Action Plan to Control Air Pollution in Sangli City

1. Preamble

Sangli is a City and the district headquarters of Sangli District in the state of Maharashtra, in western India at location North 16.4 to 17.1 East 73.42 to 75.4 (750 km from Bangalore ,220 km from Pune & 400 kilometers southeast of Mumbai. Established in 2 november 1960 having area of 8577 sq.km. It is known as the Turmeric City of Maharashtra due to its production and trade of the spice. Sangli city is situated on the bank of Krishna river. The valley of the River Krishna and its tributaries offer many irrigation and agricultural advantages which drives the economy of the district and the city Land in the region is best suitable for agriculture. so green city is called 'Sugar Belt' of Maharashtra. The district alone has more than eighteen sugar factories, which makes it among the highest sugar-producing districts of India. It has largest trading centre for turmeric in Asia. Today, more than 90% of the turmeric trade in India takes place in Sangli. The Sangli district has recently entered into wine industry, and has achieved some success in producing classic vintage categories.

As per reports of Census India, population of Sangli Miraj Kupwad in 2011 is 502,793; of which male and female are 253,640 and 249,153 respectively and estimated to be 5,57000 in 2018. Hinduism is majority religion in Sangli Miraj Kupwad city with 71.32 % followers. Islam is second most popular religion in city of Sangli Miraj Kupwad with approximately 21.11 % following it. In Sangli Miraj Kupwad city, Christianity is followed by 1.38 %, Jainism by 4.32 %, Sikhism by 0.14 % and Buddhism by 0.14 %. Around 0.10 % stated 'Other Religion', approximately 0.25 % stated 'No Particular Religion'. The total rainfall is about 22 inches (580 mm). sangli has a chill climate all around winter, summers are dry but not so much dry like in the big metropolitan cities. Temperature of the city is Max. - 42°C. Min. - 14°C. Literacy rate of city is 76.70 %, Male - 9,86,743 Female - 7,44,836. Area under Horticulture is 29381 Hectares and Area under Irrigation is 1,20,302 Hectares.

Data for Monthly average reading recorded at Sangli

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
Terrace of SRO-Sangli, UdyogBhavan	2017	Apr	7.22	21.88	66.77
		May	6.87	27.25	47.87
		Jun	7.33	23.55	33.11
		Jul	6.33	19.55	36
		Aug	7.88	24.22	35.77
		Sep	7.5	25.5	34.12
		Oct	9.88	32.44	62.11
		Nov	9.33	43.33	106.44
		Dec	9.88	56.88	150.33
	2018	Jan	12.62	54.5	176
		Feb	26.25	56.37	142.25
		Mar	8	38.55	118
Sangli-Miraj Primary Municipal school, Near BharatiVidyapeeth, RjawadaChowk	2017	Apr	9.22	34.11	66.44
		May	8.22	27.22	43.22
		Jun	8.25	27.37	31
		Jul	10.44	20.55	35.88
		Aug	9.55	30.22	31.33
		Sep	9.44	29.88	36.66
		Oct	11.75	48.5	57.75
		Nov	12.88	55.66	121.44
		Dec	12.55	65.33	135.44

	2018	Jan	13.66	78.33	150.55
		Feb	23.37	123.25	142.75
		Mar	11.88	66.22	116.11
Krishna Valley school, MIDC	2017	Apr	9.75	39.5	77.87
		May	8.88	36.22	54.22
		Jun	8.77	29.22	38.22
		Jul	8.77	23.88	42.44
		Aug	9.37	30.75	43.37
		Sep	9.33	24.55	54.22
		Oct	11.88	42.11	51.11
		Nov	10.87	57.5	116.5
		Dec	12.66	55	122.44
	2018	Jan	13.66	48.22	133.88
		Mar	14	51.75	104

Data for Annual average trend of SO_2, NOx, and RSPM at Sangli

Station Name	year	Average of SO_2	Average of NO_X	Average of RSPM
		50	***40***	***60***
Terrace of SRO-Sangli, UdyogBhavan	09-10	21.68	26.56	53.74
	10-11	11.66	29.25	54.01
	11-12	9.96	35.85	63.4
	12-13	9.92	38.53	69.75
	13-14	8.84	34.22	69.4
	14-15	11.9	41.61	66.58
	15-16	9.71	38.07	81.77
	16-17	8.25	40.93	77.92
	17-18	9.02	35.12	83.45
Sangli-Miraj Primary Municipal school, Near BharatiVidyapeeth, RjawadaChowk	09-10	23.01	31.98	68.97
	10-11	12.51	31.56	69.18
	11-12	9.65	35.89	71.57
	12-13	10.81	44.35	79.65
	13-14	9.53	41.12	80.19
	14-15	12.55	48.16	91.53
	15-16	10.71	44.32	77.75
	16-17	9.27	45.05	75.6
	17-18	11.69	50.1	80.81
Krishna Valley school,	09-10	23.65	34.09	81.62

MIDC	10-11	12.25	29.79	74.54
	11-12	10.47	36.41	89.4
	12-13	12.42	43.33	97.37
	13-14	10.65	36.62	94.87
	14-15	13.37	43.94	102.86
	15-16	11.43	36.95	92.66
	16-17	8.73	34.8	75.62
	17-18	10.71	40.05	80.13

2. Action Plan for Sangli:

		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	
Sr. No		**Source Group**	**Control Option**	**Expected reduction and impacts**	**Technical Feasibility**	**Requirement financial resources**	**Implementation period (Short/mid/long-term)**	**Time target for implementation**	**Responsible agency (ies)**	**Any other information**
1	i	**Vehicle emission**	Pollution monitoring and source attribution by collaborating with sangli Pollution Control regional office to ensure that sangli has an adequate network of air quality monitoring stations , Remote Sensor based PUC systems, mobile monitoring systems, on road monitoring systems, ambient air monitoring systems	Monitoring Data is used to establish the emission rate by source, by fuel, by technology, ambient air monitoring date is used for long-term spatial and temporal trend analysis; can be used to determine the merits and the de-merits of an intervention over time by usage, road monitoring data can be used for understanding pollution exposure during commute; specially to understand the acute health impacts of being exposed to augmented pollution levels on the roads. this data will help in reducing the pollution from highly polluting vehicles. The machines installed on roads will perform real time in-situ emission scan and will identify high emitters. The machine will also scan number plate and send notice for enforcement of rules. This technique is	Feasible.. To be checked with specific study	Rs. 3.5 Crores/ machine Ref: Swachhindia.ndtv.com	Long term	90 months	RTO	The installation of Remote Sensor RFID based PUC systems will be proposed under consultation of Transport Commissioner agency will take the expertise of CSIR-NEERI for its installation, Geo Tagging of Locations for its ,implementation and monitoring

				extensively used in Germany China, Kolkata						
	ii		Prepare action plan to check fuel adulteration and random monitoring of fuel quality data by collaborating with Department of Science & Technology for ensure that independent data on air pollution is available in real time	will reduce the overall Air Pollution Load in City	Feasible	Survey and random checking work-Rs. 5-10 lakhs,, Ref: http://urban.rajasthan.gov.in/content/dam/raj/udh/organizations/ruidp/Downloads/BSR/RUIDP%20ISOR-%202017.pdf	Long term	12-18 months	SMKC, anti-adulteration cell, RTO	Establishing adulteration cell and Checking fuel adulteration with coordination of anti adulteration cell which is a continuous process.
	iii		Prepare action plan for widening of road and improvement of Infrastructure for decongestion of Roads. Development of bicycle tracks along roads to promote use of cycles. Separate bicycle tracks will ensure safe cycling along busy roads and will result in increase use of bicycles.	The existing development of roads will reduce the congestion on existing roads thereby reducing the vehicular emissions. Effective implementation of parking policy should be done.	Feasible	Survey/ maintanence work-Rs. 10-20 lakhs, pothole maintanence-Rs. 20000 approx. based on the size	Short term	18-24 months	Executive Engineer SMKC , Chief Engineer PWD, Project Director National Highway Auhtority	-

	iv	**Vehicle emission**	Identification of areas where space for more parking is required and developing parking facility Prevent parking of vehicles at Non designated areas.	will reduce the overall Air Pollution Load in City	Feasible	Approx. 5 crores for parking area development	Short term	12-18 months	Traffic Engineer, Executive Engineer SMKC /DCP Traffic,	In addition to existing parking facility it is propose to develop parking lots IN areas having high traffic density in city markets ,commercial areas. Similar parking facility to be developed in other congested areas.
	v		Introduction of Vehicle emissions control technologies such as oxidation-reduction catalytic converters, advanced catalytic converters, and lean-burn combustion For diesel fuelled vehicles.	implementation of a new-type vehicle emissions st andard can be expected to be very effective in reducing NOx, SO2, PM10, CO and THC over the long term. Each step of the new standard corresponds to the adoption of some new vehicle technologies. The effect of these standards will be shown gradually, reflecting the rate of replacement of existing vehicles	Feasible	-	Long term	28 -24 months	Traffic Engineer, SMKC /DCP Traffic	Must increase awareness regarding use of new technologies by taking events.

	vi	**Vehicle emission**	Launch extensive drives against polluting vehicles for ensuring strict compliance	It is reported that the existing polluting old & under maintained vehicles viz., Two wheeler, Autos, cars, buses, trax, trucks etc. approx form 10-15 percent of total vehicles. Pollution from these vehicles will get reduced by proper maitenance, etc. BSIV technology reduces the emission rates by over 20%, of the previous BSIII technology reduces the emission rates by over 20%, over the previous BSIII technology. The present annual vehicle emissions for PM2.5 is about 34 tons which may increase to 58 tons in 2022 (BAU). With mitigation measures like introduction of CNG/e-cars/hybrid vehicles/ green vehicles (about 10-15%) it would reduce to about 38 tons .	Feasible	Approx. 5 crores (approx. cost for monitoring systems)	Short term	12-18 months	RTO Sangli, SMKC	RTO to have portable monitors for PM and Gaseous air pollutants, random checking of polluting vehicles and take strict action against them to make maintenance compulsary. At present the vehicle manufacturers have to comply with the BSIV standards applicable to all since April, 2017
	vii	**Vehicle emission**	Initiate steps for retrofitting of particulate filters in Diesel vehicles	will reduce the overall Air Pollution Load	Should be technically checked for efficiency	Rs. 0.5-0.7 lakhs per unit https://dir.indiamart.com/impcat/diesel-particulate-filters.html	Long term	12-18 months	GoI, GoM, SMKC MPCB	Policy making decision Up to some extent light motor vehicle & auto rickshaw are presently running on petrol & LPG dual combination. To reduce the

										impact of air pollution by public transport vehicles the use of CNG, battery operated system, E- Rickshaw are the options which will be implemented in future step by step.
	viii		public awarness campaigns for vehicle emission control through proper vehicle maintanence, minimising use of personal vehicles, lane discipline etc.stopping of engines while idling in inter sectons.	Drive less, Drive wise, Choose fuel efficient vehicles, Don't idle, Schedule transport vehicles movement, Use clean and efficient transport systems.		Approx. 10 lakhs for the year 2018-19 at 20-25 locations (for digital display boards, organising plays, video cuts, audio recording play)	Short term	12-18 months	Traffic Engineer, SMKC/ MSRTC	display boards at various traffic intersections to be used for the advertisement
	ix		Identification of traffic congestion hot spots and prepare Plan for the construction of bypass/flyovers to avoid congestion	The congestion Index of sangli city is increasing due to enormous constrction of roads and infrastructure. After this constrution, the widening of existing roads,and other activities as per the parking and mobility plan, the vehicular emissions will be reduced	Feasible	project consultancy work-Rs. 5-10 lakh.	Short term	12-18 months	RTO Sangli, SMKC	-

	x	**Vehicle emission**	Insall weigh in Motion bridges at the borders of the cities/Towns and states to prevent overloading of vehicles.	will reduce the overall Air Pollution Load	The percentage reduction in air pollutants should be quantified based on actual monitoring of emissions	Rs 12 Lakhs per unit for 100 tonne load capacity Ref : India Mart	Long term	12-18 months	SMKC, RTO Sangli.	Plan to install weighing check post for heavy goods carrying vehicles has to carried out consultation with Regional Transport office.
	xi		Steps for Promoting electric, Battery operated vehicles.	will reduce the overall Air Pollution Load	Feasible.	About 5 - 10 crores for introduction of E - vehicles by 2022	Mid term	12-24 months	RTO, SMKC	Already initiated electric fleet of 06 electric e-rickshaw for solid waste transport, sangli To promote electric vehicles.
	SCS -1		Sulphur reduction in diesel	Same as Above	Feasible.		Long term	60 months	GoI, GoM	POLICY MAKING DECISON
	SCS -2		Introduction of new technology vehicles	Same as Above	Feasible.. To be checked with specific study		Long term	60 months	RTO, Transport Deptt. SMKC	-

	SCS -3		Introducing good public transport system.	Increase in public transport fleet will result in less use of personal vehicles thereby reduce the pollution load	Feasible	Approx. 5 crores (for introduction of buses for public transport)	Long term	60 months	Sangli,Transport Deptt. SMKC RTO, MSRTC	Public tranport should me engouraged so that load on air pollution gate reduced.
	SCS -4	**Vehicle emission**	Standards for new and in-use vehicles	Will significantly reduce the emissions on the city roads	Feasible		Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION
	SCS -5		Alternative fuels	Will significantly reduce the emissions on the city roads	the emission reduction efficiency of proposed alternate fuels to be checked	-	Long term	60 months	GOI, GOM, SMKC.	
	SCS -6		implementation of BS-VI norms	Will significantly reduce the emissions on the city roads	Feasible	-	Long term	60 months	GOI, GOM, SMKC.	At present the vehicle manufacturers have to comply with the BSIV standards applicable to all since April, 2017
	SCS -7		Hybrid Vehicles	Will significantly reduce the emissions on the city roads.	Feasible	-	Long term	60 months	GOI, GOM, SMKC	Organising Awareness programs for encourage use of hybrid vehicles

	SCS -8		OE-CNG for new public transport buses	Will significantly reduce the emissions on the city roads	Feasible.. To be checked with specific study	-	Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION
	SCS -9		Ethanol blending (E10-10% blend)	Will reduce the emissions if found to be better than the conventional fuels	emission reduction efficacy of proposed fuels to be checked	-	Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION
	SCS -10		Bio-diesel (B5/B10:5-10% blend)	Will reduce the emissions if found to be better than the conventional fuels	same as above		Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION
	SCS -11		Retro-fitment of Diesel Oxidation Catalyst (DOC) in 4-Wheeler public transport (BS-II and BS-III)	Will significantly reduce the emissions on the city roads	To be checked with specific study	-	Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION
	SCS -12		Retro-fitment of Diesel Particulate Filter in 4- wheeler public transport(BS-III city buses)	Will significantly reduce the emissions on the city roads	To be checked with specific study	-	Long term	60 months	Ministry of Road Surface Transport & National	POLICY MAKING DECISION

									Highways	
	SCS -13		Banning of 15 year old commerical vehicles	Will significantly reduce the emissions on the city roads	Feasible		Long term	60 months	Ministry of Road Surface Transport & National Highways	POLICY MAKING DECISION Buses and heavy vehicles more than 15 years old are still plying. The transport department to undertake a drive to check the fitness of such vehicles.
	SCS -14		Inspection/maintenance to all BSII & BSIII commerical vehicles	Will significantly reduce the emissions on the city roads	Feasible	-	Long term	60 months	RTO + MSRTC	POLICY MAKING DECISION
	SCS -15		Restrict commercial vehicle entering city by having ring roads.	Already existing	practice to be continued	-	Long term	60 months	DCP traffic, RTO sangli SMKC	POLICY MAKING DECISION
2	(i)	**Resuspension**	Prepare plan for creation of green buffers along the Traffic corridors. The total road in the city is partially paved/unpaved. The present annual PM 2.5 emissions is 1.5 tons which will decrease after paving.	The green buffers will act as air pollution sinks and reduuce the pollution load	feasible	Approx. 100 crores	Mid term	12-24 months	Garden deptt. SMKC, , MPCB.	Partially done. green buffers at road dividers, channelizer, traffic islands and on both sides of the roads were developed. This work may be extended to other highly polluted roads

	(ii)		Maintain Pothole Free Roads for Free flow Traffic	Will reduce pollution load	feasible	As per the requirement	Mid term	12-24 months	Civil Dept. Smkc, Sanitary Dept. Smkc	-
	(iii)		Introduce water fountains at Major Traffic intersection, wherever feasible.	Will reduce pollution load	Feasible	Approx. 40 lakhs (for 20 water fountains)	Mid term	12-24 months	SMKC Traffic Deptt. sangli	The water fountains may be installed at the spaces near traffic lights where space is not avialable at the centre of the road
	(iv)		Greening of open areas, garden, community places, schools and housing societies.	Will reduce pollution load	Feasible	As per the requirement	Mid term	12-24 months	Garden deptt. SMKC	SMKC has already started eveloping green spaces around the city. new gardens are proposed in the city under Amrut mission.
	(v)		Blacktopping of metaled Roads including pavement of Road shoulders	Will reduce pollution load	Feasible	As per the requirement	Long term	12-24 months	SMKC	Majority of the metaled roads have blacktopping
	SCS -1		Wall to Wall paving (brick)	Will reduce pollution load	Feasible	Rs. 100 per sq. ft Ref. https://www.indiamart.com/proddetail/natural-stone-wall-bricks-16478046533.html	Long term	12-24 months	City Engineer, SMKC	-

	SCS -2	**Road design improv ement**	More Roads are made in city and old roads are maintained properly with planningm over which vehicle emissions to be studied	Will reduce pollution load	Feasible	Already covered above	Long term	12-24 months	City Engineer, SMKC	-
3	(i)	**Solid waste manag ement/ Biomas s/trash burnin g, landfill waste burnin g**	Regular check and control, of burning of Municipal Solid waste	Will reduce the air emissions	Feasible	As per the requirement	Short term	12 Months	Health Dept. SMKC, MPCB.	Already iplemented strict rules regarding open burning as penalty of rs 5000 if found guilty.
	(ii)		Launch extensive drives against open burning of biomass crop residue, garbage, leaves etc.Ensure ban on burning of agricultural waste and crop residues and its implementation.	Will reduce the air emissions	Feasible	-	Long term	12-18 Months	Health Dept / Garden Suptd, CEO ZP sangli. SMKC, Sangli.	Measure are taken to implement rules to restrict open burning of crop residue.
	(iii)		Biomethanation and biogas plant need to be installed.	Will reduce emission of methane	Feasible	As per DPR of SWM	Mid term	12-18 Months	Health Departm ent, SMKC, Sangli.	DPR is awaiting approval of urban developmen dept. GOM.
	(iv)		Proper collection of Horticulture waste and its disposal following composting-cum-gardening approach	Will reduce the air emissions	Feasible		Short term	12 Months	Health Dept / Garden Suptd, SMKC, Sangli	Presently SMKC has installed 24 bio composting bed in 24 gardens.

	SCS -1		Solid waste management at landfill site, increase capacity of waste to energy project. Presently, 220 TPD solid waste is generated in city. Assuming 41% of unmanaged waste so releasing emissions.	If waste is treated scintifically it can reduce consider amount of emission.	Feasible	As per DPR of SWM.	Mid term	24-36 months		DPR is awaiting approval of urban developmen dept. GOM.
4	(i)	**Industry**	Identification of Brick Kin and their regular monitoring including use of designated fuel and closure of unauthorized units.	Will reduce the air emissions	Feasible	MPCB to undertake	Short term	12 Months	SMKC, MPCB, Revenue Dept.	-
	(ii)		Conversion of natural draft brick kilns to induced draft	Will significantly reduce the emissions	The quantification of reduction in emissions should be done by monitoring emissions prior and after the conversion-feasibility to be checked	Rs. 38.5 Lakhs Approx. per unit..Ref:http://shaktifoundation.in/wp-content/uploads/2018/01/Zig-Zag-Kilns-A-Design-Manual-English-2017-1.pdf	Long term	60 Months	SMKC, MPCB	-
	(iii)		Action against non-complying industrial units	Will significantly reduce the emissions	-	MPCB to undertake	Short term	12 Months	MPCB	-.

	SCS -1		Sulphur reduction in fuel	Will significantly reduce the SO2 emissions	To be checked with specific study	Policy decision	Short term	12-18 Months	(Policy matter) MPCB	1) FGD system 2) PolicyDecision
	SCS -2		Improved Combustion technology	Will significantly reduce the emissions	To be checked with specific study	Industry to undertake	Short term	12-18 Months	Revenue Deptt.	-
	SCS -3		Alternate fuel ...Efficacy of use of solar power in Industries and other control measures needs to be studied	Will significantly reduce the emissions	To be checked with specific study	to be done individually by Ind ---- 100 kW rooftop solar plant costs Rs 60 Lakhs Ref: http://www.solarmango.com/faq/2	Short term	12-18 Months	Revenue Dept. MSEB	Alternative option for use of biogas/ other renewable solid fuels such as MSW briquettes etc. may be probed for co-firing in LSI, MSI alogwith control measures
	SCS -4		Promoting cleaner industries	Will significantly reduce the emissions	feasible	-	Short term	12-18 Months	SMKC	Green- white industries
	SCS -5		Location specific Emission reduction	Will significantly reduce the emissions	feasible	-	Short term	12-18 Months	SMKC	3rd party audit for emission reduction
	SCS -6		Fugitive emission control	Will significantly reduce the emissions	feasible	-	Short term	12-18 Months	SMKC	Major Large Scale industries have internal tar road & sprinkler system for vehicular movement. Transportation is

										done in closed containers for raw material, byproducts, products are etc.
SC S-7			Banning of new air polluting type industries and proposed expansions in existing city limit and nearby periphery of 20km radius	Will significantly reduce the emissions	Feasible	MPCB to undertake	Short term	12-18 Months	SMKC	Already done.
SC S-8			Installation /upgradation of air pollution control systems	Will significantly reduce the emissions	To be checked with specific study	Approx. Rs. 50-100 lakhs by industry for APC systems & house keeping	Short term	12-18 Months	M.H.O. SMKC Joint Director, MPCB Industries, Office of Directorates Industries SANGLI Division, Sangli	Probing studies for reduction of gaseous emissions
SC S-9			Use of high grade coal	Will significantly reduce the emissions	Feasibility to be checked	WCL to undertake beneficiation	Short term	12-18 Months	M.H.O. SMKC, MPCB Joint Director, Industries, Office of Directorates Industries SANGLI	Periodic audit (3rd party) of quality of coal Coal beneficiation to be done

									Division, Sangli	
	SCS -10	**Industry**	Regular audit of stack emissions for QA/QC	Will significantly reduce the emissions	Feasible	Rs.10-20 lakhs per industry	Short term	12-18 Months	M.H.O. SMKC Joint Director, Industries, Office of Directorates Industries, MPCB	-
5	(i)	**Construction and Demolition Activities**	Enforcement of construction & demolition rules, implementation of measures for control of emissions during activity	Will significantly reduce the emissions	Feasible	--	Short term	12-18 Months	SMKC/PWD/ to undertake as per CPCB norms	Already implemented rule penalty of Rs.50000 is declared if found guilty.
	(ii)		Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinking, curtains, barriers and suppression units.	Will significantly reduce the emissions	Feasible	--	Short term	12-18 Months	SMKC	MPCB HQ issued direction on 12/03/2018 for implementation and compliance of Construction and Demolition Waste Management Rules 2016.
	SCS -1		Better construction practices with PM reduction of 50%	Will significantly reduce the emissions	Feasible	--	Short term	12-18 Months	SMKC	

	SCS -2		Banning of operation of Brick kilns in city area	Will significantly reduce the emissions	Feasible	---	Short term	12-18 Months	Revenue Department SMKC	----
	SCS -3		Ensure carriage of construction material in closed/covered Vessels	Will significantly reduce the emissions	Depending on state or local By-laws, member of corporation can organize regional co-operations according to their specific needs. Through the corporation, public and private decision makers can be brought together to consider a regional strategy in the direction of MPCB. If regionalization seems promising, the corporation can then plan and implement	Rs. 1 lakhs per vehicles	Short term	12-18 Months	SMKC RTO	MPCB HQ issued direction on 12/03/2018 for implementation and compliance of Construction and Demolition Waste Management Rules 2016.

					the program.					
6	SCS -1	**Domestic fuel burning**	Shift to LPG from solid fuel & kerosene for domestic applications	Will reduce emissions significantly	Feasible	Ujjawala scheme in operation (Rs. 500 per cyl. Refilling)	Short term	12-18 Months	RDC	---
	SCS -2		Better cook-stove designs	Will reduce emissions significantly	Feasible	Rs. 2000 per stove (for residential purpose) MNRE	Short term	12-18 Months	RDC	---
8	(i)	**DG sets**	Monitoring of DG sets and action against violations	Will reduce emissions significantly	Feasible	Rs. 2 lakhs - survey work	Short term	12-18 Months	SMKC , MPCB	Identified DG sets in LSI and MSI and others to strictly implement consent rules to ensure fuel quality usage and emissions control norms. Random checks/ 3rd party audit to be followed
	SCS -1		Reduction in DG set operation /Un-interrupted power supply	Will reduce emissions significantly	Feasible	15 KVA (NG based)-3.7 lakhs, 100 KVA (NG based)- 14 lakhs Ref. https://dir.indiamart.com/impcat/n	Short term	12-18 Months	Director, MSEDCL (Electrical Inspector)	---

						atural-gas-generators.html				
9	SCS-1	**Hotel/restaurants/Bakeries /**	Use of LPG in Hotels and "Dhabas"	Will reduce emissions significantly	Feasible	Cyl. (commercial) cost per unit-Rs. 1000 approx.	Short term	12-18 Months	SMKC	Use of alternate fuels such as MSW/ Agricultural waste briquettes after the testing of these alternate fuels for reduction in pollution
10	(i)	**Crematoria**	Use of electric/ gas crematoria should be promoted	Will reduce emissions significantly	Feasible	Approx. Rs. 12-40 Lakhs per unit Ref: India Mart	Short term	12-18 Months	SMKC	----
	(ii)		Promote use of briquettes instead of wood	If wood is replaced with briquettes then around 35% reduction in PM emissions will take place.	Feasible	As per requirement	Short term	12-18 Months	SMKC	Presently SMKC is using briquettes for crematoria
	(iii)		Development of green areas along crematoria	Will reduce transport of emissions in vicinity significantly	Feasible	Rs. 1000 per sq. ft Ref. https://www.indiamart.com/proddetail/natural-stone-wall-bricks-16478046533.html	Launch extensive awareness drive against polluting vehicles;	Immediate	SMKC	It is proposed by SMKC to develop green belt.

11		**Other (city specific)**	Wastewater treatment plant	This will reduce emissions of foul gases and other pollutants from the running as well as stagnant sewage	Feasible	As per requrement	Long term	18 to 24 months	SMKC	Already completed 5 sewage treatment plant

1. Monitoring Mechanism for Implementation

The aforesaid action plan shall be implemented by Maharashtra State Pollution Control Board with coordination of concern departments/stakeholders.

2. 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 Sangli. The Principal Secretary, Environment and Forest, 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.

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Medical Officer Health
Sangli Miraj Kupwad
City Corporation,Sangli