

CHAPTER - II
Audit Framework,
Scope and
Methodology

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This Chapter describes the broad objectives of the Performance Audit; sources of the audit criteria used; scope of audit; methodology adopted and the constraints faced, while conducting the Audit.

2. Audit Framework

2.1 Audit Objectives

The objectives of the Performance Audit (PA) were to assess whether:

- ❖ the planning and designing, for collection/ conservation of storm water and construction of infrastructure for drainages/ sewerages, had been effective and efficient
- ❖ the financial management of projects had been efficient
- ❖ there had been adequate transparency in the tendering and award of works, relating to storm water drainages/ sewerages, and whether the execution of such works, had been in accordance with extant rules *and*
- ❖ the monitoring mechanism had been adequate and effective.

2.2 Audit Criteria

The following sources of audit criteria were used by Audit, for assessment of the management of storm water drainage and sewerage:

- ❖ National Water Policy, 2002 and 2012 and State Water Policy, 2007
- ❖ Odisha Urban Water Supply Policy, 2013
- ❖ Urban and Regional Development Plans formulation and implementation Guidelines, 2015, by Ministry of Urban Development Department, Government of India
- ❖ Odisha Urban Sanitation Policy, 2017
- ❖ National Disaster Management Act, 2005 and Guidelines, 2010
- ❖ The Water (Prevention and Control of Pollution) Act, 1974
- ❖ Odisha Town Planning and Improvement Trust Planning Act, 1956 and Odisha Town Planning and Improvement Trust Rules, 1975, Odisha Development Authority Act, 1982 and Odisha Municipal Corporations Act, 2003
- ❖ Wetlands (Conservation and Management) Rules, 2017
- ❖ Municipal Solid Waste Management Rules, 2016, Odisha General Financial Rules, Budget Manual, Odisha Public Works Departmental Code, State Schedule of Rates and Analysis of Rates
- ❖ Indian Roads Congress (IRC) SP-50- 2013- Guidelines on Urban Drainage and IRC-SP-42-2014- Guidelines of Road Drainage issued by the Indian Road Congress

- ❖ Manuals of Sewerage and Sewage Treatment, 1980 and Manual of Sewerage and Sewage Treatment System, 2013, Storm Water Drainage (SWD) Systems, 2019 and handbook, issued by the Central Public Health and Environmental Engineering Organisation (CPHEEO)
- ❖ Swachh Bharat Mission guidelines (Urban) and Handbook for Service Level Benchmark (SLBM), issued by the Government of India (GoI)
- ❖ Scheme guidelines of various schemes, executed with the assistance of the State/ Central Governments
- ❖ Government orders, Court judgements/ National Green Tribunal instructions/ orders, executive instructions and Circulars, issued from time to time
- ❖ Time-series satellite imagery of SWDs and Comprehensive Development Plans (CDP) of Cities
- ❖ Research and Study Reports of the Odisha University of Agriculture and Technology (OUAT), Indian Council of Agricultural Research (ICAR), Central Institute of Fresh Water Aquaculture (CIFA), Indian Institute of Water Management (IIWM), Indian Institute of Human Settlements (IIHS) and Centurion University of Technology and Management (CUTM), Odisha
- ❖ Media reports *and*
- ❖ Urban and Regional Development Plans formulation and implementation guidelines, 2015, GoI

2.3 Audit scope and methodology

The PA was conducted from June to December 2022, covering period from the FYs 2017-18 to 2021-22, through test-check of records and documents relating to storm water drainage and sewerage management systems, in the offices of five MCs¹⁵; Bhubaneswar Smart City Limited (BSCL) and Rourkela Smart City Limited (RSCL); Principal Secretary and Director of Municipal Administration of the H&UD Department; and the SPCB. Audit also scrutinised related records of the office of Additional Chief Secretary, Health and Family Welfare Department (H&FWD); Director of Town Planning (DTP); five¹⁶ Development Authorities (DAs) of Corporation areas; EIC, OWSSB; CEO, WATCO; three¹⁷ Drainage Divisions of the Department of Water Resources (DoWR); and three¹⁸ National Highway (NH) Divisions, of the Works Department, in regard to their involvement in the management of SWD and SPs, within the urban limits of the above MCs.

¹⁵ Bhubaneswar Municipal Corporation (BMC), Cuttack Municipal Corporation (CMC), Berhampur Municipal Corporation (BeMC), Sambalpur Municipal Corporation (SMC) and Rourkela Municipal Corporation (RMC)

¹⁶ Bhubaneswar Development Authority (BDA), Cuttack Development Authority (CDA), Berhampur Development Authority (BeDA), Sambalpur Development Authority (SDA) and Rourkela Development Authority (RDA)

¹⁷ Drainage divisions: Khordha, Cuttack and Berhampur

¹⁸ National Highway Divisions, Bhubaneswar, Cuttack and Rourkela

Audit also analysed the satellite images obtained from *Google Earth Pro* and *Google Earth*, along with the land use data furnished by the Odisha Space Research Application Center (ORSAC), to arrive at the time-series pattern of land use changes due to rapid urbanization, as well as rainfall data from the Indian Metrological Department (IMD), in these MC areas. Audit also analysed the water supply data of urban areas, obtained from the Public Health Department (PHD), to derive the sewerage generation in cities. Information regarding de-silting works, executed for roadside drains, were also obtained from 12 Public Works Divisions¹⁹ (PWDs) and Prachi Irrigation Division, Bhubaneswar inside the corporation areas. Joint Physical Verification (JPV) of various sites was also conducted, along with departmental officials, to identify encroachments and examine the status of repairs, maintenance and de-silting works, carried out by the MCs, in drains and water bodies. Research papers of the OUAT, ICAR, CIFA and other institutions, in regard to the impact of urban sewerage waste, on soil, vegetables, aquatic life and ground water, were also analysed for impact assessment. Illustrative videos, taken during JPV, have also been included in the report, at relevant places, by providing the link and Quick Response (QR) codes for scanning, to access these videos.

The entry conference was held on 19 September 2022, with the Principal Secretary, H&UD Department, in which the audit objectives, criteria, scope of audit and methodology, were discussed.

Draft performance Audit Report was issued on 13 February 2023 to the Government. Despite several requests and issue of reminders (six times, during March 2023 to June 2023), the department was not willing to conduct the Exit Conference.

2.4 Acknowledgement

Audit acknowledges the cooperation extended by the Department, along with all the five MCs, five DAs, DTP, BSCL, RSCL, Drainage Divisions/ PWDs, OWSSB, WATCO, SPCB, PHD, OUAT, CIFA, IMD and ORSAC, Bhubaneswar, in conducting the Performance Audit.

2.5 Audit Constraints

Absence of complete records in the Office of the Principal Secretary to Government, H&UD Department, MCs, WATCO and OWSSB (mentioned at various places in the report), hindered the audit analysis. Hence, the findings of the JPVs, documented in the form of photographs and videos, formed the basis for highlighting the impact of insufficient SWD and sewerage management systems. The findings have been substantiated with reference to various studies relating to the impact of urban wastewater, on agriculture, soil and aquatic life, conducted by OUAT, ICAR and CIFA; research papers of other institutions; media reports; and official tweets of the MCs.

2.6 Previous Audit

A Performance Audit, on the “Implementation of Sewerage projects in the State” had been conducted, covering the period from the FYs 2010-11 to 2015-16 and the findings of the PA had been included in the Report of the

¹⁹ Bhubaneswar I; II; III; IV and V; Cuttack I and II; Sambalpur I and II; Berhampur I and II PWD Divisions and Rourkela (R&B) Division

CAG of India on General and Social Sector for the year ended March 2016, Government of Odisha *vide* Report No. 1 of the year 2017. The report had not been discussed by the Public Accounts Committee as of March 2023. The findings of the report have been referred to, at appropriate places in this report.