

Issues, Present Status and Detailed Action Plan

Chapter 1

Environmental Flow

Issues

As a living river the Yamuna should be able to fulfil its own ecological functions. These include recharging the ground water aquifers, carrying nutrient rich alluvial sediment while also supporting biodiversity and aquatic life. A river passing through the capital of the country can realistically be expected to be a source of well-being for the citizens by promoting a range of cultural and ecological activities in tune with the special place accorded by many civilizations that came up on the river banks.

This legitimate expectation is belied because the river is presently fighting for just oxygen to stay alive. The Central Pollution Control Board has specified that the river must achieve at least bathing standard. Presently the pollution in the Yamuna is far in excess and no impact on river quality is likely unless there a minimum environmental flow. The situation is exacerbated by a suffusion of sewage, industrial effluent and municipal waste which is also responsible for near destruction of the river.

NGT in its orders dated 13-01-2015 and 11-06-2015 had referred to the Order of Hon'ble Supreme directing release of 10 cumecs of water and reiterated that the state of Haryana must release at least 10 cumecs of water in the river, downstream of Hathanikund barrage.

NGT had additionally directed that the water bodies and wetlands upstream of Wazirabad should be deepened for improving ground water recharge and increase flow in the river during the lean seasons. The Principal Committee in its report submitted to NGT on 6th May 2015 had also recommended a slew of measures including creating off river reservoirs along the floodplains, recycling of treated waste water in all urban centres along the Yamuna, improving water use efficiency in agriculture and giving much greater thrust to mandatory rain water harvesting.

Present Status:

The Executive Director, NMCG (National Mission for Clean Ganga) who is also the Member Secretary, Upper Yamuna River Board (UYRB) confirmed that 10 cumecs of flow is being released by the State of Haryana at Hathanikund. However, most of it evaporates or percolates before it reaches Palla during the lean season.

No action has, however, yet been taken on the other measures to augment flow in the river as suggested by the Principal Committee.

Action Plan

First, the release of E flows prescribed in the NGT orders would be monitored and reported on by 31st December. MC proposes to visit the site and satisfy itself about the 10 cumecs release at Hathanikund barrage and to understand whether either of two alternatives which have been suggested for improving the river flow have substance and are prima facie feasible.

Second, from discussions with all experts it emerges that in the lean months 10 cumecs of water as ordered by the Supreme Court and NGT would be completely insufficient to sustain the flow in the river as the 10 cumecs released at Hathanikund evaporates or percolates as it flows downstream. Resultantly, most parts of the river are completely dry. There is presently no possibility of the release of more water in the river by the upper riparian states like Haryana and UP howsoever much the river runs dry downstream of Hathanikund.

The Executive Director of NMCG informed the MC that a study of E-Flow for Ganga has been done by Central Water Commission (CWC) with the help of Experts and such a technical assessment was needed if justification for augmenting the water discharge was to be based on factual data. The authority which can assign more water would be the MoWR, RD&GR.

The MC, therefore, proposes to get a study done through CWC to assess E-flows for Yamuna in the stretch between Hathanikund to Okhla as recommended by the Shashi Shekhar Committee in its report dated 01-08-2014 which forms part of the judgement of NGT dated 13-01-2015. This has to be related to monthly data and the changing temperatures.

The scope for introducing other measures to enhance the lean season flow in the river e.g. through creation of off river reservoirs, deepening of wetlands, recycling all the treated waste water, rainwater harvesting and promoting water conservation and efficiency in agriculture, including growing less water intensive crops, all of which had all been recommended by the Principal Committee constituted by the NGT, will also be made a part of the proposed study.

The MC is working in tandem with the Principal Committee under the Chairmanship of the Secretary, MoWR, RD&G who heads both NMCG and the Principal Committee set up by NGT. The Terms of Reference would accordingly be discussed with the Ministry and with experts who have been identified.

A progress report would be given to NGT by 31st December.

Chapter 2.

DDA and Demarcation of the Flood Plains and Conservation Activities

Issues

Floodplains play an important role in maintaining the flow in the river, help recharge ground water and provide a habitat for aquatic biodiversity. They are integral to river hydrology. The Expert Committee which gave its report on demarcation, protection of floodplains and removal of debris from the floodplains had recommended demarcation of 1 in 25 years floodplains and its mapping both in Delhi and UP portion of NCR by DDA and state of UP. It recommended total removal of all encroachments and solid waste and reclaiming possession of the floodplains; prohibition of growing agricultural crops and vegetables and permitting only floriculture and tree planting; and creation of biodiversity parks in four phases.

There were recommendations for creation of constructed wetlands on the floodplains at the outfall points of all drains before they join the river so as to improve the quality water, constant monitoring of illegal activity on the floodplains, the use of technology/remote sensing and creating a task force to prevent dumping on the floodplains'

It was also recommended that Environmental Compensation of Rs 50,000 should be levied on anyone found dumping construction and demolition waste or Municipal Waste on the floodplains and Rs. 5,000 on anyone throwing pooja material into the river. Special Ghats were proposed to be created for idol immersion in the river.

The Expert Committee's report dated 01-08-2014, has been treated as a part of the judgement which had also recommended declaration of river floodplains in the Delhi stretch both in UP and Delhi, as an Eco-sensitive river conservation zone under provisions of the Environment (Protection) Act 1986 or the DDA Act 1957 as well as relevant Acts of the State of UP.

Present Status:

Demarcation of 1 in 25 year's floodplains within Delhi as confirmed by DDA has been done. The authenticity of this needs to be accepted by expert agencies which would be ascertained.

DDA claims to have removed encroachments that had come up over 400 acres of land and had reported that more than 17500 cum of malba (C&D waste) has been removed. Moreover 155 vehicles had been seized. Data referring to the periods when this was done has not been given to the MC despite being asked twice. No plan for regularly taking action has been provided. There is

apparently, no strategy for day to day surveillance of activities on the flood plains. The effectiveness of the CCTV surveillance depends on studying the recordings, identifying and taking deterrent action against defaulters and not by simply having the footage. The receptivity to the MCs questions was routine and did not inspire confidence.

The experience of deploying 'Quick Response' teams and the use of private security to guard the land were not commented upon. From the reports given (that too after several weeks), it is unclear how much of the floodplain is under encroachment and how much of it has been repossessed by the DDA or is completely unencumbered. No khasra wise survey appears to have been undertaken. The road map for future reclamation which had been sought by the MC is hazy and too broad to enable monitoring in terms of timelines and deliverables. Whether DDA can use drones or remote sensing technology for surveillance of the floodplains has been received with repetitive responses, "still under consideration" three times.

As to what happened to the 243 FIRs registered and other achievements related to NGT's specific orders issued over the last six months, there is no response. During two meetings it was apparent that follow up with the police to see that arrests are made and charge sheets issued to at least some defaulters is not considered a responsibility. In such a situation there can be no deterrence against illegal and unauthorized activities on the flood plains which are inviolable.

Despite assertions by the DDA that Phase I of the Biodiversity Park has been completed and phase II, III and IV are in the final stages of starting, there is no tangible progress. Even phase I has been completed only partially. A recent proposal sent by DDA for restoration of the flood plain sent to the MC for perusal was more in the nature of creating cycle tracks, concrete pathways etc. which negate the very concept of floodplain development.

DDA has also not clarified if agricultural activity is still continuing in portions of the flood plains which are presently not under a Court stay.

Environmental Compensation which was imposed by DDA under Polluter Pays Principle was stated to have been opposed by the people. This reply is not acceptable and raises the question whether this was dropped out of fear of consequences or apathy. In any case it was not reported to NGT. No meeting with the Vice Chairman could be held despite a suggestion by the members that they would visit his office as the subjects referred by NGT were receiving perfunctory treatment.

Finally, a meeting with the new Vice Chairman could be held after 8 weeks when not even phone calls were responded to. On 15th October MC took the new VC through all the pressing subjects one by one and his response was receptive and he expressed concern over disregard of earlier efforts. To start with the MC advised him to revamp the administrative structure responsible for

flood plain preservation and rejuvenation so that there is a single dedicated project team in charge of all matters including enforcement. This was agreed to by the VC.

The DDA have given the work of detailing an Action Plan for flood plain development to Professors of the Jamia Millia Islamia University. The rejuvenation plans are reported to be in the final stages of completion and were shown to the MC along with timelines. However, there was no description of the plans and activities envisaged. The VC undertook to have the plans placed before experts and knowledgeable people in a workshop to elicit wider opinion and get more participation and involvement.

Action Plan

The MC's letter delineating what was needed to be done is at [Annexure II](#) and forms the basis for monitoring.

All the directions of the Tribunal were gone over and since the new VC had just taken over time was given until 15th November to give timelines for each action point already delineated by the MC.

- (i) DDA officers told the MC that these plans are ready and are based on the advice provided by the University as a part of a paid consultancy. The VC said the plans would be discussed in a workshop where a cross section of experts and knowledgeable people would be invited, including those who have actually executed such projects. This would be reviewed by MC.
- (ii) Specificity would be brought into implementation of enforcement measures in particular the follow up on FIRs, removal of illegal cultivators and structures that had mushroomed up after the cut-off date and who had no legal protection to continue.
- (iii) DDA would specifically try and identify existing and future encroachment and unauthorized construction through the use of technology. The National Informatics Centre (NIC) has been handling ISRO related activity and has an official position on the GSDL Board of Government of Delhi. Certain technological options for monitoring activity on the flood plain had been suggested by the Director in charge of GIS. The Vice Chairman told the MC that he would convene a meeting to decide how best technology could be used as a tool to enforcement – in particular the use of remote sensing and drones.

The Activities that are proposed to be monitored and reported in the progress report on Dec 31, 2018 are;

- i. Progress in demarcation and mapping of floodplains falling within Delhi and UP.
- ii. Progress on the removal of encroachments from floodplains and agreement on a practical mechanism to prevent fresh encroachments. The possibility of using technology like drones or satellite imagery, CCTV cameras supported by physical patrolling will be reported.
- iii. The scope for use of technology to monitor access points to the floodplains through installation of CCTV camera to enable identification and apprehension of those found dumping C&D waste; MSW, biomedical waste and pooja material and action taken will be reported.

- iv. Steps taken for stoppage of cultivation of agricultural produce on the flood plains and alerting consumers of the hazards of eating such produce.
- v. Quarterly status of cases reported, arrests made, trucks / tempos impounded, compensation levied and police follow up undertaken with results would be monitored.

Separately, the Chairman of the Principal Committee/ Secretary MoWR, RD & GR has been contacted by the MC and a joint meeting of the MC and the Principal Committee is now proposed in two parts:

- To jointly with the help of experts see how best the rejuvenation of the floodplain and creation of bio diversity enclaves can be promoted concurrently. This is needed as the progress will have to be a continuum of past decisions and a common understanding of the road map and funding where needed.
- To jointly consider whether the issue of notifying Hathnikund to Okhla portion of the floodplains as Eco-Sensitive Zone or Conservation zone under the Environment (Protection) Act 1986, DDA Act of 1957 or the UP state Act has the support of, MoWR, RD & GR, the State of UP, Haryana, NCT of Delhi and DDA before it is taken up with MoEF & CC. The progress would be reported in December 2018.

MC would get a committee of experts to advise on the feasibility of creating constructed wetlands on the embankments of selected large drains at the outfall point into Yamuna. This subject came up in the light of some success stories reported in respect of other rivers (namely, Assi Ghat pilot done by INTACH). The UP authorities would also be involved as there are floodplains lying within the UP sections of the river. Timelines are not being given but the effort would be to do this by 31st December.

Chapter 3

Quality of Riverwater

Issues

Although the Yamuna River flows only for 54 KM from Palla to Badarpur through Delhi, the 22 KM stretch from Wazirabad to Okhla, which is less than 2% of the river length of 1370 Km from Yamnotri to Allahabad, accounts for about 76% of the pollution in the river. During the dry season, spreading over nearly nine months of the year, the river has no fresh water downstream of Wazirabad and the only flow available is sewage, both treated and untreated, flowing through 22 drains that join the river Yamuna all through its journey from end to end within Delhi.

NGT had directed setting up of Sewage Treatment Plants (STPs) and Common Effluent Treatment Plants (CETPs) to ensure that the sewage/industrial effluent does not find its way to drains which eventually join the river, besides several other measures, and that the quality of river water be monitored by CPCB and DPCC.

Present Status:

As per the report of CPCB (2017) the river receives about 3911 MLD of sewage, which includes industrial effluent, and has a BOD at Okhla ranging from 31 mg/L to 64 mg/L with virtually no DO and a Total Coliform varying from 1.3 million to 16 million MPN/100 ml. The limits prescribed for the Delhi stretch are 3 mg/L and 5000 MPN/100 ml respectively. Specifying a goal which is clearly unattainable needs to be revisited.

The DJB has raised the issue of intermittent pollution, including high levels of Ammonia in river at Wazirabad with periods of near normalcy. During the period 30th December, 2017 to 11th March, 2018 however there was continuous pollution.

A suggestion has been made to MC that this can be prevented by bifurcation of e-flow (352 cusec) into two parts- wherein 176 cusec is to be released through River Yamuna and the balance at DD- 8 (Bindroli, Sonipat, Haryana) near Palla. It has been assured by DJB engineers that this will circumvent the water getting polluted on the way and would greatly improve the quality of water. DJB's CE Water has stated that Haryana authorities would have no objection to making this arrangement.

There are two stations set up CPCB for online monitoring of water quality in river Yamuna which are non-functional. Separately, DPCC on a monthly basis carries out manual quality testing of river

Yamuna at 9 places and CPCB at 5 places. Whereas DPCC test results for water quality at Palla show a BOD level of 3 mg/L, CPCB test results show BOD levels varying between 2 and 9 mg/l.

Action Plan:

1. MC proposes to examine the adequacy of the water quality monitoring stations set up on Yamuna by DPCC and CPCB. Already both organizations have been told to simplify reporting systems and to invariably give a critical analysis which can be compared with the month on month and year on year data. Hence comparative reports on these lines would become available.
2. A mechanism will be worked out jointly with DPCC and CPCB to install an online system for quality testing of water in Yamuna at Palla and Wazirabad. Not only standard parameters would be included but also Ammonia because this is brought up as a recurrent problem which impacts drinking water supply to Delhi.
3. MC, in response to media reports and information as and when received through informal sources about pollution in Yamuna or any other violations of NGT orders, has decided to constitute team of Scientists from CPCB, DPCC and other Institutions like the IIT Delhi or NEERI to carry out inspections and submit reports to MC for issue of directions to concerned agencies for remedial action. The instructions issued by MC to CPCB and DPCC are at [Annexure III](#).
4. With no flow in the river downstream of Wazirabad and 3900 MLD of sewage (both treated and untreated) released into the river with a BOD level in excess of 30 mg/L and virtually zero DO for most part of the year there is no scope for any dilution which can improve the quality significantly. In the short and medium term, therefore there is no possibility of achieving a BOD level of 3 mg/L for a C Class river as categorized by the CPCB. The MC therefore will monitor incremental change in the quality parameters of river flow consequent to commissioning of the Interceptor Sewer projects, setting up or upgrading the STPs and other connected activities like creation of biodiversity parks and wetlands on the floodplains.

Chapter 4.

Sewage Treatment Plants (STP)

ISSUES

Delhi which has a population of 18 million, as per DJB estimates consumes 900 MGD (4086 MLD) of water (both surface and ground water) and generates 720 MGD (3268 MLD) of waste water, reckoned at 80% of the fresh water used. The present capacity of all the existing STPs in Delhi is 607 MGD (2756 MLD) against which the sewage actually received at the STPs is 458.75 MGD (2083 MLD) - which means there is only a 75% capacity utilization. Out of the 458.75 MGD of treated sewage, only 89 MGD is presently being utilized, mainly for irrigating parks and gardens and the rest is being released into drains, where it gets mixed with untreated sewage, and eventually empties into the river Yamuna.

i) Functioning and Upgradation of Existing STPs

The order dated July 26, 2018 of NGT gives a list of 41 STPs at 22 locations, although the Judgement dated 13-01-2015 had listed 23 locations. Out of these 41 STPs, 6 STPs are closed and 5 out of these 6 are proposed to be rehabilitated/ upgraded. Twenty (20) STPs are receiving waste water (sewage) below their installed capacity, the deficit ranging from 10% to as high as 90%. Five plants as per the DJB test reports are not meeting design parameters, although as per DPCC's test report dated 23-08-2018, as many as nine (9) STPs are not meeting the standards. NGT in its order dated 13-01-2015 and 08-05-2015 had directed that plans should be prepared for the upgradation of STPs, optimal utilization of capacity of those STPs that are receiving waste water/sewage below capacity and removing deficiencies in the STPs that are not meeting design parameters for treated waste water.

Setting up of new STPs

NGT's order dated 13-01-2015 records that 32 new STPs will be set up by the DJB. This was based on the recommendations of the Expert Committee appointed by NGT and DJB's own Sewerage Master Plan 2031.

Present Status:

MC has reviewed the matter in detailed meetings with the Delhi Jal Board and based on the review the DJB has been asked to furnish information on the STPs commissioned during the last three and a half years after the judgement. In particular details were sought on:

- STPs under construction,
- The progress of construction and
- STPs which are still at the planning or tendering stage,
- STPs for which financing or land issues still remain to be resolved.

The DJB has clarified that the 32 new STPs were to be constructed as per the Sewerage Master Plan (SMP) 2031 and that none of the 32 planned under that Plan have been commissioned. These included 14 STPs proposed to be set up in Najafgarh basin. Seven out of 14 STPs have been sanctioned by the NMCG and Rs 45 crores released in July 2017. No construction has yet commenced even in these seven STPs after a lapse of more than a year. The reasons are mostly non-availability of land. Even the two sites where land is in possession of DJB, work has not commenced as the Board is undertaking a fresh sewage flow study. This clearly shows a complete lack of direction and seriousness on the part of DJB to move forward on its commitment to NGT given from time to time.

Though not part of 32 STPs covered in the order dated 13-01-2015 four (4) STPs of a total capacity of 80 MGD have been commissioned during the last three and a half years and seven (7) STPs are under construction/up gradation/rehabilitation. The list of STPs commissioned and those under construction is at [Annexure IV](#). The status of 32 STPs as per the SMP 2031 which includes 14 STPs that are proposed to be set up on Najafgarh drain and its tributary drains are at [Annexure V](#). After a joint meeting with all engineers and CEO DJB held on 04-10-2018 the same points were repeated. A time of one week was agreed upon for giving the fresh time lines which was not received by the time this report was going for printing. The minutes of the meeting held by the MC with the officials of DJB are placed at [Annexure VI](#).

Based on the information received new timelines and deliverables will be worked out and finalized and reflected in a modified Action plan and included in the Progress report to be sent to NGT as directed by 31.12.18.

The Plans for up gradation of the STPs functioning below capacity and those not meeting standards are also a part of this exercise and had not been provided earlier.

Action Plan

Existing STPs

Sewage treatment at the optimal level is partially a design problem and partially because the sewage does not reach the STP. For each STP a time frame for upgradation / modification, reduced into short and medium term milestones like making DPRs, getting financial and administrative sanction and tendering the work will be got prepared with milestones to be crossed. Thereafter, every quarter this would be updated on the basis of information provided. The sources from where funding is likely to become available would be asked for as the only two sources are budgetary support and funding from NMCG.

New STPs

New timelines for completion of new projects broken down into the various sub activities like DPR, land, sanction, tendering and construction will be got prepared and new timelines reported to NGT. A revised list of STPs required, if different from the original planned 32, will be got projected so as to cater to all the sewage likely to be generated in Delhi in the next 10 years with plants adhering to the new standards for STPs. The revised schedule will be informed to NGT.

Chapter 5

Interceptor Sewer Project

Issues

Out of all the drains outfalling into the river Yamuna, 75% of pollution is contributed by three major drains i.e. Najafgarh, Supplementary & Shahdara. Untreated sewage which comes from smaller drains all flows into these three major drains. This sewage is coming from 1800 unauthorized colonies with a population of 68.40 lakhs as per DJB Report. Most of these colonies are unsewered. Since laying sewer lines and providing connectivity of each household to sewage treatment plants is a long-term goal, in a short and medium term, the Interceptor Sewer Project seeks to trap sewage at the point of confluence of the smaller drain and a larger drain, like the Najafgarh drain, and to convey the sewage through a trunk sewer line.

The engineering plan is to trap the sewage by constructing Intercepting Chambers and laying Interceptor Sewers along the banks of the drains.

Approximately 57 kms of sewer lines are to be laid by Micro Tunneling and Pipe Jacking method.

This project has been subdivided by DJB into six "Packages" as given below:

Package No.	Package description	Sub-drains being trapped (in Nos)	Discharge (in MGD)	
1	Dwarka	2	13.80	
2	Nilothi & Keshopur	37	63.10	
3	Coronation Pillar & Bharat Nagar	19	69.10	
4	Rohini & Rithala	19	26.0	
5	Shahdara North (Yamuna Vihar)	15	31.80	
6	Shahdara South	16	37.20	
	Total	108	242.00	
1	Najafgarh	28	87.00	
2	Supplementary	49	86.00	
3	Shahdara	31	69.00	
	Total	108	242.00	

Present Status of the Project

The ISP which is due to be commissioned in December 2018 will trap 108 drains and the project is 92% complete. At present 98.9 MGD of Sewage is being trapped and treated at the STPs. Once commissioned, this is expected to trap 242 MGD of sewage. However, the project which is being taken in six packages will be able to treat only 180 MGD of sewage by December 2018 as the STPs in some phases will still not have been commissioned. Treatment of all the 242 MGT of sewage intercepted through the project will possible only when all the STPs in six phases are completed by December 2019.

Action Plan:

MC will monitor commissioning of ISP by 31.12.18 and the remaining STPs included in the six packages one of which has been commissioned. The revised timelines as fixed in consultation with DJB will be monitored jointly with DJB and the Concessionaires.

MC will also monitor improvement the water quality in the river Yamuna, the reduction in the BOD load in stages, with the commissioning of each package of the ISP and report this to NGT.

Chapter 6

Repair and Maintenance of Drains

Issues

There are 22 drains that join Yamuna in Delhi, including Shahdara outfall drain which joins downstream of Okhla. These drains carry 3911 MLD of waste water, both treated and untreated, (CPCB report for the year 2017) which is released into the river Yamuna. Though the Report of Expert Committee dated 13-10-2014 had stated that there are 210 natural storm water drains of which 157 could only be located, as per the information now received from DJB, the number of drains (natural and artificial) in the catchment of Najafgarh, Supplementary and Shahdara drain is 376

NGT had given detailed directions which are recounted below as they are all monitorable.

- i. Actual number of drains which are connected to STPs either directly or indirectly should be mapped and no sewage or industrial effluent be allowed to flow through the drains and drains joining larger drains should be trapped at the outfall point and conveyed through Interceptor sewer line to STPs.
- ii. In respect of the Interceptor Sewer project (ISP) which proposed to trap 108 drains and 242 MGD (about 1100 MLD) of sewage it should have been commissioned by March 2016. As per DJB the revised date now is Dec 2018.
- iii. Sewage flow from eleven drains out falling into Yamuna which have been trapped and sewage conveyed to STPs should be sewage free as six of these drains on inspection, were found having sewage in them.
- iv. Six drains, namely, Shadara, Qudasia bagh (Mori gate), Barapulla,, Maharani Bagh, Kalkaji and Tekhand drains have to be trapped.
- v. As per the Expert Committee report there were 148 locations in sewerred areas where the drains were found carrying sewage due to puncturing of sewer lines and 344 locations where storm drains join sewers thereby causing surcharging of sewers resulting in flooding. This is where sewage gets mixed with storm water overflowing in the area. DJB had already identified and mapped such locations and has been directed to prepare an Action Plan to remedy this.
- vi. IFCD, PWD and Municipal Authorities are expected to undertake periodic dredging and de- silting of drains within their jurisdiction and dispose of the silt/dredged material as designated landfill sites.
- vii. No MSW, C&D waste or faecal sludge should be allowed to be deposited into drains and the authorities owning the drains should have plans to clean drains. Also, Environmental

Compensation under Polluter Pays Principle of Rs 5000 on individuals should be imposed in addition to action under municipal laws.

- viii. No concretisation or covering of the drains should be permitted as any such action adversely affects the biodiversity present in the drains and affects the ground water recharge.
- ix. Drains carrying both industrial effluent and domestic sewage should be identified and effluent from such point sources of industrial pollution conveyed to CETPs as the STPs are not designed to treat industrial effluents.
- x. All the drains should be subjected to flow measurement and testing of quality of waste water by CPCB and DPCC

Present Status:

An Action Plan for sewage flowing through drains in sewerred areas at 148 locations and 344 locations where storm water is being forced into sewers, has been prepared by DJB and out of 148 locations, at 69 locations the sewage flowing into drains has been plugged and the action plan for plugging the balance 79 locations is under implementation.

Action Plan:

- In order to make an assessment of the number of drains, DJB through IIT Delhi has prepared a Drainage Master Plan for Delhi. DJB has informed that the number of drains that still remain to be trapped in the catchment of Najafgarh, Supplementary and Shahdara drains which will be assessed and plans formulated for their trapping and conveyance to STPs. MC will monitor this.
- Progress of plugging sewage in drains flowing through sewerred areas will be monitored on quarterly basis and the progress covered in the progress report. Already 79 out of 148 such spots have been stated to have been plugged by the DJB. These will also be subject to independent verification.
- DJB has been asked to prepare an action plan for plugging six (6) out of 11 drains where sewage was found in the drains despite the same having been trapped. The DJB will also be asked to take follow up action on recommendations in respect of each of the six drains as decided in the meeting of the Principal Committee held on 18-07-2018. The Action taken by DJB will be monitored by the MC.
- Compliance of NGT directions for imposition of Environmental Compensation under Polluter Pays Principle for those generating sewage, whether in sewerred areas or unsewerred areas, which despite NGT's directions in May 2015 has not been complied with so far, will be pursued. Separate directions have been issued asking NCT Delhi as to why those consuming

water upto 20KLD should be exempt from paying sewage charges even if water is subsidized by the Government.

- Secretary PWD, Secretary I&FC and DMCs will be asked to draw up calendar for dredging and desilting of drains and bring it in public domain for better compliance. The authorities will be asked to keep the public informed about nodal officer's numbers on websites and through public notice and they can what's app details to the zonal engineer in case drains are being misused or not being dredged as per the Calendar.
- NGT has already placed a ban on concretisation of natural storm water drains. Any violation of this direction if reported to the MC will be taken up at the highest level of the Agencies/Departments and also reported to the Tribunal.
- For controlled dredging of Yamuna River as directed by NGT, as a first step, the issue will be discussed with the Secretary MoWR, RD & GR and Chairman Principal Committee for funding the feasibility study. A feasibility report for de-sludging and controlled dredging in Yamuna can be got prepared through expert institutions like NEERI, IIT Delhi and Delhi University under the technical supervision of Experts like Dr Rakesh Kumar Director NEERI, Prof CR Babu, and Prof AK Gossain. Co-option of other Experts will be suggested, if considered necessary, in consultation with the Principal Committee.
- The Action plans for enforcement action against people throwing C& D waste or letting sewage flow into drains will be followed up and results obtained from DMCs, DJB and DMs will be displayed on the website of the concerned agencies and the MC. There was however a tendency to disown responsibility with arguments that the drains belong to PWD, I& FC and MCD is only responsible for storm water drains. The I& FC and DJB tried to disown the problem as one where they have no powers to take punitive or deterrent action. This continued deflection of responsibility has been brought to the notice of all the Heads of the organizations and the Chief Secretary. If the apathy continues it will be reported to NGT on 31.12.18.
- The only way of judging whether the action taken is showing is to have samples of waste water from various drains taken by CPCB and DPCC and to ask for location specific action started against concerned staff in whose jurisdiction things have worsened. Such periodic measurements will be taken through joint team of CPCB and DPCC scientists and will cover both flow measurements as well as quality parameters. Adequacy of the number of testing stations for long drains like the Najafgarh drain will be decided in consultation with the DJB, CPCB and DPCC.
- Hot spots of industrial pollutants in selected drains will be identified after sending out team of scientists from CPCB and DPCC and drain owning agencies/DMCs and based on such reports Action Plan will be got prepared for trapping industrial effluent in the drains for treatment through existing CETPs or by setting up new ones or even action under the law against such point sources of pollution. This is ongoing activity and reports would be sought every 2 months.

- Directions have been issued to Dept. of Irrigation & Floods for placing boom at the mouth of drains joining Yamuna and at some other selected points so as to collect floating plastic and other waste entering Yamuna. First report has been sought on 01-11-2018. The progress achieved will be reported to NGT.
- I&FCD has been directed to do aeration/ozonation under the supervision of CPCB in selected drains like the Najafgarh drain as directed by the NGT. Progress on this will be monitored and technical help of Institutes like NEERI will be sought. No time line is possible but action on this would be coordinated by the MC by 15th December subject to NEERI agreeing to carry this out within November and December.
- Teams of students from Delhi College of Engineering/IITs Delhi under the leadership of some faculty will be sent out to carry out surprise and random check on selected drains, prioritized in consultation with DMCs and DJB, and report on dumping of septage, C&D waste or biomedical waste into the drains. Specific locations where CPCB and DPCC find a worsening situation would be reported on website and directions given for immediate rectification. This has been arrangement has been discussed with Professor Gossain of IIT Delhi. A plan has still to be drawn up depending on student availability. They would need to be compensated for out of pocket expenses. A system for doing this does not exist presently and by 31.12.18 the progress made would be reported.

Chapter 7

Industrial Pollution and CETPs

Issues

There are 28 industrial clusters in Delhi out of which 17 clusters are connected to 13 CETPs. The remaining 11 clusters are not connected to any CETP. In addition, there are reported to be 51837 industries in non-conforming/residential areas which are completely unregulated and who are releasing their effluent, consisting of heavy metals and other toxins, into the drains which then gets mixed with domestic sewage. All this muck is eventually discharged in the Yamuna. These industrial pollutants when mixed with domestic sewage, are not amenable to treatment even by the STPs due to the limitation of treatment process/technology. It also was brought to the notice of the NGT that most of the CETPs are receiving effluent much below their designed capacity.

NGT vide orders dated 02-03-2015 directed that

- i. All the industries in 17 clusters should be connected to CETPs. Industries not connected should be asked to connect through conduit pipes to CETPs and in event of failure such industries should be ordered to be closed by DPCC.
- ii. Eleven clusters which do not have CETPs are stated to be dry industries and do not consume water in the process. Such Industrial clusters will be subjected to joint inspection by CPCB, DPCC and DSIIIDC and MCDs verify the claim and also assess the manner in which hazardous waste like used oil, lubricants and grease if any used in the process it is disposed of.
- iii. No drains should carry industrial effluent and if found in the drains CETPs should be set up to treat the effluent before being taken to STPs as the STPs are not capable of treating industrial effluent.
- iv. Hazardous waste generated at the CETPs should be disposed of at the designated hazardous waste sites
- v. NGT vide order dated 19th may 2017 and later through an order dated 23-08-2018 in OA no. 601 of 2018 has directed the MC to monitor functioning of the industries located in non-conforming/residential areas.

Present Status:

Against an installed capacity of 212 MLD, the effluent received by all the 11 CETPs is only 52 LMLD thereby 160 MLD capacity lying unutilized. The capacity utilization varies from 10% to 41%. As per the minutes of the Principal Committee held on 21-05-2018 seven out of 13 CETPs were not meeting the standards. The reason for low capacity utilization as pointed out by the DPCC was that some of the

Industries have closed or moved out. Some of the industries may not be connected to the CETPs. The stand of DSIIDC and DPCC in respect of 11 clusters not connected to any CETP is that industries in these clusters are not water consuming.

Most of the CETPs are not utilizing the treated waste water, while some using it for horticultural purposes. The CETPs continue to draw ground water with very little recycling and no CETPs have ZLD.

The industries located in residential areas/non-conforming areas are quite dispersed and DPCC does not exercise any control on them. As per the DPCC such industries can be regulated by the DMCs and DDA.

Action Plan:

Monitoring the compliance of these instructions will be undertaken by MC. However no timelines can be given presently until the feasibility of the solutions are available. A second review would be held in November/December 2018 and the outcome reported to NGT. The methodology is given below:

1. The overall capacity utilization of the CETPs is as low as 25%. The DSIIDC and the concerned CETP societies will be asked to prepare an Action Plan for better utilization of this spare capacity. Director NEERI with whom the matter was discussed by the MC, confirmed that it is quite feasible to retrofit some of the CETPs to treat sewage. Action Plan for this will be got prepared involving DSIIDC, CETP societies and the DJB with technical support of NEERI.
2. The decisions taken in the meeting of the Principal Committee on 08-05-2018 will be followed up in meetings with CETP societies, DSIIDC, CPCB and DPCC.
3. Special Joint Inspection Team of CPCB and DPCC will be constituted to monitor the performance of CETPs, both in terms of quality parameters and capacity utilization.
4. Action Plan for achieving ZLD and water recycling will be prepared after meeting with CETP societies, DSIIDC, CPCB and DPCC.
5. Special teams of DMC, DPCC and CPCB will be constituted and hotspots of pollution emerging from residential colonies into drains identified for area specific action initially for selected industries like dyeing and polishing/pickling. Such action will be taken in coordination with the EPCA which also has similar mandate.

Chapter 8

Sewage and Faecal Sludge Management

Issues

One of the major sources of high level of pollution in the drains is the absence of sewer network in unauthorised colonies and slums. Delhi has 1797 unauthorized colonies which have a population of 40 lakhs which is growing. There is no regulated system of emptying the septic tanks and the faecal sludge, containing very high levels of Faecal Coliform, gets deposited in drains and water bodies which ultimately pollutes the river. By not confronting what is happening it is putting the entire population at risk and cannot be ignored on grounds of public health.

Sludge generated by the STPs, CETPs and the legacy sludge at the bottom of the major drains and river Yamuna, if not removed periodically and managed/disposed of in a scientific manner, including the usage of sludge as a manure or fuel, can result in environmental harm. A safe and scientific method has also to be found for disposal of sludge generated by the STPs of DJB and CETPs.

The NGT in its orders dated 08-05-2015 had directed that:

DJB should provide by itself or through an appropriate agency de-sludging vehicles which will collect faecal sludge from septic tanks in the colonies and take it to the nearest STP and that such vehicles should be provided with GPS to ensure proper collection and transportation to the designated location.

The sludge generated by the STPs and CETPs, including the hazardous waste, generated by the CETPs should be disposed of in accordance with SWM rules 2016 and the Hazardous waste management rules.

Present Status:

The directions of the NGT have remained unimplemented so far and the faecal sludge from septic tanks in unauthorized colonies continues to be dumped in an unregulated manner. In fact the Centre for Science and Environment (CSE) in its survey has reported on the absence of sewerage network in 90% of the 1797 unauthorized colonies in Delhi and the use of privately hired services for periodic pumping out of septage from house owned pits into drains and water bodies. The CSE Report has shown how the privately contracted “emptiers” collect the septage from household pits against payment and empty the contents into drains, water bodies and pits so causing unacceptable health hazards and polluting the major drains meeting the river. This cannot be tolerated anywhere but least of all in the capital when several cities and even large states had notified the Faecal Sludge Management regulations. These were reported by CSE and are being implemented properly even in neighbouring Ghaziabad which had put a system in place. Apparently, DJB had prepared draft regulations in 2015,

which were revised in 2018, but were not pursued and were reported to be awaiting Government approval for over 6 months. One positive outcome is that the Principal Secretary (UD) has, after intervention by the MC, since informed that he has moved the file for Cabinet approval for the Regulations.

DJB, the Municipal Commissioners and the Deputy Commissioners all have the authority singly and jointly to prevent such sewage/septage discharge by using provisions of the EP Act 1986 and the DMC Act even without waiting for the formal notification of the regulations. In several meetings with DJB, the three Municipal Commissioners and the Principal Secretary Urban Development of GNCT, it was apparent that the agencies are not alive to the problem. DJB's vision and goals only relate to sewerage of the colonies entirely but without reference to any budget provision or commitment on user charges for household connections. Only some 14% of the 1797 colonies have been provided sewage pipe lines but even there the offtake is extremely poor as the residents are reported to be unwilling to pay the charges. DJB now says the Government will be paying for the connections but there is no such policy on paper or funding or time lines. This is a public health hazard.

As regards the sludge generated by the STPs of DJB or the CETPs, there is no management plan with either the DJB or the CETPs for disposal of the sludge.

Action Plan

The MC has reviewed this situation with all authorities and issued comprehensive directions at [Annexure VII](#). These seek the intervention of the Chief Secretary as neither are the Regulations being notified and nor is anything being done to stop sewage being discharged in the drains and water bodies. The Chief Secretary has been told about the importance of coordinating this activity which has little ownership presently.

- The Commissioners of DMCs have a primary duty for sanitation in the whole of the Municipal area. Therefore, each DMC Commissioner has been directed to submit an Action Plan for prevention of such pollution and to oversee proper sanitary disposal of faecal sludge and other waste under the powers vested in the DMC Act. This has been directed to be taken up first to cover all drains nearest to the 3 major drains out of the 22 drains which empty into the river irrespective of whether they come under I& FC Department or PWD as enforcement powers are not with those Departments. Periodic reviews will be carried out with three Municipal Commissioners to monitor, compliance of the directions.
- The DJB has concurrent but also direct responsibility under the Delhi Water Board Act 1998 and Section 31 of the Act specifies that all drains which were municipal drains under the erstwhile DWS & SD Undertakings shall vest in the Board. Under Section 79 (subsection 1) DJB has power to impose a fine up to Rs 5000 for discharging filth and garbage into the drains.
- The District Magistrates (DM) possess powers under Section 133 of the CRPC to take action to remove a public nuisance. The Deputy Commissioner (Revenue) is designated as the District Environmental

Protection Officer under Section 4(1) of Environment Protection Act, 1986. These powers have to be used by the officers within their jurisdiction in coordination with DJB which has overall responsibility for sewage management. Reviews will also be taken with DJB and Revenue Deputy Commissioners/DMs for action under the powers vested in them under respective statutes.

- The MC will pursue this with DJB, the Revenue Deputy Commissioners and Municipal Corporations to oversee that discharge of the “emptiers” dumping of septage into drains is stopped and designated pumping stations are used without waiting for the Regulations to be notified and enforced.

The magnitude of the problem and the seriousness of the situation has already been brought to the notice of all key officers namely the Chief Secretary, the CEO DJB, the Secretary UD in NCT of Delhi and the 3 DMC Commissioners. MC will monitor the issue of regulations, their implementation and enforcement action undertaken by the three DMCs, DJB and DMs month to month and report progress by 31st December.

Chapter 9

Online monitoring of STPs, CETPs and Yamuna

Issues

Regular monitoring of the functioning of STPs and CETPs with respect to the quality of treated waste water is essential not only for timely management intervention but also to ensure accountability and transparency in the functioning of public bodies. The judgement dated 13-01-2015 and subsequent orders directed that:

- i. All the STPs and CETPs should have online monitoring system installed which should function 24*7, provided with power back up for uninterrupted functioning and linked to the servers of CPCB and DPCC.
- ii. DPCC and CPCB should also monitor on a real time basis water quality in Yamuna by setting appropriate water quality testing station.

Present Status:

The review carried out with DJB, DPCC and CPCB in the two meetings that the MC had with these agencies brought out that despite a lapse of three and a half years since the judgement delivered on 13-01-2015 the connectivity between the servers of DJB, DPCC and CPCB has not become operational though equipment is said to be in place and the DJB is receiving the data on real time basis. Also, out of 13 CETPs to which 17 industrial clusters are attached, only nine (9) have been linked with the servers of DPCC and CPCB and four (4) CETPs are still to be linked. Also, one of the DJB STPs has no equipment for online connectivity. Despite clear orders of NGT, the information available through online monitoring is not available in public domain. DJB has also no system of generating alerts in the event of some STPs exceeding parameters.

There is a clear violation of NGT orders not only by the DJB, DSIIDC, and the CETP societies but even by the DPCC and CPCB-the regulatory bodies.

Action Plan

The Instructions issued are at [Annexure VIII](#).

1. DJB has been directed to provide connectivity to their server to CPCB and DPCC for real time connectivity for data transfer in respect of the quality parameters of treated waste water from each of the STPs. CPCB and DPCC shall also liaise with DJB to make it functional. Within one month a system of generating SMS alerts for all the STPs in the event of parameters being exceeded by any of the STPs is a goal now accepted by the three agencies and will be monitored by the MC who arranged for exchange of basic formats and exception reporting. Such SMS

alerts will also go to the CEO, DJB and the MC

3. CPCB and DPCC will designate Scientists/Engineers within their respective organizations to be responsible for monitoring such online reports from DJB and send SMS alerts to CEO DJB. If corrective action is not taken even after a lapse of one week, DPCC and CPCB shall report the matter to the Monitoring Committee.
4. DJB has been directed to take steps to put the test results, manual and real time online data, in public domain by providing access to its website for each of the STPs.
5. DJB shall ensure that the online connectivity for data transfer is provided for all the STPs under its control.
6. DJB has been asked to prepare an action plan to improve the functioning of two STPs, namely, Keshopur Ph II and Phase III, which as per Chief Engineer DJB, are not meeting the design parameters. This has been asked to be done within one month.
7. The Standard Operating Procedures (SOPs) for calibration of sensor transmitting data online shall be observed in letter and spirit to ensure that the results of online monitoring correspond with manual testing, within acceptable margin of error. CE, DJB informed that such calibration is done once a month although it is required to be done once in a fortnight.
8. DPCC shall while carrying out inspection jointly as directed by this MC on 29-08-2018 shall also measure effluent received at each CETP, its quality both at the inlet and outlet, and compare the total flow so measured with the total discharge from all the industries as contained in the Consent to Operate order. The DPCC has been directed to take action against the CETPs/industries concerned strictly in accordance with the law and submit a compliance report. If inspections show continuance of hazardous activity in non-conforming areas it will be treated as dereliction of duty and reported to NGT.
9. The Joint inspection as ordered on 29-08-2018 has asked for inspection of selected Clusters out of the 11 clusters which do not have CETPs to ensure that they do not release any liquid effluent.

The DPCC has made statements before NGT and the MC and have been directed to ascertain facts through inspection and report as to how and where the auto service stations discharge their hazardous waste like the used oil, grease etc. This was also covered in the direction given by NGT in its order dated 05-08-2015 also.

The above directions will be monitored monthly and progress reported to NGT.

Chapter 10

Use of treated Waste Water

Issues

The STPs of DJB treat about 475 MGD of waste water. Only about 90 MLD of this waste water is presently being used by DJB and the rest released into drains which also carry untreated waste water. Some of the waste water, as per the DJBs report, has BOD as low as 10 mg/L. In fact with installation of more and more STPs and commissioning of ISP, more and more treated waste water treated to very high level of purity (tertiary standards) will become available. It is, therefore, incumbent upon the authorities to find most appropriate use for this water so as to reduce overall demand for fresh water which indirectly helps rejuvenation of the river.

Since most of this water is suitable for various non-potable uses like horticulture, agriculture, irrigating parks and gardens, washing, cooling in power Plants and even for flushing in the toilets NGT had vide order dated 07-06-2016 directed the VCDDA to take a meeting with DJB, MCDs and other agencies and Institutes and prepare a report on the use of treated waste water. Reuse of treated waste water was reiterated by NGT vide order dated 19-05-2017 and directed DJB to prepare a proposal in this regard.

Present Status:

Neither DDA nor DJB has shared any report prepared by the Authority/ Board in compliance of NGT's orders or provided a road map with deliverable and timelines for use of treated waste water for agriculture, maintenance of parks and gardens for horticultural uses, for non-potable domestic use including flushing through dual plumbing, in power houses for cooling, for washing purposes or even to recharge water bodies. DJB has also brought to the notice of the MC, their proposal to convert the treated waste water through a pipeline upstream and release it into Yamuna.

The DJB and the NCT Delhi has, however, been asked whether such a proposal has been examined from the point of view of its technical feasibility, whether any expert body has been consulted and whether the treated water so released has been treated for Total Coliform/Faecal Coliform.

Action Plan:

A detailed plan will be got prepared keeping in view the total treated water available and likely to be available once the ISP and STPs under construction get commissioned, the location of STPs, facilities like parks and gardens, water bodies or housing colonies where such water could be used for non-potable uses, the length of the conveyance system required etc. The road map will include increasing the recycling from present 20% to say

30% and higher and lay down monitorable timelines.

In short term DDA, DJB and DMCs have been asked to prepare a plan for switch over to use of treated water for irrigating parks/gardens and stop use of groundwater. Quarterly monitoring would be done by MC.

Use of the treated water for rejuvenating some of the water bodies will be also considered after discussion with experts and agencies owning such water bodies.

The feasibility of CETPs, which presently release treated waste water into drains or reuse it for horticultural uses, achieving ZLD, as directed by the NGT will be explored and pursued with CETP societies and DSIIDC.

Chapter 11

Idol Immersion

Issues

Idol immersion during festival seasons like Ganesh Chaturti, Durga Pooja and religious activities during Chhat Pooja cause extensive damage to the river as the idols mostly made of Plaster of Paris, and using toxic paints and synthetic material including plastics are released into the river. NGT has given specific direction to the public authorities to follow CPCB guidelines and the NGT orders regarding the use of material for making idols, use of nontoxic paints and immersion either in tanks built in colonies or by drawing a separate stream of the river. The left-over idols and those recovered from the river will be disposed of in accordance with the SWM Rules 2016.

Action Plan

The MC has already given and will continue to monitor its directions as issued to the Divisional Commissioner, NCT Delhi and other public authorities, like MCDs, IFCD, DDA, CPCB and DPCC for establishing a system for giving registration and approval to Pooja pandals. The minutes / instructions issued are at [Annexure IX](#).

1. It was directed that an undertaking be obtained from the organizers about adherence to the CPCB guidelines. In particular, the material which should not be used and the height of the Murti were emphasized in terms of NGT orders and CPCB guidelines.
3. A route map to be followed for immersion should be ascertained and mapped in advance along with the plans for immersion at specific ghats. Departments in charge of sanitation in the MCD will coordinate with Irrigation and Floods so that minimum time lag exists in picking up the immersed idols and sending them to the disposal sites.
4. The DMC, the Delhi Police and Irrigation and Flood Departments have a supportive role which has to be mapped out and shared in advance with each agency so that each organization works in tandem with the other.
5. The Revenue Deputy Commissioner were asked to ensure that the facilities for immersion and retrieval of the Pooja remnants are adequate and the disposal to the landfill sites is prompt.
6. Creating public awareness should be such as would make people understand why it is important to desist from using paints, plaster of Paris and also to ensure that the synthetic material used is not thrown into the river.

7. Bill boards at suitable locations should be also erected highlighting NGT directions and the prohibitions, both in Hindi and English, that applies to plastic bags containing flowers, garlands and other offerings which are being immersed into the river even now every day.
8. The Divisional Commissioner has been directed to prepare a budget and take prorata contributions from the departments in terms of their responsibilities for abatement of river pollution if needed.
9. Undertakings were asked to be obtained from the Pandal in charges who should be held responsible in case of infringement.
10. The Monitoring committee will appoint teams to visit the ghats on a random basis and put up the findings on the website by location.
11. The I&FC Department has been asked to make available trash skimmer in the river during the period of idol immersion, particularly in the Ghats which receive most number of idols for immersion.
12. The CPCB and DPCC have been mandated to take samples of river water both upstream and downstream of the Immersion ghats independently and submit test reports of water quality along with reports of previous five years so as to assess the impact of awareness creation and enforcement.
13. The Divisional Commissioner has been asked to hold preparatory meetings well before the festival/immersion and submit a report on compliance of directions and CPCB guidelines at the end of each such immersion event.
14. The MC held a meeting after Ganesh Chathurti and before Dussera immersions and was informed by CPCB that the magnitude of increase in BOD varied from 0.3 to 9.5 times. Faecal coliform increased 141 times at individual ghats. However, the connection with idol immersion needs to be looked into if at all. **Significant increases in heavy metals, viz Chromium 2.4 times, Lead 12 times and Mercury 15 times were observed post immersion.** This shows that use of toxic materials continues in a big way. There is an urgent need to build awareness about how dangerous this can be and for the authorities to be much more vigilant.
15. The DDA and the Irrigation & Flood Department was asked to have videography done of the Immersion Ghats both during the process of Immersion and after the event and submit to the MC immediately thereafter with an analysis of what was going as planned and transgressions where found which would enable better arrangements in future if needed.
16. The NCT Delhi and regulatory bodies have been asked to propagate use of innovative messages for off river immersion like immersion in small ponds created in RWAs and even in buckets using clean water as opposed to use of river channel. The representatives of DMC and Divisional Commissioner were introduced to the B Block Society of Chitranjan Park as they have been digging a pit and carrying out immersion on a tarpaulin filled with water for 5 years already.

The steps outlined above have already been initiated and will be followed up with the concerned authorities

during all the religious/cultural events which has potential for causing pollution in the river.

Chapter 12

State of Haryana *and Pollution of the River*

Issues

Hathanikund Barrage about 240 Km upstream of Delhi, regulates flow of water and is also the point where most water in the river gets diverted through Western Yamuna canal and Eastern Yamuna canal. Additionally there are cities of Yamuna Nagar, Panipat, Sonapat, Karnal, Kundali and Barhi which not only release domestic sewage through various drains but also industrial effluent. Najafgarh drain which originates in Haryana also carries domestic sewage and industrial effluent of Gurugram and industrial clusters in Bahadurgarh.

The directions of NGT pertaining to Haryana not pertain to but refer to;

- i. Release of minimum E flow of 10 cumecs from Hathanikund
- ii. Setting up of STPs and CETPs in all cities and industrial clusters located on the bank of the river and online linking with HPCB and CPCB and closure of industries not complying with standards and not connected to CETPs.
- iii. Blocking the drain under Leg I of Najafgarh basin joining the drain
- iv. Setting up CETPs and STPs in Leg II area of Gurugram joining drain Najafgarh drain
- v. Setting up STP at Badshahpur drain before it joins Najafgarh drain

Present Status:

As per MS, UYRB state of Haryana is releasing 10 cumecs of water in the river at Hathanikund barrage. As regard pollution caused by the industries located in Yamuna Nagar, Karnal and Sonapat the MC has received no information from the state. No information has also been received about the action taken by the State to set up CETPs and STPs on Leg 1, Leg 2 and Badshahpur drain which join Najafgarh drain before it enters Delhi. Despite three letters and telephonic requests to the state of Haryana through the Chief Secretary, the MC has not received any status report which the State was required to submit to the MC within four weeks of July 26, 2018. The representation of the state in the review meeting called by the MC has been at very junior level and the Departments responsible for setting up STPs and CETPs have not been represented. The review meeting called by the MC have therefore proved infructuous. Though the state has constituted state specific MC on 23rd August, the MC has yet to become functional.

Action plan:

1. A lackadaisical approach that the state has followed in far has been brought to the notice of the Chief Secretary, who has now informed that he will personally attend the meeting called by MC or depute senior officers of the Department responsible for setting up STPs and CETPs in the state. Action taken by the state in compliance of the directions given in orders dated 11-06-2015, 28-07-2015, and dated 08-08-2017 of NGT will be monitored in October/November.
2. MC will also undertake field visit to apprise itself of the status of drains carrying sewage/Industrial effluent from the Cities of Yamuna Nagar, Karnal, Sonapat and Panipat which eventually join Yamuna, the steps taken by the state so far for setting up STPs and CETPs and proposals to set up new STPs and CETPs.
3. Field visit will also be undertaken to the monitor status of work relating to setting up STPs and CETPs under Leg 1, Leg 2 and Badshahpur drain which join Najafgarh drain before it enters Delhi.
4. Monthly monitoring of flow and quality of waste water in Najafgarh at the point of entry in Delhi will be monitored through DPCC and CPCB.
5. CPCB and HPCB will also be directed to carry out inspections of STPs and CETPs and stand-alone ETPs of big industries and submit report and issue directions, if so warranted
6. Preparation of an Action Plan for water conservation measures, increasing water use efficiency of agriculture and creating ponds and reservoirs on the floodplains will be pursued with the state and progress reported to NGT and taken up with Principal Committee for supporting a study, if warranted.

Chapter 13

State of Uttar Pradesh *and Pollution of the River*

Issues

A substantial portion of the floodplain in NCR falls within UP state. NGT had 04-07-2015 directed demarcation of floodplains to which the state of UP had informed that 75% of the floodplains stands demarcated and the balance shall be completed within one week. Directions were also given on 08-08- 2017 for preventing sewage and industrial waste water flowing into drains joining Shahdara drain from industrial areas in Shahibabad, and residential areas of Loni, Indirapuram and Noida.

Present Status:

Though the state of UP, as recorded in NGT's order dated 04-07-2015 had completed 75% work of demarcation of the floodplains within its jurisdiction, the present status of demarcation and whether there are any encroachments on floodplains and what steps, if any, have been taken for their eviction is not available on record. The officials of the state of UP who attended the meeting called by the MC on 25-09-2018 were also not able to give any information on this. In fact, no senior officer from Environment and Forest or Irrigation or Public Health Engineering two specific requests having been made in writing addressed to the Chief Secretary and reminded over phone through the Resident Commissioner. Only some local level functionaries of the UP Pollution Control Board attended the meeting who were not conversant with the orders of NGT on various aspects pertaining to pollution points in the Yamuna. The matter was again brought to the notice of the Chief Secretary UP fully and he had directed the Secretary Environment and Forests UP to meet the MC. This meeting is still to be held. The MC is, however, not aware if the State has set up a Monitoring Committee without which matters remain without focus.

Action Plan:

The MC proposes to hold another meeting with the Secretary Environment & Forests UP who has since contacted the MC to review the action taken on floodplain demarcation in the area that falls within the control of the State of UP and also review various measures that were required to be taken pursuant to the directions of NGT dated 08-08-2017. Timelines will be drawn up once there is clarity about what the state proposes to do.

Chapter 14

Creating Public Awareness Through Information Dissemination Strategies

Issues

Much as the River Yamuna is revered as a sacred river and has deep religious, mythological and cultural association for Indians it has not received commensurate respect in contemporary times. Except at the time of idol immersion during Ganesh and Durga Pooja festivities, it has no human activity which would enhance its habitat. On the contrary it is a receptacle for waste generated through human activity river which makes it imperative to building sustained awareness about several different aspects of river cleaning and cleanliness. NGT has directed that awareness building activities have to be taken up on a wide scale.

Present Status

Presently there is no ownership for the river Yamuna. That is because it means nothing to the citizens as it is providing no opportunity for cultural activities, leisure or recreation. There is little knowledge about why flood plains are sacrosanct and why they must be preserved and protected. There is a need to plan for awareness building and permissible activities beyond the flood plains but for that there has to be a nodal Department to build awareness by spearheading permissible events and activities. Presently vertical responsibility lies with DDA, Irrigation and Floods and the Department of Environment & Forests. Others like DJB, the DMCs only look at sewage and maintenance of storm water drains but the connection with the river is remote.

Citizen involvement requires that there is knowledge of why the river is important, and why it is worth preserving and restoring.

Action Plan

The Monitoring Committee proposes to discuss a broad approach with the Chief Secretary and engage with MOWR, RD& GR, NMCG, MoEF&CC and MoUD to support activities which lead to awareness building. However without a media and awareness building plan the resources even when received can get scattered in small activities which would not attract visitors. There is a need for assigning nodal responsibility for creating public awareness to a consortium of agencies with an interest which can include international and national level NGOs engaged in building awareness about the environment, Delhi Government Corporations like DSIDC + DTTDC, schools, Eco clubs, RWAs, Rotary , Inner Wheel, Industry Associations, Market Associations and the Parks & Gardens Society.

The Chief Secretary needs to assume nodal responsibility or give it to an officer who has an interest and adequate field staff. In the totality of things it is a minor activity and concerns something that the public is not interested in presently. Ordinarily this should be co-ordinated by the Department of Environment & Forests of Government of NCT of Delhi by involving the DCs of the Districts, the Commissioner Lands and Director Horticulture of DDA and DMC.

The MC will ask the Chief Secretary to set up an Apex level consortium that can approve of specific awareness building projects. The response would be included in the progress report.

- a) MC would ask the Chief Secretary to encourage programmes that prevent gobar from dairies going into the river. Installing a biogas plant with the support of the Ministry of Renewable Energy for making gas out of gobar instead of letting it flow into drains at Ghazipur would make a visible impact. Technology for this is easily available and this can become an interesting school field trip too.
- b) The green model adopted by the B block Chittranajan Park is to immerse it in a deep pit with water in a local park in conformity with CPCB guidelines. This has been demonstrated to the concerned officers by the office bearers and DMCs and Divisional Commissioner have been asked to popularize it. This can build awareness about the dangers of river pollution.
- c) Waste from the river Yamuna (plastics, Pooja samagri and suchlike) needs to be mined out and recycled or up cycled. The waste includes flowers, coconuts, cloth etc and can either be composted and its collection and sorting would give livelihoods to waste pickers. The Chief Secretary would be requested to see whether any NGO can be asked to undertake a pilot in coordination with Department of I& FCD for turning the waste into marketable products to be done through a co-operative effort of waste pickers.
- d) The Yamuna is a unique birding destination. Therefore, birding needs to be popularized amongst schools. There is a need for DDA to preserve the birding hot spots with inputs from an established birder group in Delhi.

A periodic progress report would be given.

Chapter 15

Establishing a Website for the MC's Activities

The NGT had directed that the MC sets up a Website and encourage public participation. In compliance thereof, a comprehensive website has been constructed from scratch as an in-house activity. However, to have credibility and legitimacy it needs to be hosted by NIC. It could have been done by now through a private vendor but that would give the impression that the MC is a private body which would detract from its status as an NGT appointed committee.

The website has several drop-down lists which inter alia cover NGT's orders; the Action Plan of the MC in an abridged form; a Power Point Presentation which gives a bird's eye view of all issues and challenges; a Contextual Note for the educated, curious viewer the entire gamut of activities and how each activity is interrelated and what aspect fits in where.

The website has over 50 pictures and maps without copyright issues which have been given pro bono by some NGOs and photographers depicting the "good, bad and ugly" aspects of the river.

There is a prominent **Knowledge Sharing Platform** button which opens to a template seeking comments and suggestions from academic experts and separately from members of the public but in both cases, there is a requirement for registration and giving the name, phone number and address to avoid frivolous correspondence and complaints.

The website is undergoing security clearance as required by NIC after which it would be uploaded. The number of hits will be shown as well as the date the website has been updated. The minutes of meetings taken by the MC will also be uploaded so there is satisfaction that things are progressing.