

## CHAPTER 13

### WATER SUPPLY AND SEWERAGE

Water supply and sewerage are essential components of the civic infrastructure and also to ensure good public health status. The population of Delhi increased from 138.51 lakh in 2001 to 167.53 lakh in 2011 and expected to reach 190 Lakhs by March 2017. Besides domestic use of water, water is also required for industries, commercial, institutions, parks and gardens and for fire fighting purposes.

2. To meet the growing requirement of water due to the increase in population at a rapid rate, Delhi Jal Board (DJB) is planning to increase the water supply and treatment capacity in every Five Year Plan. Efforts are being made by the Government for an equitable and adequate Water Supply in all parts of the NCT of Delhi by laying of new water lines, construction of UGRs, construction of new Water Treatment Plants, etc.
3. The water treatment and supply capacity, which was 66 MGD in 1956, was raised to 240 MGD in 1979, 437 MGD in 1990, 650 MGD in 2002 and 855 MGD in 2012.
4. As per 2011 census, 33.41 lakh households were in Delhi, out of which 27.16 lakh households were provided piped water supply system. About 4.61 lakh households were getting water supply through tube wells/ deep bore hand pumps/ public hydrants and remaining 1.64 lakh households depended on other sources like river, canal, ponds, tank, spring, etc. The information regarding the households availing the sources of water in Delhi as per 2011 census is presented in Statement 13.1.

#### Statement 13.1

#### DISTRIBUTION OF HOUSEHOLDS BY AVAILABILITY OF DRINKING WATER FACILITY & SOURCE IN DELHI

No	Source and Availability of Drinking Water	Households (%)
<b>I. Sources</b>		
1.	<b>Piped Water Supply System</b>	<b>81.30</b>
	a. From Treated Source	75.20
	b. From Untreated Source	6.10
2.	Covered Well	0.10
3.	Hand pump	5.30
4.	Tube Well	8.40
5.	Tank, Pond, Lake	1.20
6.	Other Sources	3.70
<b>II. Availability</b>		
1.	Within the Premises	78.40
2.	Near the Premises	15.40
3.	Away	6.20

Source: - Census of India, 2011, Houses, Household Amenities and Assets.

## 5. Water Requirement

- 5.1** Based on the norm of 60 Gallon Per Capita per Day (GPCD) as per Central Public Health and Environmental Engineering Organization (CPHEEO), Ministry of Urban Development, Government of India norms, the total requirement of water in March 2011 was 1020 MGD. The detail regarding water requirement norms is presented in Statement 13.2.

**Statement 13.2**  
**DETAILS OF WATER REQUIREMENT NORMS - DJB**

Sl. No	Details	Requirement of Water
1	Domestic	172 LPCD
2	Industrial, Commercial and Community requirement based on 45000 liters per hectare per day	47 LPCD
3	Fire protection based on 1% of the total demand	3 LPCD
4	Floating population and special uses like Hotels and Embassies	52 LPCD
	<b>Total</b>	<b>274 LPCD (60 GPCD)</b>

Source: - Delhi Jal Board

- 5.2** Master Plan of Delhi-2021 prepared by Delhi Development Authority proposed water requirement with the norm of 80 Gallon Per Capita Per Day (GPCD), out of which 50 GPCD is for domestic requirement and 30 GPCD for non-domestic purposes. The domestic water requirement of 50 GPCD comprises of 30 GPCD for potable needs and 20 GPCD for non-potable water.

**Statement 13.3**  
**WATER REQUIREMENT NORMS- AS PER MPD 2021**

Sl. No	Norms	Quantum (GPCD)		Sources of Non-potable Water
		Potable	Non-potable	
1.	<b>Domestic @50 GPCD</b>	<b>30</b>	<b>20</b>	--
	Residential	30	20	Recycling & Permissible Ground Water Extraction at Community Level
2.	<b>Non-domestic @30 GPCD</b>	<b>5</b>	<b>25</b>	
	a. Irrigation, Horticulture, Recreational, Construction, Fire @6.65LPCD	-	10	Recycling from Sewerage Treatment Plants (STPs) and Permissible Ground Water Extraction
	b. Public, Semi-Public, Industrial and Commercial	5	15	Recycling from Common Effluent Treatment Plants (CETPs)
	<b>Total @ 80 GPCD</b>	<b>35</b>	<b>45</b>	

Source: -Delhi Jal Board

- 5.3 With the norms of 60 GPCD, water supply requirement, for projected population of 190 Lakhs in 2017 in Delhi, will be around 1140 MGD.

## 6. Water Supply Capacity

### Statement 13.4

#### INSTALLED CAPACITY OF WATER TREATMENT PLANTS: 2006-2012

(As on 31<sup>st</sup> March)

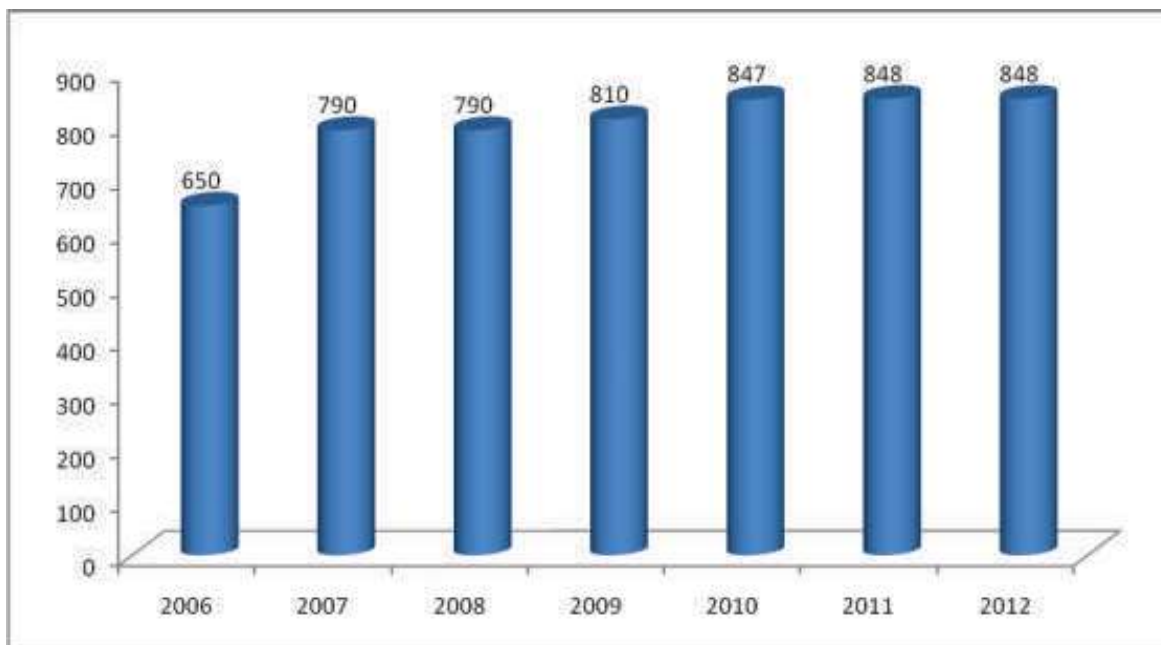
Sl. No	Name of Plants	Capacity (MGD)						
		2006	2007	2008	2009	2010	2011	2012
1.	Chandrawal Water House No I & II	90	90	90	90	90	90	90
2.	Wazirabad I, II & III	120	120	120	120	120	120	120
3.	Haiderpur	200	200	200	200	200	200	200
4.	North Shahdara (Bhagirathi)	100	100	100	100	100	100	100
5.	Bawana	--	--	--	20	20	20	20
6.	Nangloi	40	40	40	40	40	40	40
7.	Sonia Vihar	--	140	140	140	140	140	140
8.	Ranney Wells & Tube Wells	100	100	100	100	100	100	100
9.	Recycling of Water at Bhagirathi, Haiderpur & Wazirabad	--	--	--	--	37	37	37
10	Commonwealth Games Village	--	--	--	--	--	1	1
	<b>Total</b>	<b>650</b>	<b>790</b>	<b>790</b>	<b>810</b>	<b>847</b>	<b>848</b>	<b>848</b>

Source: - Delhi Jal Board

**6.1** The installed treatment capacity of Water in Delhi during 2006-12 is depicted in Chart 13.1.

**Chart 13.1**  
**INSTALLED TREATMENT CAPACITY OF WATER TREATMENT PLANTS**  
**DELHI- 2006-2012**

(MGD)



**6.2** During the 11<sup>th</sup> Five Year Plan, two new Water Treatment Plants were proposed to be constructed at Dwarka (50 MGD) and Okhla (20 MGD). Raw water for the two plants would be available on construction of the pucca parallel channel from Munak to Haiderpur.

## 7. Water Consumption

**7.1** Delhi Jal Board supplies treated water in bulk to the New Delhi Municipal Council (NDMC) and to the Delhi Cantonment Board (DCB), both of which are responsible for the distribution of water within their own territories. The provision of water in the areas under three Municipal Corporations of Delhi is the responsibility of Delhi Jal Board.

**7.2** During 2010-12, water production by DJB was 845 MGD with water obtained from a range of sources such as river Yamuna, Bhakra Storage, Upper Ganga Canal and from underground water resources. The billed quantity of water during the year 2009-10 was at 255.53 MGD with marginal increase of 0.94 MGD as compared to 2009-10.

**7.3** The information regarding water supplied and billed to various categories of consumers by Delhi Jal Board during 2007-08 and 2009-10 is presented in Statement 13.5.

**Statement 13.5**  
**CATEGORY-WISE WATER CONNECTIONS, SALES AND  
 PERCENTAGE OF SALES**

Sl. No	Category	Connections		Sales (MGD)		% of Sales	
		2007-08	2009-10	2007-08	2009-10	2007-08	2009-10
1.	Domestic	15,37,931	16,61,356	194.46	196.34	76.38	77.14
2.	Commercial & Institutional	1,15,635	1,01,595	20.70	17.46	8.14	6.86
3.	Industrial	22,888	22,073	5.87	4.60	2.30	1.81
	<b>Sub Total</b>	<b>16,76,454</b>	<b>17,85,024</b>	<b>221.03</b>	<b>218.40</b>	<b>86.82</b>	<b>85.81</b>
4.	Supply to NDMC & DCB	--		33.56	37.13	13.18	14.19
	<b>Total</b>	<b>16,76,454</b>	<b>17,85,024</b>	<b>254.59</b>	<b>255.53</b>	<b>100.00</b>	<b>100.00</b>

Source: - Delhi Jal Board

**7.4** The information regarding water consumption in Delhi covering number of connections, domestic, commercial and industrial consumption is presented in Table 13.1.

## 8. Water Resources

The water supply treatment plants of Delhi Jal Board treated 725 MGD surface water and 100 MGD ground water as on March, 2011. The water resources of Delhi Jal Board are indicated in Statement 13.6.

**Statement 13.6**  
**WATER RESOURCES OF DELHI JAL BOARD**

(As on March 2011)

Sl. No	Resources	Quantity (MGD)
1	Yamuna River	310
2	Ganga River	240
3	Bhakra Storage	140
	<b>Sub-Total</b>	<b>690</b>
4	Rainy Wells/Tube Wells (Ground Water)	115
	<b>Total</b>	<b>805</b>

Source: - Delhi Jal Board

## 9. Ground Water

- 9.1** The decreasing ground water level in Delhi has become a matter of serious concern. At some places in South and South West Delhi, the water level has gone 20-30 meter below the ground level. The quality of underground water is deteriorating in several places. It has been found to be unfit for human consumption. The salinity of ground water is increasing in South-West and North-West Delhi. In some areas of Shahdara and Kanjhawala, Nitrate content has been found to be more than 1000 mg/ liter. Fluoride and chemical concentrations, more than prescribed limits, have also been found in ground water at various locations in Delhi. To tackle these problems, the Central Ground Water Board has taken steps to regulate the number of tube-wells being commissioned in Delhi.
- 9.2** As on March 2012, Delhi Jal Board has 2636 functional Tube wells including re-boring of 65 tube wells and 21 Ranney Wells. The Flood prone area upstream of Wazirabad barrage is being exploited for commissioning of more tube wells by DJB. The deepening of old lakes and other water bodies, preserving and developing the forest area in Delhi, construction of check dams at Asola Wild Life Sanctuary and plantation of trees, are some of the steps being taken to improve ground water resources.

## 10. Parallel Channel from Munak to Haiderpur

About 30-50 per cent of the raw water discharged from Tajewala Head works is lost in the present water carrier system through the Yamuna River and the Western Yamuna Canal system. To prevent this loss, a parallel pucca channel is under construction from Munak to Haiderpur. This channel of 102 kms. Length is being constructed by the Haryana Government. The estimated cost is ₹ 525 crore. The entire cost of the project will be financed by Delhi Government. Water availability will increase by 80 MGD on construction of this channel. A stretch of around only 250 meter has not been completed by Haryana Government inspite of repeated requests at all levels.

## 11. Reservoirs

- 11.1** Renuka Dam, Kishau Dam and Lakhwar Vyasi Dam are proposed to be constructed so that Delhi gets its share in Yamuna water as per Yamuna Water Sharing Agreement signed in May, 1994. The approved allocation of Yamuna water to each state is presented in Statement No. 13.7. About 275 MGD water will be available to Delhi from Renuka Dam. Delhi will also get 372 MGD water from Kishau reservoir and 135 MGD from Lakhwar Vyasi reservoir.

**Statement 13.7**  
**APPROVED ALLOCATION OF WATER FROM**  
**YAMUNA RIVER TO STATES**

Sl. No.	States	Allocation (BCM)			Total(BCM)
		July to Oct.	Nov. to Feb	March to June	
1	Haryana	4.107	0.686	0.937	5.730
2	Uttar Pradesh	3.216	0.343	0.473	4.032
3	Rajasthan	0.963	0.070	0.086	1.119
4	Himachal Pradesh	0.190	0.108	0.080	0.378
5	Delhi	<b>0.580</b> (Consumptive 1926+495 return flow) or <b>2421</b> cusec	<b>0.068</b> (Consumptive 231+495 return flow) or <b>726</b> cusec	<b>0.076</b> (Consumptive 255+495 return flow) or <b>750</b> cusec	<b>0.724</b> (Consumptive 806+495 return flow) or <b>2350</b> cusec

Source: - Delhi Jal Board

Note: - BCM Billion Cubic Meter.

- 11.2** For augmenting the raw water from Renuka Dam, Ministry of Environment and Forest raised the issue of environmental clearance from the angle of felling of trees. Presently, Himachal Pradesh Government is undertaking a fresh survey of the area so as to find out the exact number of full grown trees that would require felling on account of development of Renuka Dam. The Government of NCT of Delhi expects that the issues would get resolved and start actual project construction at the earliest.

## 12. Water Accounting and Auditing

- 12.1** Till now Delhi Jal Board was using old system for measuring the quantity of raw water available at water treatment plants and the quantity of treated water supplied by treatment plants for distribution. Similar, was the position at underground water tanks, reservoir and booster pumping stations. Due to this system, Delhi Jal Board was not able to assess exact amount of water distribution losses. To overcome this situation, Delhi Jal Board has started a comprehensive programme for installation of bulk meters at all water treatment plants. About 282 bulk meters have already been installed upto December 2012.
- 12.2** Delhi Jal Board has also decided to install bulk meters on all distribution mains, underground reservoirs and booster pumping stations for correct measurement of water supply from these points upto different localities / consumer points.

**12.3** Complete and correct water supply accounting could not be maintained by Delhi Jal Board due to the following facts;

- As on 1<sup>st</sup> April 2012, there were 3.99 Lakh un-metered connections.(Table 13.1)
- Around 4.00 lakh meters were defective or non-functional.
- Fixing of maximum average of 20 KL/30 KL per month (as the case may be) for domestic consumers, if water meters are non-functional and till defective water meter is replaced.

**12.4** Delhi Jal Board has streamlined its system for obtaining water connections along with installation of water meter. The existing system of supply of water meter along with sanction of water connection has been amended and now consumers can purchase water meters of approved specifications from the open market. The consumers having Delhi Jal Board's defective meters have been allowed to get the defective meter replaced with private water meter and have been given option either to get the refund of meter security or get the same adjusted towards water charges in future.

### 13. Water Tariff

**13.1** The tariff is based on the principle of “use more pay more”. At higher consumption levels, the tariff acts as a disincentive to consumer for excessive use of water or wastage of water. As against the target of revenue collection of ₹ 926 crore in 2011-12 and revised target of ₹ 1095 crore, ₹ 1068 crore has been collected up to March 2012.

**13.2** Special subsidy in water charges has been allowed to resettlement colonies and rural areas where water charges are being recovered on assumed average of 10 Kl. per connection per month. As a public welfare measure, water consumption upto 6 Kl. per connection in a month is without any charge for all domestic consumers except service charge. Salient features of existing water tariff are as under:

- Existing water tariff has two parts. One is Service Charge and other Volumetric Water Consumption Charge applicable w.e.f. 1.12.2004 and 1.4.2005 respectively.
- 50 per cent of water consumption charges are recoverable towards Sewerage Maintenance Charge from such colonies / areas where sewerage services have been provided / maintained by the Delhi Jal Board.
- In case of bulk connection for a colony / group housing society serving a number of residential premises, water charges will be worked out as per residential unit-wise at the domestic rates applicable from time to time.



### **13.3 Water Tariff for Un-metered Connections in JJ Resettlement Colonies and Rural Areas:**

Water charges are applicable on assumed average of 10 Kl. Per month per connection and service charge. Water consumption rates are same as referred to in the preceding Para. Sewerage maintenance charge is also recoverable, if sewerage services are being managed by Delhi Jal Board. Besides above, water cess is recoverable from all consumers at the rates determined by the Central Government from time to time.

### **14. Rain Water Harvesting**

- 14.1** All Government Departments, Local Bodies and Public Sector Undertakings have been directed to install rain water harvesting system in their buildings / complexes. Buildings norms have also been modified and now all new buildings with 100 square meters and above area will have to provide rain water harvesting system in their lay out plan for approval to Local Bodies. Public Works Department, Municipal Corporations of Delhi, Delhi Jal Board has installed rain water harvesting system in the buildings / complexes being maintained by them.
- 14.2** A plan scheme to promote rain water harvesting is being implemented by Delhi Jal Board. Technical know how is being provided to all willing Individuals, Resident Welfare Associations (RWAs), Institutions, Housing Societies, etc. Financial incentive of ` 1,00,000/- or 50 per cent of project cost, whichever is less, is also being provided under the scheme. A number of RWAs have found very encouraging results from rain water harvesting system introduced in their respective areas.

### **15. Water Conservation**

- 15.1** Delhi has a network of about 11350 Kilometers of water supply mains, of which, a significant portion is as old as 40 to 50 years and prone to higher leakage losses. Normally, water losses are calculated by water billed or consumed subtracted from the water produced. In the case of Delhi, water billed or consumed and leakage losses there from cannot be calculated exactly as a majority of houses do not have working meters. According to the estimates of Delhi Jal Board, the total distribution losses are of the order of 40 per cent of the total water supplied. These are quite high as compared to 10-20 per cent in the developing countries. The distribution losses include losses due to (a) leaking pipes and (b) theft of water through unauthorized connections.
- 15.2** Delhi Jal Board has taken several steps to minimize leakage losses. To address this problem, a leak detection and investigation (LDI) cell was set up. The Board has replaced about 1200-km length of the old, damaged and leaking water mains during the last five years. As a result of these initiatives, the Board expects to bring down the distribution losses to 20 per cent level in the near future.

**15.3** Delhi Jal Board has formulated a programme for recycling of backwash water in four major water treatment plants at Haiderpur, Bhagirathi, Chandrawal and Wazirabad. The work for commissioning of recycling plant at Haiderpur, Bhagirathi, Wazirabad recycling plant has been completed. About 45 MGD water supplies will be available without any additional raw water from these four plants.

## 16. Sewage Treatment Capacity

**16.1** Sewage treatment capacity of Delhi Jal Board increased from 402.40 MGD in 31<sup>st</sup> March 2001 to 514.75 MGD in 31<sup>st</sup> March 2012. The information regarding the sewerage treatment capacity and percentage of utilization is presented in Statement 13.8.

**Statement 13.8**  
**SEWERAGE TREATMENT CAPACITY AND ITS UTILIZATION**

(MGD)

Sl. No	Name of Sewerage Treatment Plants(STPs)	Capacity		Actual Treatment as on 31.3.2012	% of Utilization
		31.3.2001	31.3.2012		
1.	Okhla	140.00	140.00	112.13	80.09
2.	Keshopur	72.00	72.00	46.00	63.89
3.	Coronation Pillar with Oxidation Ponds at Timarpur	46.00	46.00	7.63	16.59
4.	Rithala	40.00	80.00	42.03	52.54
5.	Kondli I, II, III, IV	45.00	45.00	56.40	125.33
6.	Yamuna Vihar I,II	10.00	20.00	10.95	54.75
7.	Vasant Kunj	5.00	5.00	4.10	82.00
8.	Ghitorni	5.00	5.00	--	--
9.	Pappankalan	20.00	20.00	17.73	88.65
10.	Narela	10.00	10.00	1.10	11.00
11.	Najafgarh	5.00	5.00	0.90	18.00
12.	Delhi Gate	2.20	2.20	2.37	107.73
13.	Sen Nursing Home	2.20	2.20	2.54	115.45
14.	Rohini	--	15.00	--	--
15.	Nilothi	--	40.00	14.58	36.45
16.	Mehrauli	--	5.00	2.74	54.80
17.	CWG Village	--	1.00	0.09	9.00
18.	Molarbad	--	0.65	0.50	76.92
19.	Bakkerwala	--	0.70	0.13	18.57
	<b>Total</b>	<b>402.40</b>	<b>514.75</b>	<b>321.92</b>	<b>62.54</b>

Source: - Delhi Jal Board

- 16.2** It is evident from the above statement that the percentage of utilization of sewerage treatment plant in Delhi as on 31<sup>st</sup> March 2012 was 62.54 per cent. The sewerage treatment plants are not functioning up to their optimum level due to various reasons such as low flow of sewage to STPs, trunk and peripheral sewer lines still to be connected to these STPs, Rehabilitation of Silted and settled Truck Sewer Lines yet to be completed, etc. The sewage generation, at present, is estimated to be around 670 MGD = (840 water production x 0.8) and treatment is around 322 MGD only. Balance untreated sewage (348 MGD) falling in river Yamuna is major cause of river pollution.
- 16.3** Delhi Jal Board has a network of branch, peripheral sewers of about 6708 kms. Also there is network of 192 kms of trunk sewers. The rehabilitation / de-silting have been completed in a length of 140 kms and is in progress in 50 kms.
- 16.4** The consultant for World Bank funded, "Delhi Water Supply & Sewerage Project" estimated 5259 MLD water supply requirement for Delhi in 2021 and waste water generation from this level of water supply will be about 3760 MLD. The information regarding the same is presented in Statement 13.9.

### Statement 13.9

#### WATER SUPPLY REQUIREMENT AND WASTE WATER GENERATION ESTIMATED

Sl. No	Details	Volumes (Mld)				
		2004	2005	2006	2011	2021
1.	Total water demand	2685	3763	4090	5181	6272
2.	Total net water supply	2265	2362	2461	3573	5259
3.	Waste water generated	1812	3010	3272	4144	5017
4.	Treated at CETP	200	217	234	346	755
5.	Proportion not sewered	14%	13%	13%	10%	5%
6.	Outside sewered area	254	302	302	294	210
7.	Net generated waste water	1358	1722	1798	2218	3242
8.	Infiltration	518	518	518	518	518
9.	Gross Wastewater to treatment	1876	2240	2316	2736	3760

Source:- Delhi Jal Board

## 17. Expenditure Incurred on Water Supply and Sewerage Programmes

- 17.1** The expenditure incurred on water supply and sewerage programmes in Delhi during the first three annual plans of 11<sup>th</sup> Five year Plan is presented in Statement 13.10.

### Statement 13.10

#### EXPENDITURE INCURRED ON WATER SUPPLY AND SEWERAGE PROGRAMMES IN DELHI DURING 2007-2012 & OUTLAY FOR 2012-13

Sl. No	Details	Water Supply	Sewerage	Total
1.	Approved Outlay (2007-2012) (Rs. Crore)	4361.50	3132.50	7494.00
2.	Fund Released (Rs. Crore)			
	a. 2007-08	962.01	383.96	1345.97
	b. 2008-09	1015.17	441.73	1456.90
	c. 2009-10	1080.35	568.55	1648.90
	d. 2010-11	1080.14	527.93	1608.07
	e. 2011-12	1033.02	528.02	1561.04
	Total (a+b+c+d+e)	5170.69	2450.19	7620.88

- 17.2** It may be observed from Statement 13.10 that the released fund for water supply and sanitation to DJB increased from ₹1345.97 crore in 2007-08 to ₹1561.04 crore in 2011-12.

## 18. Re-use of Waste Water

- 18.1** The major reuse of treated waste water in and around the city is for irrigation, horticulture and industrial use. There is now demand for use of treated waste water for cooling in the power stations. Other options include ground water recharge, return to be raw water source, and the treatment and reuse of treated waste water, for flushing of toilets, i.e. use for non-potable purposes like washing of Railways, Buses, Construction industry.
- 18.2** Presently, Delhi Jal Board supply about 110 MGD of treated waste water to the Irrigation Department, Power Plants and for irrigation in parks in NDMC area by CPWD and in Rohini area by DDA.

Treated water supply to various purposes in Delhi is presented in Statement 13.11.

**Statement 13.11**  
**TREATED WASTE WATER SUPPLY FOR VARIOUS PURPOSES**

Sl. No	Details	Units (MGD)	Per cent
1.	Treated effluent supplied to CPWD for horticulture purpose in Lutyen Delhi from Okhla STP	20.00	18.26
2.	Treated effluent supplied to Pragati Power Plant from Dr. Sen Nursing Home Nalla and Delhi Gate Nalla STPs	4.00	3.65
3.	Treated effluent supplied to DDA for Japanese Park in Rohini from Rithala STP	5.00	4.57
4.	Treated effluent supplied to Irrigation & Flood Control Deptt. Govt. of National Capital Territory of Delhi from Okhla STP -42 cusec, Keshopur STP -37 cusecs, Coronation Pillar STP – 70 cusec for irrigation purpose	80.50	73.52
	<b>Total</b>	<b>109.5</b>	<b>100.00</b>

Source: - Delhi Jal Board.

- 18.3** A number of small reuse projects are in the planning stages. Besides, Sewerage Treatment Plants of Delhi Jal Board, treated waste water is available from Common Effluent Treatment Plants in industrial areas being maintained by DSIIDC and Mini Sewerage Treatment Plants of Delhi Urban Shelter Improvement Board (DUSIB).
- 18.4** Major drains pollute Yamuna River for various reasons including due to over-flow of untreated sewage from unsewered areas. It has been decided to lay interceptor sewers for cleaning Yamuna River. Work has been started on laying of interceptor sewers along Najafgarh, Supplementary and Shahdara drains.
- 18.5** Delhi Development Authority is responsible for 4,451 hectares of open spaces, all of which are irrigated via tube wells. There is also irrigation of Municipal Corporations of Delhi open spaces, Central Government properties, private parks and properties, road verges, sports stadiums etc. The information regarding the green areas being maintained by the various agencies is presented in Statement 13.12.

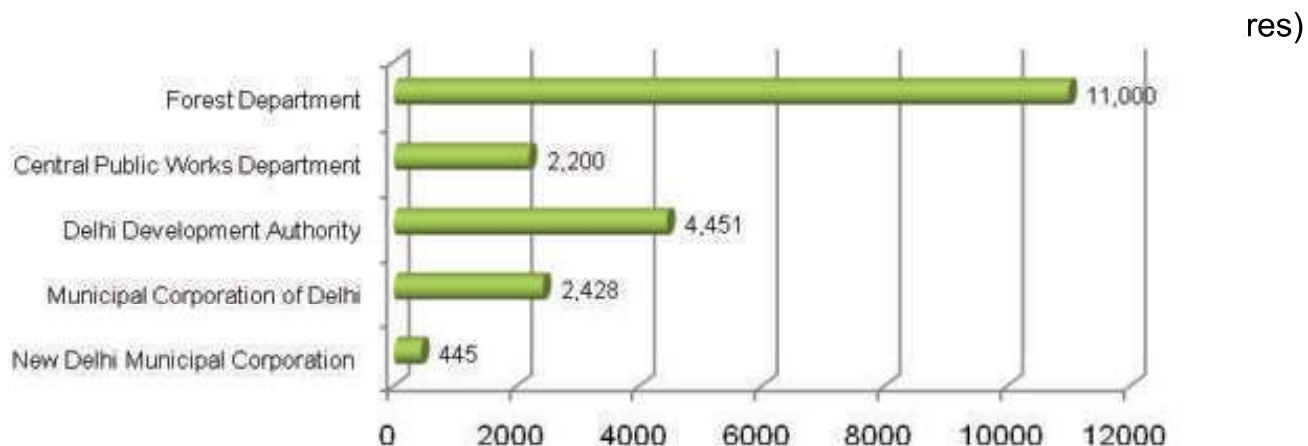
**Statement 13.12**  
**GREEN AREAS MAINTAINED BY VARIOUS AGENCIES**

Sl. No	Agencies	Green Areas (in hectares)	% age
1.	New Delhi Municipal Council	445	2.17
2.	Municipal Corporations of Delhi	2,428	11.83
3.	Delhi Development Authority	4,451	21.69
4.	Central Public Works Department	2,200	10.71
5.	Forest Department	11,000	53.60
	<b>Total</b>	<b>20,524</b>	<b>100.00</b>

Source:- Delhi Jal Board

**18.6** The green areas maintained by various agencies in Delhi are depicted in Chart 13.2.

**Chart 13.2**  
**GREEN AREAS MAINTAINED BY VARIOUS AGENCIES**



**18.7** The colonies/category wise progress of sewage system is given in statement 13.13.

**Statement 13.13**  
**COLONIES/CATEGORY WISE PROGRESS OF SEWAGE SYSTEM**

<b>Sl. No</b>	<b>Colonies / categories</b>	<b>Total no of colonies</b>	<b>Total no of Sewerage System</b>
1.	Unauthorised Regularised Colonies	567	535
2.	Urban Village	135	129
3.	Rural Villages	219	34
4.	Unauthorised Colonies	1639	98
5.	Resettlement Colonies	44	44

Source: - Delhi Jal Board - SMP 2031