

WATER SUPPLY & SANITATION

1. Delhi Jal Board is responsible for procurement and treatment of allocated raw water to Delhi. Delhi Jal Board make bulk supply of treated potable water to Delhi Cantonment Board and NDMC for distribution in their areas of jurisdiction respectively. In the area of Municipal Corporation of Delhi, Delhi Jal Board is responsible for supply of drinking water with its own trunk, peripheral and distribution network.
2. Raw water is being made available to Delhi from Ganga River (240 MGD), Yamuna River (310 MGD), Bhakhra Beas Management Board (140 MGD). About 115 MGD of ground water is being explored through Ranney Wells and Tube Wells of Delhi Jal Board.
3. As per Yamuna Water Sharing Agreement signed in 1994, among the Northern Region States of Himachal Pradesh, Haryana, Uttar Pradesh, Punjab and Delhi, 0.724 BCM Yamuna water was allocated to Delhi. Uttrakhand was part of the Uttar Pradesh at that time. This share is divided into 3 blocks period of the year i.e. July to October, November to February and March to June. Delhi may get its full share of 0.724 BCM (808 Cusecs consumptive) only after construction of 3 new reservoirs in the upper Yamuna Basin Area. These 3 new proposed reservoirs are : Renuka Dam on River Giri, a tributary of Yamuna in Sirmaur District of Himachal Pradesh, Kishau Dam on river Tons, also a tributary of Yamuna river in Uttrakhand and Lakhwar-Vyasi Dam on river Yamuna near Lakhwar village in District Dehradun of Uttrakhand.
4. Govt. of Delhi paid an amount of ` 215 Cr. to the HP Govt. for land acquisition for Renuka Reservoir. The DPR of the project has already been prepared and approved. Earlier entire cost of the construction of Renuka Reservoir was to be financed by Delhi Govt. Now Renuka Reservoir project has been declared as a national project and as such the Govt. of India will finance the cost of its construction. However, construction work of this project could not be started as clearance from Ministry of Environment and Forest is still awaited. About 275 MGD raw water will be made available to Delhi on construction of this reservoir.
5. The construction of Kishau Dam through Tehri Hydro Development Corporation and Lakhwar-Vyasi Dam through National Hydro Power Corporation is also yet to be started.
6. The ground water, the only resource available to fill the gap between drinking water requirement of the National Capital Territory and the raw water available is in a very critical condition as the pace of ground water recharge is far behind the pace of ground water exploration. Delhi Jal Board is very much concern on this scenario of very fast depleting ground water level in Delhi. Delhi Govt. prepared draft Delhi Water Board (Amendment) Bill 2006 which is yet to be approved by Delhi Legislative Assembly.
7. On sewerage front NDMC and Delhi Cantonment Board, the two local bodies are responsible for providing sewerage facilities in their respective areas. For the area under jurisdiction of MCD, DJB is responsible for providing sewerage facilities. Since more than 95% of the total area is within the jurisdiction of DJB, the total sewage treatment is being taken care of by DJB.

8. At present, the sewage treatment capacity of all 17 treatment plants is 544.72 MGD. However, actual treatment capacity utilization is around 360 MGD of sewage only.

The statement showing Proposed Outlay for 12th FYP and 2013-14 is given here under:

[` in crore]

Particulars	Revised Outlay 2012-13	Funds Released 2012-13	2013-14 Proposed Outlay
Urban water Supply	961.25	952.98	880.00
Rural Water Supply	12.00	12.00	10.00
Urban Sanitation	410.00	385.70	385.00
Rural Sanitation	17.00	17.00	20.00
YAP-II	23.0	23.00	-
YAP-III	5.00	5.00	30.00
JNNURM	321.55	321.55	336.80
Others	0.20	0.20	3.20
Total	1750.00	1717.43	1665.00
Total Outlay	15000.00	15000.00	16000.00
% w.r.t. Total Outlay	11.66%	11.44%	9.60%

The Scheme-wise details of Water Supply & Sanitation Sector are given below:

WATER SUPPLY

1. PROVIDING WATER SUPPLY IN UNAUTHORIZED COLONIES

Annual Plan Outlay 2013-14 : ` 8000 Lakh

Piped Water Supply network has been extended in 776 unauthorized colonies. To give immediate relief to public in pockets/ areas with water shortage, additional tubewells have been bored/ re-bored and about 900 water tankers will be deployed for supplying potable water to far-flung areas, JJ Clusters, rural villages; re-settlement Colonies, unauthorized colonies and deficit prone areas. It is proposed to provide piped water supply in 60 more unauthorized colonies during the year 2013-14. New Tanker Management System has been introduced and work has been awarded and it will be in place in current financial year.

2. REPLACEMENT OF OLD DISTRIBUTION AND TRUNK TRANSMISSION SYSTEM

Annual Plan Outlay 2013-14 : ` 15000 Lakh

DJB has undertaken major works for replacement of critical stretches of water main in leakage prone portions especially of pre-stressed concrete (PSC). It is proposed to add 35 km of new water lines and replace 150 km of old water lines.

3. IMPROVEMENTS OF EXISTING WATER WORKS

Annual Plan Outlay 2013-14 : ₹ 15000 Lakh

The renovation of coagulation and filtration system at Chandrawal WTP no 1 is in progress and const. of boundary wall at proposed WTP at Palla will be taken up. Further, three pilot projects have been awarded proposed i.e. Vasant Vihar, Malviya Nagar and Nangloi WTP for improvement of water service delivery based on PPP Model.

4. RANNEY WELLS & TUBE WELLS IN URBAN AREAS

Annual Plan Outlay 2013-14 : ₹ 1500 Lakh

About 115 MGD of ground water is being explored through Ranney Wells and Tube Wells of Delhi Jal Board.

5. STAFF QUARTERS & OFFICE ACCOMMODATION

Annual Plan Outlay 2013-14 : ₹ 500 Lakh

A provision of ₹ 5 crore has been kept for construction of quarters at Chandrawal as well as training and consumers centers.

6. LAYING OF WATER MAINS IN REGULARIZED UNAUTHORIZED COLONIES

Annual Plan Outlay 2013-14 : ₹ 200 Lakh

A provision of ₹ 2 crore has been kept for laying of water mains in regularized unauthorized colonies.

7. RAW WATER ARRANGEMENTS

Annual Plan Outlay 2013-14 : ₹ 15000 Lakh

- a) To bridge this gap of around 200 MGD in raw water needs, DJB has been pursuing the matter of construction of 3 upstream storage dam projects (Renuka, Kishau and Lakshwarvyasi) on River Yamuna in close cooperation with other basin states. Of these, the Renuka dam project which will provide Delhi around 275 MGD of water as per 1994 MOU. The project awaits environmental clearance and DJB paid ₹ 214.83 cr to Himachal Pradesh for conducting initial studies and for land acquisition. All the 3 projects have been declared National Projects recently by the Government of India.
- b) CWC has submitted the pre-feasibility report (PFR) for additional barrage at Palla. This work will be taken up for projectization through consensus among all basin states. Such barrage will store monsoon period flows apart from being an anti flood measure.

- c) A parallel lined Canal from Munak to Haiderpur (102 Kms) has been constructed through Irrigation Department, Government of Haryana at a cost of ₹ 525 cr (as projected by Haryana. This saved water will enable Delhi to run the WTPs at Bawana (20MGD), Dwarka (50MGD) and Okhla (20MGD). DJB released ₹ 414 crores upto date to Haryana. DJB is also pursuing the matter of release of additional supply of raw water accrued on account of saving of 80 MGD enroute seepage losses through Munak Canal with Haryana.
- d) Further provision of ₹ 95crores has been kept for payment of Delhi share of Hathnikund Barrage and payment of raw water as well as raw water mains from WZD to Okhla, Link mains of Haiderpur & WZD and Twin water main to Dwarka.

8. DISTRIBUTION MAINS AND RESERVOIRS

Annual Plan Outlay 2013-14 : ₹ 15000 Lakh

For ensuring optimal utilization of available water and its equitable distribution, DJB planned to construct 53 additional underground (UGRs). Out of these, 37 UGRs are already commissioned. 4 will commissioned during the year 2013-14. For balance 3, DJB is liasioning with DDA and DC offices for provision of adequate plots of land. The action against balance 9 reservoirs will be taken in subsequent years.

9. WATER SUPPLY IN URBAN VILLAGES

Annual Plan Outlay 2013-14 : ₹ 1000 Lakh

A provision of ₹ 10.00 crore has been kept for water supply in 135 Urban Villages.

10. WATER SUPPLY IN RE-SETTLEMENT COLONIES

Annual Plan Outlay 2013-14 : ₹ 370 Lakh

A provision of ₹ 3.70 crore has been kept for water supply in 44 Resettlement Colonies.

11. AUGMENTATION OF WATER SUPPLY IN JJ CLUSTER

Annual Plan Outlay 2013-14 : ₹ 80 Lakh

A provision of ₹ 0.80 crore has been kept for water supply in 643 JJ Cluster.

12. INFORMATION TECHNOLOGY INFRASTRUCTURE/CAPACITY BUILDING

Annual Plan Outlay 2013-14 : ₹ 300 Lakh

A provision of ₹ 3.00 crore has been kept for improvement of Revenue Management System through Information Technology.

13. CONSTRUCTION OF 31 MGD WATER TREATMENT PLANT AT PALLA

Annual Plan Outlay 2013-14 : ₹ 5000 Lakh

Total estimated cost of the project is ₹ 370.00 crore. The target date of completion of project is 3 years. The underground water will be used for this plant. A provision of ₹ 50.00 crore has been made in 2013-14.

14. WATER QUALITY CONTROL

Annual Plan Outlay 2013-14 : ₹ 300 Lakh

A provision of ₹ 3.00 crore has been kept for testing of Quality of Water for which testing operator have been appointed.

15. METERING AND LEAKAGE MANAGEMENT

Annual Plan Outlay 2013-14 : ₹ 7000 Lakh

DJB has started installation of latest technology based bulk meters on all raw water mains and on water distribution mains going out of the WTPs. DJB installed 86 meters at all WTPs. Further, DJB is vigorously proceeding with supply and installation of 305 bulk meters at the inlet and outlet points of all the existing UGRs as well as on the direct tapping from the rising mains upto colony level. All the 305 bulk meters have been procured and of these 282 bulk meters have been installed. DJB has also taken initiative for providing GSM technology based bulk consumer meters. Tenders for procurement and installation of the same are likely to be invited shortly.

DJB will emphasize on full domestic metering and streamlining of internal revenue processes. Further administrative approval for supply, installation and maintenance of 7 years for 8 lacs domestic meters in 2 phases has been accorded by the Board. Tenders have been invited for phase-I comprising of procurement and installation of 4 lacs domestic AMR water meters. It is likely to complete the metering of all domestic and commercial meters by 2014.

16. ENVIRONMENTAL GREENERY & LANDSCAPING

Annual Plan Outlay 2013-14 : ₹ 250 Lakh

A provision of ₹ 2.50 crore has been kept for maintenance of plants and filling of land scaping.

17. EAP FUNDING – REHABILITATION OF CHANDRAWAL WTP & ITS COMMAND AREA

Annual Plan Outlay 2013-14 : ₹ 3500 Lakh

DJB, through JICA Technical study, has framed Master Plan for water supply 2021 based on water demand of all areas. The Master Plan has been developed for extension of rehabilitation of water supply facilities (new reservoirs, Treatment Plants new

command areas and transmission network) by considering three water availability scenarios. Further rehabilitation of Chandrawal WTP command area has been proposed which includes rehabilitation of treatment plant, transmission/distribution mains, service pipes and meters. The project cost is around ₹ 2018 crore. The loan agreement has been signed between JICA & GOI. Expression of interest for appointment of consultant has been invited. ACA of ₹ 33.12 crore has been claimed from GOI.

18. RURAL WATER SUPPLY

Annual Plan Outlay 2013-14 : ₹ 1000 Lakh

A provision of ₹ 10.00 crore has been kept for supply of water through tankers/pipe line in rural areas.

B. Sewerage Sector

Present Status: Presently Delhi Jal Board is supplying about 847 MGD of potable water to citizens of Delhi from all the sources i.e. surface water from riparian states like U.P., Himachal & Haryana as well as ground water and have an installed capacity of 544.72 MGD to treat the waste water generated. The Delhi Jal Board has prepared Water Supply Master Plan for the year 2021 and shall be taking up projects accordingly. The projected water demand for 2021 for a population of 230 lacs @ 60 gpcd works out to 1380 MGD. The shortfall of around 440 MGD by 2021 will need to be met through construction of the upstream storage dam projects of Renuka, Kishau and Lakhwarvyasi. However, till such time as that happens sewage generation for water supply of 941 MGD will be 750 MGD approx. DJB is also getting Delhi Sewerage Master Plan for the year 2031 prepared by M/s AECOM, the consultants.

As per the availability of water supply, the scenario in r/o sewerage will be as under (as 80% of water is converted into sewage as per CPHEEO norms):

Year	Population (Lakh)	Availability (MGD)	Available treatment capacity (MGD)	Sewage generated @ 80% of water supply (MGD)
2007	150	775	512.40	620
2012	170	940	614.40	750
2021	230	940	745.40	750

The present sewage treatment capacity is 544.72 MGD. An additional capacity of 75 MGD is being achieved through construction of STP at Kondli (45 MGD), Kapashera (5 MGD) and Yamuna Vihar (25 MGD) bringing up the treatment capacity of sewage to 619.72 MGD. The treatment capacity will be augmented further to 746.72 MGD by setting up STPs at Coronation Pillar(40 MGD), Pappan Kalan(20 MGD), Nilothi(20 MGD), Delhi Gate(15 MGD), Delhi Cantt.(8MGD), , Chilla (9MGD) and Delhi Gate Phase-II(15 MGD).

De-centralized treatment plants will also be set up in rural villages/unauthorized colonies/unsewered areas which will bring up the sewage treatment capacity to 760 MGD approx. (besides this, a capacity of 40 MGD for treatment of industrial effluent is available with the DSIIDC). This will make a total treatment capacity of 760 MGD against the requirement of 750 MGD. DJB has 18 wastewater treatments Plants. Sewage treatment plants (STPs) are at Okhla, Keshopur, Coronation Pillar, Kondli, Rithala, Vasant Kunj, Yamuna Vihar, Ghitorni, Narela, Pappan Kalan, Najafgarh, Delhi gate nallah, Sen Nursing Home nallah, Rohini, Nilothi CWG village, and Mehrauli. Oxidation ponds have also been made at Timarpur. The industrial wastewater generation is 40 MGD.

DJB has a network of 7000 km of sewers with 192 km of trunk network and about 1508 km of peripheral network. There are 42 major SPSs across Delhi. As the estimated wastewater generation is 680 MGD, ever since inception, DJB has strived to augment sewage treatment capacity which has increased from 334 MGD to 544.72 MGD.

The existing 18 sewerage treatment plants (STP) are not currently being utilized to their optimum capacity due to blockage of sewers, settlement of old and deteriorated sewers and extensive unsewered areas. Only about 55% of the population is connected to the sewerage network. Thus of the estimated 640 MGD of wastewater generation, only 360 MGD is getting treated at 18 wastewater treatment plants which have installed capacity of 544.72 MGD.

In recent times, the sewerage services have been under strain in wake of explosive unplanned population growth and growing water resource scarcity. The obvious manifestations are the increasing generation - treatment gap, poor quality of treatment and low quality of water in river Yamuna. This is also manifested in the Service Level Benchmarks.

Proposed Indicator	Benchmark	Status
Coverage of Waste Water Network Services	100%	55 %
Collection Efficiency of Waste Water Network	100%	65 %
Adequacy of waste water treatment capacity	100%	89%
Quality of waste water treatment	100%	94.6 %
Extent of recycling of treated waste water	20%	35 %
Efficiency in redressal of customer complaints	80%	80 %
Efficiency in collection of sewerage charges	90%	85 %

** SLB Handbook of Ministry of Urban Development*

As is apparent, the sewerage services need to be enhanced by improving network coverage, transmission and treatment efficiencies and metering / zonal data. Hence DJB is further working on following initiatives for better sewerage facilities for the capital:-

(i) TRUNK SEWERS

Annual Plan Outlay 2013-14 : ₹ 3100 Lakh

There is a network of 192 km of trunk sewers in Delhi of which 105 km trunk sewers needed rehabilitation/ desilting. Of these, 50 km of Trunk sewers have been desilted / rehabilitated. To rectify the silted / settled trunk sewers and ensure optimal utilization of all STPs, DJB has already completed rehabilitation (desilting and relining) of its critical trunk sewerage network in different packages. Some of the important trunk sewers in this category are Ring Road, University, North, West Delhi Relieving Trunk Sewer, Punjabi Bagh, Jail Road and Bela Road Sewer which have been rehabilitated which has resulted in positive impact on capacity utilization of all STPs, especially in North and West Delhi.

(ii) SEWAGE TREATMENT PLANTS

Annual Plan Outlay 2013-14 : ₹ 12500 Lakh

As estimated waste water generation is 680 MGD, DJB is augmenting capacity by 75 MGD through 45 MGD STP at Kondli, 25 MGD STP at Yamuna Vihar ,5 MGD STP at Kapashera by 2013 and thereby raising the installed capacity to 619.72 MGD. About 84% of Construction work of Yamuna Vihar STP and 99% of 45 MGD STP at Kondli has been completed. Work for construction of 50 MGD capacity SPS and construction of 90 MGD Effluent Pumping Station at Yamuna Vihar is in advance stage of completion.

(iii) RENOVATION OF EXISTING PLANTS & PUMPING STATIONS

Annual Plan Outlay 2013-14 : ₹ 7500 Lakh

Construction of SPS at Possengipur is in advance stage of completion. Pappankalan & Nilothe are in progress & STP at Coronation & Delhi Gate is proposed.

(iv) SEWERAGE SYSTEM IN REGULARIZED UN-AUTHORIZED COLONIES

Annual Plan Outlay 2013-14 : ₹ 10000 Lakh

DJB is gradually extending sewerage system to 46% unsewered area, viz. 1639 unauthorized colonies, 135 Urban villages, 112 Rural villages and 44 unauthorized regularized colonies.

- a) **REGULARISED COLONIES:** Out of 567 earlier Unauthorized/Regularized Colonies, 541 colonies have been provided sewerage facilities till December, 2012.
- b) **UNAUTHORIZED COLONIES:** Government of NCT of Delhi took decision to provide basic services like water supply, sewerage, sanitation and roads in 1639 unauthorized colonies. Out of 1639 colonies, sewerage facility is provided in 98 colonies for remaining colonies, the consultant M/s AECOM is preparing schemes of laying of sewerage system. Now 895 Un-authorized colonies have been regularized and laying of sewer lines in these colonies shall be taken up in a phased manner.

(v) SEWERAGE FACILITIES IN URBAN VILLAGES

Annual Plan Outlay 2013-14 : ₹ 100 Lakh

Urban Villages: Out of 135 Urban Villages, 111 villages have been provided sewerage facilities.

(vi) SEWERAGE FACILITIES IN RESETTLEMENT COLONIES

Annual Plan Outlay 2013-14 : ₹ 300 Lakh

A provision of ₹ 3.00 crore has been kept for sewerage facilities in 44 resettlement colonies.

(vii) SEWERAGE FACILITIES IN UNAUTHORIZED COLONIES

Annual Plan Outlay 2013-14 : ₹ 5000 Lakh

A provision of ₹ 50.00 crore has been kept for sewerage facilities in 1639 un-authorized colonies. Out of which the work in 98 colonies has been completed. Now, 895 unauthorized colonies have been regularized. Laying of sewer lines in these colonies shall be taken up in phase manner.

(viii) SEWERAGE FACILITIES IN RURAL VILLAGES

Annual Plan Outlay 2013-14 : ₹ 2000 Lakh

Rural Villages: For providing sewerage facilities in the 112 rural villages. Sewerage works in 34 villages have been completed. Work in 10 villages are under execution. Lands at 47 locations of Gram Sabha have been allotted. Further allotment of land for construction of STP/ WSP/ SPS is being pursued with DDA, Revenue & Land & Building departments.

(ix) TRANS YAMUNA AREA DEVELOPMENT BOARD

Annual Plan Outlay 2013-14 : ₹ 300 Lakh

A provision of ₹ 3.00 crore has been kept for Trans Yamuna Area Development Board.

(x) JNNURM PROJECTS [₹ 33680 Lakh]

(a) REHABILITATION OF TRUNK SEWER

Annual Plan Outlay 2013-14 : ₹ 880 Lakh

(b) INTERCEPTOR SEWER

Annual Plan Outlay 2013-14 : ₹ 23760 Lakh

(c) MODIFICATION OF SEWERAGE PROJECTS- NILOTHI & PAPPANKALAN

Annual Plan Outlay 2013-14 : ₹ 9040 Lakh

The project - Rehabilitation of Trunk Sewer has been completed. The provision has been made against ACA amount to be released by GOI.

An innovative solution to deal with the pollution in river Yamuna was evolved by DJB and has been widely endorsed. This involves laying of interceptor sewer along the Najafgarh Drain, Supplementary Drains and Shahdara Drain (total length 59 kms). The interceptor sewer will be laid along these drains below the bed level of the drains and all the drains carrying wastewater from unsewered areas will be trapped and conveyed to the existing STPs. The project has been designed in such a way that the interceptor sewer works as the trunk sewer for the presently unsewered areas in long term. Further DJB has strived to ensure that this project complements with its ongoing and mid-term sewerage projects. The project was appraised by CPHEEO and recommended to the Ministry of Urban Development for sanction of ₹ 1357.71cr under JNNURM. The Expenditure Finance Committee of the central Government has accorded approval for funding in January, 2010 and CCI has also approved in May 2010. The works of 6 packages have been awarded to three different agencies in July, 2011 with stipulated period of completion of 36 months. Average 28% work has been completed so far.

(xii) **YAMUNA ACTION PLAN PHASE- III**

Annual Plan Outlay 2013-14 : ₹ 3000 Lakh

The STPs at Okhla, Kondli, Coronation Pillar and Rithala as also the SPSs at Kilokri, Ring Road, Haiderpuri, Jagriti and Preet Vihar are quite old. Refurbishment & modernization of existing sewer network and Sewerage Treatment Plants for improving conveyance efficiency of sewer network and for enhancing treatment effectiveness and quality is being taken up in 3 sewerage zones of Kondli, Okhla and Rithala under YAP – III. The STPs at Kondli, Okhla and Rithala for which a proposal of ₹ 1664 crore has already been approved with JICA funding to the tune of 85% consultants for the project have been appointed who are working on various aspects so that the works can be taken up. Existing STPs will be up graded as per the norms laid by Ministry of Environment & Forests / CPCB / DPCC. These projects will be taken up in 2013.

(xiii) **WATER CONSERVATION MISSION**

Annual Plan Outlay 2013-14 : ₹ 20 Lakh

A provision of ₹ 20 lakh has been kept for Water Conservation Mission.