Executive Summary: Sewage Management in Delhi

Background

It is estimated that Delhi produces about 680 million gallons per day (MGD) of sewage. The sewage network comprises of 6500 kilometres (Kms.) of sewer lines including sewers. A number of agencies viz., The Delhi Jal Board (DJB), The New Delhi Municipal Council (NDMC), Delhi Cantonment Board (DCB), The Delhi State Industrial Infrastructure Development Corporation (DSIIDC) and Delhi Development Authority (DDA) are responsible in their respective functional jurisdictions for constructing and managing this huge network. Concerned with the problem of environment, the Hon'ble Supreme Court had also directed (February 1996) the Government of National Capital Territory of Delhi (NCT) to construct Common Effluent Treatment Plants (CETPs) to treat effluent of industrial units located in 28 different Industrial Estates of Delhi.

Reasons for selection of the topic

The present performance audit is the fourth in the series of performance audits carried out by Audit in the state of Delhi on issues relating to sewage management and treatment aimed at controlling water pollution in NCT. In view of the significant under performance of sewage treatment projects, this performance audit was carried out with a view to assessing the management of the Sewage treatment Plants (STPs), Sewage Pumping Stations (SPSs) connecting sewer lines and treatment of industrial and domestic sewage along with quality of treatment.

Scope of Audit

The performance audit covered the period from 2007-08 to 2011-12. Through statistical random sampling without replacement, Audit selected 100 % of Sewerage Treatment Plants (STPs) with capacity of more than 70 MGD (three), 40 % of STPs with capacity from 20 to 70 MGD (two) and 30 % of STPs with capacity less than 20 MGD (two) along with their Sewage Pumping Stations (SPSs) and 20 % of sewage maintenance divisions of DJB (eight) along with various controlling and other related offices.

Audit Objectives and Criteria

The performance audit was conducted to verify whether:-

- there was a gap between sewage generation, sewage treatment capacity and actual sewage treatment by the DJB and DSIIDC,
- the programs and schemes for sewage system in Delhi were conceived and systematically planned for treatment of sewage,

- the facilities created were effectively functioning in accordance with the stipulated performance standards,
- there was an effective system for monitoring the quality of the effluent water so as to enable to take timely corrective measures and the measures taken had impact in improving the quality of effluent water,
- all the industrial areas were covered for collection of industrial sewage for treatment at CETPs, and
- the sludge generated was being disposed of properly.

The audit criteria was drawn from The Sewage Manual of the Ministry of Environment and Forest, GoI, The Central Public Works Department Works Manual, Guidelines and instructions issued by the Environment Pollution (Prevention and Control) Authority (EPCA) and the Delhi Pollution Control Committee and Guidelines and instructions issued by the Hon'ble Supreme Court of India.

Major Audit Findings

- It is estimated that Delhi produces about 680 MGD of sewage. Out of this, the DJB was able to collect and treat only about 367 MGD (54 %).
- In 15 STPs sampled, the sewage effluents did not meet the prescribed standards of Bio-Chemical Oxygen Demand and Total Suspended Solids etc. DJB did not analyze the standard of total coliform and fecal coliform at any of its STPs sampled, leaving the public exposed to spread of many contagious diseases caused by pathogens.
- To cater sewage treatment demand of some industrial areas, CETPs were planned but not constructed despite a lapse of 14 years after their stipulated completion time, thereby, flowing industrial sewage into the river Yamuna. Further, some industrial areas remained unconnected to the CETPs.
- Hazardous sludge totaling 12769 MT, generated by the CETPs' during treatment, was lying in the premises creating a threat to the environment and health of the masses.
- All the seven test-checked STPs were working below capacity and overall utilization was only 53 % of the total capacity as treatment capacity was installed in sparsely populated areas while STPs and conveyance systems were not installed in areas where large quantity of sewage was being generated.
- The quantum of actual sewage treated at nine STPs was only 153 MGD against the total treatment capacity of 220 MGD due to failure of the DJB to plan synchronized development of all the activities of sewage collection.
- 37 out of 62 digesters were not working in the 15 sampled STPs. Due to this, about 7.27 lakh cubic feet of harmful gases produced at Okhla, Keshopur and Rithala phase-I STPs were escaping into the

atmosphere every day.

- Though the STPs were in operation since long, no evaluation study of the STPs was undertaken during 2007-12 to assess the impact of the STPs/ SPS and Sewage Network.

Recommendations

- The DJB may strengthen its initiatives to achieve the GOI bench marks of 100 % sewage collection and treatment in a time bound manner.
- It may ensure simultaneous execution and completion of all related infrastructure so as to avoid mismatch between collection of sewage and treatment capacities of STPs'.
- Proposals for creation of treatment capacity must be based on and prioritized with reference to the estimated sewage generation in the relevant catchment areas and availability of facilities to bring the same to STPS'.
- A policy for disposal of sludge from CETPs, may be devised and timeline fixed for its implementation.
- The instructions issued by the EPCA should be complied with and oversight mechanism may be ensured to implement the decisions of EPCA.

Source: http://saiindia.gov.in/english/home/Our_Products/Audit_report /Government_Wise /state_audit/ **recent_reports /Delhi/2013/Report_2/Chap_2.pdf**