



Rejuvenation of River Yamuna

Department-wise Action Plans with Timelines



Department of
Environment, GNCTD

Delhi Pollution
Control Committee



NGT Case OA No. 21/2023 in matter of “Ashwani Yadav Vs. Govt. of NCT of Delhi”

Directions

“High Level Committee (HLC) headed by Hon’ble LG, Delhi has been constituted and CS, Delhi as a convener.

- ***Secretaries of GNCTD:*** Irrigation, Forest and Environment, Agriculture, and Finance, CEO, DJB and Vice Chairman, DDA
- *Secretary or his nominee (not below the rank of Additional Secretary), Ministry of Agriculture, Gol*
- *D.G. Forest or his nominee (not below the rank of DDG), MoEF&CC, Gol*
- *Secretary, MoJS or his nominee not below the rank of Additional Secretary*
- *Secretary, MoEF&CC or his nominee not below the rank of Additional Secretary*
- *DG NMCG and Chairman CPCB.*

NGT Case OA No. 21/2023 in matter of “Ashwani Yadav Vs. Govt. of NCT of Delhi”

Directions

- *First meeting of HLC within a week and subsequently at least once in every week for next six months.*
- *The Committee will deal with all issues as set out in order dated 27.1.2021 (in OA No. 06/2012) and other ancilliary matters*
- *The Committee may compile data of pollution as on 1.1.1994, 1.1.2012, 1.1.2017, 1.1.2019, 1.1.2021 and 1.1.2023.*
- *Report to be submitted to Hon'ble NGT by 31.01.2023.*
- *Action Plan to be prepared covering the points and issues mentioned in the report of Yamuna Monitoring committee (YMC) and given in the order dated 27.01.2021 in OA No 06/2012.*

Next Date of hearing: 7.02.2023 along with OA No. 562/2022 and OA 06/2012

Agenda

I. Water quality monitoring by DPCC

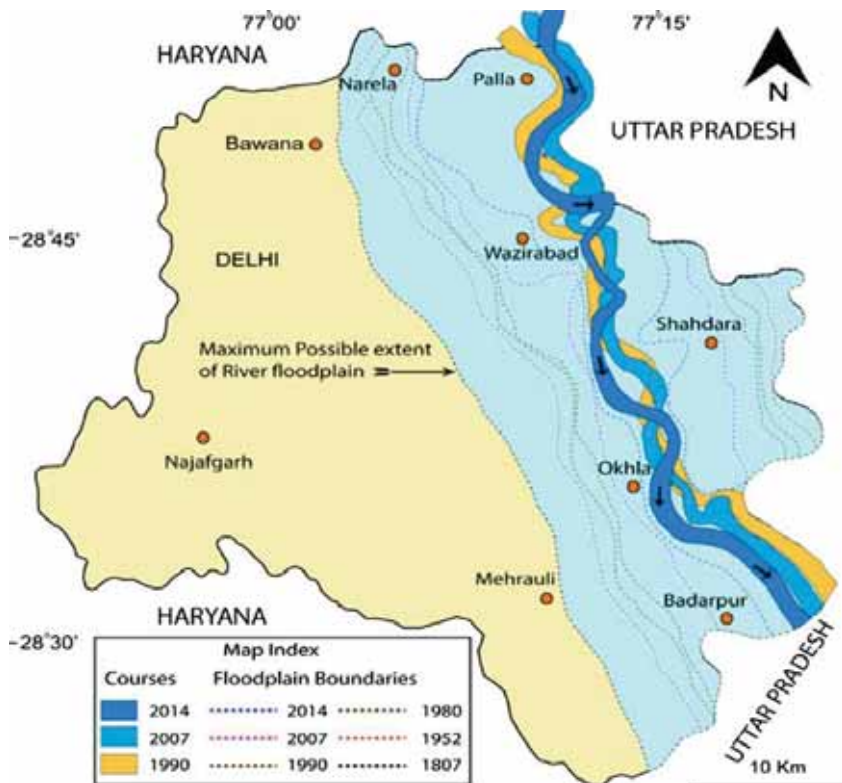
1. River Yamuna
2. Drains
3. Sewage Treatment Plants
4. Common Effluent Treatment Plants

II. Improvement of water quality in Yamuna: Actions taken and gaps

1. Maintaining Environmental Flow
2. 100 Percent Treatment of Sewage
3. Tapping of all Drains
4. Sewerage Network in Unauthorised Colonies and JJ Clusters
5. Industrial Effluent Management by CETPs (13)
6. Faecal Sludge (Septage) Management
7. Regulation of Floodplain
8. Utilization of Treated Wastewater

I. Water Quality Monitoring by DPCC

Compliances with prescribed standards



Yamuna

River Yamuna at 8 locations

22 Drains

Out falling into Yamuna

35 STPs

Operational at 20 locations

13 CETPs

Operational



Yamuna



Drains



STPs



CETPs

Water Quality of River Yamuna (DO, BOD & FC determine WQ of Yamuna : Hon'ble SC)

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.

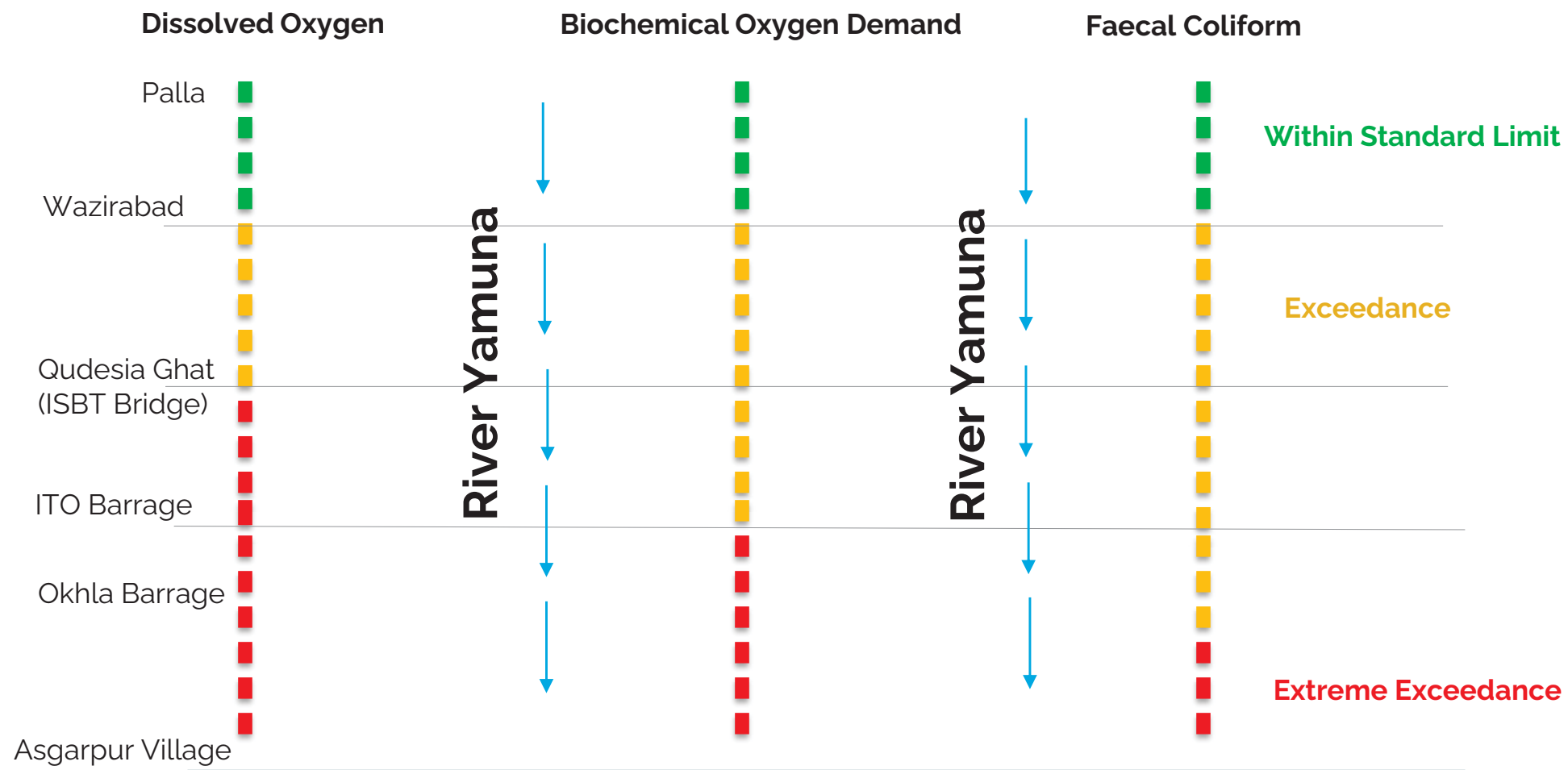
Standards (3 mg/l) : Less BOD is good

Fecal Coliform

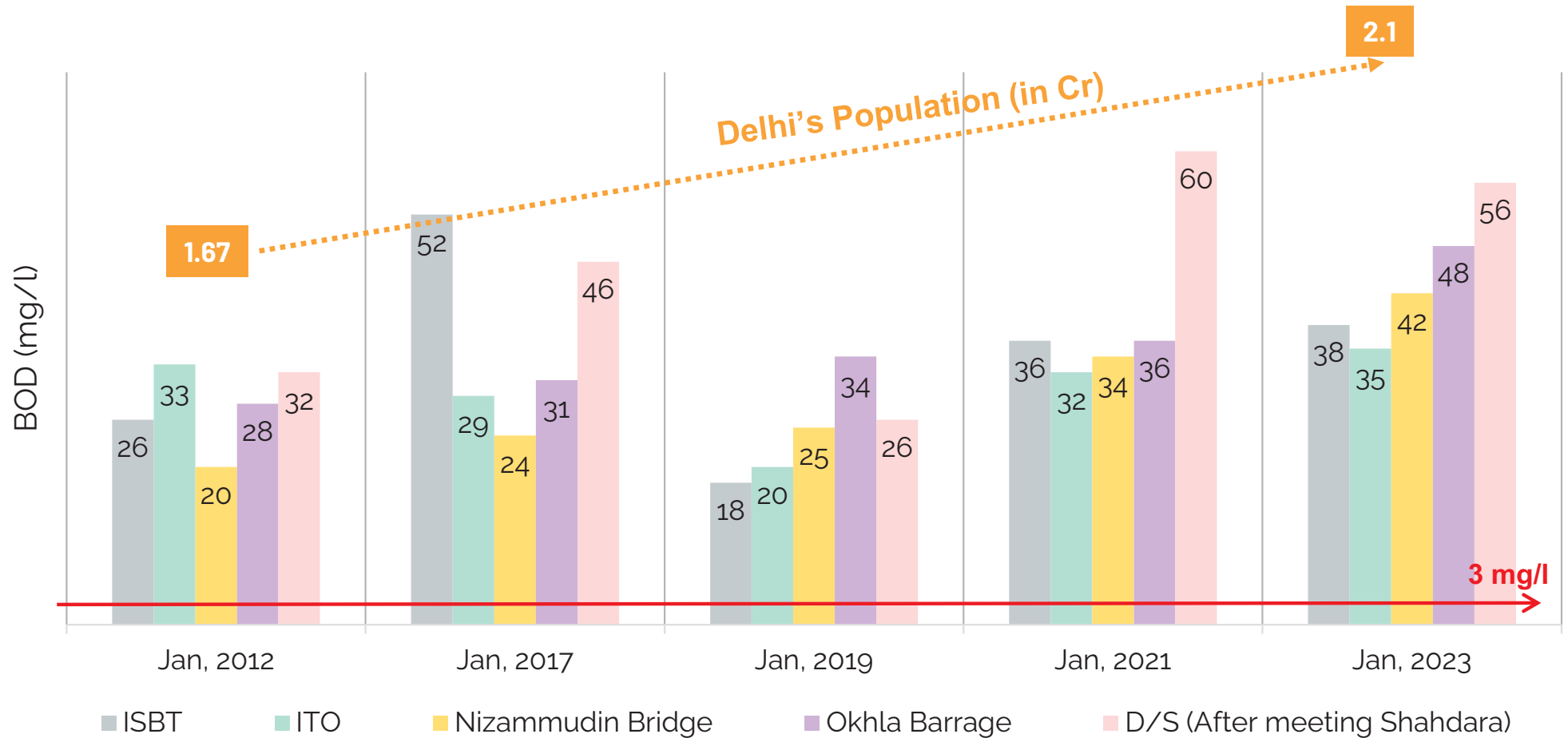
Fecal Coliforms are a group bacteria present in faeces of humans / homeotherms indicating discharge of untreated sewage in a water body.

Standards: (500 MPN/100 ml): Less Fecal Coliform is good

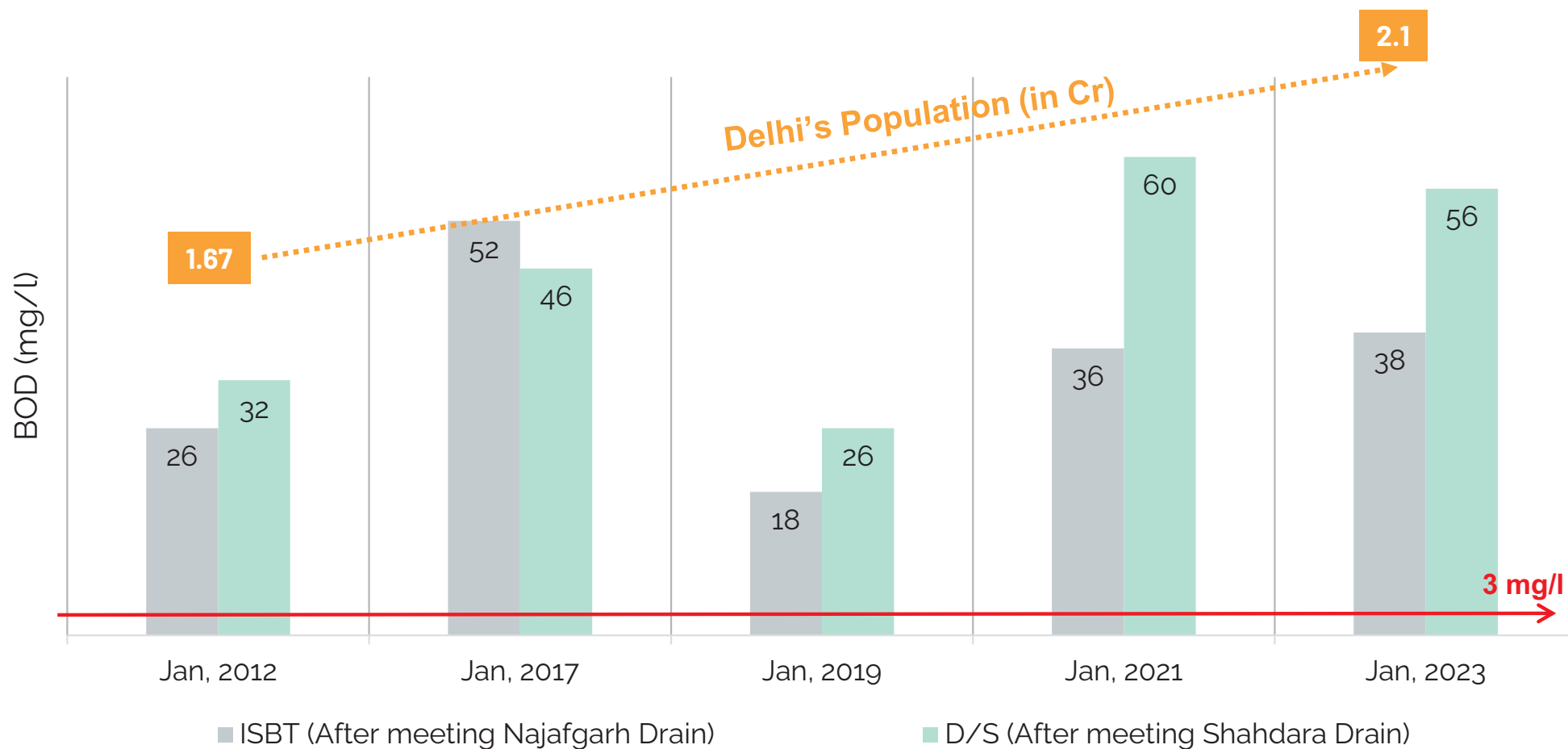
Water Quality of River Yamuna (DO, BOD & FC determine WQ of Yamuna : Hon'ble SC)



Water Quality of River Yamuna wrt BOD (Jan 2012 - 2023)



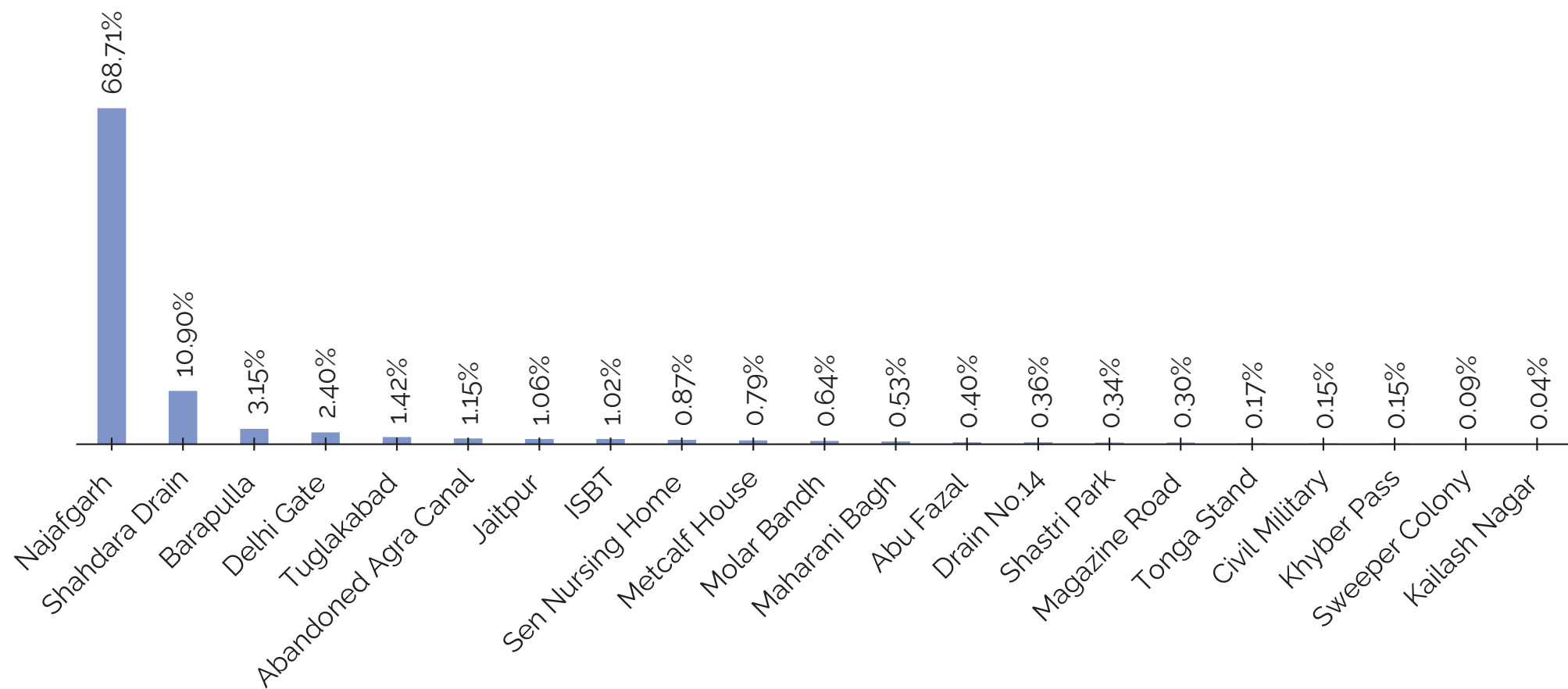
Water Quality of River Yamuna wrt BOD at ISBT Bridge (after meeting Najafgarh drain) & D/S (after meeting Shahdara drain) (Jan 2012 - 2023)



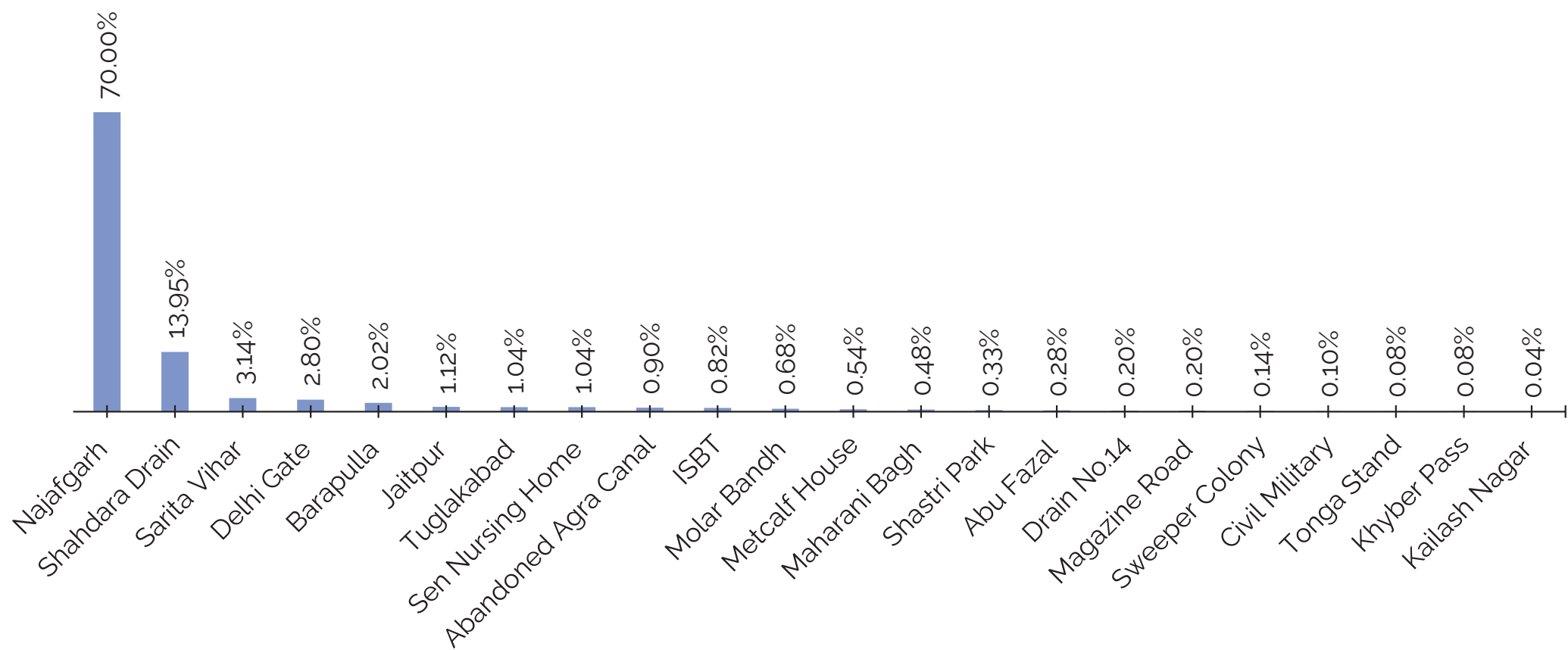


Water Quality of Drains

Discharge of wastewater from Major Drains into river Yamuna at Delhi



Discharge of BOD load from Major Drains into river Yamuna at Delhi



Rejuvenation of Sahibi River (Najafgarh Drain)

INTERDEPARTMENTAL RESPONSIBILITIES

IFCD

Desilting

MCD

No MSW disposal
into Drains

DJB

Trapping of all outlets

DSIIDC

Prevent untreated
industrial effluent

Revenue

Encroachment

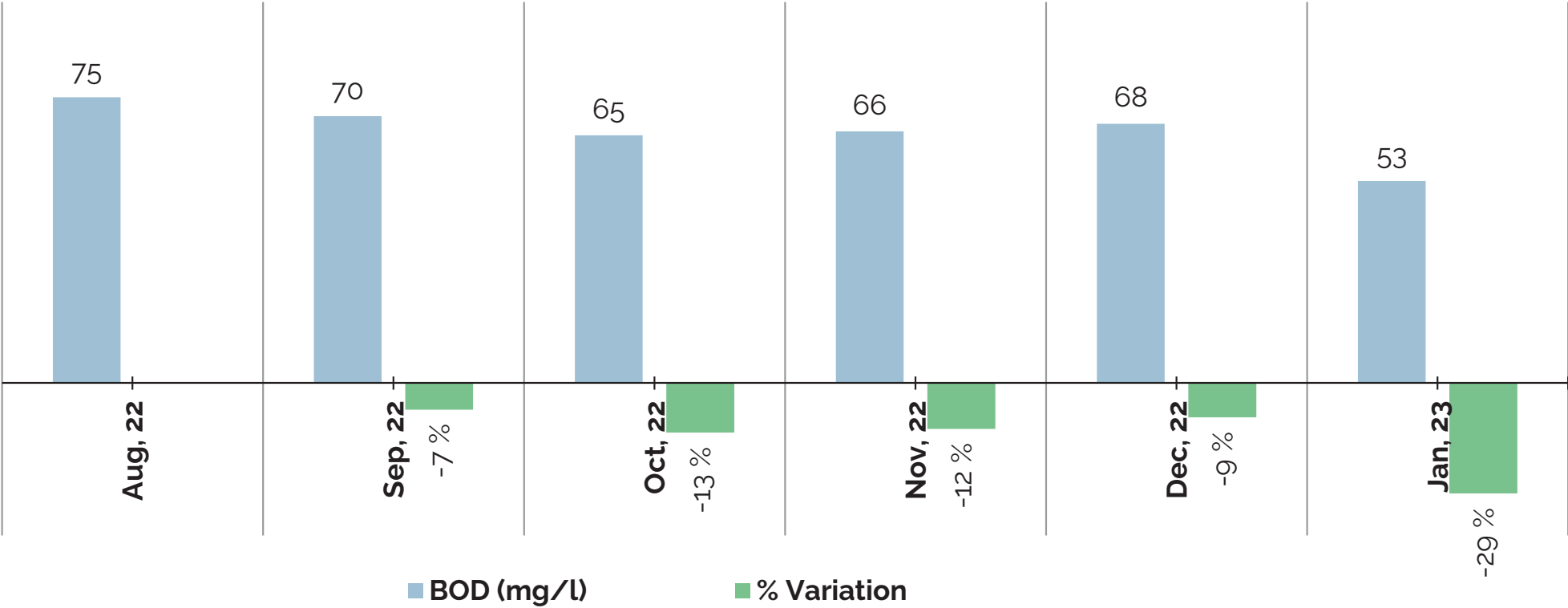
DUSIB

Relocate Jhuggies

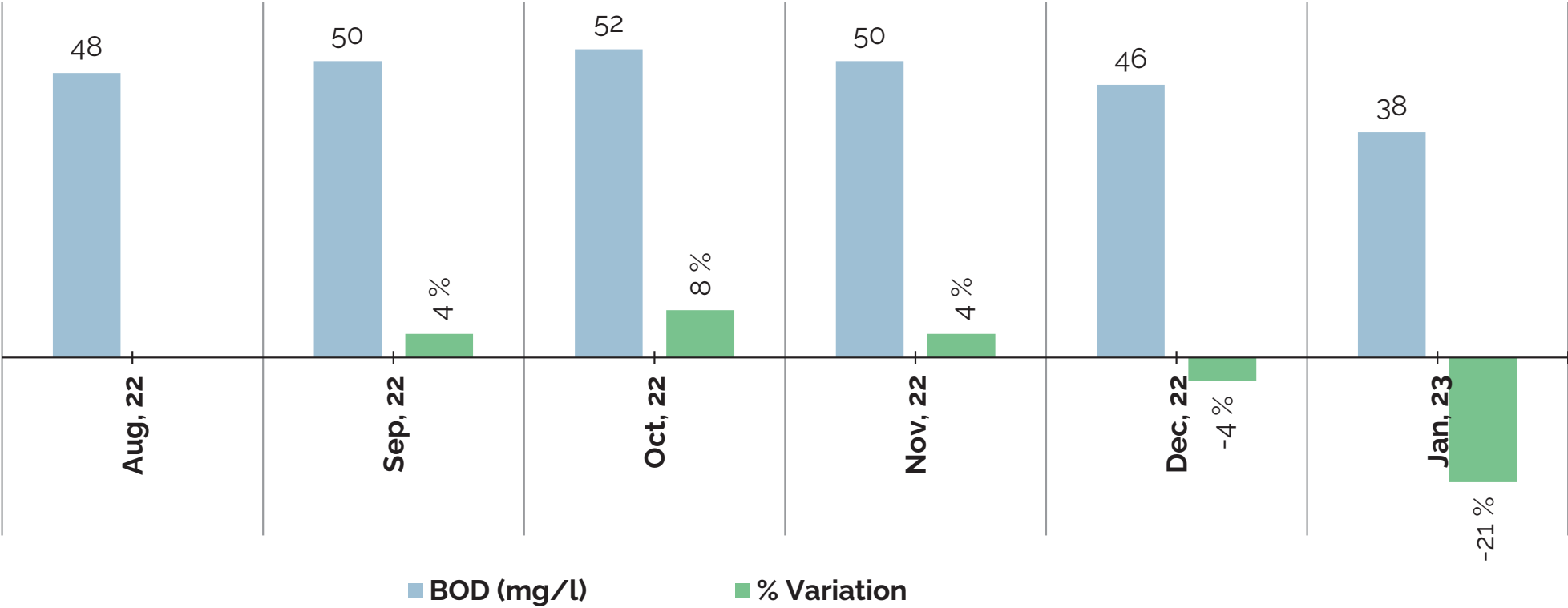
DPCC

Water quality monitoring

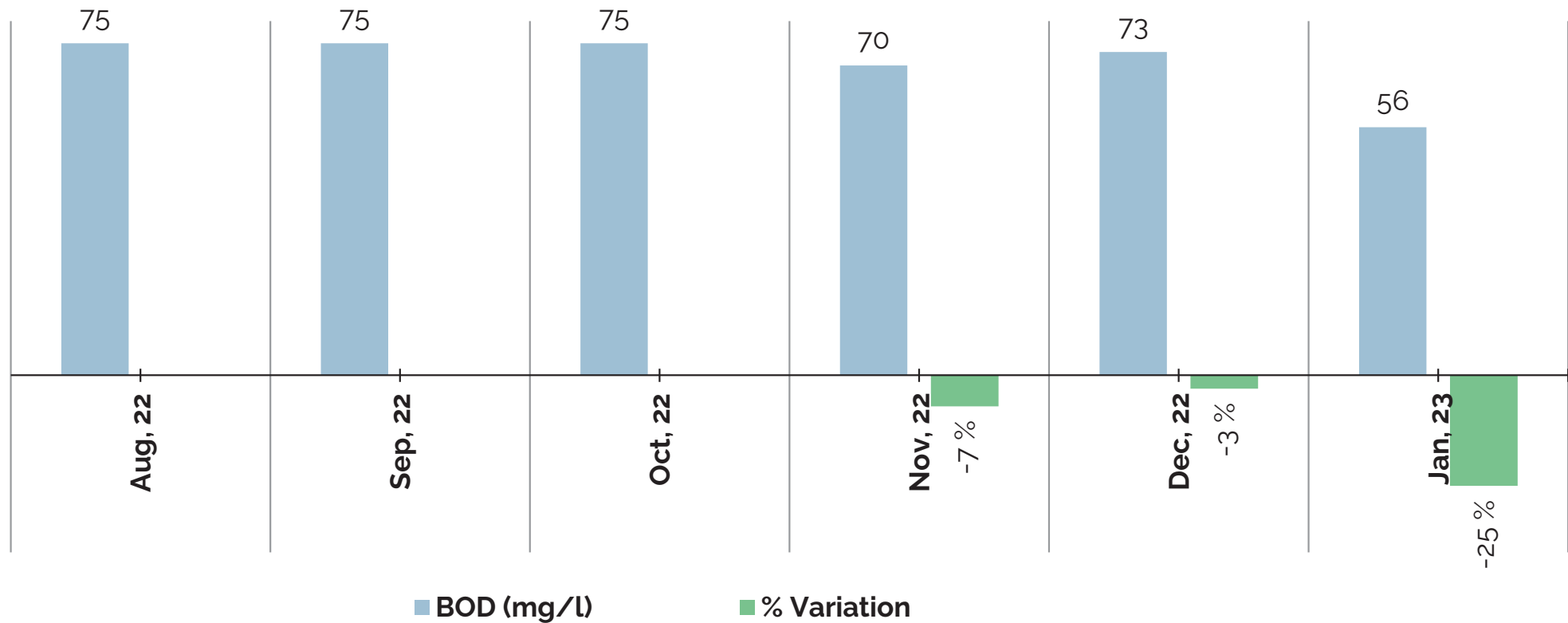
BOD variation in Najafgarh Drain (Aug, 22 to Jan, 23)

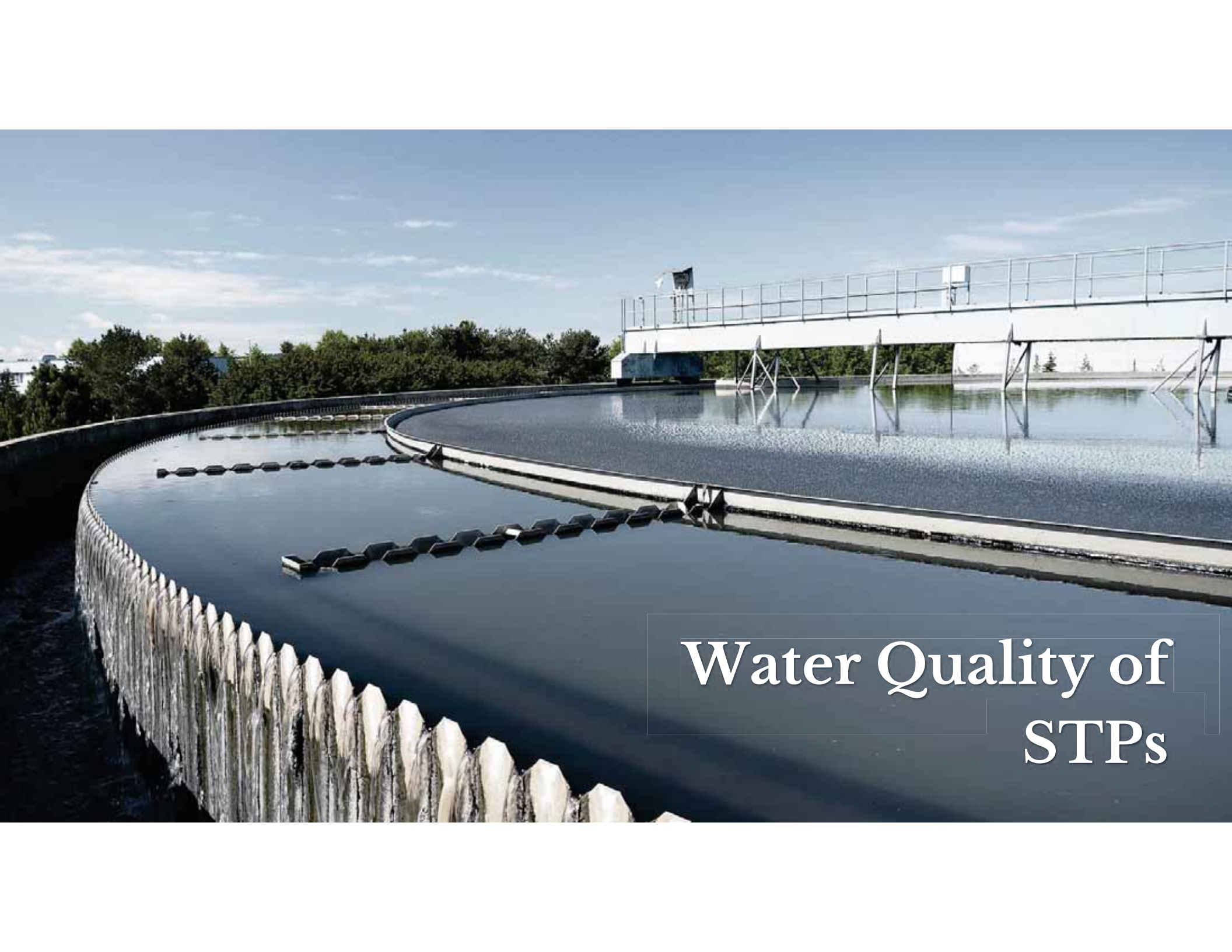


BOD variation in River Yamuna – ISBT (Aug, 22 to Jan, 23)



BOD variation in River Yamuna – Okhla D/s (after confluence of Shahdara drain) (Aug, 22 to Jan, 23)

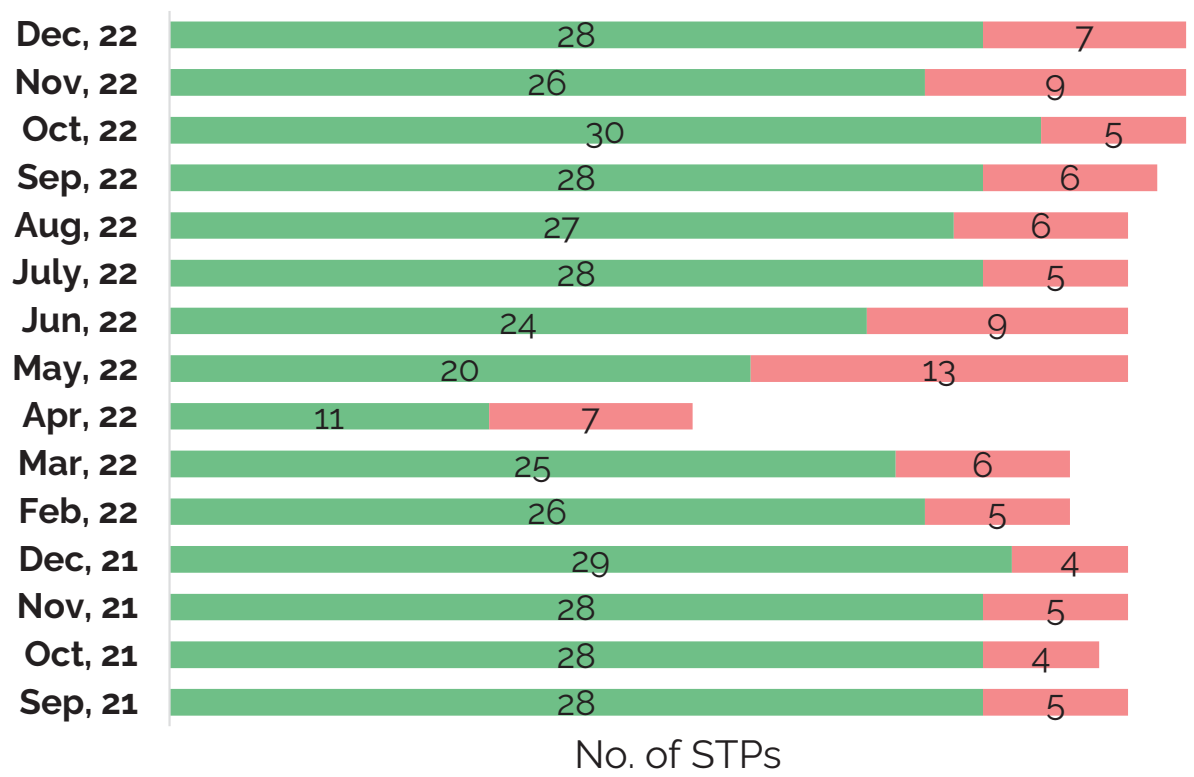




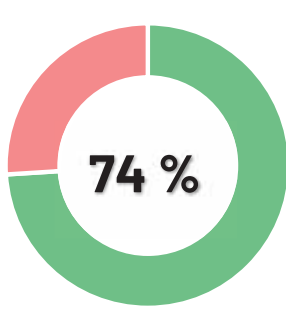
Water Quality of STPs

Water quality monitoring of STPs (35)

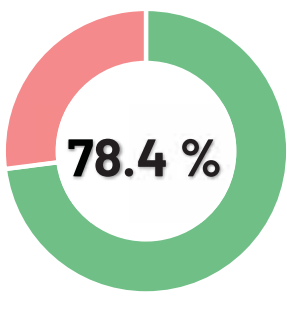
Compliance with design standards - BOD: TSS(30:50 / 20:30 / 15:20 / 10:15)



STPs meeting design standards



28/35 STP

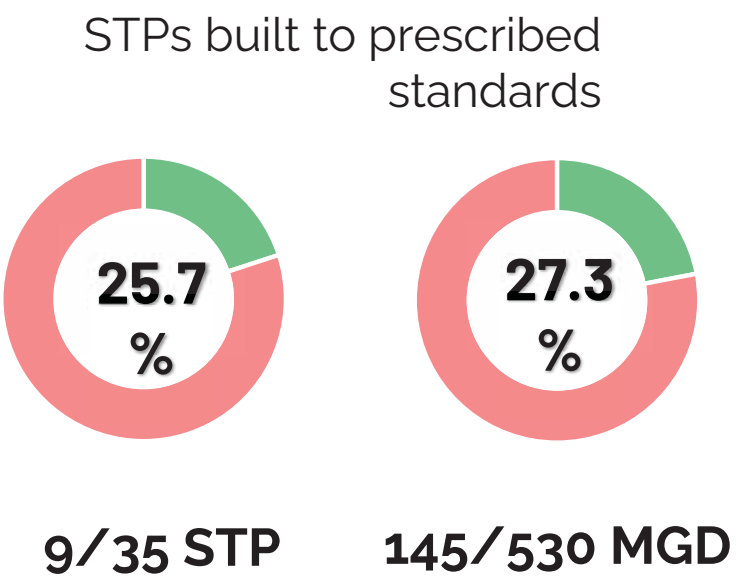
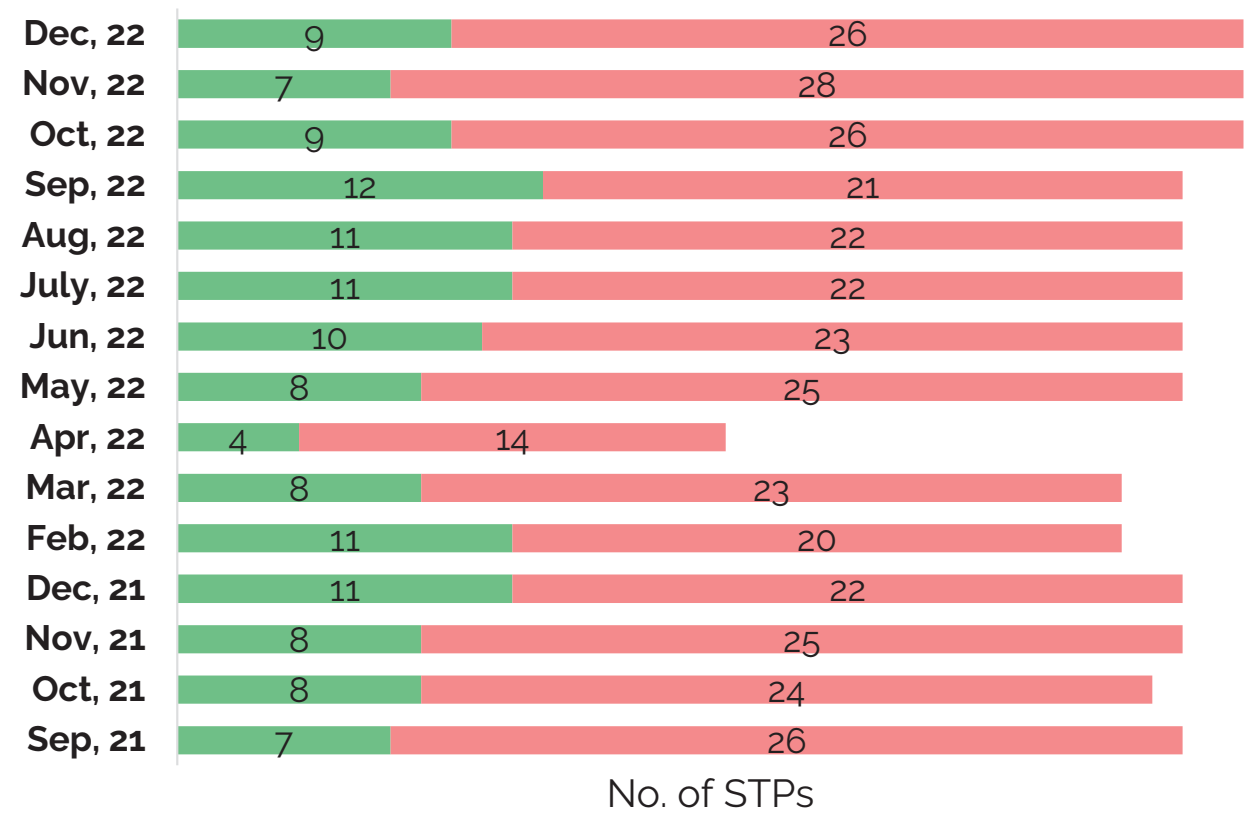


415.6/530 MGD

Water quality monitoring of STPs (35)

[SHEET LINK](#)

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



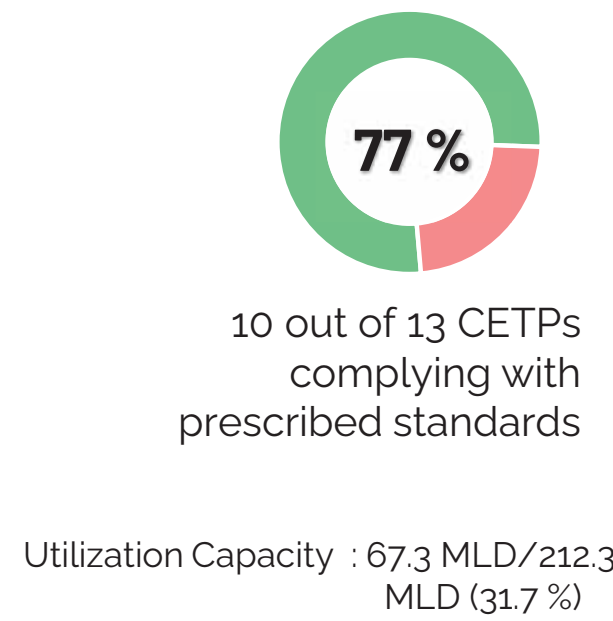
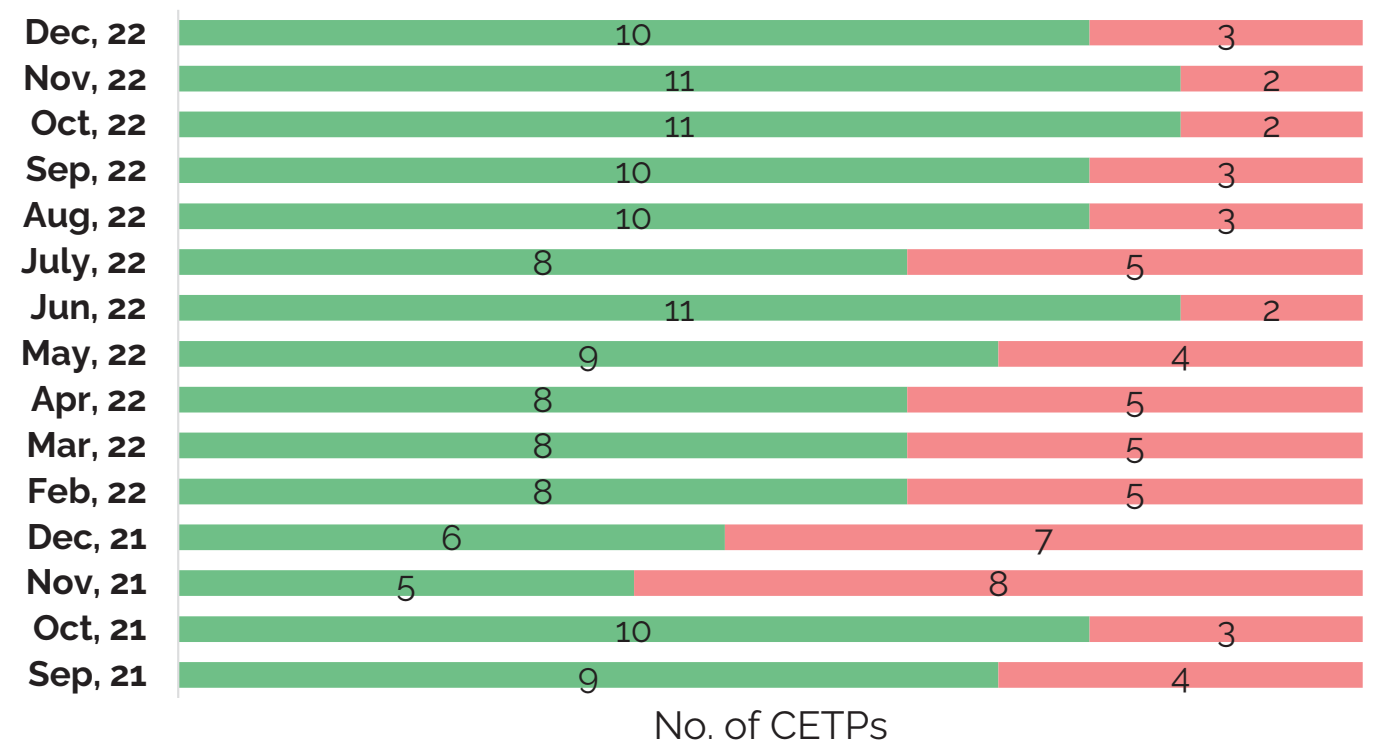


Water Quality of CETPs

Water quality monitoring of CETPs (13)

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

Compliance with prescribed standards - 30:100 (BOD:TSS)





II.

Improvement of water quality in Yamuna

Actions taken and gaps

Improvement of water quality in Yamuna

Actions taken
and gaps

1. Maintaining Environmental Flow
2. 100 Percent Treatment of Sewage
3. Tapping of all Drains
4. Sewerage Network in Unauthorised Colonies and JJ Clusters
5. Industrial Effluent Management by CETPs (13)
6. Faecal Sludge (Septage) Management
7. Regulation of Floodplain
8. Utilization of Treated Wastewater

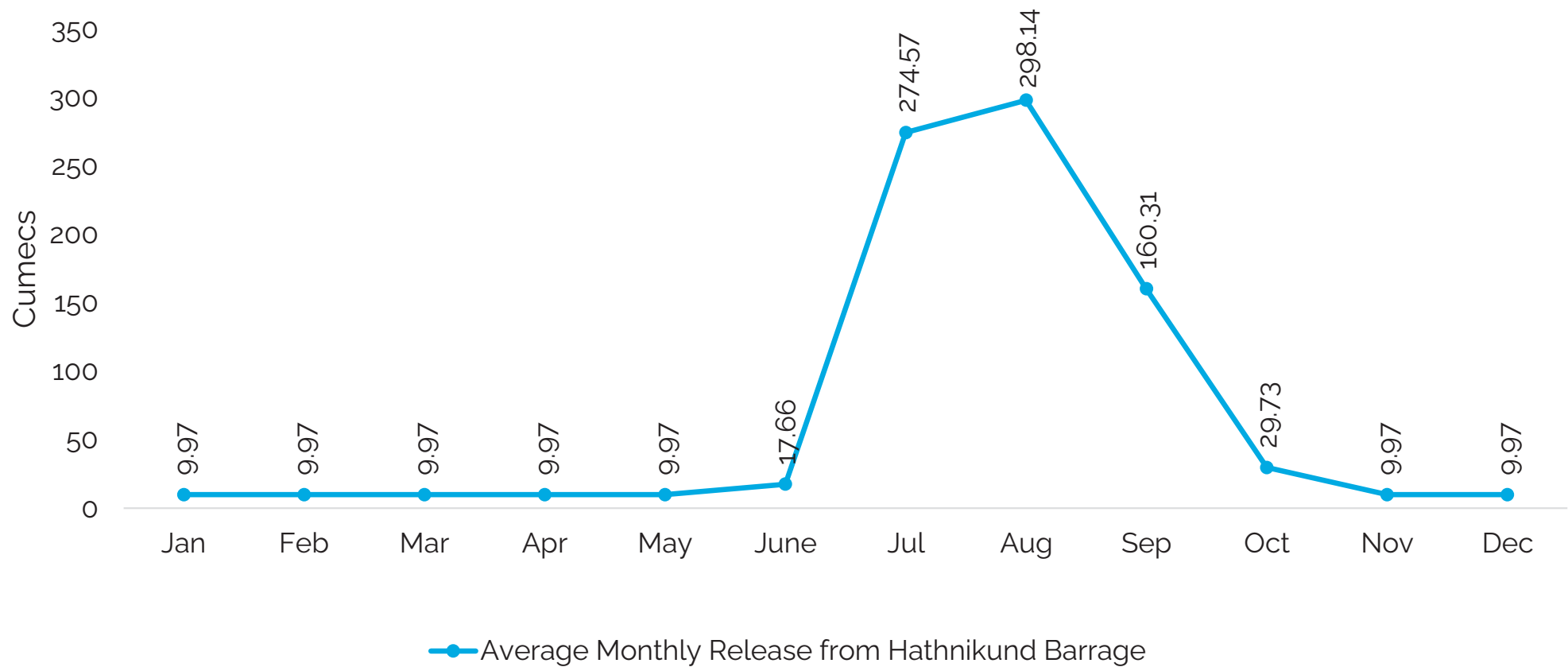
1. Minimum Environmental Flow (e-flow)

- 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 < 3 mg/l & DO > 5 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.



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

1. Minimum Environmental Flow (e-flow)



1. 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.

Hathnikund Barrage

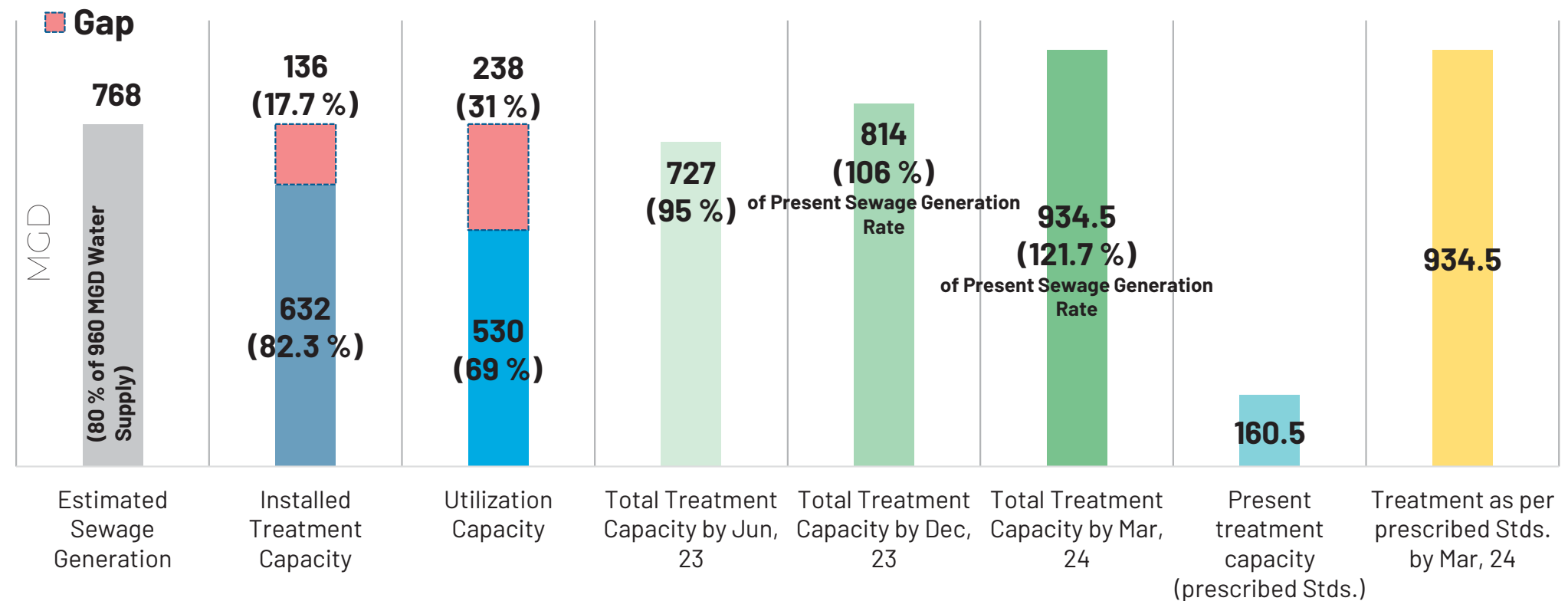


Okhla Barrage

- Under e-flow of 23 Cumecs, the 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).**

2. 100 Percent Treatment of Sewage

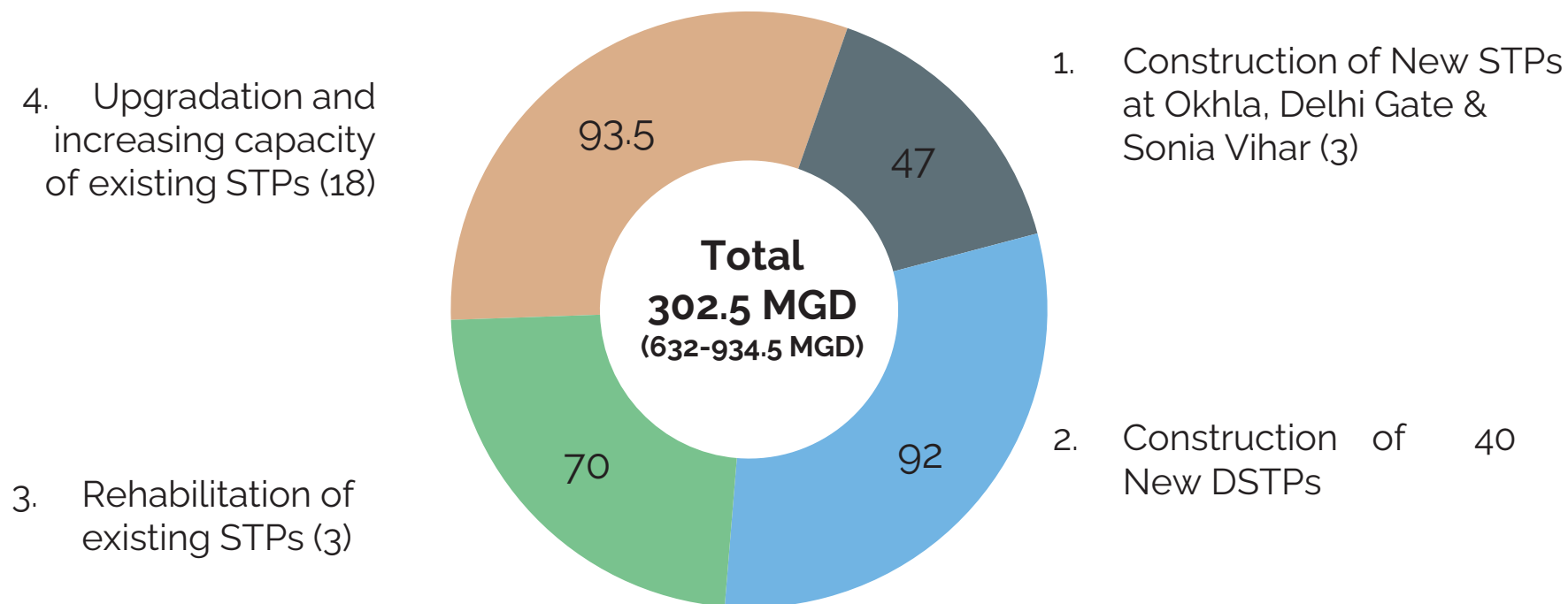
Generation, Treatment and Gap in Sewage Treatment



2. 100 Percent Treatment of Sewage

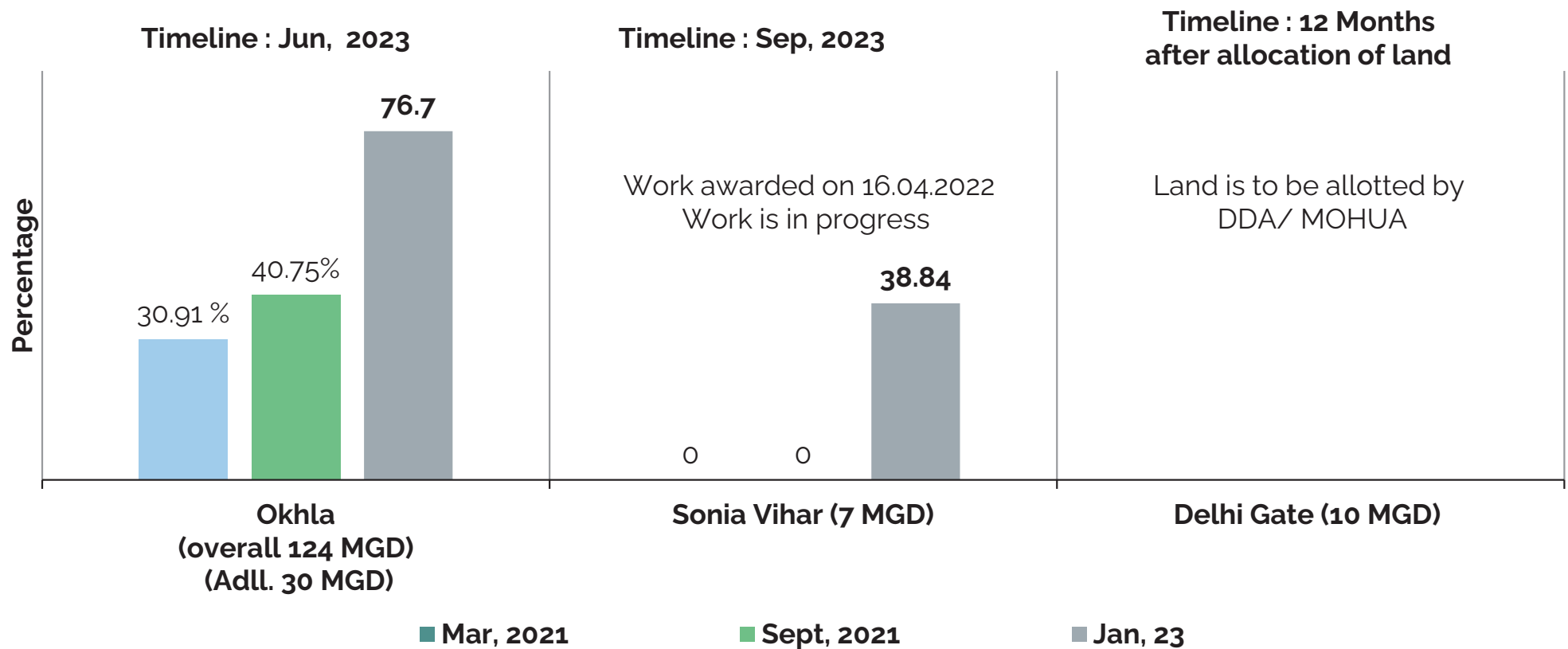
Focus Areas for Enhancing Sewage Treatment Capacity

Timeline : Mar, 24



2.1. Progress in Construction of 3 new STPs

Capacity Addition: 47 MGD

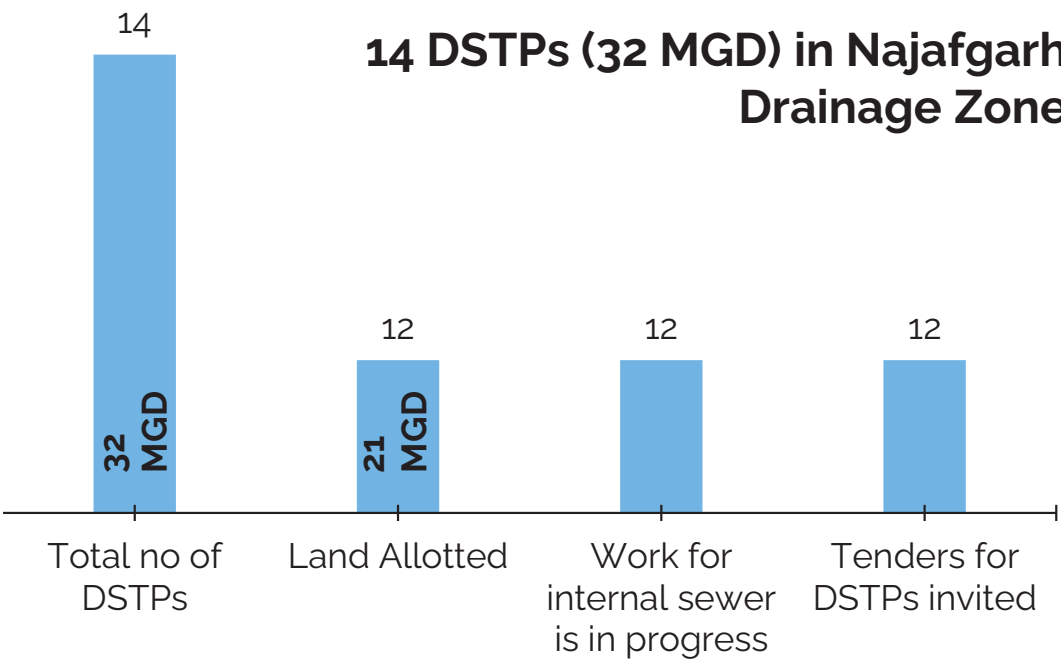
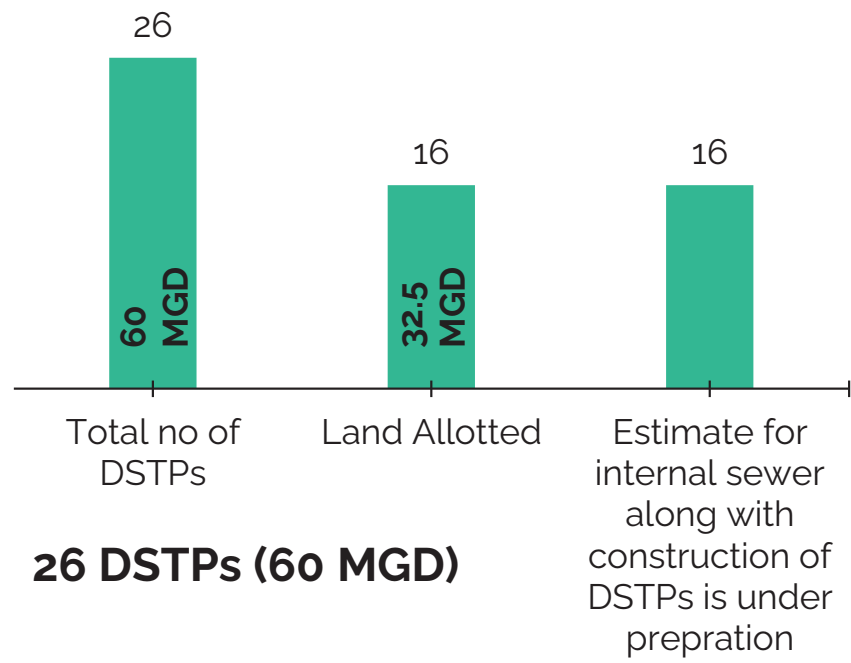


2.2. Construction of 40 New DSTPs

[SHEET LINK](#)

Capacity Addition: 92 MGD

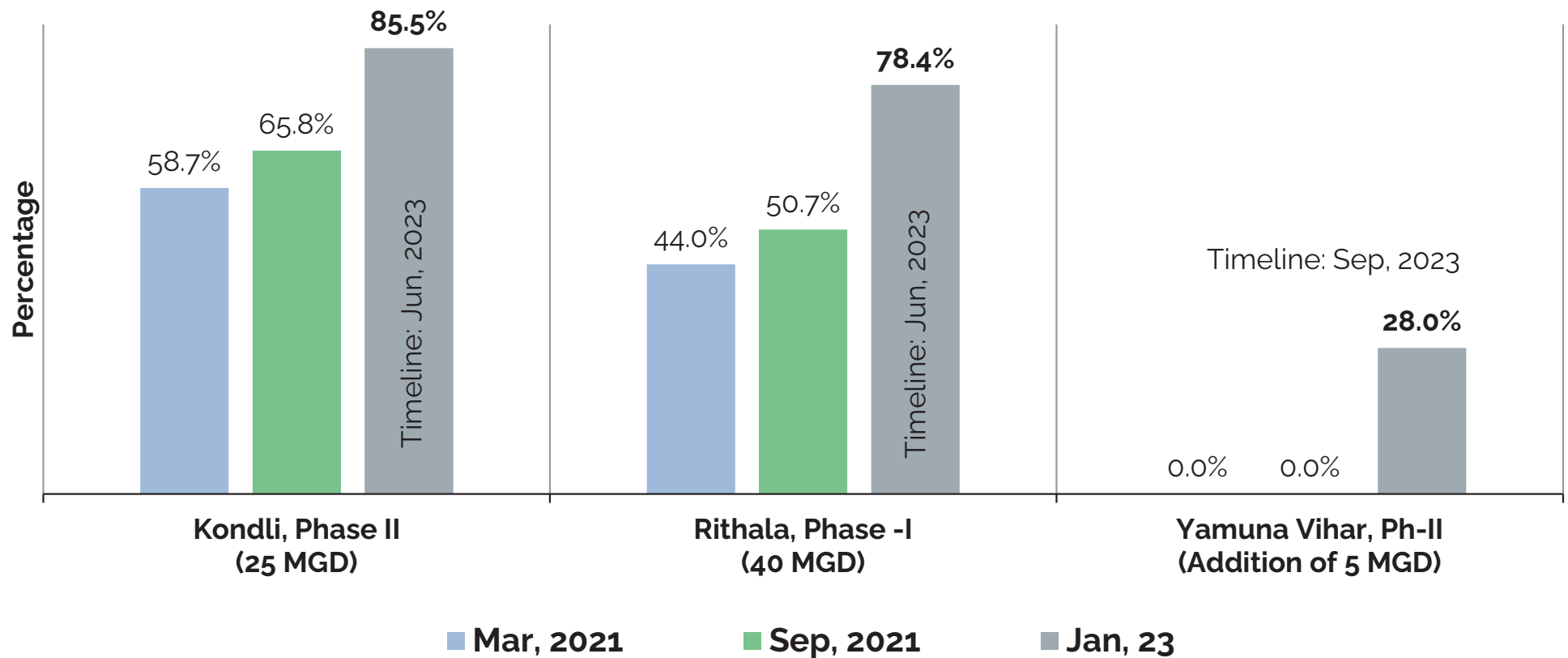
Timeline for completion – Dec, 23



$10 + 2 = 12$ *DSTPs Subject to Land availability*

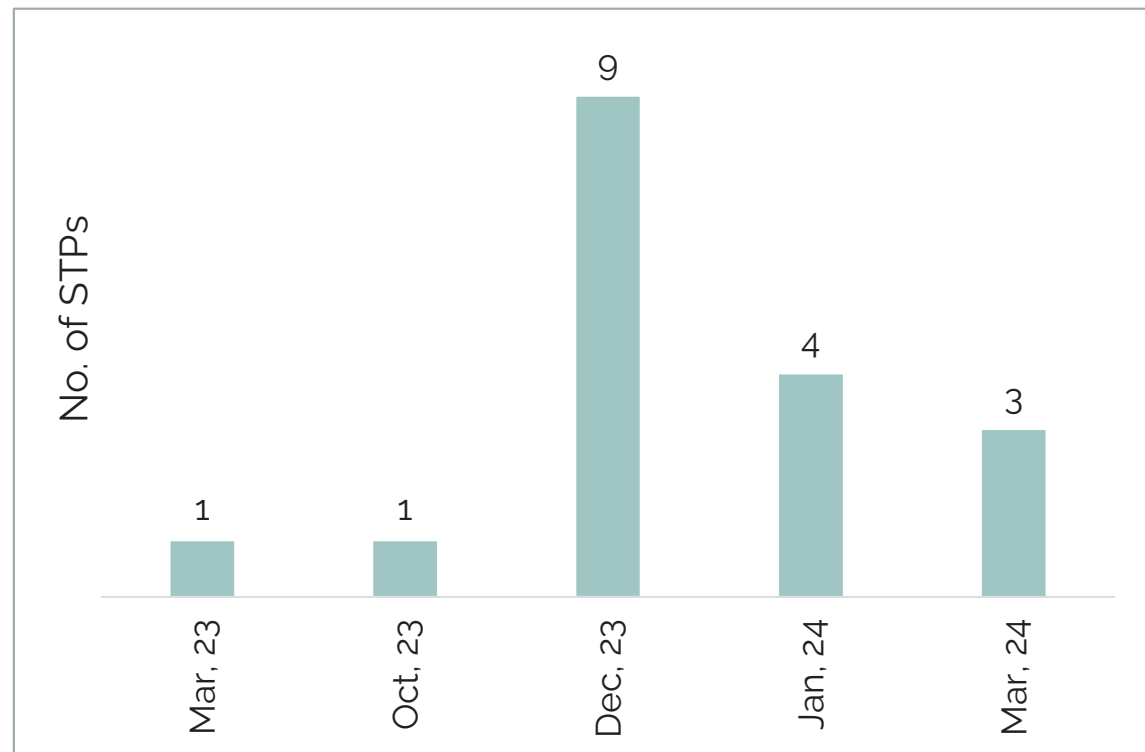
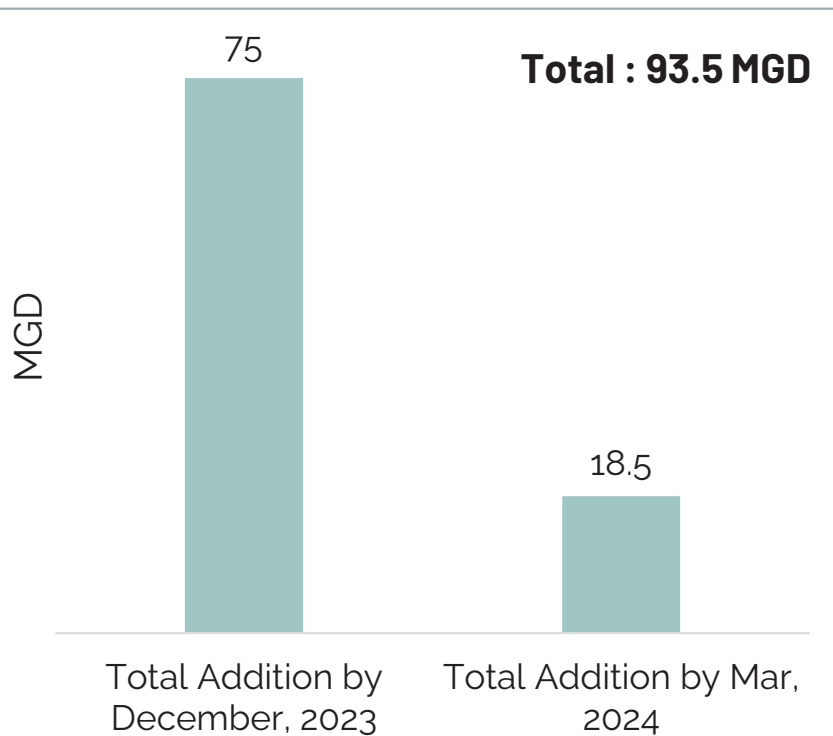
2.3. Progress in Rehabilitation of existing 3 STPs

Capacity Addition: 70 MGD



2.4. Upgradation of Existing 18 Sewage Treatment Plants

Capacity Addition: 93.5 MGD
Timeline for completion – Mar, 2024



2.4. Upgradation of Existing 18 Sewage Treatment Plants

Sr. No.	Name of STP	Existing Capacity	Enhanced Capacity (In MGD)	Status	Timelines
1.	Pappan Kalan Phase - I	20	30	Work awarded. The Concessionaire agreement signed. Special purpose vehicle (SPV) formed on 30.10.2022.	Dec, 2023
2.	Nilothi Phase -II	40	60		
3.	Najafgarh	5	5	Work awarded. The Concessionaire agreement likely to be signed by 15.01.2023	Dec, 2023
4.	Keshopur Phase -II	20	20		
5.	Keshopur Phase-III	40	60		
6.	Rohini Sector 25	15	25	Work awarded. The Concessionaire agreement signed. Special purpose vehicle (SPV) formed on 09.11.2022	Dec, 2023
7.	Narela	10	15		
8.	Coronation Pillar Phase -I & II	20	20		
9.	Coronation Pillar Phase -III	0 (Plant is non operational)	10		
10.	Yamuna Vihar Phase – I	10	15	Tenders re-invited and were due for opening on 07.11. 2022. On due date of opening no tender received. A Committee has been formed to review the Tender conditions. Tenders to be re-invited again.	Mar, 2024
11.	Yamuna Vihar Phase – III	25	25		

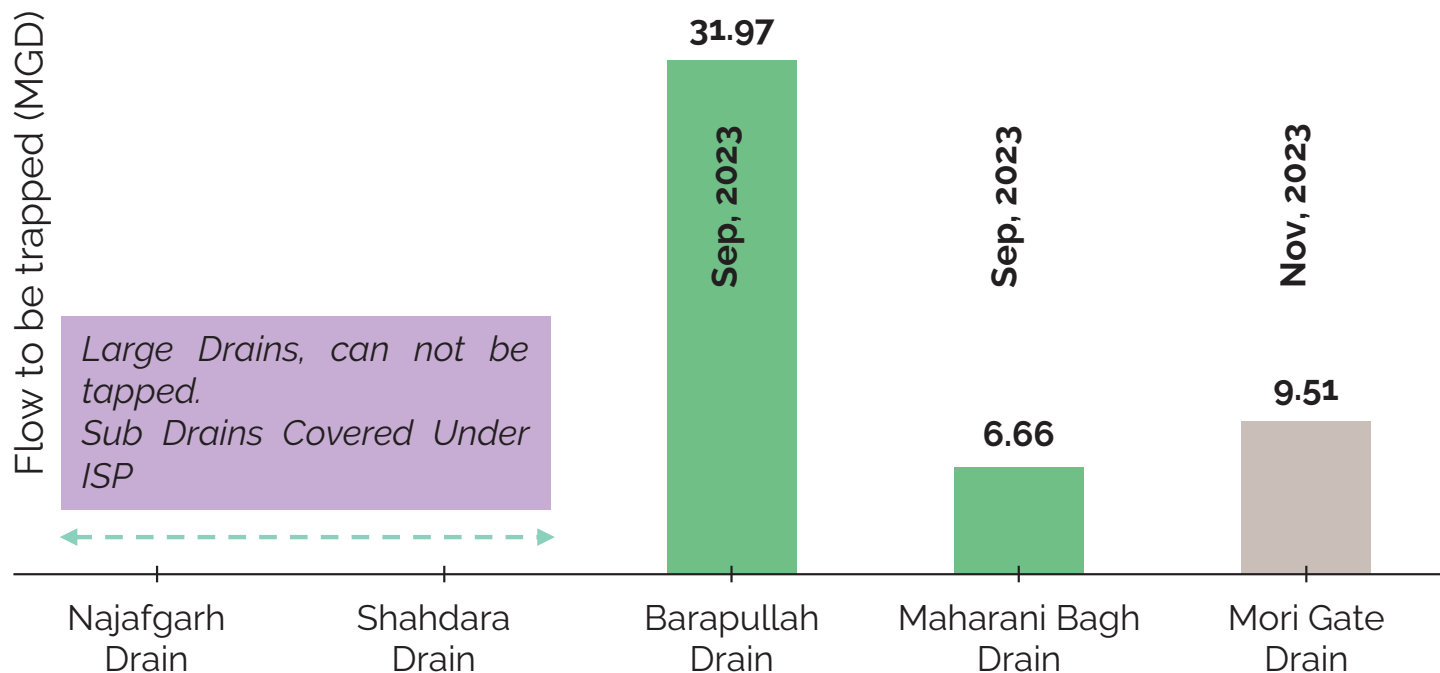
2.4. Upgradation of Existing 18 Sewage Treatment Plants

Sr. No.	Name of STP	Existing Capacity	Enhanced Capacity (In MGD)	Status	Timelines
12.	Okhla Phase- V	16	16	Tenders invited on 07.09.2022. On the due date of opening i.e. 07.11.2022, only one Tender received. Technical Evaluation is complete & matter is under process. Financial bid opened and tenders are in process of award.	Jan, 2024
13.	Mehrauli	5	7.5		
14.	Ghitorni	5	7.5		
15.	Vasant Kunj	5	7.5		
16.	Kondli Phase-IV	45	45	Work order issued, The firm has taken over the plant for rehabilitation and O&Mon 06.09.2022	Oct, 2023
17.	Keshopur Phase- I	12	18	The tenders were invited. On due date of opening i.e 12.12.2022, no tender was received. Tenders re-invited and due date is 10.01.2023.	Mar, 2024
18.	Rithala Phase -II	40	40	Work Order issued on 26.05.2022, Methodology submitted by the firm has been approved. The work is going on at the site.	Mar, 2023

3. Tapping of all Drains

Tapping of Drains (Remaining 3 untapped major drains)

Total Flow to be Trapped: 48.14 MGD



i. **Barapulla Drain (31.97 MGD)**

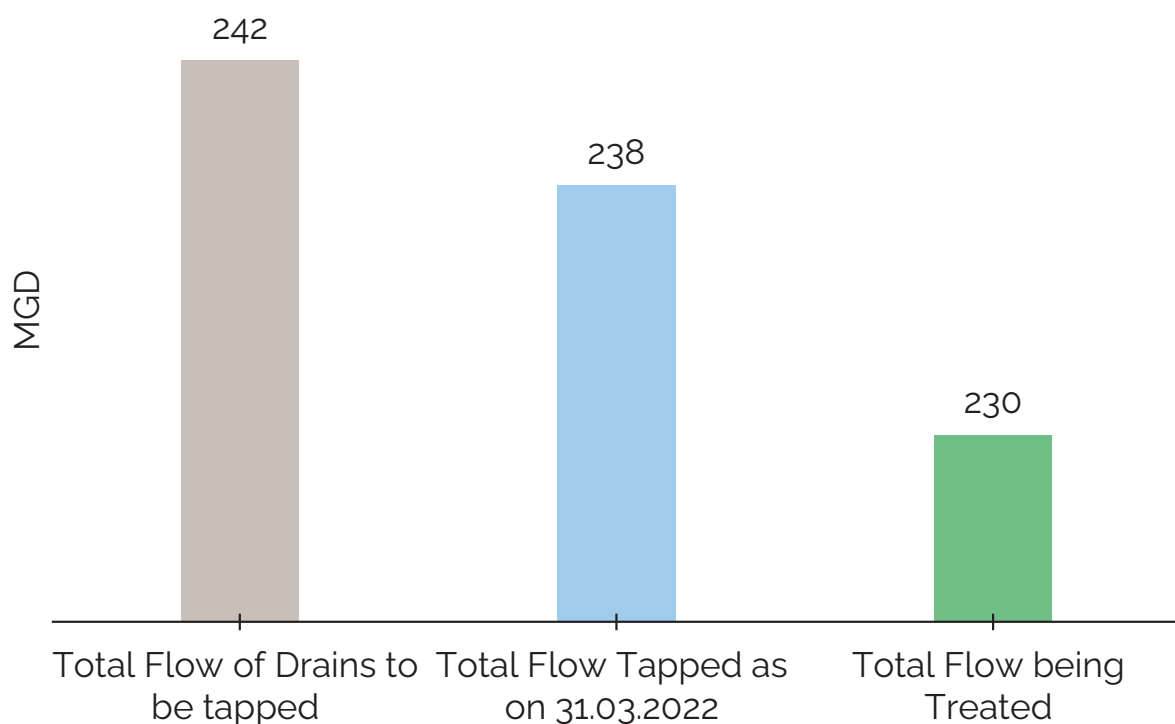
ii. **Maharani Bagh Drain (6.66 MGD)** - on going (work awarded on 16.04.2022. Work on three fronts i.e. Laying of 1200 mm dia rising main, const. of 35 MGD SPS and laying of 1800 mm dia interceptor sewer is in progress.)

ii. **Mori Gate Drain (9.51 MGD)** - on going (work awarded on 23.12.2022 and survey work in progress)

3. Tapping of all Drains

[SHEET LINK](#)

Status of Interceptor Sewer Project (ISP) of DJB



- Physical work of ISP completed and commissioned.
- 230 / 242 MGD trapped & treated (238 MGD provisioned)
- Entire flow shall be trapped and treated by June, 2023 after construction/ rehabilitation of Rithala and Kondli STPs under YAP-III.

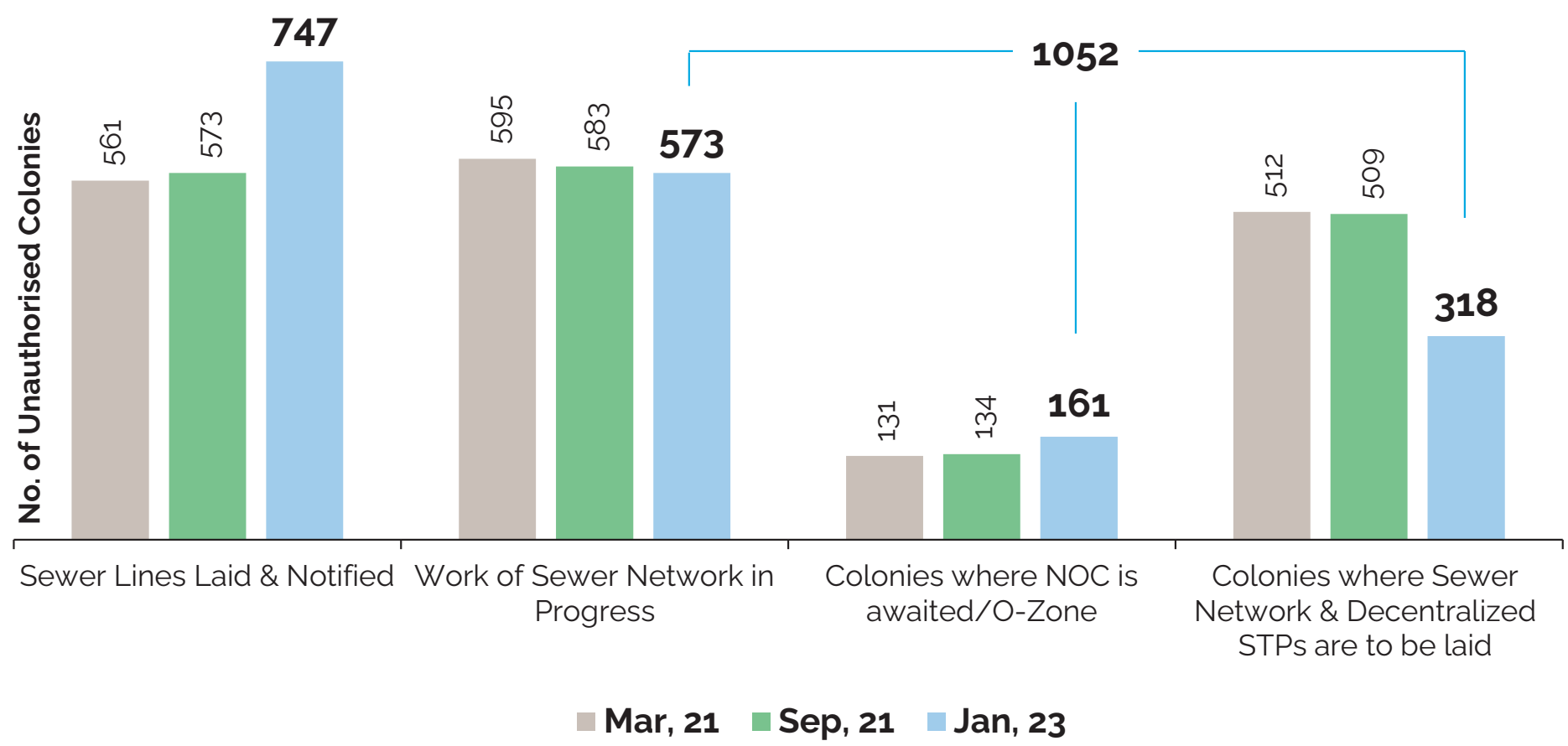
3. Tapping of all Drains

Action plan of 76 un-trapped sub drains

Sr. No.	Name of major Drain	Total number of un-trapped drains	Number of sub drains	Timeline
1.	Najafgarh Drain	44	06	Completed
			06	Jan, 23
			01	Feb, 23
			04	Mar, 23
			01	May, 23
			04	Jun, 23
			03	Nov, 23
			13	Dec, 23
			06	Others
2.	Shahdara Outfall Drain	02	02	Jun, 23
3.	Supplementary Drain	30	02	Feb, 23
			07	Mar, 23
			04	Apr, 23
			1	May, 23
			14	Jun, 23
			01	Sep, 23
			01	Others

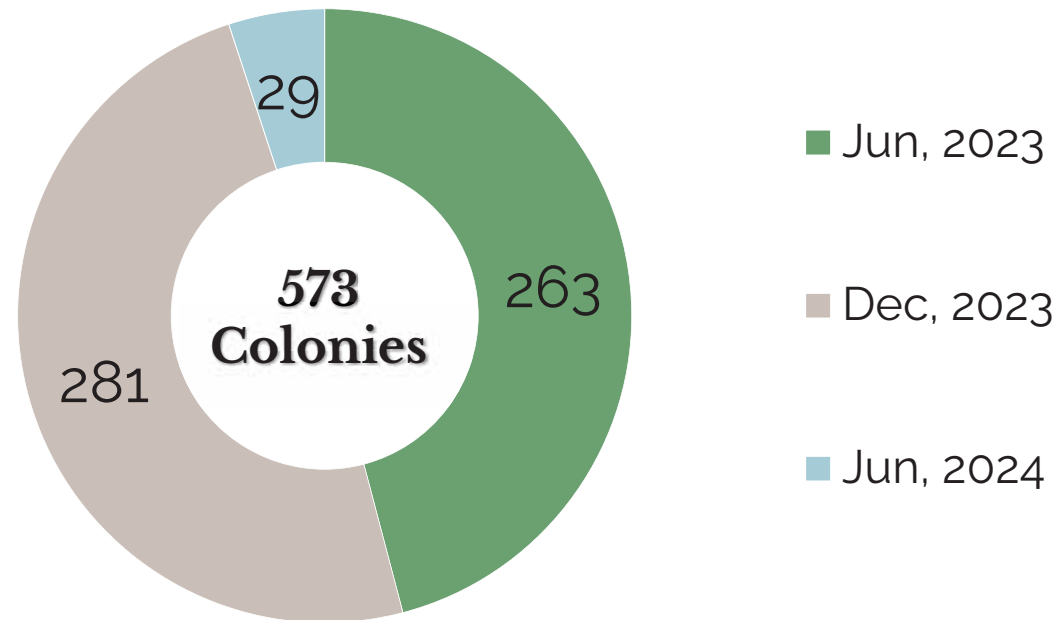
4. Sewerage Network in unauthorised colonies (1799)

[SHEET LINK](#)



4.1. Status of Sewerage Networks in Progress

573 Colonies where laying Sewer Network in progress



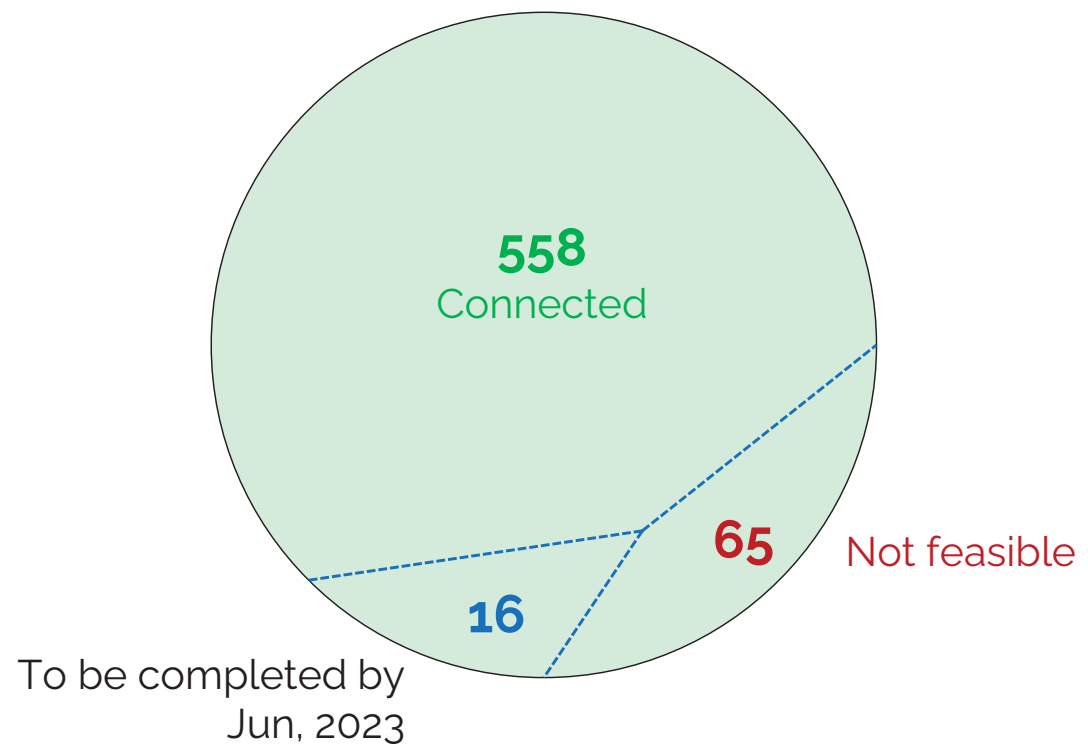
Completion by Jun, 2024 (Diversion of 100 MGD from drains to STPs)

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

[SHEET LINK](#)

Total JJs : 639

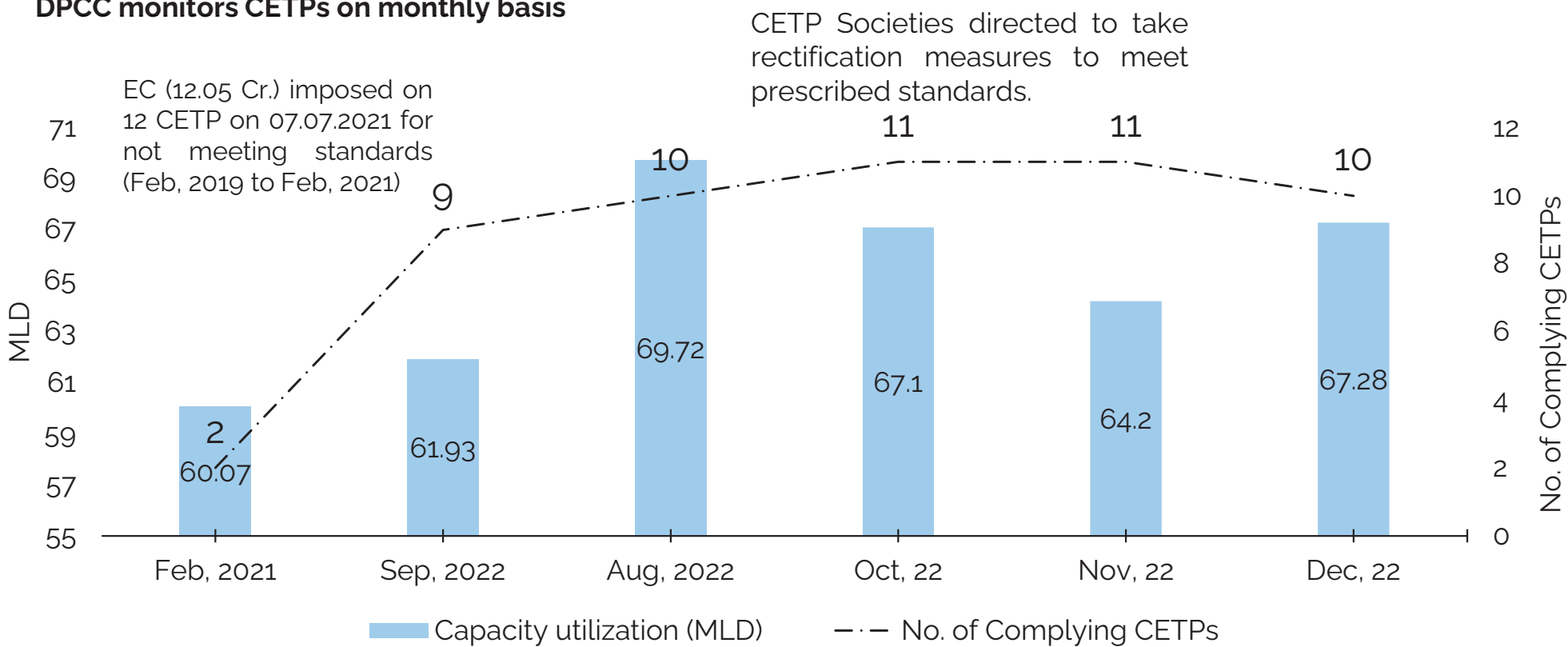
- Connection of storm water drain at outfall points/ points of JJs into nearest DJB sewerage system.
- All storm water drains out falling from JJs will be trapped into DJB sewerage system.
- **Timeline: Jun, 2023**



5. Industrial Effluent Management by CETPs (13)

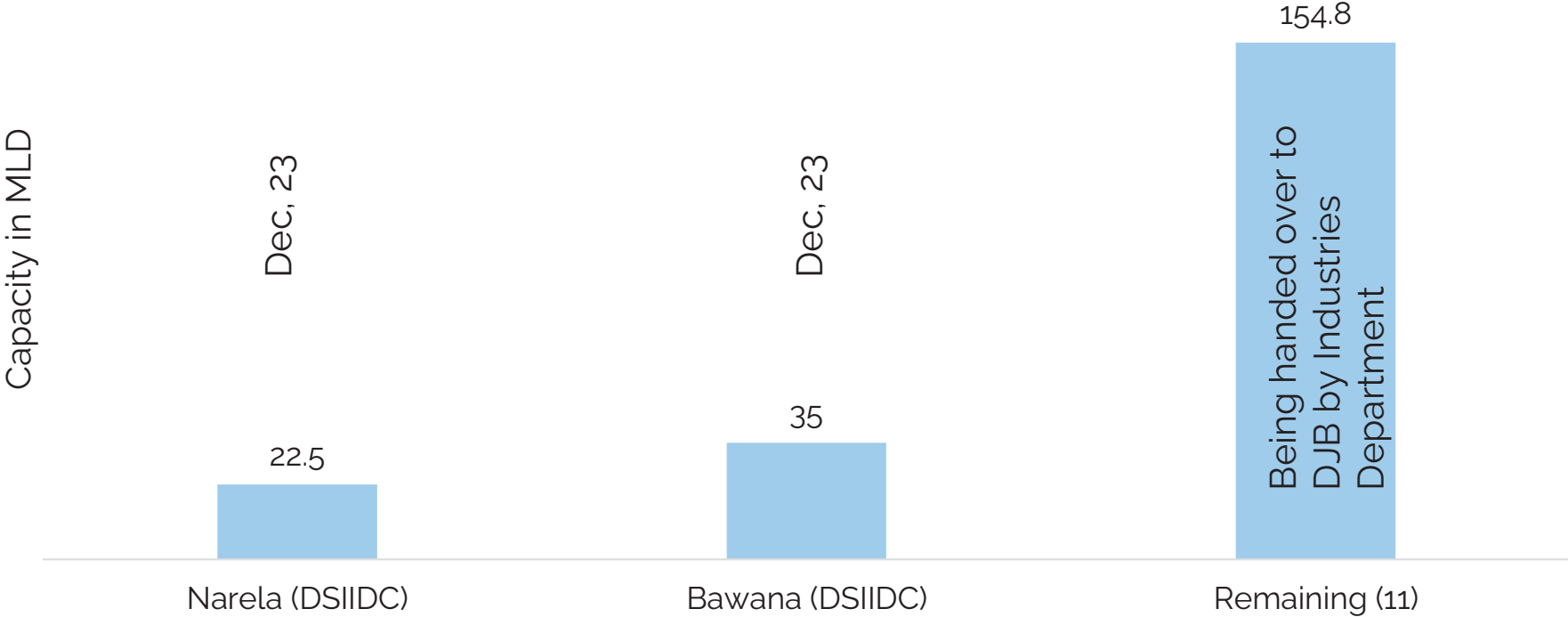
CETPs are designed to meet prescribed standards under EP Act (Installed Capacity of all the 13 CETPs: 212.3 MLD)

DPCC monitors CETPs on monthly basis



5.1. Upgradation of CETPs with Timelines

[SHEET LINK](#)



6. Faecal Sludge (Septage) Management

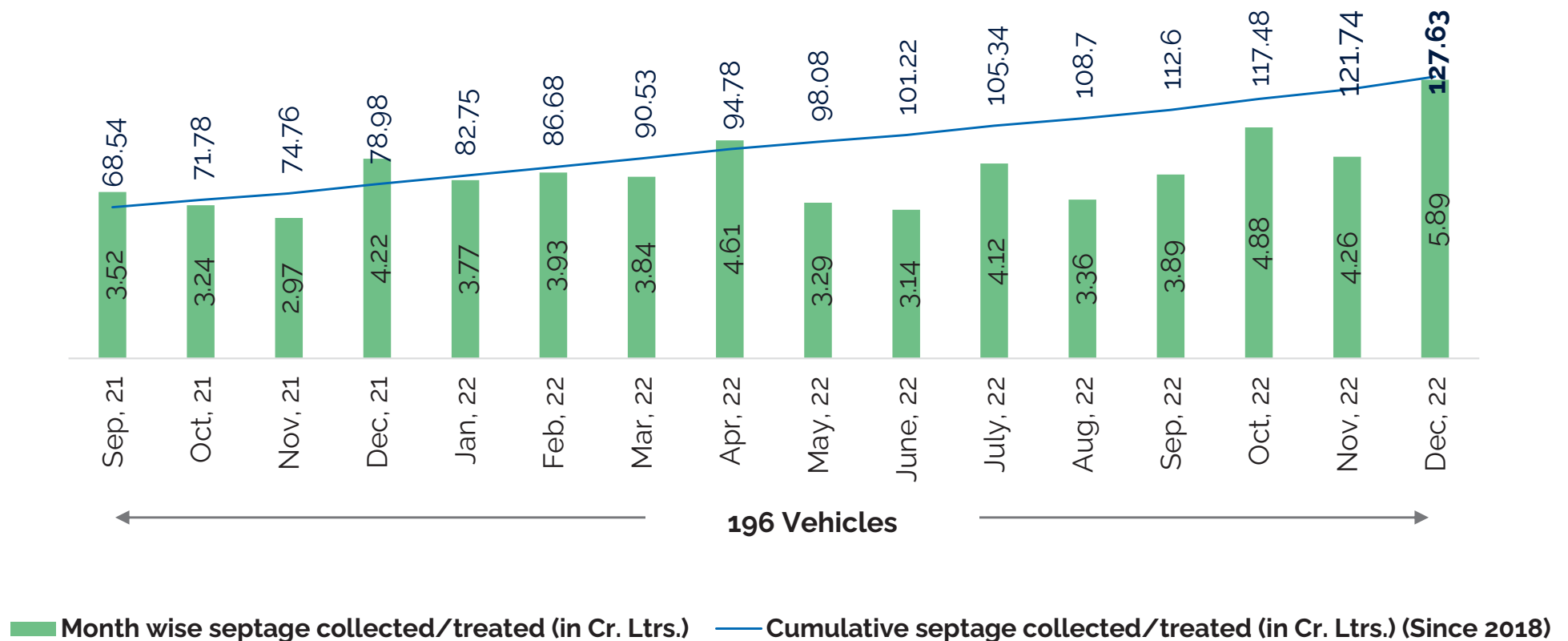
- **Delhi Water Board Septage Management Regulations 2018** dated **12.11.2018** for collection, transportation and disposal of waste of septic tanks (Septage).
- As per said Regulations , necessary action is to be taken by DJB , District Magistrates & Local Bodies
- DM - authorized to ensure enforcement 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**
- **DivCom taking review meetings with DMs on weekly basis .**

ATR (As on Date):

▪ Total No. of Meetings of Septage Management Committees held	- 68
▪ No. of Vehicles/ Tankers found unauthorizedly discharging septage into Drains etc.	- 50
▪ No. of Vehicles/ Tankers impounded	- 46
▪ No. of Challans/notices issued	- 22
▪ Total Amount of Environmental Compensation Imposed & received	- Rs 12.77 Lakh

6.1. Faecal Sludge (Septage) Collection & Treatment

127.6 Cr. Ltrs collected/treated till Dec, 22



7. Regulation of Flood plain (DDA)

Demarcation

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

Protection Measures

- 125 Security Guards
- 93 CCTV cameras at 27 locations

Enforcement

- 600 JJ/Chappar removed
- 5 Acre land reclaimed
- 42,000 MT of C&D waste lifted & utilized
- 520.29/1199.75 Ha. repossessed (7 Projects)

Restoration Projects

- Landscaping
- Wetland Construction
- Public utilities
 - Pedestrian pathways
 - Cycling tracks
 - Bio-toilets
 - Entrance plaza
 - Signage

7.1. Status of 10 Projects of DDA (Restoration & Rejuvenation of Flood Plains)



Completed Projects (Phase-I)

1. Kalindi Aviral (100 Ha)



Projects in Advance Stage

1. Asita East (197 Ha)
2. Kalindi Biodiversity Park (115 Ha)
3. Asita West (200 Ha)
4. Amrut Biodiversity Park (116.25 Ha)
5. Yamuna Vanasthali (236.5 Ha)
6. Wazirabad to Old Railway Bridge (66 Ha)



Projects in Initial Stage

1. Mayur Nature Park (397.75 Ha)
2. Eco-Tourism Area (30 Ha)
3. Hindon Sarovar (45 Ha)

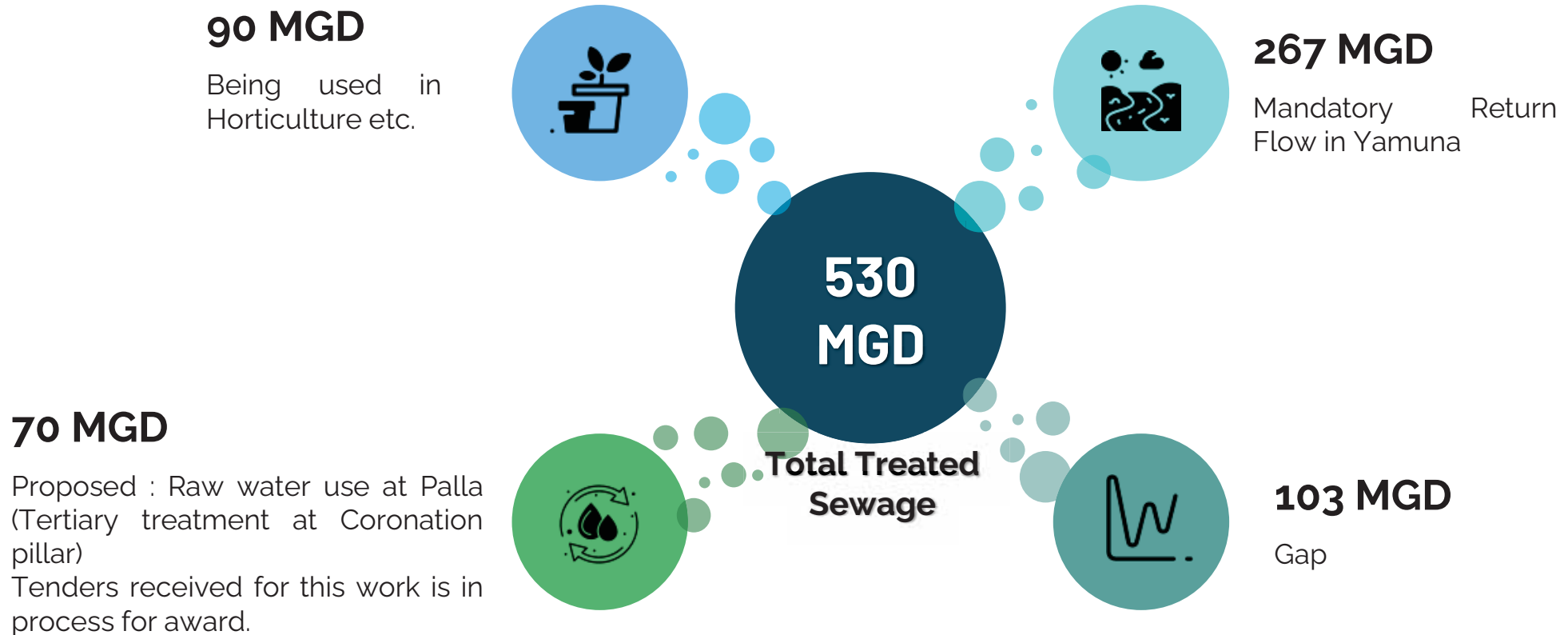
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7.2. Removal of Dhobi Ghats from Floodplains

- NGT directed to remove encroachments from Yamuna Floodplain, no construction activity in demarcated floodplain and repossessing floodplain area under illegal and unauthorized person.
- DDA to remove illegal Dhobi Ghats from the Yamuna River Banks.
- Directions issued by DPCC on 08.11.2021 for removal of Encroachment & Dhobi Ghats from the Yamuna Flood Plain .
- Letters sent to DM and DDA for removal of Dhobi Ghats.
- Also a major factor in foam formation/frothing.

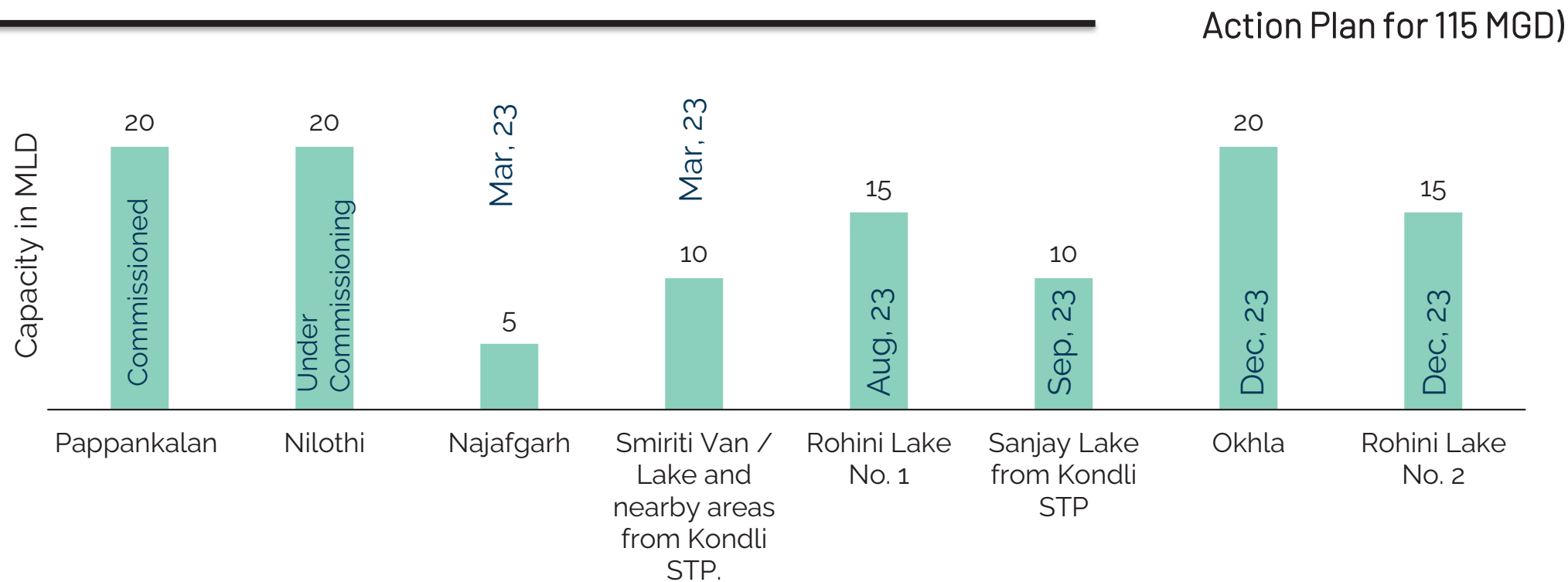
8. Utilization of Treated Wastewater

Action Plan by DJB (530 MGD)



8.1. Action Plan for Utilization 115 MGD Treated Wastewater

[SHEET LINK](#)



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.



Way Forward

1. NGT order "*Meeting of HLC at least once in every week for next six months*".
2. Weekly monitoring strategies needs to be decided.
3. Dedicated Cell to be created with hired Experts/Consultants.
4. Expeditious allotment of land parcels/permissions.
5. Similar Action Plans with regards to "other issues" be firmed up with timelines.
 - Repair and maintenance of drains.
 - Illegal Industries in non-conforming area.
 - Rejuvenation of water bodies.
6. Report to be submitted to Hon'ble NGT by 31st Jan, 2023.

A large flock of birds, possibly seagulls, is captured in flight over a body of water during sunset. The sky is a mix of blue and orange, with the sun low on the horizon. The birds are silhouetted against the bright sky. In the foreground, a small boat with two people is visible on the water.

Thank you



Department of
Environment, GNCTD

Delhi Pollution
Control Committee

