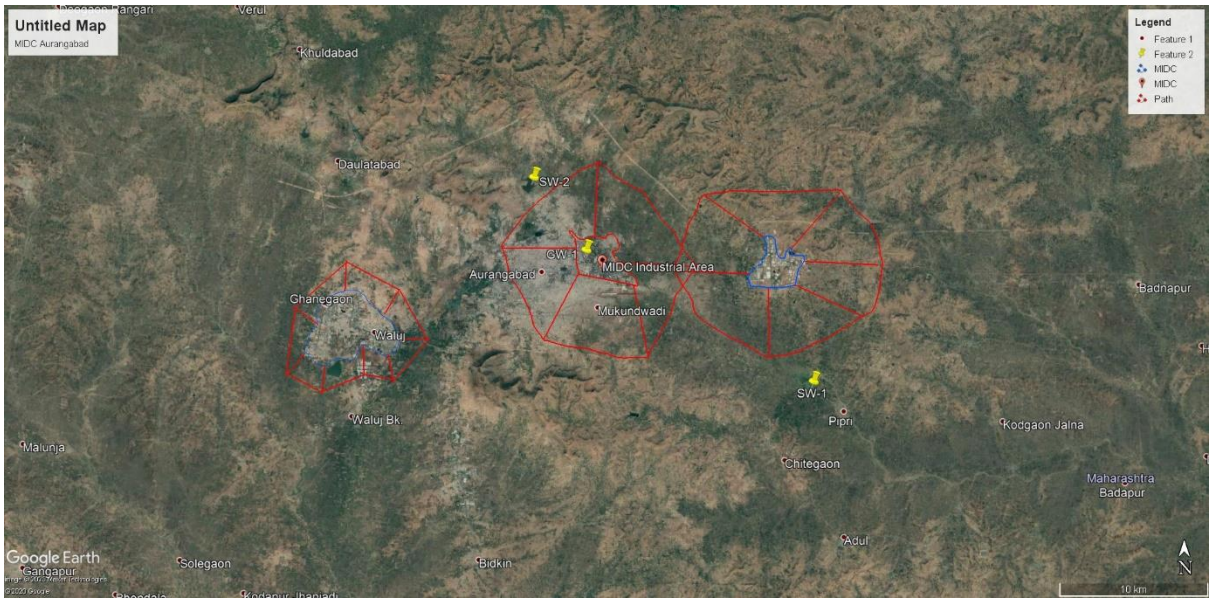
The initial boundary coordinates of the MIDC Shendra cluster boundary are as follows:

Direction	Latitude	Longitude
East	$19^0$52'29.89" N	$75^0$28'20.41" E
West	$19^0$52'39.64" N	$75^0$30'51.30" E
North	$19^0$53'52.01" N	$75^0$29'29.24" E
South	$19^0$52'6.07" N	$75^0$29'36.46" E

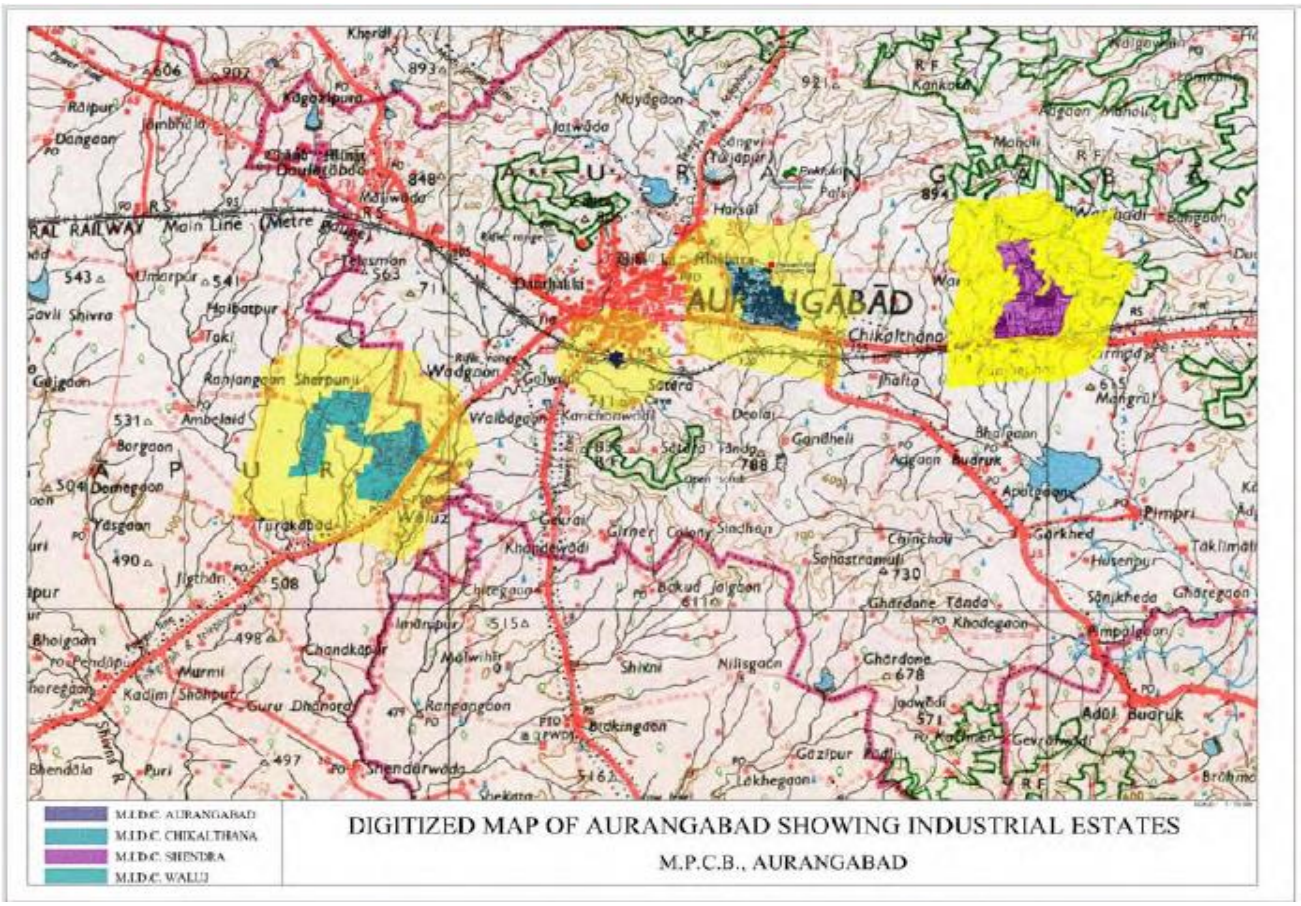
The initial boundary coordinates of the MIDC Walunj cluster boundary are as follows:

Direction	Latitude	Longitude
East	$19^0$49'55.07" N	$75^0$11'24.60" E
West	$19^0$50'9.54" N	$75^0$15'14.42" E
North	$19^0$51'35.05" N	$75^0$12'50.85" E
South	$19^0$49'8.52" N	$75^0$12'49.46" E

5 Km impact Zone marking



Digitized Map of Aurangabad CEPI Area:



Map showing location of industrial clusters in Aurangabad

v. Eco-geological features Impact Zones the area comprising of geographical area of the cluster and its impact zone

Aurangabad city is situated on the bank of river Kham a tributary of the Godavari River. The city is surrounded by hills of the Vindhya Ranges and the river Kham passes through it. The city stands in the Dudhana valley between Lacken Vera Range on the North and Satara Hills on the South. Sukhna river is one of the main tributaries of Dudhana river, which originates from neighbouring hills near Kankura village and flows along the Chikalthana MIDC Area in nearby Aurangabad city. The city occupies very uneven ground. Annual temperature of Aurangabad ranges from 9oC to 40oC. Average annual rainfall is 725 mm. The geological formations of the area are characterized by the Deccan traps (Upper cretaceous to lower Eocene). The granitic rocks have given rise to red as well as black cotton soils. Major part of this area has deep black soil derived from the trap rock. Certain variations occur due to exposure and protection. A mixture of late rite and black soil, for example, is encountered in the eastern parts together with sandy soil along river banks. Most of the hill tops are bare or covered by coarse gravel while the low-lying area accumulates clay and loam.

Environment Dept., Maharashtra Government issued G.R. vide No. NGT 2018/PC-2/TC-3 dtd.13.12.2018. regarding constitution of River Rejuvenation Committee (RRC).

Board has prepared separate action plan for Godavari river and its connected river separately & Submitted to CPCB.

Aurangabad Municipal Council, Gangapur Municipal Council, Paithan Municipal Council, provided STPs & management of sewerage system.

vi. Industry classification and distribution (no. of industries per 10 sq.km area or fraction)

There are four clusters of industries in Aurangabad district. However, also there is scattered Industrial development along the periphery of Aurangabad city along Beed Road and Paithan road. Renowned companies such as Wockhardt Ltd., United Spirits Ltd., Bajaj Auto Ltd., Orchid Chemicals & Pharmaceuticals Ltd., Skoda Ltd., Johnson & Johnson Ltd., Colgate Palmolive Ltd., Garware Polyesters Ltd., Sterlite Technologies Ltd., etc are in operation in Aurangabad.

vii. Details of Industrial Cluster of Aurangabad.

Sr. No	Name of Industrial Cluster	Distance from Aurangabad	Area in Hectares	Remarks
1	Shendra MIDC Area,	15 Km	600	New developing area SEZ units
2	Railway Station MIDC	Within AMC area	20	Very small industrial area also having many sick units

3	Chikalthana MIDC Area	Within AMC area	400	Old industrial area having mostly sick units
4	Waluj MIDC Area	12 Km	1520	Major Ind. Area near Aurangabad city

INFORMATION ON POLLUTION SOURCES STATUS IN PIA

1. Name of the Polluted Industrial Area (PIA) : MDC Walunj, Shendra, Chikhalthan, Railway station, Paithan road
2. Demarcated area of the PIA in sq.km : --- sq.KM
3. Number of 17 category of industries covered under the area: 14 no.s
4. Number of Red category industries covered under the area: 381 no.s
5. Total human population : 15.8 Lakh(as per 2011 Census)
6. Atleast three critical criteria pollutants in each air, surface water and ground water:1.Air - SO2, NOX, RSPM
   2. Water- BOD, pH, COD
   3. Ground Water- SS, TDS, Hardness

Compliance status of industries, waste management facilities:

S. No	Category of industries	Total number of units	Remarks, if any
1.	Large scale industries	63	LSI units are having pollution control facilities.
2.	Medium & Small scale industries	318	Complied
3.	CETPs	1	Analysis reports of treated effluent are within prescribed limit.
4.	TSDF	0	--
5.	STPs	4	4 STPs are functional at Kanchanwadi, Zalta, Salim Ali Sarovar and Padegaon.
6.	CBMWMF	1	Facility has provided APCE and it is operational.
7	MSW management facilities	0	Dumping of waste was on Naregaon.

viii. CATEGORY WISE INDUSTRIES FROM CEPI AREA OF Aurangabad

Industrial Statistics					
		Scale			Total
		LSI	MSI	SSI	
	RED	119	**177**	**749**	**1045**
	Orange	**20**	**41**	**535**	**596**
	Green	**6**	**40**	**3012**	**3058**
Total		145	258	4296	**4699**

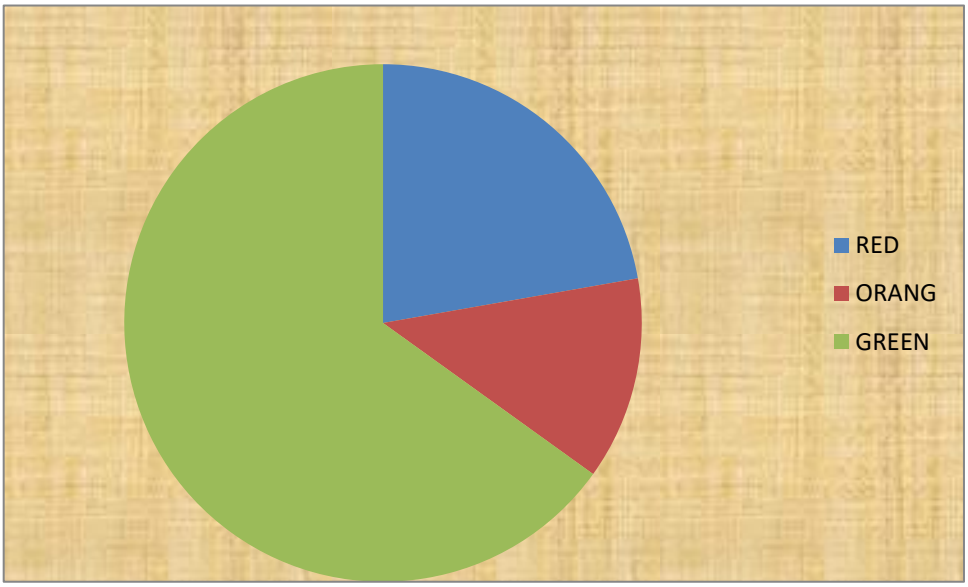
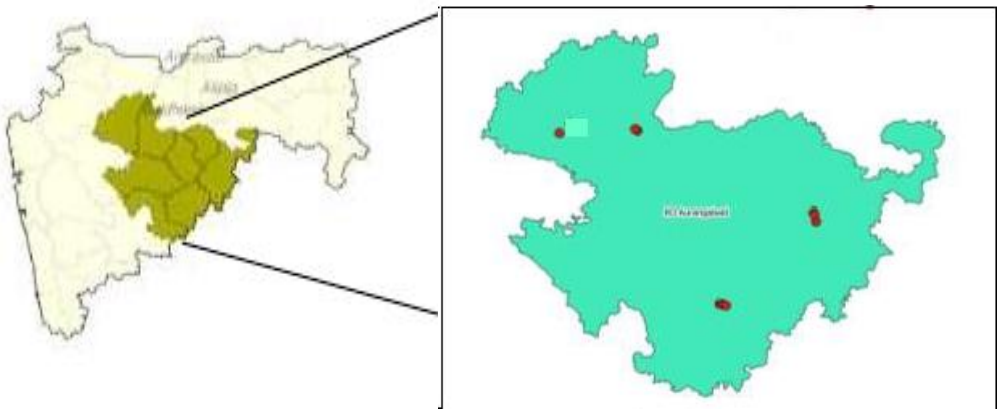


Chart showing industrial Statistics

ix. Ambient Air Quality Monitoring carried out by M.P.C.Board:

M.P.C.Board has carried out ambient air quality monitoring under NAMP & SAMP at various location at Aurangabad are as below,



Region	Station	Type	Latitude (deg)	Longitude (deg)
Aurangabad	SBES College	Residential	19° 52' 54.9" N	75° 19' 33.7" E
	Collector Office, Aurangabad	Residential	19° 53' 58.4" N	75° 19' 14.2" E
	C.A.D.A. Office	Residential	19° 52' 14.3" N	75° 21' 03.5" E
	Aurangabad CAAQMS	Industrial	19° 48' 59.11"N	75° 14' 18.65"E

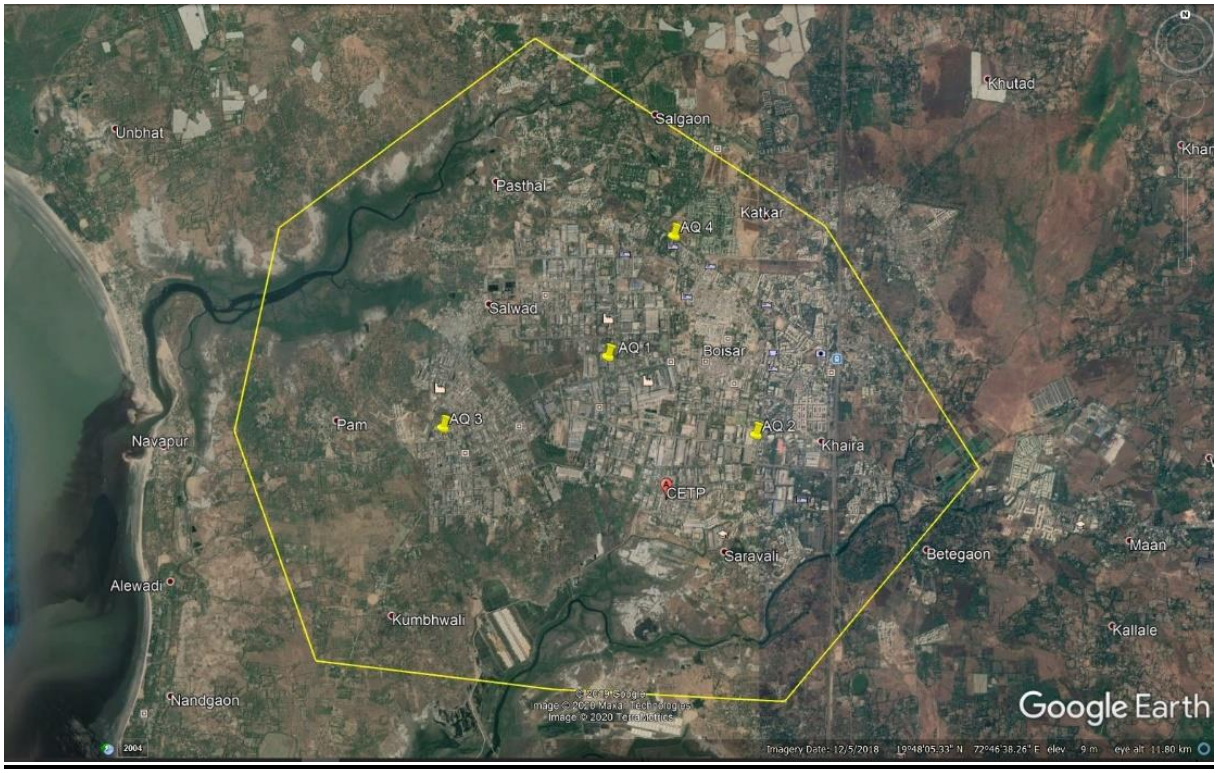
x. Water Quality Monitoring carried out by M.P.C.Board:

M.P.C.Board has carried out water quality monitoring under MINAR/NWMP/SWMP at various location at Nashik are as below,

Sr. No	Location name	Latitude	Longitude
1	Godavari river at Jaikwadi Dam, Village- Paithan, Taluka Paithan, District-Aurangabad.	19°29.263'	19°29.263'
2	Godavari river at U/s of Paithan at Paithan intake pump house, Village- Jayakwadi	19°30.887’	19°30.887’
3	Godavari river at D/s of Paithan at Pathegaon bridge, Village- Pathegaon, Taluka- Paithan, District Aurangabad.	19°28.835’	19°28.835’
4	Godavari river at U/s of Aurangabad Reservoir,Kaigaon Tokka near Kaigaon bridge,Village- Kaigaon,Taluka Gangapur,District- Aurangabad.	19°37.463’	19°37.463’
5	Dug well at Pandharpur, village - Pandharpur, Taluka-Gangapur, District-Aurangabad.	19°50.197’	75°15.086'
6	Bore well at Katpur, near Z.P. School, Village- Katpur,Taluka- Paithan, District-Aurangabad.	19°31.114'	75°23.887'
7	Bore well at Wahegaon, near Zilla Parishad School, Village- Wahegaon, Taluka- Paithan, District- Aurangabad.	19°33.678'	75°23.638'

xi. MONITORING STATIONS SELECTED BY CPCB: SURFACE WATER, GROUND WATER& AIR QUALITY:

i. Air Quality Monitoring Station:



AAQ Monitoring Location making on google map

Table: Air quality Monitoring locations

Sr. No.	Location Name	Latitude	Longitude
AQ 1	Wockhard Resarch Division	$19^0$87'70" N	$75^0$37'07" E
AQ 2	Harman Finochem ltd	$19^0$88'31" N	$75^0$49'93" E
AQ 3	Aurangabad Electricals	$19^0$75'56" N	$75^0$29'69" E
AQ 4	Good Year South Asia Tyres	$19^0$85'75" N	$75^0$20' 61" E

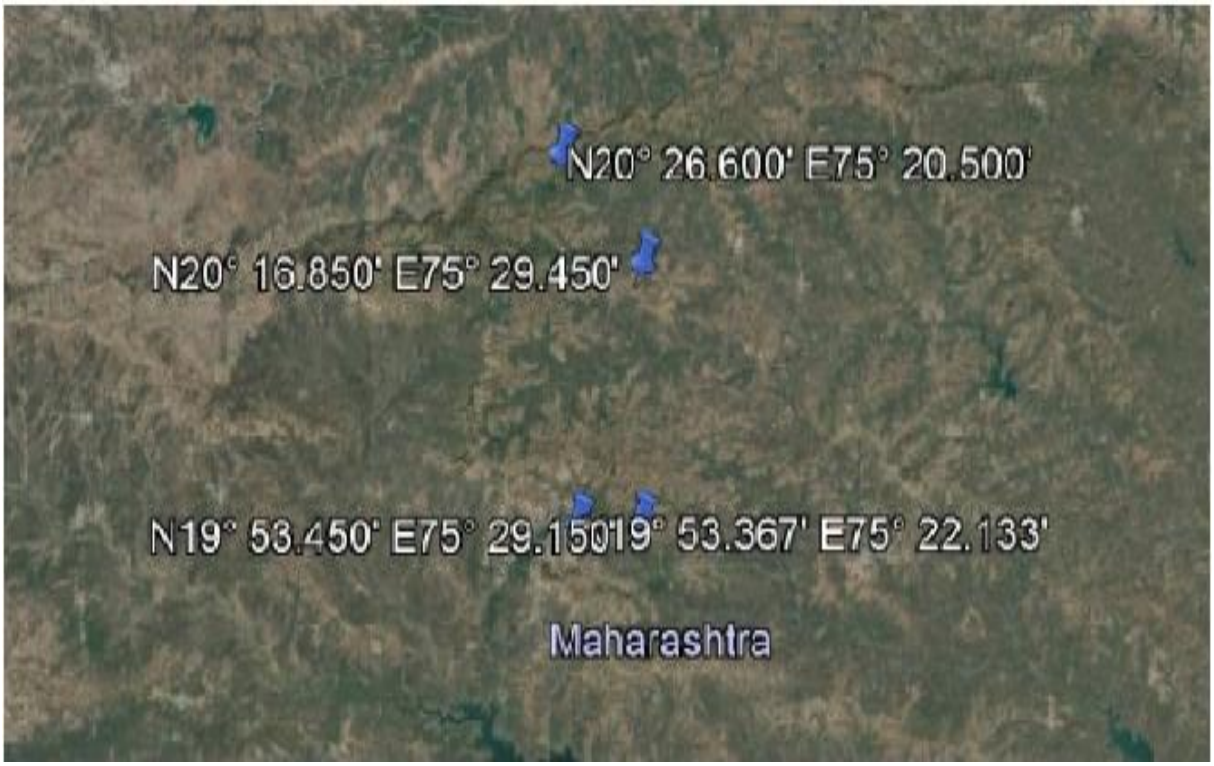
ii. Surface Water Monitoring Station:

SW sampling Location making on google map

Table: Surface water sampling locations

Sr. No.	Location Name	Latitude	Longitude
SW-1	Sukhana Dam	$19^0$47’98’’ N	$75^0$29'11" E
SW-2	Harsul Dam	$19^0$55’22’’ N	75°20'80" E
SW-3	Kham River upstream	$19^0$87’54’’ N	75°31'01" E
SW-4	Kham river after CETP	$19^0$24’11’’ N	75°24'98" E

iii. Ground Water Monitoring Station:



GW sampling Location making on google map

Table: Ground Water Sampling locations

Sr. No.	Location Name	Latitude	Longitude
GW-1	Universal High School, Bore	$19^0$53’22’’ N	$75^0$22’08’’ E
GW-2	Well water	19^0’52’87’’ N	$75^0$28’69’’ E
GW-3	Shendra village hand pump	$19^0$55’96’’ N	$75^0$20’30’’ E
GW-4	Mr Gayke well near Good year	19^0 56’51’’ N	$75^0$28’87’’ E

Comprehensive Environmental Pollution Index as per CPCB Monitoring 2017-2018:

Sr. No	Industrial Area	Air	Water	Land	CEPI Score	Rank
1	Aurangabad	45.00	65.38	28.75	69.85	39

Revised CEPI is comprised of the following components:

Component A	Scale of industrial activity	20 Marks
Component B	Status of Ambient ENV. Quality (Air/SW/GW)	50 Marks
Component C	Health related Statistics	10 Marks
Component D	Compliance of	20 Marks

a) **Air Score:**
   - **Ambient Air Quality Parameter considered for CEPI calculation: PM_{10}, $PM_{2.5}$ & CO.**
   - **Sub Score (A+B+C+D)= (7.5+22.5+5+10)=45**

b) **Water Score (Surface Water):**
   - **Surface Water Parameter considered for CEPI calculation : BOD, TP, TKN**
   - **Sub Score (A+B+C+D)= (6.875+43.3+5+10)=65.38**

c) **Land Score (Ground Water):**
   - **Ground Water Parameter considered for CEPI calculation : Total Hardness, TDS, Iron**
   - **Sub Score (A+B+C+D)= (3.75+10+5+10)=28.75**

xii. COMPLIANCE OF SHORT TERM AND LONG TERM ACTION PLAN:

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
1.	Setting of Continuous 4 AAQM Stations in MIDC Waluj, Chikalthana and Aurangabad city.	MPCB, Inds. Govt	4 AAQM Stations in MIDC Waluj, Chikalthana and Aurangabad city are in operation (One CAAQMS Station and 3 NAMP Station)
2.	Up-gradation of existing air pollution control system provide to coal fired/ Briquette fired/ Bagasse fired burning equipment's by wet scrubbers/ venture-scrubber/ bag filters in the industries located in MIDC area Waluj and Chikalthana wherever required.	Individual Industry	Complied. Last 3 years industries have upgraded their APC system.
3.	Direction to the industry for improving the efficiency of air pollution control system and increase in vigilance.	MPCB	It is a continuous process. MPCB has developed the software for randomized visit scheduler as per the Government of India Guidelines.
4.	Industries to provide solvent recovery system wherever applicable	MPCB, Individual Industries	Complied. Bulk Drug and Chemical units located in MIDC Waluj have increased their Solvent Recovery efficiency to recover solvents up to 92% to 98%.
5.	Control of air pollution due to vehicle in the area	Transport Dept.	Police Department/transport Department has regulated the timing & route in the city for heavy vehicles for reducing air pollution..

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
6.	Providing air pollution control measures during the activity of demolishing old building and new constructions	Local Body	Most of the major construction project have started demolishing and new constructions activity in a closed manner by providing dust arresting facility at the boundary.
7.	Traffic managements in the area	Traffic Dept. & AMC	Police Department /Transport Department/Aurangabad Municipal Corporation has regulated the timing & route in the city for heavy vehicles.
8.	Installation of continuous Stack monitoring facility by major air polluting industries.	Individual Industry	All the 17 category industries has installed OCEMS as per guidelines where is required.
9.	Changing the fuel pattern of the industry to clean fuel.	Individual Industry	Most of the industry has changed their fuel pattern from coal/ furnace oil etc. to LPG/ Electricity. Some of the industries are using Bio-Gas, electricity and LPG as a fuel. M.P.C.board has issued state fule policy for ues of Furnace Oil & Pet Coke and directed industry clean fuel.
10.	Checking of adulteration of fuel	Dist Adm.	Periodically checking done.
11.	Availability of clean fuel vehicles.	Dist Adm. & Oil & Gas Companies	Available. Installed CNG stations for vehicle

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
12.	Widening of the road and square for avoiding vehicle congestion.	Local Body	AMC has started work of widening of the road, Construction of RCC roads and square for avoiding vehicle congestion also constructed Fly Overs at some locations.
13	Completion of conveyance system for carrying the effluent from individual industry to CETP in MIDC Area Waluj Phase	MIDC	Complied.
14	Completion of conveyance system for carrying the effluent from individual industry to CETP in MIDC Waluj Phase-II	MIDC	Work is completed and The work of connection of effluent generating industries is also completed.
15	Completion of conveyance system for carrying the effluent from individual industry to CETP in MIDC Area Shendra.	MIDC	Industries in MIDC Shendra provide individual ETP with state of art technology.
16	Commissioning of the CETP in MIDC area Waluj	MIDC & CETP	Complied. 10 MLD CETP in operation results are comply.
17	Construction of common effluent treatment plant in MIDC Shendra.	MIDC, Inds & Govt. Assi	Is in planning stage. Industries in MIDC Shandra provide individual ETP with state of art technology.
18	Construction of separate CETP for electroplating industries in Waluj MIDC.	MIDC, Inds & Govt. Assi	Complied. Treatment of effluent from electroplating is being done in existing 0.5 MLD CETP separately.
19	Laying of disposal line from CETP to Kham River	MIDC	Work completed 3.0 km pipe line laid down as per disposal point finalized by NEERI.

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
20	Revamping of old ETPs in prominent industries for stoppage of leakages and seepages in MIDC Chikalthana and Waluj wherever required.	Individual Industries & MPCB	Complied. All Large and medium unit of Waluj Shendra & Chikhalthane MIDC has upgraded ETP.
21	Up gradation of effluent treatment plant which are not meeting prescribed standards.	Individual Industries & MPCB	Complied. All Large and medium unit of Waluj Shendra & Chikhalthane MIDC has upgraded ETP.
22	Solvent recovery in major bulk drug and chemical units located in MIDC area Waluj MIDC Shendra and Chikalthana	Individual Industries & MPCB	Bulk Drug and Chemical units located in MIDC Waluj have increased their Solvent Recovery efficiency to recover solvents up to 92% to 95%, remaining 9 units are carrying pharmaceutical/formulation activity.
23	Identification and separation of high concentrated streams in prominent industry of MIDC area Waluj, MIDC Shendra and Chikalthana and treating them separately.	Individual Industries	Bulk Drug and Chemical units located in MIDC Waluj, Shendra and Chikalthana have separated high concentration stream.

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
2	Scientific collection treatment and disposal of sewage generated from human habitation.	Local Body	Total Sewage Generation of Aurangabad Municipal Corporation is 120 MLD. Previously they having 2 STPs, 5.0 MLD and 6.5 MLD i.e. total 11.5 MLD is in operation. AMC has Proposed 4 STP for capacity 216 MLD. As on date construction of 3 STPs completed having total capacity 206 MLD. 161 MLD STP at Nakshatrawadi STP 35 MLD at Zalta and 10 MLD at Padegaon. Which were commissioned recently.
24	Scientific collection and treatment of sewage generated from MIDC Area Waluj and Chikalthana.	MIDC	MIDC has proposed 4 MLD STP in MIDC Waluj Area for treatment of Dom eff. generated from MIDC & nearby area. Consent to establish is obtained by MIDC.
25	Scrapping of Percolation Tanks & artificial water bodies in and around MIDC Area Waluj.	Irrigation Dept. & MIDC	Board has instructed to Irrigation Department for necessary action
26	Treatment of Kham river water with the help of Bio-remediation technology which is flowing through Aurangabad city.	Local Body	STP commissioned at Nakshatrawadi in the Kham river Basin having capacity of 161 MLD
27	Treatment of Sukana river water with the help of Bio-remediation technology which is flowing through Aurangabad city.	Local Body	Zalta STP located in the Basin of Sukhana River is commissioned.
28	Proper Collection of Strom Water in MIDC area Waluj & Chikalthana	MIDC	Open road side gutters are provided along roads.

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
29	Installation of treatment facility waste waters generated from major hotels, laundries, vehicle service center, commercial complex, major residential complex, major marriage halls etc.	MPCB, Local Body & concerned Establishment	STPs/ETPs provided by Major Hotels and Malls.
30	Providing the scientific collection and isolated temporary storage facility for HW in the industries	Individual Industry	HW generating industries have provided isolated scientific temporary storage facility.
31	Restriction on disposal of treated effluent on land in MIDC area Waluj	MPCB	CETP commissioned and industries have joined CETP and discharging industrial effluent in the CETP for further treatment. Notices has been issued to the unconnected industries to CETP falling under Phase II. Now problem of pollution due to land disposal of effluent get reduced. As per directives of Hon'ble NGT Pilot Plant for ground water remediation is in operation and further guidance sought form NEERI Nagpur.
32	Scientific collection segregation and storage of MSW in residential areas.	Local Body	AMC is collecting MSW from the Aurangabad city and dumping MSW at five locations presently. The details regarding the action taken are included in water Env. Action plan.
33	Restriction on use of thin plastic carry bags.	Local Body	AMC authority has constituted squads within the different wards of the City for implementation of Plastic and Thermocol Notification 2018 rigorous checking the usage of thin plastic carry bags, by way of imposing penalties.

Sr. No.	Action Points	Responsible Stake Holders	Compliance Status
34	Scientific collection, storage and disposal of BMW generated in the area.	Local Body & CBMWTSDF	CBMWTSDF facility is in operation.
35	Providing full-fledged collection, treatment and disposal of non-hazardous solid waste generated from MIDC Area	MIDC	Industries are disposing reusable Non-HW solid waste to reuse. However, MIDC has allotted work to M/s Mahindra & Mahindra for installation of collection, treatment and disposal of non-hazardous solid waste.
36	Providing full-fledged collection, treatment and disposal of MSW generated from Human habitation	Local Body	Same as point No.03
37	Soil reclamation in & around MIDC area as per guideline of NEERI	MIDC, Individual Industry	M/s. Ipca Laboratories Ltd., Plot No. H-4, MIDC Area, Waluj and M/s. Paschim Chemicals Pvt. Ltd., MIDC Area, Waluj have reclaimed soil in their premises as per guidelines of NEERI.
38	Availability of CHWTSDF at Aurangabad	MPCB	• Plot allotted in Shendra Indl. Area. • Environmental clearance is obtained by M/s SMS Infrastructure from MOEF/ GOI

EFFORTS TAKEN FOR POLLUTION REDUCTION:

Water Environment

Existing infrastructure facilities – water quality monitoring network, ETPs, CETP, Sewage Treatment Plant of industry (STPs), surface drainage system, effluent conveyance channels/outfalls, etc.

The MIDC Area, Waluj is established in the year 1982-83 and located on Aurangabad-Pune State Highway at a distance of about 20 km. from Aurangabad City. The total area of MIDC is about 1520 Hectares. There are about 1400 No's of industries which cover all small, medium and large scale industries. Most of the large and medium scale units are polluting in nature and the major water consumers as well as major effluent generating units. In MIDC, mainly engineering (electroplating and surface treatment), chemical and bulk drugs, breweries, pharmaceuticals, etc. are also established. The total quantity of effluent generation from units located in MIDC Waluj Area is 10.0 MLD which includes 7.0 MLD industrial and 3 MLD domestic effluents.

Large and medium scale industries are having own treatment facility consists of primary, secondary and tertiary treatment. Most of these industries have adequate land for the disposal of their treated effluent. Small scale industries have provided primary treatment facility and connected to CETP.

A common effluent treatment plant is established to overcome this scenario in Waluj MIDC. The plant is ready for commissioning. Work of collection pipelines from all the industries for collection of effluent from individual industry is completed.

Pollution control measures installed by Industries

All the large scale and medium scale industries have provided primary and secondary treatment facility for treatment of the trade effluent generated. Board has persuaded large industries to adopt cleaner technologies. Following are the industries who have adopted cleaner technologies:

Chrome recovery plant has been installed and operated by M/s. Metalman Industries. Metal recover plant has been provided by M/s. Endurance group of Companies and M/s. Durvoalve industry.

RO system is being installed and operated by M/s. Orchid Chemicals, and M/s. Radico distillery. Multi effect evaporators are being used by M/s. Radico distillery and M/s. Pranav Agrotech distillery. Raamri, M/s Skol brewery and M/s. Foster (I) Ltd. have also provided RO system and are generating biogas from there UASB plant. M/s. Canpac industries have provided central fume extraction system and these fumes are treated by thermal oxidation system.

Air Environment

Existing infrastructure facilities – Ambient air quality monitoring network

- Air quality is monitored at 4 locations in Aurangabad on a regular basis. Three stations are being funded through National Ambient Air Quality Monitoring Program and one station is operated by the Archaeological Department. The parameters monitored at these stations are SO_2, NO_X, SPM and RSPM. Ambient air quality monitoring is also carried out randomly by the Board's officers in the industrial clusters. Large and medium scale industries are directed to carry out ambient air quality monitoring and submit the report to the Board regularly.

- Stack monitoring of process stack and boiler stacks is regularly carried out by the Board. It is mandatory for the industries to monitor stack emissions and submit report to the Board.

- Parameters such as VOCs, benzene, PAH, metals etc. are monitored in continuous ambient air quality monitoring system.

Pollution control measures installed by the individual sources of pollution

The Board has laid down specific conditions to all industries like:

a) To provide specific height to their boilers on the basis of fuel consumption.

b) To provide dust collection system like dust collectors, cyclone dust collectors, bag house filters, electrostatic precipitators etc. on a case to case basis.

c) To provide adequate scrubbing system for process emissions on case to case basis.

All the industries in the industrial clusters have provided stacks of adequate height as per the conditions laid down in the consent. Scrubbers for the process emissions have been provided by large and medium and some small scale industries.

Due to improper maintenance and operation of air pollution control systems, high concentration of pollutants is observed.

M/s. Canpac industry in Waluj MIDC has provided central fume extraction system. These fumes are then treated by thermal oxidation. Major industries like M/s. Orchid Chemicals and other large bulk drug industries have provided solvent recovery systems. This has lead to substantial reduction in the VOC emissions. The Board has made it mandatory for industries using coal / bagasse / biomass / briquettes as fuel to provide dust collectors and wet scrubbers to limit emissions.

Land Environment

the following recommendations are made for improving land environment:

1. Site-specific land application of wastewater needs to be adopted. Soil characteristics determine the amount of wastewater to be applied to the land. Hence, it is recommended before applying the wastewater, soil characteristics must be known.

2. The modeling studies indicate that the application rate of wastewater should be less than the average vertical hydraulic conductivity of soil to avoid ground water contamination due to leaching.

3. For land application, the characteristics of the wastewater determine the quality of wastewater and amount to be used on land. Each type of wastewater contains one or more constituents that limit its application. land disposal criteria with respect to EC, TDS, sodium, COD and BOD as prescribed by State and Central boards for pollution control. They must follow the regulations strictly. Therefore, it is recommended to establish a CETP with appropriate unit operations and process which can produce effluent suitable in all respects for land disposal.

4. To avoid further deterioration of soil and groundwater qualities, effective utilization of treated wastewater for plantation should be done at wastewater disposal sites after meeting the land disposal criteria.

5. The soil's capacity to use, retain, or reduce the undesirable effects of wastewater varies significantly according to the physical, chemical, and biological properties of the soil and the characteristics of the wastewater. Thus, the development of a land treatment system must be tailored to the characteristics of the specific site and the specific wastewater. Industries like Garware Polyester Ltd., Wockhardt Biotech Park

Ltd., Innotech Pharma Ltd., Paschim Chemical Pvt. Ltd., Ariane Orgachem Ltd., Fosters India Ltd., and Aurangabad Breweries Ltd. possess different types of soil and hence have different soil characteristics. Recommended hydraulic loading (quantity and schedule) of wastewater should be carefully implemented by these industries to avoid further deterioration of soils.

6. Based on lysimeter studies, it is recommended that the treated wastewater having BOD load of 30 and 60 mg/L can be disposed on land with suitable plantation at optimum hydraulic loading of 150 m^3/ha/day during pre-monsoon and 125 m^3/ha/day during post monsoon respectively.

7. It is also recommended that the plant growth was the best among all treatments with the composite treated wastewater having BOD load of 30 mg/L. Hence, this is more suitable for land application.

8. Groundwater studies at Vittawa and Ranjangaon areas, which are in the vicinity of MIDC, Waluj and percolation tank showed that dug wells, bore wells and hand pumps in and around were severely polluted. The percolation tank (stagnant water reservoir) is nearer to the cluster of industries such as Lilason Industries Ltd., Innotech Pharma Ltd., Aurangabad Breweries Ltd., Paschim Chemicals Pvt. Ltd., Ariane Orgachem Pvt. Ltd. and Endurance system India Pvt. Ltd. The wastewaters from these industries move to percolation tank which acts as a groundwater recharge source. This might be the cause of groundwater pollution of nearby areas. To avoid further groundwater pollution, the percolation tank (stagnant water reservoir) should be filled.

9. The lysimeter investigations for assessing the feasibility of the wastewater application on land need to be performed to assess the amount of wastewater to be applied at a specific site.

10. Land disposal sites should be monitored regularly to assess the soil and groundwater quality in the area.

11. Each of the alternatives discussed above can go wrong if a site specific waste management and monitoring programme is not implemented. The results of monitoring must be reviewed periodically and the management plan may be modified, if necessary.

Green Belt

Green belt development is proposed in Waluj MIDC around the villages shown in the diagram below to reduce the impact on inhabitants.

Specific schemes

a) GPS system is being implemented for vehicles carrying hazardous and bio-medical wastes.

b) Most of large industries and some commercial complexes have provided sewage treatment plant before disposal into municipal sewers / drains.

Public Awareness & Training Programmes

MPCB at head office level is carrying out regular awareness program through media like newspapers, television etc. The Regional office also conduct social program for mass awareness in Aurangabad region. Training is imparted to the Board's staff as well as the industries representatives. Seminars with Doctors for proper implementation of BMW Rules have been conducted by MPCB. Training to Police personnel have imparted by MPCB for noise level monitoring.

Carrying out CEPI Monitoring as per CPCB direction dtd.26/04/2016:

As per CPCI direction dtd.26/04/2016 Board has selected third party agency (laboratory) recognized under Environmental (Protection) Act, 1986 and accredited under NABL through E-tendering for 3-year Post-monsoon season & Pre-monsoon Season monitoring. The monitoring data with CEPI score were communicated to CPCB and uploaded on public domain. The monitoring score are as below,

Below are the CEPI score from 2017 to Feb 2019 Carried by Board through third party as per CPCB direction:

	Air Index	Water Index	Land Index	CEPI
CEPI score Feb 2019	22.75	23.25	62	64.01
CEPI score June 2018	36.25	55.25	56.25	65.01
CEPI score February 2018	56	34	50	64.38
CEPI score June 2017	20	60.5	45	64.05
CEPI score February 2017	35	59	41	64.88
CEPI Score 2016	46	44	44	56.45

PROPOSED ACTION PLANS FOR 2019 – 2020:

1. CEPI area for Aurangabad including MIDC Waluj, Shendra, Chikalthana, MIDC Railway Station Road and Paithan Road.

2. In the Application No. 1038/2018, directions are given by Hon'ble NGT regarding CEPI score for Aurangabad is 69.85 as its rank is 39 as Severely Polluted Industrial Area (SPAs).

3. MPCB with all stakeholders prepared time bound action plan t improve CEPI score as an below,

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
1	Construction of Common Effluent Treatment plant in MIDC Shendra	To conduct Comprehensive study regarding number of industries with volume of effluent generation in MIDC Shendra.	1 month	MPCB/Industry
2	Mechanism to be developed for reduction of CEPI score	Measures for reduction in pollution:		
		a) Enhancement in green belt from 33% to 40%.	Coming monsoon	Industry

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
		b) Encouragement to switchover to clean cleaner fuel.	continues process	Industry
		c) Permissible limit for TPM to be reduced from 150 ppm to 50 ppm.	1 year	MPCB & Industry
		d) Zero liquid discharged to be achieved by major polluting units.	1 year	MPCB & Industry
		e) Action against polluting industries & imposing environmental compensation.	3 month	MPCB
3	Pollution control measures in MIDC area	a) Inspection & monitoring of air polluting industries to assess the compliance status for adequacy of APC system.	3 month	MPCB & Industry

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
		b) Repair & maintenance of approach & internal roads of industrial area.	3 months	MIDC & Local Body (Aurangabad Municipal Corporation)
4	Scrapping of percolation tank and artificial water bodies in and around MIDC Waluj	Regional Officer, MPCB, Aurangabad to carry out sampling of percolation tank for water & Soil characterization and submit report	2 months	MPCB/irrigation dept.

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
5	Installation of treatment facility waste water generated from major Hotels, Laundries, Vehicle Service centre, major Marriage Hall and major residential complex	To conduct the comprehensive survey of all major Hotels, Laundries, Vehicle Service centre, major Marriage Hall and major residential complex and to make a performance audit of the same	2 month	MPCB/local body
6	Traffic management in the area	To submit data for traffic management and enforce to discard the old vehicles as per RTO rule	1 month	Regional transport Officer, Aurangabad
7	Availability of CHWTSDF at Shendra Aurangabad	To submit the present status of the same	1 month	MIDC

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
8	Installation of RO and MEE for CETP of electroplating unit.	To provide RO and MEE at CETP for the electroplating effluent	2 months	CETP/Industrial Association
9	CEMS installed for Air and Water in Large and Medium scale RED category industries.	17 category confirm the installation of the CEMS and its calibration and connectivity	2 months	MPCB and Industry
10	Recycle 100% treated effluent to achieve ZLD	MIDC Chikalthana/ Shendra/ Paithan Road industrial area/other units to recycle 100% treated effluent to achieve ZLD.	6 months	Industries.

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
11	Adhere to consented norms standard & recycle treated effluent to the maximum extend	All the units which are member of CETP must adhere to consented norms standard & recycle treated effluent to the maximum extend	Continuous process	Industries
12	To avoid leakages and ground water pollution industry shall change their underground ETP tank to overhead.	All the water polluting industries shall change their underground ETP tank to overhead.	6 months	Industries/industries association.
13	Scientific collection, Storage and Disposal of BMW generated in the area.	The CBMWTSDF shall ensure Scientific collection, Storage and Disposal of BMW generated in the area.	Continuous process	CBMWTSDF

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
14	Scientific Collection and treatment of sewage generated form MIDC area Waluj, Chikhalthana and Shendra	The MIDC Shall ensure to provide Scientific Collection and treatment of sewage generated form MIDC area Waluj, Chikhalthana and Shendra	1 year	MIDC
15	Reuse, Recycle treated waste water	All the water polluting industries in MIDC Chikhalthana, Shendra, MIDC Railway station road and paithan road.	1 year	Industries/ MPCB

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
16	Solvent recovery in major bulk drug and chemical units located in MIDC area waluj Shendra, chikhal thana, MIDC Railway station road and paithan road.	All the Solvent recovery in major bulk drug and chemical units located in MIDC area waluj Shendra, chikhal thana, MIDC Railway station road and paithan road shall ensure increase their solvent recovery efficiency to recover solvent upto 98%.	6 months	Individual Industries and MPCB.
17	Widening of the Road and square for avoiding vehicle congestion.	The Aurangabad Municipal Corporation shall ensure Widening of the Road and square for avoiding vehicle congestion.	6 months	Aurangabad Municipal Corporation
18	Checking of Adulteration of fuel and availability of clean fuel	The District Administration and Oil and Gas company shall ensure Checking of Adulteration of fuel and availability of clean fuel.	1 year	Dist Adm.& Oil and Gas company

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
19	Installation of additional 2 nos. of CAAQMS	As per CPCB direction dtd. 26/04/2016 Board has already installed one CAAQMS station at Walunj MIDC.	9 Month	MPCB
20	Studying Carrying capacity/Source apportionment of Aurangabad CEPI Area	M. P. C. Board is in process to carrying study coordination with NEERI for further planning of pollution control in Aurangabad CEPI area.	18 month	MPCB/NEERI

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
21	Ban on Biomass burning on open land (This action point is incorporated in City level action plan under NCAP also sperate follw-up as per Hon'ble NGT order in OA No. 606/2018)	1. Launch extensive drive against open burning of bio-mass, crop residue, garbage, leaves, etc. 2. Ensure segregation of waste at source 3. Regular collection of municipal solid wastes. 4. Regular check and control of burning of Municipal Solid waste 5. Providing Organic Waste Compost machines, decentralization of processing of Waste, dry waste collection centers. 6. MPCB already issued direction on 29/08/2019 to Municipal Corporation for complete prohibition	Continuous process	Aurangabad Municipal Corporation

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
		on open burning and for violation imposed Environmental Compensation.		

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
22	Restoration of polluted water bodies. (Rejuvenation of water bodies and polluted stretches in the country. (O.A.No.673/2 0 18)	1. Environment Dept., Maharashtra Government issued G.R. vide No. NGT 2018/PC-2/TC-3 dtd.13.12.2018. regarding constitution of River Rejuvenation Committee (RRC). 2. Board has prepared separate action plan for Godavari river and its connected river separately & Submitted to CPCB.	--	--

Sr. No	Action Points	Actions	Time Target	Concerned Stakeholder
23	NWMP monitoring stations on Godavari River and Kham river River	Sampling is done monthly under NWMP	Continuous Monthly activity	MPCB

Conclusion:

With compare to earlier CEPI score calculated by CPCB in 2009-2010 Aurangabad Industrial Cluster was ranking at no 17 with overall CEPI score 77.44, but after effective implementation CEPI score of Air, water & land are reduce and now as per CPCB 2017-2018 monitoring report Aurangabad industrial area is out of critically polluted industrial area and overall CEPI score below 70. All stakeholder taking effort for same.

State Level Monitoring Committee, under Chairmanship of Principal Secretary, Environment Department constituted vide GR dtd. 31/12/1018.

Till date M.P.C.Board under Chairmanship of Member Secretary conducted various reviews meeting with all stakeholders for effective implementation of action plan and constituted monitoring team at respective Regional Officer for visit.

Also Hon'ble Principle Secretary, Environment Department , GoM and Hon'ble Chief Secretary, GoM has conducted time to time meeting to review progress.

The proposed action plan is comprehensive and each activity under Air, Water and land considered for achieving environmental standards and will help to reduce Air CEPI score below 60. The all stakeholders like MIDC authority,

Industrial associations, District administrator and Local body contribution for implementation of action plan will help to achieve reduction of CEPI score.