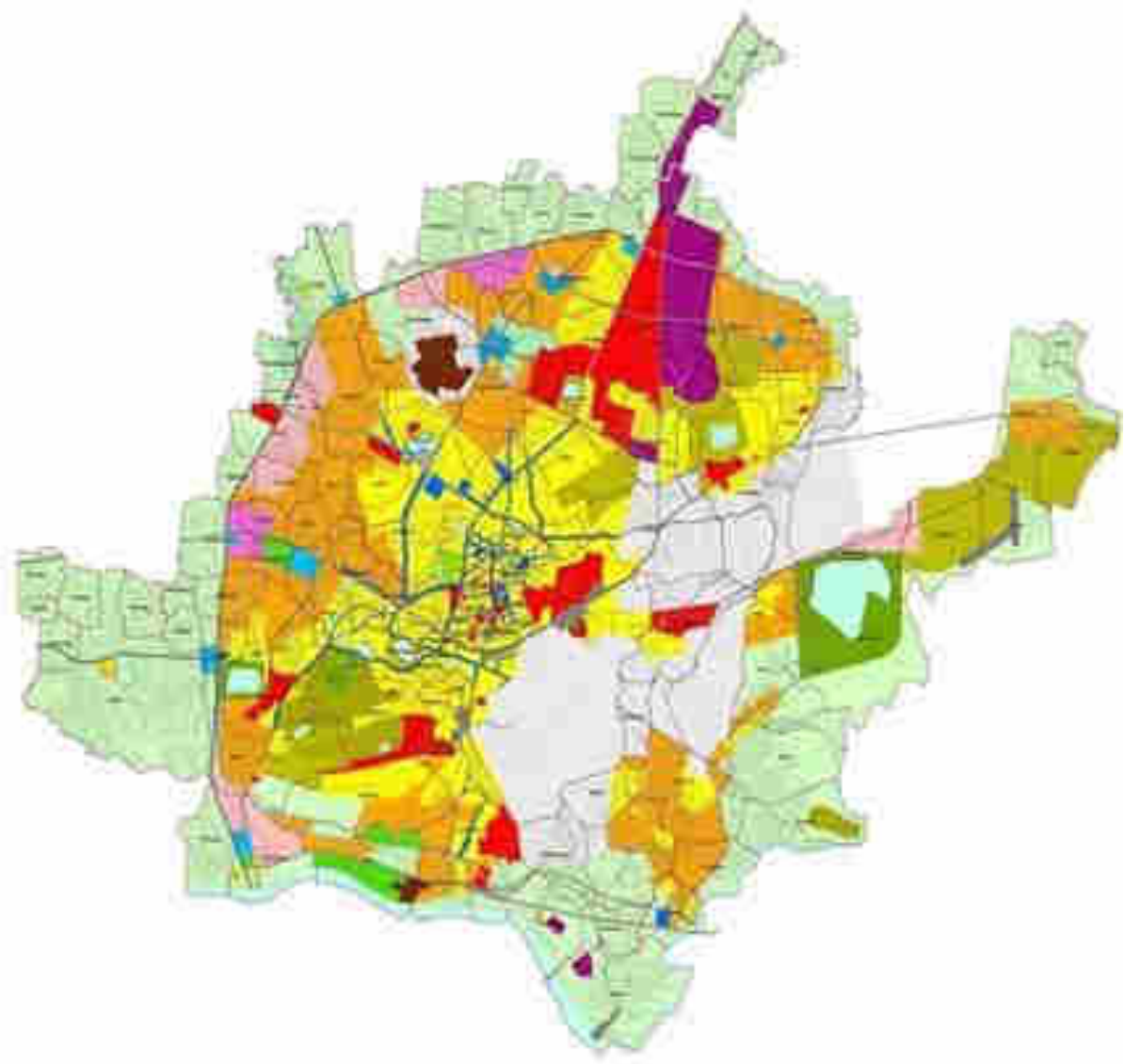
ACTION PLAN TO CONTROL AIR POLLUTION IN NON-ATTAINMENT CITY OF MADHYA PRADESH

"JABALPUR"



PRESENTED BY :

REGIONAL OFFICE, M.P. POLLUTION CONTROL BOARD JABALPUR AND JABALPUR MUNICIPAL CORPORATION

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1. INTRODUCTION

India is committed to clean environment and pollution free air. In fact, it mandated in our constitution. India commitment and obligations to conservation and protection of environment within the ambit of targeted goals on environmental sustainability under the sustainable goals (SDGs) is manifested in the fact that several administrative and regulatory measure including a separate statue on air pollution is under implementation since long.

In recent years, medium and small towns and cities have also witnessed spurt I pollution thus getting reelected in the non-attainment cities in India. Air pollution is increasing and becoming a serious concern, predominantly for health of the people. The reported perplexing statics in various international report, drawing correlation of air pollution with various aggravated figures on Health, without validation on Indian population further complicates the issues by creating a flawed public perception.

Air pollution emission issues are associated with many sectors which inter- alia include power, transport, Industry, residential, construction and agriculture. The impactofairpollutionisnotlimitedtohealth,butitgetsextended toagricultureand general well-being of human I.e. to Floral and faunalpopulation.

2. OBJECTIVE

- To have feasible management plan for prevention, control and abatementof airpollution.
- To augment and evolve effective and proficient ambient air quality acrossthe city.
- Improve quality & cost effectiveness of Public / Urban transport.
- Reduce fuel use, air pollution and greenhouse gas emissions.
- Provide dust free transport.
- Improve quality of public spaces and access to city benefits for all income classes.

3. ABOUT CITY BRIEF / BACKGROUND

- **Brief History Of The Town**

Tripuri is said to be the most ancient form of city that existed in this region. This city is believed to be located at the site where the Tewar village is presently located. The proximity to the river Narmada has been depicted as the cause for its choice as capital by the rulers of Tripura or Chedi country.

Tripuri remained the centre of power till the uprising of Gonds in 14th century A.D. The Gonds established there capital at Garha-Katanga. The Gonds preferred this location of Garha-Katanga for its physiographical features and fertile land. The region was easily defendable from invaders due to its scattered low hillocks as mentioned in some of the Mugal literature. However, the Moguls finally defeated Rani Durgavati, last and perhaps the most famous Gond Ruler, in 1564 A.D.

- **Geographical, Roadway / Railway Linkage & Regional setting;**

Geographically, **JABALPUR** is located at 23°10′N 79°57′E / 23.17°N 79.95°E. The central point of India is located in Jabalpur district. It has an average elevation of 411 meters (1348 ft)**.**

Jabalpur is well connected by roads, rails and airways. National Highway-7 passing through the city links it with important neighboring cities like Nagpur, Raipur, Bhopal, Allahabad, Sagar etc. The city being an important station on the Allahabad - Itarsi section of the Howrah -Mumbai main line, has direct railway route to important cities of national importance like Mumbai, Howrah, Delhi, Varanasi, Secunderabad, Patna, Cochin, Chennai, Lucknow, Rajkot, Ahmedabad, Surat and Guwahati. The city has recently been made the head office of central zone of Indian Railways. The city also has an airport with flights for Raipur and Delhi. The airport is however currently defunct.

The city is a big centre for trade and commerce of various commodities**,** mainly due to the good connectivity of Jabalpur city with places of regional and national importance by railways and roadways. Large *Mandis* (Markets) dealing in various commodities such as grain, cloth, hardware, glassware, timber, vegetable, and fruit exist in the city.

- **Climate**

Jabalpur has a humid subtropical climate, typical of North-Central (Madhya Pradesh and Southern Uttar pradesh) India. Summer starts in late March and last up to June. May is the hottest month with average temperatures reaching up to and beyond 45 °C. They are followed by monsoon season, which lasts until earlyOctober, with a total precipitation of nearly 55 in (1386 mm). Winter starts in late November and last until early March. They peak in January with average daily temperature near 15°C. The following table depicts the climate date for each month.

Climate data for Jabalpur													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	26.5 (79.7)	28.8 (83.8)	34.3 (93.7)	38.7 (101.7)	40.4 (104.7)	36.2 (97.2)	30.3 (86.5)	28.2 (82.8)	30.9 (87.6)	32.4 (90.3)	29.7 (85.5)	26.9 (80.4)	31.9 (89.5)
Average low °C (°F)	9.8 (49.6)	11.4 (52.5)	16.2 (61.2)	21.2 (70.2)	24.4 (75.9)	24.1 (75.4)	22.6 (72.7)	21.9 (71.4)	21.1 (70.0)	18.1 (64.6)	13.9 (57.0)	10.6 (51.1)	17.9 (64.3)
Average precipitation mm (inches)	4 (0.2)	3 (0.1)	1 (0.0)	3 (0.1)	11 (0.4)	136 (5.4)	279 (11.0)	360 (14.2)	185 (7.3)	52 (2.0)	21 (0.8)	7 (0.3)	1,062 (41.8)
Average precipitation days	0.8	0.8	0.3	0.3	1.8	8.6	15.9	18.3	8.6	3.1	1.4	0.6	60.5
Mean monthly sunshine hours	288.3	274.4	288.3	306.0	325.5	210.0	105.4	80.6	180.0	269.7	273.0	282.1	2,883.3

- ## Topography

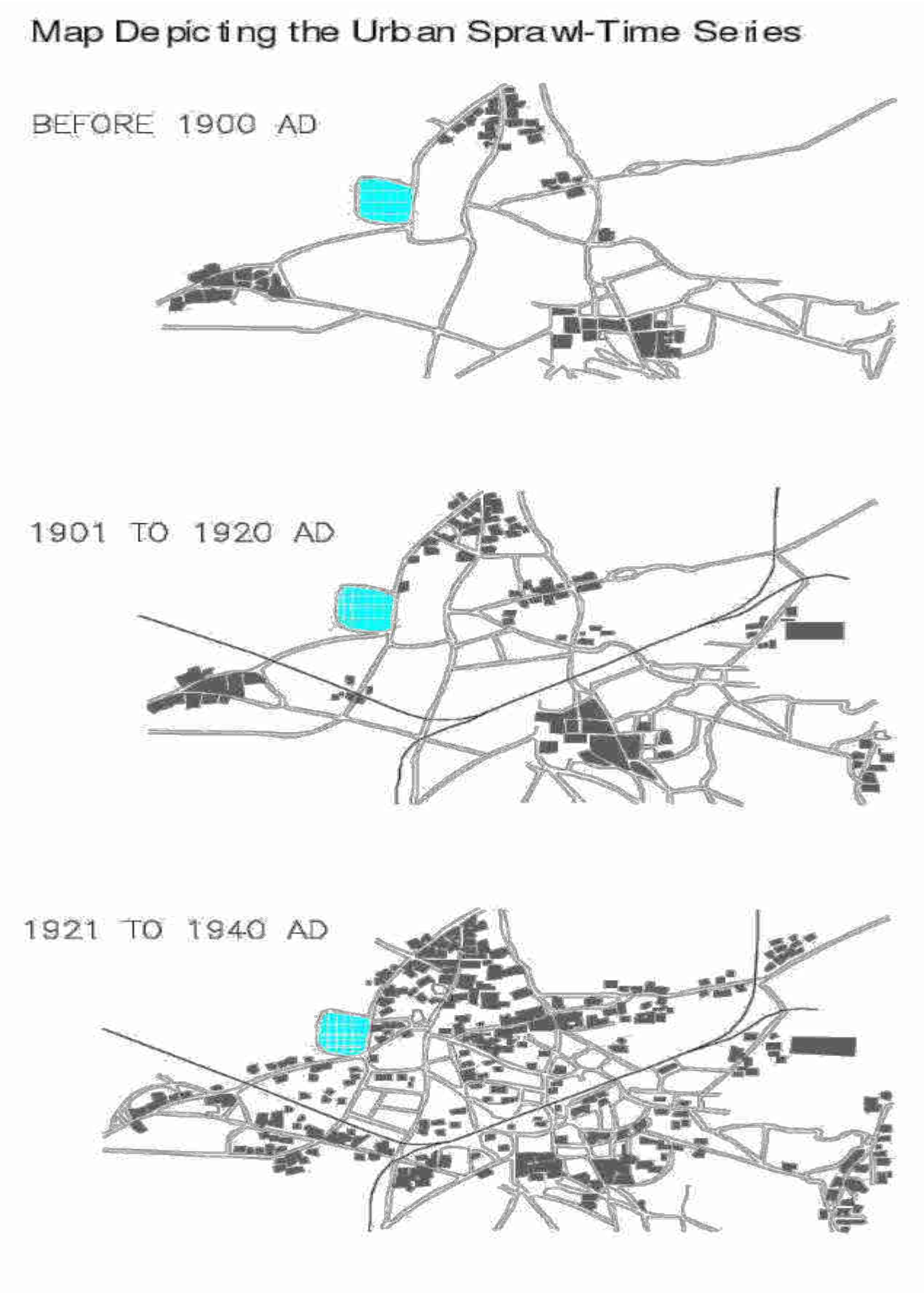
Jabalpur is surrounded by low, rocky and barren hillocks. The city has Kariya Pathar hills in north-east, Khandari hills and Sita Pahad in east, and Madan Mahal and Rampur hills in its south. This low hill terrain has resulted into formation of large number of small and large water bodies and tanks in the city. The western and north-west portions of city however have plane lands and these are the areas with dense population with future prospects for urban sprawl.

- ## Land Breakup Area Of The Town;

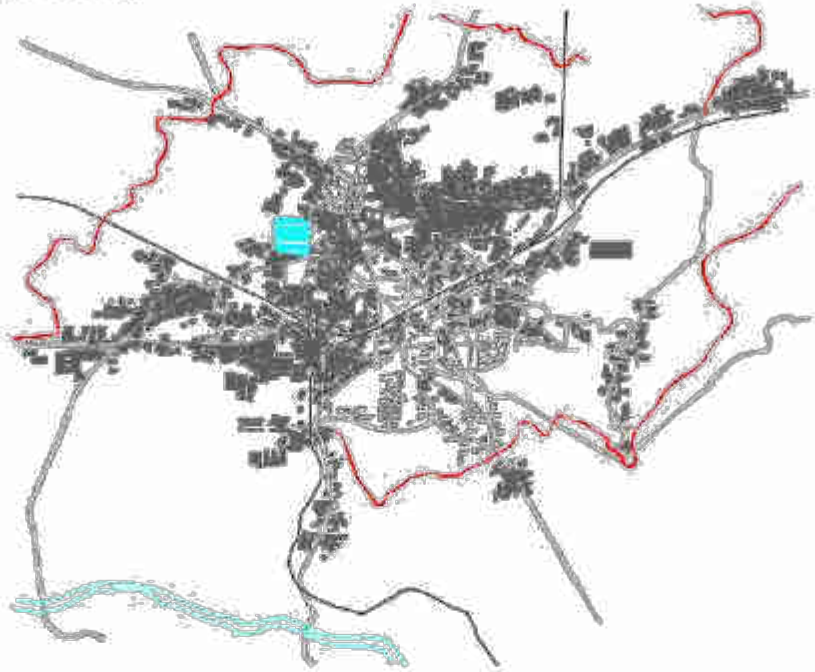
The city got Municipal Corporation on 31st May 1950, under City of Jabalpur Corporation (Act III of 1948). The city had an area of 12 sq. miles and it had 30 wards. The jurisdiction of Corporation was enlarged in 1959 to cover an area of 52 sq. miles and 46 wards which later got raised to 53 wards. The Corporation was brought under Madhya Bharat Municipal Corporation Act of 1956 on 17th May 1961. The numbers of wards were raised to 60 in year 1994 by the notification of State Government. Afterwards nearby 55 villages were added to its boundary , which cause the total number of wards were raised to 79 and now at present the total city area is approx 141.69 square miles.The British took the charge of the region by 1818 and made it there district headquarters in 1820 A.D. The Cantonment Board was established in 1826 with an area of 445 acres and was enlarged in 1837. The Cantonment Act was extended to the Cantonment of Jabalpur in 1864-65. Apart from that, the railway station in 1870 and the High Court in 1882 dictates the importance city received during British rule. The city therefore assumed a tri-nuclear urban form with old Millionigunj and Hanumantal localities, Garha and Cantonment. These localities have different characteristics, both social and economical. The Millionigunj and Hanuman tal assumed the character of commercial centre habited by business community.The Cantonment area grew with military establishments and Garha was occupied by serfs. The horse shoe shaped railway line physically divided these areas. The establishment of Gun Carriage Factory in 1904, Madan Mahal railway station and narrow gauge rail line between Jabalpur and Gondia followed these developments during 1901-1920 A.D.

In the period 1920-41, the Millionigunj and Cantonment area link got strengthened with the establishment of many government offices in this area. The important of those are Municipal Council Office (1914) and Victoria Memorial Hospital (1933). During these decades the city grew at a faster rate. In 1941, Napier Town and Wright Town areas were planned and

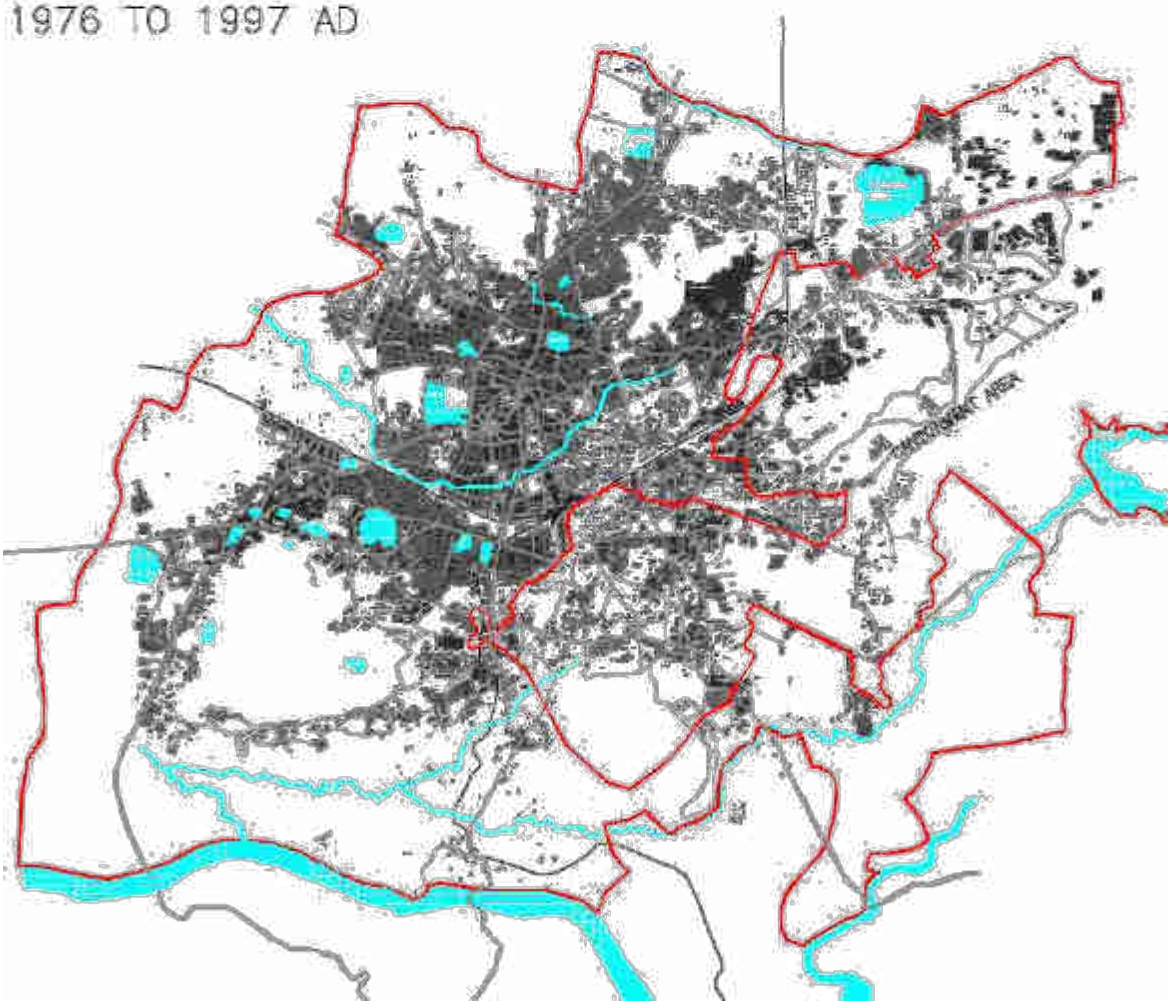
established. These well planned areas were controlled by specified rules of subdivision of lands and coverage restriction. They form the posh localities in the region.



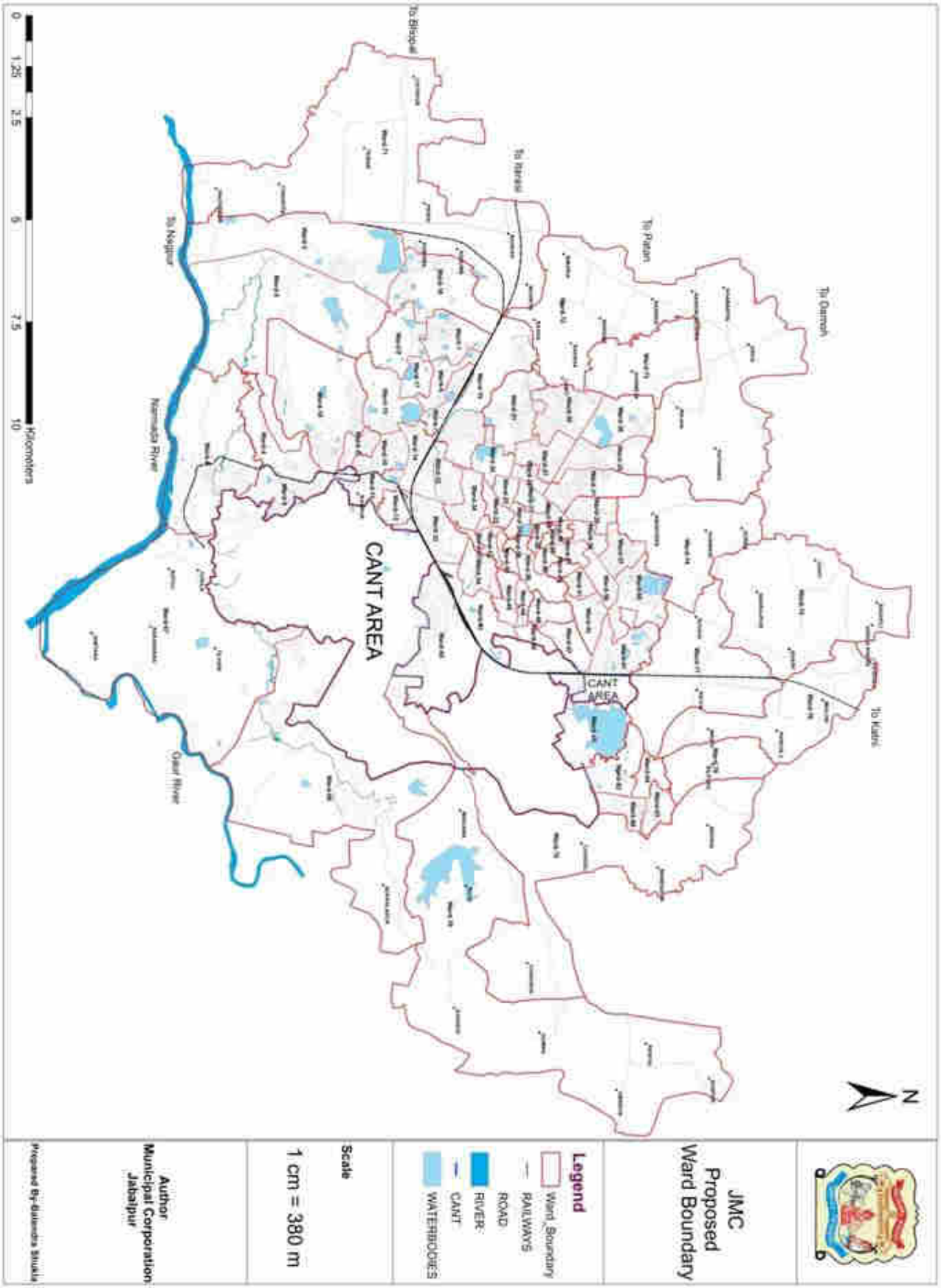
1941 TO 1975 AD



1976 TO 1997 AD



Present Map of Jabalpur city YEAR-2020(Map-1)



- **Residential Area Of The Town;**

As per CDP 2005 approx 3807 hec. Residential land was identified for development. Out of which approx 3215 Hec. residential Development was done by year 2005. Current proposed area for development is shown in attached **Map-02.**

- **Commercial Area Of The Town;**

As per CDP 2005 approx 445 hec. Commercial land was identified for development. Out of which approx 209 Hec. commercial Development was done by year 2005. Current proposed area for development is shown in attached **Map-02.**

- **Industrial Area Of The Town;**

Later in 1943, the Telecom Workshop and the Ordinance Factory at Khamaria were established. In post independence phase many remarkable events took place indicating the importance of the city in this region. Engineering College (1947), Vetenary College (1948), Medical College (1956), Shahid Smarak (1956), Madhya Pradesh Electricity Board Headquarters (1957) and the Home Science College (1960) are some of the institutions established in the city contributing towards the social, economical and cultural needs of the city.

Jabalpur has been classified as 'Class A' city by Government of India which indicates a highly industrialized city. The main industrial sectors herein are defence establishments, garment industries, limestone extraction and allied industries. Bidi making and stone carving are two traditional industries which were once major source of employment in rural areas, are now in declining state. Other cottage industries based on forest produce are also in existence. The city has two industrial centres namely Richhai industrial area (1965 established, 11 km away from city centre) and Adhartal industrial area (1962 established, 6 km away from city centre) with 191.77 ha and 43.18 ha area respectively. Most of the industries in Ricchai industrial area are closed or sick. Currently, large scale dairy development is being initiated along Katni-Jabalpur road. The city is an important centre for education as well. It has Rani Durgawati University and Jawaharlal Nehru Agriculture University, offering education in wide range of subjects.

Further, it has a Telecommunication training centre of national importance. Jabalpur being the district headquarters of Jabalpur district has a Collector office with administrative officers at divisional and district level. The city of Jabalpur is headquarters of Madhya Pradesh Electricity Board and Central Railway. It also has the High Court of Madhya Pradesh State. This indicates the importance of city as an administrative centre.

As per CDP 2005 approx 551 hec. Industrial land in Ricchai & Madhai gram was identified for development. Out of which approx 368 Hec. Industrial Development was done by year 2005 because some big industries were established in Maneri. Current proposed area for development is shown in attached **Map-02.**

There are some other industries in Jabalpur city which are ;
Shah Metal Industries, Calcutta Machineries, Manjulam Enterprises, Safe Tech Fab & Engg., Divya Glass, New Super Electrical And Mechanical Works, Swastik Associates, M. P. Heat Transfer, Aquadet Corporation, Mediwala Machinery Company, Akram Servo Stockist, Kabir Enterprises, Unique Enterprises, Bheraghat Marbles Pvt. Ltd., Aquadet Chemicals Pvt. Ltd., Rayon Industries, P. C. Engineering Works etc.

- **Public Service / Semi Public Facilities Area Of The Town;**

As per CDP 2005 approx 876 hec. land was identified for development. Out of which approx 730 Hec. Development was done by year 2005. Current proposed area for development is shown in attached **Map-02.**

- **Recreational Activities Area Of The Town;**

As per CDP 2005 approx 540 hec. land was identified for development. Out of which approx 140 Hec. Development was done by year 2005. Current proposed area for development is shown in attached **Map-02.**

- **Transportation Area Of The Town;**

As per CDP 2005 approx 1107 hec. land was identified for its development. Out of which approx 852 Hec. Development was done by year 2005. That time National Highway which were passing through the city was constructed but the plantation on both side and development of some main roads of the city were remained , which were done later. Current proposed area for development is shown in attached **Map-02.**

- **Planted / Green Area Of The Town;**

There are approx 3.50 lakh plants/trees in the municipal boundary. Day by day peoples and JMC are taking initiate to plant more trees/plant. JMC also taking initiate and coordinating with locals to developmore gardens. There are approx 155 nos developed gardens at different locations of the city. Brief about these gardens with area is given below;

S.No	Ward No.	Name	Location	Area
1	1	Rajul city chandan colony	23.163091 N, 79.891644 E	1116Sq.m(12012Sq.ft)
2	1	Rajul city chandan colony 1	23.163427 N, 79.892108 E	1390Sq.m(14962Sq.ft)
3	2	Police line colony park	23.153336 N, 79.887247 E	750Sq.m(8073Sq.ft)
4	2	Police line colony park 1	23.152700 N, 79.886920 E	785Sq.m(8450Sq.ft)
5	2	Near Pisanhari ki madiya(JDA garden)	23.151714 N, 79.886636 E	586Sq.m(6308Sq.ft)
6	4	Bajmohan nagar park	23.126153 N , 79.918517 E	935 Sqm(10064sq.ft)

7	4	Satyanand vihar park	23.135239 N, 79.920875 E	2055Sqm(22120Sq.ft)
8	4	M.P.Highcourt Society	23.126913 N, 79.914652 E	3010Sqm(32400Sq.ft)
9	4	Nation housing society	23.125677 N, 79.913347 E	1551Sqm(16695Sq.ft)
10	4	New Ram nagar colony	23.125144 N, 79.917892 E	325.5Sqm(3504Sq.ft)
11	4	Avanti vihar garden	23.128340 N, 79.922789 E	1005Sqm(10818Sq.ft)
12	5	Nehru nagar garden	23.147217 N, 79.883006 E	3320Sq.m(35763Sq.ft)
13	6	Narayan nagar park(indra park)	23.163010 N, 79.906633 E	2361Sq.m(25420Sq.ft)
14	6	k.p.bose colony park	23.164447 N, 79.899982 E	759Sq.m(8170Sq.ft)
15	7	laal maidan park	23.166782 N, 79.903495 E	6820Sq.m(73410Sq.ft)
16	7	Gulmohar park	23.168363 N, 79.898963 E	4500Sq.m(48430Sq.ft)
17	7	Sanjeevani nagar park(pump house)	23.168050 N, 79.897395 E	2315Sq.m(24919Sq.ft)
18	8	Ideal hill polipather 1	23.127636N, 79.925327E	1150 Sq.m (12380Sq. ft),
19	8	M.P. housing Old polipathare	23.121855 N, 79.924872 E	1,238 sq.m(13326sq.ft)
20	8	Triveni garden narmda nagar	23.121079 N, 79.924370 E	2,408 sq.m(25920sq.ft)
21	8	Narmda nagar 1	23.118245 N, 79.923615E	2,023 sq.m(21776 sq.ft)
22	8	Narmda nagar 2	23.107921 N, 79.924260 E	440 sq.m (4737 sq.ft)
23	8	Oswall colony	23.113849 N, 79.917238 E	840 sq.m (9041sq.ft)

24	8	Sukhasagar valley 1	23.116114 N, 79.925742 E	802 Sq.m (8633sq.ft)
25	8	Sukhasagar valley 2	23.116034 N, 79.927906 E	475 Sq.m (5113 sq.ft)
26	8	Sukhasagar valley 3	23.115737 N, 79.929050 E	720Sq.m (7750sq.ft)
27	8	Sukhasagar valley 4	23.116298 N, 79.928721E	1222Sq.m (13154sq.ft)
28	8	Sukhasagar valley 5	23.116420 N, 79.926919 E	656Sq.m(7062sq.ft)
29	8	Sukhasagar valley 6	23.115726 N, 79.928074 E	950Sq.m (10226sq.ft)
30	8	Awadhpuri colony 1	23.113456 N, 79.925049 E	2027Sq.m(21819sq.ft)
31	8	Awadhpuri colony 2	23.112518 N , 79.925779 E	1200sq.m(12917 sq.ft)
32	8	Bramrishi colony	23.110252 N, 79.923348 E	596sq.m(6415sq.ft)
33	8	Bramrishi colony 1	23.110385 N, 79.921958 E	1228sq.m(13218sq.ft)
34	9	Aadarsh nagar 1	23.133877 N, 79.929884 E	1,121sq.m(12067 sq.ft)
35	9	Aadarsh nagar green park	23.131782 N, 79.927498 E	1,551sq.m(16695 sq.ft)
36	9	Aadarsh nagar 3	23.129902 N, 79.926535 E	2,333 sq.m(25113 sq.ft)
37	9	Aadarsh nagar 4	23.131635 N, 79.929509 E	1,592 sq.m(17137sq.ft)
38	9	Aadarsh nagar 5	23.130965 N, 79.929503 E	3,967 sq.m(42701sq.ft)
39	9	Indrapuri colony	23.128412 N, 79.931960 E	3,150 sq.m(33907sq.ft)
40	9	Taigore nagar	23.127001 N , 79.933445 E	4,641 sq.m(49956sq.ft)
41	9	Taigore nagar 1	23.126842 N, 79.932669 E	1,851 sq.m(19925sq.ft)
42	9	Modi colony	23.125860N, 79.935578E	1,105 sq.m(11894sq.ft)
43	9	Ideal hill polipather	23.128864N, 79.927080E	3,371 sq.m(36285 sq.ft)
44	11	Bramrishi colony 2	23.110480 N, 79.920993 E	1480 sq.m(15930 sq.ft)
45	11	National colony	23.142868 N , 79.920465 E	1150Sqm(12378sq.ft)

46	12	Lakshmi parisar garden (alok nagar) katanga	23.146551 N, 79.931109 E	3390Sq.m(36490Sq.ft)
47	16	Ganesh park	23.162310 N, 79.879005 E	1408Sq.m(6512Sq.ft)
48	16	Sai garden	23.162310 N, 79.879005 E	605Sq.m(6512Sq.ft)
49	18	Giriraj kishor kapur ward 1	23.147380 N, 79.914367 E	1600sq.m(17222sq.ft)
50	18	Pushpanjali garden	23.145643 N, 79.914583 E	7465sq.m(80353sq.ft)
51	18	Aashirvaad garden	23.146231N, 79.909506E	4004sq.m(43099sq.ft)
52	18	Shaheed gulab singh ward 3	23.144845 N, 79.907240 E	5001Sqm(53830sq.ft)
53	18	Pavan bhumi near babli	23.144845 N, 79.907240 E	4003Sqm(43088 sq.ft)
54	18	Sainik society	23.144845 N, 79.907240 E	2544Sqm(27384sq.ft)
55	18	Sakar hill view	23.142475 N , 79.900827 E	277Sqm(2982Sq.ft)
56	18	Sakar hill view 1	23.142509 N, 79.900596 E	610Sqm(6566sq.ft)
57	18	Pawan bhumi	23.145874 N, 79.907353 E	2707Sqm(29138sq.ft)
58	18	90 quarter sharda nagar	23.144998 N, 79.911977 E	162Sqm (1744 Sq.ft)
59	18	Aajad garden	23.144285 N, 79.911159 E	2545Sq.m(27394Sq.ft)
60	18	50 quarter sharda nagar	23.146818 N, 79.906436 E	1326Sq.m(14273Sq.ft)
61	18	Sainik society near divya home	23.145412 N, 79.905501 E	460Sq.m(4951Sq.ft)
62	18	JDA Godham garden	23.139688 N, 79.881745 E	1295Sq.m(13939Sq.ft)
63	18	Naya gov rampur	23.129077 N, 79.906537 E	8001Sq.m(86123Sq.ft)
64	20	Kashturva gandhi garden	23.171809 N, 79.922843 E	790Sq.m(8503Sq.ft)
65	21	Hathital society park	23.150348 N, 79.922929 E	1150Sqm(12381sq.ft)

66	21	Indra park (kamala neharu nagar)	23.164327 N, 79.916457 E	3504Sq.m(37717Sq.ft)
67	21	Rani durgavati garden	23.165987 N, 79.914238 E	2165Sq.m(23304Sq.ft)
68	21	jay nagar park	23.168634 N, 79.913291 E	3660Sq.m(39396Sq.ft)
69	21	Daya nagar park	23.170516 N, 79.916582 E	3833Sq.m(41258Sq.ft)
70	21	Kamala nahru nagar garden	23.167162 N, 79.914357 E	808Sq.m(8697Sq.ft)
71	21	S.B.I park	23.181813 N, 79.916075 E	3560Sq.m(38319Sq.ft)
72	21	Pipaleshver temple garden	23.182356 N, 79.914730 E	1908Sq.m(20558Sq.ft)
73	21	Janki nagar garden	23.182852 N, 79.911218 E	2403Sq.m(25866Sq.ft)
74	21	H.B. college garden	23.185166 N, 79.904025 E	4040Sq.m(43486Sq.ft)
75	21	Vivekananad park 1	23.182020 N, 79.907988 E	1550Sq.m(16684Sq.ft)
76	21	Rameshwaram	23.179942 N, 79.908902 E	1990Sq.m(21420Sq.ft)
77	21	Sahib papisar park	23.178956 N, 79.907773 E	950Sq.m (10226sq.ft)
78	21	Gajanand society park	23.171224 N, 79.910658 E	1290Sq.m(13886Sq.ft)
79	21	Prabhat colony park	23.171298 N, 79.911588 E	1180Sq.m(12701Sq.ft)
80	21	Vivekananad park 2	23.173307 N, 79.914169 E	1555Sq.m(16738Sq.ft)
81	21	Sahib parishar park	23.173999 N, 79.917049 E	665Sq.m(7158Sq.ft)
82	21	Sahib parishar park 1	23.173544 N, 79.915935 E	1018Sq.m(10958Sq.ft)
83	21	Sahib parishar park 2	23.174756 N, 79.916370 E	930Sq.m(10010Sq.ft)
84	21	Madhuwan garden	23.179881 N, 79.913990 E	450Sq.m(4843Sq.ft)
85	23	Gandhi bhawan parisar garden	23.171278 N, 79.937541 E	2340Sq.m(25188Sq.ft)

86	27	Sarswati garden	23.184306 N, 79.924167 E	2280Sq.m(25541Sq.ft)
87	27	Shitlapuri garden	23.187801 N, 79.922647 E	1380Sq.m(14854Sq.ft)
88	27	Kanyakunj garden	23.182778 N, 79.925833 E	1500Sq.m(16146Sq.ft)
89	28	Shiv nagar park	23.187925 N, 79.921549 E	7290Sq.m(78470Sq.ft)
90	28	Sakti park	23.188888 N, 79.911148 E	5945Sq.m(63992Sq.ft)
91	28	Janbhagidari park	23.186190 N, 79.921769 E	618Sq.m(6652sq.ft)
92	28	Infront of ashoka hall	23.185629 N, 79.920563 E	1750Sq.m(18837sq.ft)
93	28	Shikshak colony park	23.183556 N, 79.912799 E	836Sq.m(8999sq.ft)
94	29	Manmohan nagar park	23.192160 N, 79.919506 E	14760Sq.m(158876Sq.ft)
95	30	mother teresa garden	23.206181 N, 79.905860 E	1333Sq.m(14348Sq.ft)
96	31	Trimurti nagar human mandir park	23.195433 N, 79.923640 E	1130Sq.m(12163Sq.ft)
97	31	Ambedkar park	23.193936 N, 79.927584 E	1600sq.m(17222sq.ft)
98	31	Shanti nagar	23.192032 N, 79.928562 E	3500Sq.m(37674Sq.ft)
99	31	Shanti nagar (JDA Garden)	23.189639 N, 79.931806 E	5970Sq.m(64261Sq.ft)
100	33	Chandanwan garden	23.165180 N, 79.943849 E	1200Sq.m(12917 sq.ft)
101	33	Madhav Rao garden	23.162638 N, 79.941347 E	670Sq.m(7212Sq.ft)
102	34	Nagar nigam garden	23.165442 N, 79.932921 E	1560Sq.m(16792Sq.ft)
103	34	Nehru garden	23.166039 N, 79.934194 E	4966Sq.m(53454Sq.ft)
104	34	Civic Center garden	23.167593 N, 79.934623 E	10,950Sq.m(117866Sq.ft)
105	34	Shri nath ki taleyya	23.172538 N, 79.933113 E	6350Sq.m(68352Sq.ft)
106	35	Jagdamva colony garden	23.183500N,79.915000E	2111Sq.m(22722Sq.ft)
107	35	Shiv mandir park	23.184423 N, 79.905489 E	7475Sq.m(80460Sq.ft)

108	35	Garba garden	23.191320 N, 79.909901 E	3320Sq.m(35763Sq.ft)
109	35	S.B.I bank colony park	23.189904 N, 79.910913 E	2420Sq.m(26048Sq.ft)
110	35	Vikash nagar garden	23.186870 N, 79.913713 E	3400Sq.m(36598Sq.ft)
111	35	Pansheel garden	23.179292 N, 79.911316 E	1777Sq.m(19128Sq.ft)
112	35	State bank office colony park	23.183509 N, 79.915045 E	2670Sq.m(28740Sq.ft)
113	35	New Jagdamba colony	23.185414 N, 79.917666 E	935Sq.m(10064Sq.ft)
114	38	Bhumi vikas nagar garden	23.187619 N, 79.913122 E	2710Sq.m(29170Sq.ft)
115	39	P.N.T durga mandir garden	23.184910 N, 79.912519 E	1920Sq.m(20667Sq.ft)
116	41	New aanand nagar garden 1(Near Remond school)	23.193355 N, 79.947297 E	386Sq.m(36447Sq.ft)
117	41	New aanand nagar garden 2	23.192922 N, 79.947630 E	442Sq.m(47814Sq.ft)
118	41	New aanand nagar garden 3	23.192637 N, 79.947823 E	526Sq.m(5662Sq.ft)
119	41	New aanand nagar garden 4	23.192282 N, 79.948127 E	360Sq.m(3875Sq.ft)
120	42	Punit nagar	23.197074 N, 79.958184 E	1570Sq.m(16899Sq.ft)
121	42	Ambedkar colony park	23.196444 N, 79.953347 E	2740Sq.m(29493Sq.ft)
122	48	Sidha baba	23.189346 N, 79.955469 E	1395Sq.m(15016Sq.ft)
123	51	New aanand nagar(aanandeshwer garden)	23.194655 N, 79.943986 E	2960Sq.m(31861Sq.ft)
124	51	Saif nagar garden	23.194520 N, 79.941856 E	915Sq.m(9849Sq.ft)
125	51	Kali garden	23.190233 N, 79.943398 E	1860Sq.m(20021Sq.ft)
126	51	New Aanand nagar (Husaini garden)	23.192338 N, 79.946391 E	2275Sq.m(24488Sq.ft)

127	52	In front shivparvati temple garden	23.173111 N, 79.940178 E	3008Sq.m(32415Sq.ft)
128	54	Lalit garden	23.170828 N, 79.947542 E	1975Sq.m(21258Sq.ft)
129	56	Mansarowar garden	23.200566 N, 79.951616 E	790Sq.m(8503Sq.ft)
130	57	Alok nagar garden	23.199843 N, 79.942592 E	2730Sq.m(29095Sq.ft)
131	57	Jaiprakash nagar	23.200763 N, 79.948757 E	980Sq.m(10548Sq.ft)
132	57	Mahakoshal garden(JDA)	23.201803 N, 79.942481 E	1600sq.m(17222sq.ft)
133	57	Pushpak nagar park	23.201334 N, 79.941669 E	410Sq.m(4413Sq.ft)
134	60	Near Durga mandir garden	23.198302 N, 79.970843 E	955Sq.m(10280Sq.ft)
135	60	Sharda colony garden	23.198919 N, 79.970537 E	1100Sq.m(11840Sq.ft)
136	61	Pachmatha mandir garden	23.206710 N, 79.948863 E	3208Sq.m(34531Sq.ft)
137	61	In front of sai temple garden	23.205315 N, 79.947857 E	1500Sq.m(16146Sq.ft)
138	63	Samsanghat garden	23.211491 N, 80.005198 E	3960Sq.m(42625Sq.ft)
139	63	Bada pathare garden (Ambedkar garden)	23.208529 N, 80.001706 E	980Sq.m(10548Sq.ft)
140	68	New sobhapur park	23.193208 N, 79.975459 E	1355Sq.m(14585Sq.ft)
141	69	Rawan park	23.205135 N, 80.003833 E	8050Sq.m(86650Sq.ft)
142	69	Swami Vivekanand park	23.206580 N, 80.003971 E	3560Sq.m(38319Sq.ft)
143	71	P N T Colony garden	23.160548 N, 79.871496 E	1360Sq.m(14639Sq.ft)
144	71	In front of pooja home garden	23.160877 N, 79.871299 E	870Sq.m(9364Sq.ft)
145	71	Jasuja city	23.157695 N, 79.870008 E	1930Sq.m(20775Sq.ft)

146	72	kachanar city face 2(in front of shobha vila) shri Dham park	23.187449 N, 79.902250 E	2200Sq.ft(23680Sq.ft)
147	72	Kachanar city face 2(in front of Pradeep soni home) shri ram park	23.186311 N, 79.901910 E	1180Sq.m(12701Sq.ft)
148	72	Shiv park kachanar city	23.188332 N, 79.900525 E	2300Sq.m (24757Sq.ft)
149	72	Kanchanar city (near mukesh kosta house) (sai park)	23.189722 N, 79.902013 E	610Sqm(6566sq.ft)
150	72	Ganesh park , kanchanar city	23.189314 N, 79.902493 E	1180Sq.m(12701Sq.ft)
151	72	Mahaveer garden	23.187816 N, 79.901459 E	2430Sq.m(26156Sq.ft)
152	73	ATR colony , ram nagar	23.210724 N, 79.899690 E	1850Sq.m(19913sq.ft)
153	75	Durga mandir , patel nagar	23.227763 N, 79.957214 E	3806Sq.m(41000Sq.ft)
154	77	COD colony, sohagi	23.222220 N, 79.949111 E	7870Sq.m(84713sq.ft)
155	77	Near shiv mandir, COD colony	23.221115 N, 79.950642 E	4218Sq.m(45403sq.ft)

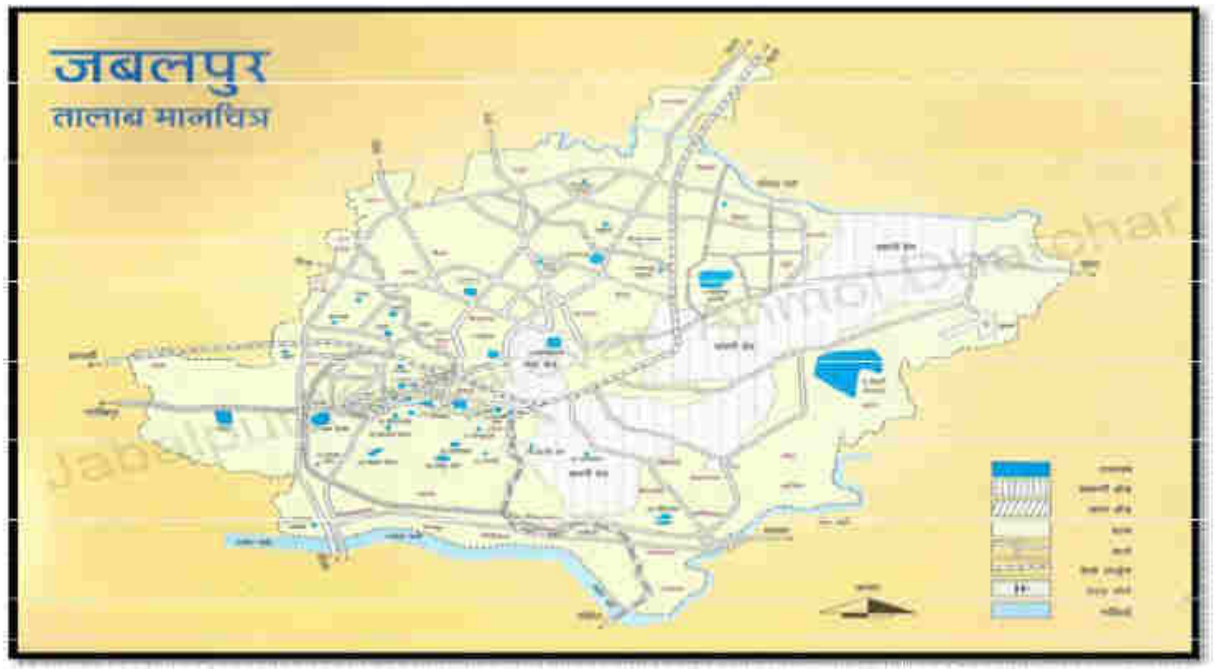
• Lake / Water Body Of The Town;

There are total no of 36 lakes present in the city having total area of approx 457 hec. Ownership of 27 lakes are government and 09 are private. Brief detail of these lakes are ;

जबलपुर के सरोवर...अनमोल धरोहर (तालाब विवरण : एक नजर में)

क्र.	तालाब के नाम	स्थिति (ग्राम)	रकबा (हे.)	प्रबंधन
1	माढ़ोताल	माढ़ोताल	16.998	शासकीय एवं ज.वि.प्रा.
2	अधारताल	अधारताल	16.189	कृषि विभाग
3	कंचनपुर तालाब	महापुरा	2.145	निजी
4	गोकलपुर तालाब	कछौंदा	122.492	शासकीय
5	खंदारी जलाशय	कोहा	157.804	नगर निगम जबलपुर
6	हनुमान ताल	जबलपुर	6.33	नगर निगम जबलपुर
7	रानीताल	लक्ष्मीपुर छिरौलिया, जबलपुर	10.250	नगर निगम जबलपुर
8	गुलौआ ताल	चौहानपुर	2.896	जबलपुर वि. प्राधिकरण
9	शाहीताल	कांचपुरा	1.55	नगरीय अतिशेष
10	महाराज सागर	गढ़ा	1.231	जबलपुर वि. प्राधिकरण
11	जिन्दाई की तलैया	गढ़ा	0.151	निजी
12	बघाताल	गढ़ा	2.793	निजी
13	कोलाताल	गढ़ा	1.086	ओशो आश्रम
14	मठरानी किजौरी तालाब	गढ़ा	1.193	निजी
15	फूलसागर	गढ़ा	0.672	निजी
16	मढ़फई तालाब	पुरवा	0.91	नगरीय अतिशेष
17	सूरजताल	पुरवा	3.504	नगरीय अतिशेष
18	इमरतीताल	पुरवा	1.793	नगरीय अतिशेष
19	अकबैरा ताल	पुरवा	2.939	नगरीय अतिशेष
20	अवधांताल	पुरवा	0.866	मेडीकल कॉलेज
21	बालसागर	पुरवा	23.037	मेडीकल कॉलेज
22	गुल्लू की तलैया	पुरवा	0.648	मेडीकल कॉलेज
23	बगड़ाताल	बगड़ा	1.574	निजी
24	रतनगरा तालाब	रतनगरा	8.31	म.प्र शासन
25	संग्राम सागर	पुरवा	15.855	म.प्र शासन
26	ठाकुरताल	मदनपुर	4.371	म.प्र शासन, वन विभाग
27	देवताल	गढ़ा	1.534	जबलपुर वि. प्राधिकरण
28	सूपाताल	गढ़ा	9.58	नगर निगम जबलपुर
29	गंगासागर	गंगासागर	18.636	नगर निगम जबलपुर
30	गोरखताल	मदनपुर	1.619	निजी
31	चंडुताल	रामपुर	0.400	म.प्र.रा.वि. मंडल
32	जालपरी तालाब	रामपुर	0.350	म.प्र.रा.वि. मंडल
33	कमनाही तलैया	गोरखपुर	2.855	निजी
34	महानद्दा तालाब	महानद्दा	5.86	निजी
35	खम्भाताल	छावनी क्षेत्र	2.210	छावनी परिषद
36	भीटा ताल	भीटा	4.035	निजी

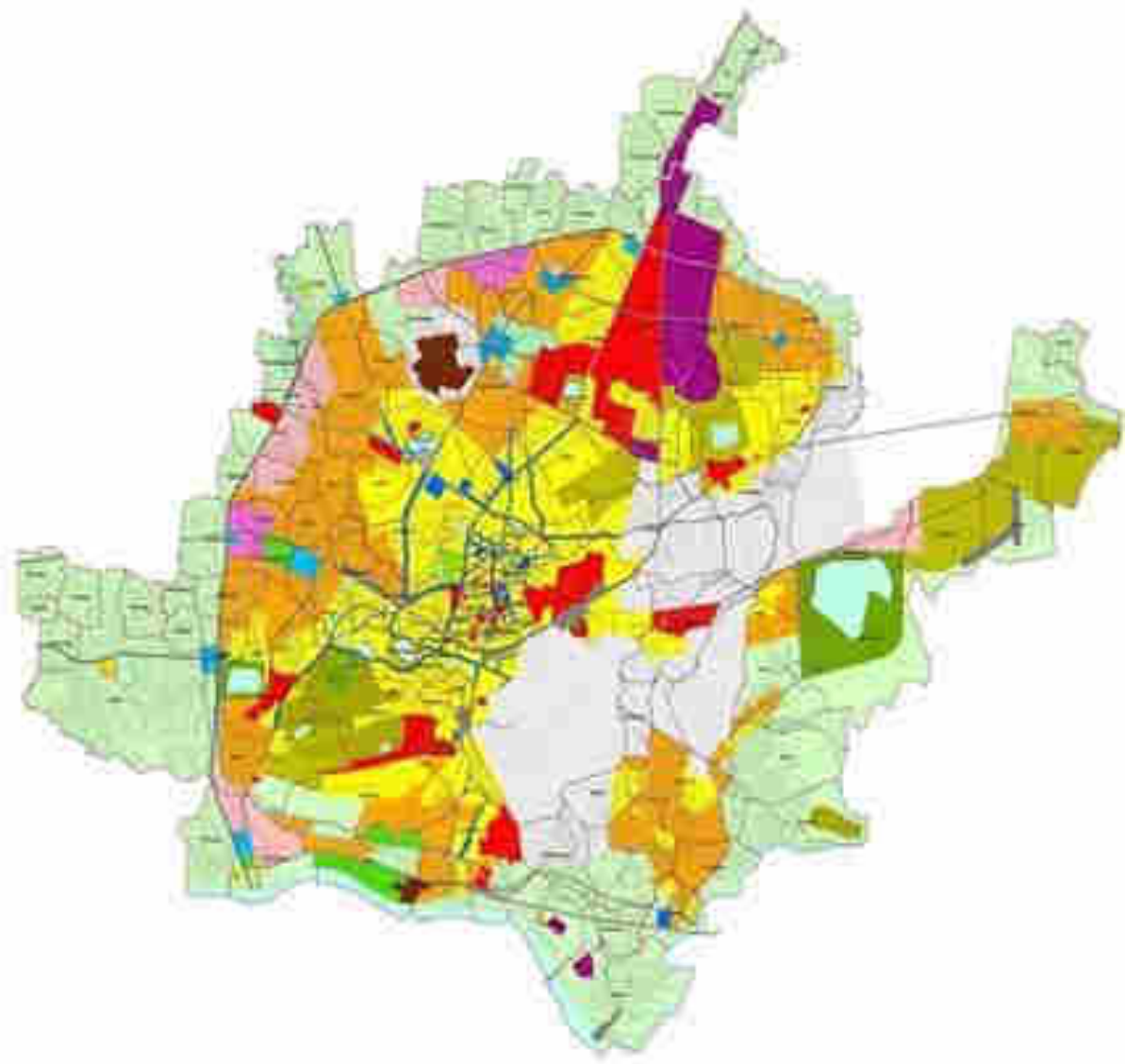
MAP LOCATION OF DIFFERENT LAKES



- **City's Different Locations;**

City's different locations i.e. Existing & Proposed detail as per current master plan is attached as **Map-02.**

City's different locations Map-02



- **Population within the Project Area**

Natural Population;

The total population of Jabalpur has reached to 1055525 as per recently conducted census survey in 2011 records, About 13.19% decadal growth rate is witnessed for last decadal year i.e from 2001 to 2011. The decade from 1971 to 1981 observed a highest decadal growth rate of 44.09%, which was followed by 25.68% for the decade from 1991 to 2001 followed by 20.80% for the decade from 1981 to 1991. The table below shows the population growth of Jabalpur from the last 5 decades.

Year	Population	Decadal Growth Rate (in %)	Annual Growth Rate (in %)
1971	426224	NA	NA

1981	614162	44.09%	4.41%
1991	741927	20.80%	2.08%
2001	932484	25.68%	2.57%
2011	1055525	13.19%	1.32%
2017	1268848	20.21%	2.02%

Floating Population

Floating Population in the Town is due to Tourism and a huge Flux is shown in peak days like Public Holidays and festivals etc. Floating Population of 75000 as per ULB and other sources is considered due to weekly hat-bazaars etc. This population is considered for time specific, area specific and location specific.

Population Projections As Per City Development Plan

In CDP population projections considered is up to 2037 Here as per guideline laid down for population projections years are considered for short term, mid & long term work execution and accordingly years are considered.

Population Forecast										
census Record for last five decades						Population Projection as per CSP				
SN	1971	1981	1991	2001	2011	2015	2018	2030	2040	2045
1	426224	614162	741927	932484	1055525	1112398	1252781	1294846	1389437	1428621
% Growth per Year							1.21	1.023	0.730	0.56
%Av. Growth per Year							0.882901956			
Note	Considering av. Growth patter and future expansion 1% av. Growth per year has been consideredfor projection of population in city.									

Slum Population In JABALPUR

As per information provided by ULB, The city has total 358 slum clusters within the municipal boundary. From which 322 are notified slums and 36 are non-notified. Total 72453 HHs (out of total 2, 50,569) are living in an improper environment.

- A majority slums in Jabalpur, are located along road margins, while others slums are along drains. Peoples are living either in unrecognized slum settlements or on pavements, live in virtual absence of basic services.

- A majority of the working population in slums is engaged in factories. Many also work as rickshaw pullers, construction laborers and daily wagers. The social composition of a

majority of slums comprises Scheduled Castes, Scheduled Tribes and other backward castes. Most of the slums or mohallas have predominantly one caste staying in it.

- The absence of water supply, disposal of human waste and garbage collection may be identified as the three most important factors that endanger the health and wellbeing of people living in slums.

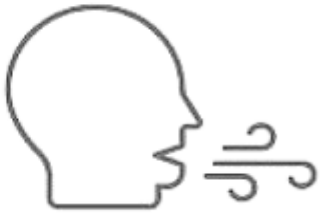
- As many as forty slums are situated on the slopes of the several hillocks that dot th e city. Slums located in low lying areas and those adjoining drains are prone to flooding during the monsoons.

As per notification issued by the Government of MP, cities have been included in the limit Municipal Corporation Jabalpur. The total wards have been now increased from 66 to 79.

4. SOURCE APPORTIONMENT STUDY

What is Air Quality & Why Important?

"Air quality" refers to the condition of the air within our surrounding. Good air quality pertains to the degree which the air is clean, clear and free from pollutants such as smoke, dust and smog among other gaseous impurities in the air. Air quality is determined by assessing a variety of pollution indicators. Good air quality is a requirement for preserving the exquisite balance of life on earth for humans, plants, animals and natural resources. As such, human health, plants, animals and natural resources are threatened when pollution in the air reach high concentrations.

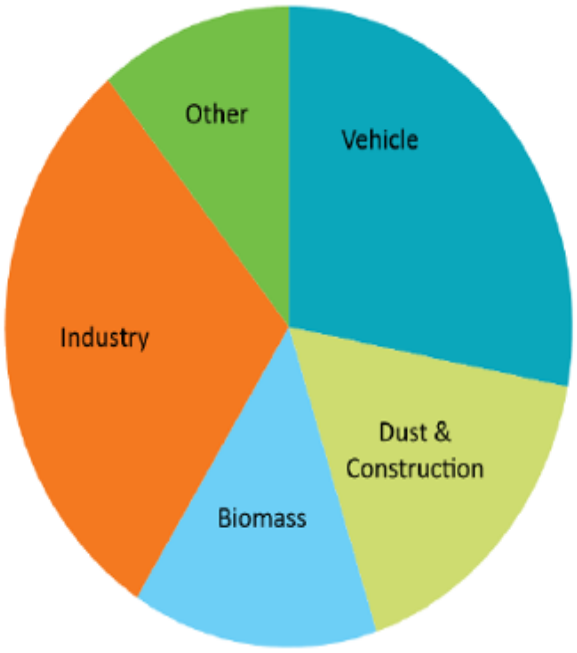


Poor air quality can affect or harm human health and/or the environment. Air quality can be degraded by natural or man-made sources. Natural sources include volcanic eruption, windstorm dust. Man-made source include pollution from moving vehicles, toxic gases from industries, coal powered plants, burning wood or other material in open air, landfills. Both these sources can seriously affect the overall air quality and can lead to severe health problems for humans.

Moreover, Pure air is a mixture of various gases such as nitrogen, oxygen, argon, carbon dioxide, and small amounts of other gases in a fixed proportion. If the composition of air alters by any means; it is known as air pollution which can lead to effect on human health, environment, and other living creatures. According to The Air (Prevention and Control of Pollution) Act, 1981, "air pollution is the presence of any solid, liquid, or gaseous substance in the atmosphere in such concentration as maybe or tend to be injurious to human beings or other living creatures or plants or property or environment".

Causes of Poor Air Quality

An atmospheric condition present in concentrations which can cause undesirable effects on man and his environment is called as air pollution. Gaseous pollution includes oxides of sulfur, oxides of nitrogen, carbon monoxide, volatile organic compounds etc. Particulate pollutants include smoke, soot, dust, fumes, aerosols, liquid droplets, pollen gain etc. the sources of air pollution are the following:



A. Man-made sources:

Smokestacks of power plants, manufacturing facilities (factories) and waste incinerators, as well as furnaces and other types of fuel-burning heating devices.

Construction activities: land clearing, operation of diesel engines, demolition, burning, and working with toxic materials.

"Mobile Sources" include motor vehicles, marine vessels, aircraft and the effect of sound etc.

Traditional biomass burning is the major source of air pollutants; traditional biomass includes wood, crop waste and dung.

Waste deposition in landfills, which generate methane. Methane is highly flammable and may form explosive mixtures with air.

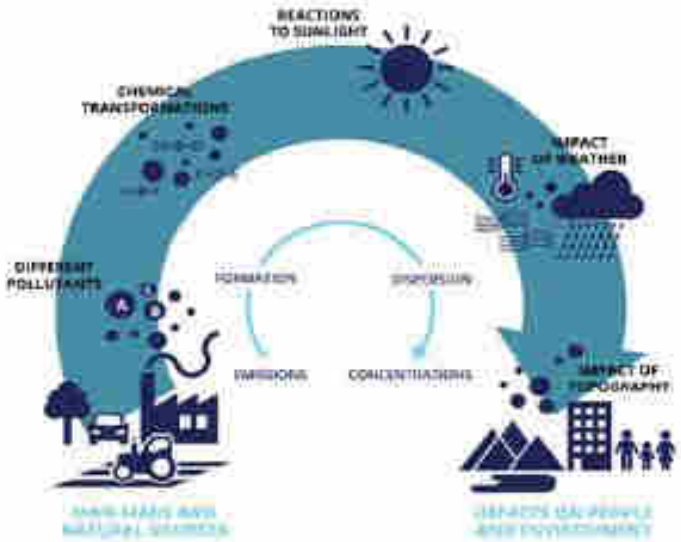
Chemicals, dust and controlled burn practices in agriculture and forestry management. Controlled or prescribed burning is a technique sometimes used in forest management, farming, prairie restoration or greenhouse gas abatement. Fire is a natural part of both forest and grassland ecology and controlled fire can be a tool for foresters. Controlled burning stimulates the germination of some desirable forest trees, thus renewing the forest and Military, such as nuclear weapons, toxic gases, germ warfare and rocketry.

B. Natural sources:

Volcanic eruptions.

Forest fires.

Sea salt sprays, biological decay etc.



What is Air Quality Index?

The Air Quality Index (AQI) is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The Air Quality Index (AQI) focuses on health affects you may experience within a few hours or days after breathing polluted air. There are five major air pollutants i.e. ground-level ozone, particle pollution Air quality directly affects (also known as particulate our quality of life matter -PM), carbon monoxide, sulfur dioxide, and nitrogen dioxide.

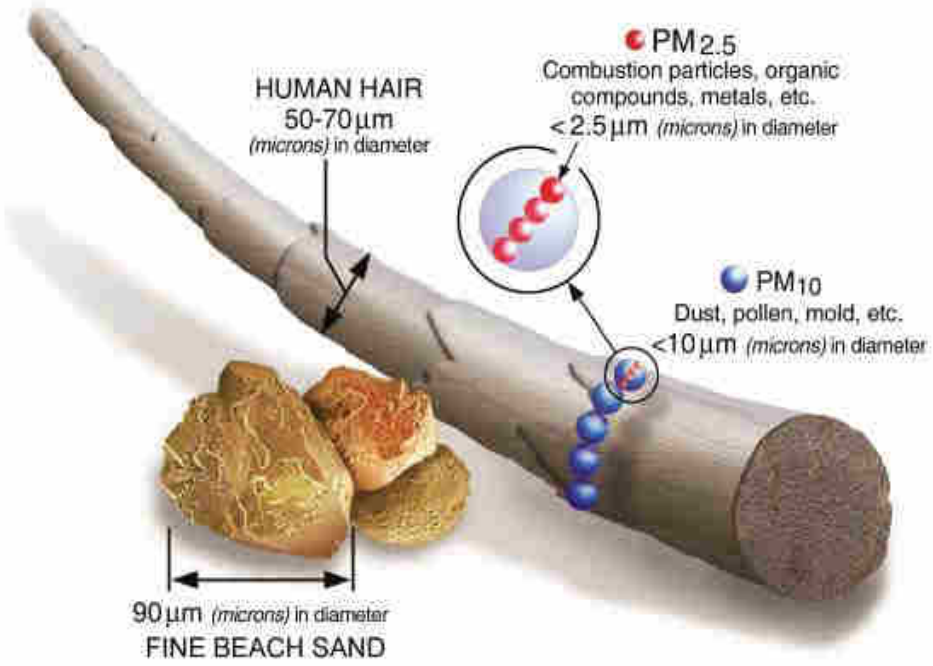
Particulate Matter (PM) means

Particle pollution (also known as "particulate matter") in the air includes a mixture of solids and liquid droplets. Some particles are emitted directly; others are formed in the atmosphere when other pollutants react. Particles come in a wide range of sizes. Those less than 10 micrometers in diameter are so small that they can get into the lungs, potentially causing serious health problems. Ten micrometers is smaller than the width of a single human hair.

- **Fine particles.** Particles less than 2.5 micrometers in diameter are called "fine" particles. These particles are so small they can be detected only with an electron microscope. Sources of fine particles include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes.

- **Coarse dust particles.** Particles between 2.5 and 10 micrometers in diameter are referred to as "coarse." Sources of coarse particles include crushing or grinding operations, and dust stirred up by vehicles traveling on roads.

By way of comparison, a human hair is about 100 micrometers, so roughly 40 fine particles could be placed on its width.



Understanding the AQI

Think of the AQI as a yardstick that runs from 0 to 500. The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 300 represents hazardous air quality.

An AQI value of 100 generally corresponds to the national air quality standard for the pollutant.. AQI values below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is considered to be unhealthy—at first for certain sensitive groups of people, then for everyone as AQI values get higher.

The purpose of the AQI is to help you understand what local air quality means to your health. To make it easier to understand, the AQI is divided into six categories:

Each category corresponds to a different level of health concern. The six levels of health concern and what they mean are:

- **"Good"** The AQI value for your community is between 0 and 50. Air quality is considered satisfactory, and air pollution poses little or no risk.

- "**Satisfactory**" The AQI for your community is between 51 and 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive t ozone may experience respiratory symptoms.

- "**Moderate**" When AQI values are between 101 and 200, members of sensitive groups may experience health effects. This means they are likely to be affected at lower levels than the general public. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. The general public is not likely to be affected when the AQI is in this range.

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

- "**Poor**" Everyone may begin to experience health effects when AQI values are between 201 and 300. Members of sensitive groups may experience more serious health effects.

- "**Very Poor**" AQI values between 301 and 400 trigger a health alert, meaning everyone may experience more serious health effects.

- "**Severe**" AQI values over 400 trigger health warnings of emergency conditions. The entire population is more likely to be affected.

To improve the air quality management system, there is also the need of knowing the particular source of pollution and its quantitative contribution to the ambient air quality. This can be done through the source apportionment study. There may be two ways for apportioning pollution,

- A top-down approach starting with monitoring of pollution
- A bottom-up approach starting with the activity data (like fuel consumption). Source apportionment study is based on tracking down the sources through receptor modeling and it helps in identifying the sources and extent of their contribution

5. AMBIENT AIR QUALITY

- Ambient Air Quality;

As a part of this study ambient air quality monitoring (AAQM) has been carried out by setting up ambient air quality monitoring stations at Yatayaat thana. There are also 2 manual based air quality monitoring system at Richhai & Vijay Nagar respectively. All these stations are being controlled and supervised by MPPCB. The baseline data pertaining to the existing air quality will help mitigate impact on air quality during construction stage and operation stage of the project. The prominent source of air pollution in urban area is vehicular traffic.

Monitoring should be done as per the guidelines for Ambient Air Quality Monitoring, National Ambient Air Quality Series NAAQMS/25/2003-04. The following parameters should be measured:

- Respirable Suspended Particulate Matter (RSPM/PM10)
- Fine Particulate Matter (FPM/PM2.5)
- Sulphur Dioxide (SO2)
- Nitrogen Dioxide (NO2)
- Carbon Monoxide (CO, 1 hourly)
- Hydrocarbons (HC 1 hourly)
- Ozone (O3)
- Lead (Pb)

- National Air Quality Monitoring Programme (NAMP);

To monitor and control of various air pollutants, Central Pollution Control Board (CPCB) has been provided with various powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. Subsequent to this, CPCB had launched a nationwide program viz. National Ambient Air Quality Monitoring Programme (NAAQM) in 1984, which has been renamed as National Air Quality Monitoring Programme (NAMP).

- National Ambient Air Quality Standards (NAAQS);

For developing a programme for the effective management of ambient air quality and to reduce the damaging effects of air pollution, development of national ambient air quality standards (NAAQS) is a pre-requisite. Central Pollution Control Board had adopted first ambient air quality standards on November 11, 1982 as per the Section 16(2) of the Air (Prevention and Control of Pollution) Act, 1981. These standards have been revised by CPCB in 1994, and later in 2009.

NATIONAL AMBIENT AIR QUALITY STANDARDS

National Ambient Air Quality Standards, as of 2009

Pollutant	Time Weighted Average	Concentration in Ambient Air		
		Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
SO_2, µg/m³	Annual*	50	20	Improved West and Gaeke Ultraviolet fluorescence
	24 hours**	80	80	
NO_2, µg/m³	Annual*	40	30	Modified Jacob & Hochheiser (Na-Arsenite) Chemiluminescence
	24 hours**	80	80	
PM_{10}, µg/m³	Annual*	60	60	Gravimetric TOEM Beta attenuation
	24 hours**	100	100	
$PM_{2.5}$, µg/m³	Annual*	40	40	Gravimetric TOEM Beta attenuation
	24 hours**	60	60	
O_3, µg/m³	8 hours**	100	100	UV photometric Chemiluminescence Chemical Method
	1 hour**	180	180	
Lead (Pb), µg/m³	Annual*	0.50	0.50	AAS/ICP method after sampling on EMP 2000 or equivalent filter paper ED-XRF using Teflon filter
	24 hours**	1	1	
CO, mg/m³	8 hours**	2	2	Non Dispersive Infra Red (NDIR) spectrosopy Chemiluminescence
	1 hour**	4	4	
Ammonia (NH_3) µg/m³	Annual*	100	100	Indophenol blue method Gas chromatography based on continuous analyzer
	24 hours**	400	400	
Benzene	Annual*	5	5	

				Adsorption and Desorption followed by GC analysis
Benzopyrene (BaP) – particulate phase only, ng/m³	Annual*	1	1	Solvent extraction followed by HPLC/GC analysis
Arsenic (As), ng/m³	Annual*	6	6	AAS/ICP method after sampling on EMP 2000 or equivalent filter paper
Nickel (Ni), ng/m³	Annual*	20	20	AAS/ICP method after sampling on EMP 2000 or equivalent filter paper

*** Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.**
**** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be compiled with 98% of the time in a year. 2% of the time, theymay exceed the limits but not on two consecutive days of monitoring.**
Note – **Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.**

6. POTENTIAL IMPACT OF POOR AIR QUALITY

Abstract

One of our era's greatest scourges is air pollution, on account not only of its impact on climate change but also its impact on public and individual health due to increasing morbidity and mortality. There are many pollutants that are major factors in disease in humans. Among them, Particulate Matter (PM), particles of variable but very small diameter, penetrate the respiratory system via inhalation, causing respiratory and cardiovascular diseases, reproductive and central nervous system dysfunctions, and cancer. Despite the fact that ozone in the stratosphere plays a protective role against ultraviolet irradiation, it is harmful when in high concentration at ground level, also affecting the respiratory and cardiovascular system. Furthermore, nitrogen oxide, sulfur dioxide, Volatile Organic Compounds (VOCs), dioxins, and polycyclic aromatic hydrocarbons (PAHs) are all considered air pollutants that are harmful to humans. Carbon monoxide can even provoke direct poisoning when breathed in at high levels. Heavy metals such as lead, when absorbed into the human body, can lead to direct poisoning or chronic intoxication, depending on exposure. Diseases occurring from the aforementioned substances include principally respiratory problems such as Chronic Obstructive Pulmonary Disease (COPD), asthma, bronchiolitis, and also lung cancer, cardiovascular events, central nervous system dysfunctions, and cutaneous diseases. Last but not least, climate change resulting from environmental pollution affects the geographical distribution of many infectious diseases, as do natural disasters. The only way to tackle this problem is through public awareness coupled with a multidisciplinary approach by scientific experts; national and international organizations must address the emergence of this threat and propose sustainable solutions.

Air Pollutants& Their Effects

The World Health Organization (WHO) reports on six major air pollutants, namely particle pollution, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. Air pollution can have a disastrous effect on all components of the environment, including groundwater, soil, and air. Additionally, it poses a serious threat to living organisms. In this vein, our interest is mainly to focus on these pollutants, as they are related to more extensive and severe problems in human health and environmental impact. Acid rain, global warming, the greenhouse effect, and climate changes have an important ecological impact on air pollution.

- **Particulate Matter (PM) and Health;**

Studies have shown a relationship between particulate matter (PM) and adverse health effects, focusing on either short-term (acute) or long-term (chronic) PM exposure.

Particulate matter (PM) is usually formed in the atmosphere as a result of chemical reactions between the different pollutants. The penetration of particles is closely dependent on their size. Particulate Matter (PM) was defined as a term for particles by the United States Environmental Protection Agency. Particulate matter (PM) pollution includes particles with diameters of 10 micrometers (μm) or smaller, called PM10, and extremely fine particles with diameters that are generally 2.5 micrometers (μm) and smaller.

Particulate matter contains tiny liquid or solid droplets that can be inhaled and cause serious health effects. Particles <10 μm in diameter (PM10) after inhalation can invade the lungs and even reach the bloodstream. Fine particles, PM2.5, pose a greater risk to health. (Table 1).

Table 1

Penetrability according to particle size.

Particle size	**Penetration degree in human respiratory system**
>11 μm	Passage into nostrils and upper respiratory tract
7–11 μm	Passage into nasal cavity
4.7–7 μm	Passage into larynx
3.3–4.7 μm	Passage into trachea-bronchial area
2.1–3.3 μm	Secondary bronchial area passage
1.1–2.1 μm	Terminal bronchial area passage
0.65–1.1 μm	Bronchioles penetrability
0.43–0.65 μm	Alveolar penetrability

Multiple epidemiological studies have been performed on the health effects of PM. A positive relation was shown between both short-term and long-term exposures of PM2.5 and acute nasopharyngitis. In addition, long-term exposure to PM for years was found to be related to cardiovascular diseases and infant mortality.

Those studies depend on PM2.5 monitors and are restricted in terms of study area or city area due to a lack of spatially resolved daily PM2.5 concentration data and, in this way, are not representative of the entire population. Following a recent epidemiological study by the Department of Environmental Health at Harvard School of Public Health (Boston, MA), it was

reported that, as PM2.5 concentrations vary spatially, an exposure error (Berkson error) seems to be produced, and the relative magnitudes of the short- and long-term effects are not yet completely elucidated. The team developed a PM2.5 exposure model based on remote sensing data for assessing short- and long-term human exposures. This model permits spatial resolution in short-term effects plus the assessment of long-term effects in the whole population.

Moreover, respiratory diseases and affection of the immune system are registered as long-term chronic effects. It is worth noting that people with asthma, pneumonia, diabetes, and respiratory and cardiovascular diseases are especially susceptible and vulnerable to the effects of PM. PM2.5, followed by PM10, are strongly associated with diverse respiratory system diseases, as their size permits them to pierce interior spaces. The particles produce toxic effects according to their chemical and physical properties. The components of PM10 and PM2.5 can be organic (polycyclic aromatic hydrocarbons, dioxins, benzene, 1-3 butadiene) or inorganic (carbon, chlorides, nitrates, sulfates, metals) in nature.

Particulate Matter (PM) is divided into four main categories according to type and size.

Table 2

Types and sizes of particulate Matter (PM).

Type		PM diameter [µm]
Particulate contaminants	Smog	0.01–1
	Soot	0.01–0.8
	Tobacco smoke	0.01–1
	Fly ash	1–100
	Cement Dust	8–100
Biological Contaminants	Bacteria and bacterial spores	0.7–10
	Viruses	0.01–1
	Fungi and molds	2–12
	Allergens (dogs, cats, pollen, household dust)	0.1–100
Types of Dust	Atmospheric dust	0.01–1
	Heavy dust	100–1000
	Settling dust	1–100
Gases	Different gaseous contaminants	0.0001–0.01

Gas contaminants include PM in aerial masses.

Particulate contaminants include contaminants such as smog, soot, tobacco smoke, oil smoke, fly ash, and cement dust.

Biological Contaminants are microorganisms (bacteria, viruses, fungi, mold, and bacterial spores), cat allergens, house dust and allergens, and pollen.

Types of Dust include suspended atmospheric dust, settling dust, and heavy dust.

Finally, another fact is that the half-lives of PM10 and PM2.5 particles in the atmosphere is extended due to their tiny dimensions; this permits their long-lasting suspension in the atmosphere and even their transfer and spread to distant destinations where people and the environment may be exposed to the same magnitude of pollution. They are able to change the nutrient balance in watery ecosystems, damage forests and crops, and acidify water bodies.

As stated, PM2.5, due to their tiny size, are causing more serious health effects. These aforementioned fine particles are the main cause of the "haze" formation in different metropolitan areas.

- **Ozone Impact in the Atmosphere;**

Ozone (O_3) is a gas formed from oxygen under high voltage electric discharge. It is a strong oxidant, 52% stronger than chlorine. It arises in the stratosphere, but it could also arise following chain reactions of photochemical smog in the troposphere.

Ozone can travel to distant areas from its initial source, moving with air masses. It is surprising that ozone levels over cities are low in contrast to the increased amounts occurring in urban areas, which could become harmful for cultures, forests, and vegetation as it is reducing carbon assimilation. Ozone reduces growth and yield and affects the plant microflora due to its antimicrobial capacity. In this regard, ozone acts upon other natural ecosystems, with microflora and animal species changing their species composition. Ozone increases DNA damage in epidermal keratinocytes and leads to impaired cellular function.

Ground-level ozone (GLO) is generated through a chemical reaction between oxides of nitrogen and VOCs emitted from natural sources and/or following anthropogenic activities.

Ozone uptake usually occurs by inhalation. Ozone affects the upper layers of the skin and the tear ducts. A study of short-term exposure of mice to high levels of ozone showed malondialdehyde formation in the upper skin (epidermis) but also depletion in vitamins C and E. It is likely that ozone levels are not interfering with the skin barrier function and integrity to predispose to skin disease.

Due to the low water-solubility of ozone, inhaled ozone has the capacity to penetrate deeply into the lungs.

Toxic effects induced by ozone are registered in urban areas all over the world, causing biochemical, morphologic, functional, and immunological disorders.

The European project (APHEA2) focuses on the acute effects of ambient ozone concentrations on mortality. Daily ozone concentrations compared to the daily number of deaths were reported from different European cities for a 3-year period. During the warm period of the year, an observed increase in ozone concentration was associated with an increase in the daily number of deaths (0.33%), in the number of respiratory deaths (1.13%), and in the number of cardiovascular deaths (0.45%). No effect was observed during wintertime.

- **Carbon Monoxide (CO);**

  Carbon monoxide is produced by fossil fuel when combustion is incomplete. The symptoms of poisoning due to inhaling carbon monoxide include headache, dizziness, weakness, nausea, vomiting, and, finally, loss of consciousness.

  The affinity of carbon monoxide to hemoglobin is much greater than that of oxygen. In this vein, serious poisoning may occur in people exposed to high levels of carbon monoxide for a long period of time. Due to the loss of oxygen as a result of the competitive binding of carbon monoxide, hypoxia, ischemia, and cardiovascular disease are observed.

  Carbon monoxide affects the greenhouses gases that are tightly connected to global warming and climate. This should lead to an increase in soil and water temperatures, and extreme weather conditions or storms may occur.

  However, in laboratory and field experiments, it has been seen to produce increased plant growth.

- **Nitrogen Oxide (NO2)**

  Nitrogen oxide is a traffic-related pollutant, as it is emitted from automobile motor engines. It is an irritant of the respiratory system as it penetrates deep in the lung, inducing respiratory diseases, coughing, wheezing, dyspnea, bronchospasm, and even pulmonary edema when inhaled at high levels. It seems that concentrations over 0.2 ppm produce these adverse effects in humans, while concentrations higher than 2.0 ppm affect T-lymphocytes, particularly the CD8+ cells and NK cells that produce our immune response.It is reported that long-term exposure to high levels of nitrogen dioxide can be responsible for chronic lung disease. Long-term exposure to NO2 can impair the sense of smell.

  However, systems other than respiratory ones can be involved, as symptoms such as eye, throat, and nose irritation have been registered.

  High levels of nitrogen dioxide are deleterious to crops and vegetation, as they have been observed to reduce crop yield and plant growth efficiency. Moreover, NO2 can reduce visibility and discolor fabrics.

- **Sulfur Dioxide (SO2);**

  Sulfur dioxide is a harmful gas that is emitted mainly from fossil fuel consumption or industrial activities. The annual standard for SO2 is 0.03 ppm. It affects human, animal, and plant life. Susceptible people as those with lung disease, old people, and children, who present a higher risk of damage. The major health problems associated with sulfur dioxide emissions in industrialized areas are respiratory irritation, bronchitis, mucus production, and bronchospasm, as it is a sensory irritant and penetrates deep into the lung converted into bisulfite and interacting with sensory receptors, causing bronchoconstriction. Moreover, skin redness, damage to the eyes (lacrimation and corneal opacity) and mucous membranes, and worsening of pre-existing cardiovascular disease have been observed.

  Environmental adverse effects, such as acidification of soil and acid rain, seem to be associated with sulfur dioxide emissions.

- **Lead;**

  Lead is a heavy metal used in different industrial plants and emitted from some petrol motor engines, batteries, radiators, waste incinerators, and waste waters.

Moreover, major sources of lead pollution in the air are metals, ore, and piston-engine aircraft. Lead poisoning is a threat to public health due to its deleterious effects upon humans, animals, and the environment, especially in the developing countries.

Exposure to lead can occur through inhalation, ingestion, and dermal absorption. Trans-placental transport of lead was also reported, as lead passes through the placenta unencumbered. The younger the fetus is, the more harmful the toxic effects. Lead toxicity affects the fetal nervous system; edema or swelling of the brain is observed. Lead, when inhaled, accumulates in the blood, soft tissue, liver, lung, bones, and cardiovascular, nervous, and reproductive systems. Moreover, loss of concentration and memory, as well as muscle and joint pain, were observed in adults.

Children and newborns are extremely susceptible even to minimal doses of lead, as it is a neurotoxicant and causes learning disabilities, impairment of memory, hyperactivity, and even mental retardation.

Elevated amounts of lead in the environment are harmful to plants and crop growth. Neurological effects are observed in vertebrates and animals in association with high lead levels.

- **Polycyclic Aromatic Hydrocarbons (PAHs);**

The distribution of PAHs is ubiquitous in the environment, as the atmosphere is the most important means of their dispersal. They are found in coal and in tar sediments. Moreover, they are generated through incomplete combustion of organic matter as in the cases of forest fires, incineration, and engines. PAH compounds, such as benzopyrene, acenaphthylene, anthracene, and fluoranthene are recognized as toxic, mutagenic, and carcinogenic substances. They are an important risk factor for lung cancer.

- **Volatile Organic Compounds (VOCs);**

Volatile organic compounds (VOCs), such as toluene, benzene, ethylbenzene, and xylene, have been found to be associated with cancer in humans. The use of new products and materials has actually resulted in increased concentrations of VOCs. VOCs pollute indoor air and may have adverse effects on human health. Short-term and long-term adverse effects on human health are observed. VOCs are responsible for indoor air smells. Short-term exposure is found to cause irritation of eyes, nose, throat, and mucosal membranes, while those of long duration exposure include toxic reactions. Predictable assessment of the toxic effects of complex VOC mixtures is difficult to estimate, as these pollutants can have synergic, antagonistic, or indifferent effects.

- **Dioxins;**

Dioxins originate from industrial processes but also come from natural processes, such as forest fires and volcanic eruptions. They accumulate in foods such as meat and dairy products, fish and shellfish, and especially in the fatty tissue of animals.

Short-period exhibition to high dioxin concentrations may result in dark spots and lesions on the skin. Long-term exposure to dioxins can cause developmental problems, impairment of the immune, endocrine and nervous systems, reproductive infertility, and cancer.

Without any doubt, fossil fuel consumption is responsible for a sizeable part of air contamination. This contamination may be anthropogenic, as in agricultural and industrial processes or transportation, while contamination from natural sources is also possible. Interestingly, it is of note that the air quality standards established through the European Air Quality Directive are somewhat looser than the WHO guidelines, which are stricter.

Potential Impact

- **Environmental Impact;**

Air pollution is harming not only human health but also the environment in which we live. The most important environmental effects are as follows.

Acid rain is wet (rain, fog, snow) or dry (particulates and gas) precipitation containing toxic amounts of nitric and sulfuric acids. They are able to acidify the water and soil environments, damage trees and plantations, and even damage buildings and outdoor sculptures, constructions, and statues.

Haze is produced when fine particles are dispersed in the air and reduce the transparency of the atmosphere. It is caused by gas emissions in the air coming from industrial facilities, power plants, automobiles, and trucks.

Ozone, as discussed previously, occurs both at ground level and in the upper level (stratosphere) of the Earth's atmosphere. Stratospheric ozone is protecting us from the Sun's harmful ultraviolet (UV) rays. In contrast, ground-level ozone is harmful to human health and is a pollutant. Unfortunately, stratospheric ozone is gradually damaged by ozone-depleting substances (i.e., chemicals, pesticides, and aerosols). If this protecting stratospheric ozone layer is thinned, then UV radiation can reach our Earth, with harmful effects for human life (skin cancer) and crops. In plants, ozone penetrates through the stomata, inducing them to close, which blocks CO2 transfer and induces a reduction in photosynthesis.

Global climate change is an important issue that concerns mankind. As is known, the “greenhouse effect” keeps the Earth's temperature stable. Unhappily, anthropogenic activities have destroyed this protecting temperature effect by producing large amounts of greenhouse gases, and global warming is mounting, with harmful effects on human health, animals, forests, wildlife, agriculture, and the water environment. A report states that global warming is adding to the health risks of poor people.

People living in poorly constructed buildings in warm-climate countries are at high risk for heat-related health problems as temperatures mount.

Wildlife is burdened by toxic pollutants coming from the air, soil, or the water ecosystem and, in this way, animals can develop health problems when exposed to high levels of pollutants. Reproductive failure and birth effects have been reported.

Eutrophication is occurring when elevated concentrations of nutrients (especially nitrogen) stimulate the blooming of aquatic algae, which can cause a disequilibration in the diversity of fish and their deaths.

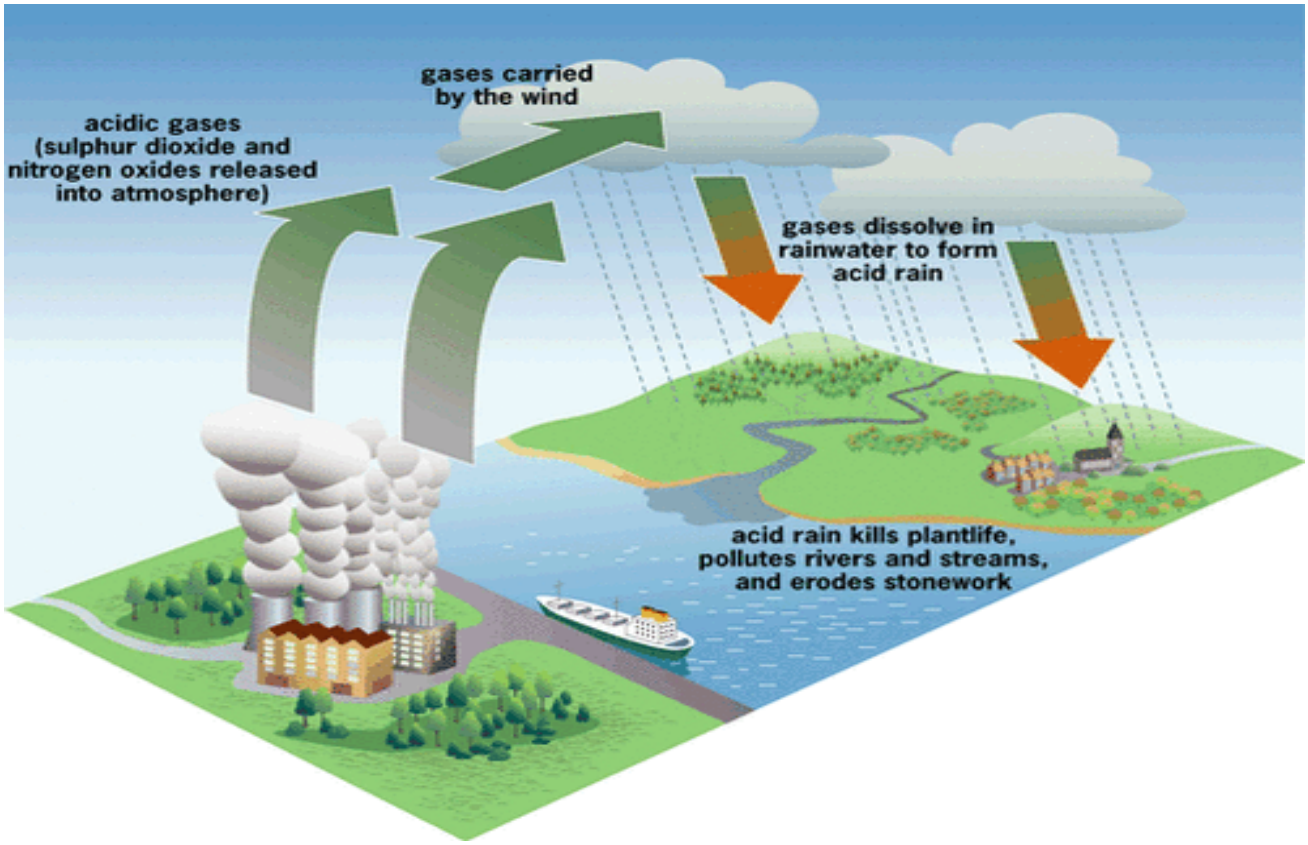
Without a doubt, there is a critical concentration of pollution that an ecosystem can tolerate without being destroyed, which is associated with the ecosystem's capacity to neutralize acidity. The Canada Acid Rain Program established this load at 20 kg/ha/yr.

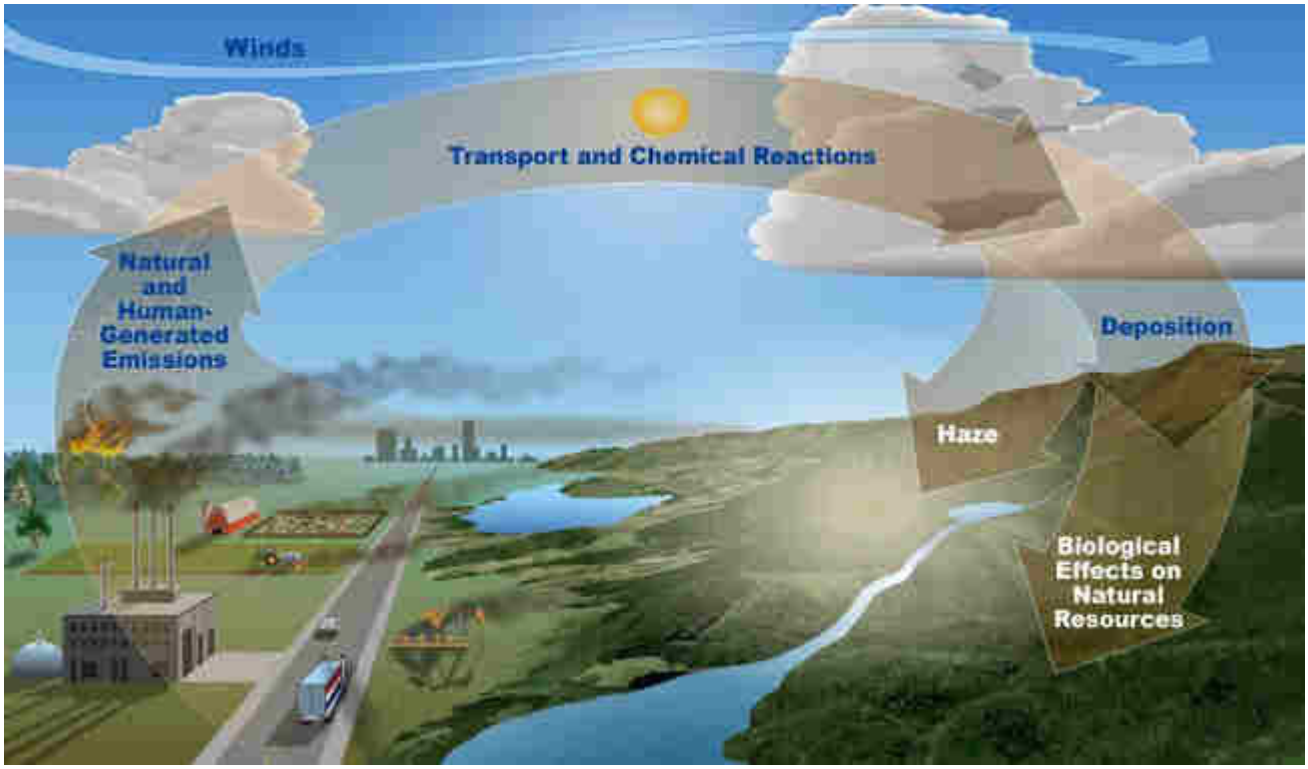
Hence, air pollution has deleterious effects on both soil and water. Concerning PM as an air pollutant, its impact on crop yield and food productivity has been reported. Its impact on watery bodies is associated with the survival of living organisms and fishes and their productivity potential.

An impairment in photosynthetic rhythm and metabolism is observed in plants exposed to the effects of ozone.

Sulfur and nitrogen oxides are involved in the formation of acid rain and are harmful to plants and marine organisms.

Last but not least, as mentioned above, the toxicity associated with lead and other metals is the main threat to our ecosystems (air, water, and soil) and living creatures.





- **Health Impact;**

The most common air pollutants are ground-level ozone and Particulates Matter (PM). Air pollution is distinguished into two main types:

Outdoor pollution is the ambient air pollution.

Indoor pollution is the pollution generated by household combustion of fuels.

People exposed to high concentrations of air pollutants experience disease symptoms and states of greater and lesser seriousness. These effects are grouped into short- and long-term effects affecting health.

Susceptible populations that need to be aware of health protection measures include old people, children, and people with diabetes and predisposing heart or lung disease, especially asthma.

As extensively stated previously, according to a recent epidemiological study from Harvard School of Public Health, the relative magnitudes of the short- and long-term effects have not been completely clarified due to the different epidemiological methodologies and to the exposure errors. New models are proposed for assessing short- and long-term human exposure data more successfully. Thus, in the present section, we report the more common short- and long-term health effects but also general concerns for both types of effects, as these effects are often dependent on environmental conditions, dose, and individual susceptibility.

Short-term effects are temporary and range from simple discomfort, such as irritation of the eyes, nose, skin, throat, wheezing, coughing and chest tightness, and breathing difficulties, to more serious states, such as asthma, pneumonia, bronchitis, and lung and heart problems. Short-term exposure to air pollution can also cause headaches, nausea, and dizziness.

These problems can be aggravated by extended long-term exposure to the pollutants, which is harmful to the neurological, reproductive, and respiratory systems and causes cancer and even, rarely, deaths.

The long-term effects are chronic, lasting for years or the whole life and can even lead to death. Furthermore, the toxicity of several air pollutants may also induce a variety of cancers in the long term.

As stated already, respiratory disorders are closely associated with the inhalation of air pollutants. These pollutants will invade through the airways and will accumulate at the cells. Damage to target cells should be related to the pollutant component involved and its source and dose. Health effects are also closely dependent on country, area, season, and time. An extended exposure duration to the pollutant should incline to long-term health effects in relation also to the above factors.

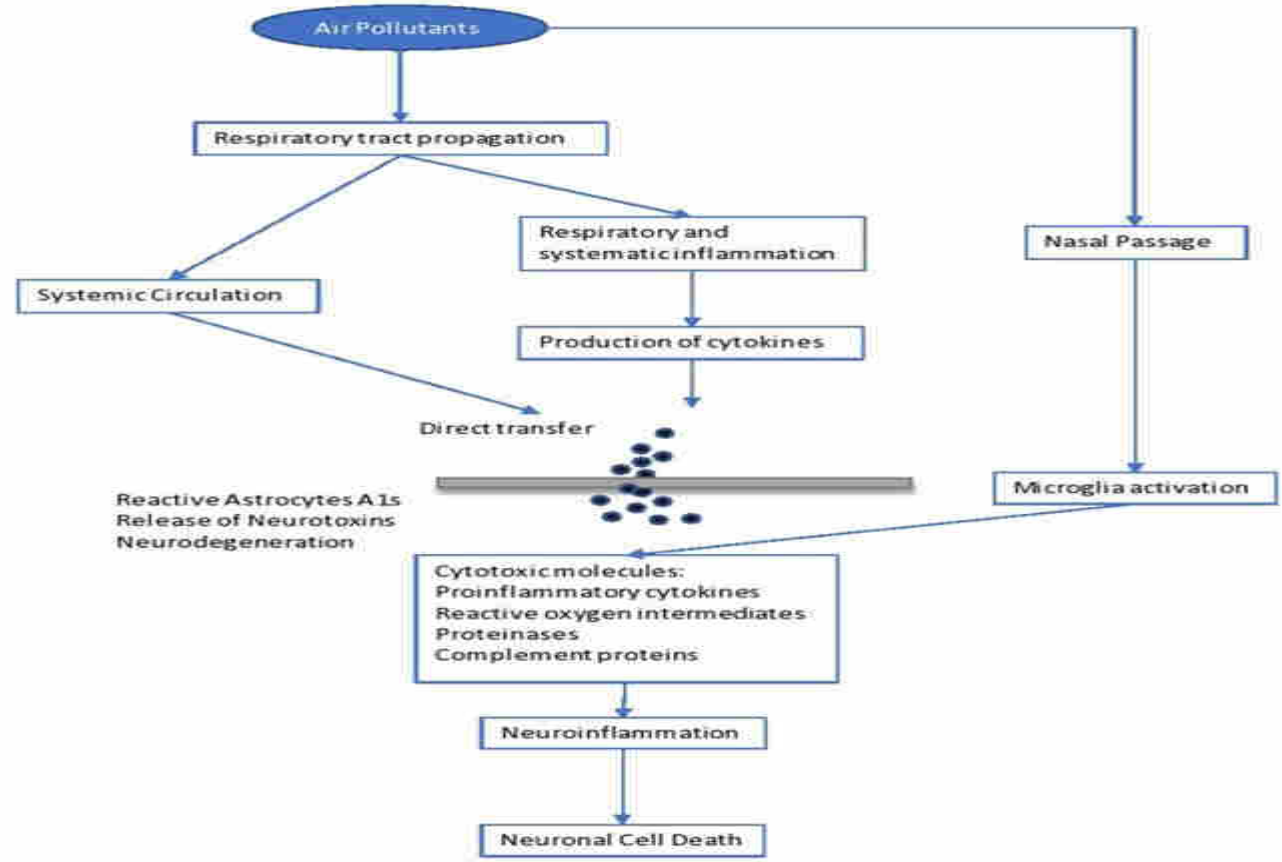
Particulate Matter (PMs), dust, benzene, and O3 cause serious damage to the respiratory system. Moreover, there is a supplementary risk in case of existing respiratory disease such as asthma. Long-term effects are more frequent in people with a predisposing disease state. When the trachea is contaminated by pollutants, voice alterations may be remarked after acute exposure. Chronic obstructive pulmonary disease (COPD) may be induced following air pollution, increasing morbidity and mortality. Long-term effects from traffic, industrial air pollution, and combustion of fuels are the major factors for COPD risk.

Multiple cardiovascular effects have been observed after exposure to air pollutants. Changes occurred in blood cells after long-term exposure may affect cardiac functionality. Coronary

arteriosclerosis was reported following long-term exposure to traffic emissions, while short-term exposure is related to hypertension, stroke, myocardial infracts, and heart insufficiency. Ventricle hypertrophy is reported to occur in humans after long-time exposure to nitrogen oxide (NO2).

Neurological effects have been observed in adults and children after extended-term exposure to air pollutants.

Psychological complications, autism, retinopathy, fetal growth, and low birth weight seem to be related to long-term air pollution. The etiologic agent of the neurodegenerative diseases (Alzheimer's and Parkinson's) is not yet known, although it is believed that extended exposure to air pollution seems to be a factor. Specifically, pesticides and metals are cited as etiological factors, together with diet. The mechanisms in the development of neurodegenerative disease include oxidative stress, protein aggregation, inflammation, and mitochondrial impairment in neurons.



Brain inflammation was observed in dogs living in a highly polluted area in Mexico for a long period. In human adults, markers of systemic inflammation (IL-6 and fibrinogen) were found to be increased as an immediate response to PNC on the IL-6 level, possibly leading to the production of acute-phase proteins. The progression of atherosclerosis and oxidative stress seem to be the mechanisms involved in the neurological disturbances caused by long-term air pollution. Inflammation comes secondary to the oxidative stress and seems to be involved in the impairment of developmental maturation, affecting multiple organs. Similarly, other factors seem to be involved in the developmental maturation, which define the vulnerability to long-term air pollution. These include birthweight, maternal smoking, genetic background and socioeconomic environment, as well as education level.

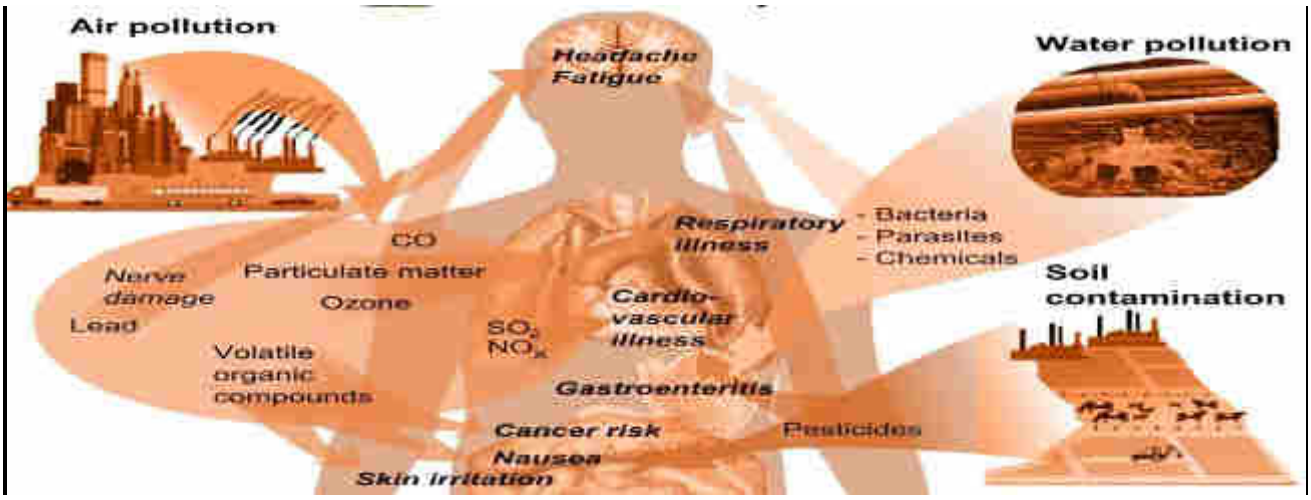
However, diet, starting from breast-feeding, is another determinant factor. Diet is the main source of antioxidants, which play a key role in our protection against air pollutants. Antioxidants are free radical scavengers and limit the interaction of free radicals in the brain. Similarly, genetic background may result in a differential susceptibility toward the oxidative stress pathway. For example, antioxidant supplementation with vitamins C and E appears to modulate the effect of ozone in asthmatic children homozygous for the GSTM1 null allele. Inflammatory cytokines released in the periphery (e.g., respiratory epithelia) upregulate the innate immune Toll-like receptor 2. Such activation and the subsequent events leading to neurodegeneration have recently been observed in lung lavage in mice exposed to ambient Los Angeles (CA, USA) particulate matter. In children, neurodevelopmental morbidities were observed after lead exposure. These children developed aggressive and delinquent behavior, reduced intelligence, learning difficulties, and hyperactivity. No level of lead exposure seems to be "safe," and the scientific community has asked the Centers for Disease Control and Prevention (CDC) to reduce the current screening guideline of 10 μg/dl.

It is important to state that impact on the immune system, causing dysfunction and neuroinflammation (104), is related to poor air quality. Yet, increases in serum levels of immunoglobulins (IgA, IgM) and the complement component C3 are observed. Another issue is that antigen presentation is affected by air pollutants, as there is an upregulation of costimulatory molecules such as CD80 and CD86 on macrophages.

As is known, skin is our shield against ultraviolet radiation (UVR) and other pollutants, as it is the most exterior layer of our body. Traffic-related pollutants, such as PAHs, VOCs, oxides, and PM, may cause pigmented spots on our skin. On the one hand, as already stated, when pollutants penetrate through the skin or are inhaled, damage to the organs is observed, as some of these pollutants are mutagenic and carcinogenic, and, specifically, they affect the liver and lung. On the other hand, air pollutants (and those in the troposphere) reduce the adverse effects of ultraviolet radiation UVR in polluted urban areas. Air pollutants absorbed by the human skin may contribute to skin aging, psoriasis, acne, urticaria, eczema, and atopic dermatitis, usually caused by exposure to oxides and photochemical smoke. Exposure to PM and cigarette smoking act as skin-aging agents, causing spots, dyschromia, and wrinkles. Lastly, pollutants have been associated with skin cancer.

Higher morbidity is reported to fetuses and children when exposed to the above dangers. Impairment in fetal growth, low birth weight, and autism have been reported.

Another exterior organ that may be affected is the eye. Contamination usually comes from suspended pollutants and may result in asymptomatic eye outcomes, irritation, retinopathy, or dry eye syndrome.



Economic Effects

The effect of air pollution on the economy may be a derived one. In simple language, the economy thrives when people are healthy, and business that depends on cultivated raw materials and natural resources are running at full efficiency. Air pollution reduces agricultural crop and commercial forest yields by billions of money each year. This in addition to people staying off work for health reasons can costs the economy greatly.

7. BASELINE ENVIRONMENT CONDITIONS – CURRENT TRENDS IN THE CITY

Air Quality of the City:-

Air: Major industries in Jabalpur are from the defence sector, IT, electrical goods, limestone products, glassware, telephones parts etc. Major industrial areas located within city limits are Richhai industrial area and Adhartal industrial area.

Defence Units operating near the city limits include:-

- Vehicle factory
- Grey iron foundry
- Gun carriage factory
- Ordnance factory

Hotspots identified with respect to congested traffic zones.

- Deendayalchowk
- Damohnakachowk
- Malviyachowk
- Ranitalchowk
- Karamchandchowk
- Russel chowk

Air quality of city is being regularly monitored by Regional Office Jabalpur under CPCB sponsored NAAMP Project at 2 points at manual station and one CAAQMS station:

1. Regional office, MPPCB, Vijaynagar ,Jabalpur(Residential Area)
2. Industrial AreaRichhai, Jabalpur (Industrial Area)
3. CAAQMS at MalviyaChowk Jabalpur

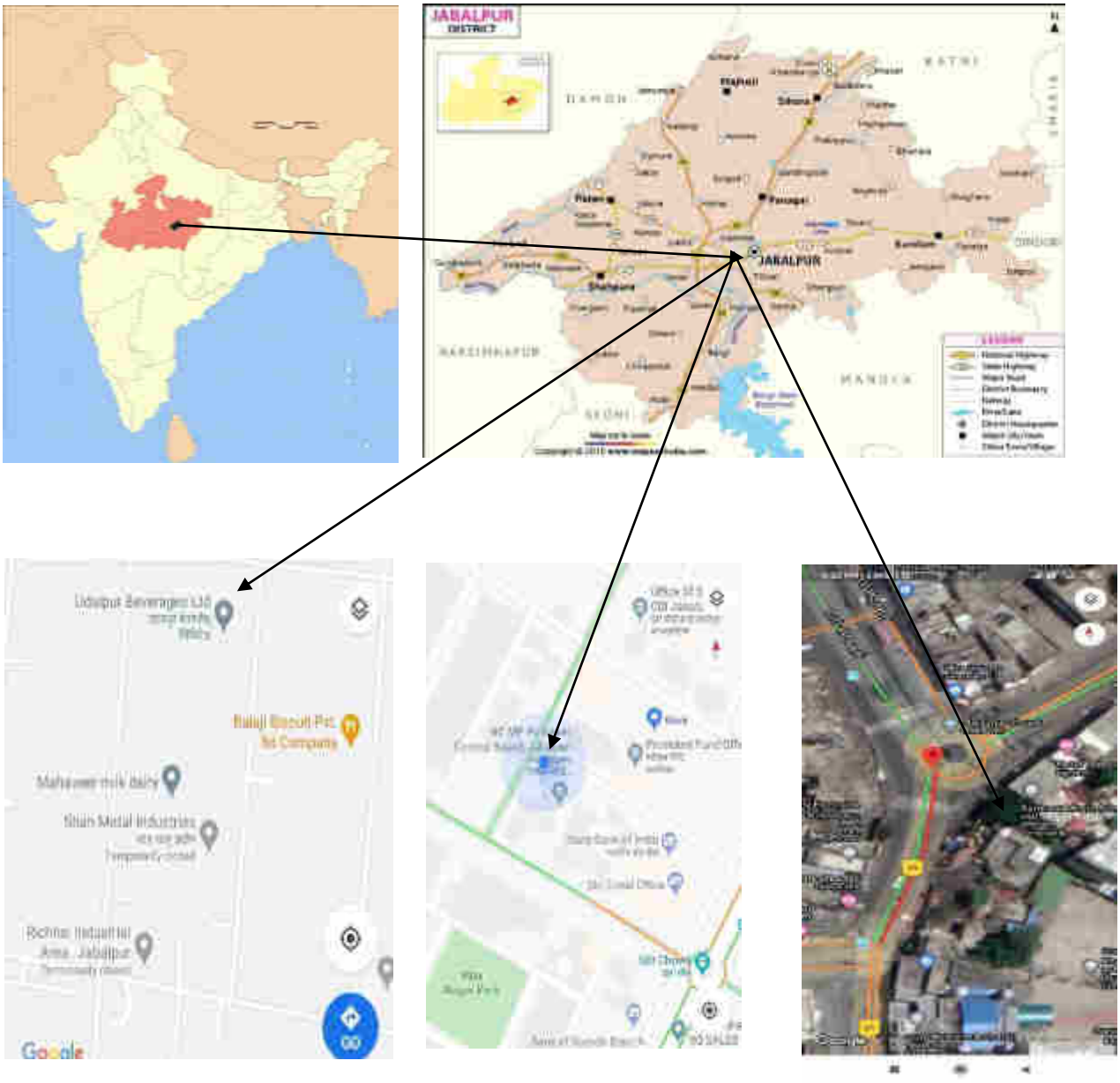


Figure 2: Map showing three ambient air monitoring locations of Jabalpur city.

- **Current Air Quality Trends in the city;**

Major pollutant present in the air:

a. Natural air pollutants: Natural air pollutants are emitted from natural sources such as volcanic activity, dust, sea-salt, forest fires, lightening, soil outgassing etc.

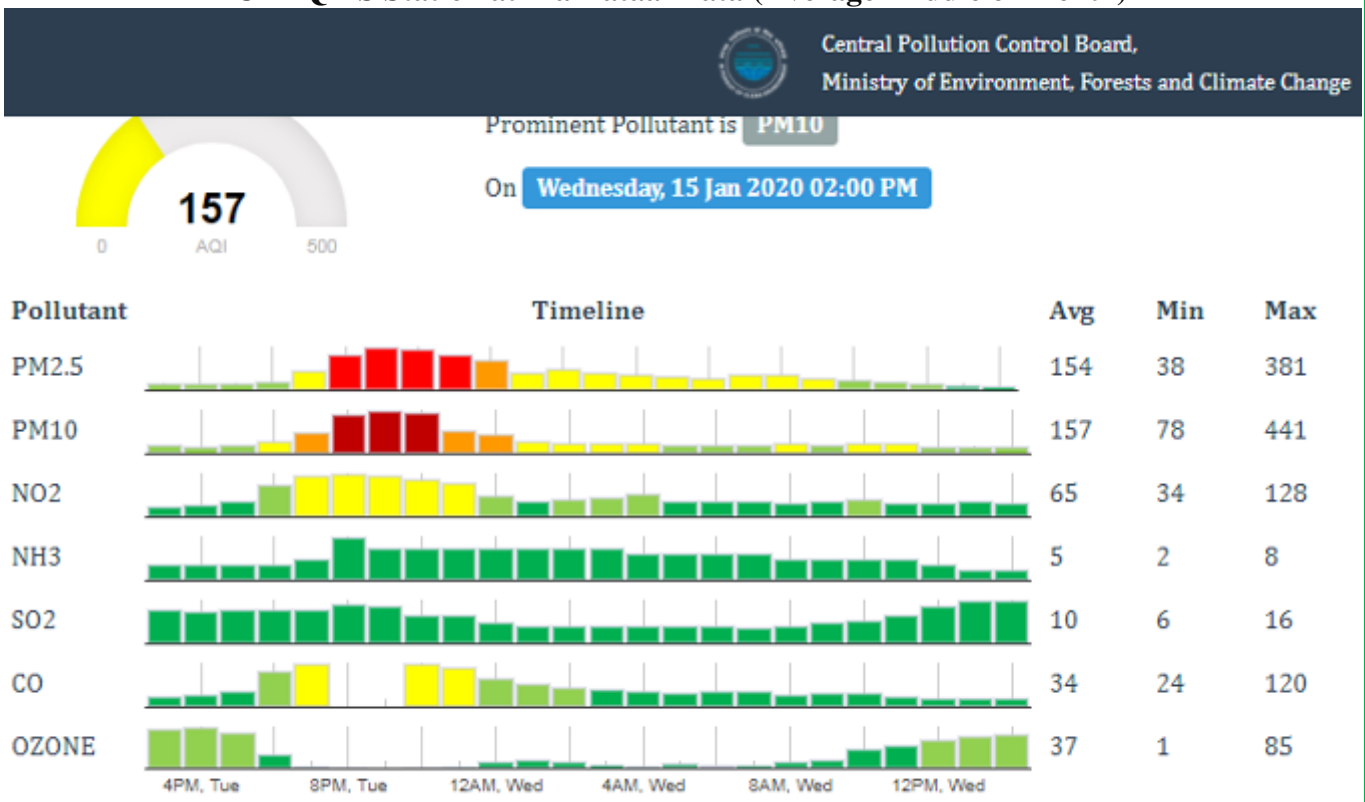
b. Anthropogenic air pollutants: These pollutants include the emissions from stationary point sources (e.g. emission from industries), mobile sources (e.g. vehicular emission, marine vessels, airplanes etc.), waste disposal landfills, controlled burning etc.

Major air pollutant present in the city are; PM2.5, PM10, SO2, NO2, NH3, O3, CO, Ni & As

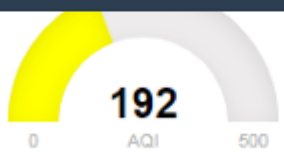
Air quality standard in the city:

There are one CAAQMS station installed at Yaatayaat Thana, Marhataal and two manual stations installed at Vijay Nagar & Richhai respectively. These stations are being monitored by MPPCB department. CAAQMS (Continuous Ambient Air Quality Monitoring System) readings are published on website **WWW.MPPCB.NIC.IN** . Average Monthly air quality standards of the city are **(as per PCB data)**;

CAAQMS Station at Marhataal Data (Average Middle of Month)



Central Pollution Control Board,
Ministry of Environment, Forests and Climate Change



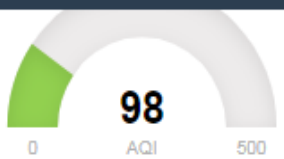
Prominent Pollutant is PM10

On Saturday, 15 Feb 2020 02:00 PM

Pollutant	Timeline	Avg	Min	Max
PM2.5		168	40	358
PM10		192	106	452
NO2		87	48	177
NH3		4	2	6
SO2		10	5	19
CO		38	25	120
OZONE		46	1	86

4PM, Fri 8PM, Fri 12AM, Sat 4AM, Sat 8AM, Sat 12PM, Sat

Central Pollution Control Board,
Ministry of Environment, Forests and Climate Change



Prominent Pollutant is PM10

On Sunday, 15 Mar 2020 02:00 PM

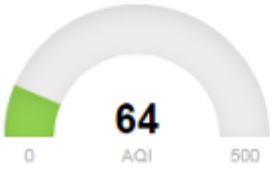
Pollutant	Timeline	Avg	Min	Max
PM2.5		66	17	151
PM10		98	59	210
NO2		46	31	115
NH3		3	1	5
SO2		10	5	68
CO		24	17	115
OZONE		40	8	81

4PM, Sat 8PM, Sat 12AM, Sun 4AM, Sun 8AM, Sun 12PM, Sun

Central Pollution Control Board,
Ministry of Environment, Forests and Climate Change

Satisfactory

Marhatal, Jabalpur - MPPCB



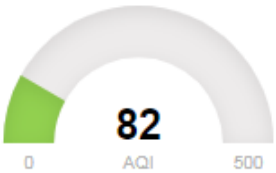
Prominent Pollutant is **PM10**

On **Wednesday, 15 Apr 2020 02:00 PM**

Pollutant	Timeline	Avg	Min	Max
PM2.5		34	15	53
PM10		64	40	141
NO2		22	17	27
NH3		2	2	3
SO2		6	4	10
CO		17	3	26
OZONE		62	37	86

4PM, Tue 8PM, Tue 12AM, Wed 4AM, Wed 8AM, Wed 12PM, Wed

Central Pollution Control Board,
Ministry of Environment, Forests and Climate Change

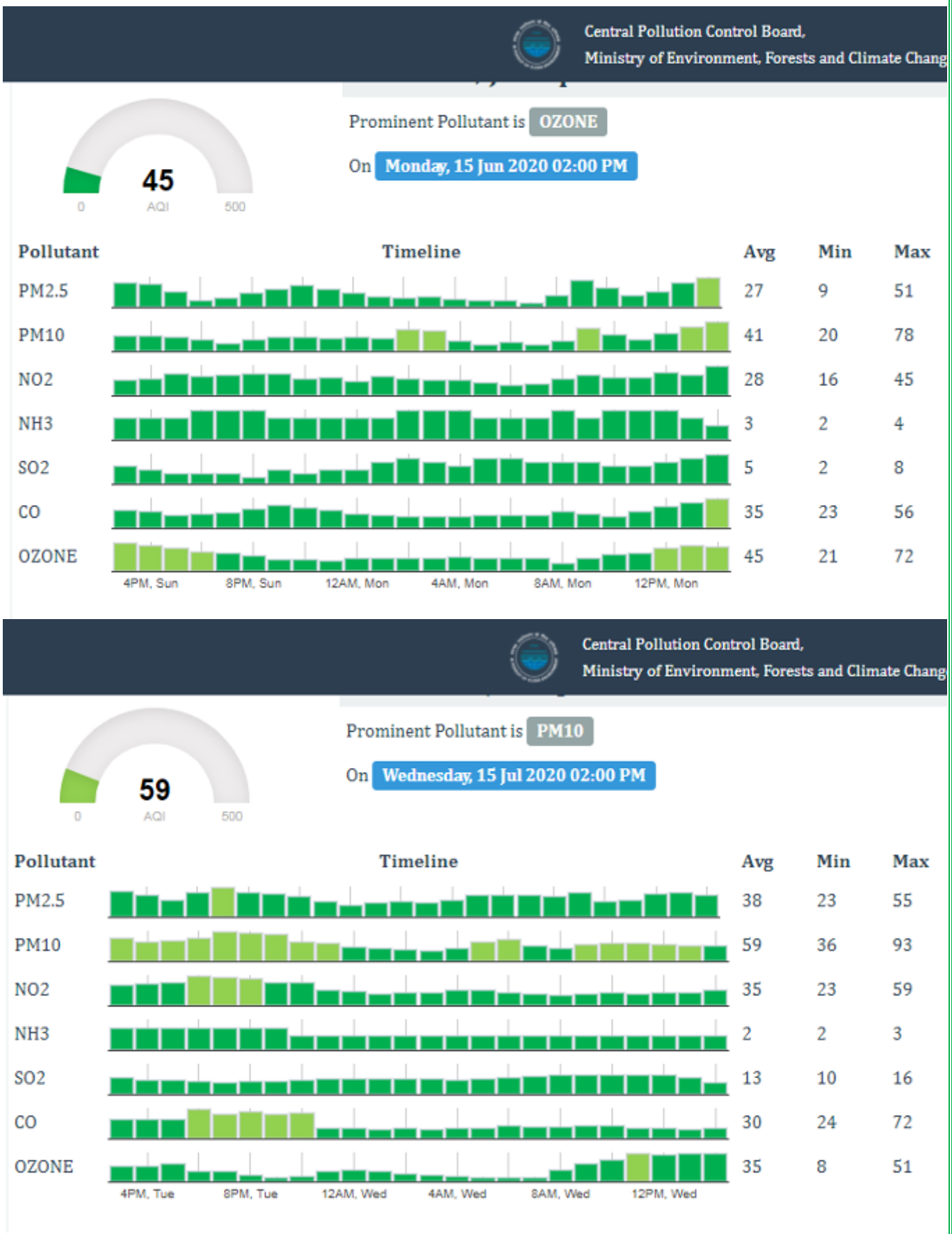


Prominent Pollutant is **OZONE**

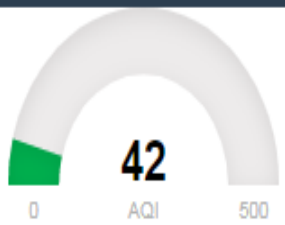
On **Friday, 15 May 2020 02:00 PM**

Pollutant	Timeline	Avg	Min	Max
PM2.5		49	26	87
PM10		69	41	98
NO2		23	16	30
NH3		2	2	3
SO2		7	5	10
CO		22	8	37
OZONE		82	42	122

4PM, Thu 8PM, Thu 12AM, Fri 4AM, Fri 8AM, Fri 12PM, Fri


Central Pollution Control Board,
Ministry of Environment, Forests and Climate Chang
45
0
AQI
500
Prominent Pollutant is OZONE
On Monday, 15 Jun 2020 02:00 PM
Pollutant
Timeline
Avg
Min
Max
PM2.5
27
9
51
PM10
41
20
78
NO2
28
16
45
NH3
3
2
4
SO2
5
2
8
CO
35
23
56
OZONE
45
21
72
4PM, Sun
8PM, Sun
12AM, Mon
4AM, Mon
8AM, Mon
12PM, Mon
Central Pollution Control Board,
Ministry of Environment, Forests and Climate Chang
59
0
AQI
500
Prominent Pollutant is PM10
On Wednesday, 15 Jul 2020 02:00 PM
Pollutant
Timeline
Avg
Min
Max
PM2.5
38
23
55
PM10
59
36
93
NO2
35
23
59
NH3
2
2
3
SO2
13
10
16
CO
30
24
72
OZONE
35
8
51
4PM, Tue
8PM, Tue
12AM, Wed
4AM, Wed
8AM, Wed
12PM, Wed

Central Pollution Control Board,
Ministry of Environment, Forests and Climate Change



Prominent Pollutant is PM10

On Saturday, 15 Aug 2020 02:00 PM

Pollutant	Timeline	Avg	Min	Max
PM2.5		19	11	32
PM10		42	20	70
NO2		26	16	45
NH3		2	1	2
SO2		17	16	18
CO		38	22	75
OZONE		14	10	22

4PM, Fri 8PM, Fri 12AM, Sat 4AM, Sat 8AM, Sat 12PM, Sat

Satisfactory

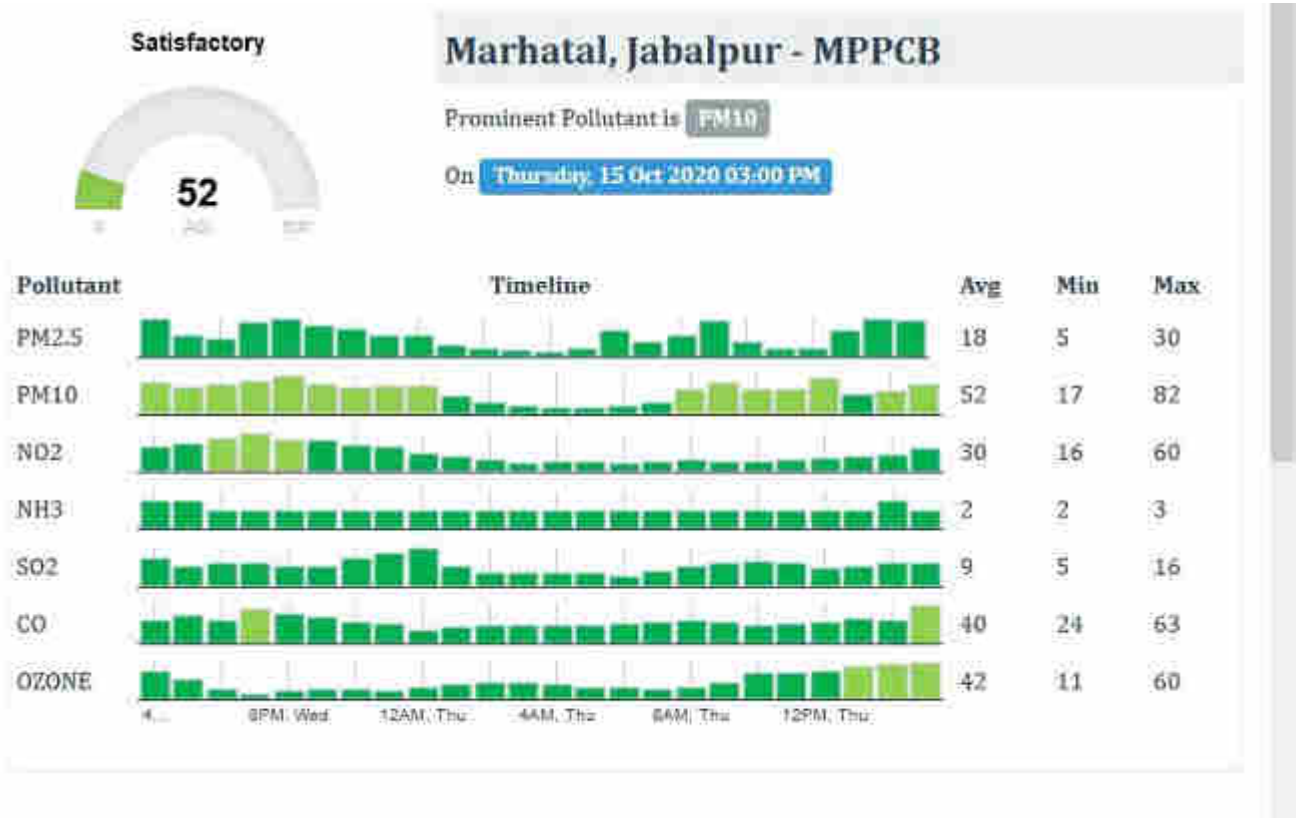
Marhatal, Jabalpur - MPPCB

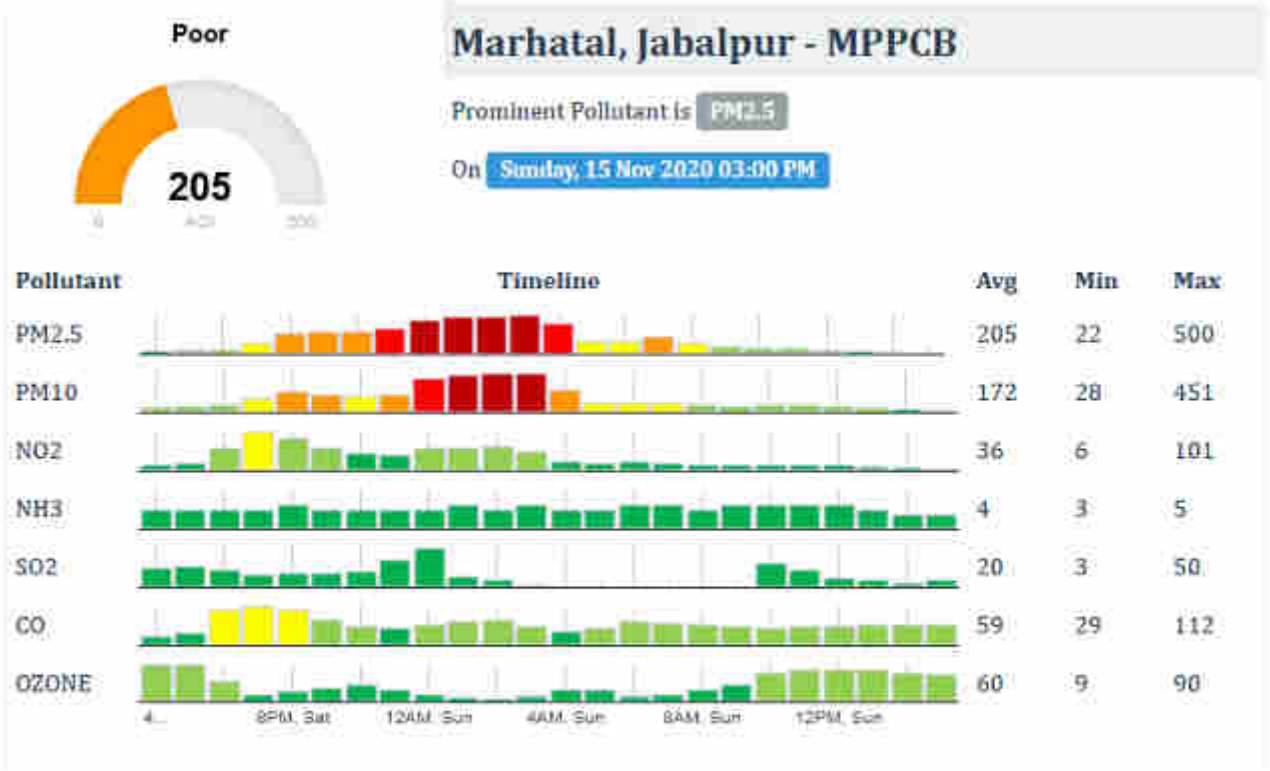
Prominent Pollutant is PM10

On Tuesday, 15 Sep 2020 03:00 PM

Pollutant	Timeline	Avg	Min	Max
PM2.5		32	15	56
PM10		53	14	104
NO2		36	22	62
NH3		3	2	4
SO2		20	14	26
CO		30	22	79
OZONE		40	14	61

4... 8PM, Mon 12AM, Tue 4AM, Tue 8AM, Tue 12PM, Tue


Satisfactory
52
Marhatal, Jabalpur - MPPCB
Prominent Pollutant is PM10
On Thursday, 15 Oct 2020 03:00 PM
Pollutant
Timeline
Avg
Min
Max
PM2.5
18
5
30
PM10
52
17
82
NO2
30
16
60
NH3
2
2
3
SO2
9
5
16
CO
40
24
63
OZONE
42
11
60
8PM, Wed
12AM, Thu
4AM, Thu
8AM, Thu
12PM, Thu


Poor
205
Marhatal, Jabalpur - MPPCB
Prominent Pollutant is PM2.5
On Sunday, 15 Nov 2020 03:00 PM
Pollutant
Timeline
Avg
Min
Max
PM2.5
205
22
500
PM10
172
28
451
NO2
36
6
101
NH3
4
3
5
SO2
20
3
50
CO
59
29
112
OZONE
60
9
90
8PM, Sat
12AM, Sun
4AM, Sun
8AM, Sun
12PM, Sun

Moderate

196

Marhatal, Jabalpur - MPPCB

Prominent Pollutant is PM2.5

On Tuesday, 15 Dec 2020 03:00 PM

Pollutant	Timeline	Avg	Min	Max
PM2.5		196	113	311
PM10		129	95	179
NO2		62	44	91
NH3		7	6	9
SO2		17	14	25
CO		81	64	105
OZONE		41	20	77

8PM, Mon 12AM, Tue 4AM, Tue 8AM, Tue 12PM, Tue

Moderate

191

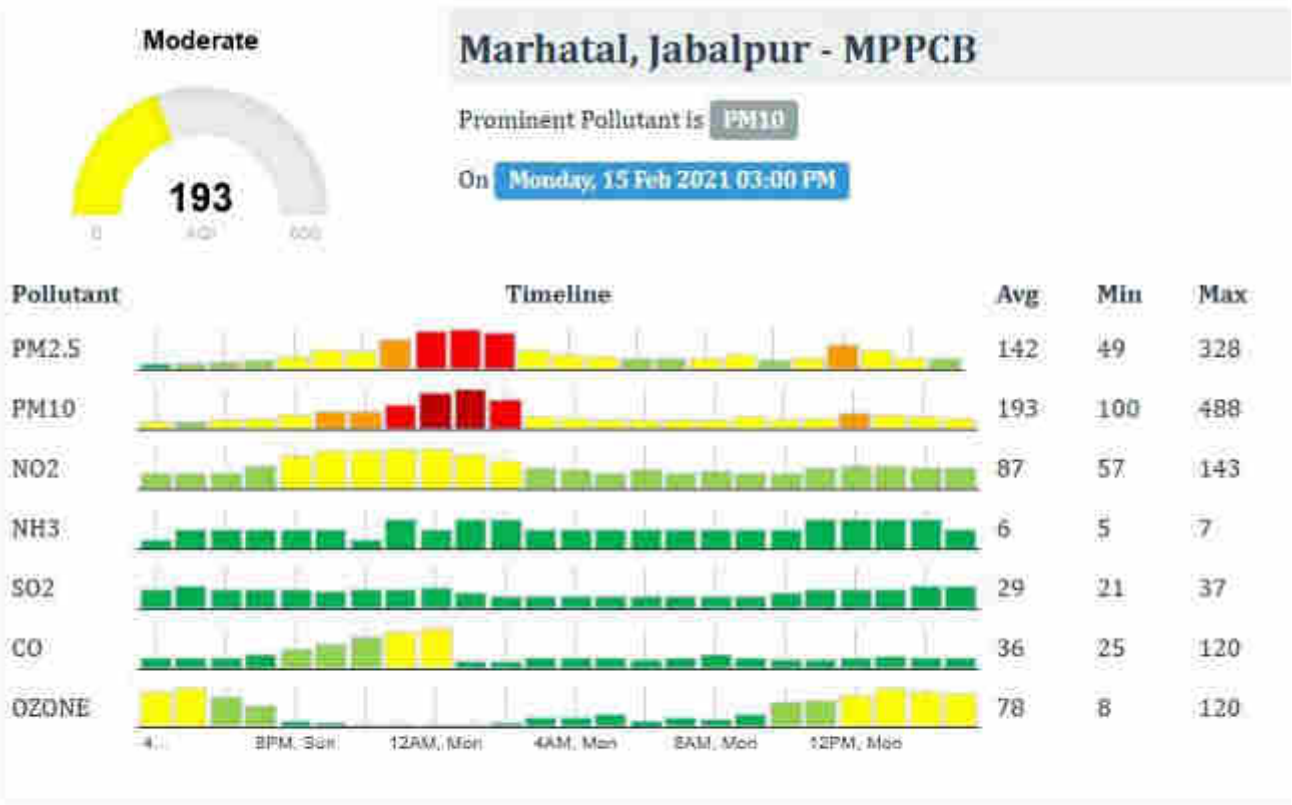
Marhatal, Jabalpur - MPPCB

Prominent Pollutant is PM2.5

On Friday, 15 Jan 2021 03:00 PM

Pollutant	Timeline	Avg	Min	Max
PM2.5		191	35	495
PM10		191	62	500
NO2		73	40	143
NH3		4	2	10
SO2		24	19	37
CO		42	14	148
OZONE		65	14	115

8PM, Thu 12AM, Fri 4AM, Fri 8AM, Fri 12PM, Fri


Moderate
193
Marhatal, Jabalpur - MPPCB
Prominent Pollutant is PM10
On Monday, 15 Feb 2021 03:00 PM
Pollutant
Timeline
Avg
Min
Max
PM2.5 142 49 328
PM10 193 100 488
NO2 87 57 143
NH3 6 5 7
SO2 29 21 37
CO 36 25 120
OZONE 78 8 120
8PM, Sun
12AM, Mon
4AM, Mon
8AM, Mon
12PM, Mon

Manual Station's AQI data

Regional Office, M.P. Pollution Control Board, Jabalpur

COMPARATIVE STATEMENT OF AMBIENT AIR MONITORING UNDER NAMP AT VIJAY NAGAR RESIDENTIAL AREA AND INDUSTRIAL AREA, RICHHAI, JABALPUR FROM JANUARY 2020 TO AUGUST 2020

Month & Year	Vijay Nagar, Jabalpur (Results in µg/m³)										Udaipur Beverages, Richhai, Jabalpur (Results in µg/m³)									
	PM 10	PM 2.5	SO_2	NO_2	Pb	NH3	O3	CO	Ni	As	PM 10	PM 2.5	SO_2	NO_2	Pb	NH_3	O3	CO	Ni	As
Jan 2020	75	29	2.0	13	0.15	0.32	29.2	1.14	BDL	BDL	95	37	13	18	0.17	-	-	-	BDL	BDL
Feb 2020	70	29	2.0	19	0.39	0.32	26.6	1.05	0.04	BDL	94	38	13	25	0.24	-	-	-	0.01	BDL
Mar 2020	65	29	2	13	0.25	0.24	28.3	1.0	0.03	BDL	93	38	13	17	0.33	-	-	-	0.04	-
April 20	47	16.5	2	10	BDL	0.2	21	0.37	BDL	BDL	46	16	10	12	BDL	-	-	-	BDL	BDL
May 20	46.3	19.1	2	13	0.02	0.2	24.2	0.43	0.01	BDL	51.7	19.5	12.1	13.5	0.02	-	-	-	0.02	BDL
June 20	60.4	22.8	2	12.6	0.06	0.29	27	0.43	BDL	BDL	76.3	31.5	11.5	15.4	0.12	-	-	-	BDL	BDL
July 20	60.8	26	2	13	0.12	0.28	27.8	0.53	BDL	BDL	79	35.6	11.7	171	0.17	-	-	-	BDL	BDL
Aug 20	57.5	26	2	12.7	0.14	0.27	22.3	0.40	BDL	BDL	83.7	37.5	11.8	16.8	0.17	-	-	-	BDL	BDL

Note –
PM 10 = Particulate Matter 10
PM 2.5= Particulate Matter 2.5
SO_2 = Sulfur di Oxide
NO_2 = Nitrogen di Oxide
Pb = Lead
NH_3 = Ammonia
O_3 = Ozone
Ni = Nickel
As = Arsenic
BDL = Below Detectable Limit
NA = Not Analyzed

(Dr. S. K. Khare)
Scientist & Lab Incharge
Regional Office
M.P. Pollution Control Board
Jabalpur

The monitoring results and trends from 2016-2020 are presented in TABLE 1-2.

TABLE – 1 Annual Average value of PM $_{10}$(µg/m^3)

STATION	YEAR				
	2016	2017	2018	2019	2020
	PM10	PM10	PM10	PM10	PM10
VIJAYNAGAR,RESIDENTIAL AREA, JABALPUR	59.5	63.3	105	72.7	60.6
UDAIPUR BEVERAGES,INDUSTRIAL AREA,RICCHAI,JABLAPUR	84.5	85.4	129	93.5	75.8

TABLE – 2 Annual Average value of PM $_{2.5}$(µg/m^3)

STATION	YEAR				
	2016	2017	2018	2019	2020
	PM2.5	PM2.5	PM2.5	PM2.5	PM2.5
VIJAYNAGAR,RESIDENTIAL AREA, JABALPUR	25.8	18.5	37.2	26.0	24.4
UDAIPUR BEVERAGES,INDUSTRIAL AREA,RICCHAI,JABLAPUR	33.4	26.8	44.6	37.5	29.4

TABLE – 3 Monthly Average value of PM 10 and PM $_{2.5}$at CAAQMS

Year	PM10	PM 2.5
Jul-19	61	18
Aug-19	40	13
Sep-19	37	15
Oct-19	117	53
Nov-19	189	93
Dec-19	198	107
Jan-20	162	82
Feb-20	159	67
Mar-20	95	36
Apr-20	84	35
May-20	87	29
Jun-20	57	19

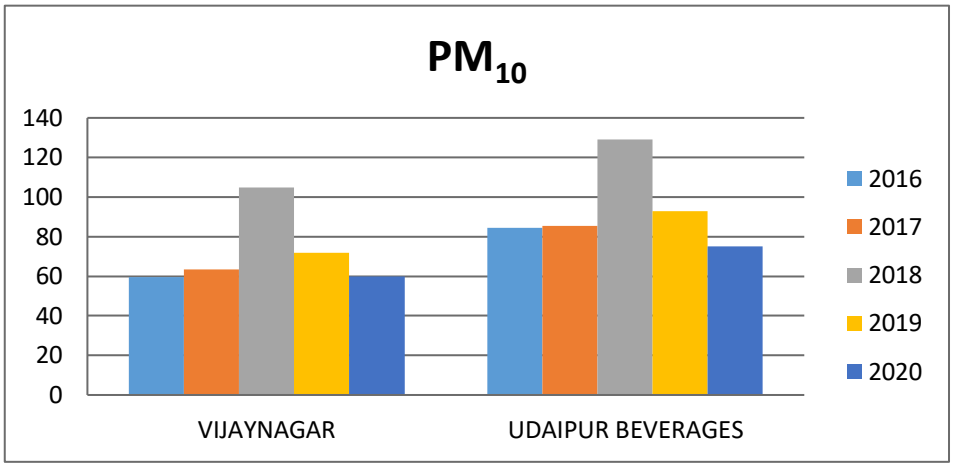


Figure 3: PM $_{10}$ trends in last five years.

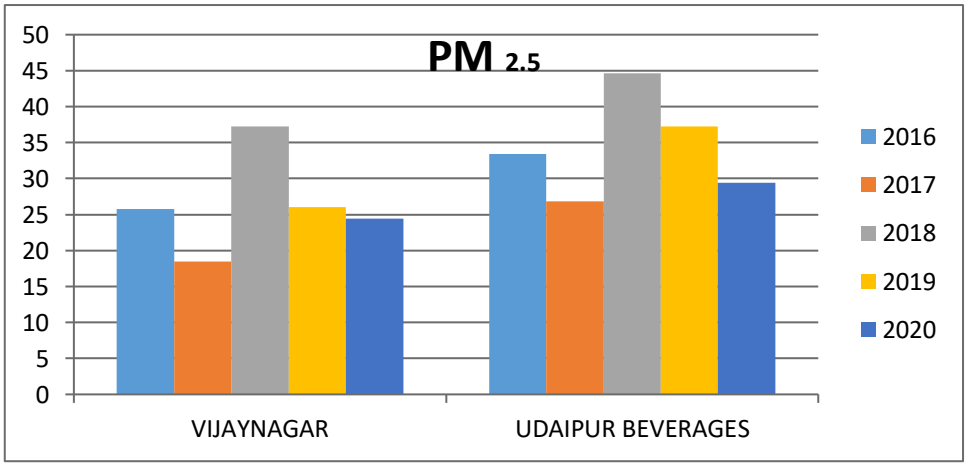
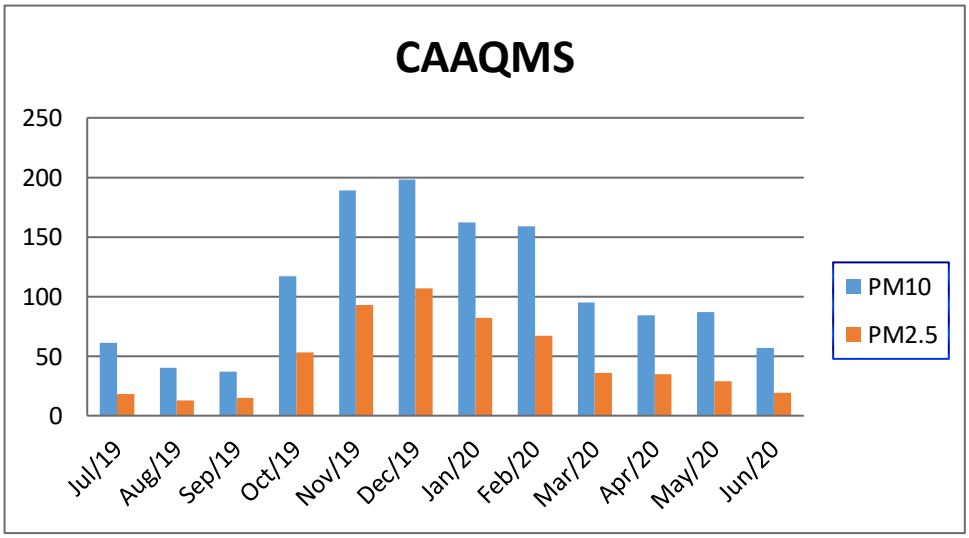


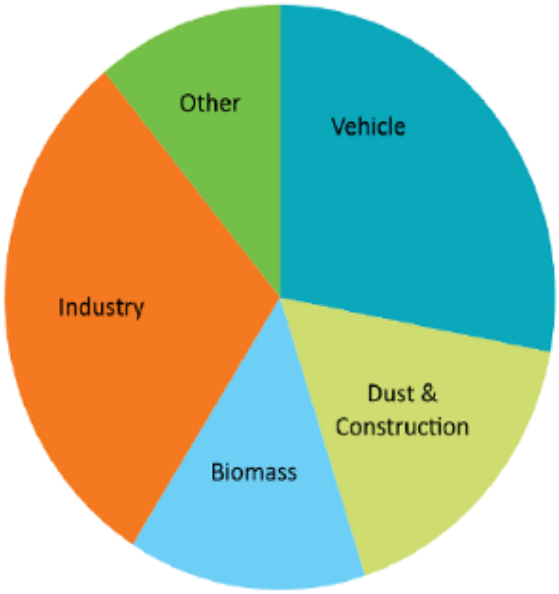
Figure 4: PM $_{2.5}$ trends in last five years.



- **Causes of poor air quality;**

Air pollution is one of the biggest global environmental challenge today. A time bound national level strategy for pan India implementation to tackle the poor air quality problem across the country in a comprehensive manner in the form of national clean air programme.

Causes of Poor Air Quality



An atmospheric condition present in concentrations which can cause undesirable effects on man and his environment is called as air pollution. Gaseous pollution includes oxides of sulfur, oxides of nitrogen, carbon monoxide, volatile organic compounds etc. Particulate pollutants include smoke, soot, dust, fumes, aerosols, liquid droplets, pollen gain etc. the sources of air pollution are the following:

A. Man-made sources:

Smokestacks of power plants, manufacturing facilities (factories) and waste incinerators, as well as furnaces and other types of fuel-burning heating devices.

Construction activities: land clearing, operation of diesel engines, demolition, burning, and working with toxic materials.

"Mobile Sources" include motor vehicles, marine vessels, aircraft and the effect of sound etc.

Traditional biomass burning is the major source of air pollutants; traditional biomass includes wood, crop waste and dung.

Waste deposition in landfills, which generate methane. Methane is highly flammable and may form explosive mixtures with air.

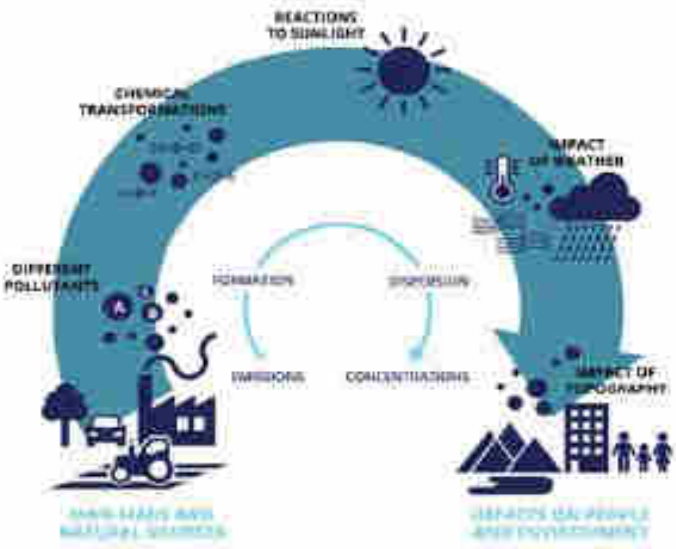
Chemicals, dust and controlled burn practices in agriculture and forestry management. Controlled or prescribed burning is a technique sometimes used in forest management, farming, prairie restoration or greenhouse gas abatement. Fire is a natural part of both forest and grassland ecology and controlled fire can be a tool for foresters. Controlled burning stimulates the germination of some desirable forest trees, thus renewing the forest and Military, such as nuclear weapons, toxic gases, germ warfare and rocketry.

B. Natural sources:

Volcanic eruptions.

Forest fires.

Sea salt sprays, biological decay etc.



- **Mitigation measures;**

Vehicles

- Restriction on plying & phasing out of 15 years old commercial diesel driven vehicle.
- Introduction of cleaner fuel (CNG / LPG) for vehicles
- Regular checking of vehicular emission and issue of PUC
- Good traffic management redirection of traffic movement to avoid congestion.
- Promotion and operationalization of E-rickshaw.

Road Dust

- Construction of Pervious road shoulders & pavement.
- Tree plantation along the roads, Development of green belt in open areas, gardens, Parks/ community places, grass carpeting on road dividers.
- Regular cleaning of road dust.
- Water spaying Washing of roads

Construction activities

- Covering of construction sites.
- Transport of construction materials in covered system.
- Restriction of construction material storage along the road.

Industries

- Installation of air pollution control devices.
- Adoption of cleaner technology in brick klins.

Strengthening of AAQ monitoring

- Installation of CAAQMS / AAQMS / AAQ monitoring sensors.

8. DESCRIPTION OF THE PROJECT

There are various type of factors which contributes to air pollution. These factors are identified by JMC & already taken steps to resolve some issues. Some proposals aresent to government for approval also. Brief about factors affecting air quality, steps taken and proposals are:

- **Vehicular pollution**
  - Restriction on plying & phasing out of 15 years old commercial diesel driven vehicle.
  - Introduction of cleaner fuel (CNG / LPG) for vehicles. CNG Pipe line should be laid to link Jabalpur city which will open more ways to introduce CNG based vehicles even conversion of City busses into CNG based can be done.
  - Regular checking of vehicular emission and issue of PUC
  - Good traffic management redirection of traffic movement to avoid congestion.
  - Promotion and operationalization of E-rickshaw.
    - There are 17 nos LCV E-rickshaw in JMC to collect door to door waste or any other loading / Unloading purpose.

(Note:- Strict Decision should be taken by Central/ State Government.)

Important:- Some Proposals to reduce Vehicular Pollution is sent to the government & under process;

1. The Potential Negative Environment and Health Impacts of Transport and probable solutions

Negative Impact of Transport

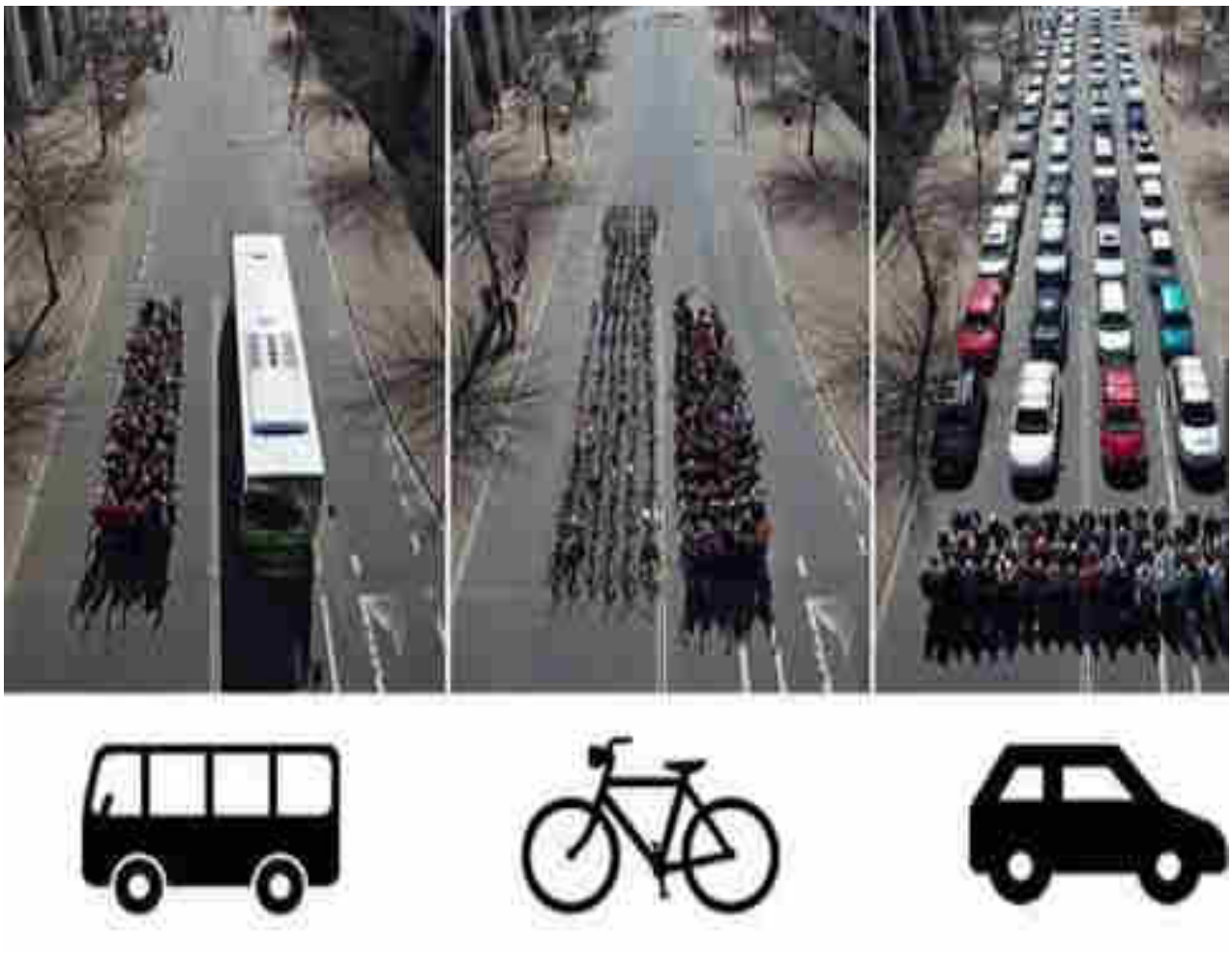
- Local air quality degradation
- Energy consumption
- Traffic safety and injuries
- Noise
- Water quality degradation
- Greenhouse gas emissions

Solutions

- Enhancing public transportation.
- Encouraging Non-Motorized Transportation.
- Introducing Public Bike Sharing system.
- Making shift to cleaner technology in transportation.
- Developing infrastructure and policy supporting above needs.

- Network of Pollution Control units need to be developed.

Advantage of Public Transportation



Proposals of City Bus Services

Sr.no.	Route name	Route Length	Route Type	Frequency	Fleet	Additional 10%	Total fleet
1	Panagar to Panagar via Ghamapur	40	Trunk	12	11	1	12
2	Panagar to Panagar via Gohalpur	40		12	11	1	12
3	Karmeta to University	12.5	Trunk	8	11	1	12
4A	Trimurti Nagar to Gwarighat	12.3	Trunk	8	10	2	12
4B	ISBT to Gwarighat						
5	Sur Talai to Ghana (Ranjhi)	29.5	Trunk	10	19	2	21
6	ISBT to Sonpur, Pipariya (via Sobhapur)	20.3	Primary	10	13	1	14
7	Teen Pati (Motor Mitra) to Gaur Barela	19.1	Primary	12	10	1	11
8	Railway station Platform No 6 to Bhita	9.2	Secondary	12	5	1	6
9	ISBT to Railway station	9.29	Primary	10	7	1	8
10	ISBT to Bhedaghat via Sagra	19.5	Trunk	8	16	2	18
11	Railway station Platform No 6 to Tilwara	13.5	Trunk	8	11	1	12
12	Railway station to Bhedaghat	22.3	Trunk	8	18	2	20
13	Gorabazar to Gwarighat	9.04	Secondary	12	5	1	6
Total Number of Buses					**148**	17	165
Additional 10% for maintenance (90% of fleet utilization)					17		
Fleet estimated for Jabalpur city bus services					**165**		

Proposals of Electric buses

Route name	Route Length	Route Type	Frequency	Fleet	Additional 10%	Total fleet
ISBT to Railway station	9.29	Primary	10	7	1	8
ISBT to Bhedaghat via Sagra	19.5	Trunk	8	16	2	18
Railway station to Bhedaghat	22.3	Trunk	8	18	2	20

fleet size	46
Additional 10% for maintenance (90% of fleet utilization)	4
Total Fleet Size	50

Total Required Buses:- 215 Nos

2. Non-Motorized Transportation

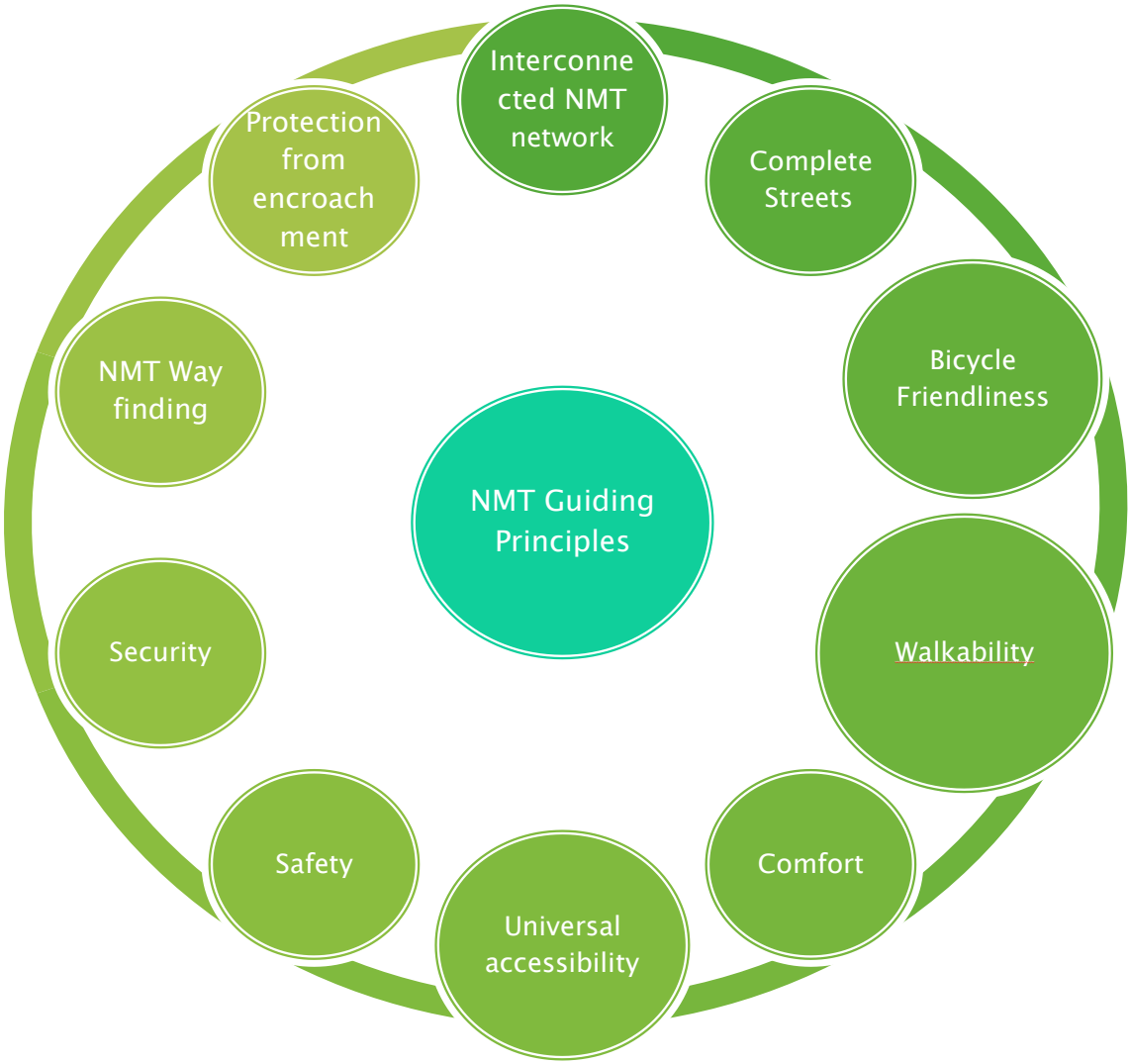
Advantage of NMT

- Reduce congestion and improve air quality
- Increase accessibility
- Increase the reach of transit
- Provide complementary services to public transport
- Improve the health of the residents

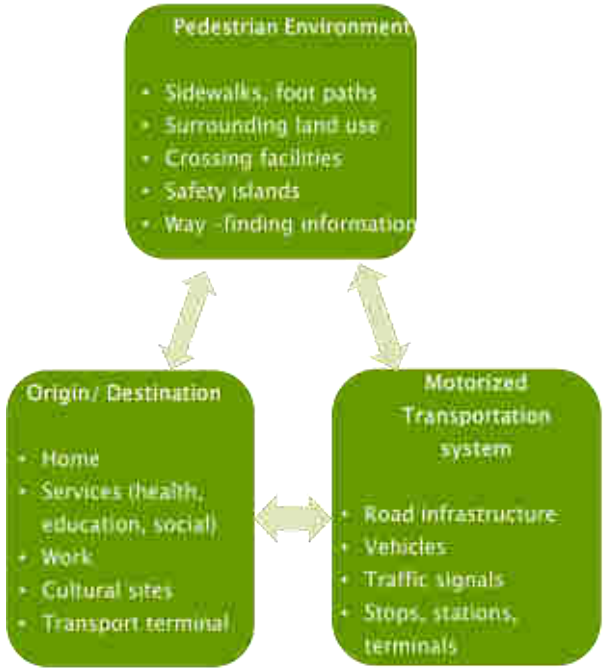
Possibility in Jabalpur

- Providing broader footpaths (with dedicated lanes for cyclists where possible).
- Promoting walking culture in already existing pedestrian lanes for which parking needs to be developed as vehicles occupy most of the footpaths of the city.
- Strict enforcement of parking by demarking the on road & off road parking, no parking zones etc.
- Developing pan city PBS system.

Principles of NMT Planning



NMT network development



Developing a dense network of pedestrian lanes **from *cul-de-sac level* to ALL major district roads.**

Demarcating **no vehicle zones** in the city specially in the dense CBD area.

Formulation of comprehensive parking, motorized and non motorized vehicle plans for such regions in city.

Providing walk ways around the **POND, PARKS and other PUBLIC PLACES.**

NMT network development

Some mile stones have already achieved but there is still possibility for more like:

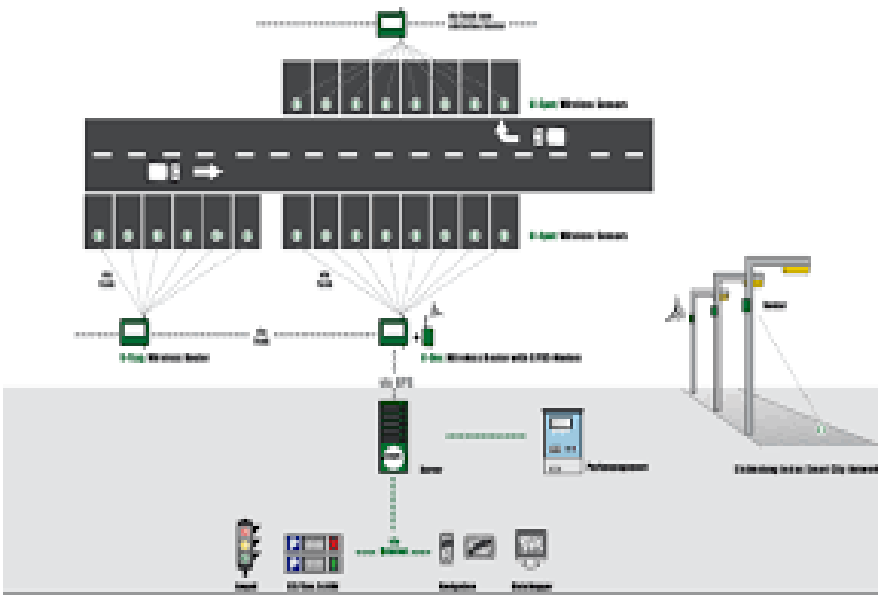
- Various culdesac of the residential areas.
- Around PONDS: Gangasagar, jalebitaal, supataal, madhotaal etc.
- In the major market places, mandis, tourist spots etc.

ON STREET PARKING

must be accompanied by foot path and NOT on foot path

Possible sites in Jabalpur

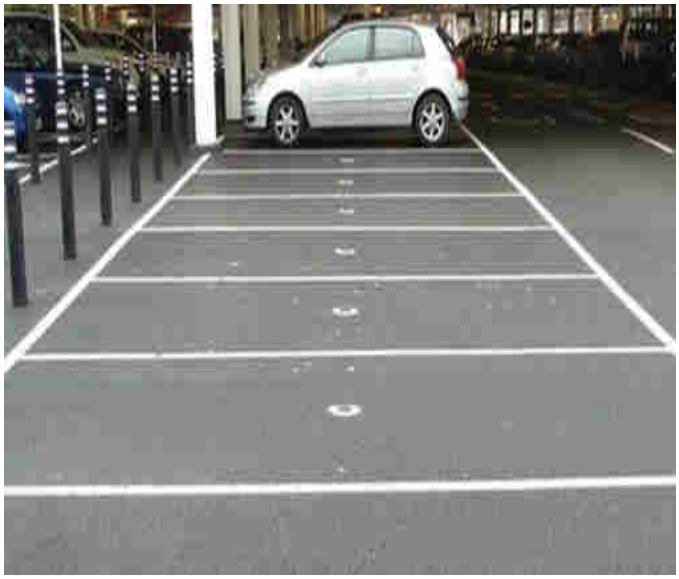
MR4 road.
Medical road (from chhotti line phatak)
Modal road.
CBD area.
Super Market.
Adhartaal road (from radichowki to suhagi).
Tilheri main road.
Ranjhi main road.



* All subjected to availability to road width after leaving sufficient space for pedestrian movement

On Street Parking - Technology Implementation

- Parking slots - marked with Thermoplastic painting
- Installing floor mount sensor
- Slot numbering for identification
- Parking meter for payment
- Handheld device with payment options.
- Installation of parking Apparatus - Signage & safety products
- Other amenities in parking lots - PCR, help desk.



Parking Slot

Parking Meter

Shared Bicycles as an Integral Part of NMT

Public bicycle sharing **(PBS)** is a **high quality bicycle based public transport system** in which bicycles are made available for **short term shared use.**

Electric Bikes;Key Software Components

- GPRS communications of bike status (connected bike)
  - User
  - Location
  - Charge Status
- GPS Mapping and Tracking + Geo-Fence implementation
- Customer registration
- Billing and Payment
- User Mobile App for Bike Rental Management
- SMS / USSD based method for non-smartphone users

Estimation for various projects;

Component	Probable cost (in cr)
Electric Buses (50 Buses for Ten Years)	126 Cr
NMT approximately 5 cr per km (including all utilities)	50 cr (for 10 km)
PBS 3.5 cr (for 1000 cycles per year)	35 cr (for 10 yrs)
Parking components	25 cr
Pollution Control unit (5 lakh per unit)	1 cr
Total	**237 cr**

"New Proposals under This programme"

- Construction of Ground + 04 floors multi-level car parking of 200 ECS capacity.
- Restriction on plying & phasing out of 15 years old commercial diesel driven vehicle.
- CNG pipe line should be laid connecting Jabalpur city. It will be more feasible in Introduction of cleaner fuel CNG / LPG for vehicles or Electronic vehicle.
- Regular checking of vehicular emission and issue of PUC by RTO.
- Good traffic management redirection of traffic movement & motivation to use public transport to avoid congestion.
- Promotion and operationalization of E-rickshaw etc.

- **Industrialization**
  - Installation of air pollution control devices.
  - Adoption of cleaner technology in brick klins.
  - Plantation in nearby areas.
- **Dust particulate**
  - Construction of Pervious road shoulders & pavement.
  - Tree plantation along the roads, Development of green belt in open areas, gardens, Parks/ community places.
  - Regular cleaning of road dust – Road / Footpath sweeping - Fogging machines are required.
  - Water spaying on roads – Road washing machines are required.
  - Construction of Water Fountains at different squares are required.
  - Banning / Penalizing the open construction & transporting construction material openly.
- **Indoor air pollution**
  - Support households to reduce indoor air pollution from cooking & heating with Solid fuels by LPG gas connection through central / State govt. schemes.
- **Solid waste management**

  Presently 100% Door to Door solid waste being collected and transported to waste to energy plant at Kathonda village of Jabalpur city.

Brief about this ongoing project;

1. **Door To Door Waste Collection**

Project Details;

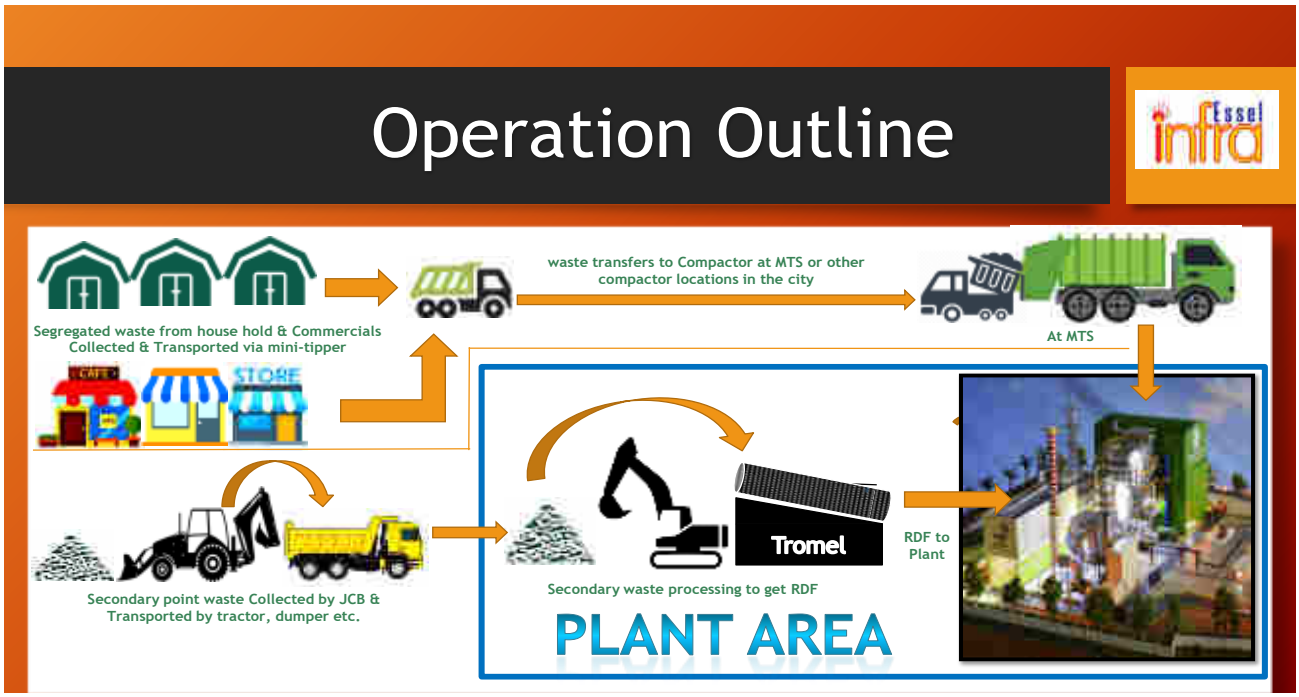
Concession Agreement Signed on	17th Nov 2016
Work started from	2nd Oct 2016
Covered Zone	15
Covered Ward	79

Executive Firm Name ESSEL INFRA

Vehicle List;

Sl.No	Vehicle Type	Total	Running
1	Minitipper	303	**200**
2	Refuse Compactor	24	**21**
3	Portable Compactor	7	**3**
4	Hook Loader	3	**2**
5	Rickshaw	180	**156**
6	HandCart	65	**27**
7	JCB	8	**5**
8	Tractor	8	**8**
9	Dumper	20	**20**
10	Transfer Station	2	**2**

Operation Outline;

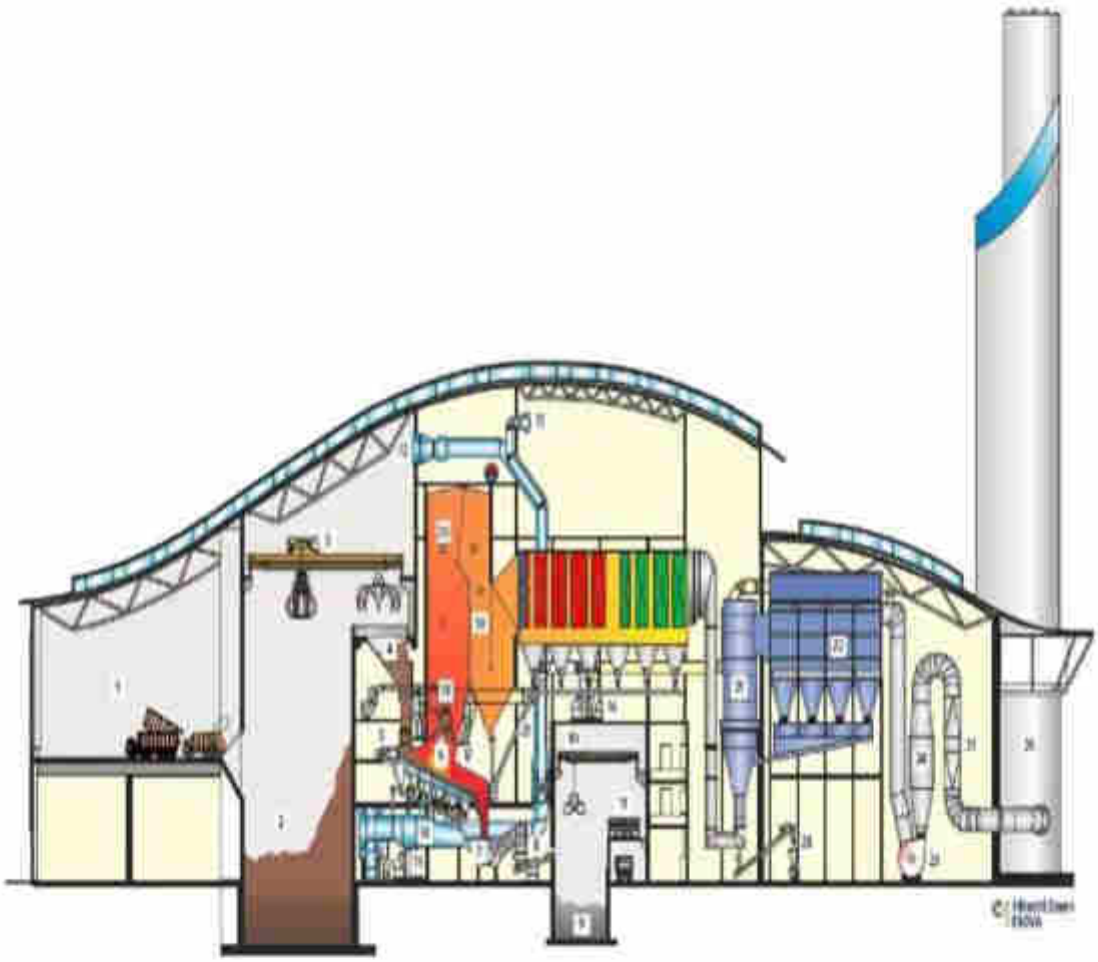


2. Brief About Waste To Energy Plant at Kathonda, Jabalpur;

DRY WASTE PROCESSING PLANT, JABALPUR

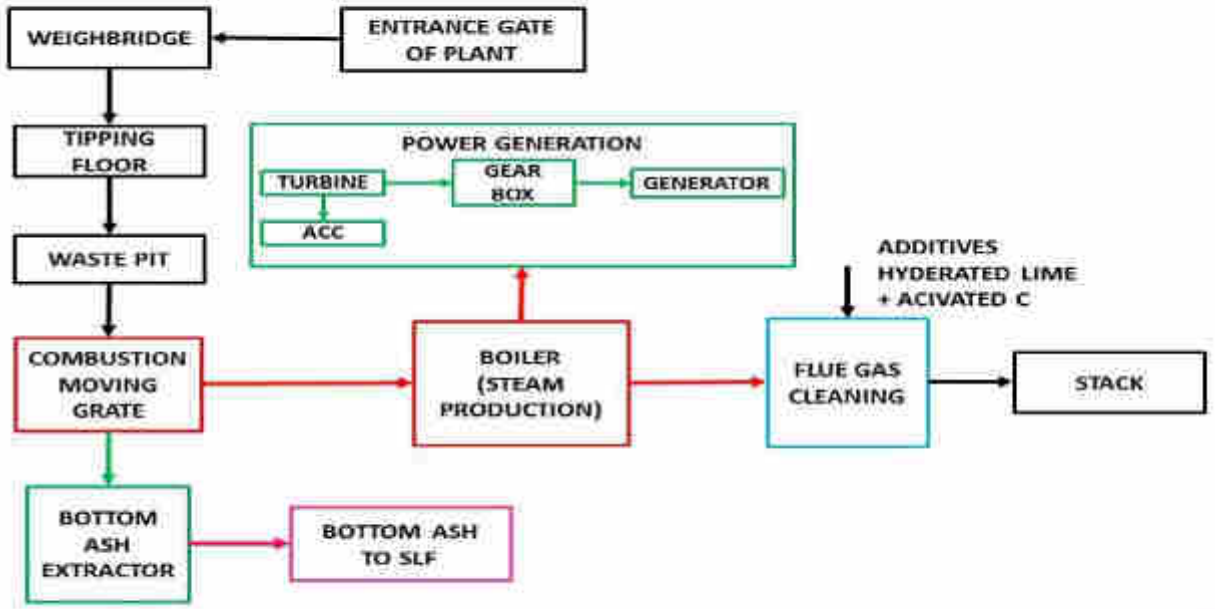
- Honored by PMO with Prime minister's Best Innovation award 2017
- Received Best Waste to Energy plant by MoHUA in 2018
- Achieved Best Smart Project by SMAY 2019
- Helped to make the city zero landfill

About Processing & Disposal



Waste receiving and storage	Combustion and boiler		Flue gas treatment	Residue handling and treatment
1 Tipping hall	4 Feed hopper	12 Primary air intake	20 SNCR injection levels	27 Ash conveying system
2 Waste pit	5 Ram feeder	13 Primary air fan	21 Semi-dry reactor	28 Residue conveying system
3 Waste crane	6 Hitachi Zosen Inova grate	14 Primary air distribution	22 Fabric filter	
		15 Secondary air intake	23 Induced draft fan	
	7 Bottom ash discharger	16 Secondary air / flue gas	24 Silencer	
	8 Bottom ash conveyor	gas recirculation fan	25 Condensate preheater	
	9 Bottom ash pit	17 Secondary air / flue gas	26 Stack	
	10 Bottom ash crane	recirculation injection		
	11 Bottom ash loading station	18 Start-up burner		
		19 Four-pass boiler		

Processing & Disposal Process Flow



29 August 2020

Typical Waste to Energy Plant Process

- Municipal Solid waste collected is stored in waste pit.
- It is mixed to make a homogeneous mixture with the help of waste cranes.
- The mixture is fed into the boiler where it burns and produces heat.
- The boiler utilizes the heat to produce pressurized superheated steam.
- The steam is used to propel turbine which further rotates generator to produce electricity.
- Steam from turbine is cooled in ACC where it gets converted back into water and the same is recirculated in boiler.
- Flue gases generated by burning of MSW is cleaned by Evaporator Cooler and dust is collected in Fabric filter.
- Clean and dust-free gases are released in atmosphere by through stack.

JABALPUR MSW PLANT

JABALPUR MSW PLANT

JABALPUR MSW PLANT

ACTUAL PLANT PICTURES

Plant View

Control Centre

Smart UTILITIES | Solid Waste Management

KEY DIGITIZATION INITIATIVES

100% Plant Automation is implemented
Auto pilot mode available

Pollution Control (data monitoring)
Implemented - Real time data transfer to SLDC/ PCB
Implemented - Live screening of Real time data to Public

Information App (collection & transport)
Designed/ tested - to be implemented on the start date in Ranchi

Information App (Waste Water collected/ treated)
Designed - Authority to be connected for on line info

NOC - Network Operating Centre - at HQ
Replicated as done for Solar and Roads

Smart UTILITIES | Solid Waste Management

END PRODUCTS

- **Electricity**
  - 11.5 MW with 1650 Kcal/kg (*with 600 tpd of input waste*)
- **Reusable / Recyclable Ash**
  - 80-100 MT of Bottom Ash / Slag , which can be recycled as bricks. Totally depend & differ on city to city.
- **Non-Reusable Ash**
  - 17 MT of Fly Ash, which goes to hazardous landfill site

Smart UTILITIES | Solid Waste Management

PLANT SUMMARY

Key Benefits

- No Human touch on Waste
- All odours are destroyed
- Low energy consumption and self sustained
- Ecologically sustainable waste treatment
- Compliance with all relevant regulations alongside Euro standards
- High flexibility to accommodate changing future demands
- High efficient power generation
- Destruction in seconds where LF requires 100s of years
- Small disposal area required when compared with a compost plant.

MSW Available for the project	600	MT/day
Gross Generation Potential (Minimum)	11404	kW
Exportable Power	9580	kW
Residue expected (Ash)	90	MT/day

Ash is usually non-putrescible, sterile, inert and can be converted into value added products like Bricks and pavement blocks.

Smart UTILITIES Solid Waste Management

ZERO LANDFILL REQUIREMENT

There is no need of waste landfill in Jabalpur Municipal Corporation, because-

All the usable waste is segregated in first phase at Material recovery facility

In second phase all the biodegradable waste is processed in compost plant.

Remaining all the waste is processed in mass burning **Waste To Energy** unit.

All the outcome of waste to energy respectively electricity, bottom ash and fly ash are used to earn revenue as described in slide.

Smart UTILITIES Solid Waste Management

By reducing, reusing, or recycling those byproducts, our Municipal Corporation not only saving money and even created a new revenue stream. We work with companies in PPP way to attain their sustainable goals by building customized programs to reduce waste generation, improve recycling rates, and achieve Zero Waste to Landfill.

Smart UTILITIES | Solid Waste Management

Proposals:

- **Wet & Dry Garbage collector machine.**
- **Sludge (Taken out from Drains during cleaning) treatment plants.**

- **Construction and Demolition (C&D) Waste**

Jabalpur City already have constructed a 50 MTD capacity Construction & Demolition (C&D) waste plant at kathonda. Agreement was done on 28th October 2017 with M/S DNP infrastructure Ahmadabad. Collection and Transportation of C & D waste to the Plant is being done by JMC. Here are some Photographs of this Plant:

- **Fuel quality etc.**

- **Existing Multilevel Car Parking in the city:**

At Civic Canter Jabalpur

At Manas Bhawan, Wright Town

Proposals:

Jabalpur smart city limited intends to develop an Multi Level Car Parking System **Near Gol Bazaar**.

Location	Required area	Tentative cost
Near Gol Bazaar	**4000 Sqmt**	**15 Cr**

1. **Brief Scopes of Work**

A. The structure shall be a smart, iconic building with integrated transportation facilities. The core components of the building shall be as follows.

Sr	CoreComponents	Details
1.	SmartParkingTower building	Ground+4Floors
2.	MinimumECSProvision	200ECS(withEVchargingpointsforatleast10% vehicles)
3.	PublicConvenience	Minimum facility shall be one unit with 5 WC + 5 urinals +2 bathrooms at ground floor.
4.	Tabletop Intersections	2 Nos, at Entry and Exit for pedestrian crossings.
5.	SolarRoofTop	Dead loadofsolarpanelsshallbeconsideredinstructuraldesign.Separatevendorsshallinstallandmaintainthesolarpanels.
6.	Digital Advertisement board	Atleast25%ofthebuildingfaçadeshallbecoveredwithdigitaladvertisementboards.
7.	AccessibleBuilding	AccessibletoallagedandAllabled(MoHUAGuidelines)
8.	VerticalGardening	Atleast25%ofthebuildingfaçadeshouldbecoveredwithverticalgardening.
9.	Ancillaryfacilities	Provision for car wash, repair, maintenance,etc.

B. InstallingICTinfrastructureforsmartparking:

- Parkingsensors,boombarriers,automaticticketcollectionkiosks,andcommoncard-based paymentsystems,etc.–on-streetandoff-street.
- Variablemessagesignage(VMS)atstrategiclocationsbothinsideandoutsidetheMLCP.
- Real time monitoring systems with seamless communication to Integrated Command & Control Centre (ICCC).

C. Managing and operating parking

- Management and operations of parking slots inside site and outside within the immediate influence zone and the smart parking locations as provided by HDMC

2. TECHNICAL SCHEDULE- CIVIL CONSTRUCTION

- Parking Structure Design Specifications

A. Design of Parking Structure

FixedDesignParameter	**Permissible**
Minimum dimension and weight of a car (SUV category) to be considered	Length – 5.20m Width – 2.20m Height – 2.20m Weight -2500 Kg
Required arrangement for convenient parking by physically challenged drivers (2% of Total ECS capacity) will have to be provided	

B. Covenants

Sr.No.	ItemDescription	Covenants
1.	Heightofparkingwithoutelevators	Shouldnotexceed3floors
2.	Heightofeachbasementfloor	Clearfloorheightshouldbenotlessthan3.60M
3.	Depthofconstructionbelowground	Shouldnotexceedthreebasementlevelsor 12.0mbelowgroundwhicheverisless.
4.	Spaceforcalculationone ECS includingcirculationwithinparkingstructure	Notlessthan30m²perECSforcoveredparking
5.	Parkingbay/slotdimensionper carspace	Notlessthan5.6mlongand2.5mwidth
6.	AirConditioning	Preferablebutnotmandatory.However,mechanicalventilationmustbeprovidedtopermitaminimumof15air changesperhourfornormalventilationand 30airchangesperhourincaseoffireofdistresscall.
7.	Gradientoframp	Notsteeperthan1:10ratiowithminimumtransitionspaceof5matterminationoftheramp
8.	Widthoframp	Minimumof6.5mwidthfortwo-way trafficandonly4.5mforone-waytraffic

9.	Carriagewayofpavementforcirculationspacewithinparking facilities	Notlessthan4.5m,ifoneway,andnotlessthan6.0mifitistwowaysflow.

Maximum queue Length at any of the entry area the facility shall not ideally exceed three cars, at any point of time, except under exceptional circumstances.

C. Column Center

Inasmartcarparkfacility,thereshouldbenocolumnstoimpedeaccesstoparkingspaces.Designersshouldallowforadequateclearspacebetweencolumnedgessothatfullwidthspacesareavailabletousers.

D. Head Clearance

Flatceilingsarepreferableinallcarparks.Structuralbeamsshouldnotbelocatedinthevicinityofparkingspaces,andifthiscannotbeavoidedthenallowancemustbemadenotonlyfortheheightofcarroofsbutalsofortheheightofhatchbackdoorswhichswingup.

E. Entry and Exit Specifications

- Location

LocationoftheEntryandExitAreasandofthedrivewaysalongwiththeirconnectiontotheroadsystemshouldbemadeproperlyandatleastthreeexitsarerequiredtobeprovided foraccesstoandfromthesite.Besidestherampsforvehicles.The building should haveatleast2elevatorsand2staircasesformovementofusersthroughoutthebuilding.

- Size

TheEntryandExitAreasmustbesizedtoallowdriverstosafelyandcomfortablydriveinandoutthevehicle.Turningradiusandwidthofdriveaislesandminimumclearwidthof EntryandExitAreahallbedesignedaccordingtotherespectiveneedsandleavingadequatespacetotheleftandrightoftheacarforpassengerstoleave/enterthecarandinaccordancewithApplicableCodes.

- Components

i. MotiondetectorsandCCTVcamerasorsimilardevicesshallbeinstalledinsidetheEntryandExitAreastoensurethatnopersonoranimalsareinsidetheEntryandExitAreasorvehiclewhenthemachinestartsmoving.Camerasshallbeinstalledtorecorddigitalphotosofthephysicalconditionofthecarenteringandexitingthepremises.Theimagesarealsohelpfultolocatecarsfordriverswithalostticketandtovalidatedamageclaimsaswellastodetectanysuspiciousactivityintheparkingarea.

ii. TheEntryandExitAreasentrancedoorsshallbemounted,securedand operatedsafely,isolatingthepassengersfromtheEntryandExitAreasduringmovementofthemachineryandvehicles.Safetylocks/emergencyswitchesshallbeinstalledtostopanymachineryifapersonoranimalisdetectedinthisarea.

iii. TheEntryandExitAreasentrancedoorsshallbemounted,securedandoperatedsafely,isolatingthepassengersfromtheEntryandExitAreasduringmovementofthemachineryandvehi

cles.Safetylocks/emergencyswitchesshallbeinstalledtostopanymachineryifapersonora nimalisdetectedinthisarea.

iv. Recessesinthefloorareashallbeminimizedtotheneedofguidingthedrivers inthe“drive-in”process.Allotherareasshallbeflatforpedestriantraffic.Gapsbetweenmovingpartsandpla tformsneedtobelimitedasperApplicablecodes.

v. AllEntryandExitAreasmustcomplywithdisabilityrequirements.

vi. Thedrivewaysforinboundandoutboundtrafficshallbedesignedtoprovidesufficientqueui ngspaces;simplevisualsignageandguidanceshallclearlydirect approachingtrafficoffthestreetandintotheEntryandExitAreas.Respectivecommandsvi aavisualmessagecentershallbeappliedinsidetheTerminalsforthedriversinsuchmannerth ataneasyuseofthesystemispossible.

vii. Inbound/outboundtrafficcrossingshallbeprevented

viii. InsideandoutsideEntryandExitdoorsshallbeprovidedtopreventdriversandanimalsfromco mingintocontactwithanymovingelementsofthesystem.

ix. AsEntryandExitAreasaretheexchangestationoftheParkingStructure,specialattentionsh allbedirectedtoeasethe“drive-in”andpositioningofthecarbythedrivers(preferablybymeansofphysicalaids).

x. Meansofcatchingofdebrisanddrippingsfromtheincomingcarsshallbe appliedtoavoidsuchdrippingstocarsandmachineryinsidetheterminals,duringtransport ationandstorageinsidethesystem.

xi. TheTicketingStationoraccesssystemshallbelocatedoutsidetheEntryand ExitAreasontherightsideoftheinboundtraffic.

xii. Ifthesystemhasinstalledradiofrequencyaccesssystem,thereadersshallhaveenoughranget odetectapproachingvehiclesfromatleast9meteroutsideoftheEntryandExitAreas.

F. Throughput Capability

Thethroughputofasystemistheminimumnumberofcarsasystemcanstoreorretrieve(measures inbyanyrandomone-w a y traffic),inthetimeframeofonehour.Dwelltimeisdefinedasthetotaltimeadrivertakestodri veintothesystem,leavethecar,exitthesystemandbuyaparkingticket.Incaseofexitingthesystem, DwellTimeisthetimetakenbythedrivertoreturntheparkingticket,identifyhiscar,anddriveitouto fthesystem.Areasonableaveragedwelltime(entering/exiting)of30secondspercardrivingintot heEntryandExitAreascanbeassumedifphysicaldrivingguidanceisprovided.Intheabsenceofsu chphysicalguidancesystem,anaveragedwelltimeof60secondsshallbeconsidered.

G. Fire Safety

i. Fire safety measures as recommended in applicable codes shall be implemented.

ii. Provisions shall be made in the Parking Facility that leakage of fuel tanks or other flammable fluids are collected during transportation and storage of the vehicle.

iii. Construct the ‘Parking Facilities’ structure and the equipment with non-combustible construction. In addition, those portions of the facility used for the transport and / or storage shall have a finish of non-absorbent, non-combustible material. Where the Automated Parking Facility is located below a

building, 2-hour fire resistance rated separation shall be provided between the Automated Parking Facility and the adjacent space use.

iv. As the nature of an Automated Parking facility provides the means to transport a vehicle without human interference, provisions shall be provided to detect a vehicle on fire and to transport it to a fire extinguishing cell at a space on ground floor, easy accessible for fire fighters.

v. The building should have all provisions in the construction as per the Relevant Fire Safety Act as well as take all measures as per the rules and regulations including guidelines from Central Government, State Government and drafted by the ULB and any agency appointed by the government on the subject

H. Ventilations/ Air conditioning

i. Areas accessible to the public / drivers shall be equipped with sufficient air conditioning and ventilation.

ii. The storage area of the System in which no driver enter but only maintenance crews, may be unconditioned space although some ventilation emissions is required inside the storage area. Depending on the design of the Entry and Exit Areas, a ventilation of emissions may be required in that area.

I. Lighting/Accessibility for Maintenance

i. Lighting in areas accessible to the drivers / public shall be properly illuminated.

ii. Old recommendations on internal lighting standards e.g. of 50 lux, have long ago been discarded by the industry and replaced by minimum standards of 100 lux and 250 to 350 lux at entrance/exits. White fluorescent bulbs provide the best quality of light. Tungsten lamps generally give yellow tints and leave "cave" effects unless used in high densities. Lighting in stairwells and lobbies need to be to a very high specification to minimize perceptions of personal isolation.

iii. The parking structure shall be designed such, that maintenance personnel has access to all storage spaces, machinery and electronic components in a safe manner. The usage of harnesses is acceptable as long as OSHA criteria are followed.

iv. Graphical User Interface/ON – Line Support

v. Automated parking Facilities shall be furnished with a Graphical User Interface (hereafter referred as “GUI”) or Human Machine Interface (hereafter referred as “HMI”). This interface shall be positioned in the Control-Room. The GUI shall show the geometry of the entire system with occupancy and all installed machines moving in real time. The GUI shall be capable of running fully automated without human assistance; it shall have manual and maintenance mode and the capability of System Diagnostic of all critical mechanical, electrical and electronic equipment.

vi. The parking facility shall have an installed and all-time workable capability to the manufacturer / technical operator with a short response time to handle any alarms generated by the system.

J. Lines of Sight

Personalsecurityisgreatlyenhancedincarparkswherelightinglevelsarehighandclearlinesofsightaredesignedintoafacilitye.g.ataccesspointstoliftlobbies,stairlobbies,atcornersonpedestrianroutes.Inaddition,alldoors,includingliftdoors,shouldhavelargeglasspanels,allwallsshouldhavelargeglasswindowssopatronscancheckwhetheritissafetopassthroughornot.Structuralwallscanhave'openings'cutintothem,toincreasenaturallightpenetrationandimprovesightlines.

K. Lifts

Thirteen-personliftsareincreasinglyessentialifanyreasonablecomfortistobeprovided,andtheseneedtobeinpairs.Smallerliftsarediscouraged.

L. Stairs

Inallcarparks,therearesignificantnumbersofpatronswhorefusetouselifts,andsoallstairsshouldbedesignedtoahighstandardtoaccommodatethisandshouldbealarmedforeasyaccessintheeventofafire.

Proposed Public Awareness & Advertisement Programme :


Directorate of Urban Administration & Development, Madhya Pradesh
AIR QUALITY IMPROVEMENT
Invest in Energy-Efficient Power Generation.
Improve Domestic, Industry and Municipal Waste Management.
Make greener and more compact cities with energy-efficient buildings.
Reduce Agricultural Waste Incineration, Forest Fires and Certain Agro-Forestry Activities.
Provide universal access to clean, affordable fuels and technologies for cooking, heating and lighting.
Build safe and affordable public transport systems and pedestrian and cycle friendly networks.


अंग चाहे प्रकृति का हो, चाहे शरीर का ,
दोनों ही दोबारा नहीं उगते।
आइये,
अपने आस-पास हरियाली बढ़ाएँ, परिवेश की हवा को प्रदूषित होने से बचाएं।
#improveairquality
AQI
नगरीय विकास एवं आवास विभाग, मध्यप्रदेश

नगरीय विकास एवं आवास विभाग,
मध्यप्रदेश

15th Finance Commission

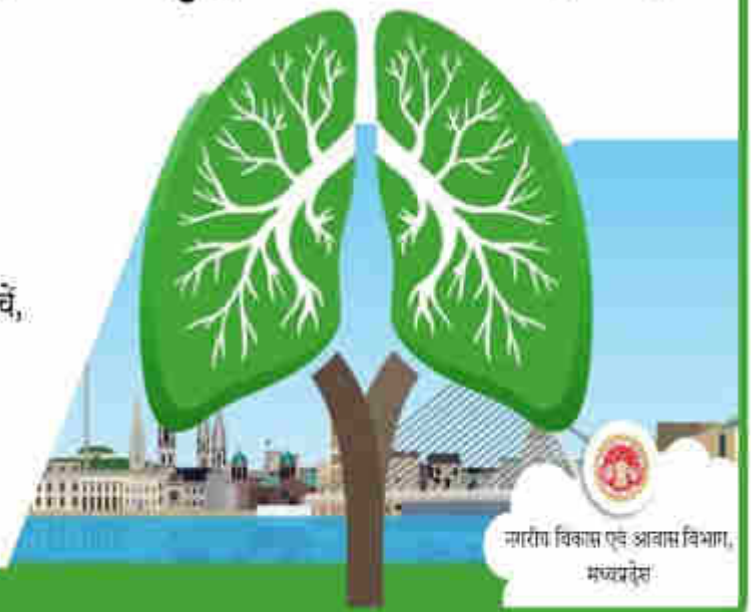
AQI
INDIA

गंभीर बीमारियों से बचने और हमारे अच्छे स्वास्थ के लिए

अपने वातावरण की हवा को शुद्ध बनाने में योगदान दें !

आइये हम ,

- पौधे लगाएँ
- कोयला, केरोसिन के उपयोग से बचें, LPG / CNG का उपयोग करें
- कचरे का प्रथक्कीकरण करें



नगरीय विकास एवं आवास विभाग,
मध्यप्रदेश

#improveairquality


वाहनों से निकालने वाला धुआँ
आपके लिए जानलेवा भी हो सकता है !
समाधान
साइकल चलाना, पैदल चलना जैसी गतिविधियों को प्रोत्साहन दें ।
वाहनों में पेट्रोल / डीजल का उचित उपयोग करें ।
अपने आस-पास हरित क्षेत्र बनाएं और दूसरों को प्रोत्साहित करें ।
समस्या
#improveairquality

9. ENVIROMENTAL MANAGEMENT&CITY ACTIONACTION PLAN

CITY ACTION PLAN

<table>
<tr><th></th><th>Source group</th><th>Action</th><th>Implementation period</th><th>Responsible agency (ies)</th><th>Work already completed</th><th>Proposed work</th><th>Time target for implementation</th></tr>
<tr><td>A</td><td>Vehicles</td><td>1-Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles</td><td>Long term</td><td>Transport department (RTO)</td><td>The total number of vehicles register from 2015, 2016, 2017, 2018 & 2019 is as follow :-

<table><tr><td>Year</td><td>2W</td><td>3W</td><td>4 W</td><td>Total</td></tr><tr><td>2015</td><td>41542</td><td>377</td><td>8259</td><td>50214</td></tr><tr><td>2016</td><td>49092</td><td>615</td><td>10337</td><td>60554</td></tr><tr><td>2017</td><td>56857</td><td>1378</td><td>13010</td><td>70645</td></tr><tr><td>2018</td><td>59705</td><td>1680</td><td>14303</td><td>75718</td></tr><tr><td>2019</td><td>63185</td><td>490</td><td>29074</td><td>78782</td></tr></table>
About 300 diesel driven tempo has banned during 2015-16 & Registration of 15 years old commercial diesel driven vehicle is banned by RTO Jabalpur</td><td>• The old three wheeler diesel driven vehicle tempo are propose to be phased out.

• Registrations of 15 years or older commercial diesel driven vehicle in the city area are proposed to be banned by RTO Jabalpur

• The age limit for vehicle is under the purview of the Central government (under section 59 of Central Motor Vehicle Act, 1988).</td><td>01 Year

01 Year</td></tr>
<tr><td></td><td></td><td>2- Introduction to cleaner fuels (CNG/LPG) for vehicles.</td><td>Long</td><td>Transport department& Oil Companies/ JMC JCTSL Jabalpur city transport services ltd.</td><td>• 2 LPG filling stations- 01 of IOCL and 01 of HPCL is installed in the city. There is no CNG pipe line the town.
• There are total 116 nos Diesel based city buses operational in the city. Which cannot be converted into CNG due to Non-Availability of CNG stations in the city but these buses' will be disowned as their life is about to</td><td>Introduction of cleaner fuels (LNG/CNG/LPG) for Vehicles.
1. Establishment of 5 nos CNG / LPG stations

2. At least 50% of the city buses proposed to be converted into CNG. Diesel based buses are proposed to be phased out and</td><td>05 years

05 years</td></tr>
</table>

				end. JMC now acquiring 200 Nos BS VI technology based buses this year via Central/ State grant & 50 Nos electric buses is approved from state government. After the availability of CNG stations, JMC propose to Convert all the buses into CNG. • 31 Installation of Charging Point at various location (24 by NTPC & 7 by REIL) are Proposed. • RTO has already stopped giving permits to diesel based Auto Rickshaw & approx 320 auto Rickshaw have been already converted into LPG. Conversion into LPG/CNG is in process. • There are approx 1000 Nos E-Rickshaw available in the city. • Govt of M.P. Transport Dept. has given incentive in motor Vehicle taxes act to promote Electric/CNG/LPG based Cars	acquire Electric buses. 3. 31 nos Charging Point Stations need to be established. 4. All diesel based Auto Rickshaw shall be converted into CNG/LPG/E-Rickshaw. 5. JMC proposed to introduce 500 E-Rickshaw every year. 6. Only Electric & CNG/LPG based rickshaw shall be allowed to run in the city. 7. CNG supply Pipe line need to be laid to connect Jabalpur city.	02 year 02 years 05 Year 5 years
	3- Regular checking of vehicular emission and issue of	Short Regular activity	Transport department& RTO	➢ It is regular activity & being done by RTO ➢ Also the joint vehicular monitoring by RTO/Traffic	1. It is proposed to open PUC centers interlinked to the central system of RTO department.	12 months

	Pollution Under Control Certificate (PUC)			Police & Jabalpur Pollution Control board is done regularly ➢ As per information received from RTO there are 34 PUC Centers are registered in city. PCB in coordination with traffic police is conducting regular PUC camps at various locations of the city. MPPCB Jabalpur has been monitoring vehicular emission of 150 vehicles per month for awareness. ➢ Number of Mobile PUC :- 28 ➢ Number of PUC at petrol pump 03 (out of 149 petrol pump) ➢ Number of PUC at service station 03 (out of 23 service station) ➢ RTO Jabalpur has instructed all the Petrol pumps for installation of PUC centers.	2. PUC Instruments to be calibrated once in six months. 3. PUC certificate of vehicle should be checked regularly and vehicle not having PUC certificate should be panelized.	Regular Activity Regular Activity
	4. Good traffic management including redirection of traffic movement to avoid	Long Regularly	Traffic Police/ Smart City Project/ Jabalpur Municipal Corporation, &	1. Integrated traffic Management System comprising cameras and control has been set up by Smart City Project Jabalpur. 2. E-Challan is generated via ICCC for violating the traffic rules automatically	➢ Installment of RLVD system in prominent squares of the city is proposed. ➢ Centrally controlled message to public through LED display in Prominent squares is proposed	20 Months 06 Months

	.		Public Works Department / JMC	3. The Major Junctions have been identified and they are 25 in numbers. Integrated Traffic Monitoring System is installed at 12 Junctions. 4. 4 nos Cameras at entry and exit point of the city are installed 5. Automatic Number Plate Recognition system is installed at 04 different locations 6. Speed Violation Detection System is installed at 05 different locations of the city. 7. ITCS system is installed at 07 different locations of the city. 8. Good traffic management for 169 buses running within the city 9. Cycling track of about 05 Km. has been developed from Katanga To Gwarighat 10. Left Turns are already developed at every squares. 11. Footpath of about 30 Km. has been developed in the city. 12. Non-Motorized Transport (NMT) System of 2.5 Km. developed from Madan Mahal to Jyoti Talkies. 13. Restrict commercial vehicle	➢ Smart Signaling system in the city is proposed ➢ ICCC System ➢ Widening of left turns are proposed ➢ A fly over of 5.9 Km. has been proposed from Damohnaka to Madan Mahal (3 years).	12 Months Already Existed 02 Year under construction

				entering city by having ring road 14. Ring Road approx 70 Km is operational. 15. Entry of heavy vehicles in the city is prohibited from 6 AM to 9 PM as per instruction given by Collector Jabalpur in the meeting of Sadak Surksha Samiti		
	5. Ban on registration of diesel driven auto rickshaw/ Tempo.	Short	Transport Department / JCTCL	Already implemented As per information received from RTO Jabalpur registration/permit for new autho rikshaw are not being done as per direction of Hon'ble Hight Court Jabalpur in WP 8/2013. Operation of E-Rikchw is being promoted. More than 1000Nos E- Rickshaw is operational in the city	* Compulsory conversion Diesel based Auto-Rickshaw into LPG/CNG based is proposed.	2 years
	6-Promotion and operationalization of E-rickshaw	Long term	Transport department RTO	450 kw solar systems installed at 9 stations for its charging. Each having a capacity of 15 e-rickshaws. About 1000 number of e-rickshaw are playing on the road.	• Promotion for use of solar energy & Battery operated e-rickshaw. • JMC proposed to introduce 500 E-Rickshaw every year.	Regular Activity 05 Years
	7-Development of Multilayer parking.	Long term	Jabalpur Municipal Corporation &Building	Two multi layer parking are functional, one at Civic center and another at Manas Bhawan in main commercial areas and need to be	• Further 01 no Multilayer parking is proposed for approx 200 car capacity as per requirement.	30 Months

			Construction Department	developed in the other locations.		
	8- Retrofitting of particulate filters in diesel driven vehicle.	Mid	Transport department (RTO)		➢ After finalization of the policy the department shall implement on ground. ➢ BS VI vehicles should be promoted.	12 Months
	9- Checking of fuel adulteration.	Short regular activity	Dist. Administration & Oil Companies	Regular checking of fuel adulteration & random monitoring of fuel quality are done by the Food & Civil Supplies Department. .	• It is proposed to do regular & random checking	Regular Activity
	10- Monitoring on vehicle fitness	Short regular activity	Transport department& Traffic police	Total 13588 vehicle fitness certificates have been issued in year 2019-20.	• It is proposed to Regularly compiled by RTO.	Long Term Continuous Process
	11. Periodic calibration test of vehicular emission monitoring instrument	Short regular activity	Transport department& MPPCB	Periodic calibration of instruments and inspection of PUC center done by MPPCB.	• Periodic calibration of instruments and inspection of PUC must be done by concern department.	Long Term Continuous Process
B	**Road Dust**	1- Regular cleaning of road dust.	Short Regular Activities	Jabalpur Municipal Corporation	1- The entire city is being cleaned up on a manually twice every day in market areas and once in a day in residential area. (500 km per day market and residential area is cover) 2- Municipal Corporation is	• 05 Nos Truck Mounted (for Roads) & 05 Nos Premium Truck Mounted (For Footpath) sweeping Machine is proposed to be Purchased. • 03 number of (mist/fog) cannon 30mtr throw & 02 Nos 100 mtr	06 Months 01 year

				operating two road sweeper machines to clean road dust on the major roads of city. 3- An approximate 40 Km road is being cleaned by two sweeper machine per day.	throw machine is proposed • Smart Road Project in Wright town, Gol Bazar, Napier Town and Ghamapur area are proposed to be constructed to assure none kind of digging required on this this for any kind of work for at least next 10 years.	03 year
	2- Water spraying on road through tankers	Long Regular Activity	Jabalpur Municipal Corporation	1- Water spraying is being done at least 5 Km a week by tankers 2- Wet cleaning is covered in the mechanical sweeping. 3- Footpath and Road dividers are being washed daily by Water tankers	• Purchasing of 02 Nos Truck Mounted Sprinklers / Jet Spray / Road Washing machine is proposed	06 Months
	3- Construction of pucca pavement along the roads. .	Long Regular Activity	Municipal Corporation & Road Construction Department	• Major roads & minor roads in the city are 2200 km. More than 60 % roads are Constructed. Approx 20 KM of Major roads are identified which needs to repair and reconstructed. Only 8 Km work is being proposed under this grant and rest are being done by JMC own sources. • Pavement along the 103 km roads has been done	➢ Major Roads Shall be constructed / Repaired. ➢ Approximate 150 km Pucca pavement along the road side is proposed at least at major / main roads. 25 Km – 1st Year 30 Km – 2nd Year 30 Km – 3rd Year 30 Km – 4th Year 35 Km – 5th Year ➢ Construction / Repair of approximate 15 km roads are	30 months 05 years 02 years

					proposed. 05 Km – 1st Year 10 Km – 2nd Year	
	4- Tree plantation along the roads.	Long Regular Activity	Jabalpur Municipal Corporation	**Approximate 3,50,000.00** number trees are planted in the city..	➢ Total area of the plantation other than garden in 31.0 sq.km. shall be carried out within one year ➢ Approx 100000 nos 09-10 feet high & 03-04 year old avenue trees at different locations are proposed with 02 years of Monitoring-Caring & Maintenance. 15000 Nos – 6 Months 25000 Nos – 6 Months 35000 Nos – 6 Months 35000 Nos – 6 Months	02 Year 02 years
	5- Development of green belt in open areas, gardens, park/ community places, Schools &Housing societies.	Long Regular Activity	Municipal Corporation	1- Total 190 gardens have been developed covering around 400566 Sq.Mt. area. 2- Housing Societies &Schools are encouraged to developed green area. 3- Ecozone of about 394 Hact. is proposed at Madan Mahal hills costing about 40 Crore. The cost will be borne by the Smart City Project.	• Development of green belt in open areas, gardens, park/ community places, Schools & Housing societies to be proposed. • 5 nos garden are proposed under AMRUT Yojna • 60 Nos gardens/Parks are proposed to be developed.	3 years 1 years 3 years

				4- The present progress is as given below :- 1-20 acer plantations has been carried out. 2- 100 % encroachment has been removed		
	6- Introduction of water fountains at major traffic intersection/ Golambar/ circle	Long Term	Jabalpur Municipal Corporation	07 fountains have already been developed at various commercial areas and they are operational in the city.	• 25 nos water fountains are proposed at identified locations of the city at major traffic intersection, parks & ponds. 05 – 1st Year 10 – 2nd Year 10 – 3rd Year	03 Years
C	**Construction Activities**	1- Covering of construction site	Regular Activity	Jabalpur Municipal Corporation & Building Construction Deptt.	Jabalpur Municipal Corporation has issued administrative orders in this regard. Building permission section has inserted a condition in this regard and the same is being monitored by them. JMC has made by Law regarding above JMC conducts regular checks to comply the conditions	• Covering of construction site are Proposed • There are over 50 construction site in the city. Which are proposed to be covered by Project Proponent (PP).	Regular Activity
		2- Transportation of construction material like sand, soil, stone chips etc. in covered system.	Regular Activity	Transportation Department, District administration & Traffic Police	• Jabalpur Municipal Corporation has issued permanent administrative orders in this regard. Provision of penalty has been laid for violation of the	• Transportation of construction material like sand, soil, stone chips etc. in covered system. • C&D rules and facility needs to be improved. • 4 nos C&D Waste collection Centre need to established	12 months 02 Years

				orders. • JMC already installed a 50 MT C&D waste treatment & recycling plants. • C&D waste collection & facility to collect the waste on payment basis is being planned and soon will be executed.	around the city	
	3- Restriction on Storage of construction material along the road	Short regular activity	Jabalpur Municipal Corporation	• Being complied and Heavy Penalty is being Laid on violations.	• Restriction on Storage of construction material along the road must be penalized.	Regular Activity
D	**Biomass and garbage burning**	1- Restriction on open burning of Municipal solid waste, Bio mass, Plastic, horticulture waste etc.	Mid Term Regular Activity,	Jabalpur Municipal Corporation	1- Waste to energy plant (11.5 MW) using MSW has already been installed at Kathonda Jabalpur. 2- MSW is being collected from door-to-door. Covered vehicles have been deployed for transportation of the MSW. 3- For disposal of garden waste construction of compost pits in societies, The work in	➢ Biomass based briquettes to be encouraged in place of wood. ➢ Bio-mining of Legacy waste as per CPCB direction for old MSW dump site at Ranital and Complete Removal & Treatment of Legacy waste. ➢ For disposal of garden waste construction of compost pits in societies is proposed. The work in tendering process,	01 year 01 year 01 year

				tendering process. 4- Heavy Fines already imposed for burning garbage & crop residue. 5- The Gwarighat & Baldevbag composting bin has operational 6- 01 gas based crematoria is operational at Chohani, Samshanghat graha Jabalpur & 01 No is proposed	after tendering time will be decided. ➢ Although there is negligible cultivated land so the crop residue burning is not a problem for the city. The city has a functional Waste To Energy Plant. As the Crop Residue has a good calorific value hence it is proposed that the Crop Residue will be purchased and collected for use in the waste to energy plant to generate the electricity.	02 year
	2- Immediate lifting of solid waste generated from de-silting and cleaning of municipal drains for its disposal	Long Regular activity	Jabalpur Municipal Corporation	Vehicles have been deployed for lifting of silt and solid waste being generated from the open drains. Approximate 12 vehicles has been deployed for lifting of de silting of solid waste being generated from open drains of city.	• Immediate lifting of solid waste generated from de-silting and cleaning of municipal drains for its disposal and treatment.	Regular activity
	3- Transportation of municipal solid waste,	Short Regular activity	Jabalpur Municipal Corporation	An order has been issued by Jabalpur municipal corporation for disposal of C & D Waste as per	• Transportation of municipal solid waste, construction material and debris in covered system is	Regular activity

	construction material and debris in covered system			the provisions of the rules with provisions of fee/ penalty. More than 350 number of penalty has been imposed in last 06 months. 50MT capacity C&D waste Treatment plant is already operational in the City at Kathonda.	proposed. • 100 MT Capacity C&D waste treatment plant is proposed to be constructed	18 Months
	4- Ensuring promotion and use of cleaner fuel for commercial purpose like local Dhaba/ eateries.	Long	District Administrations, & Oil companies	LPG is being promoted for use in the eateries, restaurants & domestic purposes of the city, Under PMUY, BPCL has released LPG 78,194 Connections, IOC-10,778 connections and HPC 38646 Connections have been provided to weaker sections in the city.	• Ensuring promotion and use of cleaner fuel for commercial purpose like local Dhaba/ eateries.	Regular activity
E	**Industries** 1- Ensuring installation and operation of air pollution control devices in industries	Mid Regular activity	MPPCB	15 Air polluting Industries have been identified within Jabalpur city (JMC Area). Only 09 Industries have adequate APCD.	• 06 industries proposed to upgrade in Air Pollution Control Facilities like cyclone, bag filter, dust collector, and use of cleaner fuel etc.	01 year
	2- Ensuring emission standards in industries	Short Regular activity	MPPCB	Being complied	• Ensuring emission standards in industries is proposed to be done by MPPCB Lab	Continuous Process
F	**Strengthening of** 1- Installation of CAAQMS / AQMS	Mid Regular	MPPCB& JMC	• Presently ambient Air Quality is being monitored at 2 locations in the city limit through 01	• 01 Nos CAAQMS Station is proposed by MPPCB which might be ready in next 01 Year.	01 Year

	AAQ Monitoring				manual station and 01 CAAQMS station. The daily monitoring results is being displayed on public domains of MPPCB website and on the LED screens located at Malviya Chowk & railway station Jabalpur.	• Additional 03 nos CAAQMS and 02 Manual Stations are proposed to be established. 1st Year – 01 nos CAAQMS & 01 nos Manual 2nd Year – 02 nos CAAQMS & 01 nos Manual	02 Year
		2- Source apportionment and carrying capacity study.	Mid Term	MPPCB / JMC	The Air Quality Index of Jabalpur City is found Satisfactory to Moderately.	• The source apportionment study of Jabalpur city is proposed to be done by institute of repute.	02 Years
G	**Public Awareness**	1- Issue of advisory to public for prevention and control of air pollution	Short Regular Activity	MPPCB & District Administration	MPPCB has developed the mobile app Env-Alert to address the public complain regarding pollution. Advertising & other Public awareness program is being organized already	• District Administrations and MPPCB issues the advisory on various occasions	Continuous Process
		2- Involvement of School, other academic institution and NGO in awareness program.	Mid Regular Activity	MPPCB JMC	MPPCB & JMC are organizing awareness programs for awareness of general public.	• It is proposed to Involve Schools, other academic institutions and NGO in awareness program	Regular Activity
H	**Other**	1- Compliance of guidelines on DG set and	Short Regular Activity	Jabalpur and Municipal Corporation	1-There is 24 hours power supply in the city the hence use of DG is negligible.	• Compliance of guidelines on DG set and action against violation	Regular Activity

	action against violation			2-Only DG sets conforming Environmental Norms & guidelines are permitted for use.		
	2- Help line to oversee non-compliances on aforesaid issue	Short Regular Activity	Jabalpur Municipal Corporation	Jabalpur Municipal Corporation Helpline number is as under 0761-4023229, 4023228, 4013603 And E-Mail commjabalpur@mpurbon.gov.in (displayed in the web-site)	• Separate Implementation cell at ULB Level is proposed to be established to overview the complains regarding air quality and its compliances.	1 month
	3- Crematoria	Mid Regular Activity	Jabalpur Municipal Corporation	01 gas based crematoria is operational at Chohani, Samshanghat graha Jabalpur & 1 Nos is Proposed.	• Biomass based briquettes to be encouraged in place of wood. • 1 no gas based crematoria is Proposed.	10 Months

FINANCIAL OUTLAY

" PROPOSED WORK TO REDUCE THE AIR POLLUTION IN JABALPUR CITY & SOURCE OF FUNDING"

S. No.	Item Description	Quantity	Unit	Rate per Unit (Rs.)	Amount (Rs.) (C*E)	GST as per Rule (12%/18 %) (Rs.)	Gross Amount Inclusive GST (Rs.) (f+G)	Source of Funding	Expected Required Execution / Aquiring Machine Time
A	B	C	D	E	F	G	H	I	J
1	Public Awareness Programme & Advertisement	1	LumpSum	2500000	2500000	-	**2500000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**Regular Activity**
2	Construction of Approximate 17 Km of smart road i/c under ground electrification, installation of transformers, street light, under ground cabling, drainage system, under ground sewer, development of footpaths, landscaping etc complete	1	Gross Work	2000000000	2000000000	Including GST	**2000000000**	**Jabalpur Smart City Project, Under Jabalpur Municipal Corporation**	**05 Year**
3	Construction / Repair of 15 KM identified roads in the city	1	Gross Work	12000000	12000000	1440000	**13440000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 Year**

4	Mist/Fog Cannon machine to attack airborne dust of 25-30 mtr throw distance LCV mountedwith 03kl water storage tank	3	Nos	3690000	11070000	1992600	**13062600**	**Under 15th Finance Base Grant to Improve AQI of the City**	**1 year**
5	Mist/Fog Cannon machine to attack airborne dust of 90-100 mtr throw distance Truck mounted with 12kl water storage tank	2	Nos	6300000	12600000	2268000	**14868000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**1 year**
6	Self Propelled Road Sweeping Machine (Medium) BS-VI Vehicle Emission Complaince	1	Nos	21000000	21000000	Including GST	**21000000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**06 months**
7	Truck mounted Road sweeping machine of 6.5 CUM Capacity	4	Nos	6350400	25401600	Including GST	**25401600**	**Under 15th Finance Base Grant to Improve AQI of the City**	**06 months**
8	Truck mounted sweeping machine Machine (small) For Footpath Cleaning	5	Nos	2871000	14355000	Including GST	**14355000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**06 months**
9	Truck Mounted sprinklers/ jet spray washing /Wetting system for Road washing.	2	Nos	4740000	9480000	1706400	**11186400**	**Under 15th Finance Base Grant to Improve AQI of the City**	**06 months**
10	Construction, Installation & commissioning of water fountain at different Locations / junctions of the city. (Width/ Dia not less than 15 feet)	10	Nos	3875000	58125000	10462500	**68587500**	**Under 15th Finance Base Grant to Improve AQI of the City**	**03 Year**

11	Construction, Installation & commissioning of water fountain at different Locations / junctions of the city. (Width/ Dia not less than 25 feet)	5	Nos	4602000	46020000	8283600	**54303600**	**Under 15th Finance Base Grant to Improve AQI of the City**	
12	Construction, Installation & commissioning of water fountain along the roads at different Locations / junctions of the city. (wall Width not less than 12 feet)	10	Nos	3540000	17700000	3186000	**20886000**	**Under 15th Finance Base Grant to Improve AQI of the City**	
13	wet & Dry garbage suction machine / litter picker LCV mounted not less than 1500 litre storage capacity	16	Nos	3191813	102138016	Including GST	**102138016**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 Year**
14	50 cum capacity Treatment and recycling plant of solid waste generated from de-silting and cleaning of drains at different locations of the city	4	Nos	17500000	140000000	Including GST	**140000000**	**Under 15th Finance Base Grant to Improve AQI of the City & Jabalpur Municipal Corporation's own Fund**	**05 Year**
15	Construction of approx 150 km of footpath/ Road side Pavements with tree plantation along the road, landscaping, lighting, underground drainage system etc	1	Gross Work	737876250	737876250	88545149.96	**826421400**	**Under 15th Finance Base Grant to Improve AQI of the City & Jabalpur Municipal Corporation's own Fund**	**05 Years**

16	100 nos Tipper to collect door to door Municipal Solid waste	1	Gross Work	70000000	70000000	Including GST	**70000000**	**Proposed under Jabalpur Municipal Corporation**	**02 Year**
17	100 MT capacity of C&D waste treatment & Recycling Plant	1	Gross Work	NIL			**0**	**Under PPP Mode**	**1.5 year**
18	Construction of 65 nos Gardens/ Parks at different locations of the city	1	Gross Work	160000000	160000000	Including GST	**160000000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 Year**
19	Widening of Left Turns at 12 nos heavy traffic Junctions	1	Gross Work	3000000	3000000	Including GST	**3000000**	**Under Jabalpur Municipal Corporation**	**01 Year**
20	Installation of RLVD System , Smart Signaling System and LED display in 13 Prominent squares	1	Gross Work	220000000	220000000	Including GST	**220000000**	**Jabalpur Smart City Project, Under Jabalpur Municipal Corporation**	**02 Year**
21	31 Nos Charging Point Station of E_rickshaw	1	Nos	NIL			**0**	**24 Nos by NTPC & 07 Nos By REIL**	**01 Year**
22	Procurement of 200 nos BS-VI City Buses & 50 Nos Electric buses for Public Transportation	1	Nos	1760000000	1760000000	Including GST	**1760000000**	**156 crores from State & Central Grant & 20 crores by JMC**	**02 Year**
23	Grass Carpeting on dividers	26636	SQM	215	5726740	687208.8	**6413949**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 Year**
24	LPG based Crematorium/ Incinerattors for human Dead Boddies	1	Gross Work	6521888	6521888	Including GST	**6521888**	**Under 15th Finance Base Grant to Improve AQI of the City**	**10 months**

25	Ground + 04 floors multi level car parking of 200 ECS capacity	1	Nos	150000000	150000000	Including GST	**150000000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**2.5 year**
26	Manual based AQMS system at different locations of the city	2	Nos	1500000	3000000	540000	**3540000**	**Under 15th Finance Base Grant to Improve AQI of the City**	**01 year**
27	Installation of Continuous Air & Ambient Quality Monitoring System (CAAQMS) in Collectorate Premises , near High Court. (i.c. 05 years of O & M)	3	Nos	27303860	81911580	14744084.4	**96655664**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 Year**
28	Plantation of 100000/- (one Lakh) different varieties of approx 9-10 feet high and 03-04 year old avenue trees at different location of Jabalpur i/c 2 years of Monitoring, Caring & Maintenance	100000	Nos	463.55	46355000	5562600	**51917600**	**Under 15th Finance Base Grant to Improve AQI of the City**	**02 years**
29	Excess Burdon on JMC such as Fuel Consumption and O&M of road sweeping, fogging, garbage sucker and road washing machines.	1	LumpSum	60000000	60000000	-	**60000000**	**Under 15th Finance Base Grant to Improve AQI of the City & Jabalpur Municipal Corporation's own Fund**	**05 years**
					Total Amount inclusive GST (Rs.)		**5,916,199,217**	-	

10. DISTRICT LEVEL AIR QUALITY MANAGEMENT CELL & PROJECT IMPLEMENTING COMMITTEE AT ULB LEVEL

कार्यालय : 0761-2679000
ई.पी.बी.एक्स. : 0761-2970171
फैक्स : 0761-2679617
ई-मेल : commjabalpur@mp.gov.in

कार्यालय कमिश्नर
जबलपुर संभाग, जबलपुर

क्रमांक 518 जबलपुर दिनांक 23/07/2020

कार्यालय आदेश

केन्द्रीय प्रदूषण नियंत्रण बोर्ड, नई दिल्ली द्वारा वायु अधिनियम की धारा 18(1) (बी) के अंतर्गत जबलपुर शहर को नॉन अटेनमेंट सिटी चिन्हित करते हुये वायु अधिनियम, 1981 की धारा 18(1) (बी) के अंतर्गत वायु प्रदूषण नियंत्रण हेतु एक्शन प्लान लागू करने संबंधी निर्देश दिनांक 09/07/2020 को जारी किये गये है। एक्शन प्लान में सम्मिलित कार्यों की प्रगति की समीक्षा हेतु निम्नानुसार समिति का गठन किया जाता है :-

1. संभाग आयुक्त, जबलपुर	अध्यक्ष
2. अतिरिक्त पुलिस महानिदेशक/उप पुलिस महानिरीक्षक, जबलपुर	सदस्य
3. कलेक्टर जिला जबलपुर	सदस्य
4. आयुक्त, नगर निगम जबलपुर	सदस्य
5. मुख्य कार्यपालन अधिकारी, जबलपुर विकास प्राधिकरण जबलपुर	सदस्य
6. मुख्य कार्यपालन अधिकारी, जबलपुर स्मार्ट सिटी प्रोजेक्ट जबलपुर	सदस्य
7. प्रबंध संचालक, ए.के.व्ही.एन. जबलपुर	सदस्य
8. क्षेत्रीय परिवहन अधिकारी, जबलपुर	सदस्य
9. जिला खाद्य अधिकारी, जबलपुर	सदस्य
10. मुख्य अभियंता लोक निर्माण विभाग, जबलपुर	सदस्य
11. महाप्रबंधक, जिला व्यापार एवं उद्योग केन्द्र जबलपुर	सदस्य
12. संयुक्त संचालक, ग्राम तथा नगर निवे ा, जबलपुर	सदस्य
13. मुख्य चिकित्सा एवं स्वास्थ्य अधिकारी, जबलपुर	सदस्य
14. संयुक्त संचालक, किसान कल्याण तथा कृषि विकास, जबलपुर	सदस्य
15. टेरेटरी मैनेजर, (ए.पी.जी.) इंडियन ऑयल कार्पोरेशन जबलपुर	सदस्य
16. टेरेटरी मैनेजर, (ए.पी.जी.) भारत पेट्रोलियम, जबलपुर	सदस्य
17. क्षेत्रीय अधिकारी, म0प्र0 प्रदूषण नियंत्रण बोर्ड, जबलपुर	संयोजक

आयुक्त
जबलपुर संभाग जबलपुर
जिला जबलपुर (म0प्र0)

पृ0कमांक/ 519 /क्षे.का/प्रनिबो/2020, जबलपुर,दिनांक- 23/7/20
प्रतिलिपि :-

1. अतिरिक्त पुलिस महानिदेशक/उप पुलिस महानिरीक्षक, जबलपुर की ओर सूचनार्थ प्रेषित।
2. कलेक्टर, जिला जबलपुर की ओर सूचनार्थ प्रेषित।
3. आयुक्त, नगर निगम, जबलपुर की ओर सूचनार्थ प्रेषित।
4. मुख्य कार्यपालन अधिकारी, जबलपुर विकास प्राधिकरण, जबलपुर की ओर सूचनार्थ प्रेषित।
5. मुख्य कार्यपालन अधिकारी, जबलपुर स्मार्ट सिटी प्रोजेक्ट, जबलपुर की ओर सूचनार्थ प्रेषित।
6. प्रबंध संचालक, ए.के.व्ही.एन. जबलपुर की ओर सूचनार्थ प्रेषित।
7. क्षेत्रीय परिवहन अधिकारी, जबलपुर की ओर सूचनार्थ प्रेषित।
8. जिला खाद्य अधिकारी, जबलपुर की ओर सूचनार्थ प्रेषित।
9. मुख्य अभियंता लोक निर्माण विभाग, जबलपुर की ओर सूचनार्थ प्रेषित।
10. महाप्रबंधक, जिला व्यापार एवं उद्योग केन्द्र जबलपुर की ओर सूचनार्थ प्रेषित।
11. संयुक्त संचालक, ग्राम तथा नगर निवे. I, जबलपुर की ओर सूचनार्थ प्रेषित।
12. मुख्य चिकित्सा एवं स्वास्थ्य अधिकारी, जबलपुर की ओर सूचनार्थ प्रेषित।
13. संयुक्त संचालक, किसान कल्याण तथा कृषि विकास जबलपुर की ओर सूचनार्थ प्रेषित।
14. टेरेटरी मैनेजर, (ए.पी.जी.) इंडियन ऑयल कार्पोरेशन जबलपुर की ओर सूचनार्थ प्रेषित।
15. टेरेटरी मैनेजर, (ए.पी.जी.) भारत पेट्रोलियम, जबलपुर की ओर सूचनार्थ प्रेषित।
16. क्षेत्रीय अधिकारी, म0प्र0 प्रदूषण नियंत्रण बोर्ड, जबलपुर की ओर सूचनार्थ प्रेषित।

आयुक्त
जबलपुर संभाग जबलपुर
जिला जबलपुर (म0प्र0)

कार्यालय नगर पालिक निगम जबलपुर

मानस भवन बिल्डिंग, राईट टाउन, जबलपुर - 482002

पृ. क्र./Air Po/2020-21/178 — जबलपुर दिनॉक 03/03/2021

आदेश

केंद्रीय प्रदूषण नियंत्रण बोर्ड, दिल्ली द्वारा वायु अधिनियम की धारा- 18(1) (बी) के अंतर्गत जबलपुर शहर को नॉन अटेन्मेंट सिटी चिन्हित किया गया है। जिसके अंतर्गत शहर की वायु गुणवत्ता नियंत्रण एवं वायु प्रदूषण को कम करने हेतु 15वें वित्त आयोग की अनुसंशानुसार जबलपुर शहर के एक्शन प्लान के अनुसार विभिन्न कार्यों के क्रियान्वयन एवं वायु गुणवत्ता नियंत्रण हेतु निम्नानुसार City Level Implementation Committee का गठन किया जाता है:-

क्र	अधिकारी का नाम	पद
1	श्री परमेश जलोटे – अपर आयुक्त	अध्यक्ष
2	श्री जी.एस. मरावी – कार्यपालन यंत्री	सदस्य
3	श्री नवीन लोनारे – कार्यपालन यंत्री	सदस्य
4	श्री भूपेन्द्र सिंह – स्वास्थ अधिकारी	सदस्य
5	श्री आदित्य शुक्ला – उद्यान अधिकारी	सदस्य
6	श्रीमति एकता अग्रवाल – सहायक आयुक्त	सदस्य
7	श्री अभिषेक किशोर शिवहरे – सहायक यंत्री सिविल	सदस्य
8	श्री अंकुर सिंह नाग – उपयंत्री इले	सदस्य
9	श्री प्रदीप मरावी – उपयंत्री सिविल	सदस्य

उक्त समिति द्वारा भारत सरकार केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा जारी की गई गाइडलाइनों/मापदण्डों अनुसार कार्यवाही की जावेगी।

(संदीप जी.आर.)
आयुक्त
नगर निगम जबलपुर

o/c

पृ. क्र./Air Po/2020-21/178 — जबलपुर दिनॉक 03/03/2021

प्रतिलिपि.

1. प्रशासक महोदय, नगर पालिक निगम जबलपुर की ओर सूचनार्थ।
2. क्षेत्रीय अधिकारी, प्रदूषण नियंत्रण बोर्ड, जबलपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु।
3. संबंधित श्री..नगर पालिक निगम जबलपुर की ओर सूचनार्थ एवं उपरोक्तानुसार आवश्यक कार्यवाही/पालनार्थ प्रेषित।

आयुक्त
नगर निगम जबलपुर

o/c

11. EMERGENCY RESPONSE SYSTEM FOR JABALPUR, MADHYA PRADESH.

Emergency Response System Plan has been prepared for implementation under different Air Quality Index (AQI) categories namely Moderate, Poor, Very Poor, and Severe as per National Air Quality Index. Ministry of Environment, Forests & Climate Change has notified for implementation of Emergency Response System Plan through Pollution Control Board, Jabalpur Authority.

Severe : (ambient $PM_{2.5}$or PM_{10}concentration value is between 401µg/m^3or 500 µg/m^3 respectively)	**Agency responsible/Implementing Agency**
Hot Mix plants, Stone Crushers	Regional Officer Pollution Control Committee, State Pollution Control Boards of Madhya Pradesh
	Superintendent of Police and Deputy Commissioner of respective districts
Intensify public transport services. Introduce differential rates to encourage off-peaktravel.	Regional Transport Officer, Jabalpur
	CEO Jabalpur City Transport Services Ltd. / JMC
Increase frequency of mechanized cleaning of road and sprinkling of water on roads. Identify road stretches with high dust generation.	All road owning agencies including Municipal Corporations Jabalpur, Public Works Departments and National Highway Authority of India
Very Poor (ambient $PM_{2.5}$or PM_{10}concentration value is between 301µg/m^3or 400 µg/m^3 respectively)	**Agency responsible/Implementing Agency**
Stop use of diesel generator sets	Regional Officer Pollution Control Committee, State Pollution Control Boards of Madhya Pradesh & Jabalpur Municipal Corporation
Enhance parking fee by 3-4 times	Municipal Commissioner
Increase bus and metro services by augmenting contract buses and increasing frequency of service	Principal Secretary, Department of Transport of Madhya Pradesh
	Jabalpur Transport Corporation
	CEO, Jabalpur Transport CELL, JMC
Stop use of coal/firewood in hotels and open eateries	Jabalpur Municipal Corporation
Residential Welfare Associations and individual house owners to provide electric heaters during winter to security staff to avoid open burning by them	Resident Welfare Associations

Alert in newspapers/TV/radio to advise people with respiratory and cardiac patients to avoid polluted areas and restrict outdoormovement.	District Management Cell & City Implementation Committee, ULB Level
Poor(ambient $PM_{2.5}$ or PM_{10} concentration value is between 201 µg/m^3 or 300 µg/m^3 respectively)	**Agency responsible/Implementing Agency**
Stringently enforce/stop garbage burning in	Jabalpur Municipal Commissioner
landfills and other places and impose heavy fines on person responsible	Jabalpur Municipal corporation
Close/stringently enforce all pollution control regulations in brick kilns and industries	Regional Officer &State Pollution Control Boards
Moderate (ambient $PM_{2.5}$ or PM_{10} concentration value is between 101 µg/m^3 or 200 µg/m^3 respectively)	**Agency responsible/Implementing Agency**
Stringently enforce pollution control in thermal power plants through PCB monitoring	Plant in-charge of power plants, Industries, and Jabalpur Pollution Control Committee and State Pollution Control Boards of Madhya Pradesh
Do periodic mechanized sweeping on roads with heavy traffic and water sprinkling also on unpaved roads every two days	Jabalpur Municipal Corporation
	Traffic Police of Jabalpur to identify roads with heavy traffic and provide information to respective Zonal Officer of Municipal Corporation
	District Level Management Cell & ULB Committee identify unpaved roads with heavy traffic and provide information to AQI Cell President.
Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or heavyfine.	Transport Department and Traffic Police of Jabalpur
Strict vigilance and enforcement of PUC norms	
Stringently enforce rules for dust control in construction activities and close non-compliant sites	Commissioner Municipal Corporation and Officers in charge of Police Departments
Deploy traffic police for smooth traffic flow at identified vulnerable areas	Traffic Police
Strictly enforce Supreme Court order on diversion of non-destined truck traffic and ensure only trucks registered not more than 15 years are allowed entry into City	Municipal Corporation Jabalpur
	Traffic Police

Strictly enforce Supreme Court ban on firecrackers	Chief Controller of Explosives
	Petroleum and Explosive Safety Organizations (PESO)
	Commissioner of Officer in charge of licensing in the police departments of Jabalpur Division.
Information dissemination Social media, mobile Apps should be used to inform people about the pollution levels, contact details of control room, enable them to report polluting activities/sources to the concerned authorities, and actions that will be taken by government based on the level of pollution.	District Level Management Cell, Implementation Committee ULB Level, Pollution Control Committee, State Pollution Control Boards of Madhya Pradesh

12. OTHER DOCUMENTS

Awareness Program Photographs;


जनजागृति कार्यक्रम


श्रमदान कार्यक्रम

ANCHOR प्रदूषण नियंत्रण बोर्ड का आयोजन

होटल-लॉन में सिंगल यूज पॉलीथिन बैन करने के लिए किया अलर्ट

पत्रिका PLUS रिपोर्टर

जबलपुर • मप्र प्रदूषण नियंत्रण बोर्ड के तत्वाधान में मंगलवार को होटल कल्चुरी रेजीडेंसी में आयोजित कार्यशाला में होटल, रेस्टोरेंट एवं मैरिज गार्डन, लॉन संचालकों को सिंगल यूज पॉलीथिन का यूज नहीं करने के लिए सेंसिटाइज किया गया। इस मौके पर 70 कारोबारियों एवं उनके प्रतिनिधियों ने सिंगल यूज पॉलीथिन को ना कहने की बात की।

कार्यक्रम में मप्र प्रदूषण नियंत्रण बोर्ड के क्षेत्रीय अधिकारी डॉ. पुष्पेंद्र सिंह ने होटल कारोबारियों की जिज्ञासाएं शांत की। सवाल-जवाब के सेशन में उन्होंने महत्वपूर्ण जानकारियां दी। वैज्ञानिक डॉ. ने एनजीटी की गाइडलाइन बताते हुए पर्यावरण संरक्षण में सहयोग करने की बात की। क्षेत्रीय कार्यालय जबलपुर की कनिष्ठ वैज्ञानिक अंगिया एक्का ने सिंगल यूज पॉलीथिन से पर्यावरण एवं सेहत पर पड़ने वाले दुष्प्रभावों को बताया। होटल एसोसिएशन के अध्यक्ष अमरप्रीत सिंह छाबड़ा ने शहर की आबो-हवा जलवायु के लिए पॉलीथिन का यूज नहीं करने की अपील की। इस मौके पर बारात घर एवं टेंट कारोबारी मौजूद थे।

पत्रिका Wed, 23 October 2019

सिंगल यूज प्लास्टिक पर्यावरण और सेहत दोनों के लिए हानिकारक

हमारे प्रतिनिधि | जबलपुर

सिंगल यूज प्लास्टिक का इस्तेमाल किस कदर मानव जीवन और पर्यावरण के लिए नुकसानदायक है। यह बताने के लिए मप्र प्रदूषण नियंत्रण बोर्ड ने शहर के होटलों, रेस्टोरेंट्स, मैरिज गार्डनों, मैरिज लॉनों के संचालकों एवं प्रतिनिधियों के लिए एक कार्यशाला का आयोजन किया। मौजूदा सभी लोगों को क्षेत्रीय कार्यालय की कनिष्ठ वैज्ञानिक श्रीमती अमिता सक्सेना ने सिंगल यूज प्लास्टिक से पर्यावरण एवं स्वास्थ्य पर पड़ने वाले विपरीत प्रभावों की जानकारी दी एवं सिंगल यूज प्लास्टिक के विकल्पों के बारे में बोर्ड मुख्यालय द्वारा जारी गाइडलाइन के संबंध में अवगत कराया गया। वैज्ञानिक डॉ. एसके खरे ने होटलों एवं रेस्टोरेंट्स संचालकों को एनजीटी के दिशा-निर्देशों की जानकारी देकर जल व वायु सम्मति प्राप्त कर संस्थानों को नियमों के पालन सुनिश्चित करने हेतु प्रेरित किया। कार्यक्रम में डॉ. पुष्पेन्द्र सिंह क्षेत्रीय अधिकारी मप्र प्रदूषण नियंत्रण बोर्ड ने सभी के मन में उठ रही जिज्ञासाओं एवं शंकाओं का समाधान किया एवं सिंगल यूज प्लास्टिक के उपयोग को कम करते हुए वैकल्पिक रूप से पारंपरिक संसाधनों का उपयोग करने हेतु प्रेरित किया। इस दौरान लगभग 70 होटलों-रेस्टोरेंट्स के संचालक एवं जनप्रतिनिधि मौजूद रहे। पी-4

निर्णय • शहर के विभिन्न स्थानों पर स्मार्ट पोल लगाकर होगा वायु का मापन, लगेंगे एलईडी डिस्प्ले

भोपाल, इंदौर, ग्वालियर व उज्जैन के बाद अब जबलपुर 'नॉन अटेनमेंट सिटी घोषित', सीपीसीबी का निर्णय

हमारे प्रतिनिधि | जबलपुर

केन्द्रीय प्रदूषण नियंत्रण बोर्ड नई दिल्ली ने जबलपुर शहर को नॉन अटेनमेंट सिटी चिन्हित किया है। प्रदेश के भोपाल, इंदौर, ग्वालियर, उज्जैन और देवास के बाद अब शहर जबलपुर भी नॉन अटेनमेंट सिटी बन गया है। नॉन अटेनमेंट सिटी में वायु प्रदूषण की गुणवत्ता खराब मानी जाती है और यहाँ सीपीसीबी के तहत वे सारे उपाय किए जाते हैं जिससे वायु प्रदूषण पर लगातार नजर रखते हुए उसका स्तर सुधारा जा सके।

शहर नॉन अटेनमेंट सिटी घोषित होने के बाद संभागायुक्त कार्यालय में एक बैठक का आयोजन हुआ। बैठक में संभागायुक्त महेशचंद्र चौधरी ने शहर के विभिन्न स्थानों पर स्मार्ट पोल लगाकर वायु मापन एवं अन्य डाटा संकलित कर डिस्प्ले किए जाने, एलईडी डिस्प्ले बोर्ड की संख्या बढ़ाने एवं उसे स्मार्ट सिटी से लिंक करने, शहर में संचालित पीयूसी सेंटर्स को इन्टीग्रेटेड कर स्मार्ट सिटी से लिंक करने निर्देशित किया।

शहर के बाहर होंगी प्रदूषणकारी गतिविधियाँ

इसके अलावा शहर में संचालित खतरनाक व्यवसायिक, आरा मशीन, टायर स्टोरेज एवं अन्य प्रदूषणकारी गतिविधियों को रोकने की बात हुई। इस हेतु अलग से जगह चिन्हित कर उसे मास्टर प्लान में सम्मिलित किए जाने हेतु निर्देशित किया गया। नॉन अटेनमेंट सिटी के लिए नगर निगम विस्तृत प्लान तैयार कर आगे की कार्यवाही करेगा।

एमपीपीसीबी ने दिया पॉवर प्वॉइंट प्रजेन्टेशन

बैठक में एमपीपीसीबी के वैज्ञानिक पीआर देव ने नॉन अटेनमेंट सिटी के संबंध में पॉवर प्वॉइंट प्रजेन्टेशन के जरिए जानकारी दी। क्षेत्रीय अधिकारी मप्र प्रदूषण नियंत्रण बोर्ड डॉ. पीएस बुंदेला ने उनके विभाग द्वारा की जा रही कार्यवाही की विस्तृत जानकारी दी। बैठक में कलेक्टर भरत यादव, अपर आयुक्त नगर निगम रोहित सिंह, महाप्रबंधक जिला व्यापार एवं उद्योग केन्द्र देवदत्त मिश्रा, मुख्य चिकित्सा एवं स्वास्थ्य अधिकारी रत्नेश कुररिया, डॉ. एसके खरे सहित अन्य मौजूद रहे। पी-4

Thu, 06 August 2020
दैनिक भास्कर https://epaper.bhaskarhindi.com/c/54922866

जबलपुर नॉन अटेन्मेंट सिटी घोषित : वायु में धूल के कण अधिक होना संकट का विषय है।

जबलपुर : शहर में निरन्तर बढ़ता हुआ वायु प्रदूषण एक चिन्ता का विषय बनता जा रहा है। जबलपुर को हाल ही में नॉन अटेन्मेंट सिटी घोषित किया गया है। शहर में प्रदूषण कन्ट्रोल बोर्ड द्वारा एक कन्टूनियस एम्बीएन्ट एयर क्वालिटी मॉनिटरिंग सिस्टम यातायात कोतवाली के समीप लगाया गया है जिसके द्वारा शहर में वायु प्रदूषण की मॉनिटरिंग लगातार की जा रही है जिसके अनुसार शहर में एक्यूआई 100 से 200 के मध्य है। यह प्रायः वायु में धूल के कण अधिक मात्रा में उपस्थित होने के कारण है। वायु में अत्यधिक मात्रा में धूल के कण मनुष्य के स्वास से सम्बन्धित कई बिमारियों का कारण है इस प्रदूषण को नियंत्रित करने के लिए नगर निगम ने अलग–अलग स्थानों पर मशीनों द्वारा सड़क की सफाई, धुलाई, सड़क के किनारों पर पेवर लगाये जाने एवं खुले में पड़े मलबे को जब्त कर उसे फेंकने वालों पर चालानी कार्यवाही की जा रही है। ऐसे में आम नागरिकों से भी खुले में कचरा, मलबा इत्यादि न फेंकने की गुजारिश आयुक्त नगर निगम जबलपुर के द्वारा की गयी है। इस दिशा में अभी और कार्य किया जाना आवश्यक होगा। इस वायु प्रदूषण के संकट को रोकने के लिए आम जनों की भूमिका भी आवश्यक योगदान देगी।

List of Air Polluting Industry with JMC Jabalpur along with proposed Action Plan

S. No		Pollution Control Arrangements	Proposed Air Pollution Control Measures	Time target for implementation	Expenditure /Fund
1	M/s A. P. Metal Industries Plot N0. 42-I.A Richhai,JAB-Jabalpur	Bag filter Cyclone & Dust Collector	Adequate	-	-
2	M/s Bhasker Lubricants Pvt.Ltd., Unnumbered plot-I.A.Richhai,JAB-Jabalpur	LDO based	Adequate	-	-
3	M/s Calcutta Metal Industry, Shed No. 12A-I E.Adhartal,JAB-Adhartal	Bag Filter, Cyclone ,Dust Collector	Adequate	-	-
4	M/s Jabalpur MSW Pvt. Ltd, Village-Kathonda Dist-Jabalpur.	ESP & Bag Filter	Adequate	-	-
5	M/s Shri Maa Narmada Metal Industries. Plot No. 127-I.A.Richhai,JAB-Richhai	cyclone/ bag filter	Adequate	-	-
6	M/s Elite Engineers Village-Kathonda Dist-Jabalpur	Venturi scrubber, & Cyclone	Adequate	-	-
7	M/s Vehicle Factory Jabalpur	Scrubber	Adequate	-	-
8	Grey Iron Foundry Jabalpur	Bag Filter, Cyclone ,Dust Collector	Adequate	-	-
9	M/s Udaipur Beverages ltd , Industrial Area Richhai Jabalpur	Bag Filter, Cyclone ,Dust Collector	Adequate	-	-
10	M/s Jabali Paper Limited. Plot No. 73 Industrial Area Richhai Jabalpur	Cyclone	Bag Filter in Boiler	31/03/2022	To be done by PP
11	M/s Jabalpur Co-Operative Milk Jabalpur. Village-Kheri Dist-Jabalpur	Cyclone	Bag Filter in Boiler	31/03/2022	To be done by PP
12	M/s Carborundum Universal Limited, Plot No. 48, 49, 50 & 51-Industrial Estate Adhartal,Dist-Jabalpur	Pulse jet type bag filter	Scrubber/bag filter in rotary kiln	31/03/2022	To be done by PP
13	M/s Ok Food Private Limited, 86-87 Industrial Area Richhai Dist-Jabalpur	Cyclone & Dust collector	Bag Filter in Boiler	31/03/2022	To be done by PP
14	M/s Amba Grains Pvt. Ltd. Kh. No. 58 & 59 (Part), P.H. No. 76--,PAN-Panagar Dist-Jabalpur	Cyclone & Dust collector	Bag Filter in Boiler	31/03/2022	To be done by PP
15	M/s Shri Ram Silicate Industries, Shed N0. 2 &2A-I.E.Adhartal,Dist-Jabalpur	Furnace	Change in furnace, Fuel & installation adequate air pollution control measures	31/03/2022	To be done by PP

कार्यालय स्वच्छता सेल, नगर पालिक निगम, जबलपुर (म.प्र.)

क्र.स्व.से./2020/120 जबलपुर, दिनांक 21/09/2020

—: अधि सूचना :—

मेयर इन काउंसिल में पारित प्रस्ताव 28.08.2019 के अनुसार ठोस अपशिष्ट प्रबंधन नियम 2016 का उल्लंघन, निर्माण एवं विध्वंस अपशिष्ट प्रबंधन नियम 2016 का उल्लंघन करने वालों के विरुद्ध कार्यवाही निम्नानुसार की जायेगी।

क्र.	अपशिष्ट प्रबंधन के उल्लंघन की श्रेणी	अर्थदण्ड की राशि
1.	सार्वजनिक स्थानों पर किसी भी प्रकार की गंदगी फैलाकर ठोस अपशिष्ट प्रबंधन नियम 2016 का उल्लंघन।	अधिकतम रूपये 2000/—
2.	सार्वजनिक स्थानों पर या नाले/नालियों में रासायनिक अपशिष्ट या हानिकारक द्रव्य बहाना।	रूपये 1000/— (एक मुश्त)
3.	जबलपुर निगम सीमा क्षेत्र प्रतिबंधित क्षेत्रों में एक अधिक गौवंश/भैंस का पशुपालन करना, सुअर पालन करना अथवा बकरों को रखना/पालन करना। इन पशुओं का आवारा सड़कों पर छोड़कर गंदगी करना एवं अपशिष्ट प्रबंधन नियम 2016 के सफाई संबंधी प्रावधानों का उल्लंघन करना।	रूपये 1000/— (एक मुश्त)
4.	निर्माण एवं विध्वंस अपशिष्ट अथवा निर्माण सामग्री फुटपाथ एवं सड़क पर पाये जाने पर।	रूपये 1000/— (एक मुश्त) रूपये 1000/— (प्रति डम्पर परिवहन शुल्क अतिरिक्त)
5.	विभिन्न रेस्टोरेन्ट, होटल एवं अन्य खाद्य पदार्थों से संबंधित संस्थानों से जैविक अपशिष्ट अथवा किचन अपशिष्ट सीधे उस क्षेत्र की ड्रेनेज, सीवरेज अथवा स्टॉम वॉटर लाइन में डालने संबंधी उल्लंघन।	प्रथम बार पाये जाने पर 1000/— रूपये द्वितीय बार पाये जाने पर 2000/— रूपये तृतीय बार पाये जाने पर 3000/— रूपये एवं चौथी बार पाये जाने पर लाइसेंस निरस्त किए जाने की कार्यवाही नियमानुसार की जाएगी।
6.	अमानक एवं प्रतिबंधित पॉलिथीन की पन्नी/कैरी बैग आदि के माध्यम से गंदगी करना।	अधिकतम रूपये 2000/—
7.	ठोस अपशिष्ट जैसे कचरा, टायर, प्लास्टिक एवं अन्य सामग्री जलाने से होने वाली गंदगी करना।	अधिकतम रूपये 2000/—
8.	शराब की दुकान/कलारी/अहातों द्वारा गंदगी करते हुए ठोस अपशिष्ट प्रबंधन नियम 2016 का उल्लंघन करने पर।	अधिकतम रूपये 2000/—

उपरोक्त श्रेणियों से ठोस अपशिष्ट प्रबंधन नियम 2016 एवं निर्माण एवं विध्वंस अपशिष्ट प्रबंधन नियम 2016 के उल्लंघन के प्रकरणों में स्पॉट फाइन/दंडात्मक शुल्क आरोपित किया जाएगा। कुछ विशेष प्रकरणों में जैसे बड़ी मात्रा में कचरा सार्वजनिक स्थानों पर डालने वाली श्रेणी के प्रकरणों में स्वास्थ्य अधिकारी ऐसी गंभीर प्रवृत्ति के उल्लंघनों में रूपये 50,000/— तक का स्पॉट फाइन स्वयं कर सकेंगे। अत्यंत गंभीर प्रकरणों में क्षेत्रीय अधिकारी, उपायुक्त स्वास्थ्य को अवगत कराकर मौके पर मुआयना करायेंगे तथा उपायुक्त द्वारा गंभीरता के अनुसार रूपये 50,000/— से अधिक किंतु 1,00,000/— से कम तक का स्पॉट फाइन किया जावेगा।

आयुक्त
नगर पालिक निगम,
जबलपुर

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD

SPEED POST

July 9, 2020

AQM/AP/2019-20

The Member Secretary
Madhya Pradesh Pollution Control Board,
Paryavaran Parisar, E-5 Arera Colony,
Bhopal – 462016

Sub: Submission of Action plan for additional non-attainment cities.

Sir,

With reference to fund sanctioned under Fifteenth Finance Commission (FC-XV) for Million-Plus population urban agglomerations/cities. As per the direction of Chairman CPCB, concern States are requested to prepare city action plans for aforesaid city/cities.

It is requested that necessary action may be taken to ensure that plans for the Jabalpur city of your state, duly approved by Air Quality Monitoring Committee (AQMC) are submitted to CPCB within one month.

Yours faithfully,

(P. K. Gupta)
Additional Director &
Head, AQM Division

मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड
पर्यावरण परिसर, ई-5, अरेरा कालोनी, भोपाल- 462016 (म.प्र.)
Tel: 0755-2464428,2466191 E-mail-monitoringhomppcb19@gmail.com

क्रमांक 236 मुप्रनिबो / मॉनि.शाखा / 2020 भोपाल, दिनांक 21/07/20

प्रति,

क्षेत्रीय अधिकारी,
क्षेत्रीय कार्यालय,
म.प्र.प्रदूषण नियंत्रण बोर्ड,
जबलपुर (म.प्र.)।

विषय :- नॉन अटेन्टमेंट सिटी जबलपुर के एक्शन प्लान बाबत्।

सन्दर्भ :- केन्द्रीय प्रदूषण नियंत्रण बोर्ड, दिल्ली का पत्र कमांक एक्यूएम / एपी / 2019-20 दिनांक 09 / 07 / 2020

आपको विदित है कि माननीय एन.जी.टी. में प्रचलित ओए प्रकरण क. 681 / 2018 के अंतर्गत मध्यप्रदेश की 06 नॉन अटेनमेन्ट सिटी (भोपाल, इंदौर, ग्वालियर, उज्जैन, देवास एवं सागर) की परिवेशीय वायु गुणवत्ता में सुधार हेतु निर्धारित प्रारूप में तैयार एक्शन प्लान बोर्ड वेबसाइट पर अपलोड है व वर्तमान में कियान्वयन प्रगति पर है। केन्द्रीय प्रदूषण नियंत्रण बोर्ड, दिल्ली का प्राप्त पत्र कमांक एक्यूएम / एपी / 2019-20 दिनांक 09 / 07 / 2020 **संलग्नक-1** अनुसार संलग्न है।

उक्त शहरों की परिवेशीय वायु गुणवत्ता में सुधार हेतु संभागायुक्त की अध्यक्षता में गठित समिति द्वारा विभिन्न स्टेक होल्डर की सहायता से एक्शन प्लान तैयार किया गया था। आपकी सुविधा के लिए संभागायुक्त, भोपाल की अध्यक्षता में गठित समिति जिसमे क्षेत्रीय अधिकारी सयोजक रहेगे तत्संबंधी आदेश **संलग्नक-2** अनुसार संलग्न है। अपेक्षित है कि शीघ्र उक्त प्रकिया अनुरूप शीघ्र बैठक आयोजित कर निर्धारित प्रारूप ध्यान में **रखकर** एक्शन प्लान संभागायुक्त महोदय से अग्रेषित करवाया जाकर दिनांक 05 / 08 / 2020 तक अनिवार्य रूप से प्रस्तुत करे ताकि अग्र कार्यवाही की जा सके।

संलग्न -उपरोक्तानुसार.

(ए. ए. मिश्रा)
सदस्य सचिव

प्रतिलिपि :-

1. सदस्य सचिव, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, परिवेश भवन, ईस्ट अर्जुन नगर, नई दिल्ली की ओर संदर्भ परिप्रेक्ष्य में सूचनार्थ
2. संभागायुक्त, जबलपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित ।
3. कलेक्टर, जबलपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित ।

कार्यालय कलेक्टर एवं जिला दण्डाधिकारी, जबलपुर

Advisory (एडवायजरी)

क्रमांक / 8884 / एस.डब्ल्यू. / 2017 जबलपुर, दिनांक 20 नवम्बर, 2017

क्षेत्रीय अधिकारी मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड, विजयनगर, जबलपुर से प्राप्त प्रतिवेदन क्रमांक 2254 / क्षेका / प्रनिबो / 2017 जबलपुर, दिनांक 13.11.2017 में उल्लेख किया गया है कि परिवेशीय वायु गुणवत्ता जॉच में शहर के विभिन्न चौराहों एवं व्यस्ततम स्थलों पर रेसपायरेबल सस्पेन्डेड पार्टीकुलेट मेटर (RSMP) के निर्धारित सीमा 100 माइक्रोग्राम प्रति घन मीटर से अधिक पाये गये हैं। ठंड के महीनों में पर्यावरण का तापमान कम रहने एवं ओस पड़ने के कारण गैसेस का डिस्पर्सशन पर्यावरण में कम होता है एवं पर्यावरण में सस्पेन्डेड पार्टीकल्स पर ओस (Water Vapours) रिटेन (Retain) हो जाने के कारण कोहरे जैसी स्थिति निर्मित होती है। उक्त परिस्थितियों में रात्रि के समय Visibility के कम होने की भी स्थिति निर्मित होने की संभावना रहती है। अतः ठंड के दिनों में उक्त समस्या को नियंत्रित रखने हेतु वायु प्रदूषण नियंत्रण हेतु विशेष उपाय किये जाने की आवश्यकता बताई जाकर विभिन्न विभागों को कार्यवाही निश्चित करने हेतु Advisory (निम्नानुसार) जारी किया जाना प्रस्तावित किया गया है।

अतः क्षेत्रीय अधिकारी म0 प्र0 प्रदूषण नियंत्रण बोर्ड, जबलपुर के प्रतिवेदन से सहमत होते हुये विभिन्न विभागों के लिए कार्यवाही हेतु निम्नानुसार एडवाईजरी (Advisory) जारी की जाती है:-

(1) नगर पालिक निगम जबलपुर :-

1. सड़क एवं सड़क के फुटपाथ आदि की नियमित रूप से साफ-सफाई कराई जाये।
2. सड़क के फुटपाथ पर जल छिडकाव सुनिश्चित कराया जाये।
3. सड़कों की मरम्मत एवं निर्माण कार्य के दौरान जल छिड़काव की व्यवस्थाएँ की जाये।
4. नगरीय ठोस अपशिष्ठ को नियमित रूप से संग्रहण एवं परिवहन सुनिश्चित कराया जावे ताकि सड़कों के किनारे कचरे का संग्रहण न रहे।
5. नगरीय ठोस अपशिष्ठ को खुले में न जलाया जावे।
6. सड़क एवं आस-पास के क्षेत्र की अनावश्यक खुदाई न हो, आवश्यक होने पर तत्काल उसकी मरम्मत कराई जावे।
7. शहर में होने वाले निर्माण कार्यो के दौरान उत्पन्न होने वाली धूल के नियंत्रण हेतु नियमित रूप से जल छिडकाव सुनिश्चित कराया जावे। संबंधित विभाग अथवा ऐजेन्सी जल छिड़काव न होने की स्थिति में जिम्मेदार होंगे।
8. Construction and Demolition Waste को सुरक्षित तरीके से डिस्पोजल कराया जावे ताकि आस-पास के क्षेत्र में धूल उड़ने का कारण न बने।
9. शहर में पालीथीन कैरी बैग के उपयोग पर लगी रोक को प्रभावी तरीके से लागू कराया जावे।
10. शहर में कार्यरत प्रत्येक मार्ग विक्रेता को ठोस अपशिष्ठ एकत्रण हेतु डस्ट बिन रखना अनिवार्य है तथा अपशिष्ठ को स्थानीय निकाय के भण्डारण डिपो अथवा कन्टेनर अथवा वाहन में अपशिष्ठ को डिस्पोजल हेतु प्रदाय करना अनिवार्य है। अतः सभी विक्रेताओं को डस्ट बिन रखना अनिवार्य कराया जावे।

-2-

(2) परिवहन विभाग :–

1. वाहनों का समय पर मरम्मत एवं इंजन की ट्यूनिंग कराई जाने हेतु आम जनता से अनुरोध किया जाना होगा। ताकि वाहनों से प्रदूषकों का निर्धारित मात्रा से अधिक उत्सर्जन पर नियंत्रण रहे।
2. क्षेत्रीय परिवहन अधिकारी द्वारा पीयूसी सेन्टर्स की नियमित जांच कराई जावे एवं यातायात पुलिस द्वारा सड़क पर चलने वाले वाहनों की पीयूसी सर्टिफिकिट की सघन जांच कराई जावे एवं वाहन मालिकों को वाहनों के नियमित जांच एवं मरम्मत कराने हेतु प्रेरित किया जावे।
3. 15 साल से अधिक पुराने वाहनों एवं आटो रिक्शा का प्रचलन शहर के सघन ट्रैफिक वाल/भीडभाड़ वाले क्षेत्रों मे प्रतिबंधित किया जावे ताकि सघन यातायात के क्षेत्रों मे वाहनों से होने वाले उत्सर्जन में कमी होगी।
4. भीड़–भाड़ वाले इलाकों में वाहनों की संख्या नियंत्रित रखी जावे तथा जहाँ वाहनों की स्पीड काफी कम रहती है, उक्त स्थल पर उनका प्रवेश बंद कराया जावे क्योंकि कम गति से वाहन संचालन में ईंधन की खपत अधिक होती है तथा प्रदूषकों का उत्सर्जन अधिक होता है।

(3) यातायात विभाग :–

1. ट्रेफिक सिग्नल वाले चौराहों पर वाहनों का चालू इंजन की स्थिति में अधिक समय तक रूके रहने से उत्सर्जन अधिक होता है तथा प्रदूषण की स्थिति निर्मित होती है। अधिक समय तक विराम स्थिति में रहने पर वाहनों को बंद कर तथा यलो सिग्नल आने पर वाहन पुन: चालू करने हेतु लोगों को प्रेरित किया जाना उचित होगा।
2. कैरोसीन, नेफ्था आदि पेट्रोलियम उत्पादों के मिलावटयुक्त पेट्रोल/डीजल के उपयोग से प्रदूषकों का उत्सर्जन अधिक होता है। अतः पेट्रोल पम्पों की सघन जांच की जाकर यह सुनिश्चित कराया जावे की ईंधन में मिलावट न हो। मिलावट होने की स्थिति में प्रदूषकों का अधिक उत्सर्जन होना।
3. शहर में वाहनों की गति पर भी नियंत्रण रखने से धूल का उत्सर्जन कम होगा।
4. कामर्शियल गतिविधियों लोडिंग/अनलोडिंग आदि एवं शहर में भारी वाहनों का प्रवेश भी नियंत्रित रहे, ताकि वायु प्रदूषण नियंत्रण में सहायक हो।

(4) कृषि विभाग :–

1. नरवाई/पराली को जलाने पर माननीय राष्ट्रीय हरित अधिकरण द्वारा प्रकरण क्रमांक 95/2016 (सूर्य प्रताप सिंह परिहार विरूद्व भारत सरकार एवं अन्य) में जारी निर्देश के माध्यम से रोक लगाई गई है एवं नरवाई जलाते हुये पाये जाने पर पेनाल्टी व भी प्रावधान किया गया है। जिसके परिप्रेक्ष्य में म.प्र. शासन एवं पर्यावरण मंत्रालय द्वारा अधिसूचना दिनांक 15.05.2017 भी जारी की गई है। अतः नरवाई को जलाने पर लगी रोक का पालन कृषि विभाग द्वारा कड़ाई से कराया जाना अनिवार्य है।
2. खुली भट्टियों के माध्यम से गन्ने से गुड़ बनाने की भट्टिया ग्रामीण क्षेत्रों में ठंड के मौसम में लगती है, जिनसे वायु प्रदूषण अत्याधिक मात्रा में होता है तथा Visibility
3. कम हो जाती है। अतः व्यवसायिक स्थल पर गुड निर्माण बनाने वाली भट्टियों को कृषि विभाग द्वारा रोक लगाई जाकर स्थिति को नियंत्रित किया जा सकता है।

(5) जन संपर्क विभाग :-

1. प्रिंट एवं इलेक्ट्रानिक मीडिया के माध्यम से आम जनता से यह अपील की जा सकती है कि उपरोक्तानुसार एडवाईजरी के अनुसार कार्यवाही सुनिश्चित की जावे ताकि पर्यावरण प्रदूषण को नियंत्रण कराने में सहयोग प्राप्त हो सके।

(महेश चन्द्र चौधरी)
कलेक्टर एवं जिला दण्डाधिकारी,
जबलपुर

पृष्ठांकन क्रमांक/8884/एस.डब्ल्यू./2017 जबलपुर, दिनांक 3 नवम्बर, 2017.

प्रतिलिपि :-

759

1. आयुक्त, जबलपुर संभाग, जबलपुर।
2. पुलिस अधीक्षक, जबलपुर।
3. मुख्य कार्यपालन अधिकारी, जिला पंचायत जबलपुर।
4. क्षेत्रीय अधिकारी, म0 प्र0 प्रदूषण नियंत्रण बोर्ड, विजय नगर, जबलपुर।
5. आयुक्त,नगर पालिक निगम, जबलपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु। कृपया नगर पालिक निगम से संबंधित बिन्दुओं का कड़ाई से पालन कराया जावे।
6. अतिरिक्त जिला दण्डाधिकारी शहर/ग्रामीण जिला जबलपुर।
7. जिला परिवहन अधिकारी, जबलपुर, को सूचनार्थ एवं पालनार्थ।
8. अतिरिक्त पुलिस अधीक्षक शहर/ग्रामीण/यातायात, जिला जबलपुर सूचनार्थ एवं पालनार्थ।
9. उपसंचालक, कृषि, जबलपुर को सूचनार्थ एवं पालनार्थ।
10. मुख्य कार्यपालन अधिकारी, जबलपुर विकास प्राधिकरण जबलपुर को सूचनार्थ एवं पालनार्थ।
11. अनुविभागीय दण्डाधिकारी, जबलपुर/कुंडम/सिहोरा/पाटन, जिला जबलपुर।
12. अनुविभागीय दण्डाधिकारी, (नगर) ओमती/कोतवाली/सांझी/गोरखपुर/गोहलपुर, जिला जबलपुर।
13. उप संचालक, सूचना एवं प्रकाशन, जबलपुर को नगर के समाचार पत्रों में प्रकाशन हेतु।

कलेक्टर एवं जिला दण्डाधिकारी,
जबलपुर

कार्यालय क्षेत्रीय परिवहन अधिकारी जबलपुर

(आकाश वाणी केन्द्र के पास पाटन रोड करमेता) 0761–2641328

क0 2590 / क्षेपअ / 2020 जबलपुर दिनांक:–23/09/2020

प्रति,

क्षेत्रीय अधिकारी,
म0प्र0 प्रदूषण नियंत्रण बोर्ड,
जबलपुर म0प्र0

विषयः– केन्द्रीय प्रदूषण नियंत्रण बोर्ड नई दिल्ली द्वारा जबलपुर शहर को नान अटेनमेन्ट सिटी घोषित किये जाने के संबंध में जानकारी प्रस्तुत करने के संबंध में ।

संदर्भः– आपका पत्र क0 / 1332 / क्षेका / प्रनिबो / 2020 जबलपुर दिनांक 23.09.2020.

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उपरोक्त विषयान्तर्गत सन्दर्भित पत्रानुसार चाही गई जानकारी बिन्दुवार निम्नानुसार है–

(1) प्रदेश में 15 वर्ष से अधिक पुरानी बसों के परमिट जारी नही किये जा रहे है ।

(2) इस संबंध में सडक सुरक्षा समिति के बैठक में कलेक्टर महोदय जबलपुर द्वारा जारी "नो एन्ट्री" आदेश में दिये गये समयानुसार ही भारी वाहनों को शहर में प्रतिबंधित किया गया है ।

(3) माननीय उच्च न्यायालय जबलपुर द्वारा जनहित याचिका 8/2013 में पारित आदेशानुसार नये ऑटो रिक्शा का पंजियन एवं परमिट जारी नही किये जा रहे है एवं शहर में ई–रिक्शा संचालन हेतु प्रोत्साहित किया जा रहा है ।

उपरोक्तानुसार जानकारी उचित कार्यवाही हेतु सादर प्रेषित ।

क्षेत्रीय परिवहन अधिकारी
जबलपुर

कार्यालय कलेक्टर एवं जिला दण्डाधिकारी, जबलपुर

क्रमांक 1164/रीडर/2019 जबलपुर, दिनांक 09.12.2019

// – आदेश – //

जबलपुर शहर में भारी वाहनों के कारण आए दिन गंभीर दुर्घटनाओं के कारण शहर में नागरिकों के सुगम आवागमन तथा यातायात व्यवस्था में कठिनाई आने की जानकारी स्थानीय समाचारपत्रों व विभिन्न माध्यमों से लगातार प्राप्त हो रही है । कई घटनाओं में दिन के समय भारी वाहनों के शहर में प्रवेश करने से नागरिकों की मृत्यु तक हुई है जिसके कारण कानून व्यवस्था की अप्रिय स्थिति निर्मित होती है ।

अतः उक्त गंभीर मुद्दे पर जिला सड़क सुरक्षा समिति की बैठकों में सर्व सम्मति से यह निर्णय लिया गया है तथा नगर के सुगम एवं व्यवस्थित मार्गों पर तथा यातायात के सुचारू संचालन हेतु जनहित में सार्वजनिक सुरक्षा को दृष्टिगत रखते हुए, केन्द्रीय मोटरयान अधिनियम 1988 की धारा 115 तथा मध्यप्रदेश मोटरयान नियम 1994 के नियम 215 के अंतर्गत प्रदत्त शक्तियों का उपयोग करते हुए निम्नानुसार प्रकार के भारवाही वाहनों का प्रवेश जबलपुर नगर निगम सीमा में प्रातः 08.00 बजे से रात्रि 09.00 बजे तक प्रतिबंधित किया जाना आवश्यक हो गया है । अतः उक्त धाराओं के अंतर्गत प्रदत्त शक्तियों के अनुसार निम्नानुसार आदेश लागू किया जाता है :-

1. भारी माल वाहक जैसे ट्रक / डम्पर, भवन निर्माण सामग्री के ट्रक / कृषि कार्यों से भिन्न प्रयोजन के प्रयोग में लाये जा रहे ट्रेक्टर । नगर निगम सीमा में प्रवेश प्रातः 08.00 बजे से रात्रि 08.00 बजे तक प्रतिबंधित रहेगा ।
2. करौंदानाला से रिछाई औद्योगिक क्षेत्र तक पूरे समय 24 घण्टे सभी वाहनों को नो एंट्री से छूट रहेगी ।
3. निम्न मार्गों पर 15 जनवरी, 2020 तक नो एंट्री से दोपहर 02.30 बजे से सायं 06.00 बजे तक छूट रहेगी एवं 16 जनवरी, 2020 से पूर्वानुसार दोपहर 03.00 बजे से सायं 05.00 बजे तक छूट रहेगी :-

   ए. बाईपास मार्ग तथा पाटन बाईपास चौराहा से चंडालभाटा ट्रांसपोर्ट नगर मार्ग ।
4. आवश्यक सेवाओं में लगे निम्नलिखित वाहनों को उक्त प्रतिबंधित आदेश से पूर्णतः मुक्त रखा जाता है :-
   1. दुग्ध वाहन
   2. नगर निगम की स्वास्थ्य सेवाओं में लगे वाहन
   3. पुलिस वाहन
   4. फायर ब्रिगेड
   5. पानी टैंकर
   6. आर्मी के वाहन
   7. विद्युत मंडल के कार्य में संलग्न वाहन ।
   8. एल.पी.जी. / पेट्रोलियम पदार्थ वाहन ।
   9. कृषि उपज मंडी में सब्जी ले जाने वाले वाहन ।

उक्त आदेश में विशेष परिस्थितियों में विभागीय अधिकारी की अनुशंसा पर वाहन विशेष को निश्चित समय में छूट हेतु अतिरिक्त जिला दण्डाधिकारी को अधिकृत किया जाता है ।

09/12/19
(भरत यादव)
जिला दण्डाधिकारी
जबलपुर

क्रमशः –2

पृ०क० 1164 /क्षेपअ/2019 जबलपुर, दिनांक 09.12.2019

प्रतिलिपि :-

1. आयुक्त, जबलपुर संभाग, जबलपुर की ओर सूचनार्थ ।
2. उप महानिरीक्षक, पुलिस, जबलपुर की ओर सूचनार्थ ।
3. पुलिस अधीक्षक, जबलपुर की ओर सूचनार्थ कृपया उक्त आदेश का पालन करने हेतु आवश्यक निर्देश प्रसारित करें ।
4. आयुक्त, नगर निगम, जबलपुर की ओर नगर निगम सीमा में प्रतिषेध का समुचित यातायात संकेतक तत्काल लगवाए जाने व समुचित प्रचार प्रसार कराए जाने हेतु ।
5. शासकीय क्षेत्रीय मुद्रणालय, एम.पी. नगर, भोपाल की ओर राजपत्र में प्रकाशन हेतु ।
6. अतिरिक्त पुलिस अधीक्षक, जबलपुर की ओर सूचनार्थ ।
7. क्षेत्रीय परिवहन अधिकारी, जबलपुर की ओर आवश्यक कार्यवाही हेतु ।
8. नगर पुलिस अधीक्षक, ओमती / कोतवाली / रांझी / गोहलपुर / गोरखपुर की ओर आदेश पालन करने के लिये संबंधित थाना प्रभारी को निर्देश प्रसारित करें ।
9. उप पुलिस अधीक्षक, यातायात, जबलपुर की ओर सूचनार्थ एवं पालनार्थ अग्रेषित ।
10. उप संचालक सूचना एवं प्रकाशन विभाग, जबलपुर की ओर आवश्यक कार्यवाही हेतु ।

O/C

(भरत यादव)
जिला दण्डाधिकारी
जबलपुर

Food Controller, Collector Office, Jabalpur;

कार्यालय कलेक्टर (खाद्य शाखा) जबलपुर

क्रमांक: 983 /खाद्य/2020 जबलपुर, दिनांक 25 /08/2020

प्रति,

क्षेत्रीय अधिकारी,
म0प्र0 प्रदूषण नियंत्रण बोर्ड,
जिला– जबलपुर।

विषय :– जबलपुर शहर नॉन अटेन्टमेंट सिटी के अन्तर्गत वायु प्रदूषण नियंत्रण हेतु विभाग द्वारा की गई कार्यवाही की जानकारी उपलब्ध कराने बाबत्।

संदर्भ :– आपका पत्र क्रमांक 1085, दिनांक 21.08.2020।

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उपरोक्त विषयान्तर्गत संदर्भित पत्र के माध्यम से चाही गई जानकारी निम्नानुसार है :–

क्रमांक	विषय	विवरण
01	जबलपुर शहर में पेट्रोल पम्पो की जनसंख्या (जिले में)	149
02	कितने पेट्रोल पम्पों द्वारा Pollution under Control (PUC) केन्द्र की स्थापना की गई है।	03
03	मिलावटी ईंधन की जांच हेतु विभाग की क्या प्रक्रिया है।	निरतंर जांच की जाती है।
04	विगत वित्तीय वर्ष 2019–20 एवं 2020–21 माह जुलाई तक पेट्रोल पम्पों की विरूद्ध मिलावटी ईंधन की की गई जांच की संख्या एवं की गई कार्यवाही की जानकारी	जांच संख्या 112, जांच में अनियमितता नहीं की गई।
05	शहर में पेट्रोल पम्प और डीजल पम्प के अलावा कितने एल0पी0जी0 फिलिंग स्टेशन है की संख्या की जानकारी	निरंक
06	घरेलू उपयोग में आने वाले एल0पी0जी0 वाहन के ईंधन के रूप में उपयोग में लाने के विरूद्ध की गई कार्यवाही की जानकारी का विवरण	निरंतर जांच की जाती है। विगत वर्ष 06 प्रकरण बनाए गए।

उपरोक्तानुसार जानकारी आपकी ओर प्रेषित है।

जिला आपूर्ति नियंत्रक
जबलपुर

Traffic Police Jabalpur ;

कार्यालय अति.पुलिस अधीक्षक शहर–उत्तर जबलपुर म0प्र0

क्रमांक – अपुअ / शहर–उत्तर / जबल / 1278 - ई / 2020 दिनांक– 24 / 08 / 2020

प्रति,

क्षेत्रीय अधिकारी
म.प्र. प्रदूषण नियंत्रण बोर्ड
स्कीम नं. 5 प्लाट नं. 455 विजय नगर
जिला– जबलपुर

विषय :– जबलपुर शहर में यातायात को सुगम बनाने के संबंध मे।
संदर्भ:– आपका पत्र क्रमांक 953 / स्था. / प्रनिबो / 2020 जबलपुर दिनांक 17.08.2020

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उपरोक्त विषयांतर्गत संदर्भित पत्र का अवलोकन करने का कष्ट करे, जिसके माध्यम से जबलपुर शहर में प्रदूषण नियत्रण की दृष्टि से यातायात सुगम बनाने एवं शहर में कहाँ कहाँ सिग्नल लगाये जाने तथा जिन रोडो पर भारी लोड है, के संबंध में जानकारी चाही गयी है। जिस संबंध में उप पुलिस अधीक्षक यातायात, नातवीय चौक से प्रतिवेदन प्राप्त किया। जिन्होंने अपने प्रतिवेदन के साथ शहर के चौराहों में लगे सिग्नलों सूची, जिन चौराहों पर अत्याधिक दबाव रहने वाले चौराहों की सूची तथा शहर में यातायात दबाव को कम करने हेतु मांग / उपकरणों की सूची संलग्न कर भेजी गयी है। जो संलग्न है।

उपरोक्त चाही गयी जानकारी के संबंध में प्रतिवेदन अग्रिम कार्यवाही हेतु प्रेषित है।

संलग्न– उपरोक्तानुसार।

अति.पुलिस अधीक्षक
शहर उत्तर, जबलपुर

कार्यालय उप पुलिस अधीक्षक यातायात जबलपुर (म0प्र)

क्रमांक:- उपुअ/यात/जबल/ 867 - A /20 दिनांक 22/08/20

प्रति,

अतिरिक्त पुलिस अधीक्षक
यातायात जबलपुर

विषय:- जबलपुर शहर मे यातायात को सुगम बनाने के संबंध मे।
संदर्भ:- आपका पृष्ठांकित पत्र क्रमांक 1228/20 दिनांक 18/08/20

उपरोक्त विषयांकित संदर्भित पत्र मे जबलपुर शहर मे यातायात नियंत्रण की दृष्टि से यातायात को सुगम बनाये जाने हेतु एवं जिन रोको पर भारी जाम है ,जहाँ कही सिग्नल लगाये गये है व कहाँ लगाये जाने की आवश्यकता है। जिसको देखते हुये यातायात सुधार हेतु प्रस्ताव म0प्र0 यातायात नियंत्रण बोर्ड जबलपुर द्वारा पारित किया गया है ।

उक्त प्रस्ताव तैयार कर आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न:- उपरोक्तानुसार।

उप पुलिस अधीक्षक
यातायात जबलपुर

(1) जबलपुर शहर के चौराहो/तिराहों में लगाये गये सिग्नलों की सूची–

जहाँ पर यातायात का दबाव अत्याधिक होता है।

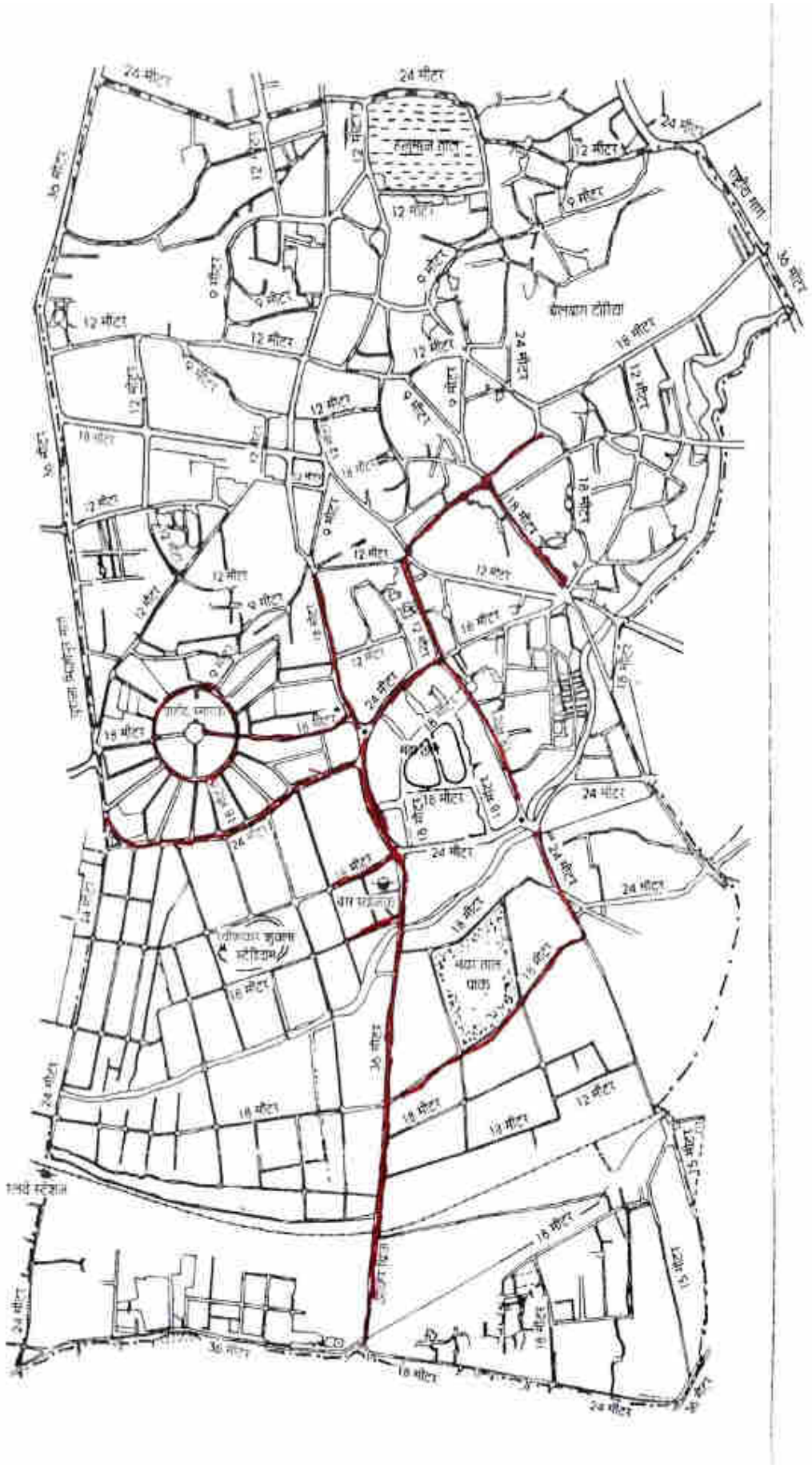
01. नौदरा कासिंग
02. तीनपत्ती चौक
03. ब्लूम चौक
04. कपूर कासिंग
05. पेण्टीनाका चौक
06. घमापुर चौक
07. दमोहनाका चौक
08. रानीताल चौक
09. मदनमहल चौक
10. बल्देवबाग चौक
11. मढाताल कासिंग
12. लेवर चौक (मेहता पेट्रोल पंप के पास)

(2) अतिरिक्त अन्य चौराहे एवं तिराहे जहाँ पर दबाव अत्याधिक होता है–

1–[illegible] चौक
2–मालवीय चौक
3–कटमबंद चौक
4–रसल चौक
5–सिविललाईन चौक
6–हाईकोर्ट चौक
7–सुपरमार्केट क्रासिंग
8–गुलाराम चौक
9–ओमती चौक
10–गढाफुरा तिराहा
11–बडा फुहारा
12–मिलानीमार्ग चौक
13–सराफा चौक
14–गोरखपुर तिराहा
15–रद्दी चौकी
16–छोटी लाईन फाटक (आदि शक्तिमार्ग चौक)
17–मदनमहल थाने के सामने चौक
18–गेट नम्बर 04

(3)– शहर मे यातायात के दबाव को कम करने एवं प्रदूषण कम करने हेतु मांग उपकरण / अन्य यातायात संबंधी कार्य

क्र.	सामग्री नाम	संख्या	अनुमानित राशि
1	WAYU (द्वारा CSIR) (Air filter device)	20	14 लाख
2	NOISE METER	02	04 लाख
3	SOLAR PANEL	20	20 लाख
4	AQI LED SCREEN (AIR QUALITY INDEX)	02	30 लाख
5	ट्राफिक सिग्नल पर NOISE METER SIGNAL (ट्रैफिक सिग्नल) online noise monitor system	02	40लाख
6	सोलर संचालित ट्राफिक सिग्नल	06	90 लाख
7	प्रमुख चौराहो पर एल ई डी एल.एस.स्क्रीन (प्रदूषण संबंधी जागरूकता प्रसारण हेतु)	10	1.5 करोड़
8	फुटओवर ब्रिज (पैदल यात्रियों के लिये)	05	2.5 करोड़
9	ट्राफिक तथा प्रदूषण अवेयरनेस पार्क	01	01 करोड़
10	प्रदूषण कंट्रोल यूनिट (5 लाख प्रति यूनिट)	20	01 करोड़
11	फुटपाथ विकास	–	05 करोड़
12	पार्किंग कम्पोनेन्ट	–	25 करोड़
13	इलेक्ट्रिक गो0स0 पेट्रोलिंग कार्य हेतु	50	30 लाख
14	कान्फ्रेन्स सिस्टम (पीए सिस्टम,प्रोजेक्टर आदि)–प्रशिक्षण कार्यक्रम हेतु।	–	25 लाख
15	पार्किंग स्थलो पर पार्किंग मीटर लगाने हेतु	20 स्थान लगभग	20 लाख
16	पार्किंग स्थल कम्प्यूटराईज्ड पेर्किंग के साथ चिन्हित करना	–	07 लाख
17	हेल्प हेल्प डिवाईस विथ पेमेन्ट्स ऑप्शन	20	12 लाख
18	जनजागरूकता कार्यक्रम–लोगो मे प्रदूषण निवारण हेतु जागरूकता कार्यक्रम	1 साल हेतु	10 लाख
19	यातायात प्रबंधन तथा प्रदूषण प्रबंधन के लिये यातायात कर्मचारियो के प्रशिक्षण हेतु	1 साल हेतु	05 लाख
20	पार्किंग हेतु सैद्धान्तिक कार्य आदि	–	10 लाख



जबलपुर

3.3 प्रस्तावित परिभ्रमण
(मध्य क्षेत्र)

राष्ट्रीय मार्ग
मुख्य मार्ग
बस स्थानक
रेलवे स्टेशन
रेलवे लाईन
नदी / नाले

0 330 660
0 100 200

Photographs of Jabalpur City

CAAQMS Located at Malvi Chowk Jabalpur

Display Board,

Proposed Fly Over Bridge (Damoh Naka to Mandan Mahal)

under construction

Cycling (Non Motorized Transit Old Bus Stand to Madan Mahal)

Blum Chowk Jabalpur

Malvi Chowk Jabalpur

Ranital Chowk Jabalpur

THANK YOU