

Revised Actions for Durgapur

Comprehensive Action Plan (CAP)

Against the backdrop of the challenges outlined in each sector, this pollution source-wise comprehensive action plan has been developed for industrial town of Durgapur. Keeping in view the air pollution reduction targets in the city detailed strategies have been identified to indicate the nature, scale, scope and depth of action needed for effective reduction to make an impact overtime. In view of this instead of listing only broad action points, detailed indicators and action points have been included for all sectors to guide implementation.

This plan has integrated and built on the on-going action and action plans of the state government in each sector that are already underway. Action plan has also been improved further based on emerging good practices. In several sectors good practices have emerged that need to be leveraged and aligned to meet the clean air objective. This creates a good template for upscaling and replication in other cities. This action plan has integrated all ongoing efforts to chart the roadmap.

Special care has been taken to ensure that sufficient indicators are included in the plan itself to indicate the nature and scope of the strategies outlined for each sector that are needed for implementation to make an effective impact. For instance, often it is not clear how different aspects of transportation and urban planning are linked with air pollution control. It is important to ensure that clean air action plan ensures convergence of planning for road building, public transport infrastructure and non-motorized transport planning to guarantee that people-oriented design are integrated all across to prevent lock in of pollution in the infrastructure itself. Similarly, action in renewable energy sector, urban forestry and a plethora of clean energy and industrial emissions management strategies have been integrated.

Alignment of inter-sectoral action will be critical to leverage the available resources of funding for maximum impact. In all sectors—transport, industry, power plants, construction industry, municipal solid waste management, air quality monitoring, road building and traffic management—budgetary resources have been earmarked for investment, or, investments from other private or bilateral sources are coming in. If these investments are better informed and aligned with this clean air action planning process and objective, significant change at a scale is possible.

This plan also opens up the opportunity for developing fiscal strategies based on polluter pay principle to generate additional resources for funding of the plan. In areas where the action depends on private sector participation and investments the detailed guidelines under this plan can guide such investment. This plan has identified the agencies responsible for implementation of each action point and has also indicated the timeline for implementation. This can be monitored for reporting and compliance.

Graded Response Action Plan (GRAP)

Based on the National Air Quality Index Graded Response Action Plan has been framed for daily response to air quality changes. This has predefined the set of measures to be taken for different air quality categories—satisfactory, moderate, poor, very poor, severe and emergency. Once notified these measures will come into force automatically. Available data shows that in most non-compliant cities, barring hotspot areas in industrial cities, the daily levels vary between moderate to poor; sometime touching the very poor level. The GRAP measures will be implemented accordingly. GRAP is also includes the advisory for people to take precaution for self-protection.

For proper implementation and oversight the high-powered committee will coordinate with the city level authorities in each six non-compliant city for direction, compliance monitoring and reporting. Each concerned department in a city will appoint a high level officer as a nodal official for coordination, implementation and periodic reporting. Comprehensive Action Plan (CAP): Short-, medium- and long-term measures Source-wise clean air action plan and compliance strategy for Durgapur to meet clean air standards. The following table indicates the short, medium- and long-term action along with agencies responsible

(1) AIR QUALITY MONITORING AND ASSESSMENT

S. no.	Action points	Agency responsible	Timeline	Financial Outlay
Short-term priority action				
1.1	To set up adequate number of real time automatic monitoring stations: The grid plan should be representative of population distribution and land use including residential, commercial, industrial, roadside and sensitive areas. Also include hot spots such as near traffic areas and landfill sites such as Sankarpur. Refer to the CPCB's thumb rule as prescribed in IS:5182 (Part 14), 2000 on Recommended minimum number of stations, population-wise (Also mentioned in Guidelines for Ambient Air Quality Monitoring, CPCB, 200327). Among all twelve pollutants to be monitored, special focus is needed on PM2.5 and ozone monitoring. Use air quality sensors at probable hotspots to complement air-quality monitoring (based on CPCB/MoEF&CC guidelines). Durgapur has a population of 5,66,517 and based on the CPCB criteria, it has only one CAAQMS and four manual stations. Two more CAAQMS needs to be installed. Only one CAAQMS, two more need to be installed to meet the CPCB criteria.	Supported by Central Pollution Control Board (CPCB)	6 months	3 crore
1.2	Use air quality information provided by satellite-based monitoring to complement ground based air quality monitoring and also unmonitored areas. This is useful to identify agricultural burning/ forest fires, regional pollution etc that have impact on urban air quality. Satellite based monitoring being done in Kolkata, to be expanded for Durgapur	WBPCB, CPCB, IMD, West Bengal State Council for Science and Technology	6 months	To be finalised
1.3	Develop capacity for pollution forecasting for implementation of graded response action plan. This will also require monitoring of weather data. Extending programs like SAFAR for Durgapur	MOES, IMD, IITM, Pune, Department of Environment, WBPCB supported by CPCB, IMD	1 year	To be finalized
1.4	Set up daily air quality public information dissemination system based on National Air Quality Index and health advisory. Further develop online reporting of daily and annual data for all pollutants and pollution forecasting on SPCB website. Set up system for dissemination of information to public through website and local media.	WBPCB, CPCB, IMD	1 year	Regular Activity
1.5	To commission a source apportionment and pollution inventory study for the city. This will capture source-wise contribution, seasonal variations in source contribution, assess regional impacts and assess carrying capacity. Additionally, a mechanism to assess trans-boundary emissions must be established	WBPCB	1 year	3 crore

S. no.	Action points	Agency responsible	Timeline	Financial Outlay
1.6	Set up rural and peri-urban air quality monitoring to assess the airshed/ influence area. The National Clean Air Programme (NCAP) from the Union Ministry of Environment and Forest and Climate Change has recommended rural air quality monitoring.	WBPCB & CPCB	1-2years	1.6 crore
1.7	Assess application of low cost sensor based monitors in areas that are not being monitored to create baseline local data to inform local area action	WBPCB & CPCB	1 year	To be finalized
Long-term action				
1.8	Research studies including emission inventories and source apportionment, health impact studies, exposure impacts, carrying capacity assessment of air shed and regional impacts, hot spot assessments and other relevant studies may be undertaken to further refine inform the action plan: Government to support research works/scientific studies by academic/ research institutions. Expertise will be sought from various institutions to develop protocols for assessment of the research proposals.	WBPCB, DoE West Bengal State Council for Science and Technology,	1 years	2 crore
1.9	Database management for implementation of action plan: Data collection, sharing and analysis protocol must be set up for effective implementation of clean air action plan. Prepare detailed data protocol for systematic recording of emissions data from industries and other sources.	WBPCB, DoE in coordination with all relevant departments	1-2 years	Regular Activity

(2) INDUSTRIES

S. no.	Action points	Agency responsible	Timeline
Short-term priority action			
2.1	Implement of SO _x and NO _x standards notified by MOEF&CC on January 29, 2018 for 35 categories of industries in and around the city. Strengthen and implement strategies needed for critically polluted industrial areas. Strengthen the current siting policy for industries to be notified in future, in order to address Durgapur-wide air quality issues.	WBPCB	6 months
2.2	Implement existing standards for PM and ensure compliance through regular testing & CEMS enabled monitoring (See action 2.4) . Also takeprecautions for minimizing fugitive emissions through the preparation of a checklist for industrial zones and units, specific to each type of industry. Carry out regular inspection	WBPCB, Department of ICE and MSMA	3 months
2.3	Prepare a clean fuel policy and provide incentives for clean fuelsfor the state: for this identify approved and non-approved fuels.For this notify a list of approved fuels.Promote relatively cleaner fuels like gas (Coal Bed Methane,natural gasetc) and electricity. Discourage fuels with very highsulphur and heavy metals like furnace oil, pet coke, tyre oil etc.(except where it is used as feedstock like cement).Need for afavourable taxation and pricing policy to make cleaner fuels morecompetitive. Incentivise replacement of boilers to switch to cleaner fuels. Clean fuel strategy needed for small and medium scale units with nominal or no emission control system	WBPCB, Department of ICE and MSME	6 months

2.4	Identify the units that need to install Continuous Emission Monitoring System (CEMS) across all targeted and applicable polluting industry: Ensure calibration and working of CEMS in all industries in the urban airshed or area of influence and provide information to monitoring agencies to take appropriate actions. Specify the mechanism for quality control and quality assurance of CEMS data and ensure that data is available online and the reported data is compared with applicable prescribed limits and not the older standards. Compliance checking to be enforced routinely to prevent tampering with the CEMS. This needs to be done for all sectors including sponge iron units, cement units, iron and steel industries, rice mills and jute mills.	WBPCB, Department of IICE and MSME	6 months
2.5	Identification of cumulative impact of industrial emissions such as total load from a specified area. Prescribe more stringent pollution control action for each type of industry. For instance different actions for sponge iron units and rice mills.	WBPCB, Department of ICE and MSME	6 months
2.6	Identification and implementation of fugitive emission control measures in ancillary units, material transfer and handling and emissions during industrial processes. Informal industrial units will require stringent monitoring. Hold quarterly inspections	WBPCB, Department of ICE and MSME	6 months
2.7	Enforce restrictions on operations of intensively polluting industries within urban airshed zones during high pollution periods. Upgrade all existing Air pollution Control devices.	WBPCB, Department Of ICE and MSME	6 months

Medium-term action			
2.8	Prepare and implement action plan specific for small and medium scale industrial units.	WBPCB, Department of ICE and MSME	1 year
2.9	Prepare and implement local area action plan for pollution hotspots and strict enforcement of air pollution control measures in all industries, including those located in unauthorized areas. Build schedule for inspection of areas of concern and reporting.	WBPCB, Department of ICE and MSME	1 year
2.10	Strengthen the current siting policy for industries to address Durgapur wise air quality problems. Restrict expansion and diversification of old polluting units that are near residential areas until robust pollution control devices have been installed and are routinely inspected.	WBPCB, Department of ICE and MSME	1 year
2.11	Training and awareness program for onsite emergency preparedness and environmental issues for industrial workers.	WBPCB, Department of ICE and MSME	1 year
2.12	Construction of paved roads around all major industrial estates. Installation of dust suppression system. Provision for water sprinkling and dust mitigation.	WBPCB, Department of ICE and MSME, ADDA	1 year
2.13	Development of adequate green belt around all major industrial estates by planting at least 1000 saplings	WBPCB, Department of ICE and MSME, ADDA	1 year
2.14	Inspection of bag filters wherever installed, replacement of older bag filters and overhauling of ESPs when applicable.	WBPCB, Department of ICE and MSME, ADDA	1 year

(3) BRICK KILNS, HOT MIX PLANTS AND STONE CRUSHERS

S. no.	Action points	Agency responsible	Timeline
Short-term priority action			
3.1	There are brick kilns in close vicinity of the city. Enforce restrictions on operations of brick kilns within urban airshed zones during high pollution periods; allow only those Brick kilns that comply with rectangular zig-zag design with induced draft or those with improved technology. Initiate phasing out of traditional brick kilns	Dept of land and Land Reform WBPCB, ADDA, DMC, Department of MSME	6 months
3.2	Relocate centralised Hot Mix Plants to areas outside Durgapur boundaries, and ensure compliance with PM, NOx and Sox emission standards. Shut down small and mobile Hot Mix Plants	DMC, WB PWD, NHAI and other road operating agencies	Immediately
Medium-term action			
3.3	Convert all brick kilns to rectangular design zigzag technology– from FCBT natural draft kilns to induced draft kilns with rectangular zigzag design.	Department of Land and Land Reform, WBPCB, CPCB ICE and MSME	1 year
3.4	Prescribe design specifications for improved kilns and ensure compliance checking. Ensure conversion has actually taken place. Ensure provision of infrastructure in terms of viewing platform and chimney emission testing point for compliance.	CPCB, WBPCB, Department of ICE, MSME	1 year
3.5	Remove stone crushers that are close to the city; adopt stringent dust control measures and greening	District Administration, WBPCB, West Bengal Department of Industries, Commerce and Enterprises, MSME	1 year
3.6	Establish a protocol for using cleaner fuels & technology for asphalt mixing and minimizing the number of hot-mix plants	MoRTH, DMC, WB PWD, NHAI and other road operating agencies	1 year

(4) ACTION TO REDUCE VEHICULAR EMISSIONS

S. no.	Action points	Agency Responsible	Timeline
4.1	Emission And Fuel Quality For New Vehicles: Ensure on-schedule implementation of BS VI fuel and emission standards on April 1, 2020. Ensure that only BS VI compliant vehicles are registered from this date. Supreme Court order of October 24, 2018 has directed that no vehicle that is not BSVI compliant can be registered from April 1, 2020.	Transport Department	1 year
4.2			
4.2.1	Expand gaseous fuel programme for vehicles: Move auto rickshaws and local taxis and buses to run on CNG. Replace diesel three wheeler & taxi fleets with CNG fleet. Expand CNG refuelling infrastructure for delivery and use. GAIL is expected to expand natural gas to West Bengal, prepare roadmap for Durgapur for the same	Transport Department, Department of ICE, MoPNG	1-2 years

4.2.2	<p>Target Medium and short term goals for electrification of new vehicles fleet in specific segments using a mixture of mandates and subsidies. Eg.</p> <ul style="list-style-type: none"> • Provision of additional state subsidy for procurement of commercial electric vehicles • 100% Exemption of duty/tax on electricity tariff for an initial period of 5 years for EV manufacturers (vehicle and battery) • Encourage retrofitting of auto-rickshaws to EV IPT • Seek to drive rapid adoption of battery electric vehicles in a manner that they contribute to 25% of all new vehicle registration by 2023. • Build on policies of the central govt to make West Bengal a hub of electric mobility. 	Transport Department, Department of ICE, MoPNG, Department of Power and NES, Central Policy guidance from DHI and Niti Ayog	1 year
4.2.3	<p>Identify and notify commercial areas with high footfalls and good public transport and goods transport connectivity to pedestrianize supported by zero emission battery-operated vehicles: Priority may be accorded to battery-operated para-transit as feeders and for last mile connectivity. Ensure organized deployment to reduce congestion. Designated parking spaces for commercial electric vehicles with exempted parking fees for EVs</p> <p>Legalise domestic charging of e-rickshaws: to control power theft due to illegal charging and eradicate informal proliferation of units</p>	Transport Department, Department of ICE, MoPNG, Department of Power and NES, Central Policy guidance from DHI and Niti Ayog	1 year
4.2.4	Explore potential of generating biogas from waste and sewage to run buses in cities	Transport Department, Department of Energy, Oil marketing companies	1 year
4.2.5	Introduce favourable fiscal measures to promote clean fuels and zero emission vehicles such as reduction in road tax.	Transport Department, Department of Power and NES and Finance	1 year
4.3			
4.3.1	Plan and implement adequate number of PUC centre for emissions testing of on-road vehicles. Strengthen periodic auditing and over-sight of PUC centres and calibration of equipment and third-party checks.	Transport Department	6 months-1 year
4.3.2	Link PUC certificates with mandatory third party insurance for vehicles to ensure 100 per cent compliance as per the Directives of the Hon'ble Supreme Court and the MoRTH notification. Ensure real-time updates for all WB registered vehicles with the VAHAN database for compliance. Develop a mechanism for ensuring that no vehicle is allowed to ply without valid PUC certificate.	Transport Department, MoRTH	Immediately
4.3.3	Improve and enforce PUC programme: Ensure universal linking of PUC centres with remote server and eliminate manual intervention in PUC testing. Implement testing of all notified emissions parameters including Lambda testing for petrol cars as notified by MoRTH in 2004.	Transport Department	1 year
4.3.4	Upgrade in-use emissions testing for petrol and diesel vehicles by using additional methods of screening such as remote sensing. Expand existing pilot on use of remote sensing for monitoring of emissions from in-use vehicles in Kolkata to upgrade inspection of on-road vehicles.	Transport Department, MoRTH, ARAI	1 year
4.3.5	Advancement of the system: Integrate on-board diagnostic (OBD) system fitted in new vehicles with vehicle inspection. As per the MoRTH advisory PUC centres have to check malfunctioning indicator light on dash boards of vehicles. If the light is found on vehicles to be sent back for testing in authorized workshops. Additionally, PUC centres need to check if the OBD is functioning properly.	Transport Department	6 months-1 year

	Also keeping in view that BSVI vehicles will roll from April 2020, there is need for system upgradation for more effective screening of on-road vehicles. It is recommended that remote sensing measurements of on-road emissions be introduced. Carry out training programmes, and auditing of PUC centres to check for preparedness of BS VI norms		
4.3.6	Enforcement of law against visibly polluting vehicles: remove them from road, impose penalty, and launch extensive awareness drive against polluting vehicles.	Transport Department, Traffic Police	6 months-1 year
4.3.7	Set up modern centralized vehicle inspection centres for upgraded emissions, fitness and road worthiness tests for commercial vehicles and diesel vehicles.	Transport Department, MoRTH	1 year
4.4	Phase out old vehicles and develop a state vehicle scrapping policy: Phase out old vehicles with the help of age cap and age linked road tax policy. Set up scrapping infrastructure for scientific dismantling and disposal of old vehicles. Set up recycling units that are authorized with proper guidelines and integrate the current informal scrapping units	Transport Department, MoRTH, CPCB	1 year

4.5 Freight Transportation			
Short-term action			
S. No	Action points	Agency Responsible	Timeline
4.5.1	Adopt freight master plan to organize freight movement and logistics. For example, the following truck terminals exist; Truck Terminal: 2 nos, Sagarbhangra, near BCPL, Bus Terminal: 2 nos: 54 foot for SBSTC and Durgapur Station	District and local administration, Municipal Corporation	Within 6 months
4.5.2	Provide truck rest areas/parks along national and state highways to prevent entry of trucks into cities during peak hours. Use of off-peak passenger travel times to move freight and restrict the entry of heavy vehicles into cities during the day to continue. Pave all roads to control fugitive dust	PWD, NHAI	
4.5.3	Introduce age and emission standards-based restrictions on the operations of commercial vehicles within the city. Install procedures and monitoring equipment to ensure better quality and more efficient vehicles operate on the roads.	NHAI, District and local administration	Within 6 months
4.5.4	Check overloading: Use weigh-in-motion bridges / machines (WIM) and Weigh bridges at entry points to the city to check the payload of commercial vehicles. As per the CMVR, a penalty of 10 times the applicable rate for overloaded vehicles is applicable.	District and local administration, Transport department, Traffic Police	Within 6 months
4.5.5	Create management systems for loading and unloading of goods in city areas.	District and local administration, Transport department	6 months
4.5.6	Develop a Safe-to-Load programme to ensure fitness and road worthiness of trucks and compliance to set standards would be adopted and enforced. Important for industrial cities.	Transport Department,	6 months
Medium to long term action			
4.5.7	Promote high capacity trucks for long-distance freight transport of mining material instead of smaller trucks	NHAI, District and local administration	Within 6 months
4.5.8	Diversion of truck traffic: Check feasibility of diversion of non-destined trucks into the city. Alternate routes need to be identified and improved to ensure that non-destined commercial traffic does not enter the city.	District and local administration, Transport department Traffic Police	Within 6 months
4.5.9	Radio frequency identification tag RFID based toll or entry tax collection: install RFID based toll collection system also link it with VAHAN database. This will enable lesser congestion on toll gates, also by using this technology vehicle identification by vintage, emission norm compliance etc. will be easier. Asansol-Durgapur Development authority can adopt such measures to make toll collection cashless and regulate entry based on age. This also allows scope of introducing environment pollution charge at the entry point.	District and local administration, Transport department, Traffic Police	1 year
4.5.10	Develop urban freight consolidation centers in relation to location of warehouses relative to suburban areas.	District and local administration, Transport department	1 year
4.5.11	Prepare a freight master plan: Prepare a detailed logistic plan which includes detailed assessment of freight connectivity, requirement of dedicated freight corridor and, allied freight infrastructure such as logistic park/ truck terminals, cold storage facilities, warehouses etc.	Transport Department, Railways	1-3 year

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S. No	Action points	Responsible Agency	Timeline
FUEL QUALITY TESTING TO CHECK ADULTRATION			
4.6	Prepare an action plan to check fuel adulteration and random monitoring of fuel quality data. To ensure that periodic, routine and surprise fuel testing is done for all transport and non-transport fuels. For this an action plan need to be prepared in consultation with oil companies and ministry of petroleum and natural gas.	WBPCB, MoPNG, Oil marketing companies	6 months
EMISSION CONTROL AT REFUELLING STATIONS			
4.7	Install vapor recovery systems in fuel refueling outlets to reduce benzene and VOC emissions in cities. CPCB has issued direction for installation of stage I and Stage II vapor recovery system in all retail outlets with capacity 3000 kiloliter and more in 46 million plus cities by December 2017. Retail outlets across the city should comply with this.	Transport department, State Oil Coordinator	6 months

(5) URBAN MOBILITY

Sr. no.	Action points	Agency responsible	Timeline
5.1	PUBLIC TRANSPORT SYSTEM		
Short-term action			
5.1.1	Improve the visibility of existing public transport system by upgrading existing Bus Queue Shelters in the city and also install bus post in all bus stop locations.	Durgapur Municipal Corporation (DMC), Public Works Department (PWD), National Highway Authority of India (NHAI)	6 months
Medium-to long-term action			
5.1.2	Introduce an organized public transport service (As proposed in Asansol Action Plan) connecting Asansol, Raniganj municipality and Durgapur of appropriate fleet size and desirable bus type replete with Global Positioning Device (GPS) and passenger Information System (PIS).	Asansol-Durgapur Development Authority (ADDA), DMC, PWD	18 months
5.1.3	Designing the major interchange location or transfer points in such a way that it helps in smooth transition of commuter from one mode to another mode (specifically Bus & IPT integration)	Durgapur Municipal Corporation (DMC), Public Works Department (PWD), National Highway Authority of India (NHAI)	18 months
5.1.4	For strengthening public transport Bus priority lane can be considered as per feasibility. Arterial roads may be identified for such operation. Bus nodes may be connected with para-transit for efficient last mile connectivity.	Transport Department	1 year
5.2	INTERMEDIATE PARA TRANSIT (IPT)		
Short-term action			
5.2.1	Prepare an operational plan for IPT services for the city which shall include route details, operation period, no of IPT services allowed in each route, IPT parking area etc., standardize IPT fares and enforce the safety standards for IPT	ADDA, DMC, Traffic Police, RTO-Transport Department	6 months
5.2.2	Facilitate IPT driver training and licensing procedures.	RTO – Transport Department	6 months
5.2.3	Demarcate proper IPT parking locations near major junctions or interchange points.	ADDA, DMC, PWD	6 months
5.2.4	Enforce IPT service providers to abide by latest fuel economy standards (i.e. Bharat Stage IV and upcoming Stage VI).	RTO, Traffic Police	6 months
Medium term action			
5.2.5	Prepare a policy framework for future IPT development, with specific consideration on regulating numbers of IPT modes, restricting vehicles more than 15 years old from plying and laying down detailed steps for diesel to electric conversion.	ADDA	1-3 years
5.3	ADOPTATION OF ELECTRIC MOBILITY		
Short term action			
5.3.1	Spread awareness on State funded incentive based (financial) electric rickshaw scheme for the quicker adaptation of electric mobility in the city. Identify areas to be served by e-vehicles only, and prepare a pilot project plan to promote e-	DMC/ Regional Transport Authority	6-12months

Sr. no.	Action points	Agency responsible	Timeline
	rickshaws.		
5.3.2	Promote E-Rickshaws and electric auto-rickshaws as feeder services to the bus services to facilitate first and last mile connectivity.	Bus SPV/ ADDA	6 months
Medium to long term			
5.3.3	Prepare regulatory mechanism for provision of dedicated parking space for electric rickshaws/vehicles.	DMC	1 year
5.3.4	Take initiative to develop electric ecosystem such as charging infrastructure, better tariff regime etc.	DMC/ Electricity Department	1 year
5.4	ROAD DESIGN		
5.4.1	Non-motorized transport and safe access		
5.4.1.1	<p>Prepare and implement plans for developing an NMT network. This should include following action:</p> <ul style="list-style-type: none"> • Pedestrian infrastructure shall be designed based on the Indian Road Congress (IRC): 103-2012 • Target specific lengths of footpaths to be completed in a phased manner and cover the entire city. • Upgrade pedestrian crossing at least every 250 m, with pedestrian signals and signages. These should preferably be at grade. • Create a cycle network by connecting existing cycle tracks. • Make safety audit of walking infrastructure mandatory. • Provide roadside public docking space for bicycles. • Make encroachment of NMT lanes punishable offence under the current provision of law. • Dedicated municipal budget shall be made for making streets safe. <p>Reference: Indian Road Congress (IRC): 103-2012</p>	ADDA, DMC, PWD	1-3 years
5.4.2	MULTI-UTILITY ZONES (MUZ)		
5.4.2.1	<p>All the stationary elements on the street shall be organized in a dedicated space which results in obstruction free streets. This should include the following elements.</p> <ul style="list-style-type: none"> • It shall have dedicated space provision for bus stops, tree plantation, street furniture, auto Rickshaw stands, parking, hawkers, public toilets, information kiosks, underground and overhead utility services like electricity, water, telephone, gas etc. • Space provision for all the street elements shall have to be done by activity mapping, surveys and stake holder consultations. • A minimum width of 1.8 m shall be maintained for MUZ. <p>Reference: Urban Street Design Guidelines Unified Traffic and Transportation Infrastructure (Planning & Engineering) Centre prepared by Delhi Development Authority.</p>	ADDA, DMC, PWD	1-3 years
5.5	TAKING COGNIZANCE OF THE PROPOSED LAND USE MAP FOR DURGAPUR MUNICIPAL CORPORATION, COMPACT CITY DEVELOPMENT SHALL BE ADOPTED TO REDUCE DISTANCES AND IMPROVE ACCESS		
Medium- to long-term action			
5.5.1	Adopt compact urban form code to create high density, mixed-use, mixed-income development and high-density accessible streets to shorten travel distances and reduce emissions	ADDA, DMC	12 months
5.5.2	In low density areas as well as new development and urban sprawl maximize densities with good transport connectivity, in order to facilitate maximum number of people walking or cycling, or use NMT or feeder services easily to access public transport.	ADDA, DMC	12 months
5.5.3	Enable a balanced mix of jobs and housing along bus corridors coupled with caps on parking supply, higher housing affordability through design and technology options, and improved	ADDA, DMC	12 months

Sr. no.	Action points	Agency responsible	Timeline
	efficiency and equity in the resulting developments. Design these spaces with adequate green spaces and high-density street network		
5.6	MAINTENANCE AND MANAGEMENT OF PARKING PLACES RULES Implement Parking Area Management Plan (PAMP) for all delineated neighbourhoods and land uses as a demand management tool. PAMP will demarcate legal parking area – on-street and off-street, to organize and cap parking and also prevent illegal parking. PAMPs to be prepared in consultation with local stakeholders, planning bodies/departments. PAMP should include the following parameters among others:		
	Short-term action		
5.6.1	Demarcate the emergency vehicle route on all public roads within the neighborhood. Demarcate on ground wherever legal on-street parking is being provided for based on the local area plan.	ADDA, DMC	6 months
5.6.2	Ensure no parks and green areas are converted to parking	ADDA, DMC	6 months
5.6.3	Where shared Multilevel Parking facility is provided demarcate ingress-egress plan and ensure that no major disruption occurs on main thoroughfare traffic. Also indicate pedestrian circulation plan.	ADDA, DMC	6 months
5.6.4	Eliminate free parking and introduce effective variable parking charges based on duration of parking and 'user pay' principle as per the National Urban Transport Policy. Kolkata has imposed differential parking charges at 11 locations. Similar measures can be undertaken in Durgapur	ADDA, DMC	6 months
5.6.5	Do not allow gross-cost basis annual or monthly lump sum payment for parking in commercial areas. Annual passes allow unlimited use and do not reduce demand.	ADDA, DMC	6 months
	Medium- to long-term action		
5.6.6	Smart parking: Cities are setting up smart parking structures. But this will have to be linked with parking area management plan as demand management measure	ADDA, DMC	6 months
5.6.7	Physically demarcate legal parking areas. Equip them with metering systems, proper signage, IT for information on parking availability to reduce cruising time and on-street management.	ADDA, DMC	1-3 years
5.6.8	Penalty for illegal/wrong parking esp. parking within the emergency lanes and non-designated areas to be prohibitive.	ADDA, DMC	1-3 years
5.6.9	Bundle existing / planned public parking facilities and on-street and off-street parking (including multi-level) facilities for management by a single agency/ operator. New stand-alone parking only sites are mostly not required since parking is permitted in all use zones.	ADDA, DMC	1-3 years
5.6.10	Earmark a part of parking revenue for local area improvement that includes footpaths, public amenities and parking facilities within the PAMP area.	ADDA, DMC	1-3 years
5.6.11	Introduce residential parking permit for regular parkers for use of public parking space and these may be monitored.	ADDA, DMC	1-3 years
5.6.12	In order to optimize utilization of land, ensure that in all new projects (e.g. commercial, institutional, housing, etc.), at least 50% of the available parking spaces is made available for shared parking facility.	ADDA, DMC	1-3 years
5.6.13	Ensure in the parking contractual agreement that the revenue sharing model is dynamic and flexible, allowing for flexibility in charging and varied usage and rates of the parking spaces; specify the investment that Contractor will have to make for up gradation of the PAMP area including metering, ITS application for commuter information, signage	ADDA, DMC	1-3 years
5.6.14	Plan and implement parking provision for buses, commercial vehicles and IPT-NMT modes, and for the differently abled.	ADDA, DMC	1-3 years
5.6.15	Parking charges should be optimal and ensure that at least 85 percent of the available parking spaces is occupied during peak time. About 15% of parking spaces can be vacant and available at any time to encourage short term parkers.	ADDA, DMC	1-3 years

Sr. no.	Action points	Agency responsible	Timeline
5.6.16	Introduce and further upgrade variable time-based pricing, as per market demand. Coordinated off-street and on-street / surface pricing in commercial and residential areas, and parking permits in residential areas. Parking should be charged as per duration, location in city and size of the vehicle. Parking rates (even if differential) should be applied to the entire PMAP area and not to a few streets.	ADDA, DMC	1-3 years
5.6.17	Multilevel parking structure shall be equipped with smart technology such as real time information on vacant parking slots, smart meters etc. Various smart cities in India such as Jaipur and Bhopal are developing smart multilevel parking facilities.	ADDA, DMC	1-3 years
5.7	TRAFFIC MANAGEMENT		
Short-term action			
5.7.1	Conduct a third party/ independent audit of geometry of all city roads and intersections and provide specific solutions.	Traffic Police	6 months
5.7.2	Conduct audit of all intersections and install functional traffic signals at all major intersections.	Traffic Police	6 months
5.7.3	Enforce lane driving through heavy fining	Traffic Police	6 months
Medium-to long-term action plan			
5.7.4	Prepare Traffic Impact Assessment (TIA) guidelines and permit new developments based on the formulated TIA guidelines.	Traffic Police/ ADDA	1 year
5.7.5	Prepare traffic management plan for special days, i.e. during Durga Puja festival/ during urban flood situation.	Traffic Police, ADDA, DMC	1 year
5.8	TRAFFIC IMPACT ASSESSMENT		
Medium-to long-term action plan			
5.8.1	Permit new developments based on the impact of traffic on the surrounding transport infrastructure and neighborhoods.	DMC/ SEIAA	1-3 years
5.8.2	Make necessary infrastructure augmentations based on traffic impact assessments and levy costs to the developer, if needed and possible.	DMC, Traffic police	1-3 years
5.9	FINANCING OF URBAN TRANSPORT		
Medium-to long-term action plan			
5.9.1	Create dedicated and ring-fenced urban transport fund for meeting Urban Transport needs by adopting innovative financial instruments to mobilize local resources including land value capture and polluter pay principle and resources from private participation	Transport Department, DMC	1-3 years
5.9.2	Rationalization and reallocation of funds from road capacity augmentation projects towards public transit systems and complete streets	Transport Department	1-2 years
5.9.3	Encourage involvement of the private sector in activities such as operation and maintenance of road infrastructure, parking facilities, vehicle testing and certification facilities, repair facilities, construction and management of terminal facilities among others. Regulatory monitoring will be required for quality control, quality assurance and performance guarantee. The private sector will be involved in providing public transport services, but under well-structured procurement contracts along with strong supervision of their service level and compliance strategy.	Transport Department, DMC	1-3 years
5.10	DATA ON URBAN COMMUTE		
Medium-to long-term action plan			
5.10.1	Regular update of the database and information would be one of the important tasks. This will require standardization of database for recording of travel and transport related activities to be able to assess travel activities -- generation of daily number of trips, nature of travel demand, and share of different travel modes, average trip distance, and changes in modal share.	Transport Department, DMC	1-3 years

(6) GENERATOR SETS

S. no.	Action points	Agency responsible	Timeline
Short-term priority action			
6.1	Ensure that only those DG sets that meet the standards in terms of emission or design of chimneys/ exhaust and acoustic enclosures; also verify and check whether design specifications are followed or not. Thereafter the genset to be allowed to operate.	Municipal Corporation	6 months
6.2	Curtail use of DG sets in social events by providing temporary electric connections. Restrict use of DG sets during high pollution episodes.	WBPCB, and Municipal Corporation	6 months
Medium-term action			
6.3	Alternate power systems should be promoted in cell towers, and use of DG sets be discouraged	Department of Energy, Distribution Companies, Department of Power and NES	1 year
6.4	Leverage roof top solar programme to reduce dependence on DG sets	NES	1 year
6.5	Ensure access to quality electricity supply		year

(7) OPEN BURNING (INCLUDING SOLID WASTE AND AGRICULTURE RESIDUES)

S. no.	Action points	Agency responsible	Timeline
Short-term priority action			
7.1	Enforce a complete ban on garbage burning in the entire region. Evolve a monitoring mechanism for this. Take stringent action against open burning of biomass, leaves, tyres etc. to control such activities. Garbage burning has significantly under control.	Durgapur Municipal Corporation, Development Authority, Resident Welfare Associations, WBPCB,	6 months
7.2	Ensure proper collection of horticulture waste (biomass) and composting- cum-gardening approach; municipal zonal offices should be responsible for controlling burning of leaves and garbage on roads / parks. All horticulture agencies should have compost pits in parks. Implement strong public outreach programme to promote household and community based composting systems (composting pits, shredders etc). There are large open grounds, and houses with compounds in the city with considerable tree cover that cause extensive leaf litter. Open burning of leaves must stop.	Durgapur Municipal Corporation, Metropolitan Development Authority, RWAs	6 months
7.3	Decentralized waste management for hotels, apartments, institutions as per Solid Waste Management Rules, 2016. Implement provisions of Solid Waste Management Rules 2016 to implement penal provisions to spot fine on waste burning. Strictly ban open burning of hazardous industrial waste. Fine system will be start after finalization of Bye-Laws		6 months
7.4	Use of satellite based monitoring as well as mobile spot check squads for enforcement	Durgapur Municipal Corporation, Metropolitan Development Authority, RWAs	6 months
7.5	Proper management of landfill sites at Kalipahari to prevent spontaneous fire. Further dumping of waste at open landfill sites should be restricted.	Durgapur Municipal Corporation, Metropolitan Development Authority, RWAs	6 months

7.6	Adopt roadmap for zero landfill policy to promote decentralized waste segregation, reuse and recycling	Police Department, WBPCB GIS cell, Municipal Corporation, Metropolitan Development Authority, RWAs, State Police Department, WBPCB GIS cell	6 months
7.7	With good decentralised and segregated waste management system in place to waste-to-energy plants will not be needed in the city. In case any location requires such plant - strong siting policy should be adopted to keep it away from habitation including neighbourhoods of low income groups. Strict implementation of emissions norms; use of state-of-the-art technology and provide real time emissions data to SPCB.		6 months

(8) COMMON BIOMEDICAL AND TREATMENT FACILITY

S. no.	Action points	Agency responsible	Timeline
8.1	Implement emission norms for incinerators and examine the feasibility of less polluting alternatives in compliance to Biomedical waste treatment rules.	WBPCB, Municipal Corporation; incinerator facility operators	6 months
8.2	Implement CEMS for incinerators and provide data on emissions on an open platform progressively.		6 months
8.3	Develop a siting policy for biomedical incinerators.	WBPCB Supported by Municipal Corporation	6 months

(9) COOKING FUELS AND OPEN EATERIES

S. no.	Action points	Agency responsible	Timeline
Medium to long term action			
9.1	A targeted programme to be implemented for 100 per cent coverage of households by distribution of LPG/PNG in all non-compliant cities.	Department of Power & NES, District and local administration	1-2 years
9.2	In low-income neighborhoods, as well as roadside eateries/dhabas/restaurants etc. promote and give access to LPG and electricity. Mandate and link commercial license to clean fuels.	Dept. of Power & NES, Natural gas, municipal corporation, urban local bodies	1-2 years

(10) ROAD DUST

S. no.	Action points	Agency responsible	Timeline
Short-term action			
10.1	Sprinkling of recycled water (without compromising other uses); introduce water fountains at major traffic intersections, wherever feasible. Adopt dust control measures for dug up areas.	District and local administration, PWD, Road owning agencies	6 months
10.2	Phase-in mechanical / vacuum-based street sweeping wherever feasible; introduce wet / mechanized vacuum sweeping of roads		6 months
Medium- to long-term actions			

10.3	Implement truck loading guidelines; use of appropriate enclosures for haul trucks; gravel paving for all haul routes.	Department of Transport, Traffic Police	1-2 years
10.4	Maintain pothole-free roads for free flow of traffic to reduce emissions and dust. At present, 90% roads are free from pot holes	Durgapur Municipal corporation, District and local administration	1-2 years
10.5	Increase green cover in the region. Undertake greening of open areas, gardens, community places, schools and housing societies. Minimum 20% green area is maintained in open space in individual complex	West Bengal State Council for Science and Technology, DMC, local bodies, RWAs	1-2 years
10.6	Enforcement of air pollution control in concrete batching (use of water spray and wind breakers, bag filter at silos and enclosures, hoods, curtains etc.) or use clean alternative technologies	WBPCB,	1-2 years
10.7	Adopt street design guidelines for paving of roads and footpaths (hard and soft paving) with vegetative barriers. Mandate restoration according to the guidelines after the completion of all infrastructure projects.	Road Owning Agencies, Department of industries	1-2 years

(11) RENEWABLE ENERGY

S. no.	Action points	Agency responsible	Timeline
Medium- to long-term action			
11.1	West Bengal has solar energy policy. As per the policy, it is mandatory for all housing societies having a total contract demand of 500 KW to install solar rooftop systems to meet at least 1.5 percent of their total electrical load. This should be further strengthened and implemented. This should be linked with transition from diesel genset to solar power, also the electric public transport can be linked with solar power plans to shift to zero emission target. Identify and target institutional/ industrial and residential consumers for faster adoption. Identify open areas in the city where solar power generation is possible.	WBREDA, Department of Power & NES, District and local administration	1-2 years
11.2	WB RE policy requires commercial and industrial establishments with more than 1.5 MW of contract demand, to install solar rooftop systems to meet at least 2 per cent of their total electrical load. This should be further strengthened and implemented. This should be linked with transition from diesel genset to solar power. Identification of the mandated entities to encourage adoption through awareness camps and introduce relevant penalties in case of non-compliance.	WBREDA, Department of Power & NES, District and local administration	1-2 years
11.3	Introduce a stand-alone scheme for state run institutions - schools, colleges, hospitals etc. that meet the criteria and facilitate their adoption through a state tender; the tenders must be based on the aggregated demand and must occur at defined intervals to ensure developer participation.	WBREDA, Department of Power & NES, District and local administration	1-2 years
11.4	Facilitate uptake of solar PV on existing residential households and commercial establishments (for example - where there is a lack of rooftop space or single grid-connection for multiple houses) by introducing encouraging regulatory measures such as virtual and group metering	WBREDA, Department of Power & NES, District and local administration	1-2 years

11.5	Introduce an online portal, where prosumers can apply for solar rooftop, interact with installers and track the installation process [to check delays at discom and SNA's end] - inspections, grid connection and subsidy disbursal.	WBREDA, Department of Power & NES, District and local administration	1-2 years
11.6	Setup a Solar Command Centre (CCC) within the WBREDA that provides guidance, facilitate redressals and acts as a watchdog for solar rooftop adoption, especially tracking progress under schemes and mandates (including Renewable purchase obligation).	WBREDA, Department of Power & NES, District and local administration	1-2 years

(12) EPISODIC EVENTS

S. no.	Action points	Agency responsible	Timeline
12.1	Measures to control forest fires/biomass/crop residue burning: Use satellitebased monitoring and on-ground enforcement to control such burningepisodes. So an assessment needs to be carried out to identify the reasonsand kind of technological and fiscal measures needed to curtail the fires.This is part of regional action.	WBPCB, Agriculture and allied Industries , District and local administration	Ongoing
12.2	Firecrackers: regulate and control its usage including restrictions on timing as per the Supreme Court and CPCB and PESO guidelines.	District and local administration, Police Department, WBPCB, RWAs, Supported by Chief Controller of Explosives, Petroleum and Explosive Safety Organization (PESO)	Ongoing

(13) URBAN GREENS AND FORESTS

S. no.	Action points	Agency responsible	Timeline
Medium-term action			
13.1	Avenue plantation along roads with more traffic. Urban planning to integrate urban greens (parks, district forests etc.) and urban forests in the Master Plans of the cities and all infrastructuredevelopment and urban redevelopment projects. At least 15-20 percentof the new urban redevelopment projects should be set aside for urbangreen and tree cover. Urban planning to provide for green roofs and vertical greens linked to infrastructure development. Green walling with plantations around dust generators and also to be dust barriers to be integrated with theUrban forestry and forest policy. Approx. 15000 sqm greenery with plantation was more developed in last three year under Green city & Amrut scheme	Forest, DMC, ADDA, PWD, NHAI	1 year

(14) IMPROVE TRAINING AND CAPACITY

S. no.	Action points	Agency responsible	Timeline
14.1	Training and skill development will be required of public officials and other public functionaries for planning and management and execution of the plan. This will also require extensive capacity building in all sectors and infrastructure planning.	West Bengal State Council for Science and Technology, Department of	Ongoing

Personnel and Training,
District and local
administration

(15) NEED FOR PUBLIC AWARENESS AND COOPERATION

S. no.	Action points	Agency responsible	Timeline
15.1	Organizing deeper public engagement and forums for public consultation for public understanding of the nature of solutions needed to address the complex problem of sustainable industrial development and urban mobility.	West Bengal State Council for Science and Technology, WBPCB, District and local administration	Ongoing
15.2	Formation of a public grievance redressal portal for redressal of public complaints on air pollution along with a supervisory mechanism for its disposal at time bound manner		

(16) Action Plan for Power Plants

S. No.	Action points	Agency responsible	Timeline	Current Status
	Mejia Thermal Power Station – 2,340 MW The power plant has four units of 210 MW (Units 1-4), two units (Unit 5-6) of 250MW, and two units (Units 7-8) of 500 MW.	WBPCB	Units 1-6: 2022 Units 7-8: 2021	Power Station is exploring possibility to install pollution control equipment.
	Step 1: Collect major milestone plan/Gantt chart for FGD installation, PM and NO _x control and measures to meet water norms		By Feb 2020	
	Step 2: Prepare action plan for monitoring at relevant intervals, issue notice to collect a suitable bank guarantee amount – 1 per cent of the project cost		By June 2020	
	Step 3: Collect Bank guarantee, Engineering documents and Feasibility study – for FGD, NO _x control and measures to meet water norms		By October 2020	
	Step 4: Ensure tenders are awarded		By January 2021	
	Step 5: Ensure civil works completed		By June 2021	
	Step 6: Ensure P&G test initiated for Unit 7-8		By December 2021	
	Step 7: Ensure P&G test initiated for Unit 1-6		By June 2022	
	Durgapur Power Plant Ltd. – 680 MW The power plant has three units - Unit 6 of 110 MW capacity, Unit 7 of 250 MW capacity, and Unit 8 of 250 MW capacity. Unit 7 and 8 were recently commissioned in 2007 and 2014 respectively. Unit 6 is 35 years old.	WBPCB	2022	The old unit - Unit no. 6 is under reserve shut down. The plant is currently exploring the possibility to install pollution control system to meet the norms.
	Step 1: Collect major milestone plan/Gantt chart for FGD installation, PM and NO _x control and measures to meet water norms		By June 2020	
	Step 2: Prepare action plan for monitoring at relevant intervals, issue notice to collect a suitable bank guarantee amount – 1 per cent of the project cost		By October 2020	
	Step 3: Collect Bank guarantee, Engineering		By	

S. No.	Action points	Agency responsible	Timeline	Current Status
	documents and Feasibility study – for FGD, NO _x control and measures to meet water norms Step 4: Ensure tenders are awarded Step 5: Ensure civil works completed Step 6: Ensure P&G test initiated		December 2020 By March 2021 By December 2021 By December 2022	
	Durgapur Steel TPS – 1000 MW The power plant has two units of 500 MW commissioned in 2011-12. Step 1: Collect major milestone plan/Gantt chart for FGD installation, PM and NO _x control and measures to meet water norms Step 2: Prepare action plan for monitoring at relevant intervals, issue notice to collect a suitable bank guarantee amount – 1 per cent of the project cost Step 3: Collect Bank guarantee, Engineering documents and Feasibility study – for FGD, NO _x control and measures to meet water norms Step 4: Ensure civil works completed Step 6: Ensure P&G test initiated	WBPCB	2021 By Feb 2020 By June 2020 By October 2020 By January 2021 By December 2021	The plant has awarded tenders to install FGD. Plant is complying with the SPM norms. No information on compliance or plan to meet NO _x or water norms is available on public domain
	Bakreshwar Thermal Power Plant – 1,050 MW The power plant has five units of 210 MW commissioned in the year 2000. Step 1: Collect major milestone plan/Gantt chart for FGD installation, PM and NO _x control and measures to meet water norms Step 2: Prepare action plan for monitoring at relevant intervals, issue notice to collect a suitable bank guarantee amount – 1 per cent of the project cost Step 3: Collect Bank guarantee, Engineering documents and Feasibility study – for FGD, NO _x control and measures to meet water norms Step 4: Ensure tenders are awarded Step 5: Ensure civil works completed Step 6: Ensure P&G test initiated	WBPCB	2022 By June 2020 By October 2020 By December 2020 By March 2021 By December 2021 By December 2022	Power station is operating at 70-80 per cent plant load factor. It is currently doing feasibility study to explore the possibility to install pollution control equipment.
FUGITIVE EMISSIONS				
	Coal Handling: A. Issue modified consent condition and direct storage of coal in enclosed space. B. Collect Bank guarantee and timeline from power station to implement measures to enclose coal handling area	WBPCB	A.By March 2020 B.By June 2020	
	Fly ash management A. Form a committee and set terms of reference (ToRs) for inspection and improve fly ash management and utilisation in the thermal power stations. Allow only bulk container transport of fly ash – issue notice. B. Inspect fly ash pond and roads leading to the pond, audit the need for any improvement in the fly ash pond structure.	WBPCB	A.By March 2020 B.By June 2020 C.By October 2020	

S. No.	Action points	Agency responsible	Timeline	Current Status
	Collect plans from power station to improve fly ash utilisation C. Collect Bank guarantee and timeline from power station to implement measures			
FUEL QUALITY IMPROVEMENT				
	Advise use of low sulphur coal (coal with sulphur content less than 0.2 per cent), co-firing of coal with biomass. On availability of natural gas switch-over coal-based power stations to natural gas-based power stations.			

(17) ACTIONS FOR MANAGEMENT OF CONSTRUCTION DUST

S. no.	Action points	Agency responsible	Timeline
Short-term action			
11.1	Adopt and implement dust control measures for all types of construction - buildings and infrastructure. The preventive measures as mentioned in CPCB guidelines ¹ . Construction agencies to be made liable. Impose penalty for non-compliance. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporation	6 months
11.2	Undertake control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units. Introduce steeper penalties for non-compliance. Needs enforcement. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporations	6 months
11.3	Enforce restrictions on construction activities within urban airshed zones during high pollution period. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporation/ WBPCB	6 months
Medium- to long-term action			
11.4	Notify rules to segregate construction and demolition waste. Provide a network of decentralized C&D waste segregation and collection sites across the city. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporation	1-2 years
11.5	For material handling, construction and demolition, it should be obligatory on part of the developers to provide evidence of debris on-site recycling and/or disposal at designated sites. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporation	1-2 years
11.6	Set up facilities to recycle construction and demolition waste. Mandate certain percentage of the material for new construction to be recycled construction waste. Implement provision of Central regulations for construction and demolition waste management rules 2016. Set up facilities for recycling of C&D waste. Fine system will be start after finalization of Bye-Laws	District and local administration, Durgapur Municipal Corporation, WBPCB	1-2 years
11.7	Notify the requirement for a comprehensive waste management plan (WMP) from bulk waste generators mentioning the estimated amount of generation, provision of dust control measures, details of the transporting entities, information about the location of waste disposal etc. The WMP should be combined with building permits and made compulsory before any construction/demolition/remodeling activity. Fine system will be start after finalization of Bye-Laws	Durgapur Municipal Corporation	1-2 years

¹<http://jkspcb.nic.in/WriteReadData/userfiles/file/cand%20D%20guidelines/CPCB%20guidelines%20for%20dust%20control.pdf>

A draft graded response action plan has also been prepared which shall be finalized as and when the air quality forecasting is available and the emission sources are ranked on basis of SA study. In addition, the finalization of GRAP also requires the reconciliation with IMD forecasted data on air quality. It is already noted that the observed air quality is grossly different from the IMD forecasts. This draft plan is attached only as a specimen, which may also need further refining based on SA study and current year's experiences on air quality management:

GRADED RESPONSE ACTION PLAN (GRAP) FOR REDUCING AIR POLLUTION IN NON-ATTAINMENT CITIES OF WEST BENGAL

The proposed graded measure approach for each pollution source according to the Air Quality Index (AQI) categories includes appropriate measures for each level of pollution (PM10 / PM2.5). While the comprehensive clean air action plan must be implemented round the year, the GRAP measures are meant to be temporary measures for duration of smog episodes and are implemented according to the severity of the air pollution levels. Once the levels come down and stabilize, measures are withdrawn. The objective of the GRAP is to prevent pollution from getting worse when adverse weather conditions trap and spike pollution. A GRAP has been prepared, which may be implemented as and when required and when severe conditions are forecasted.

The proposed GRAP includes set of measures to be implemented with greater vigour and stringency to prevent and avoid high level of air pollution in cities. This is linked to the national air quality index that categorises daily air quality as good, satisfactory, moderate, poor, very poor, severe, and emergency. All actions suggested for each category are cumulative and add up to the level of emergency as air quality worsens. For implementation of GRAP, the scientific Task Force under WBPCB will advise the District Level monitoring committee on the daily pollution levels and forecasting based on real time monitoring. Accordingly the Committee may issue notices to the city authorities to implement the pre-defined action. Each implementing department will appoint a nodal officer to facilitate implementation. The action notified for moderate and poor categories that are largely about

stringent enforcement in different sectors can become default action for continuous implementation throughout the year. Additional measures meant for very poor and severe may be notified which such situation develops especially during calm and inversion conditions.

<u>Moderate to poor</u> Poor - When PM2.5 levels are between 91-120 microgramme per cum or PM10 levels are between 251-350 microgramme per cum; Moderate - When PM2.5 is between 61-90 microgramme per cum or PM10 is between 101-250 microgramme per cum	
Action to be taken	Agency responsible
Stringently enforce/stop garbage burning in landfills and other places and impose heavy fines on person responsible	Municipal Corporations
Close/stringently enforce all pollution control regulations in brick kilns and industries	State Pollution Control Board
Stringently enforce pollution control in thermal power plants through Pollution Control Board monitoring	State Pollution Control Board
Do periodic mechanized sweeping on roads particularly in roads with heavy traffic and water sprinkling every two days	Municipal Corporations Traffic Police PWD
Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or heavy fine	Department of Transport Traffic Police
Stringently enforce rules for dust control in construction activities and close non-compliant sites	District Administration, Police
Deploy traffic police for smooth traffic flow at identified vulnerable areas	Traffic Police
Divert non-destined truck traffic	Municipal Corporations Traffic Police
Strictly enforce Supreme Court orders on firecrackers	SPCB, District Administration in consultation with Chief Controller of Explosives, Petroleum and Explosive Safety Organization (PESO); Police
Ensure fly ash ponds are watered every alternate day during summer months (March-May)	Plant in charge of Power Plants
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.	State Pollution Control Board District Administration

<u>Very Poor</u> When PM2.5 levels are between 121-250 microgramme per cum or PM10 levels are between 351-430 microgramme per cum	
Action to be taken	Agency responsible

Control use of diesel generator sets by improving electricity supply	State Pollution Control Boards
Restrict parking and enhance parking fee by 3-4 times in commercial areas to reduce usage of personal vehicles	Municipal Corporations
Augment public transport services by increasing frequency and ensure adequate para transit services	Department of Transport State Transport Corporation
Stop use of coal/firewood in hotels and open eateries	Municipal Corporations
Alert in newspapers/TV to advise people with respiratory and cardiac patients to avoid polluted areas and restrict outdoor movement.	State Pollution Control Board

Severe When PM2.5 levels are above 250 microgramme per cum or PM10 levels are above 430 microgramme per cum	
Action to be taken	Agency responsible
Close brick kilns, Hot Mix plants, Stone Crushers and other highly polluting units or as applicable locally	State Pollution Control Board District Administration Police
Shut down / minimize operation of coal based polluting industrial units and plants, if emissions are found to be beyond permissible limit; Allow plantson cleaner fuels like natural gas, electricity etc.	State Pollution Control Boards
Intensify public transport services. Introduce differential rates to encourage off-peak travel.	Transport Department State Transport Corporations
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, Public Works Department and National Highway Authority of India
Restrict movement of trucks inside the coal field mine areas	State pollution control board, Department of Steel and mine

Severe + or Emergency When PM2.5 levels cross 300 microgramme per cum or PM10 levels cross 500 microgramme per cum (or 5 times above the standard) or persist for 48 hrs or more.	
Action to be taken	Agency responsible
Stop entry of diesel truck traffic into city (except essential commodities)	Traffic Police Municipal Corporations
Stop construction activities	Pollution Control Board Municipal Corporations
Introduce some form of vehicle restraint measures for private vehicles based on license plate numbers, or introduce low emissions zones in the city to stop entry of polluting vehicles (old and ageing and polluting diesel vehicles etc).	Transport Department Traffic Police
State Pollution Control Board Task Force to take decision on any additional steps including shutting of schools	

Actions to be taken by public:

While the National Air Quality Index (AQI) and health advisory will inform people about the dangers of exposure, people are also expected to take precautionary measures to protect themselves. Suggested actions by public are listed below:

Level according to AQI	Action
Very poor, severe and emergency	Those suffering from heart diseases, asthma, and other respiratory disease may consider avoiding undue and prolonged exposure
	Schools to suspend all outdoor activities and sport events
	Report visible emissions from vehicles, industries, power plants, garbage burning, and other non compliances to the respective control rooms
	Do not use diesel and kerosene generators
	Maintain vehicles properly (PUC certificate, replace car air filter, maintain right tyre pressure)
	Minimize unnecessary travel, use public transport & avoid using private vehicles

INSTITUTIONAL MECHANISM FOR IMPLEMENTATION for GRAP

In order to implement and monitor progress of the proposed actions, a district level monitoring committee is proposed, which will also provide for the institutional mechanism for implementation. The committee may co opt members if situation demands.

Proposed Composition of District Level Monitoring Committee:

District Collector/ District Magistrate	Chairman
Sub-divisional Magistrate of District Head Quarter	Member Secretary
Chairman of Durgapur Municipal Corporation	Member
Superintendent of Police	Member
Regional officer of WB-PCB	Member
Representative of leading NGOs working on environment related issues (nominated by Chairman)	Member
Regional officer from Transport Department	Member
CEO, Asansol Durgapur Development Authority (ADDA)	Member
One academician from the field of environment (nominated by Chairman)	Member
Regional Officer from WB Industrial Development Corporation	Member
Nominated Official from WBREDA	Member
All RTOs of the district	Member(s)
Nominated Official from State Forest Department	Member

Air Quality Monitoring network design criteria

Population (Census 2011)	Minimum No. of manual station under NAMP	Minimum no of proposed CAAQMS	Total
1,00,000- < 5,00,000	1-Background 2-Residential/ Commercial	1-Residential	4
5,00,000- <10,00,000	1-Background 2-Residential/ Commercial	1-Residential 1-Traffic dominant area 1- Commercial	6
10,00,000- <50,00,000	1-Background 2-Residential/ Commercial	2-Residential 1-Traffic dominant area 1- Commercial 1-Industrial area	8
≥50,00,000	1-Background in upwind direction 1-Background in down wind direction 2-Residential/ Commercial	4-Residential 3-Traffic dominant area 3- Commercial 2-Industrial area	16