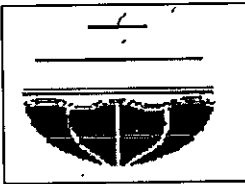


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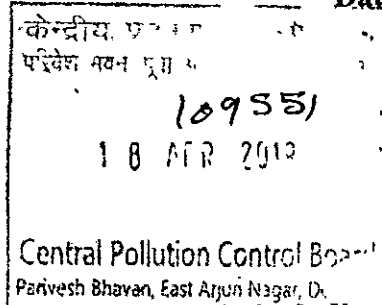


**DELHI POLLUTION CONTROL COMMITTEE**  
**DEPARTMENT OF ENVIRONMENT, GOVT. OF NCT OF DELHI**  
**5<sup>th</sup> FLOOR, ISBT BUILDING, KASHMERE GATE, DELHI-110006**  
visit us at : <http://dpcc.delhigovt.nic.in>

F.No. DPCC/Najafgarh Drain/2019/ 4826

Dated: 16-4-19

To,  
Member Secretary,  
Central Pollution Control Board,  
Parivesh Bhawan, East Arjun Nagar,  
Delhi-110032



**Sub: Action Plan for Critical Polluted Area for Najafgarh Drain Basin including Anand Prabat, Okhla, Naraina and Wazirpur.**

Sir,

This has a reference to the orders passed by Hon'ble NGT dated 13.12.2018 in in OA No. 1038/2018 News Item published in "The Asian Age" Authored by Sanjay Kaw Titled "CPCB to rank industrial units on pollution levels" wherein Hon'ble NGT directed DPCC to finalize the Time Bound Action Plan with regard to CPA. In pursuance to these directions of Hon'ble NGT, a Committee was constituted by Chief Secretary, Delhi under the Chairmanship of Secretary (Environment), GNCT of Delhi. Based upon the discussions and information received from the Committee members, Action Plan for Critical Polluted Area has been prepared and enclosed herewith for further necessary action please.

Yours faithfully,

MS - on leave  
1120-VII  
22/4

(S.M. Ali)

Member Secretary

Encl: Action Plan

Dr. R.R.  
24/4/19

This action plan, prepared before NCT order.

# **Action Plan**

**For**

**ABATEMENT OF POLLUTION**

**OF**

**NAJAFGARH DRAIN BASIN INCLUDING OKHLA,  
NARAINA, ANAND PARBAT AND WAZIRPUR**



**DELHI POLLUTION CONTROL COMMITTEE**

**APRIL, 2019**

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## BACKGROUND

Hon'ble NGT, Principal Bench, New Delhi vide order dated 13.12.2018 in OA No. 1038/2018 News Item published in "The Asian Age" Authored by Sanjay Kaw Titled "CPCB to rank industrial units on pollution levels", observed that 43 industrial clusters in India have Comprehensive Environmental Pollution Index (CEPI) score of 70 and above. Hon'ble NGT also observed that entire Najafgarh Drain Basin including Anand Parbat, Naraina, Okhla and Wazirpur has been declared as Critically Polluted Area by Central Pollution Control Board (CPCB) with CEPI Score of 79.54.

In this context, Hon'ble NGT passed a detailed order on 13.12.2018. The relevant extracts of the order are asunder:-

*"In view of above, we direct the SPCBs/Committees to finalize the time bound action plans with regard to identified polluted industrial cluster's in accordance with the revised norms laid down by the CPCB to restore environmental qualities within norms. Such action plan be finalized within three months from the date of receipt of copy of this order".*

*"The action plan may thereafter be looked into by the CPCB and steps taken for implementation so as to ensure that all the industrial clusters comply with laid down parameters as per the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981. The CPCB will be the Nodal agency".*

1849  
3629

*"The Report on the action taken by the CPCB and MoEF&CC in the matter may be furnished to this Tribunal by e-mail at ngt.filing@gmail.com before 31.05.2019."*

*"The action plan to be prepared in the States may be done by the Committee constituted by the Chief Secretary within one month from today as several Departments may be involved in the exercise. The final preparation of the action plan including its execution may be overseen by the Chief Secretary of the concerned State, along with the other connected major environmental issues of the States, such as pollution of river stretches, non-attainment cities in terms of air quality and solid waste management, utilization of treated sewage"*

*"The Chief Secretary will take meetings on all these issues once in three months (quarterly) and will forward Report to NGT by email".*

In pursuance to the orders of Hon'ble NGT, a Committee headed by Secretary (Environment) GNCT of Delhi was constituted by Chief Secretary, Delhi on 20.02.2019, comprising the officials from ULBs, DJB, Forest, DSIIDC, Traffic Police, Transport, DDA, PWD, DMRC etc(Annexure I & II). The first meeting of the Committee was held on 15.03.2019, followed by meetings on 02.04.2019 and 05.04.2019. Based upon the discussions and inputs received from the committee members, the present Action Plan for Critical Polluted Area has been prepared.

# CHAPTER 1

## GENERAL INTRODUCTION

### 1.0 INTRODUCTION

After analyzing the Environmental Status of 88 Industrial Clusters selected in the country, Central Pollution Control Board in consultation with the Ministry of Environment & Forests has identified 43 critically polluted industrial clusters based on Comprehensive Environmental Pollution Index (CEPI). Out of 43 critically polluted industrial clusters, Najafgarh Drain Basin including Wazirpur, Naraina, Anand Parbat and Okhla industrial areas in NCT of Delhi is at 4<sup>th</sup> position with score of 79.54 (combined Air, Water, and Land CEPI) in descending order arrangement based of CEPI.

### 1.1 GEOGRAPHICAL FEATURES

#### 1.1.1 Location

The National Capital Territory of Delhi is stretched over an area of 1483 sq km. As far as the location of Delhi is concerned, it stands in the middle of the Indian sub-continent, between the Himalayas and Aravalli range. Bordered by Haryana in the east and by Uttar Pradesh across the river Yamuna, Delhi is located approximately 213 to 305 m above the sea level. It is around 33 miles and 30 miles broad and extends latitude 28.38°N and longitude 77.12°E.

The location of Delhi is such that a major part of the city falls on the western side of the Yamuna River. Apart from Yamuna, which is the main river of the city, there are 3 canals, Agra Canal, Hindon Canal and western Yamuna Canal. Geography of Delhi has divided it into 3 segments. The three segments consist of the Yamuna flood plain, the Ridge and the Plain. The low lying and flood prone area of Yamuna flood plains is also known by the name of Khadar.

The area of the Ridge stretches from the Aravalli hills, encircling the city on the northwest and west. One of the highlights of the Ridge area is the Tughlaqabad Fort that stands at its highest point. The Plains consist of all the area of Delhi, apart from the Yamuna flood plain and the Ridge. Majority of the city area, consisting of Delhi, New Delhi and Delhi cantonment, falls in the fertile land of the Plains.

### **1.1.2 Topography**

The topography of Delhi can be divided into three different parts, the plains, the Yamuna flood plain, and the ridge. As per the topography, Delhi is located on the western fringes of the Gangetic Plains. The low altitude Yamuna flood plains provides an excellent scope of agriculture, as it is covered with the fertile alluvium brought by the river Yamuna and deposited here during the frequent floods. The other topographical feature is the Ridge, which reaches the height of 1043 ft above sea level, and is the highest point in Delhi. The ridge originates in the south and surrounds its western, the northwestern and northeastern part. It is a part of the Aravalli Hills.

### **1.1.3 Climate**

The climate of Delhi is one of the most varied and purely depends upon the climate of nearby areas of Himachal Pradesh, Rajasthan etc. Delhi experiences the extremes of weather. This is because of the geological location of Delhi. The climatic conditions of Delhi are similar to that of

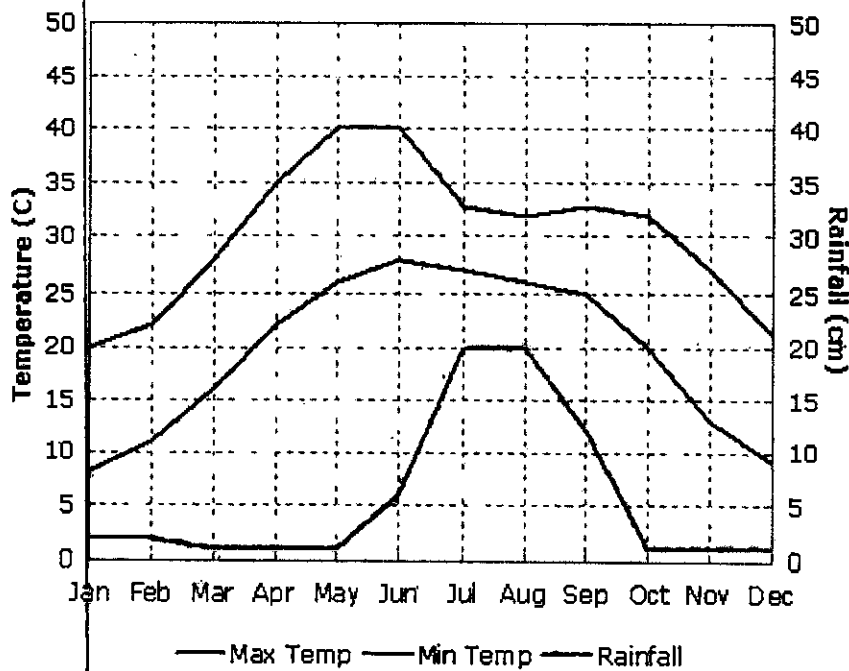


the temperate grasslands with hot, dry summers, and cold winters. The summers in Delhi start from the month of April and continue till the month of July. It is very hot and dry in the summer months, with temperature soaring up to 45°C. The rainy season provides relief from searing heat and continues till the month of October. The humidity levels very high in Delhi at this time of the year. The winter months are characterized by dip in the temperature levels often reaching 5°C or less than that.

**1.1.4 Weather**

The city does not witness much of rainy season. The monsoon lasts from July to September. October sees the end of the monsoon but it is reasonably pleasant. The average temperature data for Delhi is given in Fig 1 .

**Fig.-1: Average Temperatures**



**1.1.5 Ground Water Scenario**

The dependence on ground water is quite considerable in Delhi. The Ground water availability in the territory is controlled by the hydro geological situation characterized by occurrence of alluvial formation and hard rocks such as quartzite. The hydro geological set up and the following distinct physiographic units further influence the ground water occurrence: (1) Older Alluvial Plain on the eastern and western side of the ridge. (2) Yamuna Flood Plain deposits. (3) Isolated and nearly closed Chattarpur alluvial basin. (4) NNE-SSW trending Quartzite Ridge. The yield of tube wells ranges between 18-144 m<sup>3</sup>/hr in Yamuna Flood Plain aquifers. In Older Alluvium of eastern and western sides of the ridge, the yield of tube wells ranges between 12 to 36 m<sup>3</sup>/ hr. Tube wells constructed in Chattarpur alluvial basin tapping the aquifers of both alluvium and weathered and fractured quartzite yield about 9 to 27 m<sup>3</sup> / hr. Discharge of tube wells constructed in Quartzite varies from 6-15 m<sup>3</sup> / hr.

The groundwater is declining in majority of the areas of Delhi on account of overexploitation of the resources. The rate of decline is as high as 1.7 to 2 meters/year in some areas (South & South west Dist.). Thus eight out of eleven districts of Delhi are categorized as overexploited with respect to dynamic groundwater resources. The groundwater quality shows horizontal and vertical variation in space. The deeper aquifers are mostly underlain by saline water in alluvial areas. The extent of fluoride contamination in groundwater is also high in western part of Delhi in areas like Northwest, Southwest & West districts. The groundwater management aspects of Delhi emphasizes on augmentation of groundwater resources and improvement in groundwater quality through measures like rainwater harvesting and artificial recharge, conservation of groundwater by limiting withdrawal in overexploited areas and limited development of potential aquifers of Delhi to augment drinking water supply.

The quality of ground water is alkaline with pH ranging from 7.1 to 9.2, chloride content

ranges between 21 and 1380 ppm. South of Delhi average chloride content is 250 ppm while in Najafgarh area it is around 1000 ppm rendering the water saline covering the area of 32 km. Sq. and marginally saline over the area of 129 sq km.

The ground water study done by the NEERI for MoEF& CC revealed high nitrate and fluoride concentrations. High metallic content, particularly manganese and iron have also been observed in the samples collected. The manganese content was found to be 0.1 mg/L against the permissible limit of 0.5-mg/L and iron concentration of 4.05 mg/L to 0.337 mg/L have been observed.

#### **Chemical Quality of Ground Water in South West district**

Ground water in maximum part of the South district is fresh and potable with electrical conductivity ranging from 320 to 4130 micro-mhos/cm at 25°C. Electrical conductivity values more than the permissible limit are observed at Deragaon, Molarbund and at Gadaipur. High values of nitrate are found at three locations i.e. at Gadaipur, at Rajokri and at Jaunapur. In north Ghitorni and Andheri More, Fluoride is more than permissible limits. Except chromium concentrations at one locality, ground water is devoid of pollution by heavy metals. A comparison of ground water quality from 1983 to 2000 shows quality deterioration in the central part of the Chattarpur basin and in the areas around Nizamuddin. In central part of the Chattarpur basin, quality deterioration is mainly because of over-development of ground water resources. The exhaustion of fresh water present at shallow depths is resulting into brackish water pumping from the tube wells that are tapping the deeper aquifers of alluvium.

## CHAPTER 2

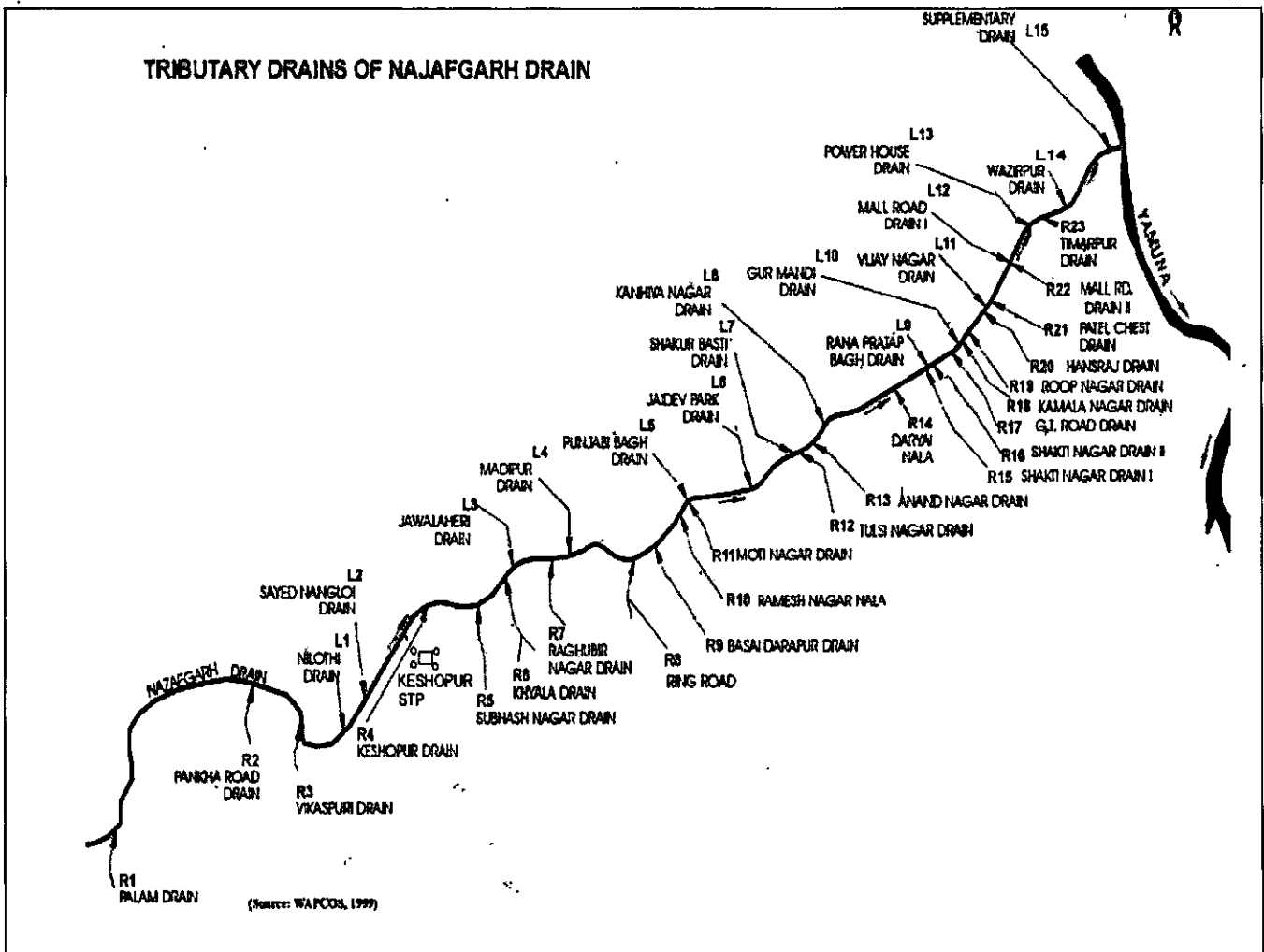
### CURRENT SCENARIO

#### 2.1 BACKGROUND:

Najafgarh Drain Basin is figuring at Sl. No. 4 in the list of 43 critically polluted clusters/areas.

Along with Najafgarh Drain Basin, four more industrial areas of Delhi i.e. Wazirpur, Naraina, Anand Parbat and Okhla have been added as critically polluted. The map of area is as follow:-

Fig. 2: Tributary Drains of Najafgarh Drain



As per the Delhi Master Plan 2021 and subsequent amendments, 22 new industrial areas have been earmarked for redevelopment considering various factors. Anand Parbat Indl area is one of these industrial areas. Other industrial areas falling in the catchment area of Najafgarh Drain are Samaipur Badli, Sultanpur Mazra, Hastal Pocket - A, Naresh Park Extension, Libaspur, Peeragarhi Village, Khyala, Hastal Pocket-D, Shalamar Village, Nawada, Rithala, Swaran Park Mundka, Haiderpur, Dabri, Basai Darapur, Mundka Ind. Area and Pehlampur Bangar. These areas have been approved as industrial areas for redevelopment by Ministry of Urban Development, UOI as per their policy as these areas consist of more than 70% industries. Though numbers of industries are in operation, they will be considered authorized/approved only when the areas are redeveloped and notified as industrial areas. The said task has been entrusted with DSIIDC, Govt. of NCT of Delhi. All the units in unauthorized and redevelopment areas shall be allowed to operate with the adequate pollution control systems.

## 2.2 POLLUTION CONTROL:-

### 2.2.1 Air Pollution:

Air pollution in Delhi is a serious cause of concern for the Govt. of NCT of Delhi. World Health Organization defines air pollutants as substances put into the air by activities of mankind into concentration sufficient to cause harmful effects to health, crop-yield and property. Air Pollution mainly constitutes particulate matter and gases. Increasing levels of PM<sub>2.5</sub> (Particulate Matter of less than 2.5 micron size), PM<sub>10</sub> (Particulate Matter of less than 10 micron size), NO<sub>2</sub> (Nitrogen dioxide)

in ambient air have been in attention of the media, Courts and various other organizations as well as general public. As per the study conducted by IIT Kanpur in 2015, the major sources of air pollution in Delhi have been identified as under:-

- Vehicular pollution ✓
- Road and soil dust ✓
- Dust generated due to construction and demolition activities ✓
- Burning of dry leaves/garbage etc. ✓
- Trans-state movement of pollutants specially due to burning of crop residue in neighboring states of Punjab, Haryana and UP Industrial sources/Thermal Power stations. ✓

Delhi has a tag of one of the most polluted city in the , specifically with reference to concentration of Particulate ( $PM_{2.5}$  and  $PM_{10}$ ). Different studies attributed to concentration of particulate to different sources from road re-suspension dust, fugitive emission construction sites, vehicular emission and windblown dust. Seasonal trend are controlled by adverse metrological parameters, Trans state movement of pollutants and episodic emissions.

Monitoring of Particulate started in Delhi in late 80's since 2010 October DPCC started monitoring of 8 parameters i.e.  $PM_{2.5}$  , $PM_{10}$ ,  $SO_2$ ,  $NO_2$ ,  $CO$ ,  $NH_3$  ,  $O_3$  and Benzene on Real time basis. The historical data since 2000-2011 is being collected in Delhi. However,as different technologies used as it evolved for comparison purpose data from 2011-2018 is used to understand the trend as mentioned in Table 1.

**Table 1** Yearly Average of various pollutants

Yearly Average of Various Pollutants (2011 - 2018)								
Year	PM10 ( $\mu\text{g}/\text{m}^3$ )	PM 2.5 ( $\mu\text{g}/\text{m}^3$ )	SO2 ( $\mu\text{g}/\text{m}^3$ )	NO2 ( $\mu\text{g}/\text{m}^3$ )	O3 ( $\mu\text{g}/\text{m}^3$ )	NH3 ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	C6H6 ( $\mu\text{g}/\text{m}^3$ )
2011	277	136	19	71	46.8	43.5	1.72	2.7
2012	368	164	18	90	47.1	55.4	1.72	2.6
2013	353	151	21	79	34.4	51.9	2.01	4.7
2014	324	149	16	82	40.9	46.9	1.58	4.8
2015	295	133	18	72	45.1	44.0	1.51	4.4
2016	303	137	21	72	39.8	43.2	1.84	6.3
2017	277	130	23	74	43.6	38.0	2.07	5.2
2018	277	128	19	50	38.6	40.0	1.52	3.1

The data shows an improving trend the highest particulate concentration was observed in 2012, when concentration observed was  $368\mu\text{g}/\text{m}^3$  and  $164(\mu\text{g}/\text{m}^3)$  respectively for PM10 and PM2.5 while 2018 the concentration respectively 277 and  $128\mu\text{g}/\text{m}^3$ .

The data reveals that the particulate matter concentration has declined almost by 20% with base year of 2015. It is also significant that the lesser peaks are observed which indicates the overall improvement of the air quality in the recent years. Sulphur Dioxide, Ammonia, CO observed always within the prescribed norms. NO2, O3 and Benzene shows occasional peaks in different seasons. The locations of CAAQMS are mentioned in Table 2.

**Table 2 Continuous Ambient Air Quality Monitoring Stations**

S.No	Name of CAAQMS	S.No	Name of CAAQMS
1	Maj. Dhyanchand National Stadium	14	MGICCC, Bakoli
2	Jawahar Lal National Stadium.	15	NIT&RD, Mehrauli
3	Dr. Karni Singh Shooting Range	16	ITI, Jahangirpuri
4	PGDAV College, Srinivaspuri	17	IARI, PUSA
5	Mother Dairy Plant, Patparganj	18	NIMR, Sector-8, Dwarka
6	Satyawati College	19	DITE, Wazirpur
7	Mundka Metro Residential Colony	20	ITI, Shahadra
8	S.S.College of Business Studies,	21	Anand Vihar
9	ITI, Narela	22	Mandir Marg
10	WTP (DJB), Sonia Vihar	23	Punjabi Bagh
11	DITE Okhla	24	R.K.Puram
12	Ch. Brahm Prakash Ayurvedic	25	Civil Lines
13	Mahrshi Valmiki Hospital,Pooth	26	Airport

**I. ACTIONS SO FAR TAKEN TOWARDS CONTROLLING AIR POLLUTION:**

**1. Review Meetings held at Govt of India**

- Hon'ble Minister and Secretary, MoEF&CC, GOI had convened review meetings periodically with all stakeholders and reviewed the Air Pollution Control Measures taken by all agencies.
- High Level Task Force (HLTF) on issues of air pollution control has been constituted under Pr. Secretary to Prime Minister and its periodical report on recommendations of HLTF is being compiled and sent to Secretary, MoEF&CC, GOI by Government of Delhi. This report is discussed and based on this report Principal Secretary to PM convenes review meeting at regular intervals.
- The HLTF reviews action taken report submitted by all the agencies including the neighboring states of Rajasthan, Haryana, UP and Punjab.
- The High Level Task Force reviews the following aspects of Air Pollution(Control & Management):-



- i. Installation and getting data of Continuous Ambient Air Quality Monitoring Stations (CAAQMS).
- ii. Procurement and deployment of Mechanical Road Sweeping (MRS) Machines.
- iii. Water sprinkling using treated sewage water in the roads.
- iv. Massive greening program by all the agencies.
- v. Dust Mitigation in all the major construction sites. Inspection and fining of violators who have not taken control measures.
- vi. Vertical greening of pillars and flyovers.
- vii. Deployment of water tankers by the construction agencies.
- viii. Removal of silt from drains and dumping in designated sites.
- ix. Prevention of biomass burning by the farmers in the state of Punjab and Haryana.
- x. Procurement and distribution of Stubble Removal Machines to the farmers.
- xi. Switching over to PNG by Industries.
- xii. Operationalize Western & Eastern Peripheral Expressway.
- xiii. Paving of roadsides to minimize dust.
- xiv. Speedy implementation and establishment of Solid Waste Processing Plant.
- xv. Speedy procurement of Buses by DTC and on Cluster mode.
- xvi. Providing last mile connectivity by DMRC by dove-tailing metro stations through mini buses and e-rickshaws.
- xvii. Removal of encroachment on roads by the civic agencies.

## **II. IMPLEMENTATION OF GRADED RESPONSE ACTION PLAN :**

Due to the poor Air Quality Index (AQI), Severe Category of GRAP provisions had been invoked in the month of June, 2018 and during 1<sup>st</sup> November to 12<sup>th</sup> Nov, 2018. Further, based on the directions of EPCA, the provisions of GRAP under Very poor category were invoked from 15.10.2018 till 15.03.2019 with following directions:

- Increasing bus and metro services by augmenting contract buses and increasing frequency of service.
- Increase frequency of mechanized cleaning of road and sprinkling of water on roads. Identify road stretches with high dust generation.
- Residential Welfare Associations and individual house owners to provide electric heaters during winter to security staff to avoid open burning by them.
- Alert in newspaper/TV//Radio to advise people with respiratory and cardiac patients to avoid polluted areas and restrict outdoor movement
- Stop use of diesel generators sets.
- Shut down Badarpur Power Plant as of October 15, 2018.
- Take steps to maximize generation of power from existing natural gas based plants to reduce operation of coal based power plants in the NCR. ✓

Besides, that as directed by EPCA following directions had been issued with effect from 1<sup>st</sup> Nov 2018:

- All construction activities involving excavation, civil construction (excluding internal finishing/work where no construction material is used) to remain closed in Delhi and other NCR districts from November 1-12, 2018.
- All stone crushers, hot mix plants generating dust pollution to remain closed in Delhi and other NCR districts from November 1-12, 2018.
- All industries using coal and biomass as fuel (excluding thermal and Waste to Energy Plants) to remain closed in Delhi and other NCR districts from November 4-10, 2018. Industries that use natural gas as fuel can continue to operate.
- Transport department/traffic police to intensify checking of polluting vehicles and control traffic congestion in Delhi and other NCR districts during November 1-12, 2018. There should be no tolerance for visibly polluting vehicles. This will require stringent monitoring and on-spot fines for visibly polluting vehicles.
- Intensify patrolling, including night patrolling in industrial areas and other 'hot spots' in the city so that there is complete control on waste burning as well as industrial emissions. EPCA

has already brought to your attention that it has found many cases of waste burning and industrial emissions, which is a gross violation of GRAP conditions.

- Intensity efforts for interrupted power supply in NCR towns to avoid requirement of operating DG sets and inconvenience to public.
- Publish in newspapers and disseminate widely the following information for the general public:
  - The need for public to minimize exposure and also advice people to minimize their travel using private vehicles as much as possible.
  - Enumerate and list all actions that have to be taken under GRAP, so that people are informed and can act as stakeholders in the efforts to control pollution.
  - Publish list of penalties that have been imposed and actions taken against people/industries found polluting. This information will provide deterrence and help improve enforcement.
  - This was followed by EPCA directions for stoppage of Trucks from 8<sup>th</sup> Nov to 12<sup>th</sup> Nov 2018. EPCA, in agreement with CPCB task force on 12 Nov 2018, allowed construction activity only during day time between 6 am to 6 pm.
  - 52 joint teams involving SDMs, officers of CPCB, DPCC & Local bodies had been deployed from 1<sup>st</sup> Nov, 2018 to 10<sup>th</sup> Nov, 2018. Night patrolling by the Environmental Marshalls was also carried out to prevent garbage/biomass or waste burning etc. Remedial actions on the spot where ever such burning was found was also done

### **III. OTHER MEASURES TO CONTROL AIR POLLUTION:-**

#### **1. Action against persons for burning of garbage in open.**

- Government undertook special drive of inspections to prevent air pollution due to burning of leaves/garbage in open areas.
- To receive the public complaints in order to stop the burning of Garbage/Waste material/ Leaves, Delhi Pollution Control Committee (DPCC) has opened "Whatsapp account with mobile number 9717593574" and "9717593501".

- Sub Divisional Magistrates (SDMs) along with Tehsildars (Executive Magistrate), Department of Revenue, GNCTD, have been authorized to take action against violations. Penalty is being imposed in accordance with the directions of Hon'ble National Green Tribunal.
- For prohibition of burning of dry leaves / garbage / plastic etc, Municipal Corporation of Delhi (MCDs)/ Delhi Development Authority (DDA) has been asked that if any violation found, concerned S.O. (Horticulture) and Sanitation Inspection will be held responsible personally and action will be taken against them.
- Other Civic Agencies also have imposed fines in respect of violations found at sites as per **Table 3**.

## **2. Monitoring and Action against violators of dust control measures:-**

Govt. launched special drive to improve air quality by way of enforcing Dust Control Measures by the construction project agencies/ individuals. Area SDMs, Tehsildars, Assistant Engineers of Public Works Development (PWD) and Delhi Pollution Control Committee (DPCC) are regularly inspecting projects for checking the compliance of dust control and levy compensation for violations of dust control measures.

- SDMs alongwith Tehsildars (Executive Magistrate), Department of Revenue, Govt. of NCT of Delhi and Assistant Engineer of Public Works department (PWD) have been authorized to take action against violations. Penalty is being imposed in accordance with the directions of Hon'ble National Green Tribunal. Detailed Action Taken Report is at **Table 4**.
- All local bodies and DDA have also been asked to apprise public in general and owners and builders in particular who have got their building plans sanctioned for following dust control measures.
- DPCC has imposed fine on construction projects who have obtained Environmental Clearance (built up area more than 20,000/- sq. Mtrs)

**Table 3: PREVENTION AND CONTROL OF BIOMASS BURNING**

S. No.	Department	For open burning of garbage and other materials	
		Challans issued	Amount collected (Rs.)
1.	South Delhi Municipal Corporation (SDMC)	1953 (from 1.01.18 to 30.11.18)	34.26 lacs
2.	North Delhi Municipal Corporation (NDMC)	1167 (Jan- Nov 2018)	20,50,000/-
3.	East Delhi Municipal Corporation (EDMC)	499 (upto 30.11.18)	82,00,000/-
4.	NDMC	Nil	—
5.	Revenue Department	166 (From Dec 2015 to 21.09.2018)	4,62,000/-
6.	Delhi Cantonment Board	02	5,000/-

**Table 4: ACTION TAKEN REPORT WITH RESPECT TO DUST CONTROL AT CONSTRUCTION SITES**

S. No.	Department	For Dust Control at construction sites	
		Challans issued	Amount collected (Rs.)
1.	South Delhi Municipal Corporation (SDMC) 1.01.2018 to-30.11.2018	5370	1,98,37,800/-
2.	North Delhi Municipal Corporation <b><u>(01.01.2018 to 31.12.2018)</u></b>	1550	2.72 Crores penalty imposed. Rs. 36.75 Lacs collected
3.	East Delhi Municipal Corporation (EDMC)	3470	54,96,500/-
4.	PWD	425	52,15,000/-
5.	DPCC ( Since 1.1.2018 to 15.12.2018)	52	1,81,05,000/-
6.	Revenue Department	2471 (From Dec 2015 to 21.09.2018)	2,68,36,000/-
7.	Delhi Cantonment Board.	03	1,50,000/-
8.	New Delhi Municipal Council	04 Nos.	50,000/-

**3. Promotion of Battery Operated Vehicles:-** With the view to promote non-polluting e-vehicles, Govt. has announced subsidy schemes for adopting various kinds of e-vehicles such as Two-Wheeler, Four-Wheelers and also e-rickshaws. Owners of newly purchased battery operated 4 wheelers and 2 wheelers are given subsidy by GNCTD, in addition to subsidy by Govt. of India @ Rs 2000-5500 for two wheelers and Rs. 30000/-to1,50,000/- for four wheelers. One time fixed subsidy of Rs. 30,000/- is given to Battery Operated e-rickshaw owner, authorized by Transport Department and registered in the NCT of Delhi.

**4. Prohibition on bursting of firecrackers:** Direction U/S 31(A) of Air (Prevention & Control of Pollution) Act, 1981 read along with Rule 20A of Air (Prevention & Control of Pollution) (Union Territories) rules, 1983 to ban bursting of firecrackers/ fireworks at all times except on religious occasions has been issued on 08.12.2016.

Hon'ble Supreme Court issued directions via order dated 23.10.2018 & subsequent orders in Writ Petition (Civil) No. 728 of 2015 regarding bursting of Firecrackers. DPCC has printed leaflets containing Supreme Court directions in brief for awareness of type of firecrackers allowed and harmful effects of bursting of Firecrackers.

**5. Imposition of Charge on lights and heavy duty commercial vehicles entering Delhi:** In compliance with the order dated 09.10.2015 and 16.12.2015 of Hon'ble Supreme Court, Environment Compensation Charge (ECC) is levied on Delhi bound light and heavy duty commercial goods vehicles. Notifications have been issued as per Hon'ble Supreme Court directions.

**6. Greening of City:** As per latest Forest Survey of India report 2017, Green cover of Delhi has increased to about 305.41 sq km from 26 Sq. Km in 1997. The increased green cover also acts as carbon sink. Target of plantation set for 2018-2019 is 32.18 lakh saplings by all greening agencies of which more than 25 Lac saplings have been already planted.

#### **7. Environmental Marshalls:**

Department of Environment, Govt. of Delhi has deployed Home Guard (HG) volunteers as Environmental Marshalls. 83 home guards have been deployed in wards of three Municipal Corporations. They have been instructed to act as eyes of Environment Dept./DPCC and report the instances of violations. Environmental Marshalls have been deployed for night patrolling also. **Additionally, request has been sent for 210 more environmental Marshalls.**

#### **8. Public Awareness conducted by Department of Environment:-**

- Organized workshops for areas under Jurisdiction of North MCD, South MCD and East MCD on "Prohibition on open burning of any kind of material – A Small Step Targeting Big Impact" respectively at Delhi Secretariat. Workshop was for public awareness and interaction with implementing authorities. The officials from North MCD and South MCD i.e. SI/ASI and horticulture wing participated in the workshop along with RWAs, School/Colleges from the areas under jurisdiction of North and South MCD.
- Every year Anti-Fire Cracker Campaign is being organised with Eco-Club Schools/Colleges.
- Public notices have been issued on prohibition on open burning of leaves, waste, garbage etc.
- Organized workshop for area under Jurisdiction of North MCD on "Dust Control Measures at construction sites to Control Air pollution".

#### **IV. NEW INITIATIVES BY DELHI GOVERNMENT:**

##### **i. Green Budget Implementation:**

The Government of Delhi has passed a Green Budget where in provisions have been made for providing subsidy to the following:

- Conversion of industries to PNG – approved by Cabinet on 04.09.2018.
- Conversion of coal based Tandoors to Gas based - approved by Cabinet on 04.09.2018.



Also a real-time source apportionment study in partnership with the University of Washington is proposed and it will carry out near-continuations analysis of factors causing pollution on a regular basis. A draft RFP is being prepared to provide a dedicated information system showing current levels of pollution by installing 1000 indoor display panels inside all Governments building that are dealing with the public.

**ii. Notification issued on Approved Fuel:**

The Delhi Pollution Control Committee (DPCC) has issued approved fuel notification on 29.6.2018. As per the notification only approved fuels are permitted to be used which as follows:

1. Petrol (BS VI with 10 PPM Sulphur) as per the Notification of Government of India as amended from time to time.
2. Diesel (BS VI with 10 PPM Sulphur) as per the Notification of Government of India as amended from time to time.
3. Liquid Petroleum Gas (LPG)
4. Natural Gas/Compressed Natural Gas (CNG)
5. Aviation turbine fuel
6. (a) Firewood for crematoriums and for other religious purposes.  
(b) Wood Charcoal for Tandoors and Grills of Hotels/ Restaurant/ Banquet Halls/ Eating Houses having emission channelization / control system.  
(c) Wood Charcoal for use in clothes ironing.
7. Biogas
8. Refuse Derived Fuel (only for Waste-to-Energy Plants)
9. Any other clean fuel notified by the Govt. of NCT of Delhi / Govt. of India, subsequent to this notification.

**Note:**

1. Besides above, Coal with low Sulphur (less than 0.4%) permitted for use in Thermal Power Plant only.

2. All other fuels will be deemed “unapproved” and so disallowed for use in NCT of Delhi.
3. Existing Industries / Units shall convert / switch over from their existing fuels to the above mentioned Approved Fuels within 90 days from the date of issue of this Notification.

Besides, the following new initiatives have been put in place in the 2018 winter months:

- i. At 5 main intersections a device called WAYU with static filters has been installed which will operate in series to suck and control the emissions from the traffic intersection including at ITO junction. This has been awarded by CPCB to NEERI as an R&D study.
- ii. At 3 construction sites in Delhi a dust suppressant is being used as a pilot project by CPCB through NEERI.
- iii. Dynamic filters in buses are also being tried on a pilot basis by CPCB/ MoEF & CC, GOI.
- iv. With the joint collaboration of various Ministries namely, MOEF&CC, MOES, IMD, IITM, CPCB, DPCC etc an advance air pollution early warning systems namely SAFAR has been launched.
- v. A Grievances redressal portal SAMEER has been launched by CPCB.

#### **V. NCR STATES RELATED ISSUES WHICH IMPACT AMBIENT AIR QUALITY:**

Following issues as mentioned below specifically relate to NCR states which impact ambient air quality of Delhi:

- The feasibility of providing U-Turn and underpass near borders to turn back the non-destined vehicles trying to enter the city needs to be explored.
- Local bodies and major construction agencies in Delhi have already been directed to use dust suppression methods on the construction sites to reduce the dust emissions. Delhi Police and Department of Transport have been directed to allow transportation of construction material and demolition waste only in closed and properly covered trucks. The neighboring states must ensure that all the construction sites must undertake the dust suppression methods to control the dust emission from the construction sites. Further, any construction material or construction waste carried to Delhi must be transported in closed or properly covered trucks.

- The practice of burning of paddy stubs in the agricultural zones adjoining Delhi needs to be stopped. Agriculture burning in the NCR and neighboring states is other major contributor of the particulate and other gaseous pollutants in Ambient Air of Delhi. It is pertinent to mention here that from October to January are crucial months for Delhi, as with onset of winter, concentration of particulate and gaseous pollutants increase significantly. Agricultural fire in Punjab & Haryana is a major cause, the Aqua satellite of NASA had taken the image and shared it in public domain. The images show the cloud of ash spreading almost in the northern belt and especially on Delhi.

Though, stringent steps have been taken/being taken by Delhi Govt. for reducing air pollution in Delhi, there is an urgent need that NCR states also take similar steps as taken by Govt. of Delhi.

## 2.2.2 Water Pollution:

### Common Effluent Treatment Plants (CETPs) :

In 1996 Hon'ble Supreme Court took cognizance of PIL filed by Sh. M C Mehta and directed that DPCC should appoint National Environmental Engineering Research Institute (NEERI) to assess the requirement of CETPs for various industrial areas in Delhi and also for designing the CETPs .As recommended by NEERI and further decided by Department of Industries, Govt. of NCT of Delhi, 11 CETPs to cater 15 industrial areas were constructed through DSIIDC. CETPs have been designed to treat mix waste i.e. sewage and industrial effluent generated from the Industries / Units in their respective Industrial Areas. As per the scheme approved by Hon'ble Supreme Court, CETPs have been handed over to CETP Societies. Out of 11, 10 CETPs are based on physicochemical treatment process and one CETP at Mangolpuri is based on biological process. DSIIDC has also constructed two more CETPs one at

Bawana Industrial Area and another one at Narela Industrial Area and both these CETPs are based on biological process. At present there are total 13 CETPs to cater 17 approved industrial areas in Delhi (including CETP at Jhilmil Industrial Area which caters Jhilmil & Friends Colony Industrial Areas which are outside the present CPA). Total installed capacity of all the 13 CETPs is 212.3 MLD (46.7 MGD) however only 56 MLD (12.3 MGD)effluent is reaching to CETPs and capacity utilization is about 26 %.

For smooth functioning of CETPs, Department of Industries, Govt. of NCT of Delhi enacted the CETP Act, 2000 and CETP Rules 2001. CETP Societies have responsibility to collect Operation and Maintenance (O&M) charges from the individual units as per the formulas developed by NEERI. CETP Societies have also been delegated powers by Govt. of NCT of Delhi to recover the Operation and Maintenance (O&M) charges as a land revenue. Name of 13 CETPs their installed capacities and 17

Approved Industrial Areas connected with these CETPs are given in Table 5.

**Table 5 :Details of CETPs**

S.No	Name of CETP	Industrial Areas connected with CETP	Installed Capacity (in MLD)	Average Flow (in MLD)
1	Jhilmil CETP	Jhilmil and Friends Colony Industrial Areas	16.8	5.5
2	Badli CETP	Badli Industrial Estate	12	1.5
3	Mayapuri CETP	Mayapuri Industrial Area	12	3.7
4	Mangolpuri CETP	Mangolpuri Industrial Area	2.4	2.2
5	Wazirpur CETP	Wazirpur Industrial Area	24	2.2
6	Nangloi CETP	Nangloi & Udyog Nagar Industrial Areas	12	2.8
7	SMA CETP	SMA, Rajasthani Udyog Nagar & SSI Industrial Areas	12	1.4
8	Okhla CETP	Okhla Industrial Area	24	3.7
9	Narela CETP	Narela Industrial Area	22.5	6.0
10	Bawana CETP	Bawana Industrial Area	35	19.0
11	Naraina CETP	Naraina Industrial Area	21.6	4.3
12	GTK Road CETP	GTK Road Industrial Area	6	2.5
13	Lawrence Road CETP	Lawrence Road Industrial Area	12	1.2
		<b>Total</b>	<b>212.3 MLD (46.7 MGD)</b>	<b>56 MLD (12.3 MGD)</b>

A study was got conducted from IIT Delhi for installation of additional 5 CETPs in Delhi for the industrial areas namely Mohan Cooperative Industrial Area, Okhla Industrial Estate, Patparganj

Industrial Area, Anand Parbat Industrial Area, Najafgarh Road Industrial Area, Kirti Nagar & Moti Nagar Industrial Area. Based on the recommendations of the experts from IIT Delhi as well as decisions taken in the meetings with various departments namely, DSIIDC, Industry Department, DPCC and IIT Delhi, it has been decided not to construct new CETPs as the existing CETP are underutilized. Also, the construction of CETPs at industrial areas such as Anand Parbat Industrial Area , Okhla Industrial Estate and Mohan Cooperative Industrial Area have been kept in abeyance by Environment Pollution (Prevention and Control) Authority (EPCA) headed by Sh. Bhure Lal. GIZ (Deutsche Gesellschaft fur Internationale Zusammenarbeit) under Sustainable and Environment- friendly Industrial Production (SEIP) ( A joint project of MoEF&CC and GIZ) is working on installation of CETP at Patparganj Industrial Area and up gradation of CETPS in Lawrence Road and Mayapuri Industrial Areas in collaboration with DSIIDC.

All the 13 CETPs are being monitored by DPCC on monthly basis and Analysis Reports are placed on the website of DPCC. Inspection of the CETPs are carried out on quarterly basis and deficiencies observed, if any, during the inspections are conveyed to the CETP Societies / Operator for rectification of the deficiencies. CETPs have installed Flow Meter at the Inlet or Outlet of CETP and also have provided On Line Monitoring System (OLMS) for the parameters pH, TSS, BOD & COD. The parameters (pH, TSS, COD, BOD & TDS) monitored at each of the CETP in the month of January, 2019 have been tabulated and enclosed as *Annexure -III*. DPCC has issued Directions to the CETP Societies / Operator of CETPs / Occupiers of CETPs in Delhi regarding optimal utilization of CETPs & reutilization of treated effluent etc.

Pursuant to the directions of the Yamuna Pollution Monitoring Committee constituted by the Hon'ble National Green Tribunal vide order dated 26.07.2018 in OA No. 06 of 2012 and OA No. 300 of 2013 in the matter of Manoj Mishra Vs. Union of India & Ors , an action plan of Industries Department / DSIIDC has been prepared

for the abatement of pollution in river Yamuna .Accordingly for assessing the functioning of CETPs and other related issues inspection of all the 13 CETPs have been carried out by a Joint Team comprising of representatives of CPCB, DPCC, NEERI, DSIIDC and Department of Industries in the month of January & February, 2019 and effluent samples have also been collected by CPCB during the inspections.

DPCC and DSIIDC jointly carried out survey of 11 approved industrial areas which are not having CETP in the year 2015. Survey findings were submitted to Hon'ble National Green Tribunal. In the report it was specifically submitted that there is no requirement of installation of CETP in these industrial areas due to insignificant water polluting industries in these industrial areas. There are Flatted Factory Complex having dry units in some of such industrial areas and in rest of the Industrial Areas there are only few water polluting units which have installed their individual Effluent Treatment Plant (ETP) and therefore CETP is not required however in view of the directions received from the Yamuna Pollution Monitoring Committee a survey is proposed to be conducted by DSIIDC to assess the present scenario.

#### **Monitoring of Drains:**

Within a stretch of 22 km between Wazirabad and Okhla, 22 drains falls into river Yamuna, out of which 18 major drains are directly falling into the river and remaining 4 drains are falling indirectly through Agra and Gurgaon Canal. River Yamuna is monitored at 9 locations on monthly basis and samples are analyzed for 5 parameters as enclosed as *Annexure IV*. 24 major drains are monitored on monthly basis for 4 parameters as enclosed as *Annexure V*. Najafgarh Drain is the major polluting drain of Yamuna River in Delhi contributing about 40 % of the total pollution to the river followed by the Shahdara Drain. Total waste water generation in Delhi is about 700 million Gallons per Day (MGD), out of which more than 80% is the domestic sewage followed by industrial waste water. Natural ecological flow of the river is affected as there is no fresh water available for dilution in Yamuna as the entire fresh water from Wazirabad is being used to meet the drinking

water needs of Delhi citizens. Consequently, the water quality of River Yamuna at the downstream of Wazirabad barrage after confluence of Najafgarh drain is not meeting desirable/prescribed norms.

Major water polluting activities have been included under F-27/33 category of units identified by Nodal Agency (Ministry of Urban Development, UOI) and Group of Experts, constituted by GNCTD (polluting category as per Master Plan of Delhi-2021) so as ensure the closure of these units from the non-conforming area, in compliance of Hon'ble Supreme Court Directions. In year 2000-2001 intensive drives have been undertaken by Govt. of Delhi to close down the Polluting industries operating in residential areas of Delhi falling under F-27/33 category of units. In total 3423 units were closed down by the Govt. of NCT of Delhi. By the continuous efforts of DPCC, about 1191 units were directed to be closed down by SDMs operating in non-conforming/residential areas. Compliance reports for closure have also been received from SDMs in case of most of these 1191 units.

Keeping in view of the indiscriminate throwing/dumping of plastic bags in drain/river Yamuna/sewage system resulting in choking of such systems, Govt. of Delhi banned Plastic carry bags in NCT of Delhi. Mandatory provisions of installation of onsite-decentralized wastewater treatment systems (STP/ETP) by industries, hotels, construction projects etc with treated wastewater reuse in flushing, cooling, horticulture etc is being enforced for implementation. Zero Discharge in building and Construction projects seeking Environment Clearance (built-up area  $\geq$  20000 sq. mt.) is being imposed with installation of STPs/ETPs.

To start with all the 5 star hotels have been asked to install STPs to treat entire waste water generated by them and to reuse the treated effluents so as to have very minimal discharge. MOU were signed between Delhi Govt. and 32 individual hotels in the presence of Hon'ble CM of Delhi to follow Green Hotel Guidelines. The said guidelines detail about rainwater harvesting structure, organic waste converter etc.. Restaurant, Eating House, Sweet Shop, Dhaba and Hotel (RES DH) policy was prepared which was approved by DPCC Board in its meeting held on 06.10.2012.



The quality of waste water flowing in the Najafgarh drain is monitored on monthly basis and the monitoring which is done every month is averaged for period of Mar 2013 to April 2014 reveals that the parameters was pH – 7.72, TSS – 212 mg/l, COD – 272.8 mg/l and BOD – 86.5 mg/l. Quality of the waste water showing here is not good. For industrial pollution control the matter remains is only to operate the existing ETPs/ECS/CETPs regularly and to keep a vigil to stop new illegal units.

#### **Domestic Waste Water Pollution and Sewage Treatment Plants (STPs) of DJB:**

DJB is supplying 900 MGD of water and 720 MGD of waste water is generated in Delhi. Installed capacity of Sewage Treatment Plants of DJB is 607 MGD (Total No. of STPs – 41, 34 STPs are operational, 4 STPs are under rehabilitation, 2 STPs have been closed and one STP is Non Functional) and 459 MGD of sewage / waste water is being treated by DJB. Out of 34 Operational STPs 33 are having On Line Monitoring System (OLMS). 11 STPs of capacity 279 MGD are under up gradation or planned to be upgraded. By June 2019 the treatment capacity will increase from 607 MGD to 657 MGD and by December , 2021 the capacity will increase upto 707 MGD. DJB Plans to set up decentralized STPs in outer Delhi considering that these will be more cost effective. This plan envisages creating additional capacity of 157 MGDs, including the 14 STPs that are proposed to be set up in Najafgarh basin out of which 7 have already been sanctioned by NMCG. Sewerage system in Delhi is available to 65 % by population. Table 6 gives the Status of Sewage Treatment in Delhi

**Table. – 6 Status of Sewage Treatment**

S. No.	Description	December, 2018	June, 2019	December, 2019	December, 2020	December, 2021
1	Sewage generated in Delhi (in MGD) as per water supply by DJB	720	720	720	720	720
2	Sewage treatment capacity (in MGD)	607	657	657	657	707
3	Sewage treatment (in MGD)	457	651	663	694	709
4	Capacity utilization (%)	75.3%	99%	100.9%	105.6%	100.3%

Source: Interim Progress Report of Monitoring Committee for Yamuna Dated 16.01.2019

Apart from above, as per SMP-2031, 32 Nos of new STPs are to be constructed in outer Delhi area. However, out of 32 STPs, 14 STPs are proposed in Najafgarh area, and in place of remaining 18 STPs, it is proposed to construct decentralized STPs for which land at 46 locations are being allotted by Delhi Govt. Proposed decentralized STPs are given in Table 7. Also, details of proposed centralized STPs are given in Table 8.

**Table. 7: Proposed Decentralized STPs**

S.No.	Proposed Decentralized STPs	Capacity (in MGD)
1	Timarpur Oxidation Ponds	5.50
2	Decentralised STP in Burari area	4.50
3	8 Nos. Decentralised STPs in Chatterpur area	5.00
4	Decentralised STP in Kirari area	20.5
5	Decentralised STPs in Narela, Zindpur & Palla	25.30
6	Decentralised STPs in Bawana & Kanjhawla	44.70
7	Decentralised STP in Badarpur area	10.00
8	Decentralised STP in Mundka (part) area	3.30
9	9+5 STPs in Najafgarh area	39.00
	<b>Total</b>	<b>157.8 MGD</b>