R-3

REVISED ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITIES OF MAHARASHTRA

SOLAPUR MUNICIPAL CORPORATION

MAHARASHTRA POLLUTION CONTROL BOARD

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Introduction of City:

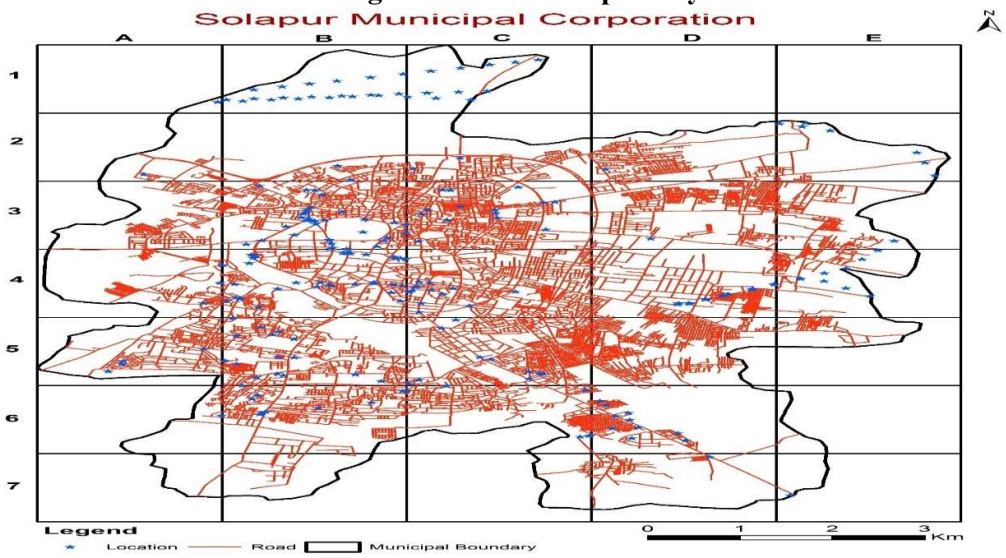
Solapur located in the south-western region of Maharashtra (17.68°N 75.92°E) on major road and rail routes between Mumbai and Hyderabad, with a branch line to the cities of Bijapur and Gadag in the neighbouring state of Karnataka. Please refer Fig. 1 for relative location. It is situated on the Deccan plateau and has an average elevation of 458 metres (1502 feet).

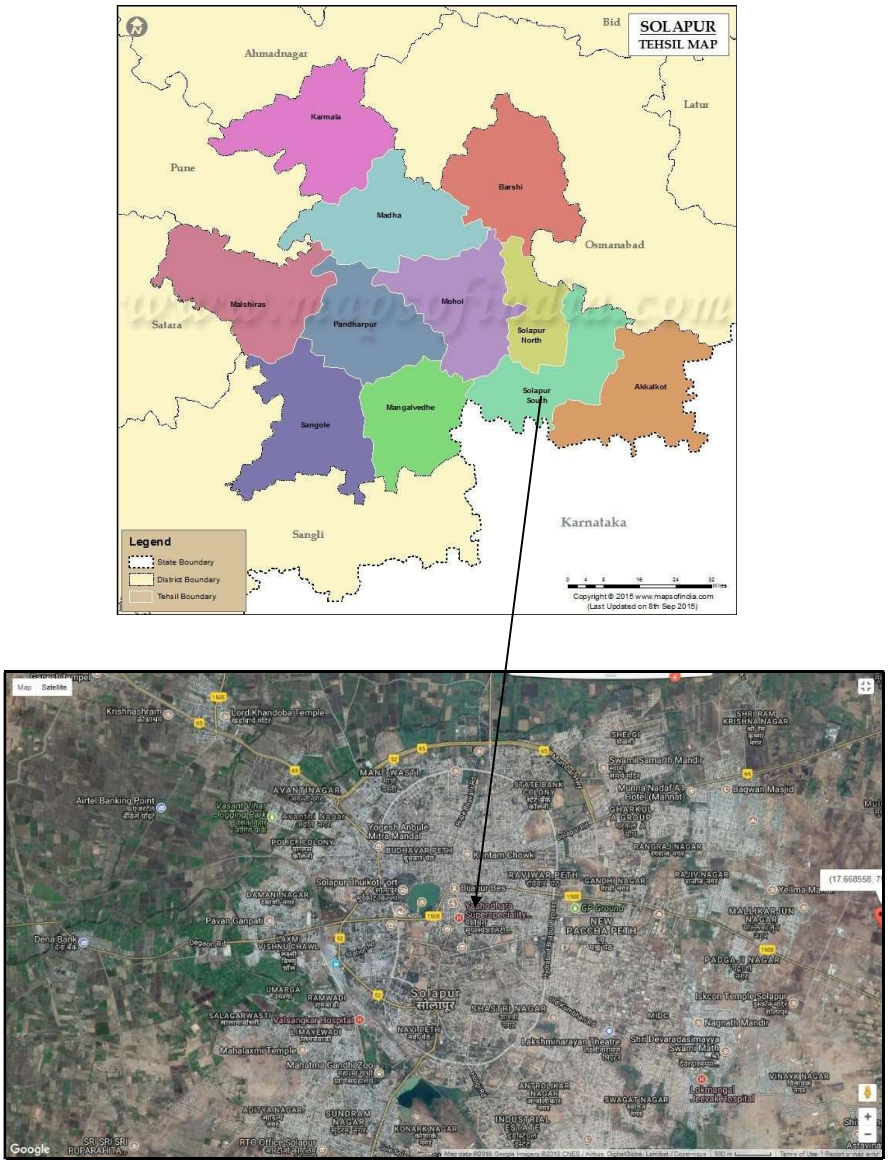
Gulbarga district on the southeast and Bijapur Districts on the south of Karnataka State, Sangli district on the south and southwest; Satara district on the west, and Pune district on the northwest. It is bordered by Ahmednagar district on the north; Osmanabad district on the north and northeast. It is situated at a distance of 410 km (250 mi) from the Maharashtra State Capital of Mumbai by road and train. Solapur is at a distance of 245 km (152 mi) from Pune and 305 km (190 mi) from Hyderabad.

In 1871 this district was reformed joining the Sub-divisions viz. Solapur, Barshi, Mohol, Madha and Karmala and two Subdivisions of Satara district viz. Pandharpur, Sangola and in 1875 Malshiras Sub-division was also attached. After the State reorganisation in 1956 Solapur was included in Bombay State and it became a full-fledged district of Maharashtra State in

Source: ***https://en.wikipedia.org/wiki/Solapur***

Fig. 1: Gridded Solapur city.





It is classified as a 2 Tier and B-2 class city by House Rent Allowance (HRA) classification by the Government of India. It is the 49th most populous city in India and the 43rd largest urban agglomeration.

Ward wise population of Solapur in ascending order is given in the following Table 1. The minimum population of ward No. 25 is 27884 and maximum is 41077 of ward No. 6. Average population of all the 28 wards is 36599, with a standard deviation of 3184 persons. This suggest that the population is more or less uniformly distributed in equal size wards. There

is no denser population set up at Solapur, thereby indicating that the commercial activities are not very prominent in the city, thereby not letting air pollutant built up. If ward-wise area is made available, population density can be determined that may give better picture of socio-economic distribution.

Table 1: Ward wise population in Solapur city.

Ward No.	Total Population	Ward No.	Total Population
25	27884	17	37226
26	30809	7	37273
4	33681	13	37320
5	33869	9	37409
10	34150	15	37844
2	34603	1	37955
16	34651	3	38715
19	34893	8	39086
11	35064	21	40696
18	35555	24	40723
14	36135	23	40842
20	36283	22	41032
12	36783	6	41077

2. City Population

Solapur with an area of 178.57 Sq. Km has a population of 951,118, as per 2011 census. The demographic details are shown in table 2 as follows:

Table-2

Population	Total	Male	Female
City	9,51,558	4,81,064	4,70,494
Slum	2,66,232	-	-
Literates	82.80 %	89.62 %	75.88 %
Sex Ratio		978 (Male to Female)	

Presently there are 41 villages and 1 town in Solapur. The literacy rate of Solapur district is 82.80%. The economy of the district is mainly depended on Agriculture 63.0% of the total workers are engaged in primary sector.

3. Industry

In light of the relatively good ambient air quality trend over a decade in Solapur, the socio-economic condition needs to be assessed. Relatively good air quality in Solapur may also be considered as an indicator of low economic growth as clean industry like Information Technology, Business Process Outsourcing (BPO) etc. are not expected to come up in Solapur due to scarce availability of human resource. Industries that does not require high end of technology thereby demanding large manpower can only come up in Solapur. Such industries and associated population, its transportation can only pollute the ambient air of Solapur. Good air quality indicates low economic growth, or large horizontal clear space availability, or high technological industrial development.

Solapur leads Maharashtra in production of Indian cigarettes or beedi. Solapur district has the highest number of sugar factories (total 33) in Maharashtra state as well as in India. These sugar mills are away from the district head quarter thereby not polluting the urban air environment.

Solapuri Chadars (Bedsheet) and towels colouring, dying industry are famous in India and also at a global level, however there has been a significant decline in their exports due to quality reasons. "Solapuri Chadars" are the famous and first product in Maharashtra to get a Geographical Indication tag. It has been a leading centre for cotton mills and power looms in Maharashtra. Solapur had the world's second-largest and Asia's largest spinning mill. All these colouring and dying industries use hot water for colour mixing and application. Hot water is generated using boilers, mostly using wood. Summary of fuel used in textile sector at Solapur is shown as table 3 below:

Table-3

No.	Fuel	No. of Industry
1.	Wood	23
2.	Diesel	2
3.	Furnace Oil	1
4.	Gas	1

The National Research Centre on Pomegranate (NRCP) of India is located in Solapur and pomegranate farming is done on a large scale in Solapur District. The Science Centre in Kegaon (Solapur) is the third largest and prominent scientific association in Maharashtra. The Raichur-Solapur Power Transmission line of 765 kV power capacity suffices the power grid accessing need of the southern states of Karnataka and Andhra Pradesh. The first waste-to-energy electricity plant in Maharashtra is situated in Solapur.

4. Transport Facilities

Solapur, which is the headquarters of Solapur district in Maharashtra, is a famous pilgrim city. Solapur serves as a base to reach pilgrimage spots like Tuljapur, Pandharpur and Ganagapur. Solapur shares its boarders with famous cities like Ahmednagar, Gulbarga, Osmanabad, Satara, Sangli and Pune. All these reasons make Solapur the main transportation hub connecting Karnataka, Maharashtra and Andhra Pradesh. Solapur is well connected by neighbouring cities and districts and states with all possible ways like rail, road and air.

a. Railway Services in Solapur

Solapur, which is one of the largest train junctions on the Mumbai – Hyderabad and Mumbai- Chennai lines, is also one of the five divisions of the Central Railway Zone. Solapur is also a terminal point of the Solapur – Bijapur line. The Solapur Railway Division is an important division that connects South India to North Western India and Western India. There are direct trains to most of the important cities like Mumbai, Bangalore, New Delhi, Chennai, Pune, Thiruvananthapuram etc. from here. Solapur city, which is 456 km away from Mumbai and 264 km away from Pune by rail, is located on major rail routes between Hyderabad and

Mumbai. The local and out-station trains from Solapur railway station connect the city with all important towns within and outside Maharashtra. Regular trains are available to Pune, Mumbai, Hyderabad and other parts of the state and the country from Solapur railway station.

b. Airways in Solapur

Pune International Airport in Maharashtra is the nearest international airport from Solapur. We can reach to Pune airport with roughly four hours drive from Solapur. This airport is well connected to all major cities like Bangalore, Chennai, Nagpur, Delhi, Ahmedabad, Hyderabad by flights. Various airline services like Air India Express, Air India, Jet Airways, Indigo and Spice Jet etc. provide flight services from and to Solapur. ChattrapatiShivaji Airport is another option for tourists, as they get connecting flights to Solapur from here. Even though there is an airport on the Southeast side of Solapur city, currently no commercial flights provides services here.

c. Roadways in Solapur

As Solapur is located on Pune – Hyderabad NH9, at the border of Karnataka, Maharasthra, it is well connected by roads. The city is 45 kms from Tuljapur, 95 kms from Paranda, 73 kms from Pandharpur, 274 kms from Pune and 300 kms from Hyderabad. There are well built and maintained roads to all main cities in Maharashtra from Solapur. Many state owned and private tour buses provides regular shuttle services between Solapur and Mumbai, which is around 400 km away from Solapur. You can also get regular bus services to other main cities like Pune, Nagpur, Aurangabad etc. Similarly, Solapur is well connected to other metro cities like Delhi and Bangalore by road.

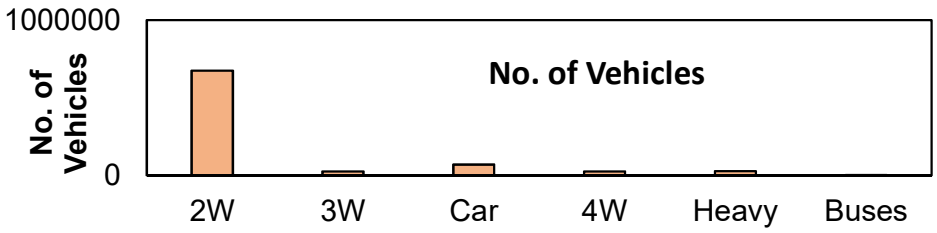
d. Local Transportation in Solapur

Before 1946, the transportation facilities in Solapur were provided by private companies. Solapur Corporation had implemented local bus services in Solapur in 1949 and it was extended to Hotgi Road, sugar factories, industrial places, airport, Vijapur and adjacent villages.

Many private bus services are also functioning in Solapur with regular services to major cities. You can also depend on hired taxi or auto rickshaw for local transportation. Table 4 shows different types of vehicles in Solapur district.

Table. 4: Registered vehicles and its forecast under BAU scenario.

Vehicle	No. of Vehicles
2W	**674416**
3W	**24046**
Car	**70306**
4W	**25919**
Heavy	**27437**
Buses	**135**
	822259



Solid Waste Management

Approximately, 300 to 350 Ton/day solid waste is generated in Solapur, but only 300 ton/day are collected as remaining 50tonnes waste is processed at source as per SWM Rules 2016. Solid waste is collected by ghantagadis (350-550 kg capacity) and unloaded in 4 transfer stations constructed under Smart City project and 16 Road Compactor (RC) Vehicles of 8-10 ton Capacity each, which is then transported in segregated manner to Solapur Bio- Energy System Pvt. Ltd. plant (Tuljapur Road). The availability of solid waste carrying vehicles is as follows:

Vehicle Type	Number (Capacity)
Ghantagadis	220 (350-550 kg Capacity)
RC (Road Compactor)	16 (8-10 Ton Capacity)
Seggregation capsules	8 [4 Wet+4 Dry] (18 ton capacity)

Some amount of user charges for SWM to be collected from all residential as well as commercial establishments on monthly basis should be started. This will help them to realize the importance of SWM and benefits for SMC, which is otherwise not taught in any social, academic or religious discourse/training.

Provision of Ghantagadis alone for shop to shop collection will not be effective in mixed economy. The provision of separate Ghantagadis and presence of businessmen need not be synchronised. Therefore the provision of underground bins in commercial areas for solid waste collection is a practical option. Hence, this is proposed in Solid Waste Management DPR.

Further, pyrolysis plant of 7 TPD capacity is sanctioned by State Government in Solid Waste Management DPR and implementation of this project is work in project. Also, Development of Sanitary Landfill is work in project under DPR.

For improper burning of Solid Waste, two Flying squads are formed and daily monitoring is done along with Spot fine collection is implemented. All the ghantagadis of SWM Dept. are monitored by GPS tracking system.

Solid Waste Management Process in diagrammatic form is as below:

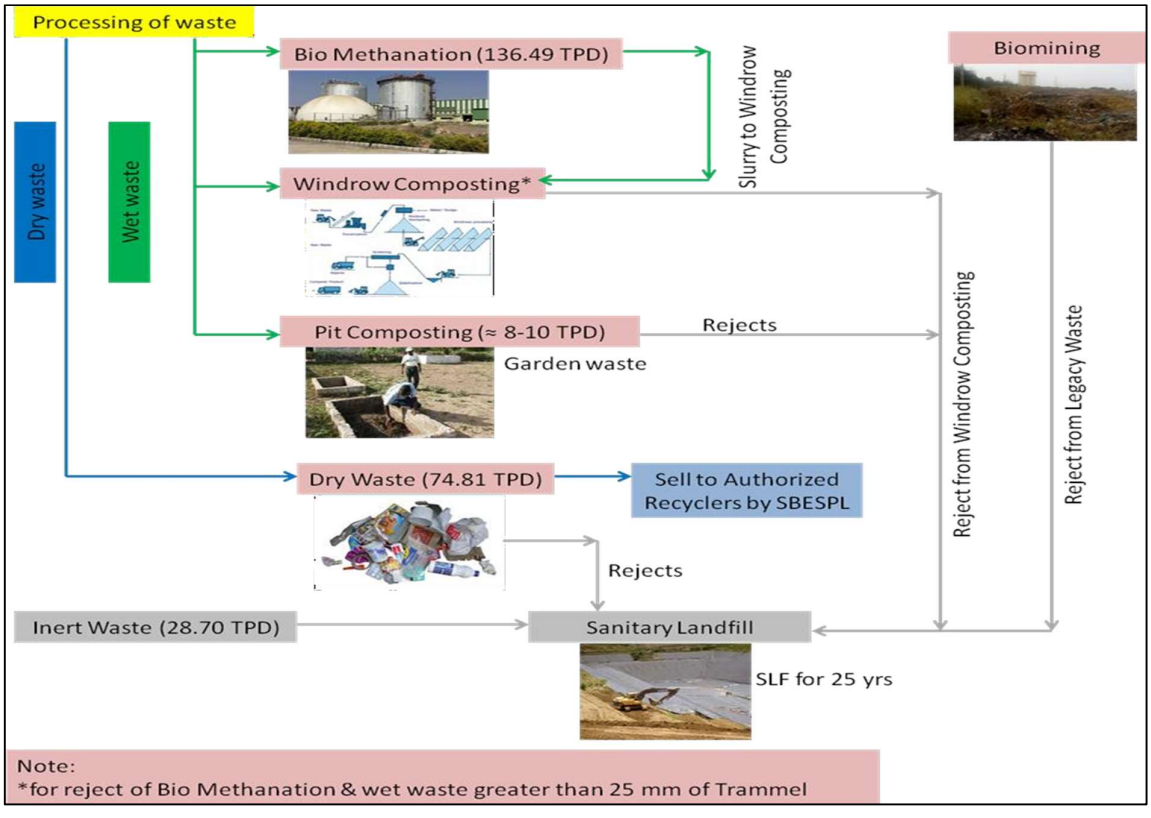
Plastic Waste Management:

Construction of 2km road from Confiscated Plastic at Bhavani peth.

a. Solid Waste Processing plant.

Solapur Municipal Corporation processing plant is located at Tuljapur road in 55 acres land. Out of which 46 aces land was previously used for dumping the solid waste and remaining 9 acre land is for bio-energy plant. This plant segregates organic fraction of solid waste and generate Energy & the remaining is used for composting. Non-compostible waste like plastic and other material is separated and further sold to scrap vendors for further processing. Presently, 4 MW of electricity and 60 MT of compost is generated daily.

The solid waste collection and transportation is done by Solapur Municipal Corporation (SMC) and energy generation from that solid waste is carried out by Bio-Energy plant. In this process, the useful input 'raw material – Solid Waste' is handled and its quantity and quality cannot be ensured by the bio-energy plant. The organic material segregated at source (like hotels, marriage halls) are usually not transported to bio-energy facility, instead, they are processing at source by means of compost unit or compost machinery.



b. Crematoria

There are seven crematoria in Solapur. All of them, except one, use wood for burning.

No	Name of Crematoria	Type	
		Wood	Electricity
1.	Rupabhavani Mashan ghat	Yes	No
2.	Karambha naka Mashan Ghat	Yes	No
3.	Padmashali Mashan ghat	Yes	No
4.	Old pune naka Mashan ghat	Yes	No
5.	Motibagh Mashan ghat	Yes	Yes
6.	Dehgavn Mashan ghat	Yes	No
7.	Kumtagavn Mashan ghat	Yes	No

Body Burn: 2-3 / Crematoria/ day

5. Climate & Meteorology

Solapur falls under the category of dry (arid and semiarid) climate according to the Köppen climate classification. The city experiences three distinct seasons: summer, monsoon and winter. Typical summer months are from March to May, with maximum temperatures ranging from 30 to 45 °C (86 to 113 °F). The warmest months in Solapur are April and May. The typical maximum temperatures being 40 °C (104 °F) or more. The highest temperature ever recorded is 46.0 °C (114.8 °F) in May 1988. Although summer does not end until May or even the midst of June, the city often receives locally developed heavy thundershowers in May (although humidity remains high). The monsoon lasts from June to the end of September, with moderate rainfall. The city of Solapur receives an average rainfall of 545 mm (21.5 in) per year. Winter begins in November and lasts until the end of February, with the temperatures occasionally dropping below 10 °C (50 °F). Solapur lies very close to the seismically active zone around Killari, Latur District, about 100 km (62 mi) east of the city. The meteorological data derived from prognostic model is used for determining the predominant wind direction. For this purpose, a windrose diagram is plotted and is shown in Fig. 2. Predominantly the wind is from West to West-North-West.

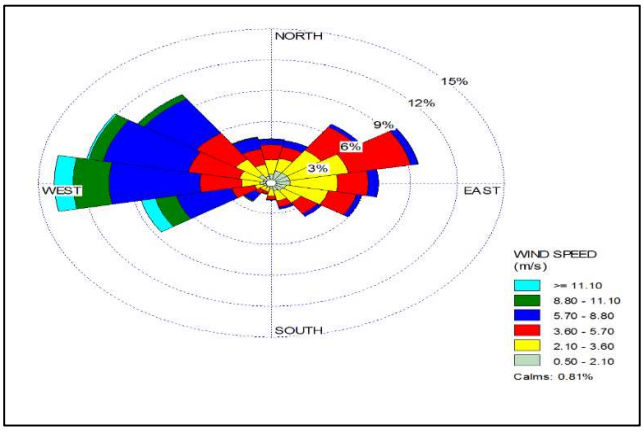


Fig. 2: Annual Windrose diagram of Solapur city.

6. **Ambient Air Quality Monitoring**:

There are three ambient air quality monitoring stations in Solapur city located at Saat Rasta near Bus stand and Walchand Institute of Technology (WIT). The data for Monthly average reading recorded at Solapur (2017-2018) are shown.

Table No.5: Ambient air quality data 2017-18

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	*40*	*60*
WIT Campus	2017	Apr	14	34	66
		May	12	26	55
		Jun	13	28	58
		Jul	13	31	62
		Aug	14	33	68
		Sep	15	33	62
		Oct	15	34	59
		Dec	14	34	70
	2018	Jan	16	36	73
		Feb	15	35	73
		Mar	15	34	73
Saat Rasta- Chithale Clinic	2017	Apr	11	38	76
		May	13	26	64
		Jun	13	28	60
		Jul	13	30	70
		Aug	13	31	64
		Sep	14	33	62
		Oct	15	34	60
		Dec	16	73	116
	2018	Jan	17	45	84
		Feb	17	49	89
		Mar	17	40	79

7. **Action Plan for Control of Air Pollution in Solapur City:**
   The comprehensive action plan for control of air pollution of Solapur city prepare by Solapur Municipal Corporation with all concern stakeholder is shown at table no.6

Action Plan for Control of Air Pollution in Solapur City

Table No.6: Action Plan for Control of Air Pollution in Solapur City

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
i) Steps To Control Emissions From Vehicular Pollution							
1) Banning of 15 year old commercial vehicles	reduction of Air Pollution Load from existing vehicles- Medium	Feasible		Continuous Process		RTO	RTO has banned 15-year-old vehicles strictly.
2) Regular Checking of vehicular emission and issue of pollution under Control Certificate (PUC).	pollution from existing vehicle to get reduced - Low	Feasible	Rs. 25 lakhs (approx. cost for monitoring systems)	Mid term	Up to March 2022	RTO / Smart city / SMC	RTO to have PUC monitors for PM & Gaseous air pollutants random checking of polluting vehicles & take strict action against them to make maintenance compulsory. At present the vehicle manufacturers have to comply with the BSVI standards applicable to all since April, 2020.
3) Public awareness campaigns for air pollution control, vehicle maintenance, minimising use of personal vehicles, lane discipline etc.	pollution from existing vehicle to get reduced - Low	Feasible	Approx. Rs. 50 Lakhs for the year 2019-21.	Short term	Up to March 2021	RTO, SMC/Smart city /MSRTC	1) IEC Agencies are appointed under Smart City for awareness regarding pollution control and ill-effects of climatic change. 2) Integration of SMC and various NGOs to create awareness among citizens of city.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
4) Allocation of designated parking areas to Prevent parking of vehicles at Non-designated areas.	Designated parking will reduce the Traffic congestion and thereby reduction in pollution - Low	Feasible	Approx. Rs. 5 Cr for survey, design and consulting of new parking lots.	Mid term	Upto December 2020	SMC/Smart City	1) In addition to existing SMC parking facilities, Survey of location for new parking lots work is in progress under Smart City and master plan will be completed December 2020.
5) Initiate steps for retrofitting of particulate filters in Diesel vehicles, when BS-VI fuels are available	Reduction of Air Pollution Load from existing vehicles- medium	Should be technically checked for efficiency.		Mid term	Up to December 2020	RTO / SMC / SMT	1)RTO AND SMC instruct all the automobile dealers of city to carry out regular maintenance of diesel vehicle and it is a continuous process. 2) Government has planned to initiate use of BSVI vehicles from April 2020 which will hugely impact control in air pollution. 3) City promotes use of CNG vehicles. Hence, Three CNG stations are available in city area and 1 new CNG fuel station's work is in final stage in Budhavar Peth Bus Depot.
6) Anti-Adulteration Cell formed for checking fuel adulteration and random monitoring of fuel quality data	reduction of Air Pollution Load from existing vehicles- low	Feasible		Continuous process		District Collector office	Continuous activity by Anti-Adulteration Cell is carried out.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
7) Widening of road and improvement of Infrastructure for decongestion of Roads.	Reduction of Air Pollution Load from existing vehicles- low	Feasible	Rs. 150.0 cr for widening & maintenance	Long term	Up to March 2023	PWD / SMC /SMART City/NHAI	1) The road widening of about 50km in city areas under process and 10km road widening work is completed under SMART City.
8) construction of expressways/bypass to avoid congestion	reduction of Air Pollution Load from existing vehicles- low	Feasible, under process.	Rs. 26Cr for construction of Bypass	Mid term	Up to March 2022	PWD / NHAI	1) Work for 5.15km Bypass route work is completed by SMC. 2)Survey work of Two flyovers from Puna naka to saat rasta and from boramani naka to vijapur road @ 12km by NHAI to remove the congestion
9) Promoting Battery operated vehicles.	Reduction of Air Pollution Load from existing vehicles- Medium	Feasible		Mid term	Up to December 2022	RTO / SMART City/ SMT	1) Solapur has started implementation of E-Bikes. There are three newly open showrooms of E-Bikes In solapur.2)SMC and RTO has started initiating use of E-rickshaws and CNG Vehicles among citizens of the city. 3) Procurement process of 25 E-buses under SMT project is in General Body for approval.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
10) Installation of weigh in Motion bridges at the borders of the cities/Towns and states to prevent overloading of vehicles.	reduction of Air Pollution Load from existing vehicles	Implement ation	-------.	Continuous	-------	RTO, solapur	Within SMC limits, Civic administration Implementing a weighing check post for the trucks and Goods carrying Heavy Trailers, Vehicles etc to enter in the City limits encompassing ICT interventions, Commissioner, solapur /DCP traffic shall impose fine/Taxes under CMV act section (179) with a minimum fine of rupees 500 and in section (179) with a fine of rupees 1000 to the vehicles found with excess weight entering in solapurcity.smc will request DCP Traffic to strictly adhere to the above act)
11) Synchronize Traffic movements by Introduce Intelligent CCTV surveillance and automated Traffic Management systems for Lane Driving	reduction of Air Pollution Load from existing vehicles-Medium	Feasible	Rs. 10 lakhs for 2 traffic intersections	Mid term	Up to March 2020	DCP traffic/ Smart city	Smart City is working synergistically on modifying Intelligent CCTV surveillance and automated Traffic Management systems in Duffrin Chowk and Shanti Sagar Chowk.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
12) Installation of Remote Sensor based PUC systems	reduction of Air Pollution Load from existing vehicles-Medium	Feasible	Rs. 5 lakhs for 4 PUC units.	Short term	Up to March 2020	RTO	Survey of 4 locations is in process by RTO/SMC. New Equipments are required to be procured for advance monitoring of pollution of vehicles by Smart City.
13) Introduce 25 E-buses for public transportation	reduction of Air Pollution Load from new vehicles-Medium	Feasible	Approx. Rs. 10.0 Cr	Mid term	Up to December 2020	RTO / SMT Transport Dept. / SMC	Proposed under SMC General Body to introduce 25 E-buses for public transportation.
14) Implementation of Bs-VI norms	reduction of Air Pollution Load from existing/new vehicles-Medium	Feasible		Mid term	Up to April 2020		Implementation from April 2020 by Government
15) Procurement of 50 E-buses	reduction of Air Pollution Load from existing vehicles-Medium	Feasible.	Approx. Rs. 30.0 Corers for 50 E-Buses	Long term	Up to March 2023	RTO, Transport Dept. / SMC	Procurement of 50 E-buses under SMT project is work in progress.
16) Encourage to use CNG for new public transport buses under SMC	reduction of Air Pollution Load from existing vehicles-Medium	Feasible, to be checked with specific study.	Approx. Rs. 30.0 Corers for 1 CNG fuel station.	Mid term	Up to March 2022	SMC/SMT Solapur	1. Near about three CNG stations available in city. 2. One new CNG Station work in progress by SMT and Private agency at Budhwar Peth Area in Solapur

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
17) Retro-fitment options of Diesel Oxidation Catalyst (DOC) in 4-Wheeler public transport (BS-II and BS-III)	reduction of Air Pollution Load from existing vehicles-Medium	Feasible		Mid term	Up to March 2022	RTO, Transport Dept. SMC	RTO has laid down rules for scrapping old vehicles in India. As per the norms, vehicles that are older than 15 years cannot be used.
18) Inspection /maintenance to all BSII & BSIII commercial vehicles	reduction of Air Pollution Load from existing vehicles-Medium	Feasible.		Continuous Process		RTO + MSRTC	RTO has randomly check vehicles PUC for Continuous Improvement
19) Restricted timing for Heavy commercial vehicles entering in the city.	reduction of Air Pollution Load from existing vehicles-Medium	Implement ation		Continuous Process		DCP traffic and Project Director, NHAI	Heavy vehicles are restricted from entering city from 6am to 9pm. Also, Ring roads construction in progress by NHAI AND PWD.
ii) Control Of Air Pollution From Re-suspension							
1) Maintaining green buffers along the Traffic corridors	reduction of Air Pollution Load from re-suspended dust-low	Feasible		Continuous Process		Garden dept. ,Land and Estate Dept., SMC	1) Main roads of Solapur City are sweeped twice in day and Once in night. 2) Land and Estate Dept., SMC has selected private agencies who have shown voluntary approach towards developing and maintaining green buffers along the Traffic corridors.
2) Maintaining Pothole Free Roads for Free flow Traffic in city	reduction of Air Pollution Load from re-suspended dust-low	Feasible	As per the requirement.	Continuous Process		SMC, Smart City solapur,	1. Constructed pothole free smart road about 10kms under SMART City. 2. Continuous work for road maintenance by

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
							City Engineer Dept., SMC as per requirement.
3) Greening of open areas, garden, community places, Schools and housing societies.	reduction of Air Pollution Load from re-suspended dust-low	Feasible	Approx. Rs. 15.0 Cr	Mid term	Up to December 2020	Garden dept. SMC/SWM Dept.	1)Near about 5 open areas are developed with various plantations under Amrut Project and 5 open areas development is in process. 2) New 1 Ayurvedic garden is under tendr process. 3) Under 33 Cr Tree plantation project, 53,000 tree plantation is in process in 22 locations of city.
4) Black topped of metalled Roads including pavement of Road shoulders	reduction of Air Pollution Load from Re-Suspended dust-low	Feasible		Continuous Process		SMC	Majority of the existing metalled roads have blacktopping.
5) Constructed Wall to Wall paving (brick)	reduction of Air Pollution Load from Re-Suspended dust-low	Feasible	As per requirement	Continuous Process		City Engineer, SMC	Already done for majority of the roads &ongoing for the present roads under construction.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
6) Designing and Construction of environment friendly roads in SMC	reduction of Air Pollution Load from re-suspended dust-low	Feasible		Long term	Up to March 2023	City Engineer, SMC / SMART City	Road Design improvement is a continuous process as per Universal Design Principles and about 10km SMART Environment friendly roads (Roads having green buffer zone, solar systems, paving's, separate walking and cycling tracks)are constructed by SMART City and SMC under these principles.
iii) Biomass/Trash Burning, Landfill Waste Burning							
1) Mass awareness drives against open burning of biomass, crop residue, garbage, leaves etc.	Reduction of Air Pollution Load from Solid Waste disposal-Medium	Feasible		Continuous Process		H.O. (S), SMC	The solid waste generated in the city is mostly collected, transported and processed every day. SMC has banned burning of garbage, leaves, biomass, & crop residue within SMC limit with a fine of Rupees 5000 to 25000 is imposed.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
2) Inspection / Regular checking and controlling of burning of Municipal Solid waste	reduction of Air Pollution Load from Solid Waste disposal-Medium	Feasible		Continuous Process		Zones and H.O. SMC solapur	Being a continuous Activity, strict regular monitoring is going on through Zonal officers of all administrative zones in a domain followed by SanitaryInspector, Conservancy Jamadar against burning of MSW.
3) Proper collection of Horticulture waste and its disposal following composting-cum-gardening approach	reduction of Air Pollution Load from Solid Waste disposal-Medium	Feasible		Continuous Process		Health Officer (S) / Garden Suptd., SMC, solapur	SMC implemented proper collection and processing of Horticulture waste through designated Tippers/carrier vehicles followed by composting is in progress at SMC's designated processing facility. Composting cum Gardening approach is in process. Ongoing activity
4) Awareness for controlling of burning of agricultural waste and crop residues.	reduction of Air Pollution Load from Solid Waste disposal-Medium	Feasible		Continuous Process		Health Officer (S) / Garden Suptd., SMC, solapur/MP CB	Initiative awareness programs & drives related with ban on agriculture waste & crop residue implemented in coordination with MPCB and SMC.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
5) Restriction and self-reporting of Open Burning.	reduction of Air Pollution Load from Solid Waste disposal- Medium	Feasible		Continuous Process		Health Officer (S) / Garden Suptd., SMC	SMC has strictly Banned open burning and use of Swachhata app launched by SBM for resolving public complaints (online grievence redressal)
iv) Control of Pollution From Industry							
1) Identification of Brick Kin and their regular monitoring including use of designated fuel and closure of unauthorized units.	reduction of Air Pollution Load from brick kilns- Medium	Feasible		Short term	Up to March 2021	Revenue Dept. RDC/ MPCB	MPCB has published notification for regulations of Traditional Brick kins
2) Action against non-complying industrial units	reduction of Air Pollution Load from casting, foundries, stone crusher SSIs- Medium	Not needed		Continuous Process		MPCB	MPCB has developed randomised visit schedule.
3) Initiated Star Rating Programme	reduction of Air Pollution Load from industries- High	Feasible		Continuous Process		ADTP, SMC/ MPCB	Programme undertaken to reduce PM emission from industries.
4) Constructed Internal Tar road for Fugitive emission control	reduction of Air Pollution Load from industries- High	Feasible		Mid term	Up to March 2022		Industries in city are having internal tar roads.
5) Banned of new industries in existing city limit	reduction of Air Pollution Load from industries- High	Feasible		Mid term			Already done.

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
6) Installation /up gradation of air pollution control systems	reduction of Air Pollution Load from industries- High	Feasible		Continuous Process	Up to March 2022	MPCB	By imposing Consent condition and Inspection by Randomised schedule.
7) Use of high grade coal to Power Plant	reduction of Air Pollution Load from industries- High	Feasible		Continuous Process		MPCB	By imposing Consent conditions MPCB directed to TPS to use low ash content Coal No Medium and Large Scale industries are in operation in the Jurisdiction of SMC using coal
8) Regular audit of stack emissions for QA/QC	reduction of Air Pollution Load from industries- High	Feasible		Continuous Process		MPCB	Inspection by Randomised schedule by MPCB

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
v) Construction and Demolition Activities							
1) Strict Enforcement of construction & demolition rules.	reduction of Air Pollution Load from C&D projects- High	Feasible	Approx. Rs. 8-10.0 Cr as per DPR	Mid term	Up to March 2022	ADTP, SMC, MPCB	Regular Inspection and Checking of Construction and demolition activities Monitoring of C&D projects
2) Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and suppression units.	reduction of Air Pollution Load from C&D projects- High	Feasible	SMC/PWD to undertake as per CPCB norms.	Short term	Up to March 2022	ADTP, SMC/ Revenue Deptt.	MPCB HQ issued direction on 12/03/2018 for implementation & compliance of Construction & Demolition Waste Management Rule, 2016
3) Adopting Better construction practices with PM reduction of 50%	reduction of Air Pollution Load from C&D projects- High	Feasible	SMC/PWD to undertake as per CPCB norms.	mid term	Up to March 2022	ADTP, SMC	
4) Banned operation of Brick kilns in city area	reduction of Air Pollution Load from brick kilns- Medium	Feasible		Mid term	Up to March 2022	Revenue RDC/ MPCB	In process of banning the brick kilns in city area by MPCB.
5) Monitoring carriage of construction material are in closed/covered Vessels	reduction of Air Pollution Load from C&D projects- Medium	Feasible		Continuous Process		RTO, MPCB	RTO has to Monitor carriage of construction material are in closed/covered Vessels MPCB HQ issued direction on 12/03/2018 for implementation & compliance of Construction & Demolition Waste Management Rule, 2016

Action	Expected reduction and impacts	Technical Feasibility	Requirement financial resources	Implement ation period (Short/mid/ long-term)	Time target for implementation	Responsible agencies	Remarks
vi) Domestic fuel burning							
1) Ongoing construction of GAS pipe line for domestic use	reduction of Air Pollution Load from commercial/Residenti al cooking- Medium	Feasible		Mid term	Up to March 2022	RDC	Proposed underground GAS line for Domestic use under Smart City.
vii) DG sets							
1) providing Un-interrupted power supply to Reduce usage of DG set	reduction of Air Pollution Load from DG sets- Medium	Feasible		Continuous		Director, MSEDCL (Electrical Inspector)	providing Un-interrupted power supply in SMC
viii) Bakeries /Crematoria							
1) Proposed to Use of LPG in Hotels and "Dhabas" and renewable fuel/oil/Electricity/gas etc in Crematoria	reduction of Air Pollution Load from C&D projects- Medium	Feasible	Approx. Rs.12-40.0 Lakhs/- per unit of Crematoria	Mid term	Up to March 2022	Revenue Deptt. RDC	1. Majority of Bakeries are based on Electric Ovens. 2. Small scale household Bakeries proposed for use of cleaner fuels. 4. SMC Licence department take initiative and gives notice household Bakeries for use of cleaner fuels. 3. One Electric crematoria is in operation and five are proposed.
Other (city specific)				None	None	None	

10. Air Quality Monitoring Network:

Presently Three NAMP stations and 1 CAAQMS station are in operation in Solapur Municipal Corporation area. M.P.C.Board has plan strengthening of NAMP with additional 3 manual Stations and 3 CAAQMS station. Time target for implementation is 2 years and financial requirement is Rs.4.0 Crs.

11. Source Apportionment (SA) and Emission Inventory (EI):

NEERI and IIT, Mumbai has undertaken project for source apportionment and emission inventory of Solapur city and same is in final stage of completion.

12. Monitoring Mechanism for Implementation

State of Maharashtra has constituted State Level Air Quality Management Committee under chairmanship of Principle Secretary, Environment Department. Same committee supervised by Chief Secretary, GoM. The aforesaid action plan shall be implemented by State with coordination of concern departments/stake holders

13. Implementation status

The Chief Secretary, Govt. of Maharashtra to convene the meetings with different concerned departments and direct for compliance of directions for implementation of air quality of Solapur city. The Principal Secretary, Environment, Govt. of Maharashtra to also convene the meeting for follow up of the aforesaid directions. The Maharashtra Pollution control Board continuously conducted the meetings with all stakeholders for preparation of comprehensive action plan for city and its implementation.

Annexure -A

Office of the Commissioner

Solapur Municipal Corporation,
'Indrabhavan' Railway Lines, Solapur - 413 001
Tel. : (O.) (0217) : 2740300
Email : smccommissioner@yahoo.com

Date : ०८/०७/२०१९ / आ.क्र./प.व्य./०१

Deepak Taware, I.A.S.
Commissioner

To,
Dr. V. M. Motghare,
Hon. Joint Director (Air Pollution Control),
Maharashtra Pollution Control Board,
Mumbai.

Sub: Regarding re-submission of revised Action Plan of Air Pollution Control for Solapur City.

Ref: MPCB Letter No.BO/JD (APC)/TB-2/B-2389 dtd.03.07.2019

Sir,

With reference to above mentioned subject, we are hereby re-submitting revised Action Plan of Air Pollution Control for Solapur City as per your instructions given in the meeting in your office attended by our Environment Manager Mr. Swapnil Solankar and AE Mr. Deepak Pawar on 05th July, 2019.

Revised Action Plan of Air Pollution Control for Solapur City is attached herewith. Please do the needful.

(Deepak Taware) I. A. S.
Municipal Commissioner
Solapur Municipal Corporation

Copy submitted for information to: Member Secretary, M.P.C.B., Sion, Mumbai

IMC LIMITED

Solapur Office : Hare Krishna Vihar, First floor, Office No.2,
Mantri chandak Park, Vijapur Road, Solapur - 413004, Maharashtra

Corporate Office : " NEELADRI" 3rd floor, 9, Cenotaph Road Alwarpet,
Chennai 600018 Tel : +91-44-4590-2222, 4590-2299.
Fax + 91-44-4590-2200 E-mail : admin@imc.net.in URL : www.imc.net.in

Ref No. : IMC/SOLAPUR CGD/2018-19/035 **Date:** 27.07.2018

To,
The Chief Executive Officer
Solapur City Development Corporation Limited,
Solapur, Maharashtra

Kind Attention: Dr. Avinash Dhakane (IAS)

Reference: 1) Our communication # IMC/SOLAPUR CGD/2018-19/011 Dated 29th June 2018
2) Discussion during the Smart City Co-ordination meeting on 20th July 2018

Sub: Natural Gas Pipeline Network Plan at Solapur

Dear Sir,
With reference to subject matter, we shared details of our plan to supply the Natural Gas to the citizens in Solapur District during the co-ordination meeting mentioned above. Our request to accommodate the NG pipelines was very well received by the team headed by Chief Technical Officer, Solapur City Development Corp. Ltd.

IMC has an ambitious plan of laying Natural Gas network in Solapur District with the following targets;

1. We are targeting approx. 44,000 household gas supply in Solapur city area
2. Gradual coverage of the entire City Area with the Pipeline Network by laying of approx 1000 KMs gas pipeline (Steel and Polyethylene pipe)
3. To establish CNG stations at strategic locations across the city.

Our team is working in sync with the Smart City team and we shall put all efforts to charge the smart city gas area with the supply of natural gas.

We thank you for the support for considering NG supplies as part of Integrated Smart City development initiative with an objective of providing clean air to the citizens of Solapur.

Best Regards,

Authorised Signatory
IMC Limited

Chief Technical Officer, Solapur City Development Corp. Ltd.

Solapur City Development Corp.Ltd.
Date :-

C.F.O.	
C.O.	
C.T.O.	
CRI...	
SGS.	
Wadia	
	C.E.O. SCDCL

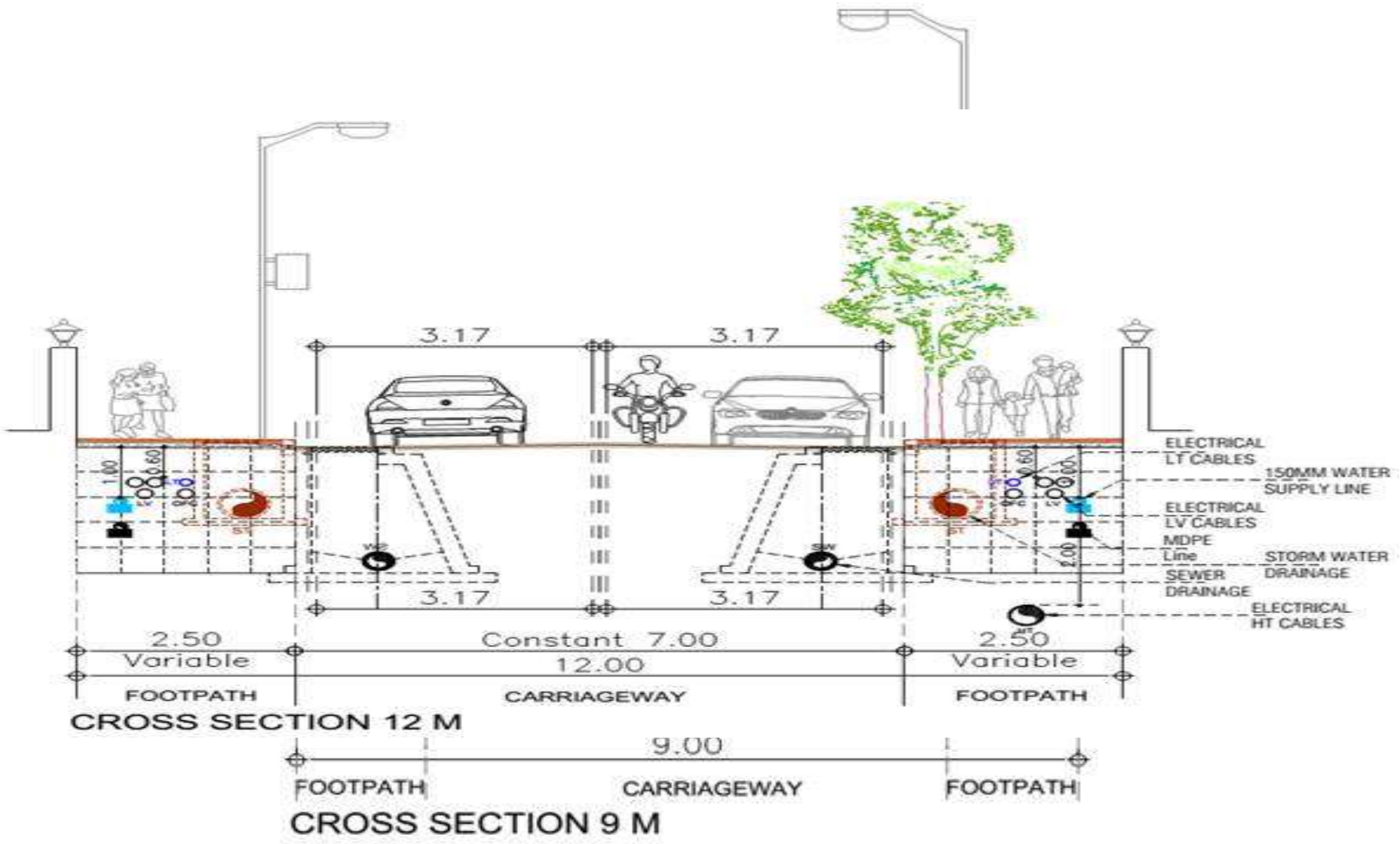
(Visit - plz give UDC & IC

Registered office : 232/A, Acharya Jagadish chandra Bose Raod, Kolkata - 700 020, India
CIN : U15428WB1935PLC008245

Procurement, Construction and Maintenance of Solapur Priority Roads Package of 09m, 12m, 15m, 18m, 24m wide road/ street/ footpath/junction/related utilities on Project Sites.

Project Component:

- Shifting of overhead utilities underground
- Hume pipe network for OFC cables
- Water pipeline network
- Sewerage network
- Storm water network
- Street lighting
- Footpath with place making sites
- PQC roads for ROW of 15 mtr and above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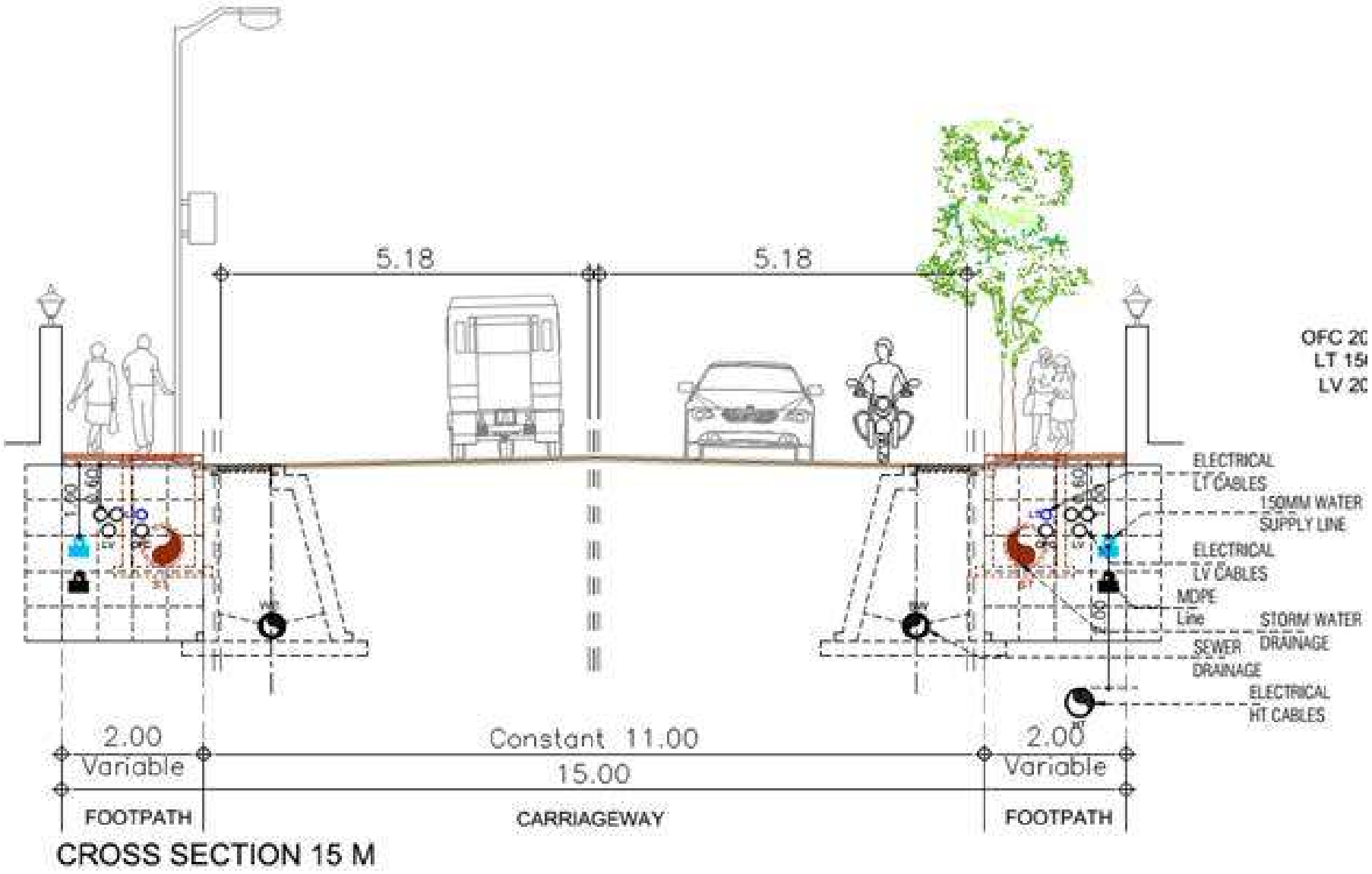
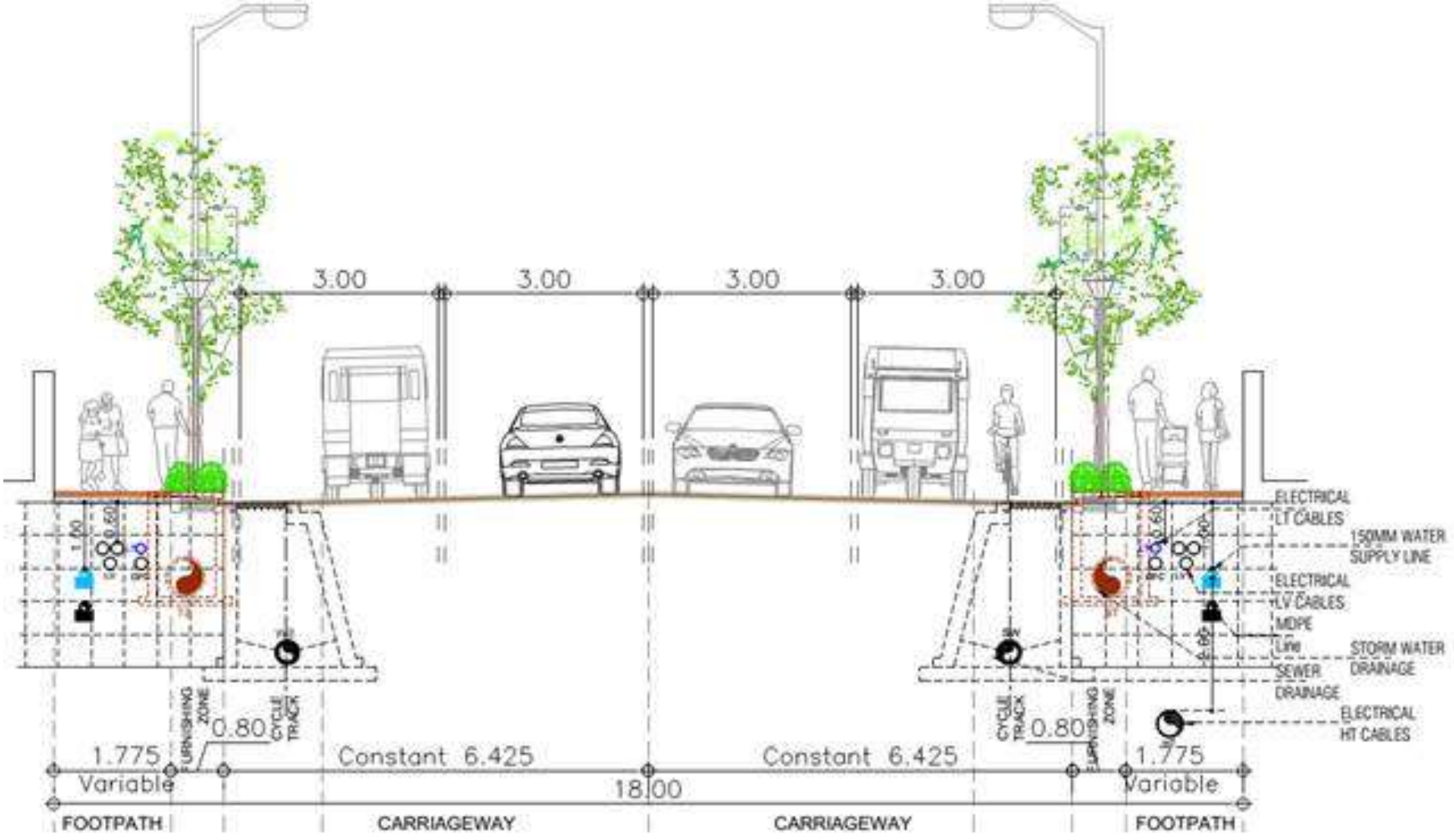
ELECTRICAL LT CABLES
150MM WATER SUPPLY LINE
ELECTRICAL LV CABLES
MDPE Line
STORM WATER DRAINAGE
SEWER DRAINAGE
ELECTRICAL HT CABLES
2.50 Variable
Constant 7.00
12.00
2.50 Variable
FOOTPATH
CARRIAGEWAY
FOOTPATH
CROSS SECTION 12 M
9.00
FOOTPATH
CARRIAGEWAY
FOOTPATH
CROSS SECTION 9 M



CROSS SECTION 15 M



CROSS SECTION 18 M

Green Corridor

Paved Footpaths

1. PROJECT HOAM GROUND – COMPLETED PROJECT

Solapur City Development Corporation Limited

TENDER FOR EXECUTION

Revision: R0

Particulars	Details
Client	Solapur City Development Corporation Limited, Solapur, MEGA
Project Name	Implementation of Projects under Smart Cities Mission in Solapur City
Name of Work	Appointment of Contractor to Develop & Maintain the Hoam Ground, Solapur under Smart Cities Mission
Cost of Blank Tender Form	Rs. 23,000.00 (Rupees Twenty Three Thousand Only – Including GST)
Estimated Amount	Rs. 2,44,00,000.00 (Rupees Two Crore Forty Four Lakhs Eighty Eight Thousand only (Excluding GST))
Earnest Money Deposit	Rs. 2,43,000.00 (Rupees Two Lakhs Forty Five Thousand only)
Initial Security Deposit	Rs. 4,80,000.00 (Rupees Four Lakhs Ninety Thousand only)
Tender / Execution Period	Four (04) Calendar Month (including monsoon)
Document Issue Date	18/05/2018
Document Number	2017-18/726

Solapur City Development Corporation Limited,

New Planning Office, Near Milk Dairy, Saat Rasta, Solapur, 413003, Maharashtra, India.

May 2018

TENDER DOCUMENT

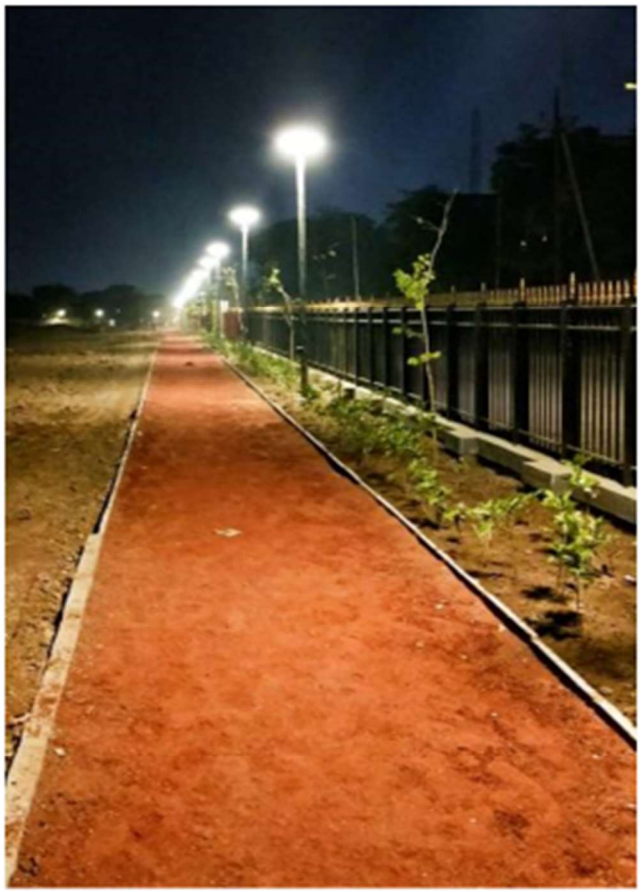
SITE PLAN

KEY ASPECT

- Project will create a city-level ground which is lacking in current scenario.
- Central location of the project will influence maximum number of people.
- It will add to the quality open space of the city.

KEY PLAN

1. PROJECT HOAM GROUND – COMPLETED PROJECT



2. PROJECT DEPARTMENT GARDEN – COMPLETED PROJECT

Solapur City Development Corporation Limited

TENDER FOR EXECUTION

Revision: 00

Particulars	Details
Client	Solapur City Development Corporation Limited, Solapur, DPDCA
Project Name	Implementation of Projects under Smart Cities Mission in Solapur City
Name of Work	Appointment of Contractor to Develop, Operate & Maintain the Department Garden, Solapur under Smart Cities Mission.
Cost of Bidding Tender Form	Rs. 22,000.00 [Rupees Twenty-Two Thousand Only – Including GST]
Estimated Amount	Rs. 4,34,11,100.00 Cr [Rupees Four Crores Thirty-Four Lakhs Eighty-One Thousand One Hundred only] [Excluding GST]
Earnest Money Deposit	Rs. 8,68,220.00 [Rupees Eight Lakhs Sixty-Eight Thousand Two Hundred & Twenty only]
Initial Security Deposit	Rs. 8,68,040.00 [Rupees Eight Lakhs Sixty-Eight Thousand Forty only]
Tender / Execution Period	Six (06) Calendar Month. (Including monsoon)
Document Issue Date	31/05/2018
Document Number	2017-18/28

Solapur City Development Corporation Limited,

New Planning Office, Near Milk Dairy, Soreganv Naka, Solapur, 413003, Maharashtra, India.

March 2018

TENDER DOCUMENT

SITE PLAN

KEY PLAN

2. PROJECT DEPARTMENT GARDEN – COMPLETED PROJECT

2. PROJECT DEPARTMENT GARDEN – COMPLETED PROJECT

4. PROJECT SIDDHESHWAR LAKEFRONT DEVELOPMENT- – CONTRACTOR ON BOARD

Transformation Near Fort

Issues

- **Uncomfortable** - Broken pavements
- **Unsafe** - Lack of lights
- **Dangerous –** Potholes across the walking area
- **Unhealthy –** Garbage & litter

Scheme

- Stone paving- designed pathway after the plinth protection for fort wall
- Lights at regular intervals
- Evenly laid natural stone finish surface with proper rain water drainage system and rainwater harvesting pit
- Beautification by native plants

A	R1	
1)	Point 1: iv, v, vi,vii,viii,SCS-3, SCS-7, SCS-8	Information Added
2)	POINT 2: ii, SCS-2,	Information Added
3)	Point3: SCS_1, SCS-9	Information Added
4)	Point 9: SCS-1 (Action plan for cleaner fuel in the bakeries required)	Information Added
5)	Details provided in Annexure I for point no. vi, vii & viii, to be part of main action plan.	Updated in Main Action plan
6)	Timelines :- Long-term measures are targeted to 12-24 months in the action plan numbers iv (vehicle) but for point no. vii, viii, x (vehicle) targeted in 12-24 it is mid-term measure.	Updated
7)	1) Type Error :- SCS-6; BS-VI instead of BS-V	Correction done
B	**R2**	
1)	The revised plan is to be submitted after approval of AQMC	AQMC Approval taken.
2)	There is lack of clarity in specific actions, the plan should include focused actions	Information Added

3)	Some control options are overlapping / repeated (e.g. vehicle source group point no. SCS-2 and SCS-3, Point iv & SCS-11 etc.)	Updated
4)	Provide time target for different type of parking facility (vehicle point iii)	Updated
5)	Type error: BS-V in place of BS-VI (vehicle point iv)	Updated
6)	Action plan should not mention 'the plans will be prepared'. (e.g. vehicles point v, vi, vii etc.)	Information Added