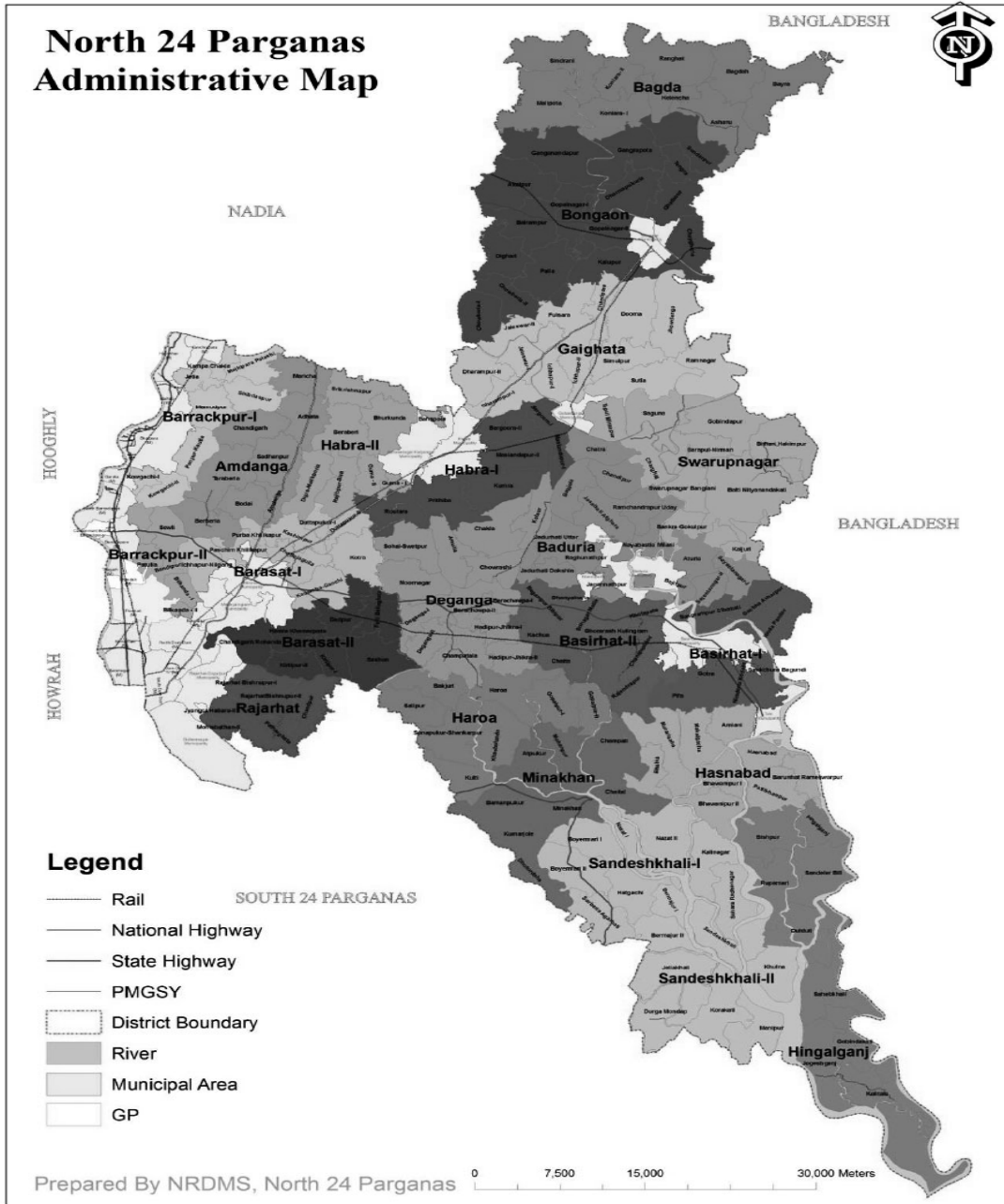


District Environment Plan for North 24 Parganas

West Bengal



Office of District Administration District Collector North 24 Parganas

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Contents

1.0 District Profile	4
a. District Administrative Set-up	7
b. Local institutions	8
c. Natural Resources	9
▪ Water bodies.....	9
▪ Availability of water resources.....	9
▪ Forest coverage.....	9
d. Geography &Demography	9
e. Land-use pattern	9
f. Climate	10
2.0 Indicative Gap Analysis and Action Plans for complying with Waste Management Rules.....	1
(i) Solid Waste Management	1
a. Current status related to solid Waste management	2
b. Identification of gap and Action plan	2
(ii) Plastic waste Management.....	4
(a) Current status related to Plastic waste management	4
(b) Identification of gaps and Action plan.....	5
(iii) C & D Waste Management	6
▪ a. Current status related to C & D Waste	6
b. Identification of gap and Action plan	7
(iv) Bio medical Waste Management.....	8
a. Current Status related to biomedical waste	8
b. Identification of gaps and Action plan	8
(v) Hazardous Waste Management	10
a. Current Status related to Hazardous Waste Management	10
b. Identification of gaps and action plan	10
(vi) E-Waste Management	11
a. Current Status related to E-Waste Management	11
b. Identification of gaps and action plan	11
3.0 Air Quality Management.....	12
a. Current Status related to Air Quality Management.....	12
b. Identification of gaps and action plan	12
4.0 Water Quality Management	17
4.1 Water Quality Monitoring.....	19

a. Current Status related to Water Quality Management	22
b. Identification of gaps and action plan for water quality monitoring.....	22
4.2 Domestic Sewage	22
a. Identification of gaps and action plan for treatment of domestic sewage.....	22
b. Identification of gaps and action plan for treatment of domestic sewage	22
5.0 Industrial waste water management.....	23
a. Current Status related to Industrial Waste water Management	23
b. Identification of gaps and action plan for industrial wastewater:.....	23
6.0 Mining Activity Management plan.....	24
a. Current Status related to Mining Activity Management.....	24
b. Identification of gaps and action plan	24
7.0 Noise Pollution Management plan	25
a. Current Status related to Noise Pollution Management	25
b. Identification of gaps and action plan	25

1.0 District Profile

- North 24 Parganas district is a district in southern West Bengal, India. North 24 Parganas extends in the [tropical zone] from latitude 22°11'6" north to 23°15'2" north and from longitude 88°20' east to 89° east. It is bordered to Nadia by north, to Bangladesh (Khulna Division) by north and east, to South 24 Parganas and Kolkata by south and to Kolkata, Howrah and Hoogly by west. Barasat is the district headquarters of North 24 Parganas. North 24 Parganas is West Bengal's most populous district. It is also the tenth largest district in the State by area and second most densely populated district (3,781/km² as of 2007 census).
- North 24-Parganas is the largest District in West Bengal (second largest in the country) and having pan-Indian characteristics with an area of 4094 Sq. Km (4.61% of the State). It is situated between 23-15'-2" and 22-11'-6" North latitude and 89-5' and 88-20' East longitude.
- The district lies within the Ganga–Brahmaputra delta. The major distributory of river Ganga that is river Hooghly flows along the western border of the district. There are many other distributory branches, sub-branches of Ganga river and other local rivers, which include the Ichhamati, Jamuna, and Bidyadhari
- North 24 Parganas as a district holds a special place in the state in respect of population, language, culture, geography and livelihood. This district is almost a miniature of India in terms of the variation it contains. There are 25 Municipalities, 1 Municipal Corporation and 1 Cantonment Board and one Development Authority with 57.27% population of the district living therein. As per Census 2011, it is most densely populated district in the state, the density 2,445 per sq. km. People residing in rural area in 22 Blocks are mainly dependent on primary sectors of livelihood while the urban population mainly depends on secondary sector and to some extent tertiary sectors. International Border with Bangladesh is also along the eastern boundary of the district. There is traditional industrial belt at Barrackpore area, while there are saline areas of Sundarban and rich alluvial tracts of the Ichhamati basin. Apart from religious minorities, there is a considerable population of linguistic minorities. This district is very rich in cultural heritage has a good collection of heritage sites. Brief descriptions of some important sectors are given below:

- 1. AGRICULTURE** :Agriculture in North 24 Parganas has witnessed a gradual transformation from subsistence farming of early fifties to the present intensive agriculture especially in better endowed regions, where basic infrastructure essential for realizing potential of improved technologies in farms fields was created along with favorable government policies. This has led to widespread adoption of intensive cropping system particularly rice in irrigated areas, which has resulted in remarkable increase in food grain production of the district. The current food grain production, in this district is 7.38 lakh tones.

The district of North 24 Parganas consists of 22 nos. of Blocks spread over 5 nos. of Administrative Sub-Divisions having a total geographical area of 4,094 sq. km. Due to the advantage of its proximity, Kolkata, 10% of the total population of the State are running their livelihood through only 4.3% of the total geographical area of West Bengal situated in the District. It is counted as 2nd most populous district of the country only after Thane of Maharashtra. The population feature is also having some specialty as 54% of the total population living in urban / semi-urban areas and remaining 46% living in rural areas.

There are two district agro-ecological situations prevailing in the district –Gangetic Alluvial Zone and Coastal Alluvial Zone. Gangetic Alluvial Zone comprises of 16 blocks spread over entire Barasat and Barrackpore sub-Divisions, Bongaon Sub-Divisions and only 4 blocks of Basirhat Sub-Divisions i.e, Basirhat-I & II Baduria and Swarupnagar. For applications of more location specific technologies, the Gangetic Alluvial regions have further been sub-divided in two regions. One is Ichhamati basin comprising of all blocks of Barasat-Barrackpore Sub-Divisions and Basirhat I & II, Baduria block of Basirhat Sub-Division.

On the one hand, the District enjoys the benefit of good infrastructural facilities and bounty of natural resources on the other. The Netaji Subhas Chandra Bose International Airport is only 12 KM away from District Head Quarter. Most of the villages are connected by roads and easily accessible by rail. Even the remote Sundarban blocks are only a few hours drive from the capital city of the state. Among natural resources, vast stretches of fertile land contributes a considerable share to the State Food basket.

- 2. HORTICULTURE :** A sizeable tract ranging from Rajarhat to Bongaon in North 24 Parganas District contribute significantly towards the bulk of State's horticulture produces. The rich Gangetic Alluvium, Alluvium, abundance of irrigation water and congenial climate of the area favour commercial production of vegetables like tomato, cabbage, cauliflower, pea, brinjal, ladies finger, beans, potato and others.

Predominantly, vegetable growing belt lies in Amdanga, Deganga, Barasat-I, Habra-I, Habra-II, Basirhat-II, Swarupnagar, Gaighata and Bagdah area. Multipurpose cold storages mainly for fruits and vegetables are established at Gaigahta, Amdanga and Nilganj. The area extending from Rajarhat to Bongaon in North 24 Parganas District may be termed as a 'Horticulture Hub' of West Bengal.

- 3. Industry:** North 24 Parganas occupies a prominent position in the industrial map of West Bengal. The industrial development dates back to the pre-independence era. The Bengal Chemical set up by Acharya Prafulla Chandra Roy at Panihati was the precursor to industrialization not only in Bengal but also in the entire country. Subsequently setting up of other industrial units like Bengal Waterproof, Basanti Cotton Mills, etc favored the nucleus of industrial units in small, medium and large scale. Major industrial clusters are:-

- **Food Processing** – Panihati, Shyamnagar, Baranagar and Kanchrapara.
- **IT / ITES State's entire electronics and IT / ITES concentration is in Salt Lake & New Town** – Rajarhat area.
- **Plastics & allied products** - Dum Dum, Panihati, Baranagar and Naihati.
- **Engineering based industries** –Dakshindari, Bonhoogly and Baranagar.
- **Handloom Units** – Basirhat, Gaighata, Hasnabad, Bongaon and Swarupnagar.
- **Ophthalmic Units** – South Dum Dum, Naihati and Barrackpore-II.
- **Electric fan manufacturing units** – In and around Rajarhat Block.
- **Silk Screen printing units** –Sajirhat and Panihati areas.

Jute industry is a trading industry in West Bengal. Out of 59 Jute Mills in the State, 23 Mills are situated in Agarpara, Kamarhati, Titagarh, Jagatdal, Naihati, Kankinara areas of the district.

Out of 12 wagon manufacturing units in the country, 9 are located in West Bengal

accounting for maximum of the all India capacity. Among these, 3 units viz. Jessop & Co. Ltd, Texmaco and Titagarh Wagons are situated in the district.

The Gun & Shell Factories at Dum Dum, Cossipore and Ichapur and the Railway Workshop at Kanchrapara are also large operating engineering units in the public sector in the district. Metro Railway has a workshop cum Car shed at Noapara in the district.

The IT hub at Salt Lake, Sector-V is India's first fully integrated electronics complex spread over 150 acres of land.

4. EDUCATION : Apart from the schools, madrasahs, colleges situated through the district, many engineering, management and other reputed educational institutions have been set up in the district, which include:

- Indian Statistical Institute, Baranagar.
- National Institute of Juridical Science, Salt Lake
- National Institute of Fashion Technology, Salt Lake
- Premier Management Training Unit (Indian ARMY), New Town, Rajarhat
- Institute of Computer Engineers (Engineering & Medical College-cum-Hospital), New Town, Rajarhat.
- Indian Institute of Engineering & Management, Salt Lake etc to name a few.

5. TRANSPORT & CONNECTIVITY : Two national Highway – NH 34, NH 35 travers through the district connecting ports, airports and other important commercial centers in the district. The major land port of the State is situated at Petrapole near Bongaon Town of North 24 Parganas district connecting Bangladesh with Kolkata thereby rest of the country through NH 35 (Jessore Road) and promoting International trade with Bangladesh.

The railway line connects Hasnabad in Basirhat and Bongaon from and to Sealdah in Kolkata. Bongaon is connected to Ranaghat in neighboring Nadia district. A railway line has been opened for transport of goods to Bangladesh via Petrapole border.

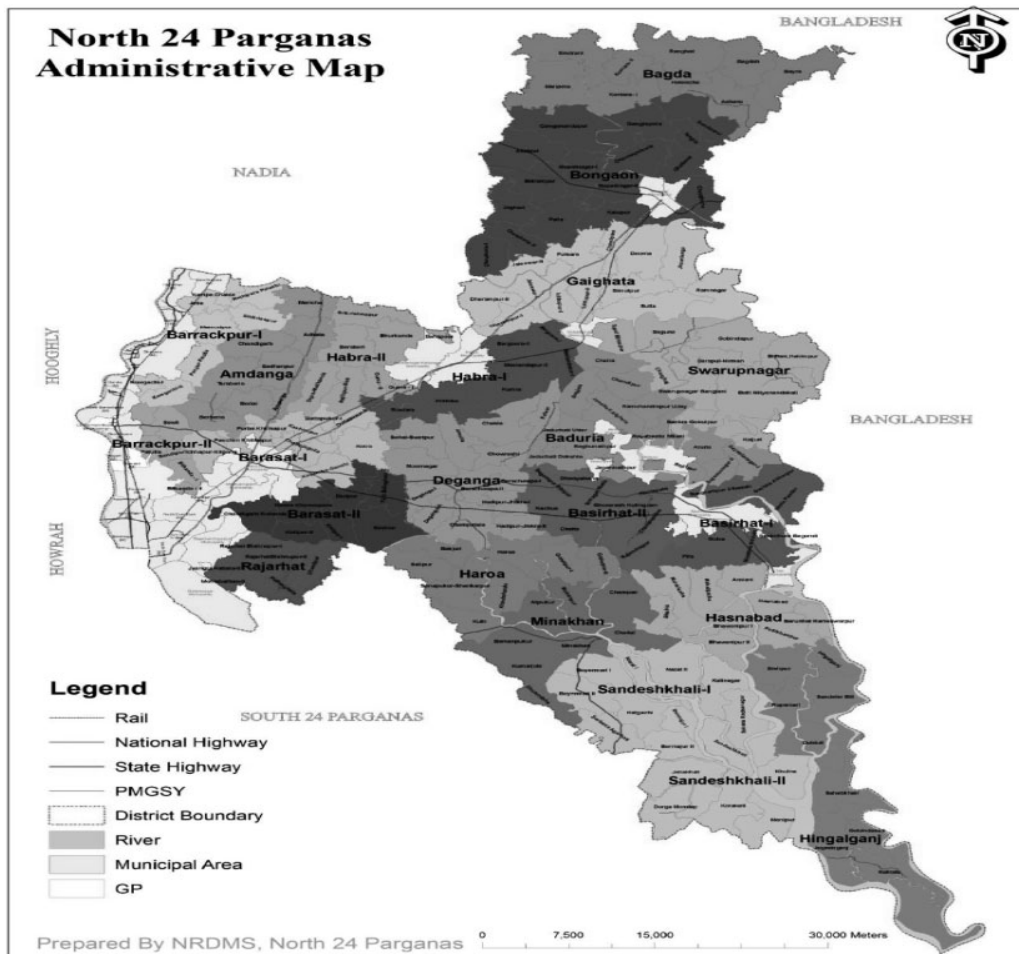
Netaji Subhas International Airport, the only international airport of the State is at Dum Dum, North 24 Parganas which provides national and international connection to all major cities and towns in India as well as to major International destinations. This district is also proximate to the Kolkata and Haldia Port.

6. ARCHAEOLOGICAL, HISTORICAL AND OTHER PLACES OF INTEREST: The District of North 24 Parganas has vast heritage resources and abundance of natural beauty, particularly the southern part of the district that is part of Sundarbans, now a UNESCO accredited World (Ecological) Heritage Site.

The district also boasts of hundreds of sites of historical and archeological importance, the most famous perhaps being Chandraketugarh at Berachampa under Deganga Block. Excavation at the site and had connections with other contemporary international ports of the world.

a. District Administrative Set-up:

1. Name of District : North 24 Parganas
2. No. of Police District : 03 (Barasat Police District, Basirhat Police District, Bongaon Police District)
3. No. of Police Commissionerate : 02 (Bidhannagar Police Commissionerate, Barrackpur Police Commissionerate)
4. No. of Health District : 02 (Barasat Health District, Basirhat Health District)
5. No. of Sub-Divisional Office : 05 (Barasat SDO, Bongaon SDO, Basirhat SDO, Bidhannagar SDO, Barrackpur SDO)
6. No. of Municipal Corporation : 01 (Bidhannagar Municipal Corporation)
7. No. of Blocks : 22
8. No. of Municipalities : 26
9. No. of Wards : 687
10. No. of Gram Panchayats : 199



District Environment Plan North 24 Parganas

b. Local institutions :

Sub-Division	Blocks	No. of Samities	No. of Gram Panchayats	Municipalities	
Bongaon Sub – Division	Bagdah	1	9	-	
	Bongaon	1	16	-	
	Bongaon (M)	-	-	1	
	Gaighata	1	13	-	
Barasat Sub - Division	Habra-I	1	7	-	
	Habra-II	1	8	-	
	Habra (M)	-	-	1	
	Gobardanga (M)	-	-	1	
	Ashokenagar - Kalyangarh (M)	-	-	1	
	Barasat-I	1	9	-	
	Barasat-II	1	7	-	
	Barasat (M)	-	-	1	
	Madhyamgram (M)	-	-	1	
	Amdanga	1	8	-	
	Deganga	1	13	-	
	Rajarhat	1	5	-	
	RajarhatGopalpur	-	-	1	
	Barrackpur Sub - Division	Kanchrapara (M)	-	-	1
Halisahar (M)		-	-	1	
Barrackpur-I		1	8	-	
Naihati (M)		-	-	1	
Bhatpara (M)		-	-	1	
Garulia (M)		-	-	1	
North Barrackpur (M)		-	-	1	
Barrackpur (M)		-	-	1	
Titagarh (M)		-	-	1	
Kardah (M)		-	-	1	
Barrackpur-II		1	6	-	
Panihati (M)		-	-	1	
New Barrackpur (M)		-	-	1	
Kamarhati (M)		-	-	1	
Baranagar (M)		-	-	1	
Dum Dum (M)		-	-	1	
South Dum Dum (M)		-	-	1	
North Dum Dum (M)		-	-	1	
Bidhannagar Sub - Division		Bidhannagar Municipal Corporation	-	-	N.A.
Basirhat Sub – Division		Baduria	1	14	-
	Baduria (M)	-	-	1	
	Haroa	1	8	-	
	Minakhan	1	8	-	
	Swarupnagar	1	10	-	
	Hasnabad	1	9	-	
	Taki (M)	-	-	1	
	Hingalganj	1	9	-	
	Sandeshkhali-I	1	8	-	
	Sandeshkhali-II	1	8	-	
	Basirhat-I	1	7	-	
	Basirhat-II	1	9	-	
	Basirhat (M)	-	-	1	
	Total		22	199	26

c. Natural Resources

- **Water bodies:** The main rivers of the district of North 24 Parganas are Ichhamati, Kalindi, Raimangal, Dansa, Borokalagachi, Benti, Haribhanga, Gaourchar, Bidyadhari, Hooghly, etc. Ichhamati is the longest among these rivers. It enters the district through Bagdah block in the north of the district from Nadia and flows south through Bongaon, Swarupnagar, Baduria, Bashirhat-I, Hasnabad and Hingalgañj. This river flows into river Kalindi and Kalindi in turn flows into Raimangal. It indicates the borderline between India and Bangladesh during its course of flow from Bashirhat to Hingalgañj. River Hooghly lies between Hooghly and North 24 Parganas district.
- **Availability of water resources:** The water mainly neutral to mildly alkaline in nature and pH value ranges between 7.5 and 8.2. Total hardness as CaCO₃ ranges from 140-670 mg/l. Generally iron content is above permissible limit in all the blocks ranges from 1.23-18.10 mg/l. but in few places it is found even of the order of 0.09-0.56 mg/l. Shallow aquifers within the depth of 100 mbgl show arsenic concentration > 0.05 mg/l occurring in 253 mouzas in 17 blocks of the district. Deeper aquifers down to the depth of 350 mbgl are arsenic free.
- **Forest coverage:** The district has no forest area as such except the Sunderbans Reserve Forests. The total area under reserve forest is 91.98 hectares covering 1.05% of the total geographical area of the district. Out of these 91.98 hectares, 63.00 hectares have been earmarked as Bhibhuti Bhushan Wildlife Sanctuary. However, these forests being positioned in the largest delta of the world, has a major role to play in maintaining the ecological balance of southern part of the State.

d. Geography & Demography

The district of North 24 Parganas falls within the new alluvium sub-region of the lower Gangetic Plain (Zone-III) and considered being most fertile for crop production. The soil type varies from sandy to clay sandy loam being the predominant ratio of high: medium: low land is 17:33:39. The soil of northern part of district is sandy, in the central middle part it is sandy with clay loam and in southern side it is clay loam. The physiographic structure of the district is mostly plain.

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e. Land-use pattern

Increase in land surface temperature (LST) of growing urban areas in the current global warming scenario is a cause of concern for city planners. This study discusses the impact of land-use/land-cover (LULC) change on LST of the area in and around Rajarhat block, North 24-Parganas District, West Bengal, covering an area of 165 km². Multi-spectral and multi-temporal satellite data from Landsat 5 TM (1990), Landsat 8 OLI (2016) and Sentinel 2A (2016) are used for the LULC mapping, and thermal infrared data from Landsat 5 TM and Landsat 8 TIRS (2016) are used for estimating the LST of 1990 and 2016. Results show that land-use pattern in November has changed in Rajarhat from 1990 to 2016: 13 km² of vegetation cover lost due to urbanization; 9.3 km² of open land converted to agricultural land and open fields/parks; 1.4 km² of aquaculture ponds converted to tree cover/scrublands and 1.45 km² of lakes/ponds filled up. Loss of vegetation (scrubland and tree) cover resulted in LST rise by about 1.5 °C. Aquaculture ponds have the ability to resist the rise in LST since the increase in temperature of this class is only 0.24 °C due to increase in its area. This change in land-use pattern over 26 years has increased the LST by 0.94 °C. The urban-heat-island (UHI) phenomenon has also increased. The area of the 'strongest' heat-island phenomenon, as per UTVFI classification scheme, has increased by 20.1 km². Positive correlation is observed between NDBI and LST's of urban areas ($r = 0.002$ for 1990 and $r = 0.047$ for 2016) which suggests that urbanization is responsible for the rise in LST. The NCEP NOAA surface temperature model suggests that the long-term trends in the rise in maximum LST over Rajarhat is about 1 °C from January 1990 to November 2016 with 90% confidence level validating the extracted LST data from satellites. Sustainable urban planning is required to arrest the rise in LST which includes urban forestry, construction of water bodies and fountains,

preserving existing aquaculture ponds and reducing construction activities. © 2019, Indian Society of Remote Sensing.

f. Climate

The climate is tropical, like the rest of the Gangetic West Bengal. It is also characterised by the Monsoon, which lasts from early June to mid September sometimes in October. The weather remains dry during the winter (late November to mid February) and too humid during summer.

Temperature ranges from 41 °C in May and 10 °C in January while relative humidity ranges between 50% in March & 90% in July. The average annual rainfall is 1,579mm.

(i) Solid Waste Management**Current status related to solid Waste management**

Urban Local bodies		No of Wards	No of Households	Population	Solid Waste Generated per day (MT)
Municipal corporations	Ashokenagar-Kalyangarh	23	32336	135592	78.4
Municipalities(Nagar Palika)	Baduria	17	12065	52493	13.62
	Baranagar	34	84600	292637	150
	Barasat	35	109874	278435	130
	Barrackpore	24	37656	152783	50
	Basirhat	23	43996	153984	35
	Bhatpara	35	92456	383762	205
	BMC	41	153661	634106	400
	Bongaon	22	29680	119340	65
	Dum Dum	22	27702	114786	62.1
	Garulia	21	18122	85336	35
	Gayeshpur	NA	NA	NA	NA
	Gobardanga	17	12615	45377	16
	Habra	24	36016	147221	72
	Halisahar	23	33613	124939	52
	Kamarhati	35	80000	331163	150
	Kanchrapara	24	27976	129576	56.71
	Khardah	22	26000	108496	64.5
	Madhyamgram	28	70000	240000	82
	Naihati	31	36447	217900	165
	New Barrackpore	20	16725	76846	29.06
	North Barrackpore	23	32564	132806	47
	North Dum Dum	34	64471	249142	150
Panihati	35	94000	469000	196	
South Dum Dum	35	103741	403316	578	
Taki	16	8919	38263	83.63	
Titagarh	23	23869	116520	65	
Nagar Panchayats(Town area councils)					

Local Bodies	No of village panchayats/blocks	No of Households	Population	Solid Waste Generated per day
Amdanga	79	43636	191673	NA
Baduria	96	67671	285319	NA
Bagda	106	57502	242974	NA
Barasat-I	70	67898	294628	NA
Barasat-II	76	41939	200918	NA
Barrackpore-I	38	46601	194333	NA
Barrackpore-II	15	52525	217171	NA
Basirhat-I	59	38033	171613	NA
Basirhat-II	66	51806	226130	NA
Bongaon	149	90774	380903	NA
Deganga	107	72770	319213	NA

Gaighata	100	79503	330287	NA
Habra-I	55	54120	225200	NA
Habra-II	76	42344	176490	NA
Haroa	90	46888	214401	NA
Hasnabad	73	47739	2032662	NA
Hingalganj	42	46048	175545	NA
Minakhan	73	43756	199084	NA
Rajarhat	30	42910	189893	NA
Sandeshkhali-I	30	37344	164465	NA
Sandeshkhali-II	24	37771	160976	NA
Swarupnagar	65	61611	256075	NA
Village/Gram Panchayats	NA	NA	NA	NA

b. Identification of gaps and Action plan for all ULBs

Action points For villages / blocks/ town municipalities / City corporations	Identification of gap	Action Plan	Responsible agencies	Timeline for completion of action plan
1. Segregation				
Segregation of waste at source	Distribution of bins to all households	At present two types of bin i.e. is Blue bin and Green bin for biodegradable and non-biodegradable and Black bags for Hazardous waste are essential. Also awareness programme, incentives etc may be considered.	ULBs, RWAs, institutions, individual households, UDMA	6months to 1 year
2. Sweeping				
Manual Sweeping	Street & Market sweeping with brooms	Manually	ULB	6months to 1 year
Mechanical Road Sweeping & Collection	Mechanical instruments	Instrument for mechanical sweeping and collection for tri-cycle . Also projected growth / intended action plan with timelines.	ULB, UDMA, SUDA	Depend on responsible agencies

3. Waste collection

100% collection of solid waste	Lack of vehicles	At present tri-cycle with man power are collecting household waste. More tri-cycle and man power are needed.	ULBs, RWAs, institutions, individual households, UDMA	6months to 1 year
Arrangement for door to door collection	Vehicles and man power	Sufficient vehicles and man power arrangements are to be taken. If there is gap, action plan for door to door collection across the district.	ULBs, RWAs, institutions, individual households, UDMA	6months to 1 year

Waste Collection trolleys with separate compartments	separate compartments with check availability & adequacy and if its needs upgradation.	Some vehicles have separate compartments and rests are under consideration. Action plan for procurement if required.	ULB,UDMA	6months to 1 year
Mini Collection Trucks with separate compartments	Separate compartments in mini trucks	It is under process	ULB,UDMA	6months to 1 year
Waste Deposition centres (for domestic hazardous wastes)	Hazardous wastes	Plan for seperately deposition Household hazardous wastes in one place dumpsite.	ULB,UDMA	6months to 1 year

4. Waste transport

Review existing infrastructure for waste Transport.	Waste Transport	Existing SWM Transportation needs triping trucks. Refuse collector tractor , trollers and other vehicles.	ULBs, RWAs, institutions, individual households, UDMA	6months to 1 year
Bulk Waste Trucks	Identification of bulk waste	Preparation of collecting waste from markets and Bulk waste is lifted informally by roadside waste pickers.	ULB, UDMA, District administration	6months to 1 year
Waste Transfer points	Yes to start	Yes to start	ULB, UDMA, District administration	6months to 1 year

5. Waste treatment and disposal

Wet-waste Management: On-site composting by bulk waste generators (Authority may decide on requirement a s per Rules)	Whether number of bulk waste generators identified for installation	Action for getting onsite composting plants commissioned	ULBs, UDMA, bulk generators	6months to 1 year
Wet-waste Management: Facility(ies) for central Biomethanation / Composting of wets waste	Whether facility exists / functional / needs upgradation	If not action plan for developing / upgradation of bio-methanation or composting facility.	ULBs,UDMA	6months to 1 year
Dry-Waste Management: Material Recovery for dry-waste fraction	Dry-Waste	Action plan for use of dry segregated waste in MRF operation	ULB,SUDA, District administration	1 year

Disposal of inert and nonrecyclable wastes: Sanitary Landfill	Inert	Used for land filling	ULB,SUDA	1 year
Remediation of historic / legacy dumpsite	Legacy Dumpsite	Committing to environmental remediation and protection. Also KMDA has initiated a project at municipal disposal site.	ULBs,SUDA	1 year
Involvement of NGOs	Whether involvement of NGO's envisaged	NGO's can be involved for management of solid waste campaign.	ULBs, SUDA,WBPCB	1 year
EPR of Producers: Linkage with Producers / Brand Owners	As per rules, producers & brand owners should facilitate in connection of packaging waste.	Action plan for linkage of all producers / brand owners or their PROs for collection of plastic waste	ULBs,UDMA	6 months to 1 year
Authorisation of Waste Pickers	Ragpicker	20 nos identified	ULBs,UDMA	6 months to 1 year
Preparation of own by-laws to comply with SWM Rules 2016	Yes	Yes	ULBs,UDMA	1 year
(ii) Plastic waste Management	85%	Ragpickers are segregating waste informally from secondary collection point.	ULBs,UDMA	2023

Current status related to Plastic waste management

Urban Local bodies		Estimated quantity of plastic waste per day (MT/day)
Municipal corporations (Nagar Nigam or Mahanagar Palika)	Kolkata	NA
Municipalities (Nagar Palikas)	NA	Data not readily available as substantial quantity of plastic waste is recycled through informal recycling units before coming into municipal and disposal collection system.
Nagar panchayats (Town area Councils)	NA	NA

	Plastic Waste Generated per day
Local bodies	
Block /Taluk / Mandal Tehsils	
Village/Gram Panchayats	

Identification of gaps and Action plan:

Action points For villages / blocks/ town municipalities / City corporations	Identification of gap	Action plan	Agencies responsible	Target time for compliance
Door to Door collection of dry waste including PW	Dry waste	Collected dry wastes are deposited in one liess by the side of dampsite	ULBs, RWAs, institutions, individual households, UDMA	6months to 1 year
Facilitate organised collection of PW at Waste transfer point or Material Recovery Facility	This infrastructure is linked to Sw management. May check gaps with respect to: <ul style="list-style-type: none"> ●Availability of transfer points and material recovery facility. ●Involment of informal Sector/NGO. ●Registering waste pickers. ●Linkage with PW recycles. ●Involment of producers and brand owners 	Within the district outline Specific plans for each village Panchayet / Block / Municipality / Nagar Panchayet / Corporations for plastic waste collection.	ULBs, UDMA	1 year

PW collection Centres	Local Bodies may setup own centres and also involve producers and brand owners or their PRO's to facilitate setting up of collection centres.	Plastic waste collection centre should be established in adequate members. Coordination with state urban department may be necessary.	ULBs, UDMA	6months to 1 year
Awareness and education programs implementation	Review existing gaps in creating awareness among public for minimising and recycling PW	Education through mass media, schools, producer / brand owner campaigns and other channels	ULBs, SUDA and WBPCB. Also BITAN (Micro planning organisation)	1 year
Access to Plastic Waste Disposal Facilities	District has access to PW recycling utilization or disposal facilities.	PW recycling facilities available at reasonable distance; channel for sending PW collected to cement plants for processing; Availability of waste plastic oil producing facilities; Linkage with PWD for usage PW in road making. Action plan at district should involve urban and rural local bodies.	ULBs	6months to 1 year

(iii) C & D Waste Management

a. Current status related to C & D Waste

Total C & D waste generation in MT per day (As per data from Municipal Corporations / Municipalities)	It is under the Municipal authority to prepare policy on C & D waste
Does the District has access to C&D waste recycling facility?	NA

Identification of gaps and Action plan:

Action points For villages / blocks/ town municipalities / City corporations	Identification of gap	Action plan	Responsible agencies	Timeline for completion of action plan
Arrangement for separate collection of C&D waste to C&D waste deposition point.	Cheeu gaps W.r.t. <ul style="list-style-type: none"> ●Separate collection point of C & D waste ●Identification of common C&D waste deposition Points. 	Action plan for every local body in district. District identify common C & D waste deposition points.	ULB, UDMA	6 months to 1 year
Whether local authority have fixed user fee on C&D waste and introduced permission system for bulk waste generators who generate more than 20 tons or more in one day or 300 tons per project in a month?	user free	ULB is contemplating for fixing user fee on C & D waste and permission system.	ULB, UDMA, SUDA	6 months to 1 year
C&D recycling Facility	100%	C & D waste is collected separately in an informal way as private concern / agency / general public arrange dumper to lift C & D waste	ULB, UDMA	6 months to 1 year
Usage of recycled C&D waste in nonstructural concrete, paving blocks, lower layers of road pavements, colony and rural roads	100%	C & D waste is collected separately in an informal way as private concern / agency / general public arrange dumper to lift C & D waste	ULB, UDMA	6 months to 1 year

ICE on C & D waste management	ICE	It is done off and on.	ULBs, SUDA and WBPCB	6 months to 1 year
(iv) Biomedical Waste Management				
Inventory of BMW in the District	Quantity			
Total no. of Bedded Healthcare Facilities	291			
Total no. of non-bedded HCF	404			
No. of HCFs authorised by SPCBs/PCCs	NA			
No of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs)	NA			
Capacity of CBWTFs	NA			
No. of Deep burials for BMW if any	NA		Quantity of biomedical waste generated Kg/annum	
Quantity of biomedical waste generated per day	NA		1659518.8	
Quantity of biomedical waste treated per day	3818.38			

b. Identification of gaps and Action plan:

Action points For villages / blocks/ town municipalities / City corporations	Gaps	Action plan	Responsible agencies	Timeline for completion of action plan
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Inventory and Identification of Healthcare Facilities	Check whether all HCFs including clinice, Hospitals, veterinary hospitals, Aayush hospital, Animal houses etc generating bio medical waste area idendified and authorized by SPBs / PCCs	Action plan for completing / updateing of inventory and authorization of HCFs by SPCB / PCCs	ULB, UDMA	6 months to 1 year
Adequacy of facilities to treat biomedical waste	Check if there is any gap between quantity of bio medical waste generated per day and quantity of bio medical waste treated and disposed in the district	Action plan for setting up CBWTF or providing acces to CBWTF with 75 KM from places waste generation including identification of site for setting up such facilities.	NA	NA
Tracking of BMW	Whether bar code system is implemented by all HCFs & CBWTFs	Plan for implementation of bar code system by all HCFs & CBWTFs in the district	Medical Environmental Management Pvt. Ltd., Kalyani Nadia	NA
Awareness and education of healthcare staff	Training has been organised for all stackholders	Action plan for awareness programes and training to health care staffs and ULB officials.	ULBs, SUDA and WBPCB	1 year
Adequacy of funds	It is allocated to Govt. Healthcare facilities for bio-medical waste management by state Govt.	For ensuring adequate funds to Govt. Healthcare facilities for bio-medical waste management by state Govt.	Medical Environmental Management Pvt. Ltd., Kalyani Nadia	NA

Compliance to Rules by HCFs and CBWTFs	District level mechanism to monitor compliance by Hospitals / HCFS	Draw action plan to monitor compliance of MCFs and CBWTFs through SPCBs/PCCs.	Medical Environmental Management Pvt. Ltd., Kalyani Nadia	NA
District Level Monitoring Committee	It has been constitute & meetings are being organised.	Periodicity of review & follow up by DLMC.	NA	NA
Wastewater treatment	HCFs are required to install ETPs for waste water generated.	Action plan for installation of ETPs.	WBPCB	6 months to 1 year

(v) Hazardous Waste Management

a. Current Status related to Hazardous Waste Management

Details of Data Requirement		Present Status
No of Industries generating HW		46
Quantity of HW in the district	Quantity of incinerable (MT/annum)	193.63
	quantity of land-fillable (MT/annum)	9560.5
	quantity of recyclable/utilisable (MT/annum)	6379.6
No of captive/common TSDF		NA
Contaminated Sites or probable		NA

b. Identification of Gaps and Action plan

Action points	Identification of gap	Action plan	Responsible agencies	Timeline for completion of action plan
Regulation of industries and facilities generating Hazardous Waste	Check whether all hazardous waste industries are identified and authorised by SPCBs/PCCs.	SPCB/PCC should ensure that all hazardous waste industries are authorised and a system of safe disposal is in place.	NA	NA

Establishment of collection centres	District has collection centres for hazardous wastes with linkage to common TSDFs/recyclers.	Local authority should ensure that adequate number of collection centres should be established and are linked to common TSDFs.	NA	NA
Training of workers involved in handling / recycling / disposal of HW	Identify facilities/Industries engaged in recycling/Pre-Processing/disposal of hazardous waste in the district.	Action plan to train the workers on safety aspects through department of Industries and Pollution Board.	ULBs, WBPCB, UD&MA	1 year
Availability / Linkage with common TSDF or disposal facility	Check if the generators of HW have access to common TSDF in the State.	Action plan to ensure all generator are linked to TSDF/Action plan in case there is no TSDF in the district or State in such case evaluate existing strong and captive disposal facilities through SPCBs/PCCs.	NA	NA
Contaminated Sites	Are the ready sites where soils/sediments/ground water contaminated due to dumping of industrial wastes.	Action plan for identification of probable contaminated site, incidents of HW dumping, responsible parties for contamination and to remediate contaminated sites.	NA	NA

(vi) E-Waste Management

a. Current Status related to E-Waste Management

Details of Data Requirement	Present Status
Inventory of E-Waste in MT/year	2 Ton
Collection centers established by ULBs in the District	No such policy is in this regards.
Collection centers established by Producers or their PROs	DO
No authorized E-Waste recyclers / Dismantler	DO

b. Identification of gaps and action plan:

Action points	Identification of gap	Action plan	Responsible agencies	Timeline for completion of action plan
Inventory / Generation of E-Waste / Bulk-waste generators	NA	NA	ULBs, UDMA, bulk generators	6months to 1 year
E-Waste collection points	E-waste	Under process	NA	NA
Linkage among Stakeholders to channelize E-Waste	NA	NA	NA	NA
Regulation of Illegal EWaste recycling / dismantling	NA	NA	NA	NA
Integration of informal sector	NA	NA	ULBs,UDMA	6 months to 1 year
Awareness and Education	Awariness	IEC materials are being and used arrangement of workshop and awareness campaigns through producers/PROs	ULBs, SUDA and WBPCB	1 year

Air Quality Management

Current Status related to Air Quality Management

Details of data requirement	Present status	
Number of Automatic Air Quality monitoring stations in the district.	Operated by SPCB / State Govt / Central govt./ PSU agency Operated by Industry:	NIL
Number of manual monitoring stations operated by SPCBs		5 Nos. 1. Barasat Municipality 2. Barrackpore Municipality 3. Dum Dum Municipality 4. Khardah Municipality 5. Madhyamgram Municipality
Name of towns / cities which are failing to comply with national ambient air quality stations		Barasat, Barrackpore, Dum Dum, Khardah, Madhyamgram

No of air pollution industries	Iron and Steel Industries, Food Industries, Jute Mills, Rice Mills, Metal Processing
Prominent air polluting sources (Large Industry)/(Small Industry)/(Unpaved Roads)/(Burning of Waste Stubble)/(Brick kiln)/(Industrial Estate)/(Others) (Multiple selection)	1. Industries with major emission potential : * Iron and Steel Industries * Food Industries * Jute Mills * Rice Mills * Metal Processing 2. 3. Vehicular emission Other potential emission sources like: * Brick Fields * Fungitive emission from Construction sector * Garbage & Leaf burning * Stubble Burning

Identification of gaps and action plan:

Action points	Indicative Action Plan	Responsible agencies	Timeline for completion of action plan
Identification of prominent air polluting sources?	District level Inventory has been done and the summary of emission sources is provided in the DEP as in Table 2. Further detail area wise inventory of air pollution sources shall be carried out. Identification of hotspots or areas of concern to Air pollution shall be done in association with State Pollution Control Boards (SPCBs).	District Authorities/West Bengal Pollution Control Board (WBPCB)	6 months

<p>Ambient Air quality data?</p>	<p>This data can be easily accessible in https://www.wbpcb.gov.in/ or http://emis.wbpcb.gov.in/airquality/citizenreport.do link. District-wise Air Quality National Air Monitoring Programme data is provided in Table 1. (recorded in 2019; latest pre-Covid19 year)</p>	<p>West Bengal Pollution Control Board (WBPCB)</p>	<p>NA</p>
<p>Setting up of Continuous Ambient Air Quality Monitoring Station</p>	<p>Ambient Air Quality Monitoring Station (AAQMS) in North 24 Parganas District is being done in</p> <ol style="list-style-type: none"> 1. Barasat Municipality 2. Barrackpore Municipality 3. Dum Dum Municipality 4. Khardah Municipality 5. Madhyamgram Municipality <p>The major town of this District shall be covered. Such station may be required for ULBs provided in 2(i)a in future. Use of Sensor-based / Earth Observation-based monitoring may also be explored.</p>	<p>District Authorities/West Bengal Pollution Control Board (WBPCB)</p>	<p>3 Years</p>

<p>District Level Action Plan for Air Pollution</p>	<p>Implementation of Comprehensive Air Action Plan (CAP) in 2020 and Micro Action Plan (MAP) for Barrackpore Non-Attainment City (NAC), has been started from 2021. It is available in the link http://www.wbpcb.gov.in/air-action-plan. To control Air Pollution, the District has already started promoting Public Transport systems, E-mobility, LPG based cooking, carpentering of</p>	<p>District Administration Authorities/ Regional Transport Office (RTO)/District Forest Office (DFO)/WBPCB/ULBs/Police Authorities</p>	<p>1 Year</p>
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Hotspots of air pollution in District	<p>Hotspot with respect to air pollution (such as emission from industrial agglomeration of emitting Industries stubble burning, illegal waste burning, unauthorised operations, cluster activities, vehicular emission shall be identified. Garbage burning and indiscriminate stubble burning should be prohibited. Emission from construction sector shall also be reduced.</p>	District Authorities/Urban local bodies (ULBs)/ Police Authority/Agriculture Department/RTO/West Bengal Pollution Control Board (WBPCB)	6 months
Awareness on Air Quality	<p>Mobile App and Online Portal has been developed by WBPCB. Dissemination of information on local air quality in towns located in District is already done.</p>	District Authority/General Managers District Industrial Centers (GMDIC)/WBPCB	NA

Table 1: District Annual Average, Year 2019

District	PM 10 ug/m ³	PM2.5 ug/m ³	SO ₂ ug/m ³	NO ₂ ug/m ³	As ug/m ³	BaP ng/m ³	Pb ug/m ³	Ni ng/m ³
North 24 Parganas	116.27	66.36	8.01	27.16	0.01	0.18	0.005	0.01
NAAQS ANNUAL AVERAGE	60	40	50	40	6	1	0.5	20

Source : State of Environment Report-1, West Bengal 2021, West Bengal Pollution Control Board, Page 222.

Note : NAAQS- National Ambient Air Quality Monitoring Systems.

Table 2: District wise Emission Inventory 2015-2019

Districts	Industry (Kg/Hr)	Transport (Tonne/Year)	Road & Construction (Tonne/Day)
North 24 Parganas	7714.52	759788	28.71

Source : Estimation of baseline emission load for state of West Bengal in terms of major air pollution and CO₂ by Environment Department.

Note: The estimate has been done as base line emission potential based upon the activities of the district during the period 2015-2019 assuming base year as 2017. This is subject to change depending on the activities in the district.

Table 3: Locations of the Ambient Air Quality Monitoring Stations and parameters monitored.

Station name & location	Parameters monitored
Barasat Municipality	PM10, NO ₂ , SO ₂
Barrackpore Municipality	PM10, PM2.5, NO ₂ , SO ₂ , NH ₃ , O ₃ , CO, C ₆ H ₆ , Pb, AS, BaP
Dum Dum Municipality	PM10, NO ₂ , SO ₂
Khardah Municipality	PM10, NO ₂ , SO ₂
Madhyamgram Municipality	PM10, NO ₂ , SO ₂

Source: As provided by the West Bengal Pollution Control Board.

4. Water Quality Management

a. Current Status related to Water Quality Management

Rivers (Name and length of each river in Km)	Ichhamati - 57.5 KM
	Kalindi - 59.2 KM
	Raimangal - NA
	Dansa - NA
	Benti - NA
	Haribhanga - 97.7 Km
	Bidyadhari - NA
	Hooghly - 31.7 KM
Sonai - 60.4 KM	
Length of Coastline (if any)	NA

Nalas/ Drains/Creeks meeting Rivers	Basirhat Drainage Sub Division, Basirhat - 77.17 KM
	Bidyadhari Drainage Sub Division , Basirhat - 205.65 KM
Nalas/ Drains/Creeks meeting Rivers	Jamuna Basin Drainage Sub Division, Gobardanga - 222.63 KM
	Barasat Drainage Sub Division, Barasat - 96.30 KM
Lakes / Ponds (No and Area in Ha)	NA
Total Quantity of sewage from towns and cities in District	1.52 MLD/Day (Approx)
Quantity of industrial wastewater	.0005 MLD/Day (Approx)
Percentage of untreated sewage	100% (through septic tank onsite sanitation)
Details of bore wells and number of permissions given for extraction of groundwater	300 No. (Approx)
Groundwater polluted areas if any	Near waste disposal site
Polluted river stretches if any (Km)	NA

b. Identification of gaps and action plan for water quality monitoring:

Action points	Gaps and action plan	Responsible agency	Timeline for completion of action plan
Inverntory of water bodies	An environmental level monitoring cell shall maintain data of all water bodies (rivers/canals/natural drains/creeks/estuaries/groundwater/ponds/lakes etc) including its water quality.	ULB & District Administration	ULBs, UDMA, WRRID, WBPCB, Public Health Engineering Department (PHED), Central Groundwater Board (CGWB), Irrigation and Waterways Department (IWD), District Administration, UD&MA, P&RDD
Quality of water bodies in district	create a district level monotoring cell for periodic monitoring of water bodies for specific parameters in association with SPCBs.	NA	ULB, WBPCB,I&WD
Hotspots of water contamination	Check trends of water quality and identify hotspot of surface water and ground water Established a system or separate cell to monitor water quality. Implement action points for restoring of water quality in association with SPCBs and department of Environment.	NA	

Protection of river / lake water front	Action plan should be prepared for control river side open defecation, dumping of solid waste on river banks for idol immersion etc.	NA	ULB, WBPCB, P&RDD, PHED, UD&MA
Inventory of sources of water pollution	Check wheather inventory of all sewage and waste water discharge points into water bodies in the district. Action plan to complete inventory.	NA	ULBs, UD&MA, Fisheries, WBPCB, Public Health Engineering Department (PHED), Central Groundwater Board (CGWB), Irrigation and Waterways Department (IWD), District Administration, WB-DST, P&RDD
Oil spill disaster management (for coastal districts)	NA	NA	NA
Protection of flood plains	Monitoring cell to be set up for protection flood plain and prevention encroachment.	ULBs, UDMA, IWD, West Bengal Wasteland Development Corporation Ltd, West Bengal Forest Department and West Bengal Forest and Biodiversity conservation society.	ULBs, UD&MA, IWD, West Bengal Wasteland Development Corporation Ltd., West Bengal Forest Department and West Bengal Forest and Biodiversity Conservation Society,

Rejuvenation of groundwater	Action plan should be prepared for Rain water harvesting	NA	ULB, SWID, CGWB,
Complaints redressal system	Municipal website, CMRO grievances redressal system.	NA	NA

Domestic Sewage

Identification of gaps and action plan for treatment of domestic sewage

No of Class-II towns and above	NA		
No of Class-I towns and above	NA		
No of Towns STPs installed	NA		
No of Towns needing STPs	2		
No of ULBs having partial underground sewerage network	NA		
No of towns not having sewerage network	NA		
Total Quantity of Sewage generated in District from Class II cities and above (MLD)	80.6		
Quantity of treated sewage flowing into Rivers (directly or indirectly)	NA		
Quantity of untreated or partially treated sewage (directly or indirectly)	NA		Quantity of untreated or partially treated sewage flowing into water bodies MLD

Quantity of sewage flowing into lakes	NA		NA
Total available Treatment Capacity	NA		

Identification of gaps and action plan for treatment of domestic sewage:

Action points	Gaps and action plan	Responsible agency	Timeline for completion of action plan
Sewage Treatment Plants (STPs)	Action plan for additional treatment capacity required should be prepared in association with ULBs/Department of UD	ULBs, UDMA, WBHBCL (West Bengal Housing Board Corporation Ltd), PWD, SEIAA	6 months- 1 year
Underground sewerage network	Action plan for laying of sewerage network in town & cities. The project may be executed through ULBs & Department of UD.	ULBs, UDMA, WBHBCL (West Bengal Housing Board Corporation Ltd), PWD, SEIAA	6 months- 1 year

Industrial wastewater management

Current Status related to Industrial Wastewater Management

Number of Red, Orange, Green and White industries in the District	13		
No of Industries discharging wastewater	12		
Total Quantity of industrial wastewater generated (MLD)	NA		

Quantity of treated industrial wastewater discharged into Nalas / Rivers	NA		
Common Effluent Treatment Facilities	NA		
No of Industries meeting Standards	NA		
No of Industries not meeting discharge Standards	NA		

Identification of gaps and action plan for industrial wastewater:

Action points	Gaps and action plan	Responsible agency	Timeline for completion of action plan
Compliance to discharge norms by Industries	Identify gaps w.r.t. industries not meeting the standards. Necessary action be initiated through SPCBs against the industries not meeting the standards.	WBPCB	6months to 1 year
Complaint redressal system	Check if the rein any complaint redressing system is available, In front complaint redressing system may be prepared at District level.	ULBs, WBPCB, District Administration	NA

Mining Activity Management plan

Current Status related to Mining Activity Management

Type of Mining Activity	Sand mining		
No of licenced Mining operations in the District	0		
% Area covered under mining in the District	NA		
Area of Sand Mining	11.7 Ha		
Area of sand Mining (River bed/estuary/non river deposit)	1. Ichhamati Riverside (Choura, Soladaha and Sangrampur under Basirhat Sub Division), 2. Hooghly Riverside (Manirampur-II under Barrackpore Sub Division)		

Identification of gaps and action plan:

Action points	Gaps and action plan	Responsible agency	Timeline for completion of action plan
Monitoring of Mining activity	NA	NA	DEIA, WBPCB
Inventory of illegal mining if any mining	Action Plan to identify illegal sand and other mining activity in the district through surveillance, patrolling and enforcement.	Concerned authority	DEIA, WBPCB
Environment compliance by Mining industry	Action plan for periodic verification of compliance to environmental conditions stipulated by SPCBs/PCCs, MOEF&CC department of mines etc.	Irrigation and L & LR Deptt.	WBPCB

Noise Pollution Management plan

Current Status related to Noise Pollution Management

	No. of noise measuring devices available with various agencies in district		
	No. of noise measuring devices with district administration	No. of noise measuring devices with SPCBs	
	NA	NA	

Identification of gaps and action plan:

Action points	Gaps and action plan	Responsible agency	Timeline for completion of action plan
Availability of Sound/Noise Level Meters.	District Administration ensure through an action plan that concern agencies that is ULBs, SHOs, Traffic Police and SPCB/PCC have adequate number of portable noise level meters.	ULB, WBPCB, Districts Administration	6 months- 1 year
Ambient Noise Level monitoring.	ULBs shall ensure that ambient sound levels comply with notified standards for residential sensitive zones. An action Apart from portable analyzers, fixed ambient noise level monitoring stations may be installed in major cities and towns, such stations may be installed aby ULBs and SPCB/PCC.	WBPCB, ULB, Districts Administration	6 months- 1 year
Signboards in Noise zones	Adequate number of sign boards intalled at sensitive zones in the ULBs.	Traffic Police and Transport Department	6 months- 1 year
Complaint redressing system	Action plan may envisage implementing a public complaint redressal system for noise pollution, such application may be used by SHOS, Traffic Police, ULBs and SPCBs in district.	1) Receiving complaint letter through e-mail / by post. 2) Every office has Officer in charge, Pollution control to monitor complain and redressed.	3 months to 6 months

Note

NA : DATA NOT AVAILABLE