

**PROGRESS REPORT IN CONTINUATION OF  
EARLIER REPORT DATED 31ST JULY 2019 OF THE  
MONITORING COMMITTEE**

**constituted by the Hon'ble National Green Tribunal  
vide Order Dated 30/08/2018 in O. A. No. 496/2016 titled  
“Tribunal on its own motion v. Government of NCT of  
Delhi and others”**

**Justice (Retd.) S. P. Garg  
S K Juneja  
Dr. D K Markandey  
Ajay Gupta**

**Dated 19<sup>th</sup> December 2019**

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## **RAINWATER HARVESTING SYSTEM**

The Monitoring Committee is constantly pursuing various govt. departments in Delhi for implementation of Action Plan on groundwater recharge with serious emphasis on implementation RWH System to trap rainy water. The Monitoring Committee has so far held 31 meetings for co-ordination among various organizations to expedite their implementation programmes. Due to constant persuasion, following departments have initiated several steps to implement RWH Systems and have shown substantial progress. The schools and colleges have shown remarkable progress in the implementation of RWH System. Monitoring Committee is now concentrating on other buildings owned by DJB, DDA, DMRC, DTC, Railways, PWD etc. to implement RWH Systems in a time bound period. DJB has been directed to provide incentives to the needy for installation of RWH System. It is informed that to promote RWH Systems, DJB has made rebate and penal provisions in its Delhi Water and Sewar (Tariff and Metering) Regulations, 2012 for implementation and non-implementation of RWH Systems by consumers. 10% rebate is applicable in water bills for the plot size of 100 sq meters and above having adequate and functional RWH System. 1560 consumers have availed the rebate so far.

RWH System is compulsory in the plot size of 500 sq meters and above. DJB has also decided vide resolution No. 829 to make RWH System mandatory in all old and new buildings and plots of 100 sq meters and above and less than 500 sq meter.

Hon'ble NGT, too, in its order dated 11<sup>th</sup> November 2019 in the present O.A. No. 496/2016 has directed DJB to ensure that RWH System is installed by all Group Housing Societies and Govt. buildings. The Group Housing Societies shall furnish a declaration of compliance in the specified 'web portal' on DJB website by 31.12.2019 indicating compliance of the order. It is informed that DJB has taken necessary steps to implement the said directions.

## **1. RAINWATER HARVESTING SYSTEM IN DMRC**

The Monitoring Committee desired that DMRC has number of locations where there was urgent need to set up Rainwater Harvesting Systems. The Monitoring Committee decided to request the concerned officers from DMRC to furnish status report regarding RWH Systems existing in their different locations.

In its 27<sup>th</sup> meeting held on 31<sup>st</sup> October 2019, Sh. S Verma, General Manager, DMRC informed that there were 185 elevated Metro Stations and RWH system existed at 149 locations. In the remaining locations, it was not technically feasible to set up RWH System. Mr. Verma was asked to furnish detailed list of the locations where setting up of system was not feasible. On receipt of the information, the concerned agency shall visit the locations to ascertain if setting up of RWH System was feasible. Mr. Verma informed that the information was also submitted before Hon'ble NGT in the matter of OA no. 94/2013, Vikrant vs DMRC. The case has been disposed of an year ago. Mr. Verma was asked to furnish the status report within one week.

Monitoring Committee inquired from Mr. Verma if Metro was using tube wells/bore wells to extract groundwater at its different locations. The officer had no information to divulge. He was directed to submit detailed status report as to how many tube wells/bore wells were functional at different locations of the Metro Stations; for how many tube wells permission/sanction has been taken from the competent authority. He was further asked to inform whether treated water is being used for horticulture purposes; cleaning/washing etc. The officer was further asked to furnish as to how many STPs have been installed and whether its treated affluent is being used for any specific purposes. The officer assured to furnish the required information within a week.

In its detailed report dated 31<sup>st</sup> October 2019, DMRC disclosed that it has provided Rainwater Harvesting System at its 185 installations/infrastructure out of 236. This included 161 Metro Stations; 12 Metro depots and 10 staff quarters, IT park

at Shastri Park and Metro Bhawan, Cannaught Place. Rainwater Harvesting System was under construction at 4 Metro Stations. At 2 Metro Stations, action to set up RWH System shall be taken shortly. The report further stated that in remaining 45 installations, RWH System was not feasible due to non availability of land/under ground stations (at 37 Metro Station locations); rocky strata (at 4 Metro Stations) and drain nearby/high water table (at 3 Metro Station locations) and 1 Metro depot at Kalandi Kunj.

In its 29<sup>th</sup> meeting held on 11<sup>th</sup> November 2019, DMRC was further directed to have joint inspection with DJB with prior notice to ascertain the feasibility of setting up of RWH Systems and submit its report to the Monitoring Committee. DMRC was advised to explore feasibility of connecting rainwater pipelines to nearby areas. It was also decided that a joint inspection will be held on 19<sup>th</sup> November 2019 at Sector 8, Metro Depot, Dwarka to ascertain the use of water for washing coaches etc and its treatment.

## **2. RWH SYSTEMS IN SCHOOLS UNDER NDMC**

In its 24<sup>th</sup> meeting held on 11<sup>th</sup> November 2019, Sh. R. A. Bharti, Executive Engineer, NDMC was present. He was inquired about the status of RWH System in the schools under the jurisdiction of NDMC.

Mr. R. A. Bharti informed that there were 44 Government schools under NDMC. RWH System was functional in 30 schools. In 11 schools, the RWH System was under construction and is expected to be completed within 2 months. In 3 schools, RWH System was not feasible. He further informed that there were 6 private schools and in 4 schools, RWH System was functional. In one school, RWH System was under construction and in the other one, it was not feasible. Mr. Bharti was requested to ensure that all educational institutions in the jurisdiction of NDMC have adequate and functional RWH Systems. He was further directed to ensure that the RWH System should be completed at the earliest.

### **3. RWH SYSTEMS IN SCHOOLS AND COLLEGES UNDER SDMC**

To take stock of RWH Systems in schools and colleges, concerned officers were requested to attend the meeting. In its 23<sup>rd</sup> meeting held on 04<sup>th</sup> September 2019, representative from SDMC was present. She informed that work of RWH Systems in 19 schools will start by 30<sup>th</sup> November 2019. The Monitoring Committee instructed SDMC to meet deadline for ongoing work of 64 schools at the earliest. It was further apprised that 20 sites were found to be non feasible which were yet to be checked by EE (RWH/GWC), DJB. She submitted detailed table showing the status of the RWH Systems.

### **4. RWH SYSTEMS IN SCHOOLS AND COLLEGES UNDER EDMC**

Representative from EDMC present in the meeting informed that there were 231 schools, out of which RWH System was in existence in 217 schools and it was under construction in 10 schools. In 4 schools, RWH System was not feasible. On inquiry from the Monitoring Committee, the representative ensured that RWH System at 10 sites under construction would be completed by November 2019.

Representative from EDMC apprised that in 65 community halls RWH System will be installed and made functional by the end of December 2019. Similarly, there were few health units where RWH System would be operational by the end of December 2019. He further informed that parks with area more than 2 acres have been taken up for installation of RWH System and these will be completed by December 2019.

The representative informed that responses from few private schools was not up to the mark with respect to sharing of information regarding RWH System. Monitoring Committee directed EDMC to submit list of such schools under its jurisdiction who have not started setting up RWH Systems to the Committee.

Mr. H. S. Singh, EE, (East DMC) attended the 26<sup>th</sup> meeting held on 11<sup>th</sup> October 2019. He informed that there are 70 private schools where work of RWH System is to be taken up. In 42 private schools work was under construction and in 22

schools, it was not feasible. Monitoring Committee directed Mr. Singh to provide list of the schools under its jurisdiction with complete data.

#### **5. RWH SYSTEMS IN SCHOOLS AND COLLEGES UNDER DIRECTORATE OF EDUCATION**

Representative from Directorate of Education informed that there were total 740 Government schools under their jurisdiction. Out of that, 699 have completed the work of installation of RWH Systems. In 6 schools, it is under construction and is expected to be completed in one month. 35 sites were found to be non feasible where checking has been done and certificates have been issued. Monitoring Committee instructed DOE to submit latest status of implementation of RWH Systems in private schools under their jurisdiction and provide the list of such schools who have not started the work of installation of RWH Systems.

#### **6. RWH SYSTEMS IN SCHOOLS AND COLLEGES UNDER DEPARTMENT OF HIGHER EDUCATION**

Mr. R. P. Meena, AO (III), Department of Higher Education informed that in SPM College, work of installation of RWH System has been allotted and construction would start in 15 days. Monitoring Committee directed to intimate the status of work in the said college after 15 days. Monitoring Committee further directed Mr. Meena to intimate time-lines of completion of new building of ESI where presently, the RWH System is not in existence.

#### **7. RWH SYSTEMS IN SCHOOLS AND COLLEGES UNDER NORTH DMC**

Mr. Ajay Chaudhary, AE, North DMC submitted list dated 10<sup>th</sup> October 2019. There were 568 primary schools under the jurisdiction of North DMC. RWH System was complete in 455 schools; it was in progress in 29 schools and is expected to be completed by 30<sup>th</sup> November 2019. At 48 locations, it was not feasible. Monitoring Committee directed Mr. Chaudhary to furnish the update list and to ensure that the pending work is completed in a time bound period.

## **8. RWH SYSTEMS UNDER PUBLIC WORKS DEPARTMENT (PWD)**

Number of buildings in Delhi are maintained by Public Works Department. In its 26<sup>th</sup> meeting held on 11<sup>th</sup> October 2019 Mr. M. L. Azad, SE (PWD) was present to submit status of RWH System in the buildings maintained by PWD. He informed that there were 339 installations other than PWD. RWH System has been completed at 149 installations. It is in progress in 10 installations. 10 locations are at estimate stage and at 56 locations, it is not technically feasible. Requisitions have not been received in respect of 28 installations.

Mr. M. L. Azad, SE and Senior officer Mr. B. B. Makkar, Principal CE, PWD informed that PWD was maintaining 1048 Delhi Government buildings including schools and colleges, fire stations, hospitals etc. Out of these 1048 buildings; 756 installations have RWH Systems which are adequate and functional. In 149 locations/buildings, the system will be implemented progressively by March, 2020. In remaining 141 installations implementation was not feasible either due to space constraints or plot area being less than 100 square meter etc. Monitoring Committee directed DJB to randomly check the locations, which are not feasible and submit report.

In its meeting held on 11<sup>th</sup> September 2019, Rajesh Kumar and Kuldeep Singh, Inspectors from office of Commissioner of Police attended the meeting and informed that the buildings under Delhi Police are maintained by PWD. Request has been submitted to PWD to provide RWH Systems. Some of the estimates have been received and required sanction is being received. Monitoring Committee directed Delhi Police to submit status of RWH System in detail. They were directed to take up the matter with concerned officers and expedite the setting up of RWH Systems at the earliest. It was informed that there were 133 office buildings and 179 residential buildings under Delhi Police. There were some police stations where residential accommodation is also provided.

S. I. Meena, CE, PWD who attended the meeting informed that RWH System

exists in most of the residential complexes of Delhi Police. Monitoring Committee directed him to furnish the detailed status report in this connection.

PWD was directed to ensure that the action plan is implemented in a time bound period.

#### **9. RWH SYSTEMS UNDER DIRECTORATE OF HEALTH SERVICES**

Mr. M. P. Singh, attended the meeting on behalf of Directorate of Health Services. He informed that dispensaries are being looked after by Directorate of Health Services and the hospitals are looked after by Health and Family Welfare Department. Monitoring Committee desired that any department i.e utility department, health department or DJB should own responsibility to ensure RWH Systems in private hospitals. Monitoring Committee directed representatives of Directorate of Health Services to provide list of private hospitals so that status of RWH System is monitored. Principal Secretary (Health) be requested to depute a responsible officer conversant with the facts to inform the Monitoring Committee about the status of RWH Systems in various hospitals/dispensaries under its jurisdiction.

The Monitoring Committee now wishes to call the concerned officers from DTC and Railways to ascertain the status of RWH Systems in the buildings under their jurisdiction.

#### **10. RWH SYSTEMS UNDER DELHI URBAN SHELTER IMPROVEMENT BOARD (DUSIB)**

The concerned officer informed that out of 129 buildings/installations under DUSIB, RWH Systems existed at 39 locations. There is proposal for provision of RWH Systems at 57 parks out of 300 parks for which the plans/proposals have been prepared. Action plan for remaining building installations and parks is being prepared.

The Monitoring Committee expressed dissatisfaction about the slow progress of setting up of RWH System under DUSIB and directed it to ensure implementation

of RWH Systems in the buildings and parks under its jurisdiction at the earliest and submit action taken report to the Monitoring Committee.

#### **11. RWH SYSTEMS UNDER DELHI JAL BOARD**

The Monitoring Committee has persuaded Delhi Jal Board in every meeting to implement Rainwater Harvesting System in the buildings owned by it. Number of steps have been taken by DJB in this regard.

In its latest report dated 07.11.2019 submitted before the Monitoring Committee, it has been reported that there are 771 installations under DJB and out of it, at 368 installations RWH System has been implemented. In 147 installations, the RWH System is under construction. In 83 buildings, the works are to be awarded. In 173 installations, it is not feasible to set up RWH Systems due to groundwater levels being shallower than 5.0 meter below ground levels or the plot area being less than 100 sq meter. DJB has action plan to implement RWH System in all the installations by December 2019.

Delhi Jal Board has also undertaken to implement Rainwater Harvesting System in the buildings other than DJB. Till date, it has implemented RWH Systems in 94 buildings. The pending work in these buildings is targeted to be completed by 31<sup>st</sup> December 2019.

Delhi Jal Board has also mapped 4800 schools and colleges (including those maintained by PWD, Govt. of NCT of Delhi). Out of these schools, in 3586 installations, RWH System has been implemented. In 1030 installations, implementation is either in progress or is expected to be taken up shortly. In 186 schools and colleges, implementation of RWH System is not feasible due to various reasons i.e. non availability of adequate space; hard rock strata or plot size being less than 100 sq meter.

The Monitoring Committee is satisfied with the progress made by DJB in implementation of RWH Systems.

## **12. RWH SYSTEMS UNDER DELHI DEVELOPMENT AUTHORITY**

The Monitoring Committee has impressed upon DDA also to implement RWH Systems in the buildings owned and maintained by it.

As per the latest status report furnished by DDA, in 324 installations, RWH System exists. It is functional and adequate. In 56 buildings, the implementation is under progress. 168 buildings have no RWH System presently, it is to be taken up shortly.

DDA has been directed to implement the RWH System in all its installations at the earliest.

## **13. RWH SYSTEM UNDER DTTDC**

In its 31<sup>st</sup> meeting held on 28<sup>th</sup> November 2019, Mr. A. K. Singh, CPM was present on behalf of DTTDC. He submitted list showing status of RWH Systems at 9 locations. RWH Systems at Nature Bazar, Guru Teg Bahadur Memorial and Delhi Haat, Janakpuri were adequate and functional. At Kanganhari Tourist Resort and at Garden of Five Senses, the area was open and have percolation ponds, hence, no RWH System was required. At Delhi Haat, INA and Azad Hind Gram, RWH System will be installed by March, 2020. At Coffee Home, Cannaught Place, RWH System will be completed by March, 2020.

## **REVIVAL/REJUVINATION OF WATER BODIES**

From the very inception, it was endeavour of the Monitoring Committee to concentrate upon revival and rejuvenation of water bodies in Delhi. For this purpose, the Monitoring Committee has visited various water bodies at different places under jurisdiction of different land owning agencies. The Monitoring Committee found that conditions of the water bodies were pathetic and they needed urgent attention. Number of directions were issued from time to time to the land owning agencies and senior officers were requested to attend the meetings. The ground work in revival of the water bodies has started and its impact is expected to be visible on ground shortly. DJB, DDA, I&FC land owning agencies, have already given their comprehensive action plans for revival of the water bodies under their jurisdiction. ASI and other land owning agencies have been involved and persuaded to revive the water bodies. Some local environment activists have also been associated in this endeavour. They are also called to attend the meetings and to provide inputs.

### **1. WATER BODIES UNDER DDA**

There are around 155 water bodies under the jurisdiction of DDA. The Monitoring Committee had visited number of water bodies under the jurisdiction of DDA at Dwarka and other places as detailed in the previous reports. The condition of the water bodies inspected by the Monitoring Committee were found horrible. Some of the water bodies were completely dry; there were encroachments in some water bodies. Some water bodies were filled up with garbage etc. Attention of the higher officers of DDA was drawn to the pathetic conditions of the water bodies and directions from time to time were issued for their rejuvenation and revival. However, no serious efforts were made by DDA for revival of the water bodies in a time bound action plan. On every meeting, only Nodel Officer Mr. Lakshmi Narain, SE used to participate. It was conveyed to him that unless senior officers involved themselves, the water bodies could not be revived. The Monitoring Committee expressed its displeasure for slow progress of the rejuvenation of the water bodies despite specific

directions. Finally, Vice Chairman, DDA was asked to attend the meeting in person to have interaction with the Monitoring Committee. Vice Chairman Mr. Tarun Kapoor, along with PC (Horticulture) and other DDA officers attended the 29<sup>th</sup> meeting of the Monitoring Committee held on 11<sup>th</sup> November 2019. A comprehensive discussion took place with VC. He was apprised about the difficulties being faced by the Monitoring Committee in getting the water bodies revived. VC informed that he himself has convened meeting of concerned senior officers and an Action Plan has been prepared for revival of the water bodies on 8<sup>th</sup> November 2019. He assured that 60 water bodies would be completely revived in an year; dedicated staff will be deputed to take care of the water bodies. He was asked to furnish list of 10 water bodies which could be revived within first 3 months.

A list of following 10 water bodies has been received from DDA which they assure to develop within 3 months by February, 2020. 10 more water bodies water bodies will be revived in next three months by May, 2020 and so on. The list of 10 water bodies are as under:

S. No.	Name of Location of the Water Body	DDA Zone
1	Water Body at Central Nursery Sector-5, Dwarka	Dwarka & West Zone
2	Water Body at Sector-23	-Do-
3	Water Body at Pochanpur, 23 B	-Do-
4	Water Body at Nasirpur Dwarka	-Do-
5	Smriti Van, Kondli Lake	East Zone
6	Sunder Nagri	-Do-
7	District Centre Shastri Park	-Do-
8	Ashoka park, New Friends Colony	-Do-
9	Hauz Khas, Deer Park	South Zone
10	(a) Mehrauli Complex-Ph-I	-Do-

VC informed that out of 155 water bodies under its jurisdiction, 44 water bodies were not feasible to be revived as either these are not 'traceable' or its revival is not possible. The DDA has already given 'No Objection Certificates' for revival of 20 water bodies to DJB. VC was informed that there is confusion regarding revival of Sanjay Lake as DDA has already issued NOC to DJB for its revival. However, subsequent correspondence reveals that DDA has taken up revival of this water body of its own. Directions were issued to DDA to take call if Sanjay Lake is to be revived by DJB or DDA. Similar is the position with respect to water bodies at Hauz Khas Lake and Deer Park in South Zone which have been shown in the list of water bodies to be developed by DDA whereas it has already issued NOC to DJB. VC assured to clear the confusion and to issue necessary directions shortly.

VC informed that remaining 91 water bodies will be revived by it in a time bound action plan. Out of this, 60 water bodies would be completely revived along with landscaping in an year.

DDA in its report dated 8<sup>th</sup> November 2019 informed that there were 783 parks under its jurisdiction. It has mapped existence of 731 number of tubewells in these parks used for extraction of groundwater for horticulture purposes. It has been made clear to DDA that the practice of using tube-wells to extract groundwater for horticulture purposes must be stopped at the earliest. The DDA should use treated water for horticulture purposes and endeavour to close the tube-wells/bore-wells to save groundwater. VC informed that the DDA has target that 72 tube-wells in 35 parks would be closed in next three months. Thereafter 50 parks will be covered in every 6 months. VC was asked to expedite the closure of bore-wells/tube-wells in the parks.

It was informed to VC, DDA that the water body at Ashoka Park, earlier visited

by the Monitoring Committee needs to be filled up and it can be done by use of treated water from nearby Okhla plant. In the beginning, the treated water can be transported through tankers till the STP is set up. VC assured that an informed decision would be taken to transport treated water from Okhla through tankers to fill the water body at Ashoka Park.

Mr. Lakshmi Narain informed that he has recently come to know that STP pipe crosses through Ashoka Park and if a connection is given by DJB, the water body can be filled up by this treated water. He was asked to make a request in writing to this effect. Subsequently, on receipt of request from DDA, necessary orders have been passed by CEO, DJB to provide connection from STP pipe running through Ashoka Park. It is expected that shortly the water body at Ashoka Park will be functional with treated water.

DDA was directed to demarcate and enter the water bodies in the revenue records in a time bound frame to prevent their encroachments. It was informed that water bodies existing within parks were well demarcated. The water bodies newly created in Yamuna flood plains i.e. in Golden Jubilee Park and in Ghonda Gujran Khader areas (6 in number) will be surveyed, demarcated and entered in the revenue records within next 3 months.

In its action taken report, DDA informed that STP lines have been laid for supply of STP water from DJB reservoir in Dwarka. DDA has also constructed 14 UGRs in Dwarka for distributing water for irrigation in parks. 13 more UGRs are under construction. 25 decentralized STPs have already been approved and would be functional within next 6 months.

The detailed report along with annexures dated 8<sup>th</sup> November 2019 and 14<sup>th</sup> November 2019 have been kept on record. The Monitoring Committee shall ensure that the action plan is duly implemented in a time bound period.

Attention of the VC was drawn for immediate revival of the water bodies at Tihar Lake (Hari Nagar) and Prasad Nagar Lake for which directions were given

earlier.

As indicated in the previous reports, the Monitoring Committee had visited Bharat Vandana Park and had given directions to DDA to rejuvenate the huge water body lying dry. VC, DDA informed that Bharat Vandana Park is now being developed. It is spread over an area of 200 acres in Sector 20, Dwarka. The park will consist of a recreational area, a conservatory, a fun park, an echo trail, an adventure park and a lake view restaurant. DDA intends to complete the project by March, 2022. VC, DDA was impressed to ensure that the water body in the park is developed at priority.

The Monitoring Committee has noted that on 17<sup>th</sup> December 2019, the foundation stone for development of Bharat Vandana Park has been laid.

## **2. WATER BODIES UNDER IRRIGATION & FLOOD CONTROL DEPARTMENT (I&FC)**

I&FC, Govt. of NCT of Delhi has taken up 95 water bodies for their revival and rejuvenation. As per action plan submitted to the Monitoring Committee, 11 water bodies are targeted to be commissioned by September, 2020 and 25 water bodies by December, 2020. Remaining 59 water bodies are likely to be commissioned progressively from January, 2021 to May, 2021.

I&FC has reported that consultants for preparation of Detailed Project Reports (DPRs) in respect of 59 water bodies have been appointed and DPRs for 33 water bodies have been received. Engagement of consultants for preparation of DPRs for 26 water bodies is yet to be decided by the department.

I&FC further informed the Monitoring committee that out of the 59 water bodies, consultancy work for 29 water bodies was assigned to M/S CSIR-NEERI in September, 2018, but there was delay in finalization of DPRs. To resolve these issues, Monitoring Committee called representatives of M/S CSIR-NEERI to expedite finalization of the DPRs. Mr. Ritesh Vijay, Principal Scientist and Mr. Raman Sharma, Senior Scientist attended the 26<sup>th</sup> meeting of the Monitoring Committee held on 11.10.2019. They informed that they were assigned work of consultancy which

involved landscaping and for that component of the DPRs, open tenders were to be invited by them. They informed that DPRs of 11 water bodies have been handed over to I&FC and assured that DPRs for another 8 water bodies would be submitted by 31.10.2019. For remaining 10 water bodies, it was informed that there was some issues about their locations. The Monitoring Committee suggested that a joint inspection be carried out with I&FC to resolve the matter on 15.10.2019 at 12 noon and the DPRs be finalized by 30<sup>th</sup> November 2019.

Monitoring Committee will call upon the officials of both, I&FC and M/S CSIR-NEERI for early finalization of the DPRs.

Details of Eleven (11) water bodies provided by I&FC which are targeted to be commissioned by September, 2020 are:

S. No.	Name of Water Body	Khasra No.	Village
1	Auchandi/ Ochandi	85	Auchandi/Ochandi
2	Bawana	203	Bawana
3	Bawana	74/18/23	Bawana
4	Budhanpur Majra	36/3, 36/7, 8	Budhanpur Majra
5	Budhanpur Majra	13/2, 10/2, 13/20	Budhanpur Majra
6	Bawana	108/25	Bawana
7	Nangal Thakran	87	Nangal Thakran
8	Rani khera	89/90	Rani Khera
9	Sawada	229	Sawada
10	Salahpur Majra	20/12, 13/14	Salahpur Majra
11	Rani Khera	74/2	Rani Khera

I&FC had set “Wet Land System based on SWAB (Scientific Wet Land with Activated Bio-digester) Technology on the left bank of Bawana Escape Drain between RD-9700M to RD-9970M to treat 1MLD of waste water of Ghoga Drain in North- West Delhi. The Monitoring Committee had carried out inspection of this pilot project and observed that there was no effective utilization of the treated effluent, which was going back into the drainage system. It was advised to explore the feasibility of conveying treated effluent for filling the nearby dry water body in Village Sanoth under the jurisdiction of DSIIDC (Delhi State Industrial and Infrastructure Development Corporation Limited). DSIIDC provided NOC for filling up the water body to I&FC and it has been reported that the water body has been rejuvenated by utilizing the treated effluent of Ghoga Wetland System. I&FC has laid a pipe line of about 1.2KM from the Wetland System to the water body for the same. DSIIDC has also recently given NOC on 31.10.2019 to I&FC for Development/Landscaping and beautification of this water body. I&FC has informed that tenders for the same have been floated and are due on 11.12.2019.

In its 23<sup>rd</sup> meeting held on 04.09.2019 Mr. Sanjay Saxena, CE, I&FC informed that installation of polishing filter in the water body shall be completed in 15 days. It was impressed upon the officer that the work should be expedited so that the water body can be inaugurated and shown as a model rejuvenated water body. It should be developed as a tourist spot.

### **3. WATER BODIES UNDER ARCHEAOLOGICAL SURVEY OF INDIA (ASI)**

The Monitoring Committee visited various water bodies under the jurisdiction of ASI and noticed that these were either dry or having less water. Decision was taken by the Monitoring Committee for revival of these water bodies. The concerned officer from ASI was requested to attend the meeting.

In its 24<sup>th</sup> meeting held on 11.09.2019, D. K. Bhardwaj, Survey Officer from ASI was present. He informed that there were 15 water bodies under ASI. 4 water

bodies were under Delhi Mini Circle; 11 water bodies were under Delhi Main Circle. There is one court case regarding one water body under Tughlakabad village. He further informed that 8 water bodies are without encroachments. 2 water bodies in Tughlakabad palace area in Tughlakabad Fort were dry. Remaining 6 water bodies were wet.

Representative of ASI informed that NOC of three water bodies being developed by DJB have been issued. He further informed that DPR of three water bodies has been requested from DJB.

Monitoring Committee was informed that a letter has been received from an NGO to clean Hauz-e-shamshi.

In the subsequent meeting, Superintending Archaeologist I/C attended the meeting and informed that ASI has no expertise to develop the water bodies. He informed that there are 11 water bodies under its jurisdiction. These water bodies and the monuments have been maintained by ASI. ASI has expertise only in the field of conservation, preservation and maintenance of historical monuments but has no expertise to make the water bodies functional/usable at centrally protected monuments. The water bodies under ASI jurisdiction are:

S. No.	Name of Village/Location, where water body is situated	Khasra No.	Whether Dry/Wet
1	Gandhak Ki Baoli, Mehrauli	1665	Wet
2	Hauz-I- Shamshi, Mehrauli	1033 & 045	Wet
3	Rajon Ki Baoli, Mehrauli	145	Wet
4	Tughluqabad Fort, Baoli (Citadel)	-	Dry
5	Baoli, (Palace Area) Tughluqabad	-	-
6	Baoli Village, Tughluqabad	-	Wet
7	Baoli Village, Tughluqabad	-	Wet

8	Hazrat Nizammudin Baoli, Nizammudin	-	Wet
9	Wazirpur Ka Gumbad, Baoli (R.K Puram)	634	Wet
10	Arab Ki Sarai, Nizammudin	738/578	Wet
11	Red fort Baoli	225	Wet

In its 30<sup>th</sup> meeting held on 18<sup>th</sup> November 2019, Monitoring Committee advised Superintending Archaeologist of ASI to give NOC to DJB for revival of the water bodies under its jurisdiction. He immediately agreed and stated that ASI did not have any objection if the water bodies were revived by DJB. The Monitoring Committee, however, advised ASI to have detailed consultation with the senior officers and to convey NOC from ASI in clear terms to DJB to revive the water bodies. The DJB should be informed the terms and conditions which are required to be adhered to by it for setting up of any infrastructure for treatment of waste water (Decentralized STP) and filling of water bodies through diversion of rain water/treated affluent of desired quality parameters so that no harm be done to the protected nature of monuments/adjoining lands with ASI where these water bodies are located.

The officer assured to take up the matter with the senior officers and to furnish NOC for revival of these water bodies by DJB at the earliest. Monitoring Committee requested that the concerned officer from Delhi Mini Circle be also conveyed to send NOC for development of water bodies under their jurisdiction.

#### **4. WATER BODIES UNDER DELHI JAL BOARD**

Delhi Jal Board, in consultation with Govt. of NCT of Delhi has prepared an action plan for rejuvenation of 155 numbers of water bodies. The process to implement the proposals started in September, 2018. The scheme amounting to Rs

376.79 Cr for revival of 155 water bodies was approved by Delhi Jal Board in its meeting held on 24.12.2018. M/S CSIR-NEERI- Nagpur (Council of Scientific and Industrial Research- National Environment Engineering Research Institute- Nagpur) was entrusted the work of finalization of detailed Project reports for development of 83 water bodies.

IIT DELHI (Indian Institute of Technology- Delhi) was awarded the consultancy work of rejuvenation of 72 water bodies in December 2018, but the Institute did not take up the consultancy work. Code of Conduct for Lok Sabha Elections in 2019 and non- response to the call of tenders by DJB for revival of 18 water bodies under Phase-I, II & V were also factors in hampering the progress.

Out of 83 water bodies entrusted to M/S CSIR-NEERI, Detailed Project Reports (DPRs) of 64 water bodies have been received, which have been divided into eleven phases for carrying out the works, depending on nature of the water bodies and receipt of DPRs in phased manner.

Works for 12 water bodies under Phase II (6 water-bodies) and Phase IV (6 water bodies) were awarded on 24/9/2019 and are targeted to be completed by 31.3.2020. Works for 6 water bodies under Phase-III have been awarded on 30.10.2019 and is targeted to be completed by 31.05.2020. Letter of Intent for Works of 4 water bodies under Phase V has been issued on 21.11.2019 and works are likely to be completed by 30.6.2020.

Details of the above 22 water bodies provided by DJB, which are targeted to be completed/commissioned by June, 2020 are as under:

S. No.	Name of Location of Water Body as per the DPR	G. No.	Land Ownership
Phase-II			
1	Daulatpur	620	BDO

2	Dhoolsiras	636	DDA
3	Ibrahimpur	161	BDO
4	Karala	325	BDO
5	Neelwal	900	BDO
6	Tikrikalan	911	BDO
Phase-III			
7	Chandan Holla	448	BDO
8	Chawala	611	BDO
9	Goman Hera	647	BDO
10	Hiranki	155	BDO
11	Siraspur	240	DDA
12	Hiran kudna	875	BDO
Phase-IV			
13	Punjab Khor	387	BDO
14	Burari	988	BDO
15	Dera Mandi	455	BDO
16	Mungeshpur	199	BDO
17	Nangal Thakran	206	BDO
18	Dichaun Kalan-1	641	BDO
Phase-V			
19	Rasulpur	398	BDO
20	Bindapur	604	DDA
21	Dichaun kalan-2	640	BDO

22	Tikri Kalan	913	BDO
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Works for 24 Water Bodies under Phase-I (8 water bodies), Phase VI (7 water bodies) , Phase VII (7 water bodies) and in Phase-VIII (2 water bodies) are likely to be awarded by December 2019 and are targeted to be completed by 31.07.2020.

Out of the remaining 37 water bodies with M/S CSIR- NEERI for preparation of DPRs, it has submitted DPRs for 18 water bodies. Works on 18 water bodies, for which DPRs have been received, are likely to be awarded by February, 2020 and works are likely to be completed by October, 2020. Works for balance 19 water bodies will also be taken in phased manner after receipt of DPRs from M/S CSIR-NEERI and the matter is being pursued with them.

In addition to above 83 water bodies by M/S CSIR- NEERI, work of rejuvenation of 4 water bodies has also been awarded to M/s CSIR-NEERI, as Project Management Consultant. The work could not be progressed due to non-finalization of agreement on escrow account. The case was appraised before DJB in its 143rd meeting held on 24.12.2018. The Delhi Jal Board vide resolution no. 735, item no.T-226, resolved to ratify the proposal of M/s CSIR-NEERI to re-invite the tenders. The case of approval of revision in agreement on escrow account is under approval in DJB. The 4 water bodies proposed to be rejuvenated by M/S CSIR-NEERI are Aaya Nagar, Kair, Mitraon-1, and Mitraon -2.

For remaining 68 water bodies {155-(83+4)}, DJB has now proposed to carry out the works in following ways:

- Execution of works for rejuvenation of water bodies through Design- Build- Operate basis
- Execution of work of rejuvenation of water bodies after award of Consultancy to Govt. Organization: DJB is in process of award of consultancy work on rejuvenation of water bodies to Indian Agricultural Research Institute, New

Delhi 110 012 (India).

- Execution of work of rejuvenation of water bodies after award of Consultancy to specialized consulting firms.

DJB has undertaken a work of creation of new water body at Timarpur Oxidation Pond on its land. The award of work has been approved in the 143rd meeting of Delhi Jal Board held on 19.08.2019. The period of completion is 12 months for execution; 3 months for commissioning and 3 months of trial run period. The work is likely to be completed in September, 2020.

DJB has awarded work of creation of water body at the vacant land of its Dwarka Water Treatment plant on 23.04.2018 for which completion period is 6 months. The work is reported to be got delayed due to delay in finalization of boundaries of proposed new water body due to proposal to construct additional WTP at Dwarka under Phase-II. Now it is proposed to construct a part of the new water body/lake in the remaining portion of Dwarka WTP and another part in the vacant land of Najafgarh WWTP, which is adjacent to Dwarka WTP. The firm was persuaded to start the work and it has been re- started on 24.07.2019. The work involves laying 700 mm diameter rising main to carry treated effluent from Pappankalan WWTP to the proposed water body and is nearing completion. I&FC department, GNCTD has to construct bridge across Najafgarh drain to carry the rising main across the drain. Work Order is issued by I & FC department, GNCTD. The project is targetted to be commissioned by 31.07.2020.

Delhi Jal Board had also proposed to create new water bodies on the vacant land at Rohini and Nilothi WWTPs. The schemes amounting to Rs. 5384.66 lac and Rs. 2349.59 lac were approved by Delhi Jal Board in its meeting held on 24.12.2018.

Tenders for the work of creation of lake at Rohini WWTP were received on 16.07.2019. The award of work was approved in the 144th meeting of Delhi Jal Board held on 27.08.2019. The period of completion is 12 months for execution, 3 months for commissioning and 3 months of trial run period. The work is likely to be

completed in September, 2020.

Tenders for the work of creation of lake at Nilothi are proposed to be issued in December, 2019. The period of completion is 12 months for execution, 3 months for commissioning and 3 months of trial run period.

Proposal on creation of water body at the vacant land of WWTP at Pappankalan was approved by Board in its 129th meeting held on 05.12.2016. Tenders for the work have been received and work is likely to be awarded by December, 2019.

As reported in the previous report, the Monitoring Committee had visited Satpula Lake, opposite District Court, Saket and had directed the concerned authorities to rejuvenate the water body inside the park. The water body was under DDA jurisdiction with constant efforts, DDA was persuaded to give NOC to DJB for development of this water body. The NOC has since been given by DDA. On its receipt DJB has chalked out a huge plan for revival of Satpula Lake. The total budgeted of Rs. 22,90,68,486/- has been approved by DJB in its meeting held on 19.08.2019. Tenders are likely to be invited in December, 2019 and work is likely to be awarded in March, 2020 with period of completion as 9 months.

DDA plans to set up STP in the said park to use treated water for horticulture purposes. Presently, the groundwater is being extracted by using tube-wells/bore-wells. DDA has been directed to close the tube-wells/bore-wells at the earliest.

**RECENT PHOTOGRAPHS OF FEW OF THE REVIVED WATER BODIES**



Water Body ,DDA Park Sector 5 Dwarka New Delhi



Inlet to the water body



Revival of water body at Samriti Van Park (DDA), Mayur vihar Phase 3, Kondli by utilization of treated effluent from DJB STP, Kondli



Outlet Goghas Drain, Bawana Industrial area  
body, Bawana Industrial area



Inlet to DSIIDC Water



DSIIDC Water body, Bawana Industrial area

## **SEALING OF UNAUTHORIZED TUBE-WELLS**

The Monitoring Committee has directed the concerned authorities including District Magistrates to seal unauthorized tube-wells/bore-wells in compliance of the directions of the Hon'ble NGT. Certain steps have been taken and its report has been given earlier before the Hon'ble NGT.

In its 27<sup>th</sup> Meeting held on 21.10.2019, SDM (Narela); BDO (North), SDM (Kanjhawala), representative of DM (North) were present. Officers from DM (NW) informed that 51 bore-wells have been sealed in Bhorgarh Industrial Area in September 2019. 180 bore-wells have been sealed during last 6 months since his joining. In Model Town, 80 bore-wells have been sealed since 01.01.2019.

Monitoring Committee directed SDM (Narela) to submit list of illegal bore-wells; list of sealed bore-wells and furnish an action plan to seal the remaining illegal bore-wells.

Officers of DM (North) informed that total 8 bore-wells have been sealed in the last month. 236 bore-wells have been sealed in Saraswati Vihar. 800 bore-wells have been sealed in Rohini since 01.01.2019.

Efforts will be made by the Monitoring Committee to involve other DMs to ensure that illegal bore-wells are sealed to prevent extraction of groundwater specifically at places where regular supply of DJB is available.

## **WATER SUPPLY IN PATPARGANJ INDUSTRIAL AREA IN EAST DELHI**

The matter regarding water supply to Patparganj Industrial Area maintained by DSIIDC, was taken up by the Monitoring Committee. In the meeting held on 18.03.2019, it was directed that a meeting of DSIIDC and DJB be convened by Chief Secretary, Delhi to resolve this issue.

In the meeting held in the Chamber of the Chief Secretary, Delhi on 28-03-2019, on the issue of supply of water in Patparganj Industrial Area, which was attended by CEO, DJB and MD, DSIIDC, it was decided that Delhi Jal Board will do the work of replacement of water supply network and sewerage network including reconstruction of local UGR and sewage pump house as deposit work on behalf of DSIIDC. Further DSIIDC will provide funds of Rs.22.00 crores, based on preliminary estimates to DJB.

It has been reported by DJB that funds amounting to Rs. 5.26 crores have been received from DSIIDC for replacement of water supply network. Tenders for this work have been received by DJB on 13-11-2019 and work is under process of award. This work has been targeted to be completed in 6 month after award of work.

It was a long pending dispute between DJB, DSIIDC and representative of Patparganj Industrial Area Association. Number of representations were received from the representatives of the Association. If the work is completed as reported above, about 400 tube-wells presently being used at Patparganj Industrial Area for extraction of groundwater shall be closed and regular water supply would be available to be provided by DJB.

**STATUS OF O.A. NO. 400/2017 TITLED “WESTEND GREENS FARMS SOCIETY V. UNION OF INDIA AND ORS”**

Hon'ble NGT was pleased to appoint Monitoring Committee vide order dated 02.11.2018 as oversight committee to review compliance of directions by the Joint Committee constituted under the Chairmanship of Secretary (Urban Development). The UD Department, however, filed its report directly before the Hon'ble NGT without being examined by the oversight committee. Vide order dated 19.09.2019, further directions with specific action plan were given by the Hon'ble NGT.

An e-mail dated 4<sup>th</sup> December 2019 was received from Mr. Sumit Gehlot, Advocate, counsel for Westend Greens Farms Society informing that directions in the order dated 2.11.2018 have not been complied so far. It was informed that the hotels/motels were in complete violation of the orders and were still organizing wedding functions in their premises. He attached photographs of hotels/motels namely Orana (taken on 1<sup>st</sup> December 2019 ) and D-Marks (taken on 30<sup>th</sup> November 2019) depicting these illegally organizing wedding functions.

A meeting was convened by the Monitoring Committee to deliberate upon the complaint on 28<sup>th</sup> November 2019. Secretary (UD) and Mr. Sumit Gehlot, Advocate were also requested to be present in the meeting.

In its 31<sup>st</sup> meeting held on 28.11.2019, Ms. Manisha Saxena, Secretary (UD) and Mr. Sumit Gehlot, Advocate were present. Secretary (UD) placed on record comprehensive report showing various steps taken by the Committee to implement directions of the Hon'ble NGT. Mr. Gehlot, however, informed that all the issues have not yet been addressed. Temporary structures like bamboo, tent etc have been erected for organizing functions at the resorts. Ms. Manisha Saxena informed that as per her report, the concerned authorities had already sealed the Orana Hotel. She was not aware as to how Orana came to organize wedding functions as shown in the photos. Mr. Gehlot further informed that three wedding functions were held on 08.11.2019. Secretary, UD assured to take required steps and to convene a meeting of all

concerned in which Mr. Gehlot would remain present. The said meeting shall be held on 05.12.2019 in the office of Secretary (UD). The Monitoring Committee directed that joint inspections should be carried out with Mr. Gehlot, Advocate and one member of the oversight committee and to concentrate initially on properties in default of directions including Orana.

The Monitoring Committee has received Minutes of Meeting dated 9<sup>th</sup> December 2019 convened by Secretary (UD) held on 5<sup>th</sup> December 2019 at 4:30PM to discuss the issue and action plan in view of the directions given by the Monitoring Committee held on 28.11.2019. Mr. Abhishek Bhardwaj, Advocate represented the society. Various discussions took place and necessary directions were given to the concerned authorities. It was decided that surprise inspection would be undertaken by the Joint Inspection Committee while the function was being held at the farm house before the next meeting on 12.12.2019. The counsel for the petitioner shall also be invited to join the inspection team. Report shall focus especially on various parameters such as sound/crackers/noise pollution, traffic, temporary structure of the pandals, groundwater/bore-well/water tanker etc. DPCC shall provide machines along with operators to each of the joint inspection team. Temporary structure installed in the farm houses shall also be inspected from the Disaster Management point of view. The further report is awaited.

Monitoring Committee shall continue to impress the Joint Committee to make sincere efforts for compliance of directions in letter and spirit. Secretary (UD) has been told to inform the Monitoring Committee as and when there is any difficulty or obstruction by any individual in the implementation of the order.

## **STUDY ON STRUCTURAL DAMPNES IN BUNGALOWS OF LUTYEN ZONE, NEW DELHI**

Problem of seepage in some buildings in Lutyen zone came to the notice of the Monitoring Committee. Central Ground Water Board was requested to carry out survey to find out ground water table in the said area. It has been brought out that seepage in the buildings is not due to shallow ground water levels but due to upward seepage in the walls of the bungalows due to capillary rise of the irrigated water. Comprehensive report of the CGWB is as under:

### **1. INTRODUCTION**

Justice (Retd) S. P. Garg, Chairman, Monitoring Committee constituted by National Green Tribunal under OA 496/2016, has raised issue of upward seepage in the bungalows located on Teen Murti Marg, Akbar Road and Tughlaq Road in its meeting dated 11.11.2019. It was desired by the Committee that CGWB should undertake a detailed study to find out reasons for seepage and also lookout possibilities of ground water extraction if cause of upward seepage/dampness was due to high water level.

The Head of Office, CGWB, SUO Delhi, discussed the matter in the office and a team of following officers was constituted:

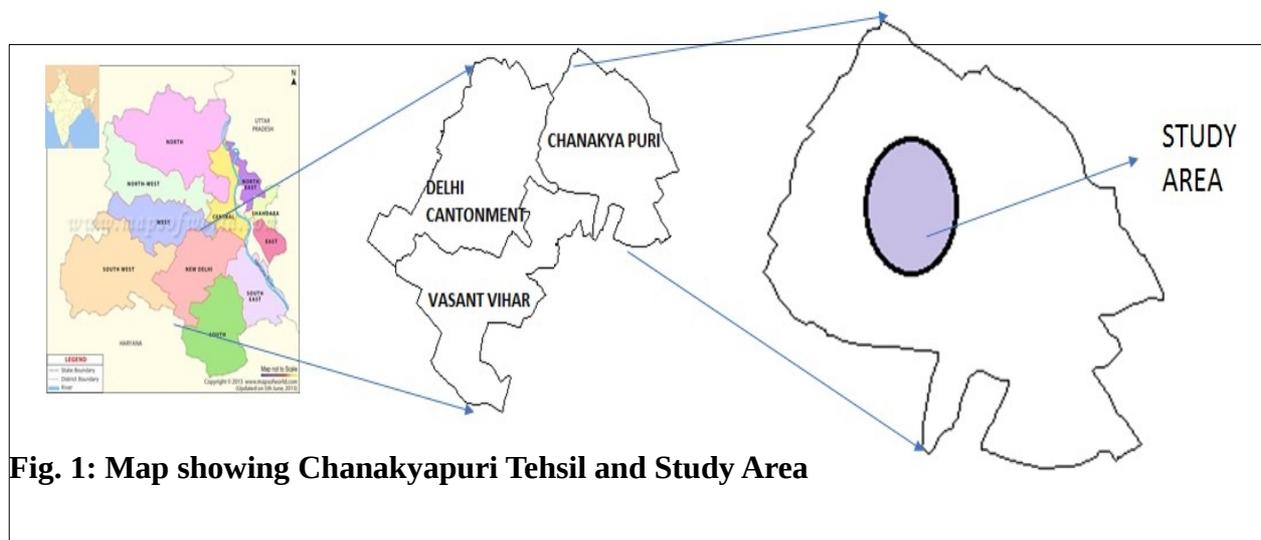
1. Sh. Saidul Haq, Sc-D (Hydrogeology), CGWB, SUO, Delhi
2. Sh. Faisal Abrar, AHG, CGWB, SUO, Delhi
3. Sh. S.Ashok Kumar, STA (Hydrogeology), CGWB, SUO, Delhi
4. Sh.V.Praveen Kumar, STA (Hydrogeology), CGWB, SUO, Delhi

The Committee was to find out reasons of issue raised by the Hon'ble Chairman of the Monitoring Committee and also to suggest remedial measures, if any. The team was also requested to suggest whether ground water extraction was possible from the study area.

### **2. LOCATION OF STUDY AREA**

The study area falls in the Chanakyapuri Tehsil of New Delhi District. It is

situated in between 28.554469° N to 28.642138° N Latitudes and 77.170946°E to 77.270125°E Longitudes. The entire tehsil is urbanized.



**Fig. 1: Map showing Chanakyapuri Tehsil and Study Area**

**Table 1: Salient features of Chanakyapuri Tehsil**

GEOGRAPHICAL AREA (sq km)	35.377
AREA UNDER ALLUVIUM ( %)	86
THICKNESS OF ALLUVIUM (m)	54
ELECTRICAL CONDUCTIVITY( $\mu$ S/cm)	653-2550
POLLUTION IDENTIFIED	NO <sub>3</sub> , Pb,Al, Fe
YIELD OF WELL (m <sup>3</sup> /day)	130
WATER LEVEL (mbgl)	6.5-30
TOTAL AVAILABLE GROUND WATER RESOURCE (MCM)	0
REPLENISHABLE RESOURCE/ DRAFT (2017)	8.27
PRESENT GROUND WATER DRAFT (MCM)	13.65

STAGE OF GROUNDWATER DEVELOPMENT (%)	173.73
CATEGORY OF DEVELOPMENT	OVER EXPLOITED
SUITABLE RECHARGE STRUCTURES	RTRWH,RS, CD

### **3. PRESENT SCENARIO/GROUND WATER RESOURCE OF THE STUDY AREA**

The water level in the tehsil ranges from 6.5-27.09 mbgl (November 2019). The depth of bed rock ranges from 47 to 80 mbgl in the area. The average fresh water thickness is 35 meters and average drawdown is 15 meters. The average discharge of well is 230 m<sup>3</sup>/day. Overall groundwater quality in the tehsil is good except some isolated pockets. The annual replenishable ground water resource of the tehsil is 8.27 MCM and total annual ground water draft is MCM. The tehsil is categorized as Over Exploited. Nitrate in excess of permissible limit (>45 mg/l) has been reported at Chanakyapuri, Lodhi garden and Safdarjung Tomb.

**Table 2: Water Level Data of Chanakyapuri Tehsil, Post Monsoon, 2019**

TEHSIL NAME	DATE	SITE_NAME	WATER_LEVEL ( mbgl)
CHANAKYAPURI	Nov-19	Birla Mandir DW	14.83
CHANAKYAPURI	Nov-19	Humayun Tomb DW	6.5
CHANAKYAPURI	Nov-19	India Gate Pz	9.97
CHANAKYAPURI	Nov-19	Lodhi Garden (D)	6.92
CHANAKYAPURI	Nov-19	Lodhi Garden(SH)	6.71
CHANAKYAPURI	Nov-19	Lodhi Garden Dw	6.63
CHANAKYAPURI	Nov-19	Mahabir Vansthali	27.09
CHANAKYAPURI	Nov-19	Safdarjung tomb	16
CHANAKYAPURI	Nov-19	Shram Shakti Bhawan1	12.62

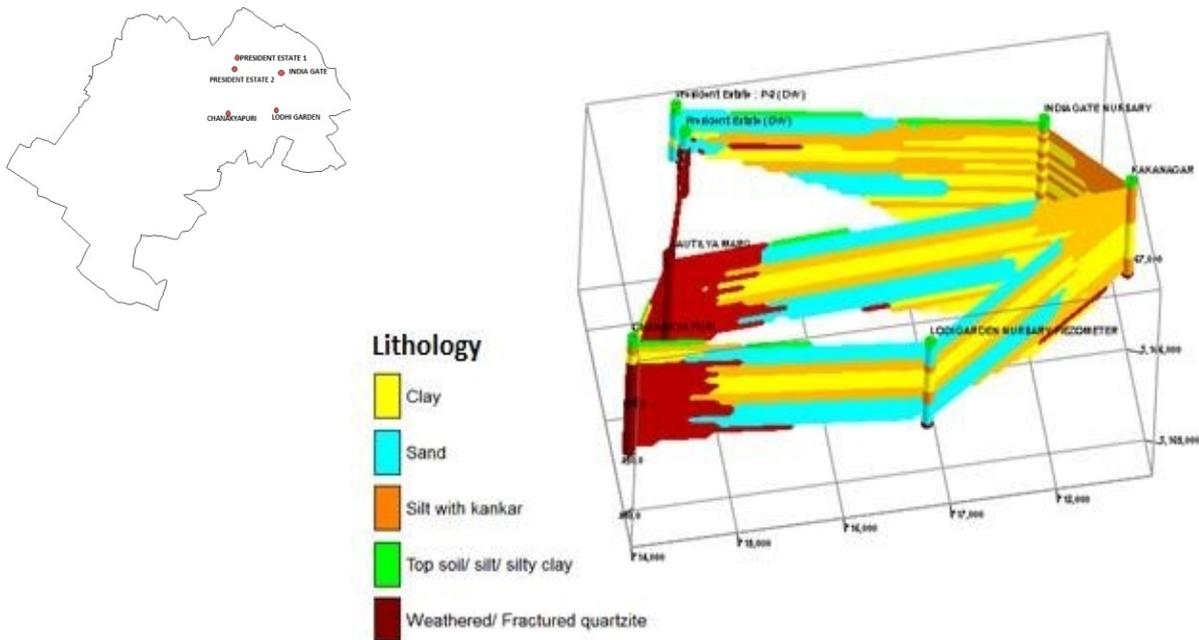
CHANAKYAPURI	Nov-19	Shram Shakti Bhawan 2	12.38
CHANAKYAPURI	Nov-19	Sunder Nursery Pz	7.92

Table 3: Resource estimation of the Chanakyapuri Tehsil

Ground water Resource of the Chanakyapuri Tehsil	
Annual Replenishable Ground Water Resource (MCM)	3.28
Annual Extractable Ground Water Recharge (MCM)	7.86
Annual Ground Water Draft (MCM)	13.65
Annual Allocation for Domestic use as on 2025 (MCM)	8.92
Annual Ground water Availability for future use (MCM)	0
Stage of Ground Water Extraction	173.73
Category	Over Exploited

#### **4. SUBSURFACE GEOLOGY OF NEW DELHI DISTRICT**

New Delhi district of NCT Delhi, covering an area of 35.3774sqkm is located centrally in the state with varied surface altitude due to presence of Delhi Ridge. Nearly 10 sq km area falls within ridge area with altitude ranging from 225 to 255 m above mean sea level (amsl). The surface is sloping gradually towards east up to the Yamuna river course where altitude is 210m amsl.



**Fig. 3: Subsurface geological cross sections of New Delhi District**

The sub-surface configuration of New Delhi district (Fig.3) varies widely. The western part which is adjoining to Delhi ridge is characterized by marginal alluvium where 0 to 30m thick veneer of alluvium overlies the weathered and fractured quartzite rocks (Delhi Ridge). Thickness of alluvium increases as we move away from the ridge towards the east. The depth to bedrock has been found to vary from 5 m bgl at Mahavir Vanasthali to 91 m bgl at Pragati Maidan. At Lodi Garden, bedrock has been encountered at 74 m bgl while at Connaught Place at 36 m bgl. At Rashtrapati Bhavan, bedrock has been encountered at 16 m bgl. The overlying alluvium consists of clay, silt and fine to medium sand. A substantial amount of kankaris also admixed with the clayey-silt. The top soil zone predominantly consists of silty-clay material followed by thin partings of clay, sand and silt layers alternatively. Sand and silt with kankar strata form favorable aquifer zones. The western part of New Delhi district covering areas of Rashtrapati Bhavan, Chanakyaपुरी, Shantipath, South and North Avenue and Connaught Place tubewells are tapping both the prevailing formations i.e. alluvium as well as hard rock whereas in the eastern part, alluvium wells are tapping alluvium. At India Gate, in a tubewell

drilled down to 150 m depth, alternate bands of clay and silt with kankar have been encountered. The extreme eastern part of New Delhi District is bounded by river Yamuna and represents a linear plain of Yamuna.

Ground water in the area occurs both under water table as well as under semi-confined conditions in alluvium. The tubewells usually tap kankar zone admixed with-silt and sand-aquifer zones. These aquifer zones are generally encountered alternatively below the depth of 10 m bgl and onward up to the basement rock. Quality of ground water is fresh at all depths in quartzite. while fresh saline interface has been encountered at 40 m depth at Pragati Maidan.

##### **5. FIELD VISIT AND OBSERVATIONS**

The team made field visits to the study area and covered Tughlaq Road, Teen Murti Marg and Akbar Road on 13/11/2019. The CGWB officials have approached subject study area in New Delhi district as follows:

- The team visited CPWD offices located in Teen Murti Bhawan and at Kushak road. The team had discussion with Sh. Anirudh Kumar, A.E and Sh. V.K.Gothra A.E, CPWD who are maintaining the bungalow of hon'ble judges located in Chanakyapuri Tehsil.
- The team visited Bungalow at 8, Rajaji Marg which was under major renovation and noticed seepage on the walls up to 4 feet height.
- The team also noticed upwards seepage on the boundary walls of Kashmiri house.
- The team monitored water level in a defunct Tubewell of NDMC located in lawn in front of US Embassy and found to be 26.82 meters below ground level.
- The team also monitored the Historical Dugwell present on backside of the High Commission of Canada and found it to be 23 meters below ground level.



Figure 4: Site Observations at Lutyens' Delhi Bungalows



Figure 5: Site Observations at Lutyens' Delhi Bungalows

## **6. CONCLUSION AND RECOMMENDATIONS**

Based on findings of the field visit, discussions with officials of CPWD and previous works of CGWB, following have been concluded as outcome of the study

1. The water levels in the study area are ranging between 6.5-30 meters below ground level which is much below than the root zone.

2. The upward seepage in the walls of bungalow of study area is attributed to capillary rise of irrigated water.
3. The old bungalows which were built during pre-Independence time do not have Damp Proof Course (DPC) over the foundation and Mud Mortar mixture have been used as cementing material during masonry work as reported by CPWD Officials.
4. There occurs a thin clay layer at 5 meters below ground level which do not permit surface water to percolate further below quickly. Hence, any water logging during monsoon or due to surface irrigation (Horticulture) causes lateral movement of ground water towards foundation of the wall/building.
5. The coarse cementing material helps rise of water within the pore spaces of cementing material due to capillary action causing dampness in the wall.
6. The absence of Damp Proof Course (DPC) over the foundation increases the rate of capillary rise causing severe damage to the buildings.
7. There is no further scope for ground water extraction in the Tehsil because this has been categorized as over exploited (already Water Stressed) as per report on Dynamic Ground Water Resource of India by Central Ground Water Board (as on 31.03.2017).

The Monitoring Committee records appreciation for the comprehensive report submitted by the officers of Central Ground Water Board.

## SUMMARY

- There is remarkable progress in implementation of RWH Systems in schools and colleges. Barring few, all the schools and colleges have adequate and functional RWH Systems.
- After successful implementation of RWH Systems in schools and colleges, the Monitoring Committee concentrated upon implementation of RWH Systems in various other buildings under DDA, DJB, PWD, DMRC, DTTDC, DUSIB. Substantial progress has been shown by these bodies. Number of buildings now have RWH Systems in place. In other buildings, RWH Systems is under construction and action plan has been chalked out for completing the same.
- The Monitoring Committee is now concentrating for implementation of RWH Systems in buildings under DTC, Railways, Group Housing Societies, Hospitals, Private Industries etc.
- Monitoring Committee has visited several water bodies. Some of the water bodies have been revived. Some are in the process of revival. The DJB, DDA and I&FC have furnished action plan for revival of the water bodies under their jurisdiction in a time bound period. The Monitoring Committee shall supervise the implementation. The Monitoring Committee intends to visit sites where the work of revival of water bodies is being undertaken and is in progress.
- DDA has been impressed upon to fill water body at Ashoka Park with treated water either by transportation from Okhla plant through tankers or by connecting STP line for which connection has been permitted by DJB.
- Monitoring Committee shall ensure that Satpula Lake near District Court, Saket is revived in a time bound period with landscaping. It will be a tourist spot surrounded by monuments.
- Water body at Gogha is on verge of complete revival. Water has been filled in this water body by laying a pipeline near the wetland system. The water body

is full of water. On persuasion by Monitoring Committee DSIIDC has already given permission for landscaping of the water body to I&FC. The work is to be allotted soon.

- The Monitoring Committee shall coordinate among various government departments, NEERI and concerned DMs to remove difficulties in revival of the water bodies.
- The Monitoring Committee has already involved the concerned District Magistrates for sealing illegal tube-wells/bore-wells. DDA and other land owning agencies have been directed to stop extraction of water through tube-wells/bore-wells in the parks for horticulture purposes and to use treated water.
- The Monitoring Committee shall supervise implementation of plan for carrying out the work in Patparganj Industrial Area to provide DJB water. It will enable 400 tube-wells presently being used for extraction of groundwater to be closed.
- The Monitoring Committee shall review the steps taken by Urban Development Department for implementation of the directions given by Hon'ble NGT in O.A. No. 400 of 2017.
- Area in Lutyen Zone has been surveyed to assess the water level position. The comprehensive report has been prepared by Central Ground Water Body.
- PWD was persuaded to provide net/mesh to prevent people standing on the road to throw garbage in the water body at Neela Hauz Khas as requested by Prof. Babu. The PWD has since provided the said protection.
- The Monitoring Committee had wider consultations with senior officers i.e. Vice Chairman, DDA, Secretary, Urban Development, CEO DJB and I&FC, Member (Water) Scientist of NEERI. They have been persuaded to implement the directions of the Hon'ble NGT and the Monitoring Committee in letter and spirit in a time bound period.
- The contractors to whom the work has been allotted were called and persuaded

to complete the projects in the allotted time period.

Submitted please.

**Justice (Retd.) S. P. Garg**  
Chairman, Monitoring Committee