



Department of Environment,
Govt. of NCT of Delhi

Progress in Rejuvenation of River Yamuna

Action Plans & Timelines

June, 2024



Water Quality Monitoring

By DPCC





01 Water Quality Monitoring by DPCC

Compliances with prescribed standards



River Yamuna

At 8 locations



22 Drains

Out falling into
River Yamuna



38 STPs

(Operational)
At 20 locations



13 CETPs

(Operational)

02 Parameters as per Hon'ble National Green Tribunal

Water Quality of River Yamuna

As per the directions of Hon'ble NGT, the three parameters to be considered for determining the water quality of River Yamuna are Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), and Faecal Coliform (FC).



Dissolved Oxygen

DO is the amount of oxygen available in dissolved form. Fishes can survive at or above DO of 4mg/l

Standards (≥ 5 mg/l): More DO is good



Biochemical Oxygen Demand

BOD is amount of DO required by aerobic microorganisms to decompose organic material present in a water body.

Standards (≤ 3 mg/l) : Less BOD is good



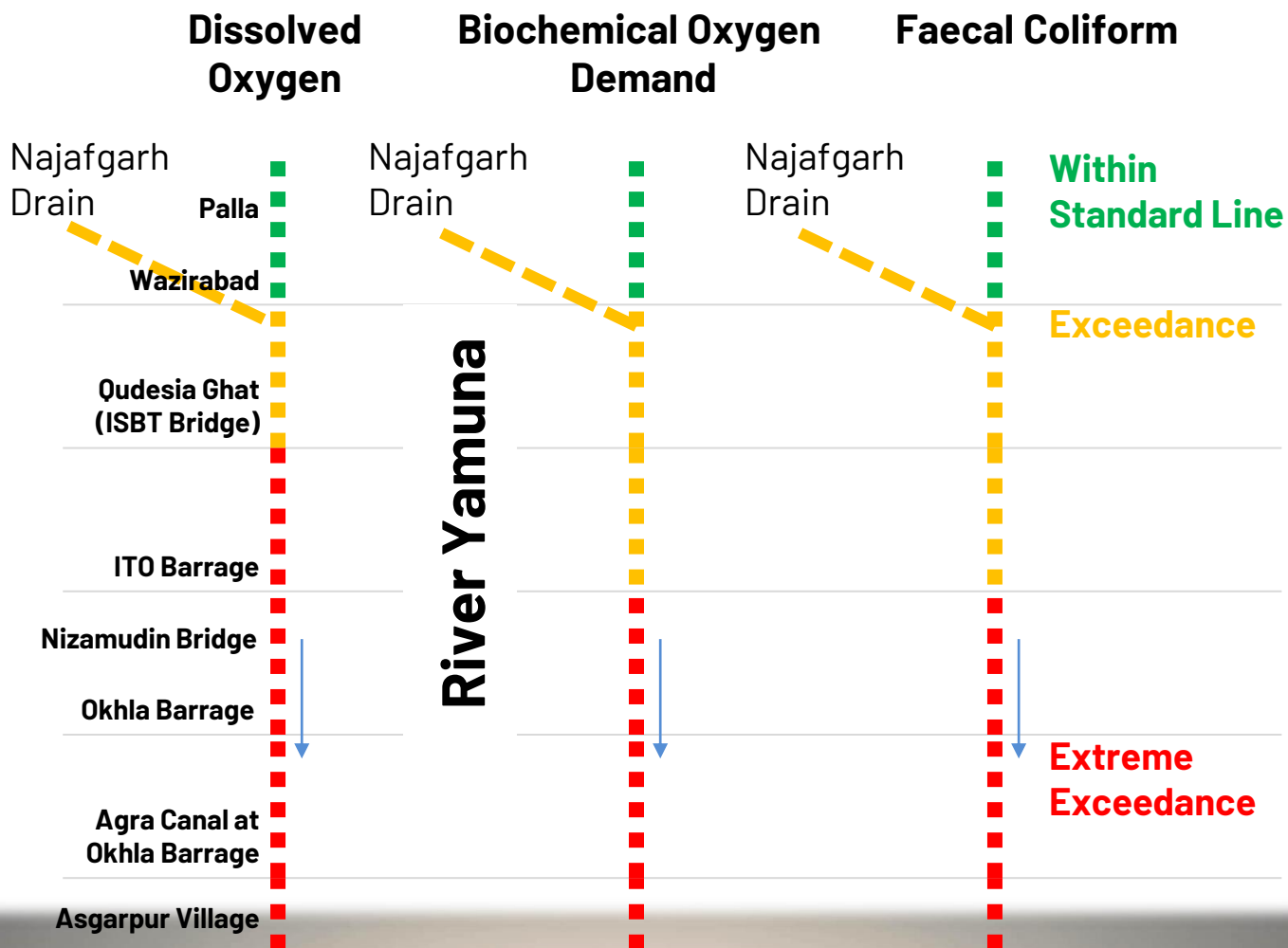
Faecal Coliform

Faecal Coliforms are a group of bacteria present in faeces of humans / homeotherms indicating discharge of untreated sewage in a water body.

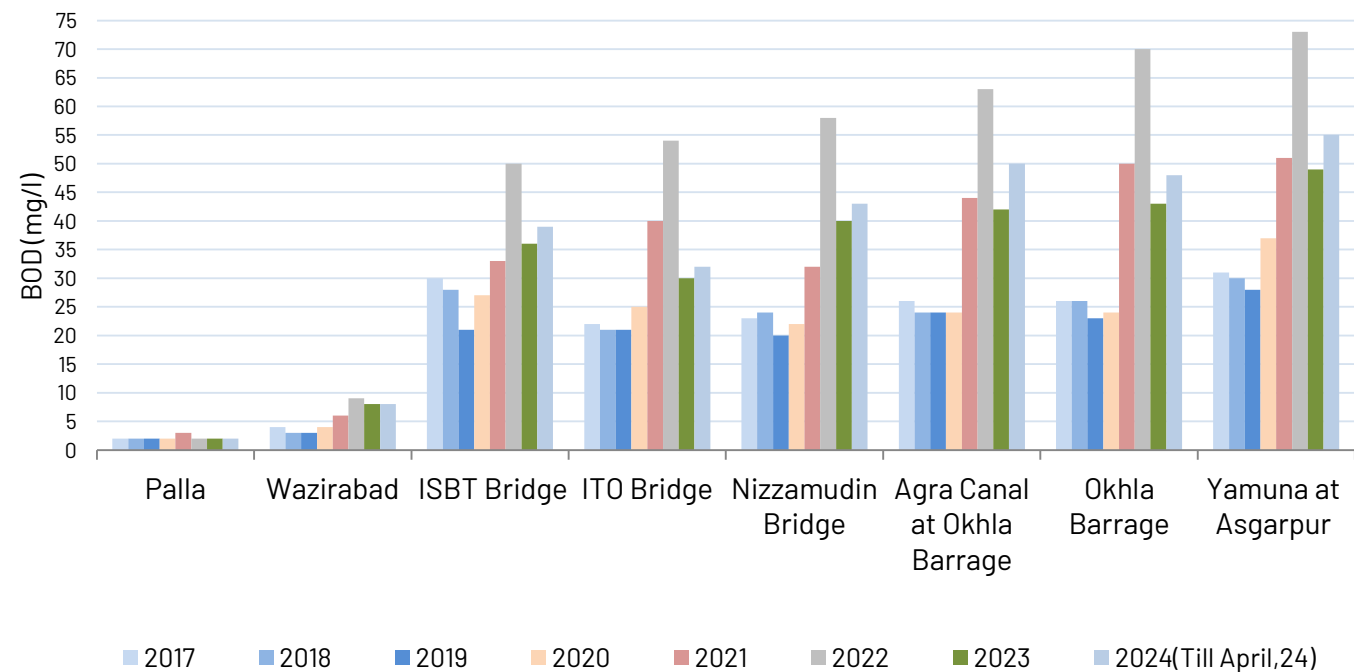
Standards: (≤ 500 MPN/100 ml - Desirable | ≤ 2500 MPN/100 ml - Maximum permissible): Less Faecal Coliform is good

02 Parameters as per Hon'ble National Green Tribunal

Water Quality of River Yamuna



03 Annual Average Water Quality of River Yamuna

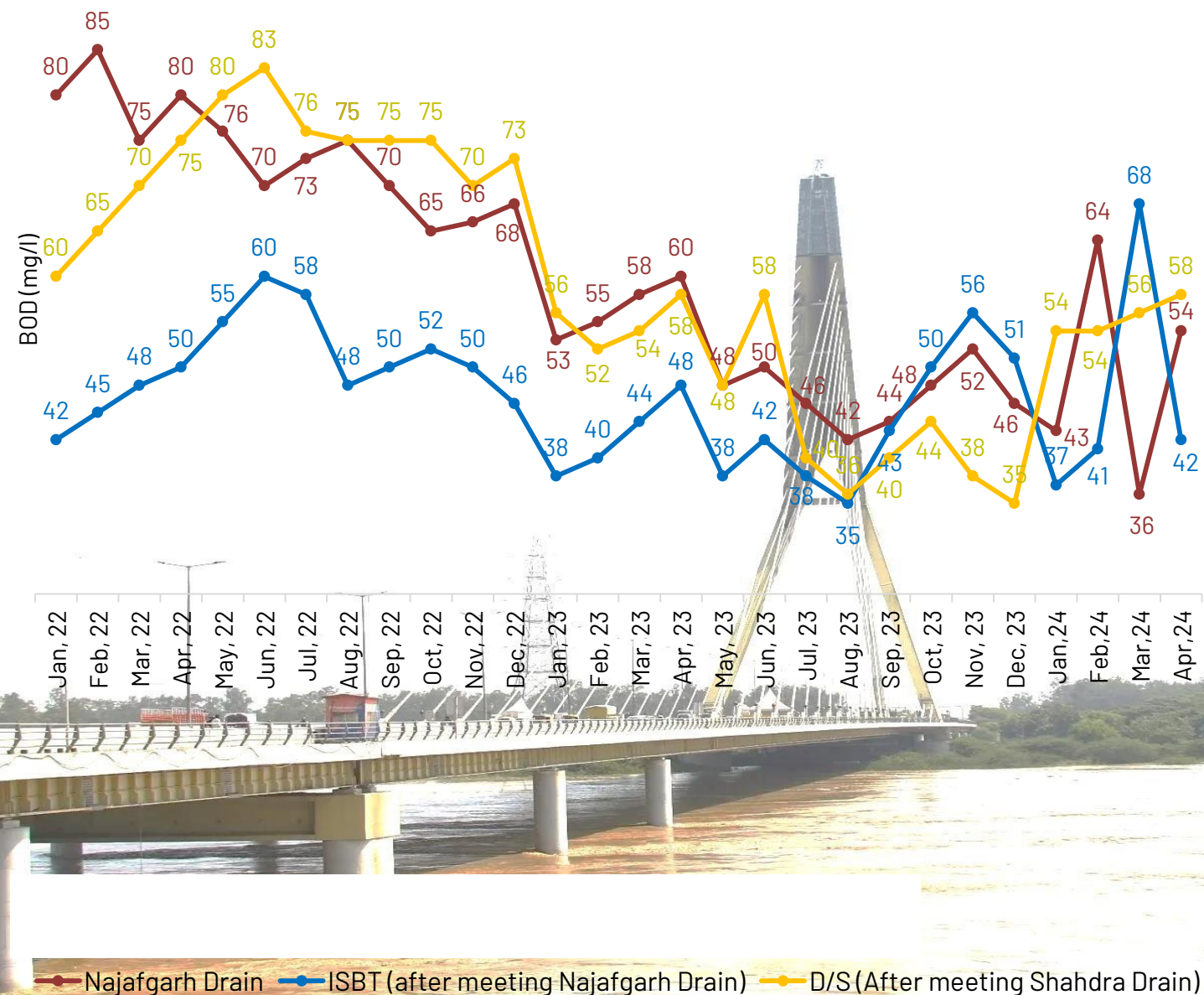


Haryana  U.P.



03 Annual Average Water Quality of River Yamuna

BOD variation : (January, 2022 to April, 2024)



Water Quality of Drains



04 Discharge of wastewater from major drains Into River Yamuna at Delhi

Based on DPCC data, 2021



05 Discharge of BOD load from Major Drains Into River Yamuna at Delhi

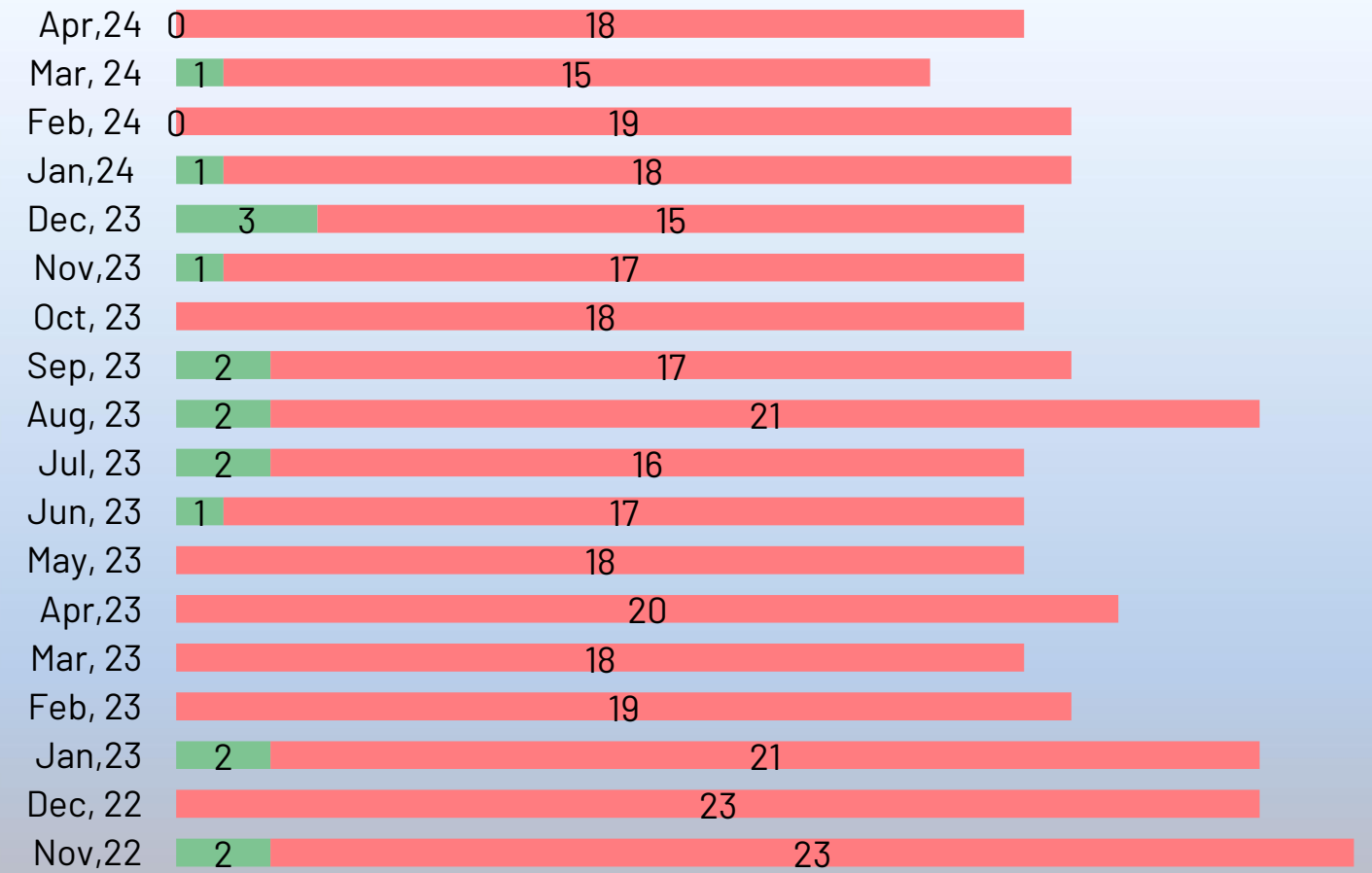
Based on DPCC data, 2021.



06 28 Drains

Water Quality Monitoring

here was no flow observed in 09 drains as on April 2024.

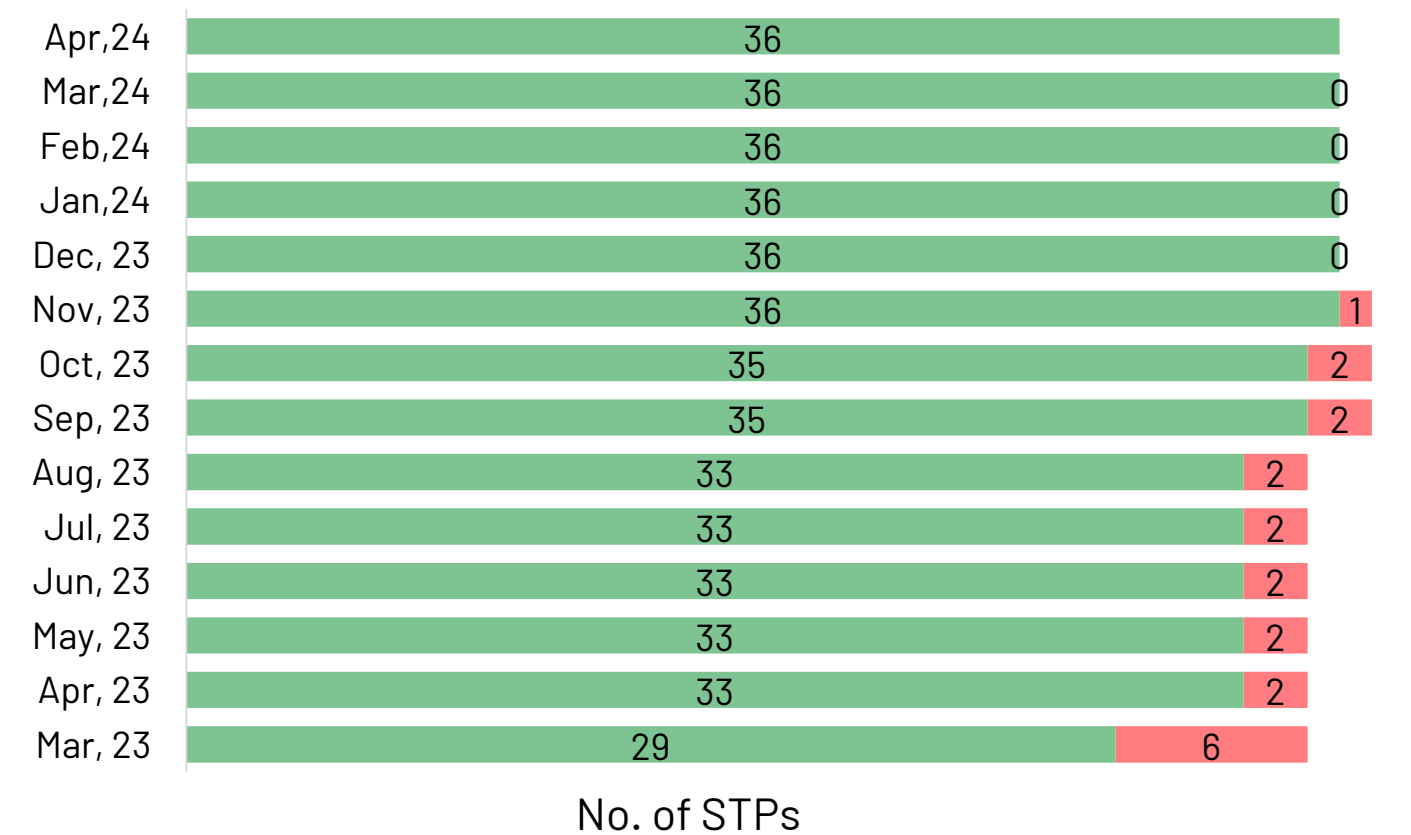


Water Quality of Sewage Treatment Plants



07 38 Sewage Treatment Plants Water Quality Monitoring

Compliance with design standards – BOD : TSS (30:50 / 20:30 / 15:20 / 10:15)

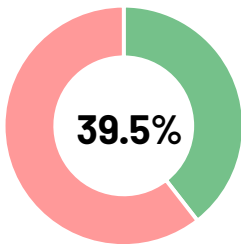


* Sample were not taken from 02 STPs

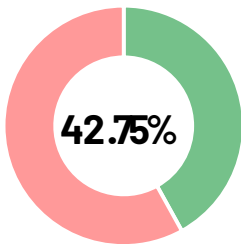
07 38 Sewage Treatment Plants

Water Quality Monitoring

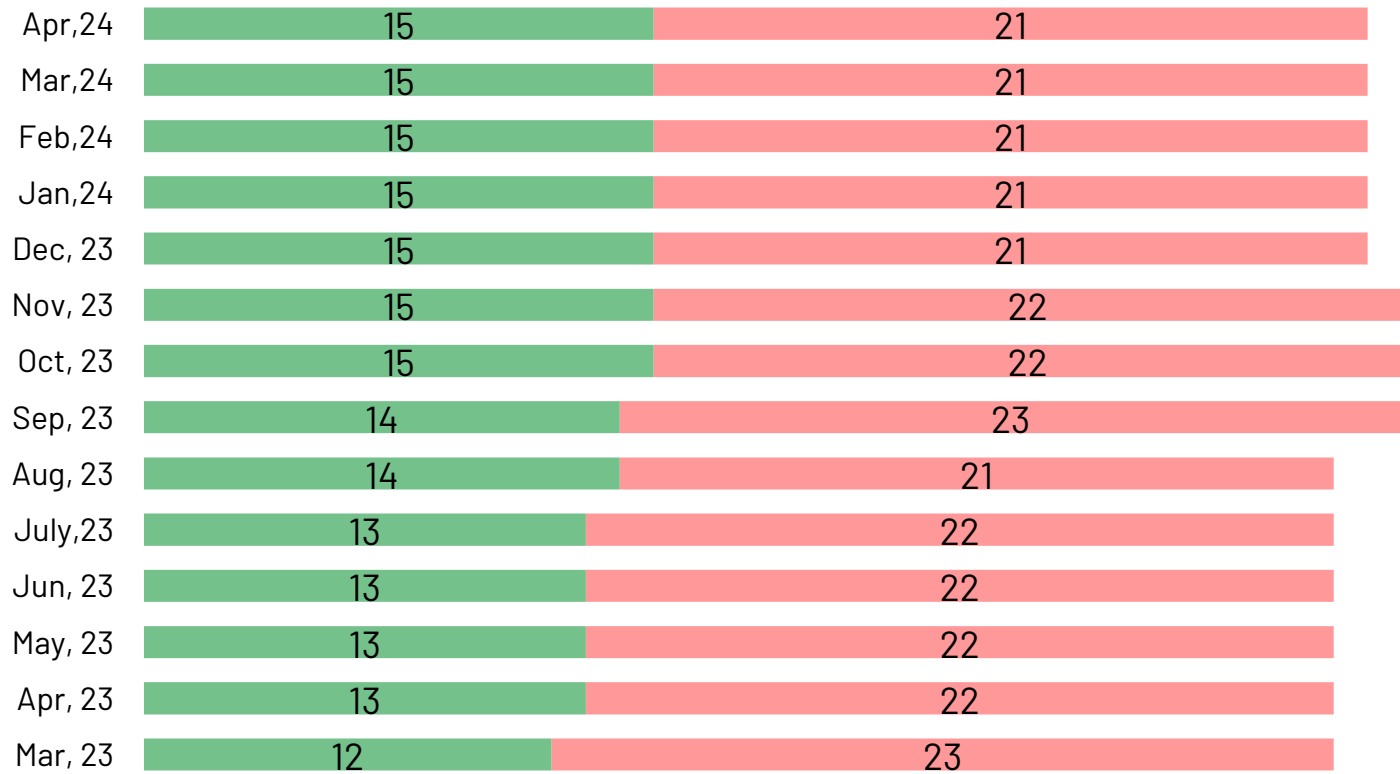
Compliance with prescribed standards BOD:TSS (10:10)



15/38 STP



268.14/627.13 MGD



No. of STPs

*No flow observed in one STP

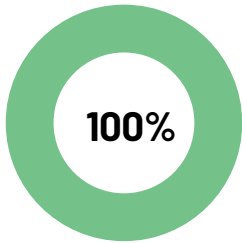
Kondli Ph-II STP under Trial Run

Water Quality of Common Effluent Treatment Plants



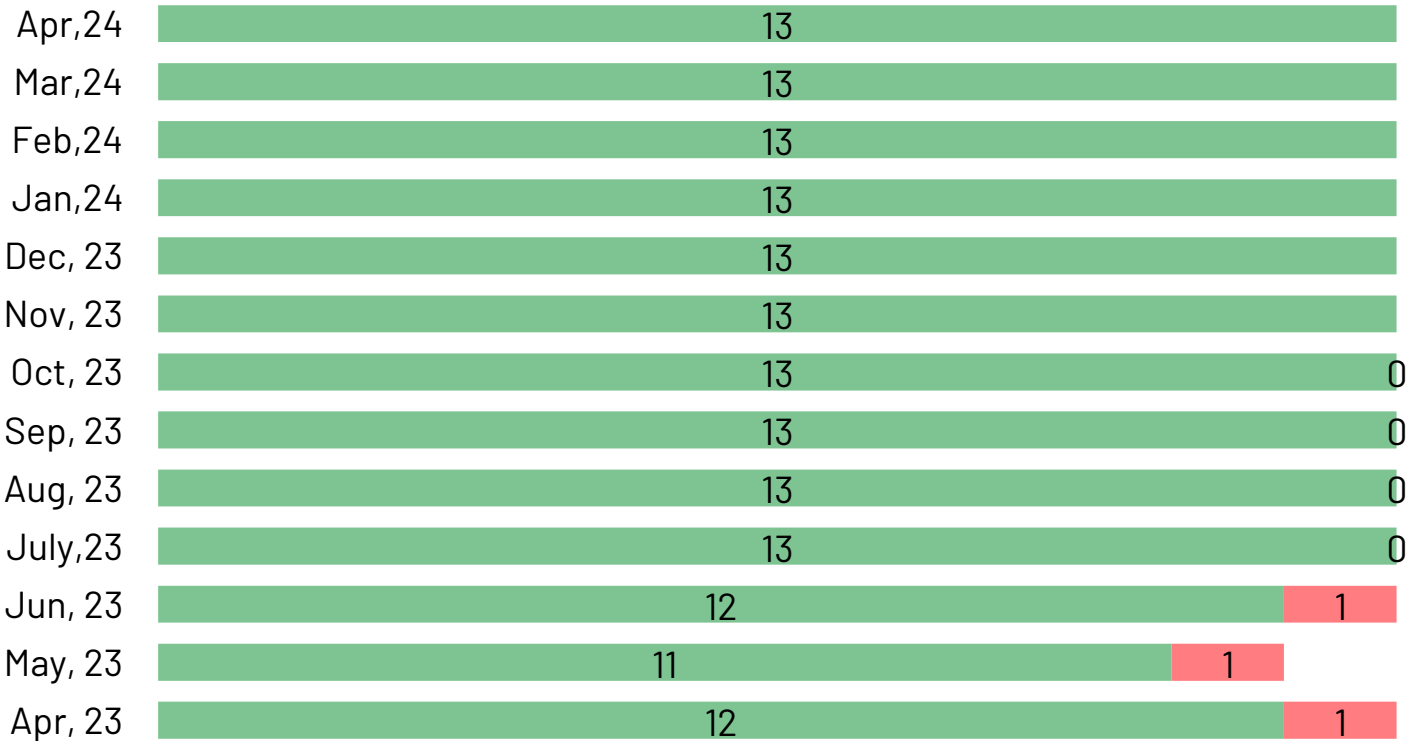
08 13 Common Effluent Treatment Plants Water Quality Monitoring

CETP: Treatment systems specifically designed for collective treatment of effluent generated from small-scale industrial facilities in an industrial cluster.



Utilization Capacity (Apr, 2024):
71.93 MLD/212.3 MLD (33.9%)

13/13 CETP



No. of CETPs

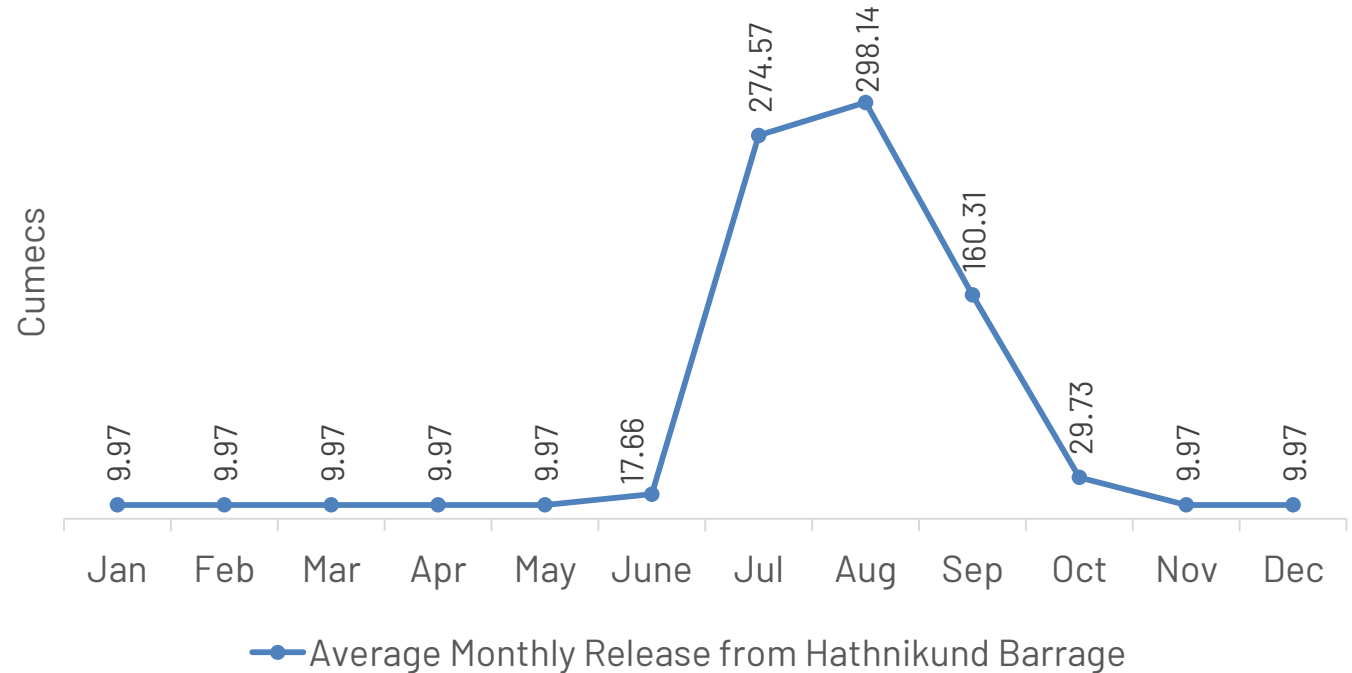
*01 found non operational

Improvement of **Water Quality in Yamuna**



09 Minimum Environmental Flow (e-flow)

E-Flow : Minimum quantity of flow of water that a river must have in order to preserve its ecosystems.



Minimum e-flow for dilution of polluted water in river Yamuna in Delhi is required to meet desired water quality levels in river Yamuna for bathing purpose i.e. $BOD \leq 3 \text{ mg/l}$ & $DO \geq 5 \text{ mg/l}$.

To assess minimum required e-flow of river Yamuna for stretch between Hathini Kund to Okhla, a comprehensive study was assigned by NMCG to National Institute of Hydrology (NIH), Roorkee on 24.12.2018.

09 Minimum Environmental Flow (E-flow)

- As per Final Draft Report submitted by NIH to NMCG. E-flow of 23 Cumecs (437 MGD) in lean season (May) has been recommended in NIH study.
 - Points : Hathnikund to Okhla Barrage
 - Present E flow: Approx. 10 Cumecs (190 MGD)
 - Gap : Approx. 13 Cumecs (247 MGD)**
- Possibilities:** Early construction and completion of below mentioned dams/Canals.
 - Renuka Dam project (Gol) - Approx. 13 Cumecs (Expected drinking water share of Delhi)
 - Lakhawar Dam project (Gol)
 - Kishau Dam project (Gol)
- Water sharing agreement of 1994 among riparian states of Uttarakhand, HP, UP, Haryana, Rajasthan and NCT Delhi is due for revision only in 2025.
- Under E-flow of 23 Cumecs, BOD level would come down from 25 to 12 mg/l (Ideal BOD : 3 mg/l)**
- For bathing standards of BOD 3 mg/l – E-flow required is more than 390 Cumecs (7410 MGD).**

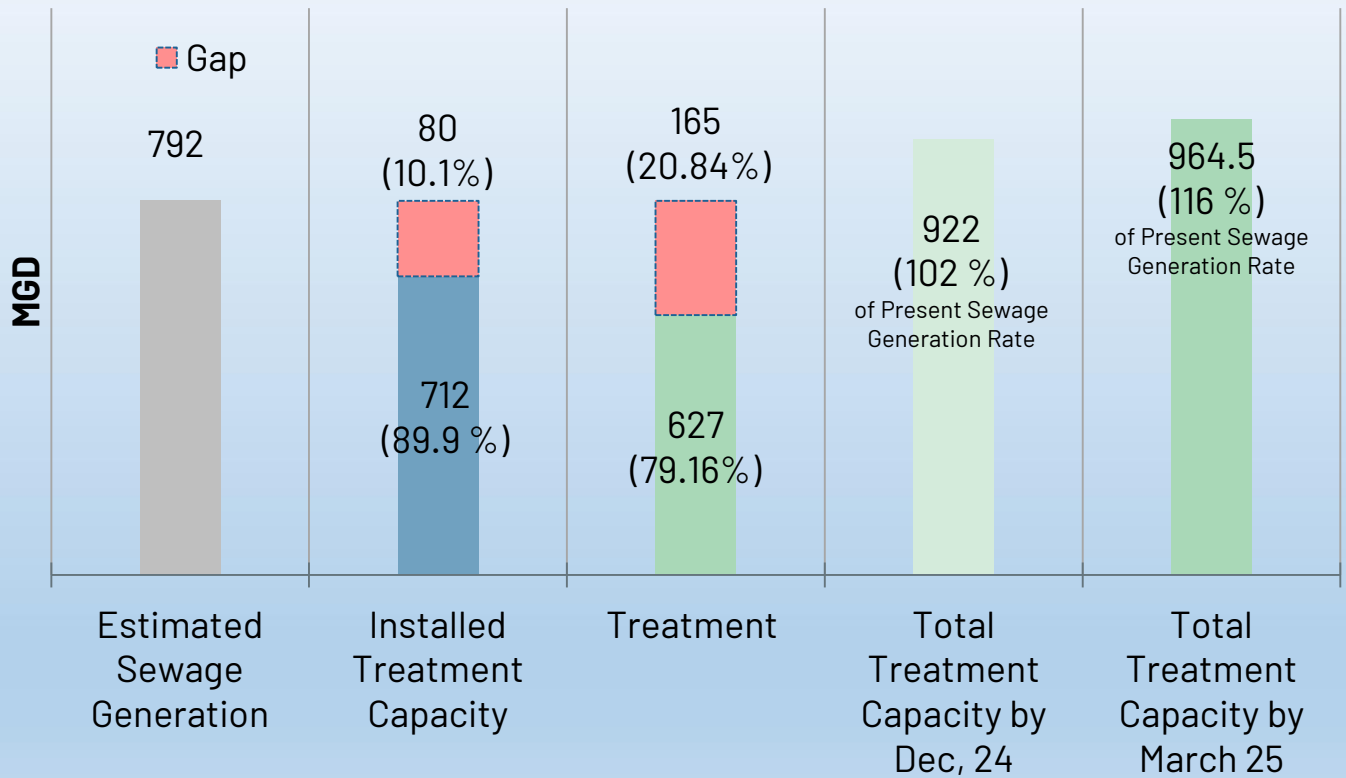
Hathnikund Barrage

Okhla Barrage



10 Augmentation & Rehabilitation of Sewage Treatment Plants

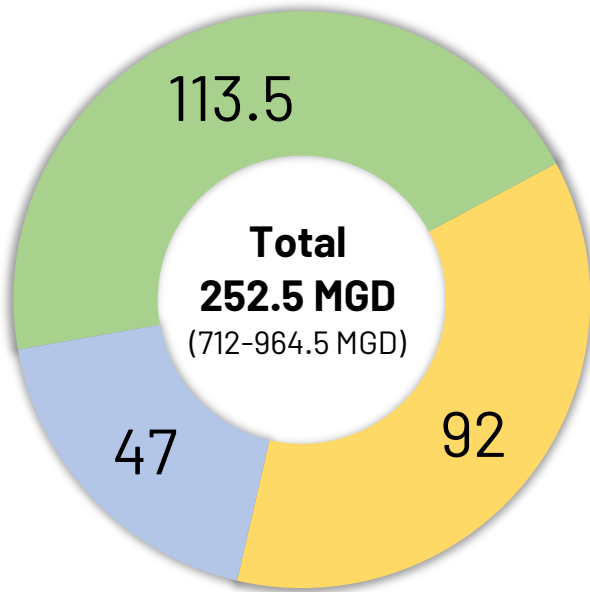
Generation, Treatment and Gap in Sewage Treatment



11

Augmentation & Rehabilitation of Sewage Treatment Plants

Focus Areas for Enhancing Sewage Treatment Capacity



■ Upgradation and increasing capacity of existing STPs (18)

■ Construction of 40 New DSTPs

■ Construction of New STPs at Okhla, Delhi Gate & Sonia Vihar (3)



12

Progress in Construction of 3 new STPs

Capacity Addition: 47 MGD

Focus Areas for Enhancing Sewage Treatment Capacity

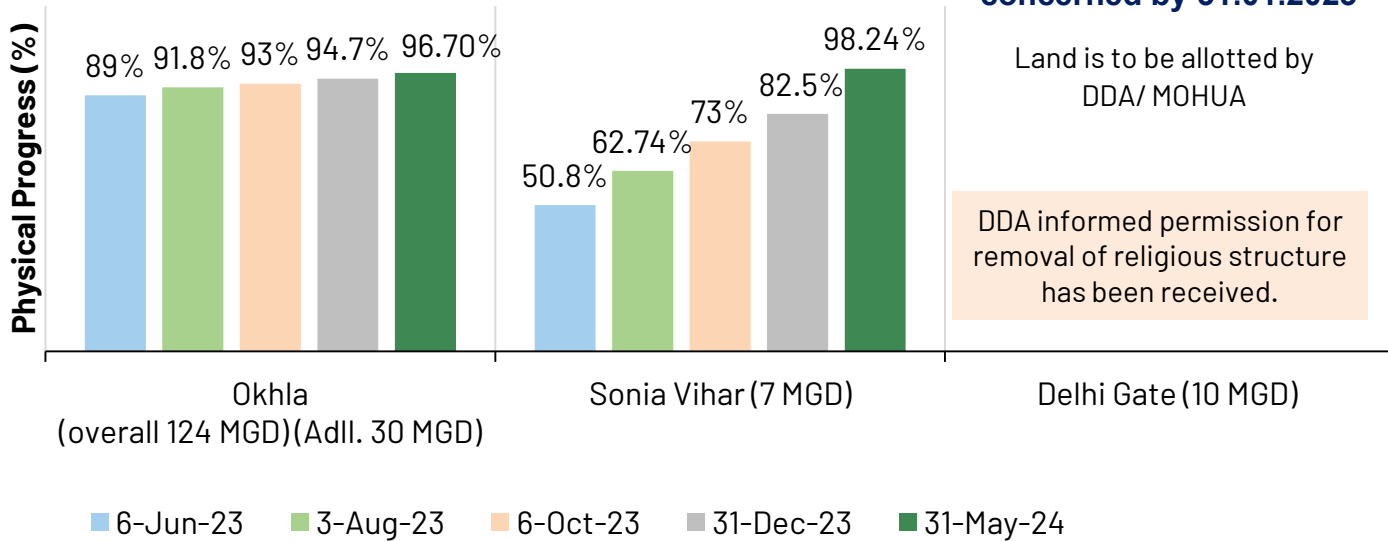
Timeline : Sept, 24

Timeline : June, 24

“Timeline: 12 months and matter of allotment of land shall be resolved by all concerned by 31.01.2023”

Land is to be allotted by DDA/ MOHUA

DDA informed permission for removal of religious structure has been received.

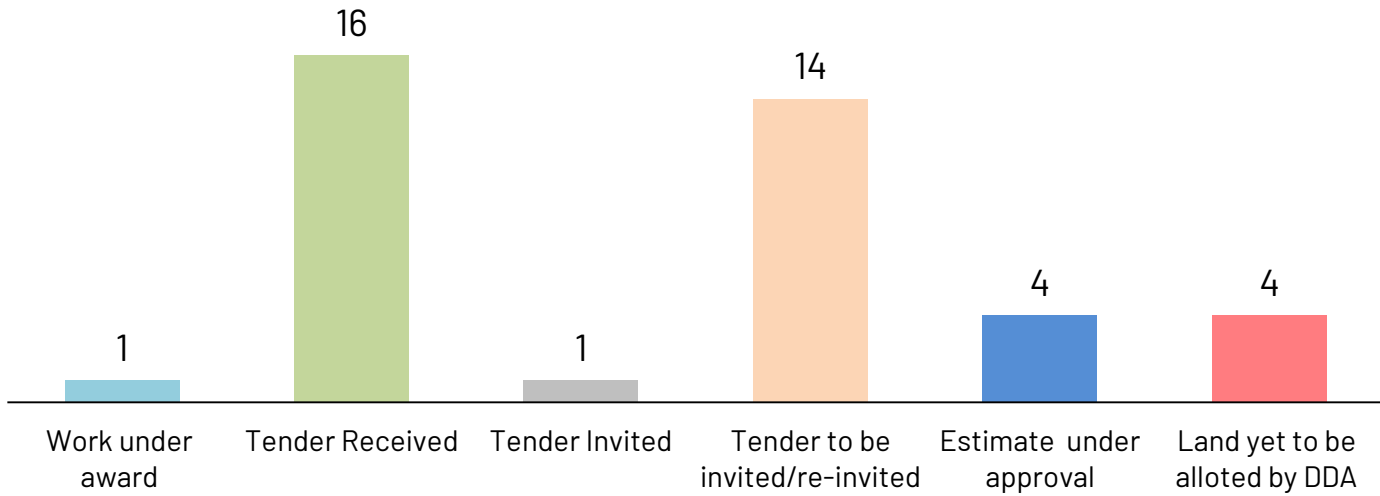


13 Construction of 40 New DSTPs

Capacity Addition: 92 MGD

Focus Areas for Enhancing Sewage Treatment Capacity

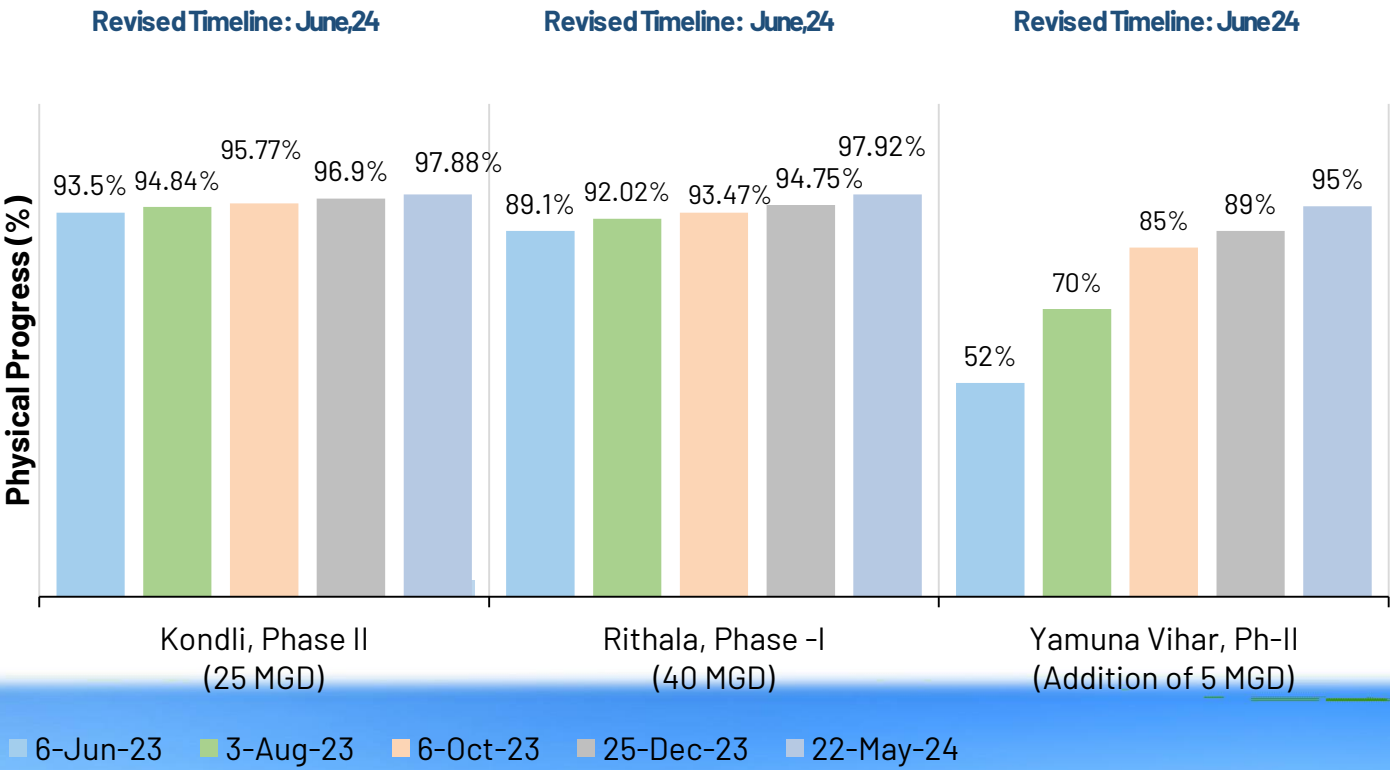
"Timeline: December, 2024"



14 Rehabilitation of Existing 3 STPs

Capacity Addition: 70 MGD

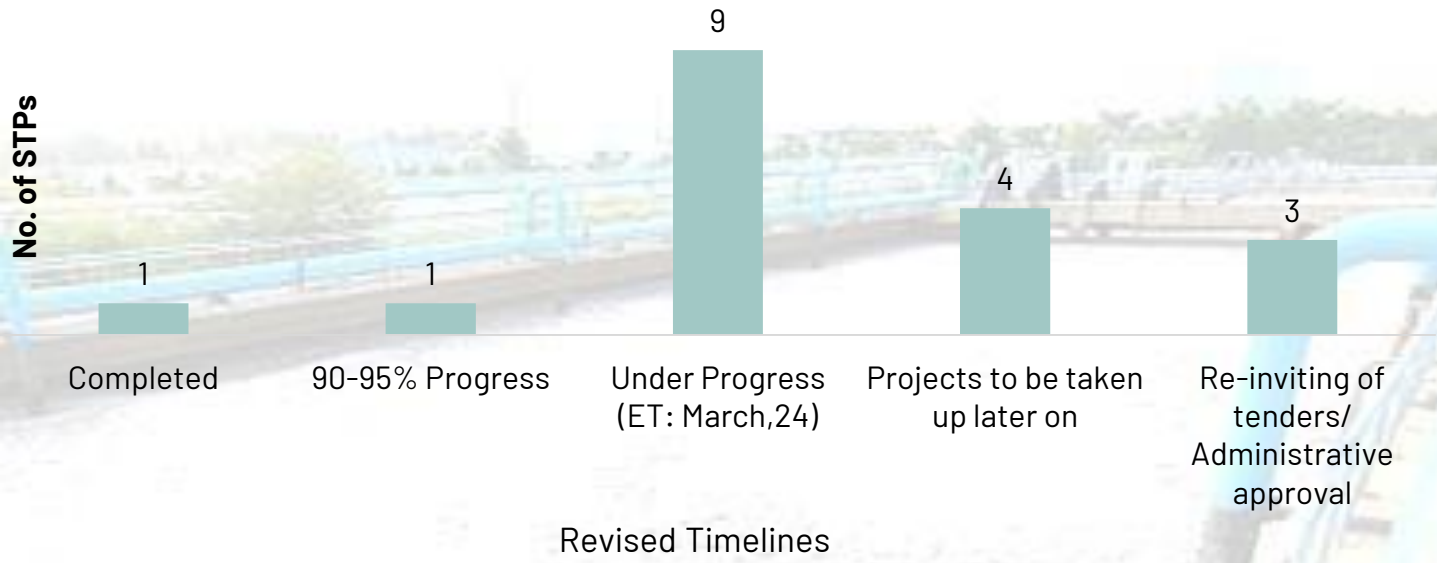
Focus Areas for Enhancing Sewage Treatment Capacity



15

Upgradation of Existing 18 STPs
Capacity Addition: 113.5 MGD

Focus Areas for Enhancing Sewage Treatment Capacity



Revised Timelines

Sr. No.	Name of STP	Existing Capacity	Enhanced Capacity (In MGD)	Status as on 22th May, 24	Timelines
1.	Rithala Phase - II	40	40	100% (Completed)	Completed
2.	Kondli Phase- IV	45	45	97%	Taking Effluent (ET: Oct,23)

15

Upgradation of Existing 18 STPs
Capacity Addition: 113.5 MGD

Focus Areas for Enhancing Sewage Treatment Capacity

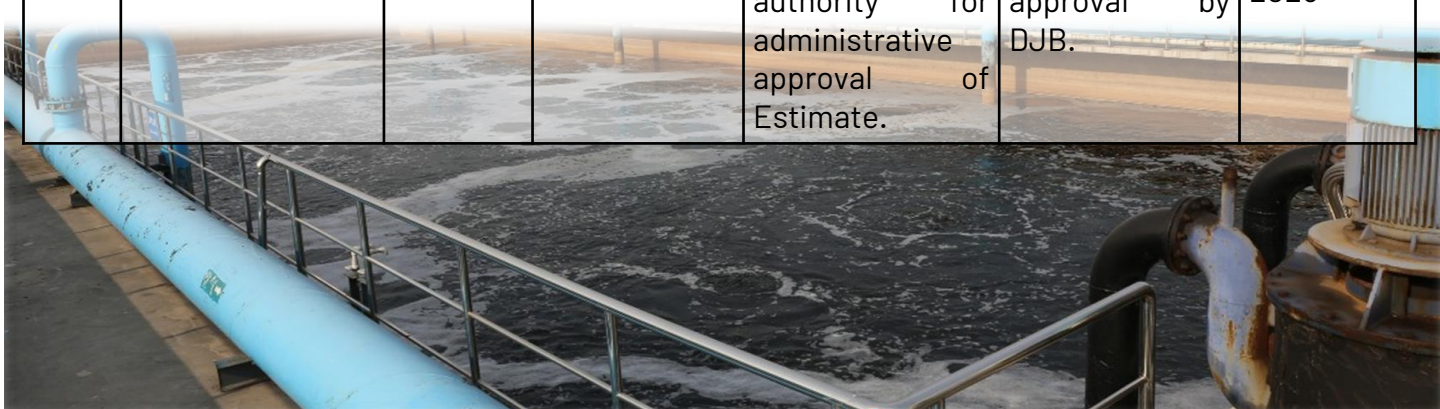
Sr. No.	Name of STP	Existing Capacity	Enhanced Capacity (In MGD)	Status as on 25th Sept, 23	Status as on 22th May, 24	Revised Timelines
3	Pappan Kalan Phase - I	20	30	21 %	41 %	Revised Timelines to be informed by DJB (ET: Dec,23/ Mar,24)
4	Nilothi Phase -II	40	60	21%	41 %	
5	Najafgarh	5	5	27%	62%	
6	Keshopur Phase -II	20	20	27 %	62%	
7	Keshopur Phase-III	40	60	27 %	62%	
8	Rohini Sector 25	15	25	25 %	62%	
9	Narela	10	15	25 %	62%	
10	Coronation Pillar Phase -I & II	20	20	25 %	62%	
11	Coronation Pillar Phase-III	10	10	25 %	62%	
12	Okhla Phase- V	16	16		Project to be taken up later on.	Dec, 2024
13	Mehrauli	5	7.5			March, 2025
14	Ghitorni	5	7.5			
15	Vasant Kunj	5	7.5			

15

Upgradation of Existing 18 STPs
Capacity Addition: 113.5 MGD

Focus Areas for Enhancing Sewage Treatment Capacity

Sr. No.	Name of STP	Existing Capacity	Enhanced Capacity (In MGD)	Status as on 6th Oct, 23	Status as on 22th May, 24	Timelines
16	Yamuna Vihar Phase - I	10	15	File sent to competent authority to re- consider the decision of re- inviting of tenders in order to award the work at te earliest.		March, 2025
17.	Keshopur Phase- I	12	18	File sent to competent authority for approval work at earliest	File sent to competent authority to re- consider the decision of re- inviting of tenders in order to award the work at te earliest	Dec, 2024
18.	Yamuna Vihar Phase - III	25	55	File has been sent to competent authority for administrative approval of Estimate.	File has been sent for administrative approval by DJB.	March, 2025



16

Desilting Trunk/Peripheral Sewer : Approx 200 Km

79.8 Km Desilted

S.No.	Particulars	Total length (Km)	Cumulative Length Desilted as on 25.12.23 (Km)	Cumulative Length Desilted as on 21.05.2024 (Km)	Timelines
1.	Desilting of 90.34 Km	94.93	66.428 (70.4%)		
a	Yamuna Vihar STP	7.65	7.5	7.	Completed
b	Rithala-Rohini STP	19.21	17.05	19.21	
c	Narela STP & Coronation Pillar STP	8.05	8.026	8.05	
d	Keshopur STP	2.84	2.84	2.84	
e	Nilothi STP	4.61	-	-	RT: Dec,23 Now: June, 24
f	Kondli STP in east zone	8.76	3.472	5.34	RT: Dec,23 Now: June 24
g	Dwarka STP	27.10	11.5	20.6	RT: Dec,23 Now: June, 24
h	Okhla STP	11.51	9.5	11.51	Completed
i	Desilting of gravity duct no. 1	5.20	5.2	5.2	Completed
	Total	94.93	66.428 (70.4%)	79.8 (84.06%)	
2.	Desilting of remaining 110 Km	110 (RL 42 km)	Estimates under approval.		"RT Jun, 24" Now: Dec, 24

17 Tapping of Drains

22 Major Drains

09 drains tapped out of 22 major drains & No flow observed in 1 drain

S.No	Drain	Status
1	Metcalf House Drain	Tapped
2	Khyber Pass Drain	
3	Sweeper Colony Drain	
4	Magazine Road Drain	
5	Tonga Stand Drain	
6	Moat Drain (Vijay Ghat)	
7	Drain No. 14	
8	Tehkhand Drain	
9	Civil Mill Drain	
10	Abul Fazal Drain	To be tapped.

S.No	Drain	Status
11	Sen Nursing Home Drain	Partially Tapped
12	Delhi Gate Drain / Power House Drain	
13	Najafgarh Drain	Work in Progress
14	Barapulla Drain	
15	Maharani Bagh Drain	
16	ISBT Drain (Qudsia Bagh/ Mori Gate Drain)	
17	Sonia Vihar Drain (On Eastern Bank of Yamuna)	
18	Shahdara Drain	

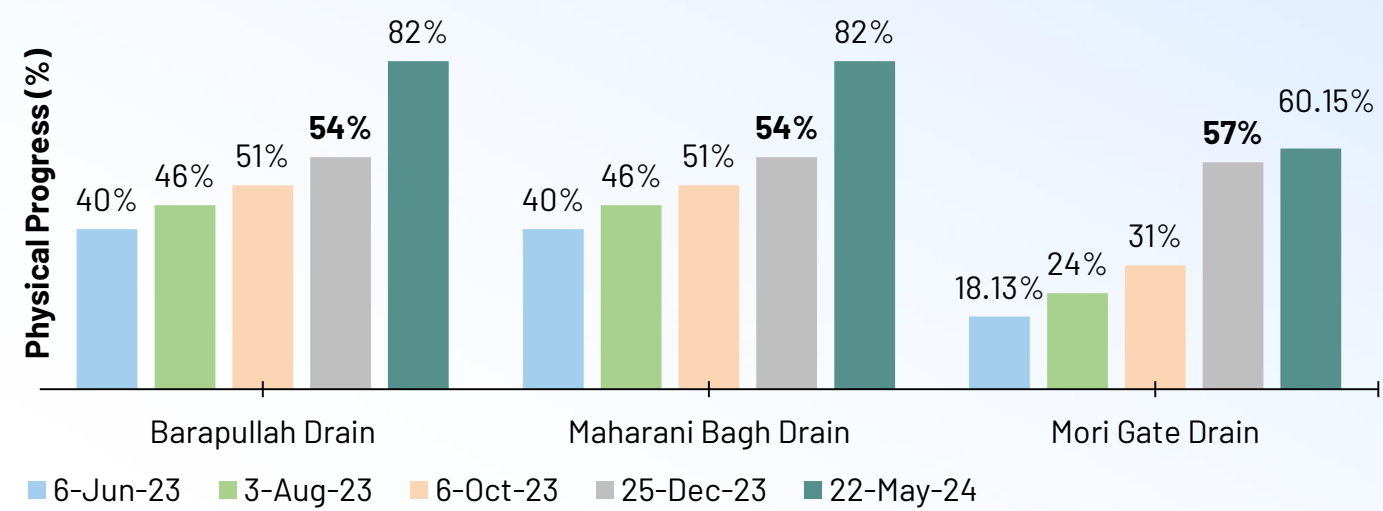
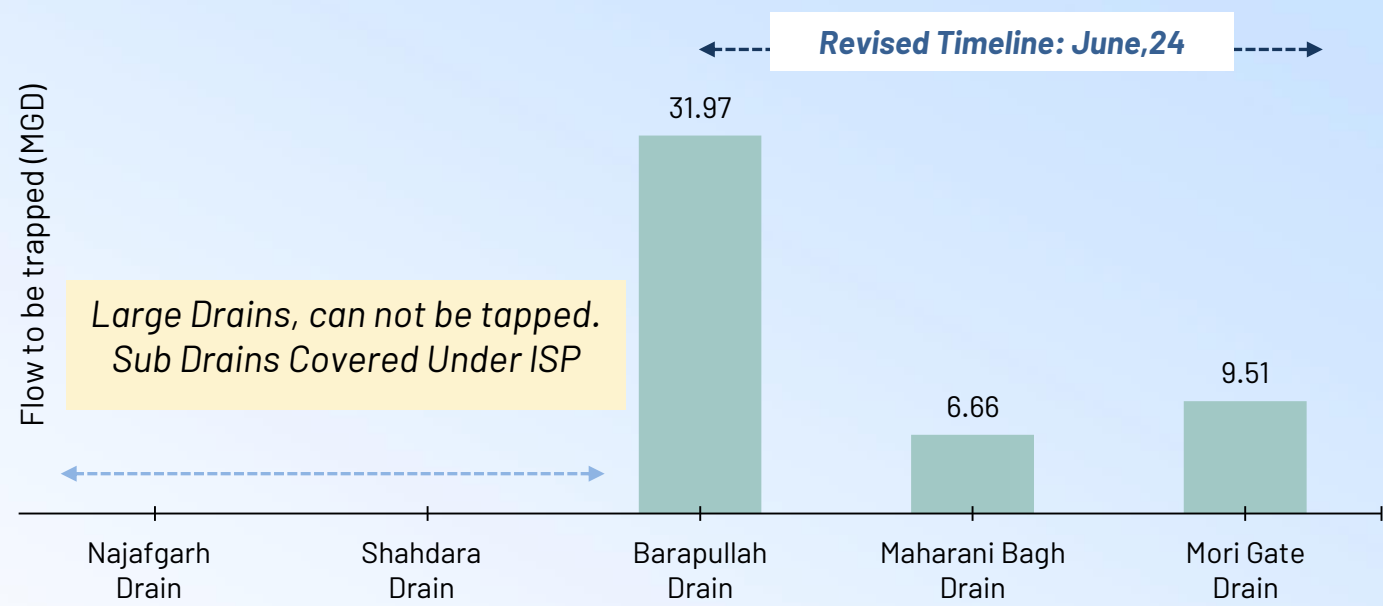
S.No	Drain	Status
19	Kailash Nagar Drain (On Eastern Bank of Yamuna)	To be tapped
20	Shastri Park Drain (On Eastern Bank of Yamuna)	
21	Jaitpur Drain	
22	Tuglakabad Drain (Kalka Ji Drain merged in this drain)	



17 Tapping of all Drains

Remaining 3 untapped major drains

Total Flow to be Trapped: 48.14 MGD



18

Tapping of all Drains 76 un-trapped sub drains

Sr. No.	Name of major Drain	Total No. of un-trapped drains	Number of sub drains	Timeline	Present Status		
1.	Najafgarh Drain	44	18	May, 23	Trapped		
			04	Jun, 23 RT: June, 24	03-Trapped	01- 99 %	
			22	Oct, 23 RT: Dec, 25	17 3- Under Progress 14- linked with DSTPs(Dec, 23)	2-Action to be taken by DDA	3- DSTPs land sub-judice
2	Shahdara Outfall Drain	02	02	"Jun, 23" RT: June,24	73.8 %		
3	Supplementary Drain	30	14	Apr, 23	Trapped		
			1	May, 23	Trapped		
			14	Jun, 23 RT: Dec,25	13-Trapped	1-DSTP Estimate prepared	
			01	Sep, 23	Trapped		

19 In-situ Bioremediation/Phytoremediation of Sewage in Drains

Bioremediation broadly refers to any process wherein a biological system, living or dead, is employed for removing environmental pollutants.

Phytoremediation technologies use living plants to clean up soil, air, and water contaminated with hazardous contaminants.

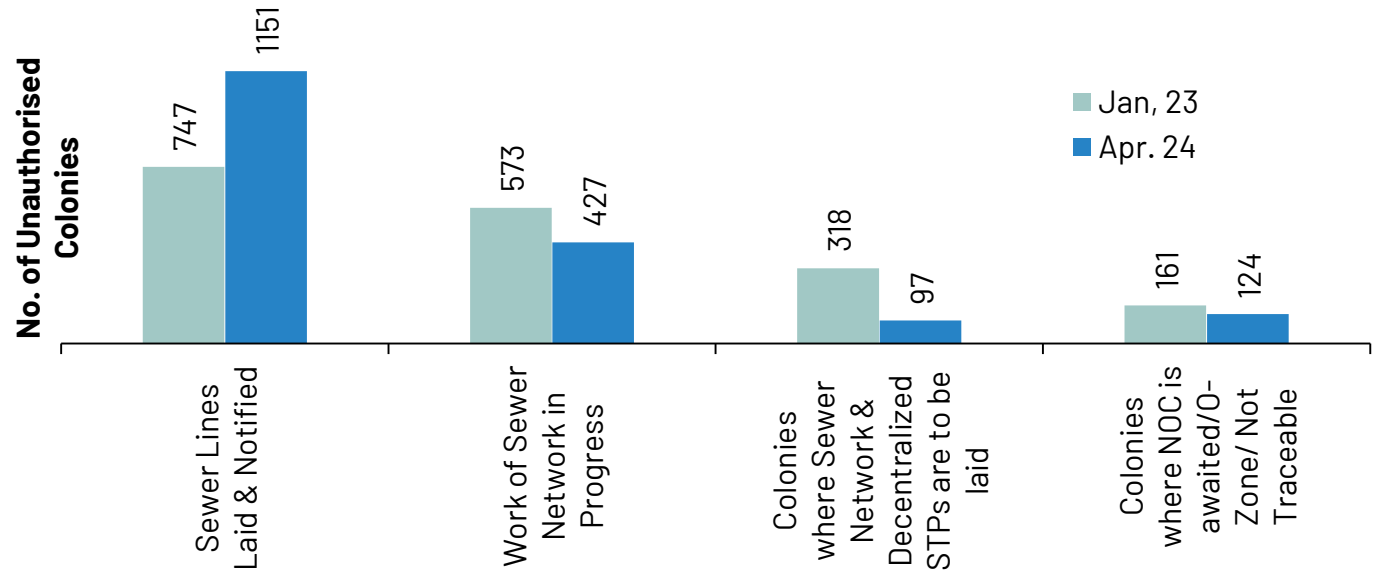
As per the NGT orders bioremediation/phytoremediation of sewage in drains is to be carried out.

Status of Drain Owning Agencies(DOAs)provided by DJB is as follows

S. No	Drain Owning Agencies	Measures Taken / Projects	Timeline
1	MCD	- Constructed Wetland / Treatment System of 3 MLD designed by NEERI at Jheel Park for treatment of incoming drains. The treatment system is functional. - Pushp Vihar Drain (1.9 Km stretch of Chirag Delhi Drain) as pilot project. - Pilot project for Phyto / Bio-Remediation of Qudesia Nallah in 350 m length. About 20 % work completed. New proposal is under consideration similar to work carried out in Pushp Vihar Drain.	Functional Work completed
2	NDMC	Waste water in portion of Kushak Nallah falling under NDMC area is under Bio-remediation.	Functional
3	DCB	In-situ treatment in 6 Drains through chemical dosing since discharge is less (in the range of 1.5 MLD).	Functional
4	DDA	- Kalindi Biodiversity Park is being developed in 200 Hectares area in 6 kilometer length & 1-3 kilometer wide. 11 Constructed Wet Lands are being developed to treat sewage. 2 Wetlands-one at Kilokari drain (10-12 MLD) and another at Dhobighat drain (12-15 MLD) have been constructed & are functional. - The third Constructed Wet Land on Maharani Bagh drain is nearly completed. 8 Constructed Wet Lands are not functional due to construction of high speed road of NHAI from Sarai kale Khan to Faridabad. These require redevelopment.	3 out of 11 Constructed Wet Lands are Functional
5	PWD	- Bio-remediation Plant of 2.5 MLD capacity has been installed at Chattarpur. - Work of installation of Bio-remediation Plant of 0.75 MLD capacity between main gate of Chattarsal Stadium and Azadpur Metro Station is under progress. - Bio-remediation of remaining drains of PWD are not feasible due to space constraint and smaller size of drains.	Completed
6	I&FCD	As per the feasibility report of the consultants, Phyto / Bio remediation is not feasible in the two major drains (Najafgarh drain and Shahdara drain) under I&FC Dept. due to heavy discharge , land constraint etc.	
7	DSIIDC	Bioremediation/Phytoremediation is not possible for drains since smaller in size.	

20 Sewerage Network in Unauthorised Colonies (1799)

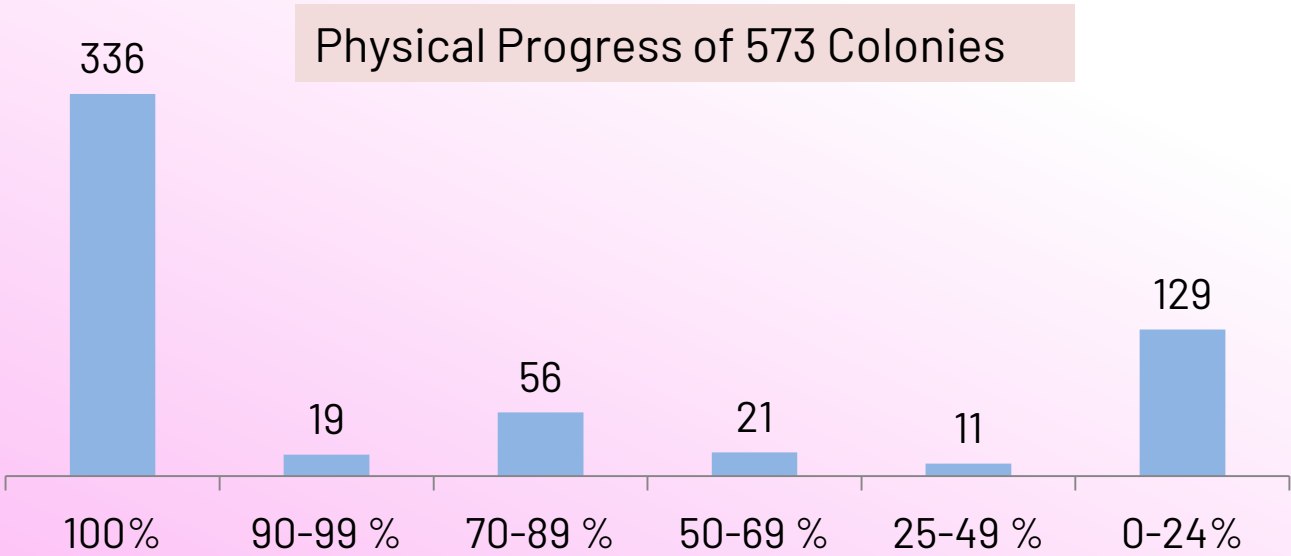
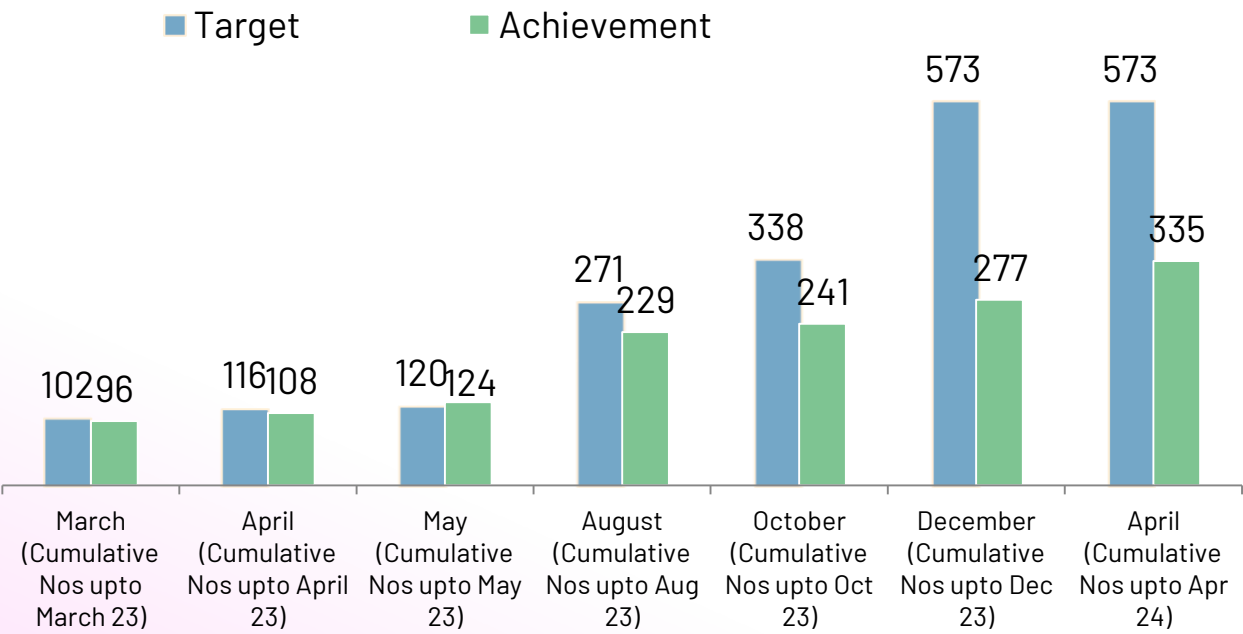
S. No	Description	Cumulative Status (No.)
1	Sewer line laid /commissioned	1151
2	No. Of UA colonies where sewer line will be laid by Dec.2025	427
3	No. of UA Colonies Colonies where sewer line will be laid after handing over possession of land for 4 DSTP.	97
4	Colonies where sewerage network is to be laid along with Decentralized STPs	107
5	No. Of UA colonies Not traceable/not existing	17
	Total	1799



20 Sewerage Network in Unauthorised Colonies (1799)

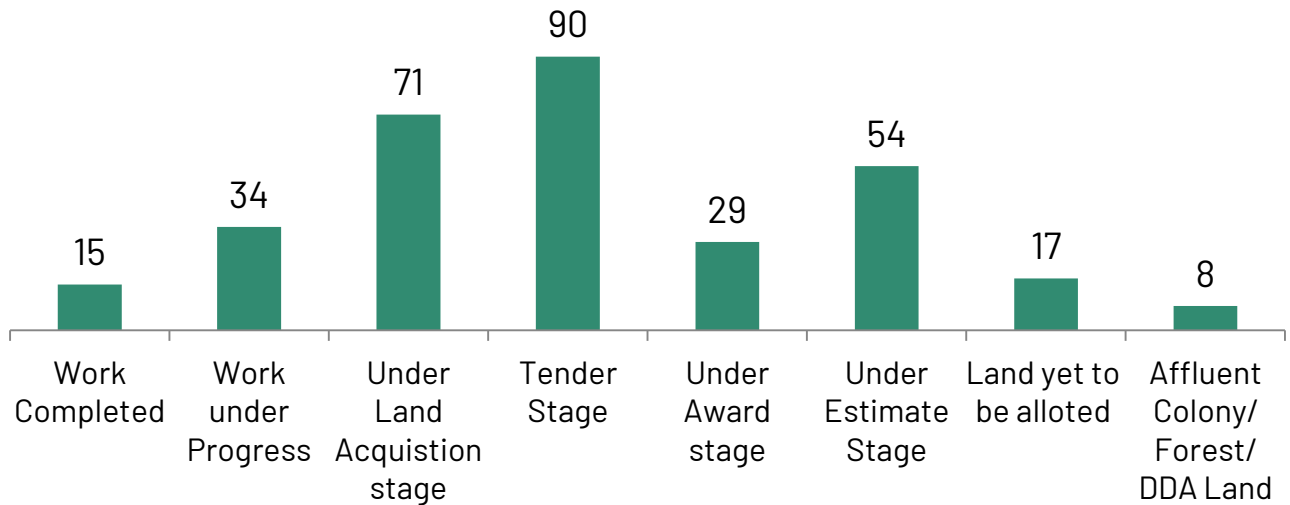
573 Colonies where laying Sewer Network in progress

“Timeline: December, 24”

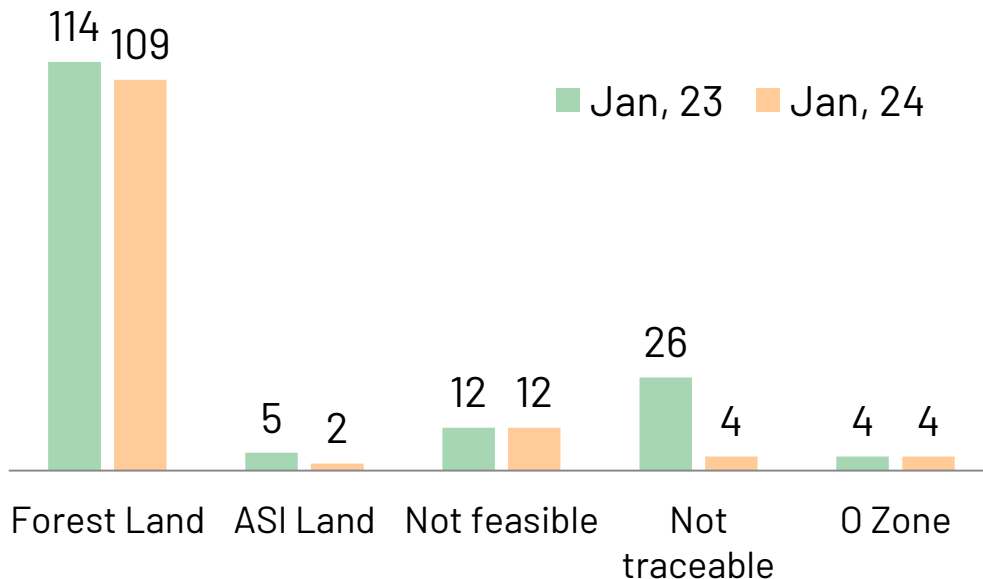


20 Sewerage Network in Unauthorised Colonies (1799)

318 Colonies where sewerage network is to be laid along with Decentralized STPs



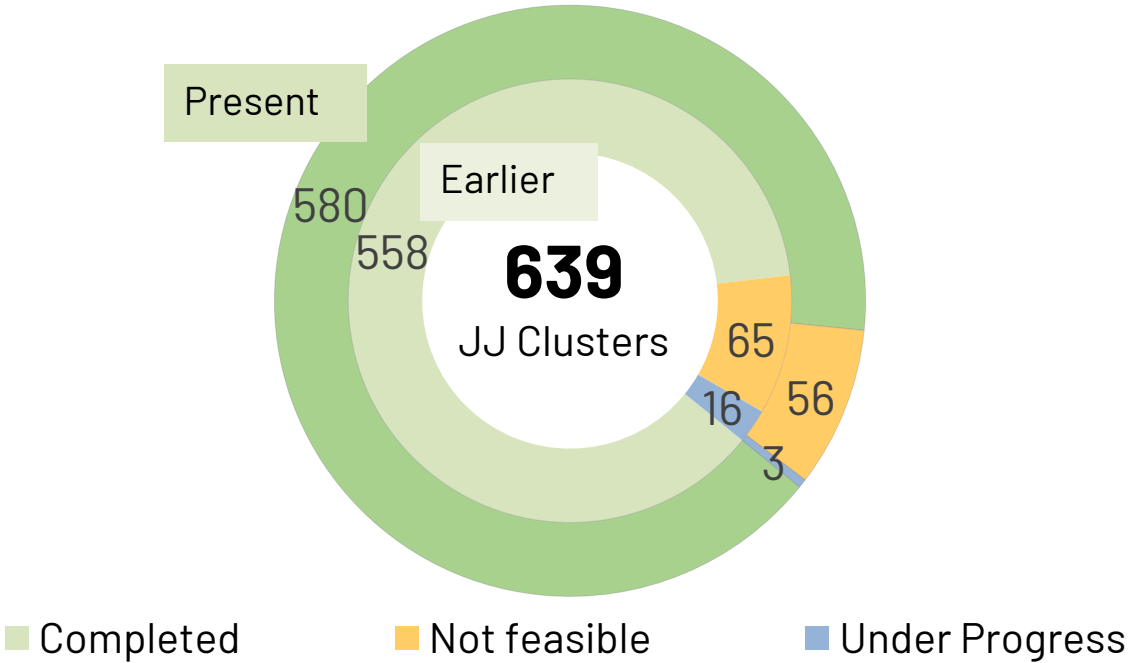
161 colonies where NOC is awaited/O-Zone



"Timeline for 161 Colonies where NOC is awaited / O Zone : 12 months after receipt of NOC but not later than June, 2024"

21 Connection of Drains/ Drainage system of JJ Clusters (639 Nos) with sewerage network

Connection of storm water drain at outfall points/ points of JJC's into nearest DJB sewerage system. Timeline: June, 2024



22 Management of Faecal Sludge (Septage)

- **Delhi Water Board Septage Management Regulations 2018 dated 12.11.2018** for collection, transportation and disposal of waste of septic tanks (Septage).
- Necessary action to be taken by DJB , District Magistrates & Local Bodies
- DM - authorized to ensure enforcement as well as compliance of these regulations. License issued by DJB to vendors for Collection, Transportation & Disposal at designated SPSs/STPs
- Septage Management Committees headed by concerned District Magistrates
- Divisional Commissioner taking review meetings with DMs on weekly basis

17.19 Total Amount of Environmental
Lakhs Compensation Imposed & 17.19 Lakhs received

149

Total No. of Meetings of Septage Management Committees held

64

No. of Vehicles/ Tankers found unauthorizedly discharging septage into Drains etc.

63

No. of Vehicles/ Tankers impounded

57

No. of Challans/notices issued

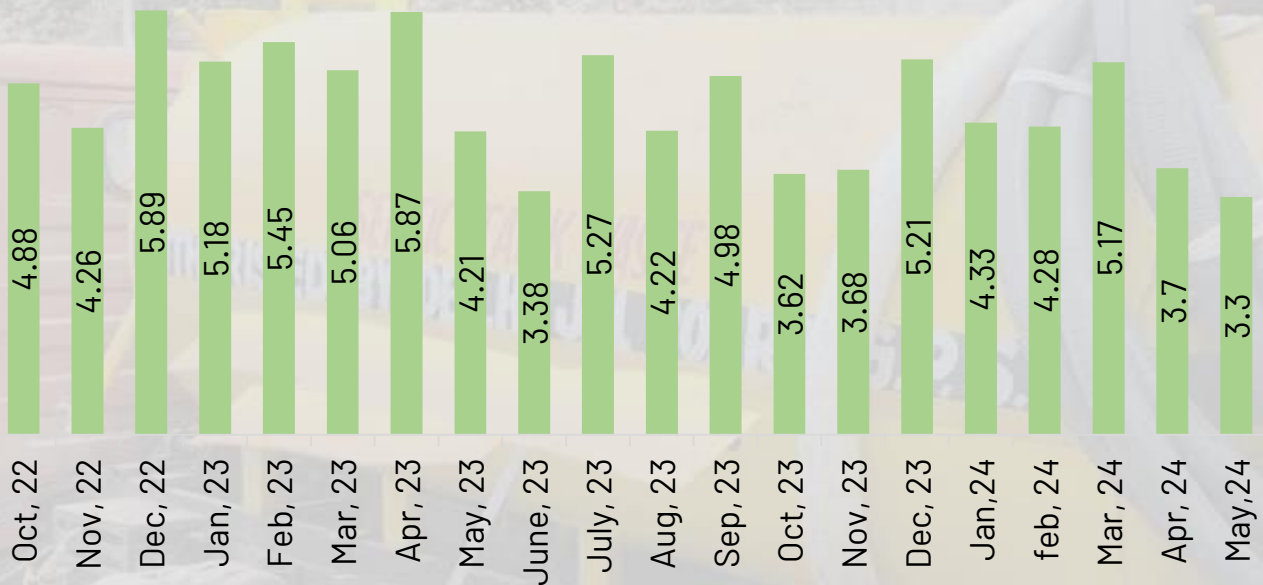
DPCC: Direction issued u/s 33(A) of Water Act on 27.03.2023

- Penalty for deposit of septage by unauthorized (unlicensed) entity: 50,000/-
- Penalty for disposal of Septage at places other than designated places: 50,000/-
- Penalty on person who uses services of unlicensed vendor/vehicles: 10,000/-

Competent Authority : DM, Delhi Police, MCD, IFCD and DJB

22 Management of Faecal Sludge (Septage)

Faecal Sludge (Septage) Collection & Treatment



172 Vehicles

■ Month wise septage collected/treated (in Cr. Ltrs.)



203.6 Crore Ltrs septage collected/treated till May, 24

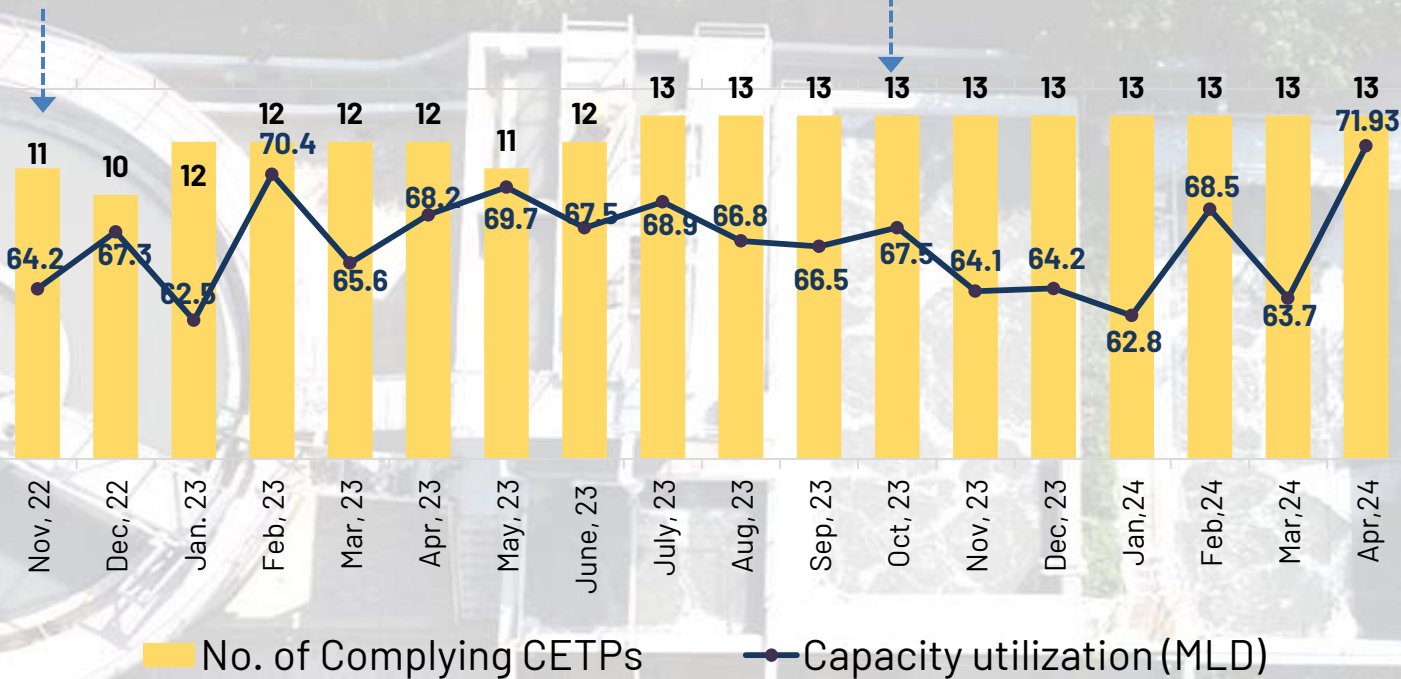
23 Industrial Effluent Management by Common Effluent Treatment Plants (13)

CETPs designed to meet prescribed standards under EP Act (Installed Capacity of all the 13 CETPs: 212.3 MLD).

DPCC monitors CETPs on monthly basis.

EC (12.05 Cr.) imposed on 12 CETP in July, 2021 for not meeting standards (Feb, 2019 to Feb, 2021)

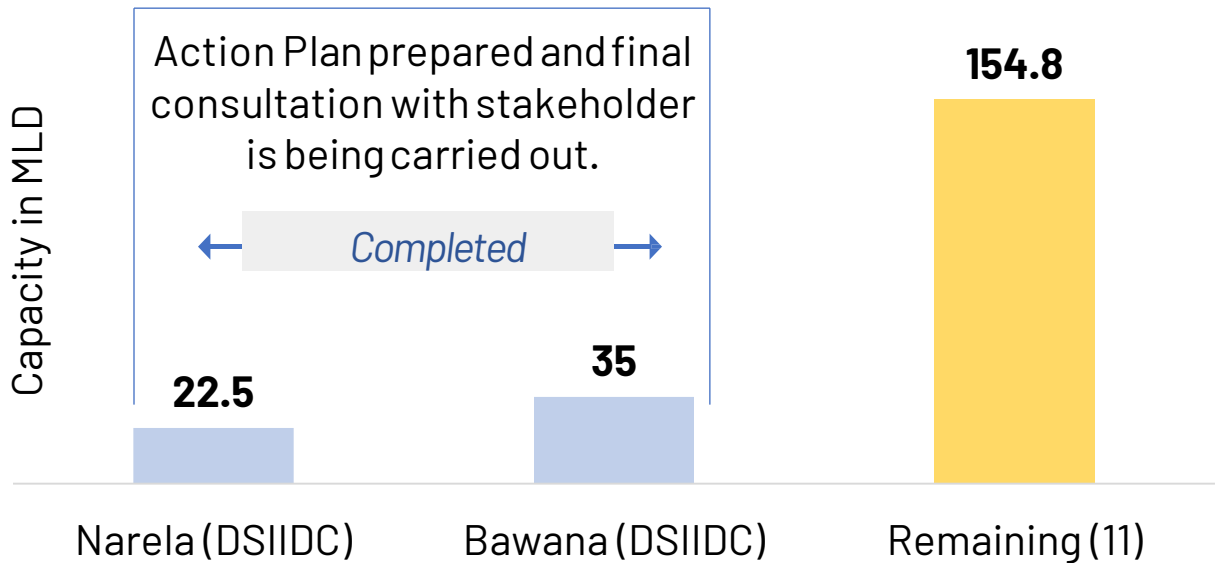
Jan, 2023: EC of Rs 6.05 Crores imposed on all 13 CETPs (Mar, 21-Dec, 22)



Action taken against Dyeing units in non-conforming areas of Delhi by Joint Team consisting of MCD, DPCC, Revenue Dept., Power Companies, DJB (28.04.2023 to 30.04.2024)

- ✓ Total No. Dyeing industries found during inspection : 336
- ✓ Close down/Sealed/ Disconnection of electricity : 140

24 Upgradation of Common Effluent Treatment Plants (13)



- Narela and Bawana CETPs has been upgraded by DSIIDC.
- Govt. of NCT of Delhi vide notification dated 01.01.2024 has given powers in respect of 11 CETPs presently being operated and maintained by CETPs Societies to DJB

25 Regulation of Flood plain Delhi Development Authority



Enforcement

677.22 Ha Area retrieved
form encroachment

72,410 MT of C&D waste lifted
& utilized



Protection Measures

125 Security Guards
93 CCTV cameras at 27 location



Demarcation

1 in 25 years Flood Plain
Fencing with 591 bollards
375 Flag Posts
27 Sign Boards



Restoration projects

Landscaping
Wetland construction
Public Utilities-pedestrian Pathways, Cycling Tracks, Bio-toilets,
Entrance Plaza, Signages

25 Restoration & Rejuvenation of Flood Plains

Status of 10 Projects



Completed Projects

- ✓ Asita East (Part A: 90 Ha)
- ✓ Asita West (Part A: 93 Ha)
- ✓ Kalindi Aviral (Part A: 100 Ha)



Projects in Advance Stage

- Asita East (Part B: 107 Ha)
- Asita West (Part A: 107 Ha)
- Kalindi Aviral (Part B: 163 Ha)
- Kalindi Biodiversity Park: 16 Ha
- Yamuna Vanasthali: 236.5 Ha
- Ghat Area (Part A: 16 Ha)
- Amrut Bio Diversity Park- (Part A: 90 Ha)



Projects in initial stage

- ❖ Ghat Area (Part B/C: 50 Ha)
- ❖ Amrut Bio Diversity Park- (Part B/C 26.5 Ha)
- ❖ Mayur Nature Park: 397.75 Ha
- ❖ Hindan Sarovar: 45 Ha
- ❖ Eco-Tourism area: (Part A: & B 30 Ha)

26 Utilization of Treated Wastewater

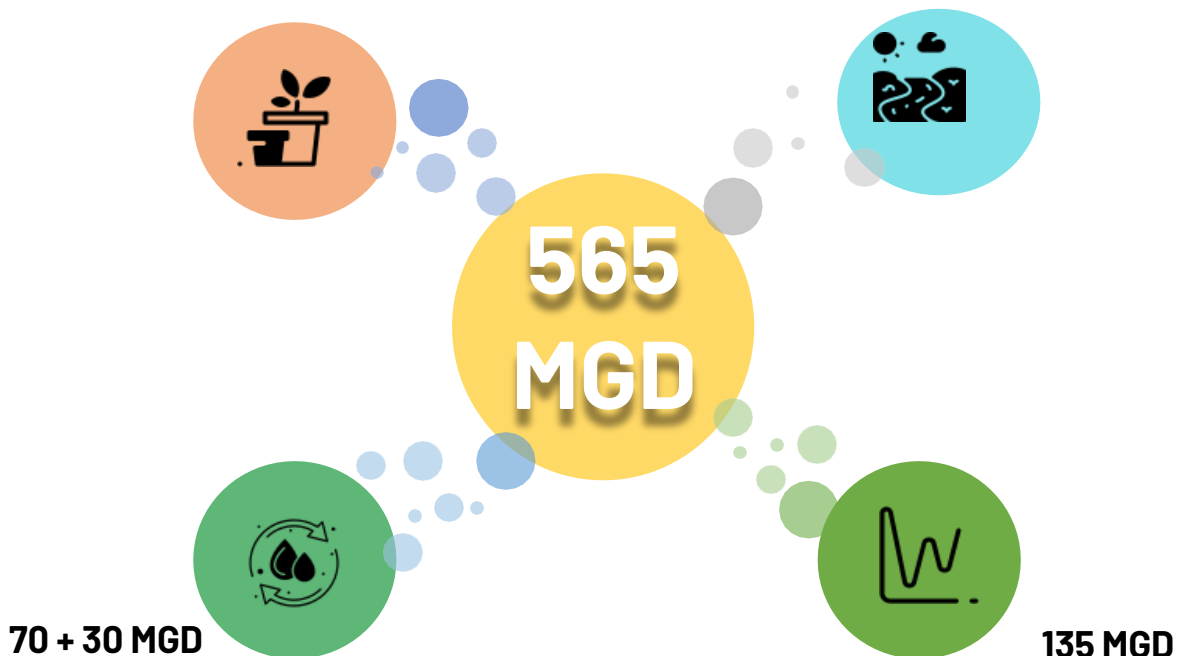
Action Plan by DJB (565 MGD)

125 (90+35) MGD

Being used in Horticulture and Lake Rejuvenation & water Bodies etc.

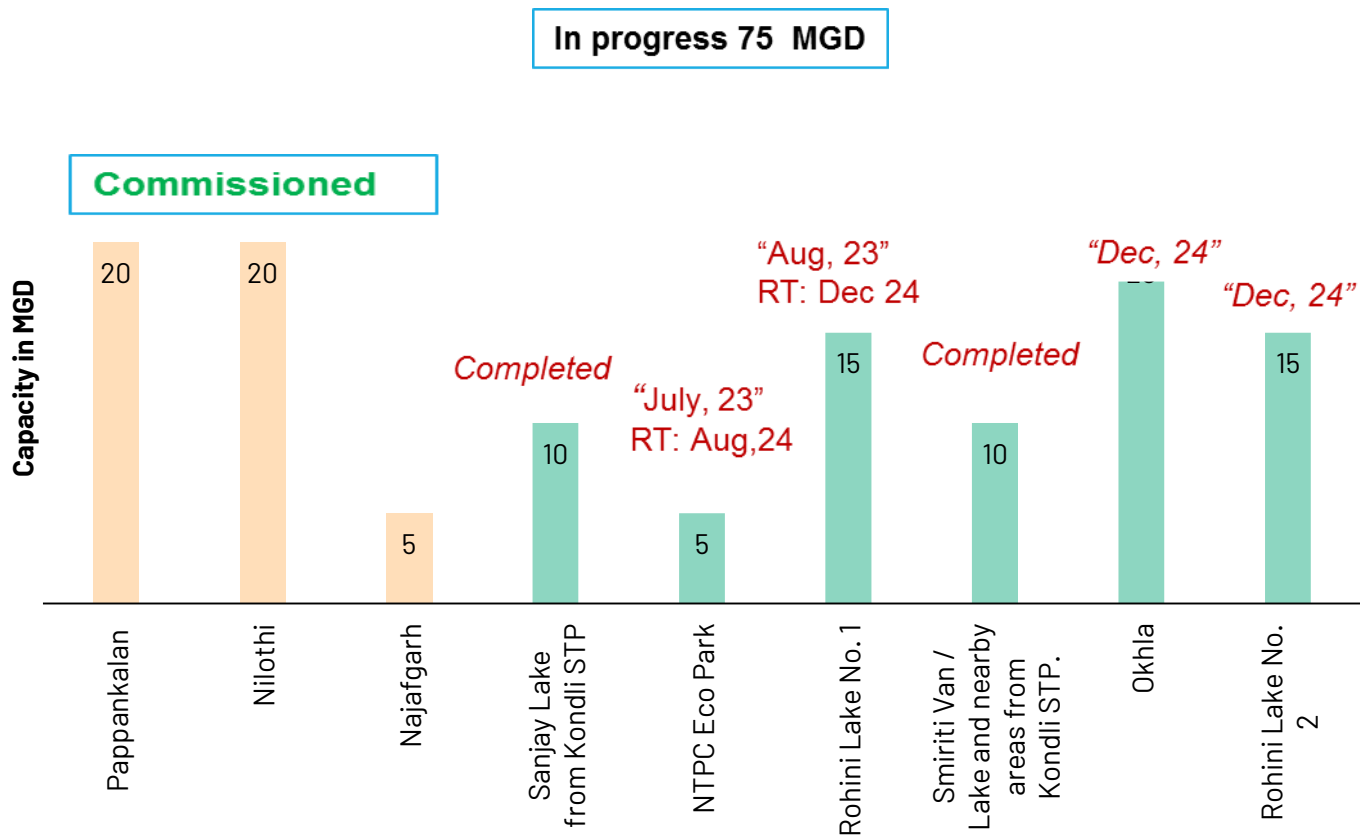
267 MGD

Mandatory Return Flow in Yamuna



26 Utilization of Treated Wastewater

Action Plan for Utilization 75 MGD Treated Wastewater



DJB is also exploring the possibility of using treated STP Water in other usages like in Farm houses, Golf courses, Construction activities etc. and have already made available treated water at its STPs @ Rs 7/ Kilolitres.





Department of
Environment,
Govt. of NCT of Delhi

