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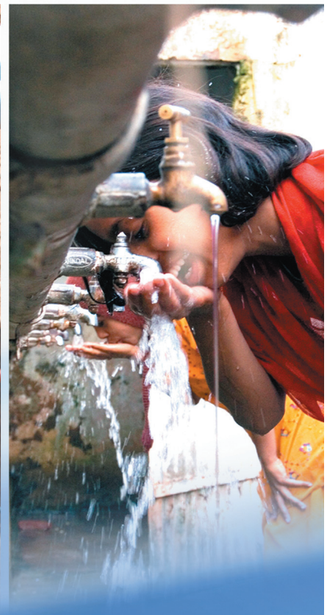
MINISTRY OF URBAN DEVELOPMENT
GOVERNMENT OF INDIA

सत्यमेव जयते

SERVICE LEVEL BENCHMARKING DATABOOK

Improving Service Outcomes

2008-09



Water supply
Wastewater management
Storm water drainage
Solid waste management

wsp water and sanitation program

CEPT UNIVERSITY झानं विज्ञान संहितम्

COOPERATION REPUBLIC OF INDIA FEDERAL REPUBLIC OF GERMANY gtz

JICA

PROOF Public Record of Operations & Finance

The Water and Sanitation Program provided the Ministry of Urban Development, Government of India, with technical support and guidance for designing this Databook.

Ministry of Urban Development
Government of India

SERVICE LEVEL BENCHMARKING DATABOOK

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Wastewater management
Storm water drainage
Solid waste management

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Acronyms and Abbreviations

AIILSG	All India Institute of Local Self Government
ASCI	Administrative Staff College of India
CEPT	Centre for Environmental Planning and Technology
CPHEEO	Central Public Health and Environmental Engineering Organisation
FC XIII	13th Finance Commission
GIS	Geographic information system
GoI	Government of India
GTZ	Gesellschaft für Technische Zusammenarbeit
IBNET	International Benchmarking Network for Water and Sanitation Utilities
ICLEI	International Council for Local Environment Initiatives
ISIP	Information Systems Improvement Plan
JE	Junior engineer
JICA	Japan International Cooperation Agency
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
lpcd	Litres per capita per day
MLA	Member of Legislative Assembly
MLD	Million litres per day
MoUD	Ministry of Urban Development
MSW	Municipal solid waste
NRW	Non-revenue water
O&M	Operation and maintenance
PIP	Performance Improvement Plan
PROOF	Public Record of Operations and Finance
pucca	Can be translated as 'permanent'
RDF	Refuse-derived fuels
SENES	SENES Consultants India Private Limited
SLB	Service Level Benchmarking
STP	Sewerage treatment plants
SWM	Solid waste management
ToR	Terms of Reference
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULB	Urban local body
UMC	Urban Management Council
WatSan	Water and sanitation
WSP–SA	Water and Sanitation Program–South Asia
WSS	Water supply and sanitation

Note: 1 lakh = 100,000. 1 crore = 10,000,000

S. Jaipal Reddy

Minister of Urban Development
Government of India

Message

While the Government of India has been assisting the States and the urban local bodies (ULBs) towards urban infrastructure improvements and asset-creation, what finally matters is the outcome in the sense of overall improvements in the delivery of services to urban residents. It is with this vision that the Ministry of Urban Development (MoUD) seeks to promote an outcome-based approach for performance assessment and management in the ULBs.

The present Databook on 'Service Level Benchmarking' for cities covered under a pilot project needs to be seen in this context. It summarises the findings of a recently-concluded and year-long benchmarking exercise in respect of 28 ULBs across India relating to four basic municipal services, namely, water supply, sewerage, solid waste management and storm water drainage. I am of the considered view that these four form the 'core' services whose efficient delivery holds the key to effective and efficient functioning of ULBs in our country at present.

It is encouraging to know that the 13th Finance Commission does also recommend service level assessment and periodic reporting (as outlined in the Handbook on Service Level Benchmarking brought out by the MoUD) as one of the nine requirements for accessing performance grants for the ULBs.

I hope that this Databook will serve as a valuable reference document that not only guides but also encourages ULBs across the country to move towards operationalising the Service Level Benchmarking framework and towards continuous monitoring and improvement in the service delivery.

I compliment the concerned officials of the MoUD, State Governments, cities, various organisations and many experts whose contribution went into the making of this Databook on Service Level Benchmarking.

S. Jaipal Reddy

Dr M. Ramachandran

Secretary
Ministry of Urban Development
Nirman Bhawan
New Delhi

Foreword

India's rapid economic growth in the last two decades has been accompanied by increased levels of urbanisation. Our cities, which are engines of growth, are under great strain to meet the growing demands and aspirations of their people.

Recognising the growing importance of improving efficiency in delivery of basic services in our cities, the Government of India has launched a series of initiatives aimed at enabling urban local bodies to meet the unprecedented challenges that they face today. These include schemes such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Capacity Building for Urban Local Bodies, National Urban Transport Policy, National Urban Sanitation Policy, National Mission Mode Project on E-governance and credit rating of select municipal bodies.

As a part of the ongoing endeavour to improve service delivery in the cities, the Ministry of Urban Development has adopted National Benchmarks in four key sectors – Water Supply, Sewerage, Solid Waste Management and Storm Water Drainage and has developed a Handbook on Service Level Benchmarking in December 2008. Over the past year, a pilot project was implemented in 28 urban local bodies spread across 14 States and 1 Union Territory in India. The results of that initiative have been presented in this Databook. Participating ULBs have undertaken performance analyses, developed improvement plans and initiated implementation of the same. This has demonstrated how performance monitoring can facilitate interventions and resource allocations that are targeted at specific service outcomes. It also helps improved articulation of service improvements achieved to the citizens. It is hoped that this Databook would enable other State level agencies and local level service providers to understand the standardised SLB framework and help them initiate similar performance-monitoring programmes within their constituencies.

The Ministry of Urban Development on its part would continue to facilitate the adoption of these benchmarks through various schemes and projects and would also provide appropriate support to urban local bodies that move towards operationalising the underlying performance monitoring framework. I encourage all State and local level functionaries to use this Databook in achieving our goal of improved service delivery for our citizens.

Dr M. Ramachandran

A.K. Mehta

Joint Secretary
Ministry of Urban Development
Nirman Bhawan
New Delhi

Preface

The Ministry of Urban Development (MoUD) initiated the development of a common minimum Service Level Benchmarking (SLB) framework for monitoring and reporting on service level indicators in four key service sectors, viz. Water Supply, Sewerage, Solid Waste Management and Storm Water Drainage in the year 2006. The primary objective of the SLB framework has been to put in place an operational framework that could help in creating outcome orientation and institutionalise a reporting mechanism for ULBs to undertake performance analysis to improve service levels in a cost effective manner.

To facilitate the operationalisation of the SLB framework, the MoUD has been supporting a pilot programme in 28 cities in the country. Over the past year, these 28 cities in States/UT of Andhra Pradesh, Chandigarh, Chhattisgarh, Delhi, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Odisha, Punjab and Tamil Nadu have undertaken the implementation of the SLB framework. A number of development partners including WSP–SA, ASCI, CEPT, GTZ and JICA have been involved in facilitating this process, by funding technical consultants for facilitating the process of data collection in the cities as well as providing technical guidance for the implementation of the SLB framework on the ground.

The exercise has had some remarkable outcomes, namely:

(i) Creation of baseline data for the 28 indicators listed in the Handbook for Service Level Benchmarking for all the cities that were involved in the exercise;

(ii) Helping local decision-makers identify gaps and plan improvement measures, based on the results of the exercise;

(iii) 12 of the 28 cities have developed Information Systems Improvement Plans (ISIPs), funds for which have already been sanctioned to them by the State Governments and the Ministry of Urban Development.

I am grateful to Shri S. Jaipal Reddy, Urban Development Minister, and Dr M. Ramachandran, Secretary, Urban Development, for the constant support and guidance throughout the exercise. I would like to sincerely thank all the State Secretaries of Urban Development, Municipal Commissioners and the staff involved in the delivery of WSS and SWM services, for the support extended for the exercise. I would also like to thank the development partners – WSP–SA, ASCI, CEPT, GTZ, JICA and PROOF as well as their consultants for hand-holding cities to undertake the SLB framework for successfully collecting baseline data and using the data for better decision-making in the delivery of services.

I indeed hope that this Databook marks a watershed in the urban sector. I expect more State Governments and cities to adopt this performance monitoring framework at the urban local body/parastatal level, which shall help in institutionalising the culture of regular collection of data and performance analysis with the objective of improving the quality of municipal services and greater transparency and accountability.

A.K. Mehta

Introduction to the Benchmarking Initiative

Background

Sustainable access to water supply and sanitation services has always been a priority for the Government of India. Yet, despite many government-supported water supply investment programmes over the past three decades, a significant number of Indians, especially the poor, continue to rely on unsafe sources of water supply and suffer inadequate water and sanitation services.

Typically poor and inadequate water supply and sanitation (WSS) service delivery outcomes have always been ascribed to the lack of adequate capital investment, poor finances of urban local bodies (ULBs) or capacity issues and staff shortages. The response has typically been greater investments in capital-intensive projects for securing improvements in performance. However, it is increasingly being recognised that these alone cannot deliver the necessary improvements on the ground, unless there is increased accountability towards the delivery of improved service outcomes.

The primary focus of the urban reform agenda being implemented as part of the various centrally sponsored schemes – for instance, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), or the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) – has been to enhance accountability for service delivery. It envisages a shift in focus from infrastructure creation to delivery of service outcomes. Benchmarking is now well recognised as an important mechanism for introducing accountability in service delivery.

Core Group on Benchmarking and the Handbook on Service Level Benchmarks

Keeping this in focus, the Ministry of Urban Development (MoUD) constituted a Core Group on Benchmarking under the chairmanship of the Joint Secretary (Urban Development), with the aim of developing a framework for benchmarking of water supply, wastewater management, storm water drainage, solid waste management (SWM) services and urban transport. Senior sector experts were invited from various organisations to be a part of the Core Group, which advised in the finalisation of a Handbook on Service Level Benchmarks. The document provides (a) a common minimum framework for monitoring and reporting on service level indicators; and (b) guidelines on how to operationalise this framework in a phased manner.

Subsequent to finalisation of the Handbook, it has been sent to the Chief Secretaries of States all over the country vide a letter dated September 12, 2008, signed by Secretary, MoUD (ref. D.O. No. N-11025/33/2008-UCD). It was desired that all States undertake a performance monitoring exercise based on the framework defined in the Handbook.

Service Level Benchmarking Pilot Initiative

To encourage and facilitate the adoption of the Service Level Benchmark framework outlined in the Handbook, a decision was taken to support the implementation of the framework in select pilot cities across the country. The MoUD proposed to coordinate and support the implementation of the SLB framework in 28 cities. The initiative encompassed two aspects:

1. Collation of performance data using the indicators and methodologies outlined in the SLB Handbook.

2. Support for adoption of appropriate information systems at the city level (and, if required, at the State agency level) to support provision of this data on an ongoing basis.

The initiative was also designed to establish a link between benchmarking and internal performance improvement efforts.

Objectives: The overarching aim of this initiative was to take the SLB framework forward from concept to practice. Within this, the specific objectives of the programme have been:

- Demonstration effect – By operationalisation of the framework into practice, other ULBs/State agencies would be encouraged to adopt the SLB framework in their context.
- Learning by doing – The process of operationalisation would result in building capacity of local bodies and technical resource persons, who could then support replication of this process in other locations.
- Authentication/validation of the framework – Questions and doubts about the definitions and methodology in the Handbook would get resolved by the process of implementation in an operating context.
- Development of template for State-wide rollouts – The implementation plan and information systems developed in a particular State's context could be templatised for rolling out to other ULBs in the State.

Some of the factors which differentiated the SLB initiative from earlier benchmarking exercises were:

- Uniform set of indicators, definitions and calculation methodology to enable meaningful comparisons.

- Provision of service benchmarks to create consensus on desired service standards.
- Inclusion of data reliability grades to highlight and address issues of data quality.
- Self-reporting by ULBs (as against consultants) to ensure ownership for data.
- Emphasis on systems and performance improvement planning based on the SLB data generated.

Besides benchmarking, the pilot initiative incorporated the development of Performance Improvement Plans (PIPs) using information generated by the benchmarking exercise and Information Systems Improvement Plans (ISIPs) for strengthening the data systems for improving reliability. This was intended to facilitate the integration of benchmarking into the decision processes of ULBs and utilities. The last section of this Databook summarises some of the ISIP proposals developed by cities after the commencement of the SLB pilot initiative. As an illustration, it also provides a sample ISIP and PIP for a ULB.

Institutional arrangements: The pilot initiative was overseen by a Steering Committee constituted at the national level, under the chairmanship of the Joint Secretary, MoUD. A National Coordinator was appointed for the programme, as also two National Technical Advisors to provide conceptual clarifications and methodological consistency in the implementation of the SLB framework – one to address water, sanitation and storm water drainage, and the other to focus on SWM.

At the pilot city level, an SLB Core Committee was constituted consisting of local functionaries responsible for service delivery. This Committee, supported by local technical consultants, was responsible for data collection and analysis, leading up to formulation of ISIPs and PIPs. To provide coordination and oversight at the State level, a State Nodal Officer was nominated under this initiative.

Donors and consultants involved: The SLB pilot initiative is being implemented in 28 cities across 14 States and one union territory.[1] A number of development partners have been involved in this initiative by providing technical consultants for facilitating data collection and improvement planning in the cities. The development partners include the Water and Sanitation Program–South Asia, Japan International Cooperation Agency, Gesellschaft für Technische Zusammenarbeit, Centre for Environmental Planning and Technology and Public Record of Operations and Finance. A list of development partners, consultants and associated support provided is given in Table 1.

Outcomes and reach: The success of the pilot initiative lies in data being collected for the first time for 28 performance indicators across four sectors and 28 cities in 14 States. The data collection exercise enabled cities to do an honest self appraisal of their performance from a service delivery point of view. The initiative was characterised by some important 'firsts'. For the first time, data was generated and analysed using a uniform definitional framework articulated by

Table 1: Partners and consultants

Development partner	Consultant	Support provided
WSP–SA	CRISIL/DENEB	Bhubaneswar, Berhampur, Chandigarh
	Jalakkam Solutions, SENES	National Technical Advisors
CEPT (Bill and Melinda Gates Foundation)	UMC	Ahmedabad
	AIILSG	Nasik, Pimpri Chinchwad, Kolhapur
GTZ	ICLEI	Tiruchirapalli, Udhagamandalam, Imphal, Shimla, Palampur, Dharamshala, Bokaro, Chas, Surat
JICA	ASCI	Hyderabad, Guntur, Trivandrum, Kozhikode, Amritsar, Jalandhar, Delhi, Bengaluru
**	ASCI	Indore, Ujjain, Bhopal, Raipur
PROOF	–	National Coordinator

*** Funded by Ministry of Urban Development, Government of India*

[1] Out of the 28 SLB towns or cities, 27 are urban local bodies except Bokaro Steel City, which is not a municipality. Its WatSan (or water and sanitation) services are provided by a division of the Steel Authority of India (a corporate entity).

the Government of India (GoI). For the first time, a focussed discussion was held on data reliability using the grading system incorporated in the Handbook and the ISIP. For the first time, cities (and not consultants) presented their own performance data, along with a performance gap analysis and improvement plans.

The SLB framework is now also gathering the support of many cities and States through a 'demonstration effect', of receiving first-hand knowledge of the framework through interactions with the participating pilot cities. Many new States such as Bihar and Uttar Pradesh are now being encouraged to adopt the SLB framework in their context, by witnessing some of the quick wins achieved and performance improvement interventions being developed by cities as a result of the SLB initiative. In addition, some States such as Odisha, Madhya Pradesh, Karnataka, Maharashtra and Gujarat are already in the process of scaling up the benchmarking exercise to cover a larger number of cities in their respective States. These can serve as a demonstration for other States to adopt similar scale up strategies.

Impact: The pilot initiative has succeeded in strengthening the principle of accountability at all levels of service delivery. The SLB framework is now being incorporated by the MoUD in all its programmes and initiatives including the JNNURM, UIDSSMT, Satellite Townships programme and other externally aided bilateral and multilateral projects.

The SLB framework has also been endorsed by the 13th Finance Commission which has included it as one of the conditionalities for allocation of performance-based grants to municipalities or municipal corporations, amounting to approximately Rs 8,000 crore[2] over the period 2010–15.

It is hoped that, with time, all other municipal bodies would also adopt improved performance monitoring systems as per the SLB framework.

[2] US$1 = Rs 45 (approximately), as of June 2010. Currency conversions are from www.coinmill.com, and are approximations.

Benchmarks at a Glance

Indicator	National benchmark
Water supply services	
Coverage of water supply connections	100%
Per capita supply of water	135 lpcd
Extent of metering of water connections	100%
Extent of non-revenue water	20%
Continuity of water supply	24 hours
Quality of water supplied	100%
Efficiency in redressal of customer complaints	80%
Cost recovery in water supply services	100%
Efficiency in collection of water supply-related charges	90%
Sewage management (sewerage and sanitation)	
Coverage of toilets	100%
Coverage of sewage network services	100%
Collection efficiency of the sewage network	100%
Adequacy of sewage treatment capacity	100%
Quality of sewage treatment	100%
Extent of reuse and recycling of sewage	20%
Efficiency in redressal of customer complaints	80%
Extent of cost recovery in sewage management	100%
Efficiency in collection of sewage charges	90%
Storm water drainage	
Coverage of storm water drainage network	100%
Incidence of water logging/flooding	0
Solid waste management (SWM)	
Household level coverage of solid waste management services	100%
Efficiency of collection of municipal solid waste	100%
Extent of segregation of municipal solid waste	100%
Extent of municipal solid waste recovered	80%
Extent of scientific disposal of municipal solid waste	100%
Efficiency in redressal of customer complaints	80%
Extent of cost recovery in SWM services	100%
Efficiency in collection of SWM charges	90%

Methodology

Selection of the sample: A wide sample set of 28 cities from 14 States and one union territory was identified, representing differing city sizes, diverse socio-economic and climatic or topographical profiles and diverse institutional environments.

Orientation to cities: The pilot programme was kick-started with an orientation workshop (February 2009) and a series of regional workshops (April–May 2009) for representatives from pilot cities and concerned State departments, along with the respective consultants. These workshops presented the rationale for SLB, framework details, questionnaires for data gathering and the programme implementation plan.

Implementation at the city level: Cities and States were then required to institute the SLB Core Committees and appoint a State Nodal Officer for the initiative. A team of local technical consultants were hired for each pilot city, for supporting that city in identifying appropriate data sources, collecting data as per the questionnaires, coordinating clarifications on definitional, methodological issues and so on. These activities were then undertaken jointly by the city functionaries and consultants, with technical guidance being provided by the National Technical Advisors, including visits to the pilot cities. Through this process, orientation sessions were held for operational staff to create awareness, clarify data requirements and design strategies for gathering the data. After data collection was completed, a performance analysis was discussed with city functionaries and subsequently submitted to the MoUD.

Validation of data: A validation process was undertaken to ensure consistency between the data collected and the definitional requirements of the Handbook. The process entailed a review by the National Technical Advisers, clarifications by consultants on queries raised, followed by modifications or corrections where necessary.

In December 2009, a national consultations workshop was organised jointly by the MoUD and WSP–SA where all the pilot cities presented their performance data along with the proposed improvement plans. This provided a further opportunity to clarify and validate the SLB data, and also share best practices across the four sectors. The data thus finalised have been compiled for the purpose of this Databook.

Performance profiles of the service providers appearing in this Databook have been derived from the basic data provided by municipalities or service providers, based on the indicators defined in the MoUD's Handbook on SLB.

Service Level Benchmarking Indicators

Service level performance parameters have been identified in the Handbook for four basic urban services, namely water supply; sewerage; solid waste management; and storm water drainage. These cover aspects related to service delivery, operating efficiency and financial sustainability.

Water Supply

Water is a basic need, and emphasis has been laid on performance related to access to quality service and effectiveness of the systems to manage water supply networks. Since financial sustainability is critical for continued effectiveness in service delivery, performance is measured on this aspect too. Indicators selected, along with their definitions, are:

Coverage of water supply connections

Coverage of water supply connections is measured as the total number of households in the service area that are connected to the water supply network with direct service connections, as a percentage of the total number of households in that service area. Service area implies a specific jurisdiction in which service is required to be provided. The indicator is expressed as a percentage. The emphasis here is on the number of households and not properties. In addition, the indicator includes only direct tap connections; water supplied through tankers or public standposts, borewells and open wells has been excluded.

Per capita supply of water

Per capita supply of water is measured as the total water supplied to consumers by population served per day. The indicator is expressed as litres per capita per day. This indicator is calculated at the consumption end.

Extent of metering of water connections

The extent of metering of water connections is measured as the total number of functional metered water connections expressed as a percentage of the total number of water supply connections. Public standpost connections that are metered are included. The indicator is expressed as a percentage.

Extent of non-revenue water (NRW)

This indicator highlights the extent of water produced, which does not earn the utility any revenue. This is computed as the difference between the total water produced (ex-treatment plant) and the total water sold, expressed as a percentage of the total water produced. The total supply should also include water that may have been purchased directly from other sources and put into the distribution system. NRW comprises (a) consumption that is authorised but not billed, such as public standposts; (b) apparent losses such as illegal water connections, water theft and metering inaccuracies; and (c) real losses that are leakages in the transmission and distribution networks. The indicator is expressed as a percentage.

Continuity of water supply

Continuity of supply is measured as the average number of hours of pressurised water supply per day. The measurement excludes hours of supply where the pressure is less than the minimum pressure standards for piped water supply. The indicator is expressed in hours per day.

Quality of water supplied

Quality of water supplied is measured as the percentage of water samples that meet or exceed the specified potable water standards, as defined by the Central Public Health and Environmental Engineering Organisation (CPHEEO). The samples include those drawn at both points – the outlet of the treatment plant and at the consumer end.

Efficiency in redressal of customer complaints

This indicator is measured as the total number of water supply-related complaints redressed within 24 hours of receipt of the complaint, as a percentage of the total number of water supply-related complaints received in the given time period (in a month).

Cost recovery in water supply services

This indicator is measured as the total operating revenues expressed as a percentage of the total operating expenses incurred in the corresponding time period. Only income and expenditure of the revenue account have been considered, and income and expenditure from the capital account have been excluded. The calculation excludes the collection of interest payments, principal repayments and other capital expenses. The calculation for annual operating revenues excludes capital income such as grants, loans and so on. Depreciation costs do not feature in this calculation.

Efficiency in collection of water supply-related charges

Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding time period. The calculation excludes the collection of arrears and is based only on current revenues.

Wastewater Management

For sewage management, performance related to reach and access of the service, effectiveness of the network, and environmental sustainability have been emphasised, apart from financial sustainability of operations. Indicators selected are:

Coverage of toilets

This indicator denotes the extent to which citizens have access to a toilet (whether individual or community) in a service area. The toilets include those in the category of residential, commercial, industrial and institutional properties. The emphasis here is on the total number of toilets and not households. The service area implies a specific jurisdiction in which the service is required to be provided. The indicator is expressed as a percentage.

Coverage of sewage network services

This indicator denotes the extent to which the underground sewage (or sewerage collection) network has reached out to individual properties across the service area. Properties include those in the categories of residential, commercial, industrial and institutional. Properties that connect their sewerage outlet to storm water drains or open drains are not considered. The service area implies a specific jurisdiction in which the service is required to be provided. The indicator is expressed as a percentage.

Collection efficiency of sewage network

This indicator is measured as the quantum of wastewater collected as a percentage of the normative sewage generation in the ULB. Wastewater generation is linked to the quantum of water supplied through piped systems, and other sources such as borewells, when they are very extensively used. The quantum of wastewater is measured at the inlet of wastewater treatment plants. Data are collected daily for an entire month, for measuring the quantities per month. While daily variations may be normalised, monthly variations may exist on account of seasonal variations. Data are aggregated from multiple points across the ULB.

Adequacy of sewage treatment capacity

Adequacy is expressed as secondary treatment (that is, removing oxygen demand as well as solids, normally biological) capacity available as a percentage of normative wastewater generation, for the same time period. The indicator is expressed as a percentage.

Quality of sewage treatment

Quality of treatment is measured as a percentage of wastewater samples that pass the specified secondary treatment standards, that is, treated water samples from the outlet of sewerage treatment plants (STPs) are equal to or better than the standards laid down by GoI agencies for secondary treatment of sewage. While the samples are collected at the STP outlet and results computed per STP, this indicator is reported at city/ULB level.

Extent of reuse and recycling of sewage

This indicator is measured as the percentage of wastewater received at the treatment plant that is recycled or reused after appropriate treatment for various purposes. This considers water that is directly conveyed for recycling or reuse, such as for use in gardens and parks or for irrigation, and so on. Water that is discharged into water bodies, which is subsequently used for a variety of purposes, is not included in this quantum. While measurements are done at STP inlets and outlets, the indicator is reported at the city/ULB level as a whole.

Efficiency in redressal of customer complaints

This indicator is measured as the total number of sewage-related complaints redressed within 24 hours of receipt of complaints, as a percentage of the total number of sewage-related complaints received in the given time period, that being a month.

Extent of cost recovery in sewage management

The extent of cost recovery is expressed as wastewater revenues as a percentage of wastewater expenses, for the corresponding time period. The indicator is expressed as a percentage. The operating expense excludes interest payments and principal repayments. The annual operating revenues include all wastewater-related revenues billed for the year including taxes, cess or surcharges, user charges, connection charges, sale of sludge, sale of recycled water and so forth.

Efficiency in collection of sewage-related charges

Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding time period.

Storm Water Drainage

The extent and effectiveness of the network are emphasised to assess storm water drainage system performance. As this service does not yield any direct revenues, financial sustainability is not considered. Indicators selected are:

Coverage of storm water drainage network

Coverage is defined in terms of the percentage of road length covered by the storm water drainage network. Here only the drains that are made of pucca (that is, permanent) construction and are covered are considered. The indicator is expressed as a percentage.

Incidence of water logging/flooding

This indicator is expressed as the number of times water logging is reported in a year, at flood-prone points within the city. The indicator is expressed as numbers per year.

Solid Waste Management

Performance related to access, effectiveness of operations and environmental sustainability has been considered, apart from financial sustainability of operations. Indicators selected are:

Household level coverage of solid waste management services

This indicator is expressed as the percentage of households and establishments that are covered by a daily doorstep collection system. The total number of households includes doorstep collection by the ULB itself or ULB-approved service providers, including door-to-door collection systems operated by resident welfare associations and so on.

Efficiency of collection of municipal solid waste

This indicator is expressed as the total waste collected by the ULB and authorised service providers versus the total waste generated within the ULB, excluding recycling or processing at the generation point. (Typically, some amount of waste generated is either recycled or reused by the citizens themselves. This quantity is excluded from the total quantity generated, as reliable estimates will not be available for these.) The indicator is expressed as a percentage.

Extent of segregation of municipal solid waste

This indicator is expressed as the percentage of segregated waste from households and establishments. Segregation is at the level of separation of wet and dry waste at the source, that is, at the household or establishment level. Ideally, the separation is in the following categories: biodegradable waste, waste that is non-biodegradable, and hazardous domestic waste such as batteries, and so on. In line with this description, the ULB can further refine the criteria for classifying waste as being 'segregated'. It is important that waste segregated at the source is not again mixed,

Pilot cities in the Service Level Benchmarking initiative

but transported through the entire chain in a segregated manner. It is therefore important that this indicator is based on measurement of waste arriving in a segregated manner at the treatment/disposal site, rather than being measured at the collection point. The quantum of waste that is segregated includes waste taken away by recyclers from intermediate points.

Extent of municipal solid waste recovered

This indicator is expressed as the quantum of waste collected, which is either recycled or processed. This is expressed in terms of percentage of waste collected. Waste collected at intermediate points by informal mechanisms (ragpickers and so forth) and fed back into the recycling chain are included in this quantity. The indicator is expressed as a percentage.

Extent of scientific disposal of municipal solid waste

This indicator is expressed as the amount of waste that is disposed in landfills that have been designed, built, operated and maintained as per standards laid down by central agencies. This extent of compliance is expressed as a percentage of the total quantum of waste disposed at landfill sites, including open dump sites. The indicator is expressed as a percentage.

Efficiency in redressal of customer complaints

This indicator is expressed as the total number of SWM-related complaints redressed within 24 hours of receipt of the complaint, as a percentage of the total number of SWM-related complaints received in the given time period. The indicator is expressed as a percentage.

Extent of cost recovery in SWM services

This indicator denotes the extent to which the ULB is able to recover all operating expenses of SWM services from operating revenues of sources related exclusively to SWM. This indicator is defined as the total annual operating revenues from SWM as a percentage of the total annual operating expenses on SWM.

Efficiency in collection of SWM-related user-related charges

Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding time period.

PART 1

Summary of Findings

Table 2: Names and sizes of cities

City	State	Population**	Area (sq km)
Ahmedabad*	Gujarat	5,606,728	466.1
Amritsar*	Punjab	1,159,972	139.0
Bengaluru*†	Karnataka	7,500,000	793.5
Berhampur	Odisha	385,356	79.8
Bhopal*	Madhya Pradesh	1,836,000	285.0
Bhubaneswar*	Odisha	1,060,464	149.0
Bokaro	Jharkhand	151,284	40.0
Chandigarh*	Chandigarh	1,130,225	79.7
Chas	Jharkhand	117,393	20.3
Delhi*	Delhi	17,059,000	1,397.0
Dharamshala	Himachal Pradesh	19,124	10.6
Guntur	Andhra Pradesh	615,796	45.7
Hyderabad*	Andhra Pradesh	7,597,058	617.1
Imphal*	Manipur	267,815	41.6
Indore*	Madhya Pradesh	1,965,004	130.2
Jalandhar	Punjab	845,404	101.5
Kohlapur	Maharashtra	560,913	66.8
Kozhikode†	Kerala	439,756	84.2
Nashik*	Maharashtra	1,591,000	259.0
Palampur	Himachal Pradesh	4,006	0.7
Pimpri Chinchwad	Maharashtra	1,390,280	170.6
Raipur*	Chhattisgarh	1,003,832	148.0
Shimla*	Himachal Pradesh	190,136	35.5
Surat*	Gujarat	3,850,000	326.5
Tiruchirapalli	Tamil Nadu	829,537	146.9
Trivandrum*†	Kerala	952,833	142.0
Udhagamandalam†	Tamil Nadu	93,921	30.7
Ujjain*	Madhya Pradesh	98,693	92.7

* Sixteen cities funded under the Jawaharlal Nehru National Urban Renewal Mission.

** The 2001 Census numbers have been used to calculate 2008 population numbers for the cities. The extrapolated numbers account for the growth rate between 2001 and 2008.

† Earlier, Bengaluru was known as Bangalore, Kozhikode as Calicut, Trivandrum as Thiruvananthapuram, and Udhagamandalam as Ooty.

Table 3a: Names and size of utilities: Water supply

City	Name of utility	Type of utility	Production (MLD)	Number of staff	Number of connections
Ahmedabad*	Ahmedabad Municipal Corporation	Municipal Department	925.0	1,988	598,648
Amritsar*	Water Supply and Sewerage Authority	Municipal Department	201.0	520	150,129
Bengaluru*	Bengaluru Water Supply and Sewerage Board	City Water Board	930.0	4,410	562,581
Berhampur	Public Health Engineering Organisation	State PHED	38.6	320	21,397
Bhopal*	Bhopal Municipal Corporation	Municipal Department	300.8	1,293	129,423
Bhubaneswar*	Public Health Engineering Organisation	State PHED	269.4	1,392	54,670
Bokaro	Bokaro Steel City Administration	Corporate Department	123.1	127	38,643
Chandigarh*	Municipal Corporation of Chandigarh	Municipal Department	381.4	792	143,966
Chas	Chas Municipality	Municipal Department	1.1	no data	1,296
Delhi*	Delhi Jal Board	City Water Board	3,677.4	24,848	1,718,957
Dharamshala	Irrigation and Public Health Department	Municipal Department	4.8	61	4,626
Guntur	Guntur Municipal Corporation	Municipal Department	74.6	262	65,197
Hyderabad*	Hyderabad Metropolitan Water Supply and Sewerage Board	City Water Board	1,503.0	4,466	814,813
Imphal*	Imphal Municipal Council	Municipal Department	78.4	471	19,119
Indore*	Indore Municipal Corporation	Municipal Department	184.5	1,103	165,002
Jalandhar	Jalandhar Municipal Corporation	Municipal Department	211.3	252	117,203
Kohlapur	Municipal Corporation of Kolhapur	Municipal Department	123.7	424	87,899
Kozhikode	Kerala Water Authority	State Board	83.3	282	38,397
Nashik*	Nashik Municipal Corporation	Municipal Department	345.0	555	150,331
Palampur	Palampur Municipal Council	Municipal Department	2.1	11	975
Pimpri Chinchwad	Pimpri Chinchwad Municipal Corporation	Municipal Department	361.0	723	111,229
Raipur*	Raipur Municipal Corporation	State PHED	149.0	201	44,184
Shimla*	Shimla Municipal Corporation	Municipal Department	35.1	264	23,009
Surat*	Surat Municipal Corporation	Municipal Department	692.0	860	349,675
Tiruchirapalli	Tiruchirapalli City Corporation	Municipal Department	92.5	1,397	82,845
Trivandrum*	Kerala Water Authority	State Board	225.0	323	181,639
Udhagamandalam	Udhagamandalam Municipality	Municipal Department	10.4	32	10,104
Ujjain*	Ujjain Municipal Corporation	Municipal Department	72.8	988	52,281

* Sixteen cities funded under the Jawaharlal Nehru National Urban Renewal Mission.

Table 3b: Names and size of utilities: Sewerage

City	Name of utility	Type of utility	Production (MLD)	Number of staff	Number of connections
Ahmedabad*	Ahmedabad Municipal Corporation	Municipal Department	518.6	336.7	952,030
Amritsar*	Water Supply and Sewerage Authority	Municipal Department	70.8	nil	127,443
Bengaluru*	Bangalore Water Supply and Sewerage Board	City Water Board	669.6	369.0	571,859
Berhampur	Berhampur Municipal Corporation	Municipal Department	20.4	nil	nil
Bhopal*	Bhopal Municipal Corporation	Municipal Department	219.0	25.0	15,000
Bhubaneswar*	Public Health Engineering Organisation	State PHED	183.2	4.5	40,788
Bokaro	Bokaro Steel City Administration	Municipal Department	35.9	22.9	37,752
Chandigarh*	Municipal Corporation of Chandigarh	Municipal Department	220.2	187.3	145,026
Chas	Chas Municipality	Municipal Department	0.5	nil	no data
Delhi*	Delhi Jal Board	City Water Board	2,812.0	1,768.1	1,701,000
Dharamshala	Irrigation and Public Health Department	Municipal Department	4.1	0.5	600
Guntur	Guntur Municipal Corporation	Municipal Department	28.2	nil	17,239
Hyderabad*	Hyderabad Metropolitan Water Supply and Sewerage Board	City Water Board	1,097.7	435.1	551,026
Imphal*	Imphal Municipal Council	Municipal Department	17.0	nil	nil
Indore*	Indore Municipal Corporation	Municipal Department	150.9	83.5	459,852
Jalandhar	Jalandhar Municipal Corporation	Municipal Department	105.2	100.0	108,702
Kohlapur	Municipal Corporation of Kolhapur	Municipal Department	72.0	nil	44,604
Kozhikode	Kerala Water Authority	State Board	36.0	nil	nil
Nashik*	Nashik Municipal Corporation	Municipal Department	139.6	138.6	304,338
Palampur	Irrigation and Public Health Department	Municipal Department	0.8	0.3	765
Pimpri Chinchwad	Pimpri Chinchwad Municipal Corporation	Municipal Department	218.7	156.0	185,025
Raipur*	Raipur Municipal Corporation	State PHED	120.0	nil	6,000
Shimla*	Shimla Municipal Corporation	Municipal Department	19.9	3.3	42,463
Surat*	Surat Municipal Corporation	Municipal Department	555.2	508.0	847,788
Tiruchirapalli	Tiruchirapalli City Corporation	Municipal Department	83.1	56.0	44,289
Trivandrum*	Kerala Water Authority	State Board	147.0	nil	143,427
Udhagamandalam	Udhagamandalam Municipality	Municipal Department	4.0	2.5	7,224
Ujjain*	Ujjain Municipal Corporation	Municipal Department	60.3	52.7	no data

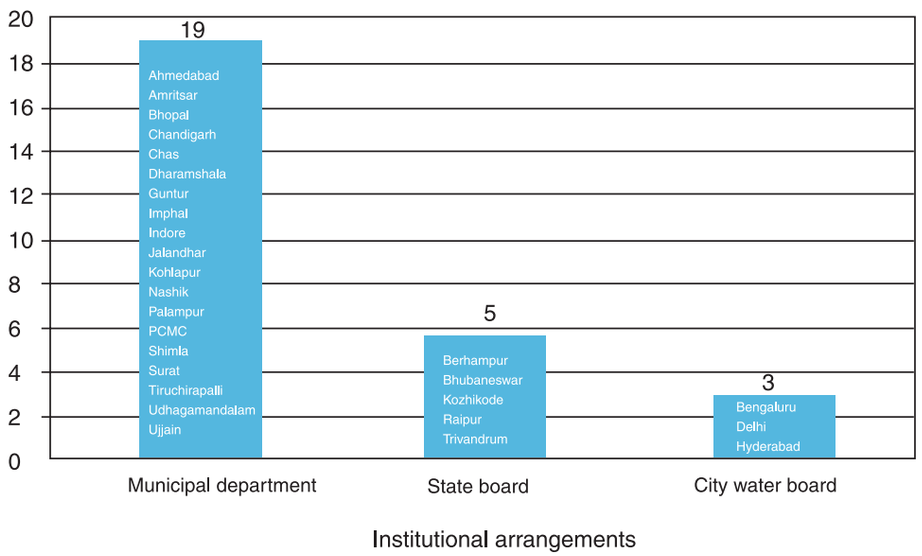
* Sixteen cities funded under the Jawaharlal Nehru National Urban Renewal Mission.

Table 3c: Names and size of utilities: Solid waste management

City	Name of utility	Type of utility	Waste (tons/month)	Waste collected (tons/month)	Number of staff
Ahmedabad*	Ahmedabad Municipal Corporation	Municipal Department	97,557	71,151	8,221
Amritsar*	Amritsar Municipal Corporation	Municipal Department	18,600	16,000	2,795
Bengaluru*	Bangalore Municipal Corporation	Municipal Department	151,020	81,569	12,273
Berhampur	Berhampur Municipal Corporation	Municipal Department	4,587	3,741	792
Bhopal*	Bhopal Municipal Corporation	Municipal Department	13,170	12,750	1,958
Bhubaneswar*	Bhubaneswar Municipal Corporation	Municipal Department	14,636	10,907	3,162
Bokaro	Bokaro Steel City Administration	Municipal Department	2,400	1,248	251
Chandigarh*	Municipal Corporation of Chandigarh	Municipal Department	14,011	10,267	3,174
Chas	Chas Municipality	Municipal Department	1,650	750	316
Delhi*	Municipal Corporation of Delhi	Municipal Department	263,500	212,908	50,932
Dharamshala	Dharamshala Municipal Council	Municipal Department	180	180	67
Guntur	Guntur Municipal Corporation	Municipal Department	10,572	8,955	1,971
Hyderabad*	Greater Hyderabad Municipal Corporation	Municipal Department	156,352	122,036	908
Imphal*	Imphal Municipal Council	Municipal Department	3,810	2,820	168
Indore*	Indore Municipal Corporation	Municipal Department	23,580	17,866	3,314
Jalandhar	Jalandhar Municipal Corporation	Municipal Department	11,413	10,635	5,132
Kohlapur	Municipal Corporation of Kolhapur	Municipal Department	4,950	4,750	907
Kozhikode	Kozhikode Municipal Corporation	Municipal Department	9,598	4,148	788
Nashik*	Nashik Municipal Corporation	Municipal Department	15,000	13,035	2,175
Palampur	Palampur Municipal Council	Municipal Department	40	40	26
Pimpri Chinchwad	Pimpri Chinchwad Municipal Corporation	Municipal Department	17,408	17,354	2,814
Raipur*	Raipur Municipal Corporation	Municipal Department	10,950	9,060	2,904
Shimla*	Shimla Municipal Corporation	Municipal Department	1,950	1,200	479 |
Surat*	Surat Municipal Corporation	Municipal Department	46,200	40,463	5,988
Tiruchirapalli	Tiruchirapalli City Corporation	Municipal Department	12,465	11,790	2,035
Trivandrum*	Trivandrum Municipal Corporation	Municipal Department	12,205	6,645	963
Udhagamandalam	Udhagamandalam Municipality	Municipal Department	1,289	1,155	300
Ujjain*	Ujjain Municipal Corporation	Municipal Department	6,662	4,800	1,263

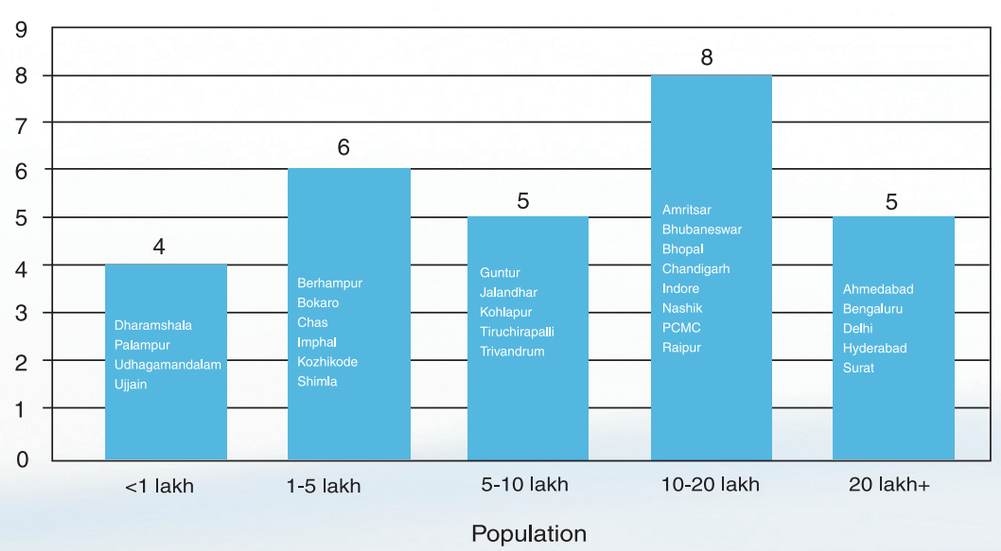
* Sixteen cities funded under the Jawaharlal Nehru National Urban Renewal Mission.

Table 4a: Types of service providers (water supply and sewerage) in cities



Note: PCMC is the Pimpri Chinchwad Municipal Corporation.

Table 4b: Cities by population size



Note: PCMC is the Pimpri Chinchwad Municipal Corporation.

Table 5a: Summary of Service Level Benchmark indicators: Water supply

City	Coverage BM: 100%		Per capita supply BM: 135 lpcd		NRW BM: 20%		Consumption metering BM: 100%	
	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade
Ahmedabad	85.4	B	121	D	31.0	D	nil	–
Amritsar	66.4	D	104	D	57.0	C	8.5	B
Bengaluru	50.8	B	88	A	50.9	A	97.6	A
Berhampur	29.2	D	81	C	34.0	C	nil	–
Bhopal	34.8	B	126	D	30.0	D	1.4	B
Bhubaneswar	45.0	B	92	D	69.5	D	0.8	D
Bokaro	99.5	D	298	D	63.6	B	2.4	A
Chandigarh	86.7	B	158	B	31.3	B	73.5	B
Chas	9.3	B	37	D	42.6	D	nil	NA
Delhi	71.6	B	144	C	52.4	B	55.3	A
Dharamshala	97.3	B	198	D	6.0	D	39.7	B
Guntur	49.5	B	109	D	52.7	D	2.4	B
Hyderabad	65.9	B	122	B	37.5	B	63.0	A
Imphal	47.2	B	110	D	72.9	D	nil	–
Indore	38.3	B	73	C	58.5	D	0.04	D
Jalandhar	69.9	B	165	D	52.8	D	2.9	C
Kohlapur	83.5	B	133	C	45.8	C	75.2	A
Kozhikode	38.5	A	197	C	45.9	A	83.7	A
Nashik	99.5	A	91	C	57.8	B	96.9	B
Palampur	93.7	B	176	D	59	D	nil	D
Pimpri Chinchwad	81.0	B	246	A	24	B	96.9	B
Raipur	19.9	no data	no data	no data	no data	no data	nil	–
Shimla	97.8	B	113	D	23.7	D	59.8	B
Surat	86.6	B	147	D	20.4	D	0.4	B
Tiruchirapalli	41.7	B	79	D	37.1	B	37.6	B
Trivandrum	68.3	A	125	C	18.2	B	81.4	A
Udhagamandalam	51.5	B	71	D	44.0	D	87.2	B
Ujjain	50.0	B	96	C	50.5	D	4.3	C

Note: Reliability grade:
A: Highest/preferred level of reliability using accurate measurements of values.
B: Intermediate level using estimates of parameter values required.
C: Intermediate level using less accurate estimates of parameter values.
D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5a: Summary of Service Level Benchmark indicators: Water supply (contd)

City	Continuity BM: 24 hours		Complaints redressal BM: 80%		Quality of supply BM: 100%		Cost recovery BM: 100%		Collection efficiency BM: 90%	
	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade
Ahmedabad	2.3	B	99.2	A	94.8	B	54.0	A	60.4	A
Amritsar	11.0	D	99.3	B	60.0	A	61.9	B	40.7	B
Bengaluru	3.0	D	86.7	C	82.7	A	92.2	B	97.1	A
Berhampur	1.0	B	73.3	D	100.0	D	49.1	B	50.8	B
Bhopal	0.5	D	90.1	A	90.0	A	51.2	B	68.2	B
Bhubaneswar	2.0	B	99.4	D	100.0	B	32.1	B	93.9	B
Bokaro	1.3	D	no data	D	100.0	B	no data	no data	no data	no data
Chandigarh	17.5	A	100.0	B	100.0	A	64.2	B	89.0	B
Chas	Intermit	D	100.0	C	no data	n.a.	61.4	D	25.0	D
Delhi	3	B	73.0	A	99.5	A	41.6	B	86.3	B
Dharamshala	1.5	D	100.0	C	100.0	A	42.2	D	97.8	B
Guntur	1.0	D	40.0	B	99.3	C	144.9	B	46.3	B
Hyderabad	0.3–2.0	D	52.0	A	99.3	C	84.4	B	77.1	A
Imphal	2.0	B	82.4	B	100.0	C	16.6	D	42.8	D
Indore	0.75	D	82.2	B	90.2	B	34.8	B	61.6	B
Jalandhar	12.0	D	98.7	A	72.1	C	67.0	B	44.9	B
Kohlapur	3.0	B	75.0	B	91.4	B	105.6	B	95.6	B
Kozhikode	7.0	D	79.5	A	100.0	A	105.8	A	86.2	A
Nashik	3.0	B	93.3	A	99.7	A	77.5	B	92.4	B
Palampur	12.0	D	100.0	B	100.0	A	16.1	B	61.9	D
Pimpri Chinchwad	6.0	D	no data	D	99.9	A	41.2	A	48.3	A
Raipur	1.5	no data	no data	no data	97.7	no data	25.8	no data	no data	no data
Shimla	1.5	D	85.0	D	100.0	B	97.9	B	82.6	B
Surat	3.0	B	94.8	B	100.0	A	92.3	A	93.9	A
Tiruchirapalli	2.0	B	100.0	B	100.0	A	197.4	B	57.6	B
Trivandrum	18.0	A	100.0	A	77.0	A	222.8	A	35.1	A
Udhagamandalam	4.0	D	73.3	C	100.0	B	27.5	D	77.6	B
Ujjain	1.0	B	100.0	C	100.0	B	28.0	B	65.5	B

Note: Reliability grade:

A: Highest/preferred level of reliability using accurate measurements of values.

B: Intermediate level using estimates of parameter values required.

C: Intermediate level using less accurate estimates of parameter values.

D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5b: Summary of Service Level Benchmark indicators: Sewerage

City	Toilet coverage BM: 100%		Sewerage coverage BM: 100%		Wastewater collection efficiency BM: 100%		Wastewater treatment adequacy BM: 100%		Quality of wastewater treatment BM: 90%	
	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade
Ahmedabad	81.7	B	65.8	B	64.9	D	94.5	D	75.0	B
Amritsar	100.0	C	74.8	B	nil	n.a.	nil	n.a.	no data	n.a.
Bengaluru	100.0	D	37.6	B	55.1	A	106.2	A	100.0	B
Berhampur	70.3	–	nil	–	nil	–	nil	–	nil	–
Bhopal	95.2	A	4.2	D	11.4	D	26.5	D	no data	–
Bhubaneswar	76.4	D	17.2	D	2.8	D	2.5	D	100.0	D
Bokaro	100.0	B	99.9	B	63.8	D	nil	–	100.0	B
Chandigarh	100.0	B	100.0	B	85.1	D	85.1	B	100.0	A
Chas	no data	C	nil	–	n.a.	–	n.a.	–	nil	n.a.
Delhi	78.0	B	54.0	B	62.9	A	88.8	A	94.6	A
Dharamshala	61.5	B	61.5	C	12.1	C	124.5	B	100.0	D
Guntur	79.1	B	13.1	B	nil	–	nil	–	n.a.	–
Hyderabad	98.5	D	46.3	B	39.6	A	55.2	A	99.4	B
Imphal	99.9	–	nil	–	n.a.	–	n.a.	–	n.a.	–
Indore	95.7	D	95.1	D	55.3	C	59.7	D	100.0	B
Jalandhar	89.7	C	66.9	B	95.1	D	95.1	D	99.0	B
Kohlapur	90.9	B	42.2	B	60.4	C	60.4	C	33.3	D
Kozhikode	91.6	B	nil	no data	n.a.	–	n.a.	–	no data	no data
Nashik	100.0	B	90.1	C	99.3	B	90.3	B	90.9	A
Palampur	98.4	B	81.1	B	35.5	D	42.9	B	100.0	B
Pimpri Chinchwad	100.0	A	71.3	B	71.3	B	94.6	B	100.0	A
Raipur	16.8	–	16.8	–	no data	–	nil	–	nil	–
Shimla	100	D	76.7	B	16.4	D	178.9	D	no data	no data
Surat	94.8	B	74.5	B	91.5	B	108.5	B	89.0	A
Tiruchirapalli	87.9	B	22.1	B	67.4	C	nil	–	n.a.	B
Trivandrum	95.4	B	65.7	A	nil	–	nil	–	no data	no data
Udhagamandalam	100	C	81.4	B	61.0	D	nil	B	n.a.	B
Ujjain	92.9	C	nil	A	n.a.	–	87.5	B	100.0	D

Note: Reliability grade:

A: Highest/preferred level of reliability using accurate measurements of values.

B: Intermediate level using estimates of parameter values required.

C: Intermediate level using less accurate estimates of parameter values.

D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5b: Summary Service Level Benchmark indicators: Sewerage (contd)

City	Reuse and recycling BM: 20%		Cost recovery BM: 100%		Complaints redressal BM: 80%		Collection efficiency BM: 90%	
	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade
Ahmedabad	0.0	–	98.5	A	99.7	A	58.7	A
Amritsar	no data	n.a.	66.6	B	100.0	B	40.7	B
Bengaluru	35.9	A	110.4	B	94.4	C	97.1	A
Berhampur	nil	–	n.a.	–	no data	no data	n.a.	–
Bhopal	nil	–	nil	B	92.9	B	nil	–
Bhubaneswar	nil	D	24.2	B	100.0	D	64.6	B
Bokaro	nil	–	nil	–	100.0	C	nil	–
Chandigarh	24.2	A	93.1	B	100.0	B	83.0	B
Chas	nil	n.a.	68.7	D	no data	D	55.6	D
Delhi	27.4	A	39.9	B	70.0	B	85.0	B
Dharamshala	nil	D	7.7	B	100.0	B	66.0	B
Guntur	n.a.	–	62.5	B	40.0	B	74.2	B
Hyderabad	2.3	D	84.4	B	56.0	A	77.1	A
Imphal	n.a.	–	no data	–	no data	–	no data	–
Indore	1.2	D	176.7	B	100.0	C	82.3	B
Jalandhar	nil	–	83.1	B	100.0	B	36.6	B
Kohlapur	34.5	D	45.9	B	90.2	C	78.9	B
Kozhikode	no data	no data	n.a.	–	n.a.	–	n.a.	–
Nashik	nil	A	47.9	B	99.7	B	71.8	B
Palampur	nil	D	28.2	B	100.0	C	78.4	D
Pimpri Chinchwad	3.2	D	42.0	A	100.0	A	86.1	A
Raipur	nil	–	6.6	–	no data	–	no data	–
Shimla	nil	–	nil	–	100.0	D	n.a.	–
Surat	0.6	A	37.3	A	99.3	B	78.7	A
Tiruchirapalli	nil	–	no data	no data	100.0	B	no data	no data
Trivandrum	no data	no data	no data	no data	100.0	A	no data	no data
Udhagamandalam	nil	–	4.3	B	100.0	C	18.7	B
Ujjain	nil	D	nil	D	100.0	C	n.a.	–

Note: Reliability grade:

A: Highest/preferred level of reliability using accurate measurements of values.

B: Intermediate level using estimates of parameter values required.

C: Intermediate level using less accurate estimates of parameter values.

D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5c: Summary of Service Level Benchmark indicators: Solid waste management

City	Household coverage BM: 100%		Collection efficiency BM: 100%		Segregation of MSW BM: 100%		MSW recovery BM: 100%	
	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade	Value	Reliability grade
Ahmedabad	75.7	A	72.9	B	2.7	B	17.5	B
Amritsar	24.8	C	86.0	D	nil	no data	nil	no data
Bengaluru	74.5	D	54.0	B	30.0	B	77.3	B
Berhampur	2.6	A	81.6	B	nil	–	nil	–
Bhopal	5.6	C	96.8	D	nil	n.a.	nil	n.a.
Bhubaneswar	28.2	A	74.5	D	nil	–	nil	–
Bokaro	100.0	A	52.0	D	3.8	D	3.8	D
Chandigarh	96.2	C	73.3	B	18.0	B	97.1	A
Chas	38.8	C	45.5	D	no data	–	nil	–
Delhi	4.2	B	80.8	B	31.6	A	31.6	A
Dharamshala	21.1	C	100.0	D	5.6	D	5.6	D
Guntur	84.9	D	84.7	D	nil	–	nil	–
Hyderabad	70.6	C	78.1	D	12.8	B	12.3	B
Imphal	33.4	A	74.0	D	nil	–	nil	–
Indore	28.3	C	75.8	B	nil	–	nil	–
Jalandhar	nil	–	93.2	D	nil	–	nil	–
Kohlapur	91.0	C	96.0	B	20.0	B	100.0	B
Kozhikode	24.2	A	43.2	D	50.8	B	50.8	B
Nashik	86.9	D	86.9	B	34.5	B	100.0	B
Palampur	nil	–	100.0	D	15.0	D	15.0	D
Pimpri Chinchwad	65.2	D	99.7	B	13.4	B	16.6	B
Raipur	16.4	D	82.7	D	nil	–	nil	–
Shimla	26.0	A	61.5	D	32.5	D	75.0	C
Surat	90.3	A	87.6	B	13.1	D	19.4	B
Tiruchirapalli	81.0	B	94.6	B	nil	–	nil	–
Trivandrum	42.9	C	54.4	B	64.9	C	30.0	D
Udhagamandalam	22.0	A	89.6	D	nil	–	nil	–
Ujjain	6.0	D	72.1	D	nil	–	nil	–

Note: Reliability grade:
A: Highest/preferred level of reliability using accurate measurements of values.
B: Intermediate level using estimates of parameter values required.
C: Intermediate level using less accurate estimates of parameter values.
D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5c: Summary of Service Level Benchmark indicators: Solid waste management (contd)

City	Scientific disposal BM: 100%		Cost recovery BM: 100%		Collection efficiency BM: 90%		Complaints redressal BM: 80%	
	Value grade	Reliability	Value grade	Reliability	Value grade	Reliability	Value grade	Reliability
Ahmedabad	nil	–	26.2	A	58.6	A	100.0	D
Amritsar	nil	no data	0.4	C	99.7	no data	100.0	no data
Bengaluru	57.6	B	nil	–	n.a.	–	80.0	D
Berhampur	nil	–	nil	–	nil	–	99.1	C
Bhopal	nil	n.a.	6.5	D	66.4	D	100.0	B
Bhubaneswar	nil	–	0.1	B	nil	–	99.6	C
Bokaro	nil	–	nil	–	n.a.	–	100.0	C
Chandigarh	nil	–	0.1	B	100.0	B	100.0	B
Chas	nil	–	nil	D	nil	D	62.5	C
Delhi	nil	–	1.1	B	nil	–	90.0	B
Dharamshala	nil	–	nil	–	n.a.	–	100.0	C
Guntur	nil	–	7.4	B	65.1	B	75.0	B
Hyderabad	nil	–	12.8	B	65.0	B	73.0	D
Imphal	nil	–	n.a.	–	n.a.	–	no data	no data
Indore	nil	–	159.9	B	50.0	C	100.0	B
Jalandhar	nil	–	nil	–	n.a.	–	70.7	B
Kohlapur	nil	n.a.	21.3	B	79.8	B	85.0	A
Kozhikode	nil	–	3.2	A	72.5	B	100.0	D
Nashik	nil	–	33.1	B	35.0	D	100.0	B
Palampur	nil	–	nil	–	n.a.	–	100.0	D
Pimpri Chinchwad	nil	D	3.9	D	70.2	D	100.0	A
Raipur	nil	–	no data	no data	no data	no data	100.0	C
Shimla	nil	–	nil	–	n.a.	–	82.9	C
Surat	0.8	A	83.0	A	85.2	A	100.0	A
Tiruchirapalli	nil	–	0.1	B	nil	–	96.2	B
Trivandrum	nil	–	nil	–	n.a.	–	100.0	B
Udhagamandalam	nil	–	1.9	D	no data	no data	100.0	D
Ujjain	nil	–	9.6	B	30.2	B	100.0	C

Note: Reliability grade:
A: Highest/preferred level of reliability using accurate measurements of values.
B: Intermediate level using estimates of parameter values required.
C: Intermediate level using less accurate estimates of parameter values.
D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Table 5d: Summary of Service Level Benchmark indicators: Storm water drainage

City	Coverage BM: 100%		Incidence of water logging BM: 0	
	Value	Reliability grade	Value	Reliability grade
Ahmedabad	69.6	A	214	A
Amritsar	5.5	B	no data	–
Bengaluru	5.3	C	135	B
Berhampur	126.6	B	62	B
Bhopal	7.0	A	no data	B
Bhubaneswar	47.4	B	51	B
Bokaro	no data	no data	nil	–
Chandigarh	100.0	B	nil	–
Chas	57.9	C	nil	–
Delhi	5.4	no data	206	A
Dharamshala	100.0	B	nil	A
Guntur	10.8	B	no data	B
Hyderabad	17.8	C	18	B
Imphal	1.53	C	no data	no data
Indore	20	C	40–50	D
Jalandhar	1.5	C	no data	B
Kohlapur	24.9	B	47	B
Kozhikode	12.0	B	32	B
Nashik	4.1	B	12	B
Palampur	60.5	B	nil	A
Pimpri Chinchwad	12.4	A	16	B
Raipur	6.5	–	no data	–
Shimla	29.4	C	nil	–
Surat	44.1	B	239	B
Tiruchirapalli	12.0	B	175	B
Trivandrum	56.3	A	12	B
Udhagamandalam	no data	–	4	B
Ujjain	19.4	C	no data	B

Note: Reliability grade:
A: Highest/preferred level of reliability using accurate measurements of values.
B: Intermediate level using estimates of parameter values required.
C: Intermediate level using less accurate estimates of parameter values.
D: Lowest level of reliability using surrogate parameters or least reliable estimates.

Comments and Analysis by Service Level Benchmark indicators

Water Supply

Water supply coverage (Average: 66.6 per cent)

Coverage in this context means a direct piped connection into the dwelling. None of the 28 ULBs have 100 per cent coverage, though Bokaro and Nashik are close with 99.5 per cent. Three others cities – Shimla (97.8 per cent), Dharamshala (97.3 per cent) and Palampur (93.7 per cent) – have more than 90 per cent coverage. Amongst the other 23 cities the coverage is only about 55 per cent, with five ULBs having coverage of less than 40 per cent, including cities like Bhopal, Indore and Raipur. Low coverage estimates in such a significant number of cities suggest considerable amounts of provision through alternative sources or illegal connections.

Per capita consumption (Average: 126.4 lpcd)

Consumption of about 100–120 litres per capita per day (lpcd) is reasonable, and the average is also broadly in line with the national standard. However, amongst the 28 cities, five have a per capita consumption above 175 lpcd; Bokaro has a per capita consumption of 298 lpcd. On the other hand, there are 17 cities that have an overall consumption of less than 130 lpcd, amongst which are five cities that have a per capita consumption of less than 85 lpcd. Calculation of this indicator at production level (as against consumption) reveals significantly higher values with 22 of the 28 cities having production sufficient to service demand. The most likely explanation for this is high levels of wastage and leakages within the network.

Non-revenue water (NRW) (Average: 44.1 per cent)

The national average reflects a very high level of NRW (international values are closer to 25 per cent). Five cities have NRW lower than 25 per cent amongst which Dharamshala (6 per cent) is the most efficient in managing its NRW. At the other end of the spectrum are cities like Imphal, Bhubaneswar, Palampur and Indore, with values over 50 per cent (a total of 12 cities). It must be acknowledged that metering is a critical component for determining NRW. None of the ULBs have 100 per cent consumption metering and full production metering. Among those with full production metering and more than 95 per cent consumption metering are Bengaluru, Nashik and Pimpri Chinchwad. Hence, NRW figures should be interpreted with caution. Given low coverage and low water availability in some utilities, more must be done to reduce water loss levels. This includes 100 per cent metering of production and consumption, repair of visible leaks, elimination of illegal connections, improved billing and identification and repair of invisible leaks.

Consumption metering (Average: 49.8 per cent)

Metering is important to fully account for water production and consumption in reducing NRW. Consumption metering is also important for consumers to pay for what they are using, which could help in promoting prudent use of water. None of the 28 cities have 100 per cent metering, though six cities – Bengaluru (the highest with 97.6 per cent), Pimpri Chinchwad, Nashik, Udhagamandalam, Kozhikode and Trivandrum – have more than 80 per cent consumer level metering. Amongst the other ULBs, six have no

metering, including Ahmedabad, Raipur, Indore; another eight have less than 10 per cent consumer level metering. For Indian water utilities, this is perhaps the single most important area requiring improvement.

Continuity of water supply (Average: 3.3 hours per day)

As yet, no city provides continuous 24x7 water supply. It is alarming that only two ULBs provide more than an average of 12 hours' supply per day. Trivandrum has the highest available supply per day at 18 hours, followed by Chandigarh (17.5 hours), Jalandhar and Palampur (12 hours) and Amritsar (11 hours). The average continuity of water supply for all other utilities is only 2 hours per day which includes nine ULBs (including Bhopal, Indore, Hyderabad, Guntur, Shimla), that are providing either 1.5 hours per day or less. Supplies of less than 24 hours pose not only a risk to health but also affect metering and the ability to reduce NRW levels. A high lpcd accompanied with poor continuity reflects poor network management. In this case, the urban poor are affected the most, as they cannot afford the coping cost of dual systems with individual storage and pumping systems in the home.

Quality of water supply (Average: 67.2 per cent)

The percentage of water samples tested for residual chlorine, bacteriological, physical and chemical parameters that passed CPHEEO standards is quite high with almost half (13) of the ULBs attaining a 100 per cent passing rate. The remaining ULBs will have to strive to reach this level, led by Amritsar (60.0 per cent), Jalandhar (72.1 per cent), Trivandrum (77.0 per cent) and Bengaluru (82.7 per cent). Leaks in the distribution system and intermittent water supply add to water contamination problems within the distributions networks; hence, testing at multiple locations within the network is proposed. One must also acknowledge the fact that this indicator is not very reliable since the method for measuring the water quality is not uniform across the ULBs.

[3] Cost recovery in case of water supply services does not account for the depreciation.

Cost recovery – Water supply services[3] (Average: 67.2 per cent)

A cost recovery ratio of less than 100 per cent means revenues from tariffs and other operating revenue sources cannot cover the operation and maintenance (O&M) costs of a utility. Only five ULBs – Trivandrum (222.8 per cent), Tiruchirapalli (197.4 per cent), Guntur (144.9 per cent), Kozhikode (105.8 per cent) and Kolhapur (105.6 per cent) – are able to cover their operation and maintenance costs, while 16 other ULBs are able to recover less than 65 per cent of their O&M costs. While low tariff levels constrain cost recovery, it has also been observed that in several instances there is an overlap between high NRW and low cost recovery. Addressing NRW can, therefore, directly contribute to improved cost recovery. Early gains can be harnessed by improved billing efficiency.

Collection efficiency – Water supply-related charges (Average: 78.8 per cent)

This indicator is a good measure of the effectiveness of a utility in collecting its bills. Apart from billing customers for the right amount based on consumption, it is equally important that the collection of the due amount be made and in a timely manner. None of the ULBs show 100 per cent collection efficiency. Six ULBs show collection efficiencies higher than 90 per cent, led by Dharamshala (97.8 per cent), Bengaluru (97.1 per cent), Kolhapur (95.6 per cent), Bhubaneswar and Surat both with 93.9 per cent and Nashik (92.4 per cent). The average collection efficiency of 19 ULBs is about 60 per cent, with two cities having an efficiency of less than 40 per cent.

Complaints redressal – Water services (Average: 80.4 per cent)

This indicator captures the effectiveness of the system in receiving complaints from customers and addressing them in a timely manner. The ULBs that report being able to address all complaints brought to them within 24 hours are Chandigarh, Chas, Dharamshala, Palampur, Tiruchirapalli, Trivandrum and Ujjain. Cities such as Delhi, Hyderabad, Kolhapur and

Udhagamandalam report redressal rates ranging from 50 per cent to 75 per cent. In the absence of proper complaint recording and response monitoring systems, values for this indicator need to be interpreted with caution.

Additional Indicators: Water Supply

Staff per 1,000 connections (Average: 8.4)

Staffing levels are an indication of the efficiency of use of human resources. This may, however, be impacted by other factors such as extent of outsourcing of functions, nature of operations (for example, share of bulk connections or share of supply from public standposts). Performance data from the 28 cities display significant variations ranging from around two to over 20 staff per 1,000 connections. Eleven cities report this indicator as the average of eight per 1,000 connections, which includes only Delhi (14) among the large cities. No correlation was evident between staffing levels and the extent of cost recovery.

O&M cost components

O&M costs for the utilities can be broadly classified into three categories, that is, energy (power, fuel), personnel and others (for example, chemicals, repair and maintenance). At an aggregate level, energy costs account for 40 per cent of production costs, while personnel accounts for 27 per cent. Factors contributing to high energy costs include transportation of water from faraway sources, pumping from groundwater sources and high power tariffs. This clearly highlights the importance of adopting energy efficiency measures. The mix of personnel and energy costs varies across the three mega cities of Delhi (45 per cent and 39 per cent), Hyderabad (32 per cent and 43 per cent) and Bengaluru (19 per cent and 55 per cent). A comparatively smaller but also salient component in energy costs is the fuel consumed for water tankers, which constitute a sizeable operation in some of the big cities – just the three cities of Delhi, Bengaluru and Hyderabad account for 97,000 tanker trips per month.

New connections annually (Average: 21,058)

At an aggregate level 157,555 new connections were provided in the 28 cities, which represents a mere 2.8 per cent increase in the connections base. Given the gaps in coverage and rapid urbanisation, this is below desired levels, and needs to be given focussed attention. Barriers such as high connection costs, procedural complexities and delays need to be removed to accelerate provision of direct connections. Of the 28 cities, eight report an addition of less than 1,000 connections a year. Among the mega cities, Delhi reports the highest number of new connections (40,000) but lowest in terms of increase over connections base (2.4 per cent). The corresponding numbers for Hyderabad are 25,713 and 3.3 per cent, while for Bengaluru it is 29,371 and 5.5 per cent. Among the mid-sized cities, Pimpri Chinchwad stands out with 11,141 additional connections in the last year.

Unit production cost (Average: 5.7)

The unit production cost of per cubic metre of water is defined as the total O&M cost of a utility for a year divided by the total volume of water produced in a year. It must be noted that in the numbers presented in this Databook, depreciation hasn't been accounted for, since the numbers for it were not available with all utilities. The production cost differs greatly between cities owing to variations in the costs of energy, labour and other O&M costs amongst cities. It is interesting to note that the highest production cost per metre cube is that of Indore (13.60) and Bengaluru (11.39) that spend more than 50 per cent of their O&M costs towards energy.

Revenue generated per m^3 (Average: 3.9)

The revenue generated per m^3 of water is defined as the total revenue generated annually divided by the total quantity of water produced in a year. Similar to unit production costs, there is a lot of variation amongst the numbers reported by the cities. This is due to the different tariff structures that each ULB has. Bengaluru has the highest figure for the revenue generated per m^3 (12.23).

Sewerage

Toilet coverage (Average: 87.9 per cent)

Toilet coverage amongst the cities is fairly good with 18 cities having a coverage of more than 90 per cent, amongst which are nine cities with a coverage of 100 per cent. All other cities with the exception of Raipur (17 per cent) have a coverage that lies in the range of 60–90 per cent. However, a significant number of cities did not have data on this indicator; hence, it has been estimated by conducting sample surveys. Moreover, the indicator includes community toilets for which norms need to be articulated on the number of persons covered per toilet seat.

Sewerage coverage (Average: 52.6 per cent)

Sewerage coverage across the 28 cities is quite low, with no network at all in five of the 28 cities. Amongst the other 23 cities the average coverage is about 59 per cent; Chandigarh has the highest coverage of 100 per cent. However, this indicator does not include alternate arrangements such as septic tanks, soak pits and so on. The need for infrastructural investment in this area is probably the greatest so that all the waste may be collected efficiently and transported to a treatment plant.

Wastewater collection efficiency (Average: 75.7 per cent)

Wastewater collection efficiency is generally poor. Eight of the 28 cities report nil wastewater collection, while the city of Raipur was unable to furnish data for this indicator. Amongst the cities that have wastewater collection, the average collection efficiency is about 55 per cent, with the highest efficiency being that of Nashik (99.3 per cent). Cities from Himachal Pradesh (Shimla, Palampur and Dharamshala) report poor collection efficiency despite high sewerage coverage, mostly due to outflows on to the hill sides.

Wastewater treatment adequacy
(Average: 76.5 per cent)

Eleven of the respondent cities do not have any wastewater treatment capabilities, including the cities of Amritsar, Tiruchirapalli and Trivandrum. However, amongst the 17 cities that have adequate treatment facilities, Shimla, Dharamshala, Surat and Bengaluru report more than 100 per cent treatment capacities. When looked at together with the low levels of wastewater collection efficiency in Shimla, Bengaluru and Dharamshala, these reflect the extent of under-utilisation of the treatment capacity. The remaining 13 cities have an average treatment capacity of about 67 per cent.

Quality of wastewater treatment
(Average: 91.3 per cent)

Only 16 of the 28 cities have quality checks for effluent samples, of which nine cities report 100 per cent compliance with secondary treatment standards. All the other cities have 75 per cent or more samples meeting standards, with the exception of Kolhapur (33 per cent).

Extent of reuse and recycling sewage
(Average: 14.8 per cent)

Recycling and reuse practices have not gained much acceptance yet in India. Only eight of the 28 cities reported some recycling and reuse of sewerage. The cities of Bengaluru and Kolhapur are most efficient in this respect, recycling and reusing 36 per cent and 35 per cent, respectively, of their sewerage. Going forward, this is an area offering potential for economic and environmental gains and warrants investment of resources to harness this potential.

Cost recovery – Sewerage services
(Average: 65.9 per cent)

Sewage charges are typically related to water charges or form a part of the property tax structure. This along with operational factors can have a significant bearing on cost recovery levels. The status on cost recovery varies greatly from city to city. On the one hand there are nine cities that either lack data on this particular indicator or do not charge the consumer.

On the other hand are Indore and Bengaluru which were able to recover all of their costs. The remaining 17 cities have an average cost recovery of about 48 per cent. Improving cost recovery levels would, hence, help generate the necessary finances that can be used to improve service delivery.

Collection efficiency – Sewerage services
(Average: 76.5 per cent)

The collection efficiency for sewerage services is fairly high, in some cases even greater than that for water supply (for example, in Guntur, Indore, Pimpri). This can be partly attributed to the fact that some of the cities charge sewerage cess/tax as a part of the property tax. Chas and Ahmedabad are examples of such cities.

Complaints redressal – Sewerage services
(Average: 83.1 per cent)

Complaints redressal is reported as a percentage of the total number of sewerage-related complaints redressed within 24 hours of receipt of complaints. Amongst the 28 cities complaint redressal for sewerage services is reported as fairly good, with 16 of the cities at 100 per cent and seven other falling in the range of 40–95 per cent.

Storm Water Drainage

Drainage network coverage
(Average: 21.05 per cent)

This indicator provides an estimate of the extent of coverage of storm water drainage in the city and is measured as a percentage of road length covered by the storm water drainage network. Three ULBs have their cities fully covered – Berhampur, Chandigarh and Dharamshala. Amongst the other cities the average storm water drainage coverage is about 23 per cent. In several cities, there is frequent incidence of mixing of sewage and storm water.

Incidence of water logging (Average: 135.3)

The incidence of water logging shows the extent and effectiveness of a city's storm drainage system. Six cities reported no incidence of water logging during the past year, those of Bokaro, Chandigarh, Chas, Dharamshala, Palampur and Shimla. Some of these benefit from climatic or topographical factors which decrease the likelihood of water logging. Those with highest incidence of water logging are Surat (239), Ahmedabad (214), Delhi (206), Tiruchirapalli (175) and Bengaluru (135). Delhi, Bengaluru and Tiruchirapalli are among those with low storm drainage coverage.

Solid Waste Management

Household coverage (Average: 47.7 per cent)

Household coverage is defined as the percentage of households and establishments that are covered by a daily doorstep collection system. Bokaro (100 per cent), Chandigarh (96.2 per cent), Kolhapur (91 per cent) and Surat (92.3 per cent) report the highest coverage. Seven ULBs have a household coverage of less than 20 per cent. The weighted average (based on respective population in the cities) of household coverage is 47.73 per cent. Sixteen ULBs have reported a lower figure than the weighted average. The door-to-door-collection is provided mainly through resident welfare associations, non-governmental organisations or the ULBs themselves. Some ULBs are going in for integrated SWM systems where one agency is responsible for collection, transportation, processing and disposal functions. A few ULBs have reported that they are not required to provide door-to-door services as per their municipal acts. Low coverage suggests that significant increase is required in the door-to-door collection of municipal solid waste (MSW) in most of the cities and the ULBs have to work out an action plan to achieve this. Better monitoring systems are required to tackle this indicator, as suggested by the low reliability grades of the data.

MSW collection efficiency (Average: 75.3 per cent)

This indicator reflects the percentage of total waste generated that is collected, transported and delivered for treatment or disposal. Palampur and Dharamshala have reported MSW collection efficiency of 100 per cent while the ULBs of Bhopal, Jalandhar, Kolhapur, Pimpri Chinchwad and Tiruchirapalli have reported a collection efficiency of more than 90 per cent. In some cases (for example, Bengaluru), collection efficiency has been reported relatively low despite the high door-to-door coverage. This suggests a need to augment the secondary collection or transportation operations.

Sixteen ULBs have been assigned a reliability grade of D, indicating low reliability as far as MSW collection efficiency is concerned. Most of the ULBs do not have a proper monitoring system for MSW generation and collection figures. The waste generation figure is mostly based on the per capita norms, and the collection figures are estimated on the basis of the capacity of the transport vehicles and the number of trips undertaken. Waste generation estimates should ideally be based on sample surveys (providing also for seasonal variation patterns) and waste collection figures should be based on measurements done using a weighbridge at the treatment or disposal site.

Segregation of MSW (Average: 19.5 per cent)

The extent of segregation (at the household level) of MSW is an important indicator for the sustainability of the SWM system in a city as MSW processing and recovery requires segregated waste for its operation. This indicator also has a direct bearing on the secondary transportation costs of MSW. Twelve ULBs have reported nil segregation, which means that unsegregated MSW is transported to the landfills or processing plants in these cities. Two cities, both from Kerala – Kozhikode and Trivandrum – have reported a segregation rate of more than 50 per cent, the highest among the sample of 28 ULBs. Source segregation is generally quite low. The segregation levels achieved are primarily based on the quantum of recyclables taken away by ragpickers and the bulk waste transported separately.

MSW recovery (Average: 31.73 per cent)

MSW recovery is a critical indicator that signifies the extent of MSW processing/treatment and is an important parameter in determining the overall effectiveness of SWM. Two ULBs, both in Maharashtra – Kolhapur and Nashik – have reported 100 per cent, while Chandigarh has reported a high 97.1 per cent MSW recovery rate. Thirteen ULBs have reported that no recovery from MSW takes place in their cities. Only six ULBs have reported a recovery rate of more than the weighted average value. Composting is the preferred technology for MSW recovery. Chandigarh and Hyderabad are using refuse-derived fuel (RDF) technology. Many smaller ULBs have an informal system for recovery of the recyclables by waste collectors/ragpickers.

Scientific disposal (Average: 8.0 per cent)

This indicator represents the extent of final waste that is safely disposed in a sanitary landfill. Currently, systems for scientific disposal of MSW are present only in two cities: Bengaluru (57.6 per cent) and Surat (0.8 per cent). Of these, the latter, despite the existence of a sanitary landfill, is not operational, resulting in open dumping of waste. Many ULBs have reported that sanitary landfills are under construction and would be operationalised in the near future. Most ULBs have designed landfills only for disposal of rejects from processing and not for inerts from MSW.

It is important to recognise the fact that of all SLB indicators, this indicator is characterised by the lowest levels of performance with 92 per cent of the final disposable waste being dumped in the open, as against a sanitary landfill in compliance with the MSW Management Rules, 2000.

Cost recovery – MSW (Average: 17.3 per cent)

Cost recovery is nil in nine ULBs, whereas two ULBs have no data pertaining to this indicator. Two cities in Gujarat, Ahmedabad and Surat, levy a collection/ conservancy tax which is an integral part of the property tax. Most of the ULBs (20 including nine ULBs reporting a nil value) have less than 10 per cent cost recovery for SWM services, whereas Indore has reported more than 100 per cent cost recovery. There seems to be no correlation between MSW collection and its cost recovery. In some ULBs, door-to-door collection charges are paid directly by the residents to the agencies involved in that operation. Imphal has reported a user fee revenue sharing model.

Collection efficiency – MSW (Average: 31.4 per cent)

It is an important indicator signifying the efficacy of the cost recovery system. Of the ULBs levying some user charges, 15 have reported either a nil collection efficiency or non-availability of any data for this indicator. Only 10 ULBs have reported higher collection efficiency figures than the weighted average value, the highest being Chandigarh (100 per cent), Amritsar (99.7 per cent) and Surat (85.2 per cent). Amritsar and Chandigarh have a very low cost recovery, thus indicating that whatever little cost recovery mechanism exists, is being implemented efficiently. Surat stands out with a cost recovery rate and collection efficiency of 83 per cent and 85.2 per cent, respectively.

Complaints redressal – MSW (Average: 89.1 per cent)

A majority of the ULBs (16) have reported a complaints redressal of 100 per cent. It is probably due to the fact that most ULBs have assumed that whatever complaints are registered are redressed by their system. A few ULBs have reported a presence of a computerised complaint redressal system. The values for this indicator need to be interpreted with caution in the absence of a proper complaint recording and response monitoring system in a majority of the cases. An appropriate monitoring system needs to be developed to implement a proper complaints redressal system in the cities.

Additional Indicators: Solid Waste Management

Staff per unit quantity of MSW (Average: 4.9)

The value pertaining to the number of staff per ton of MSW collected on a daily basis is a good indicator of the efficiency of sanitary staff as also the extent of privatisation of MSW management services. Factors such as kind of terrain (for example, hilly regions), size of city (small cities) and so on, could also have a bearing on this indicator. The value of this parameter varies from 0.22 (Hyderabad) to 15.76 (Kozhikode). Among the large cities (5 million population and above), it is lowest for Hyderabad, followed by Bengaluru (2.60) and Delhi (7.18). Hyderabad had taken the lead in the privatisation of street-sweeping operations and has subsequently outsourced most of its SWM activities. For very small towns such as Chas, Palampur and Dharamshala the value is on the high side, being 12.64, 13.61 and 10.31, respectively. The figure for Kozhikode, in spite of it being a midsized town, is very high (15.76).

Unit cost of MSW management (Average: 2,866.2)

MSW management cost in rupees per ton of waste collected is indicative of cost efficiency, extent of privatisation, level of compliance (for example, existence of processing, landfill) and topography (for instance, hilly regions have higher costs).

Due to the multiplicity of factors involved, the value of this indicator once again shows significant variation across cities. The lowest cost figure pertains to Berhampur (Rs 146.20), which is a small town. The highest cost is for Bengaluru (Rs 7,196.8), in spite of its low staff to collection ratio (2.60). SWM cost for Shimla, a hilly town, is also high (Rs 3,888.89), possibly owing to the higher costs incurred for collection and transportation in the hilly region. This is also corroborated by the corresponding figure for Palampur (Rs 3,611.11), another hill town in Himachal Pradesh. Among the large cities (5 million +), the unit cost is lowest for Hyderabad (Rs 867.20), where most services are outsourced.

PART 2

ULB and Utility Comparisons (in Figures)

Figure 1 Water supply coverage

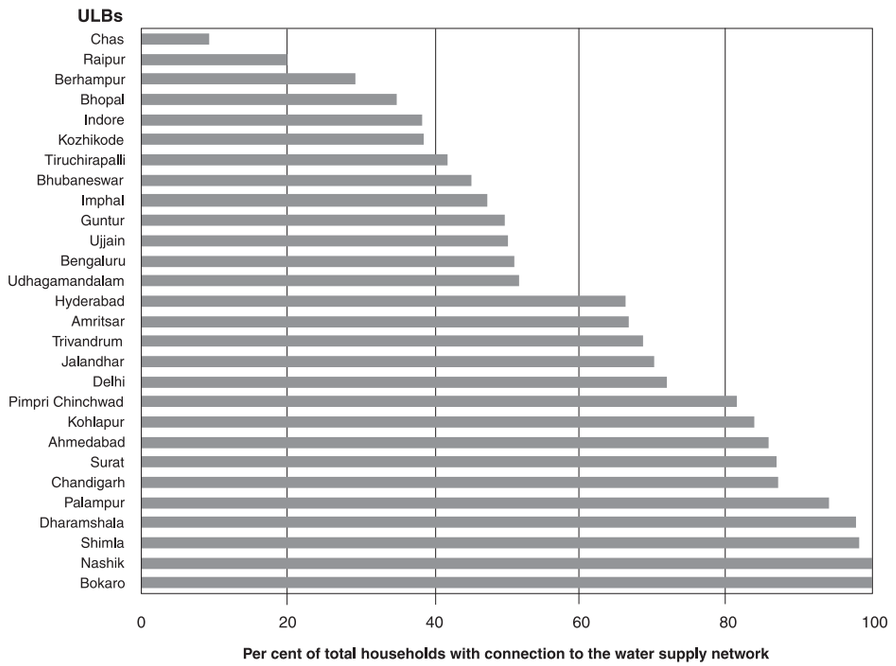


Figure 2 Per capita consumption

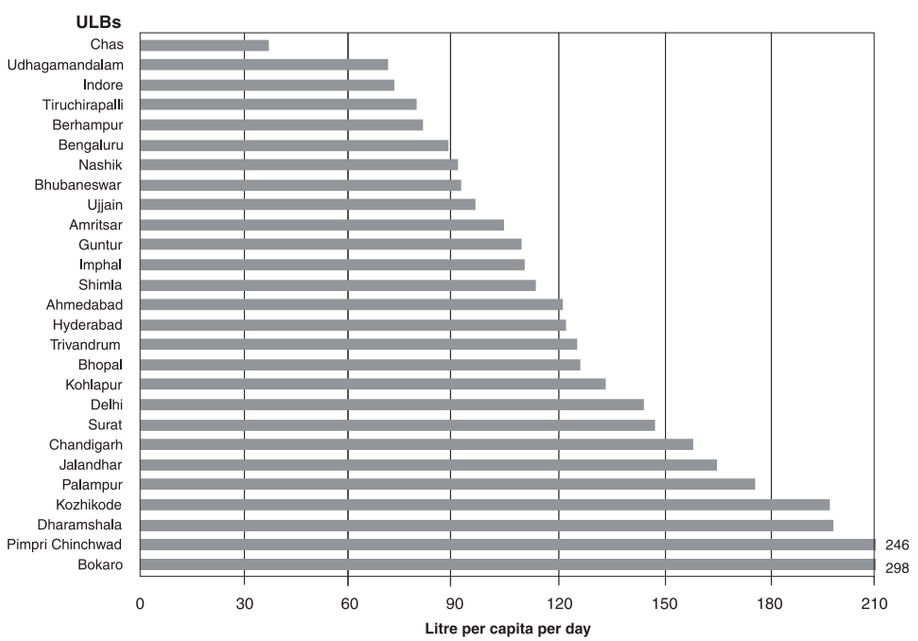


Figure 3 Non-revenue water

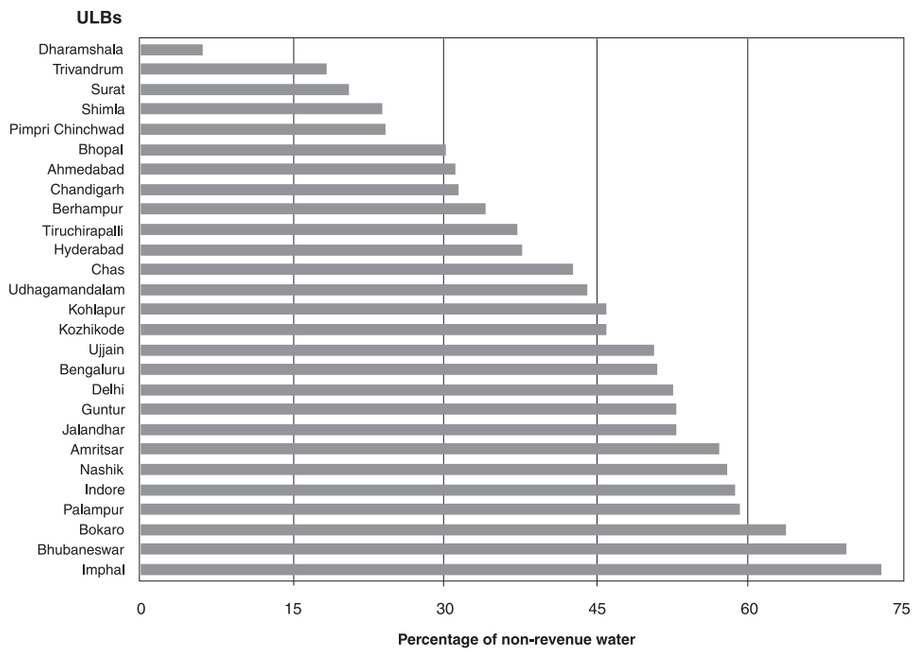


Figure 4 Consumption metering

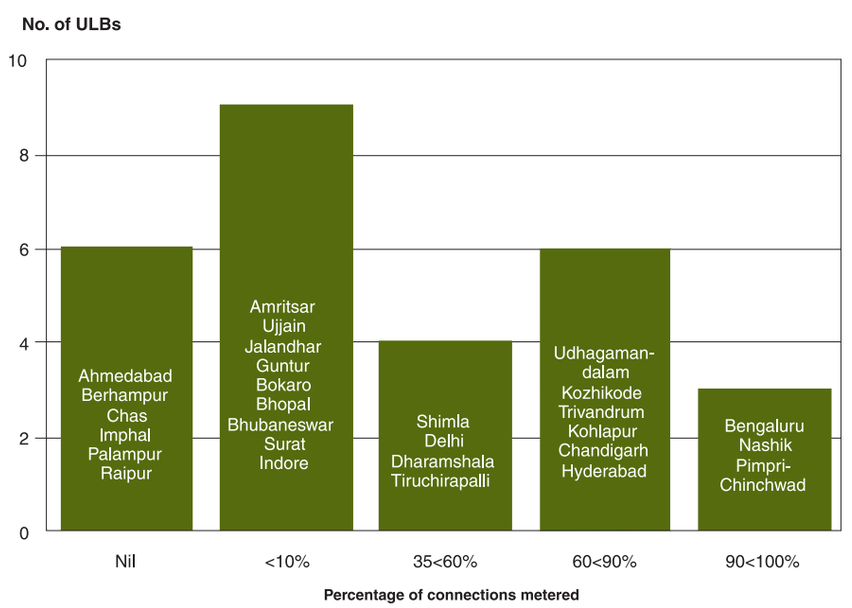


Figure 5 Continuity of water supply

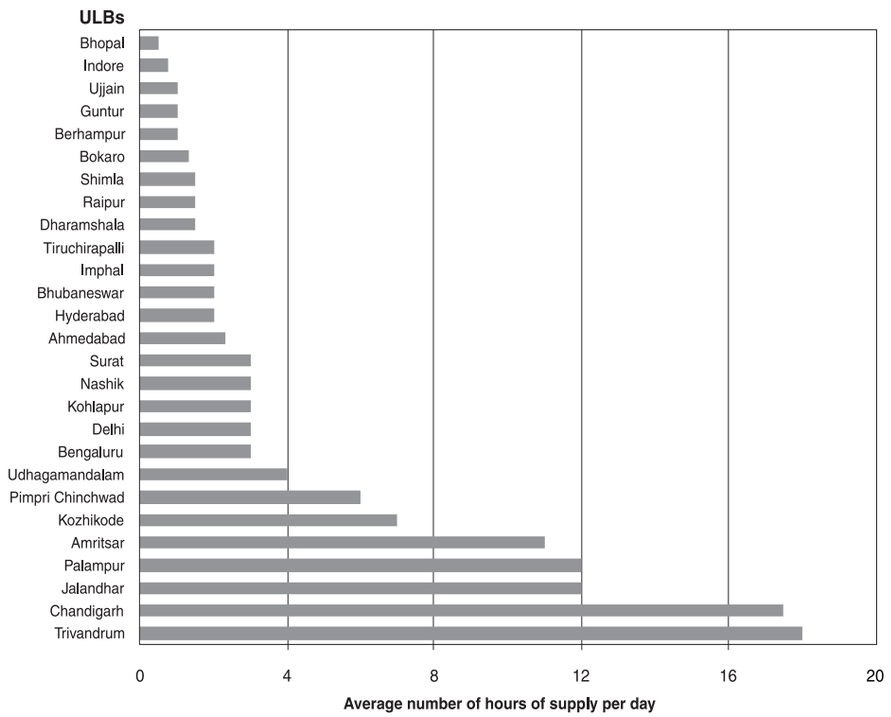


Figure 6 Quality of water supply

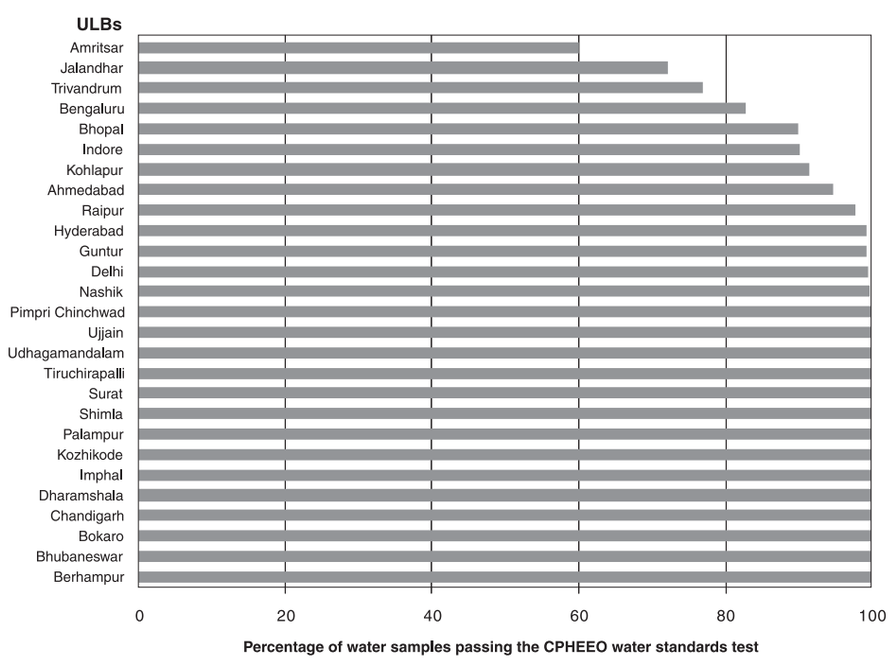


Figure 7 **Cost recovery: Water supply services**

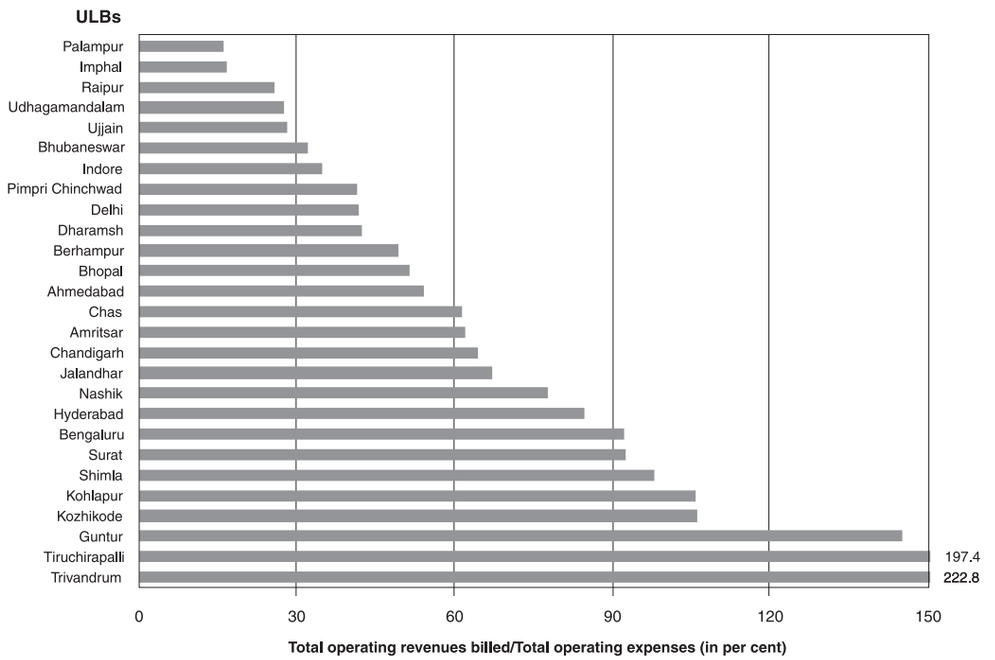


Figure 8 **Collection efficiency: Water supply-related charges**

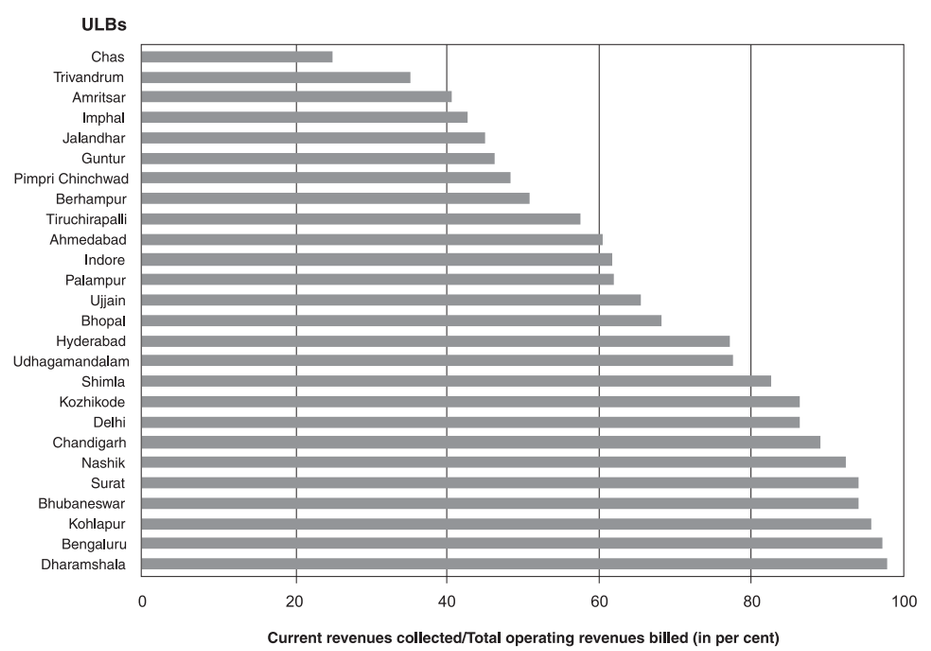


Figure 9 Complaints redressal: Water services

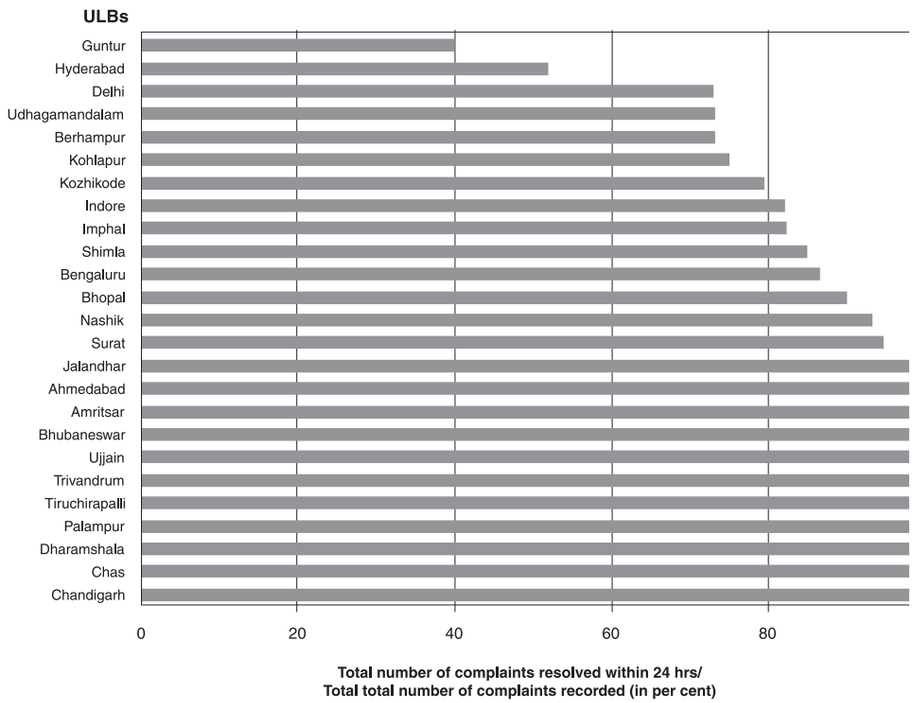


Figure 10 Staff per 1,000 connections

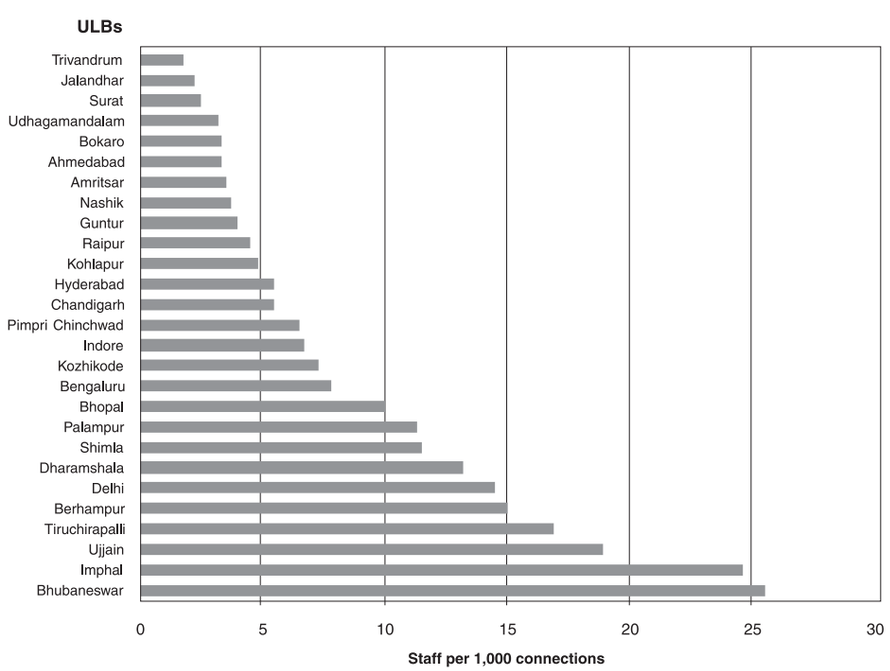


Figure 11 Unit production cost

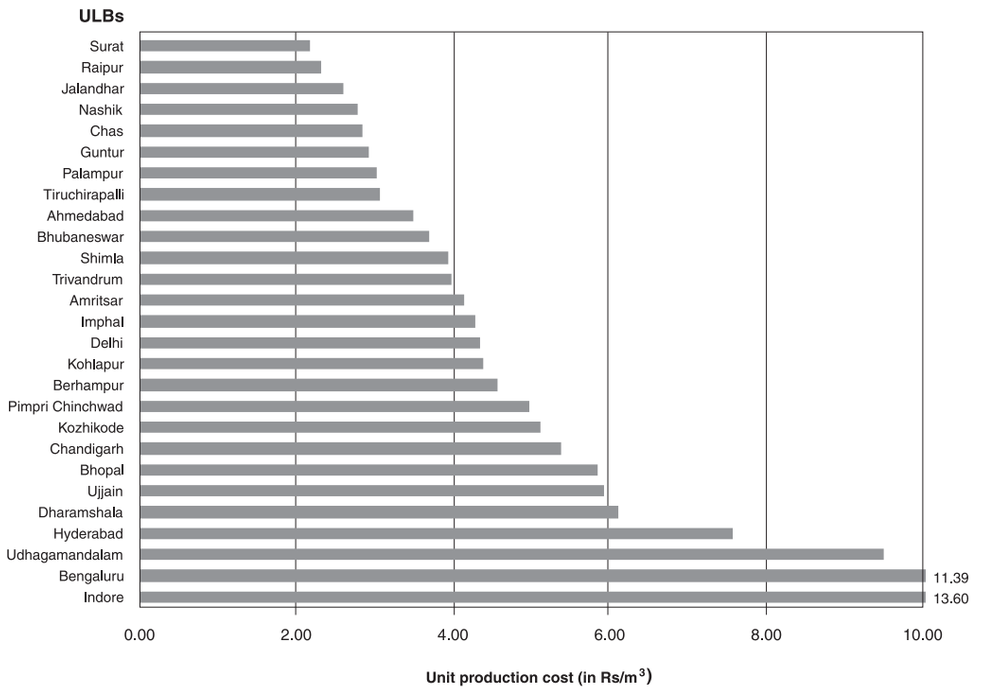


Figure 12 O&M cost components

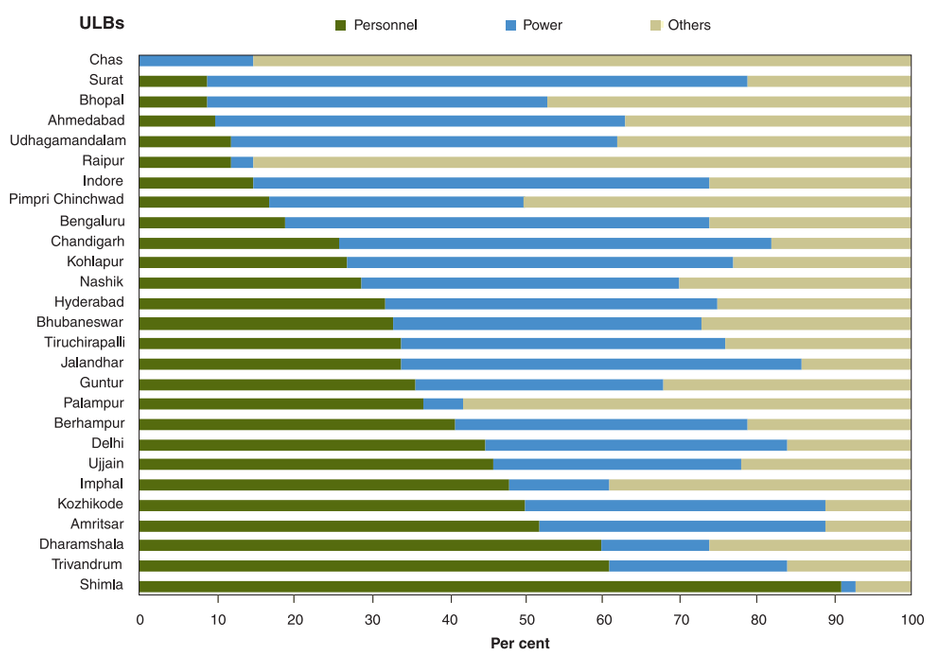


Figure 13a Domestic tariff structures

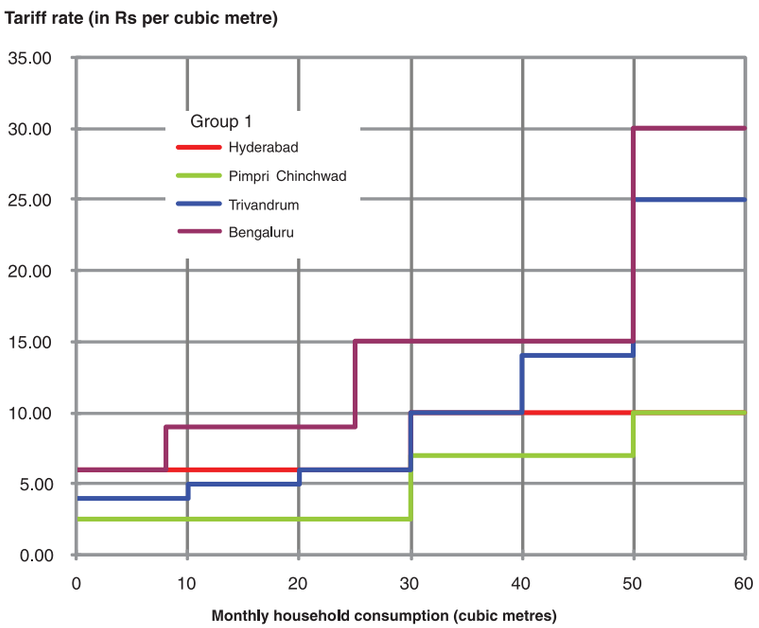


Figure 13b Domestic tariff structures

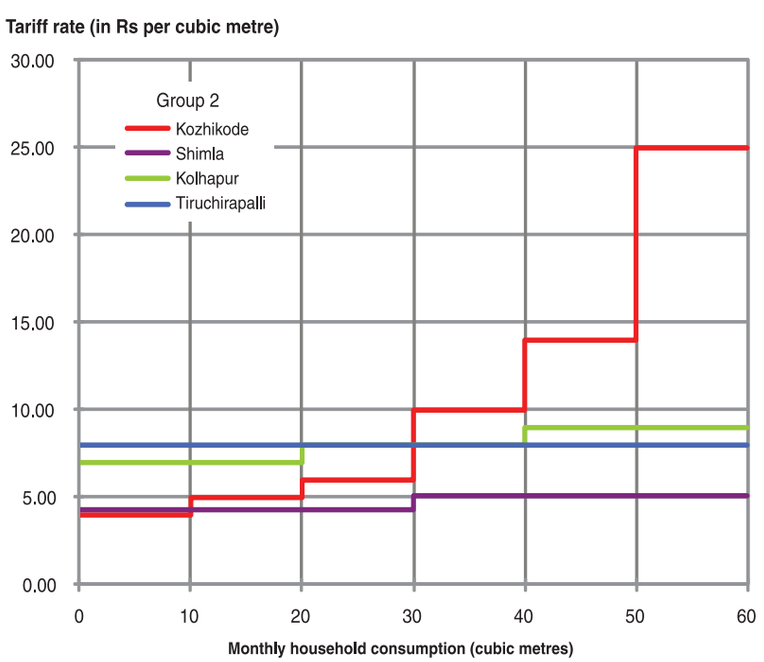


Figure 13c **Domestic tariff structures**

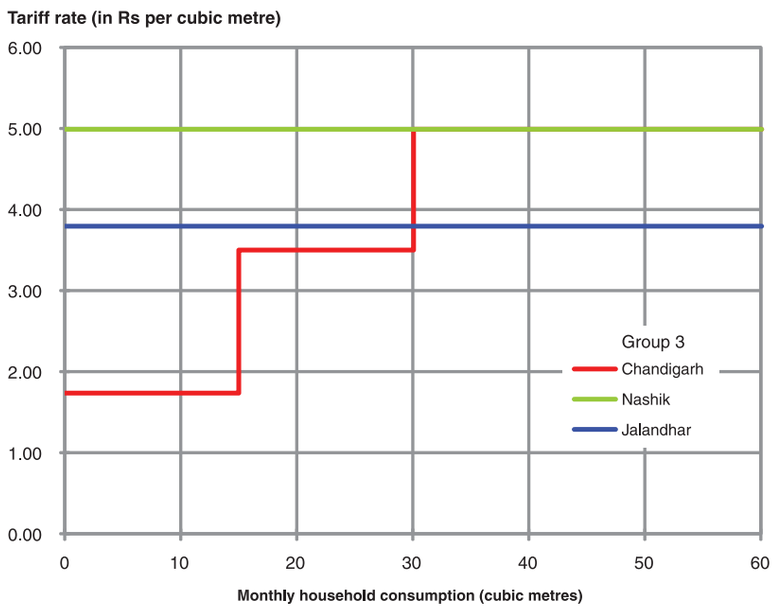


Figure 13d **Domestic tariff structures**

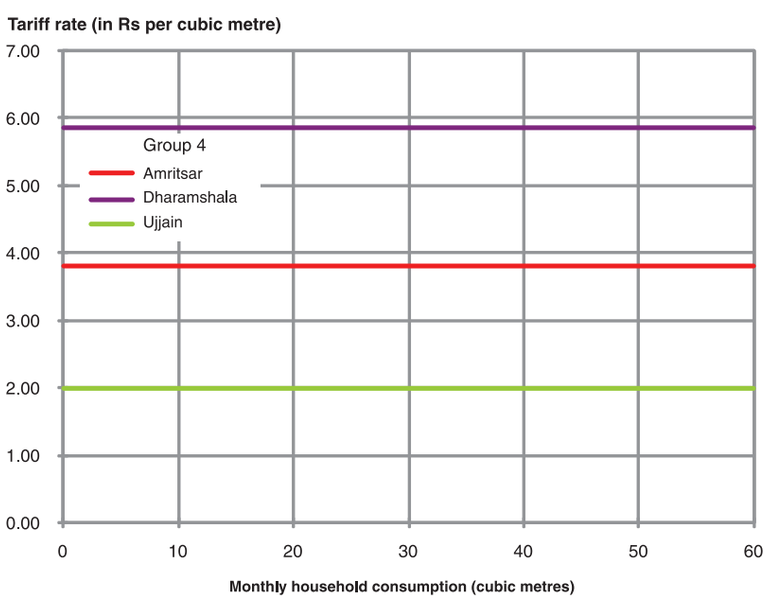
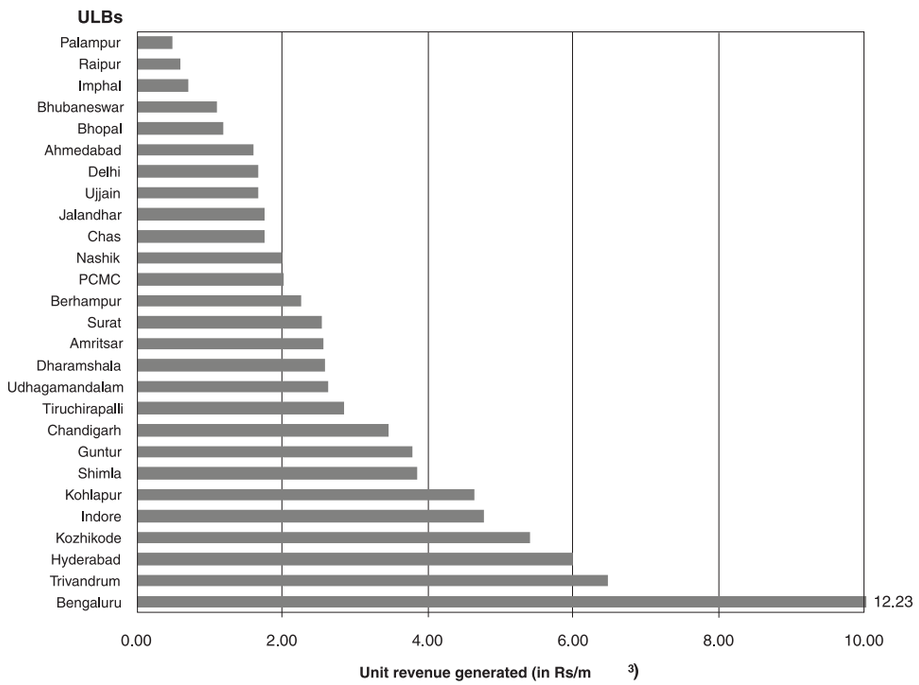


Figure 14 Revenue generated per m³



Note: PCMC is the Pimpri Chinchwad Municipal Corporation.

Figure 15 New water connections annually

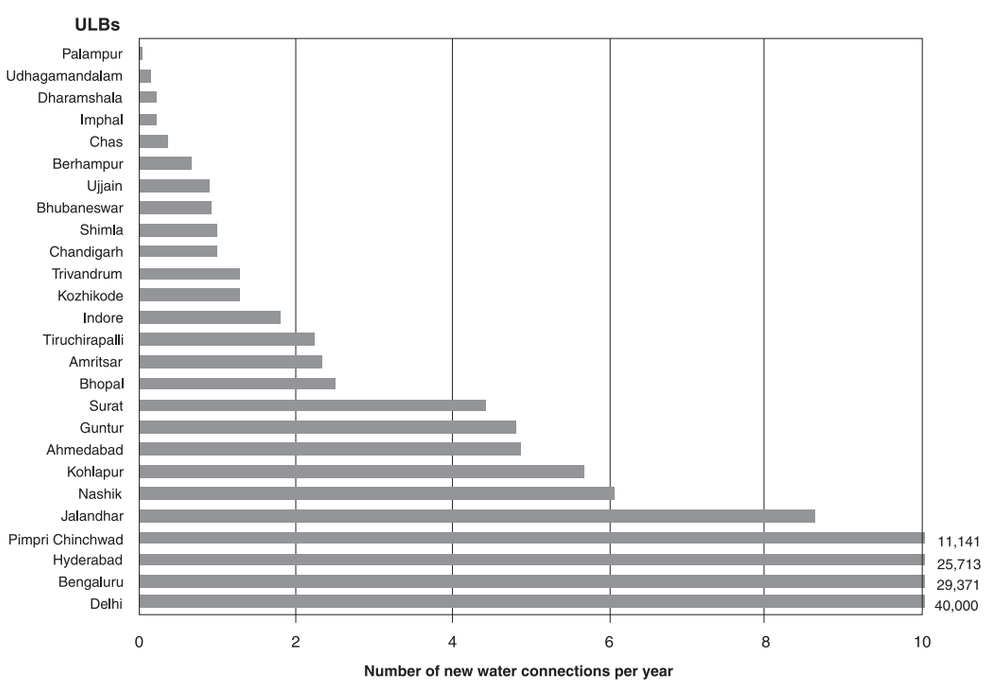


Figure 16 Toilet coverage

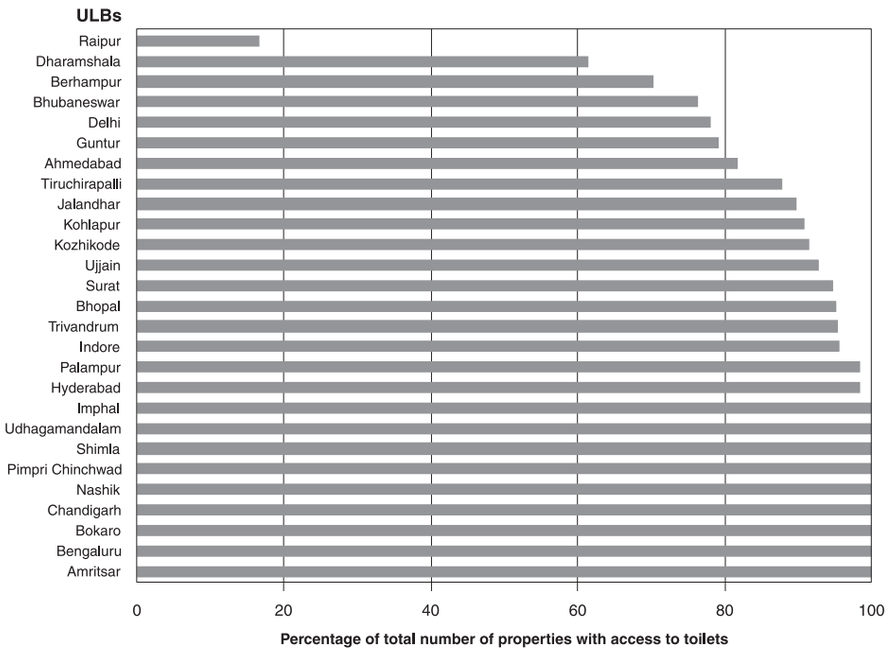


Figure 17 Sewerage coverage

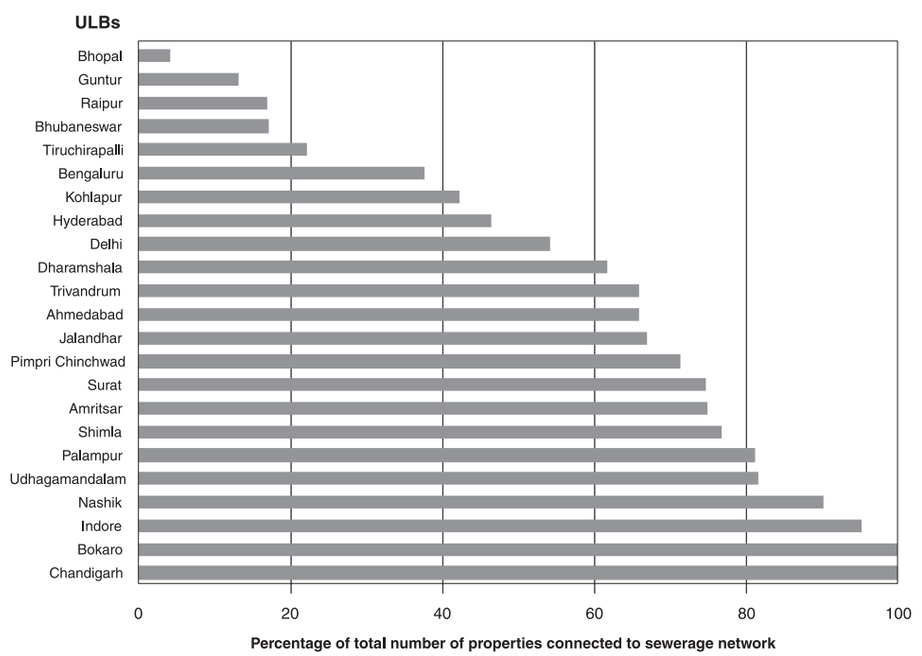


Figure 18 Wastewater collection efficiency

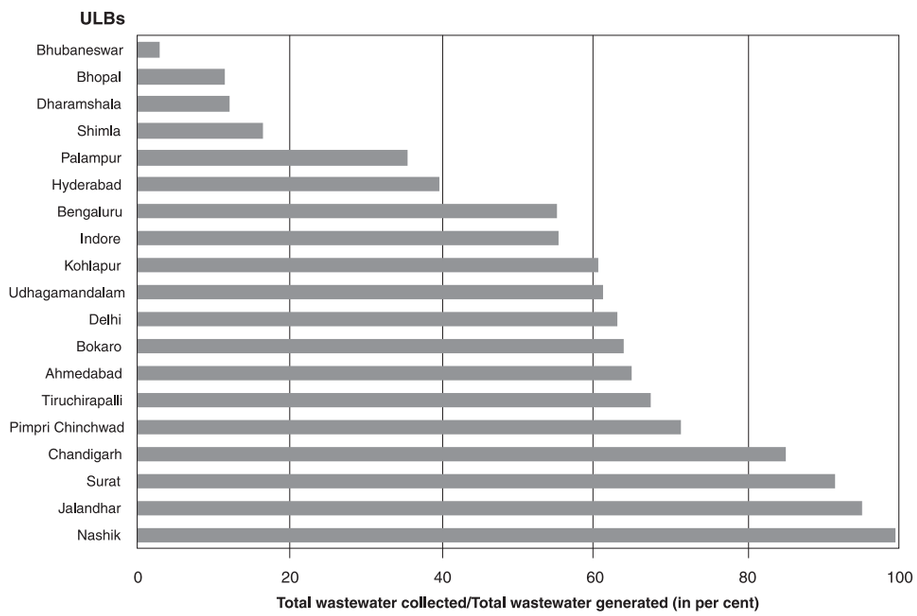


Figure 19 Wastewater treatment adequacy

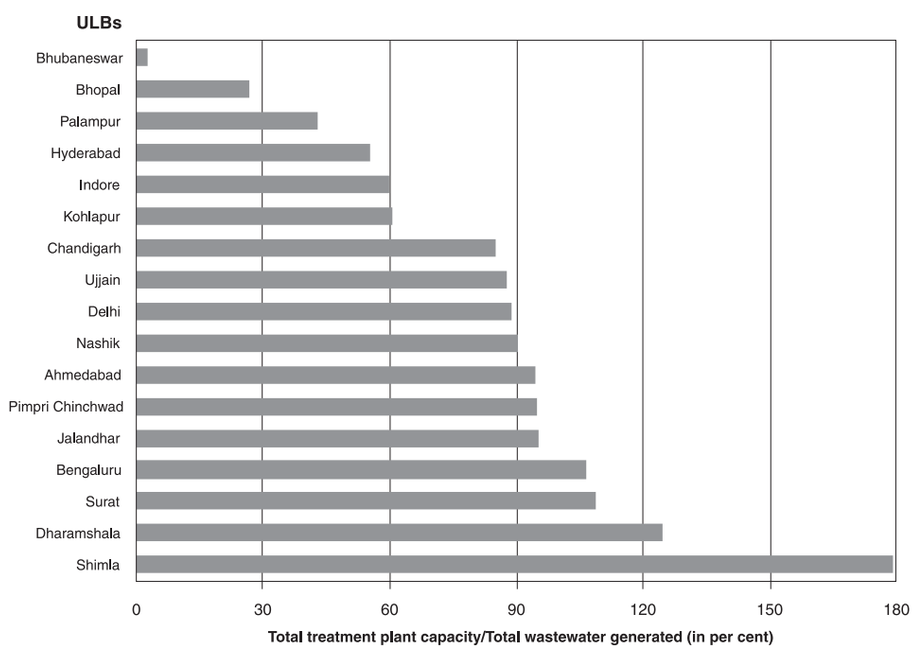


Figure 20 Quality of wastewater treatment

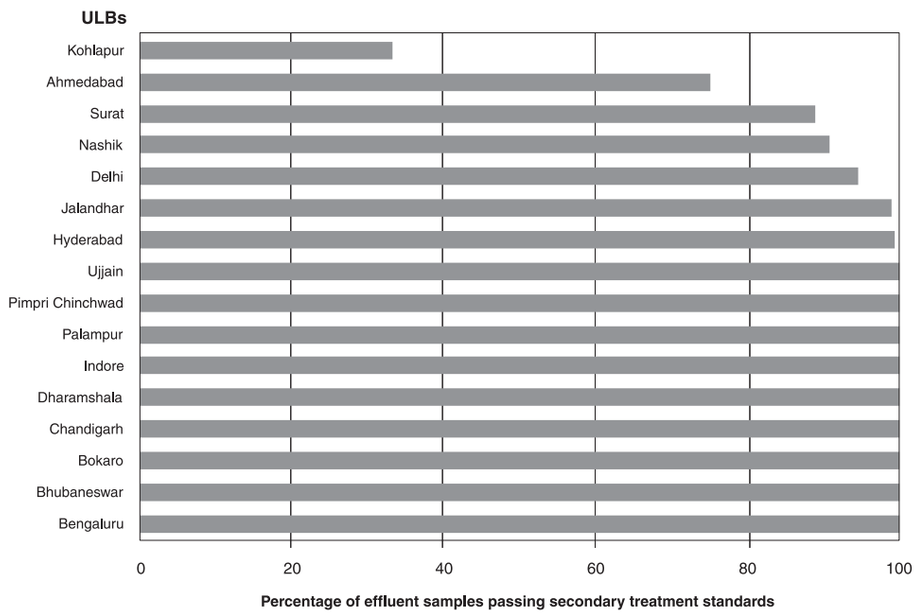
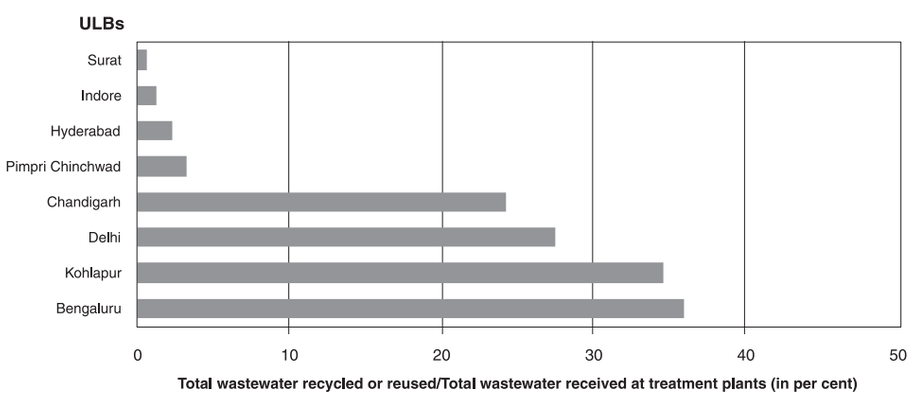


Figure 21 Extent of reuse and recycling of sewage



Note: Guntur and Imphal do not have treatment plants; Amritsar, Kozhikode and Trivandrum had no data; and the rest of the ULBs do not recycle or reuse sewage.

Figure 22 Cost recovery: Sewerage services

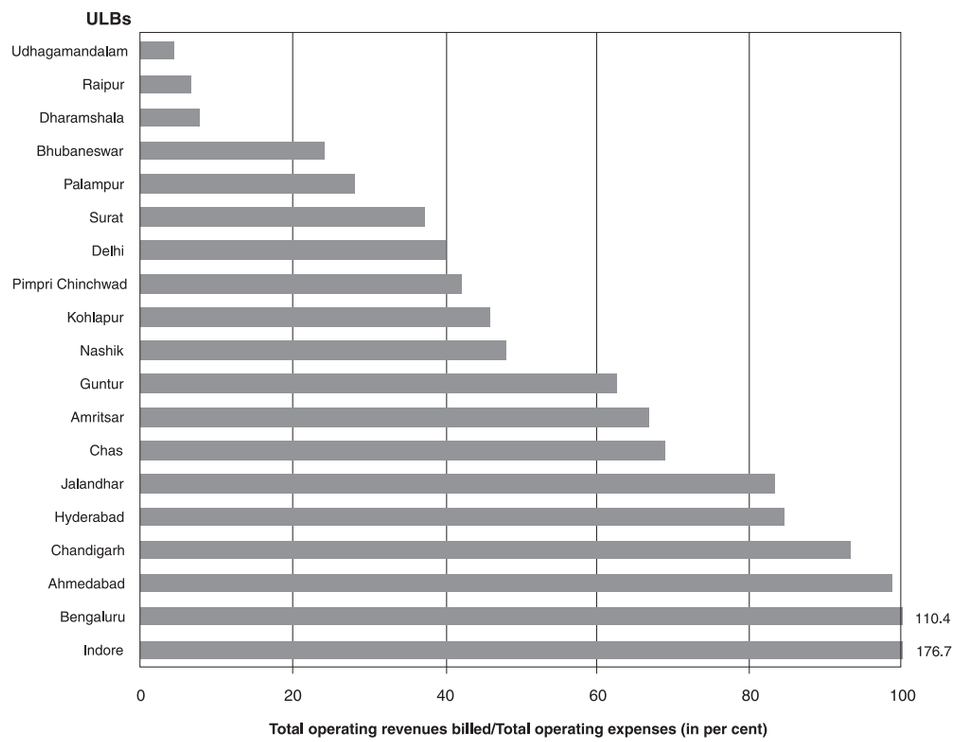


Figure 23 Collection efficiency: Sewerage services

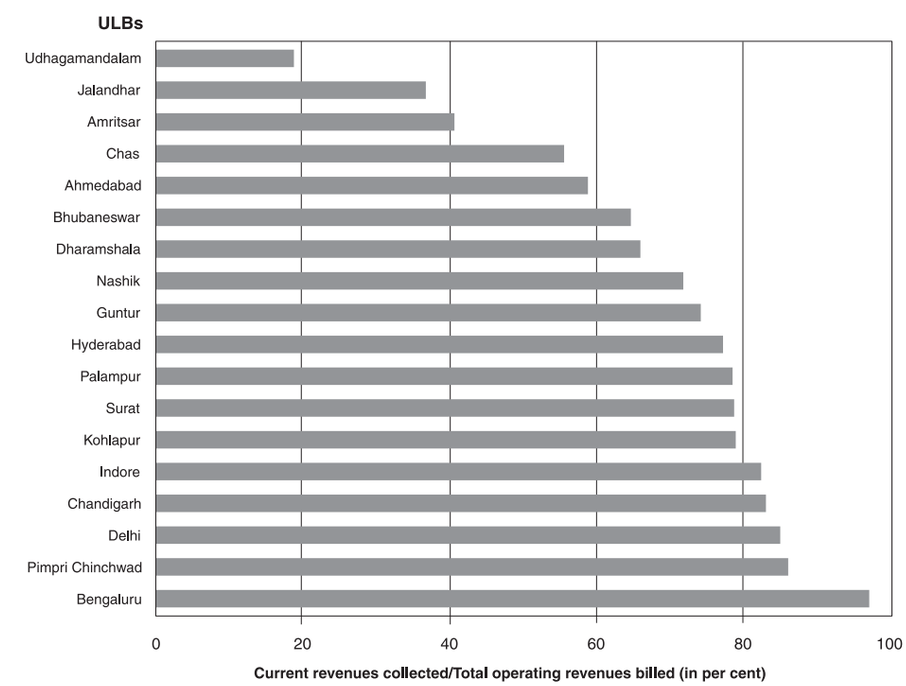


Figure 24 Complaints redressal: Sewerage services

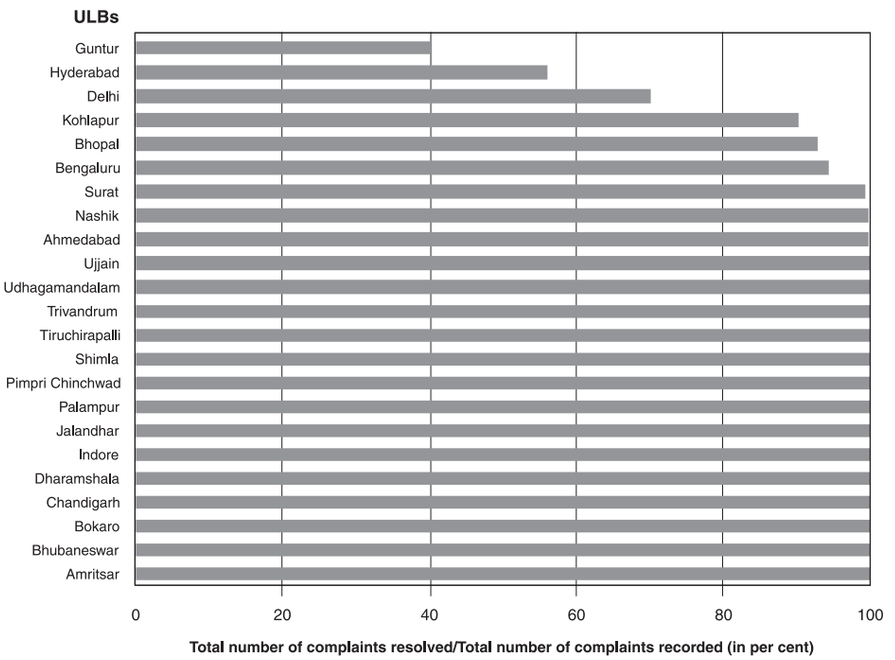


Figure 25 Drainage network coverage

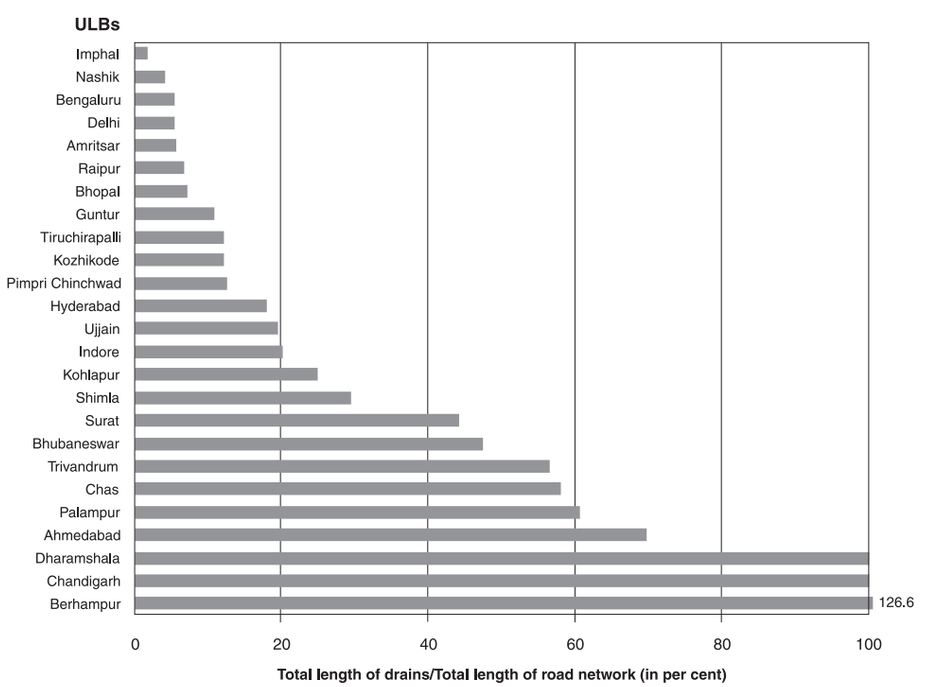


Figure 26 Incidence of water logging

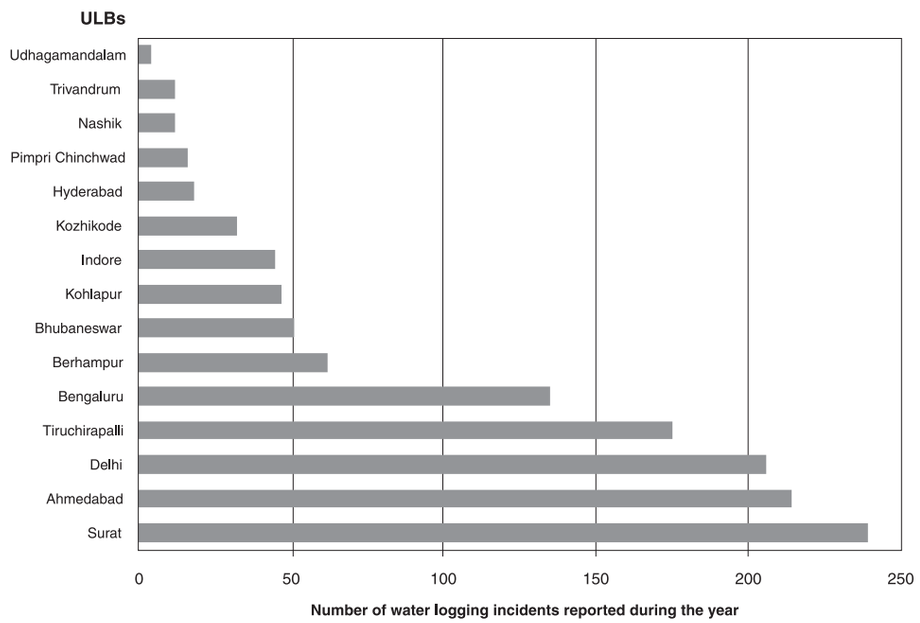


Figure 27 Household solid waste service coverage

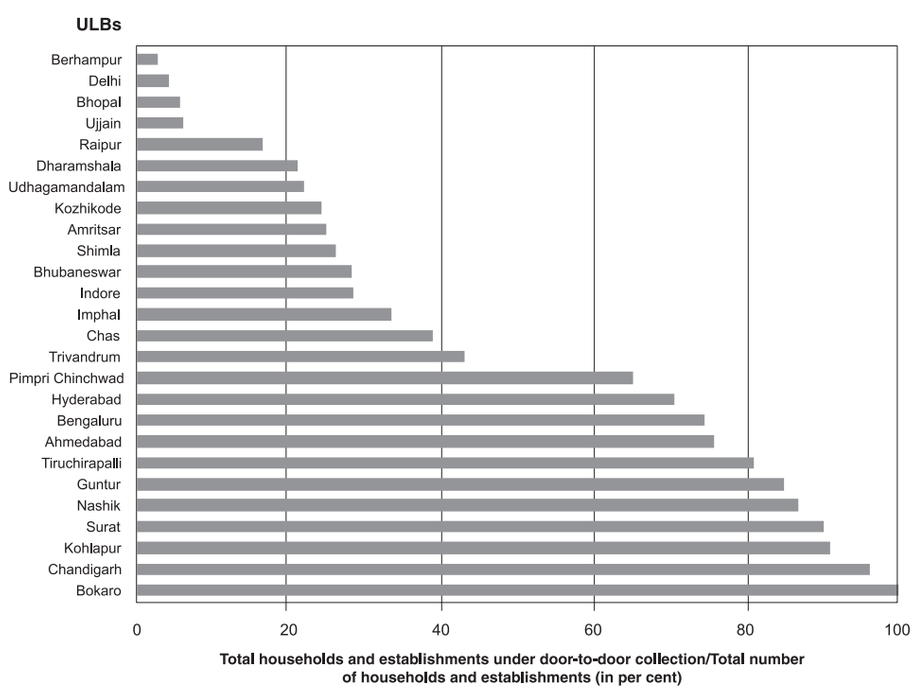


Figure 28 Collection of municipal solid waste

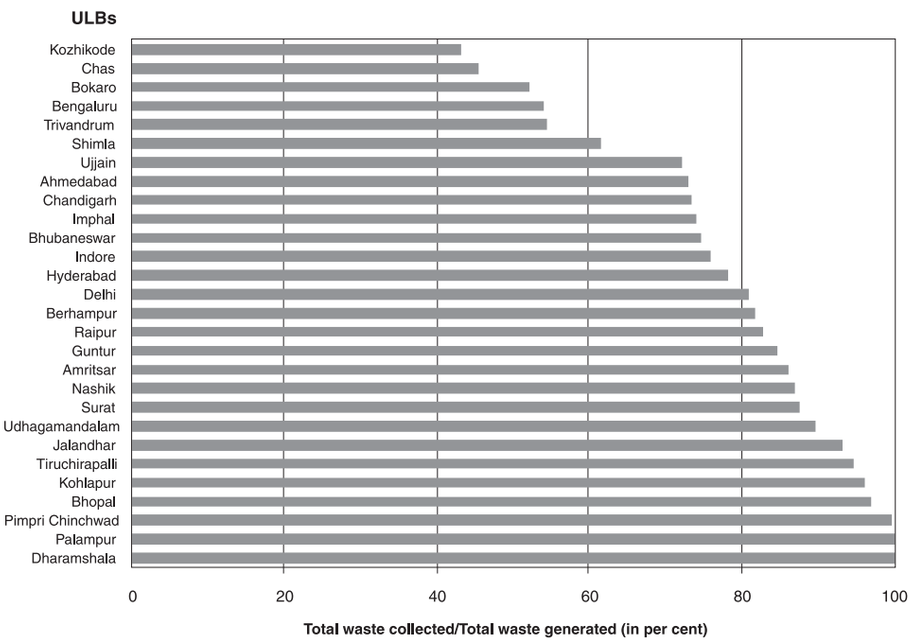


Figure 29 Segregation of municipal solid waste

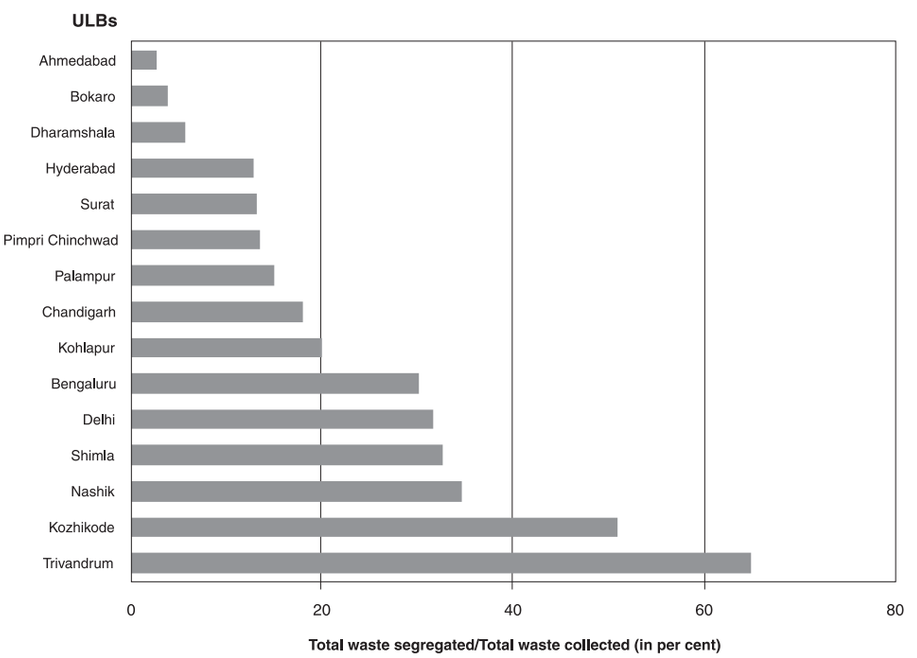


Figure 30 Recovery of municipal solid waste

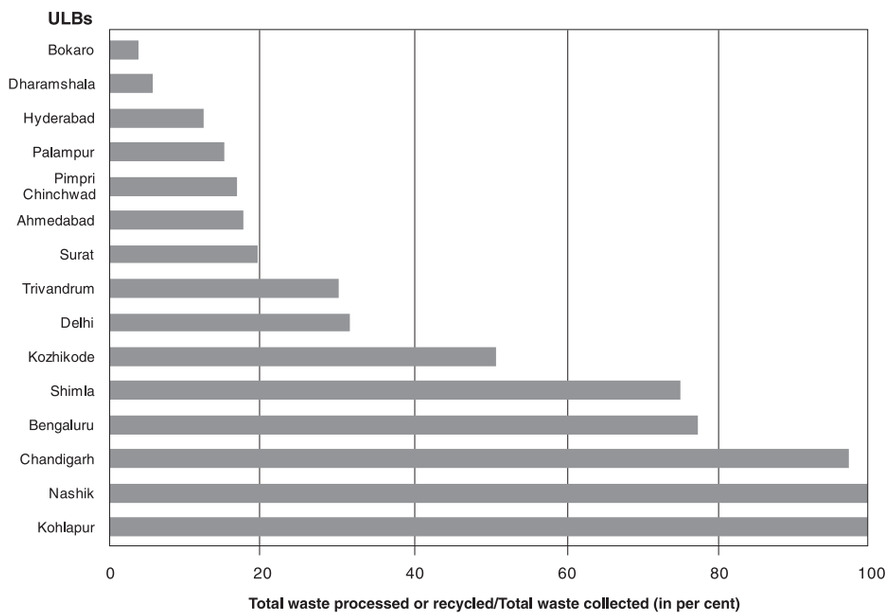
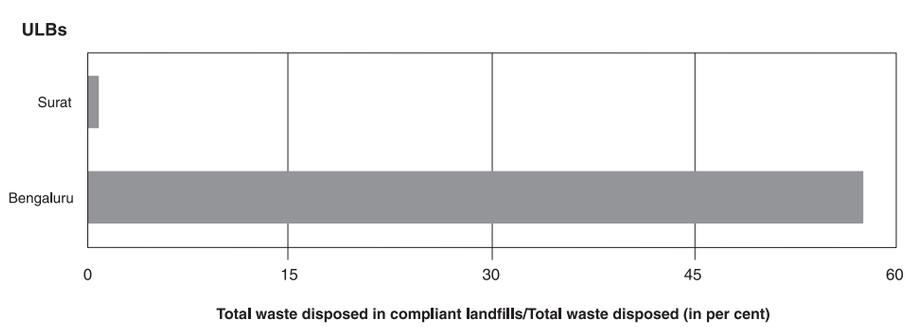


Figure 31 Scientific disposal of municipal solid waste



Note: Only Bengaluru has any significant disposal of municipal solid waste through a compliant landfill.

Figure 32 **Cost recovery: Solid waste management services**

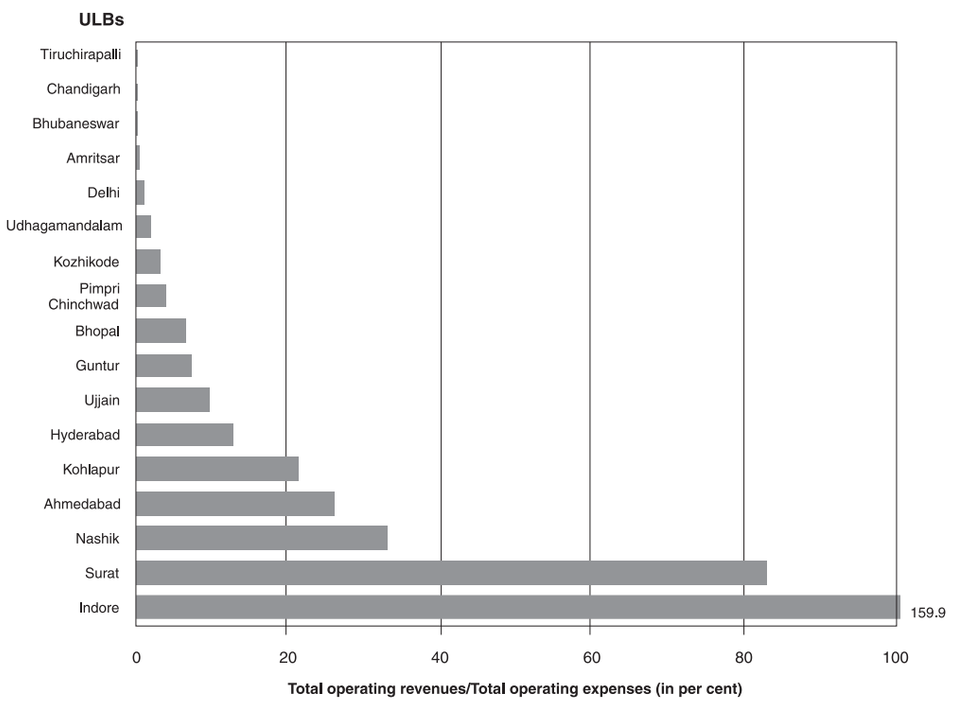


Figure 33 **Revenue collection efficiency: Solid waste management services**

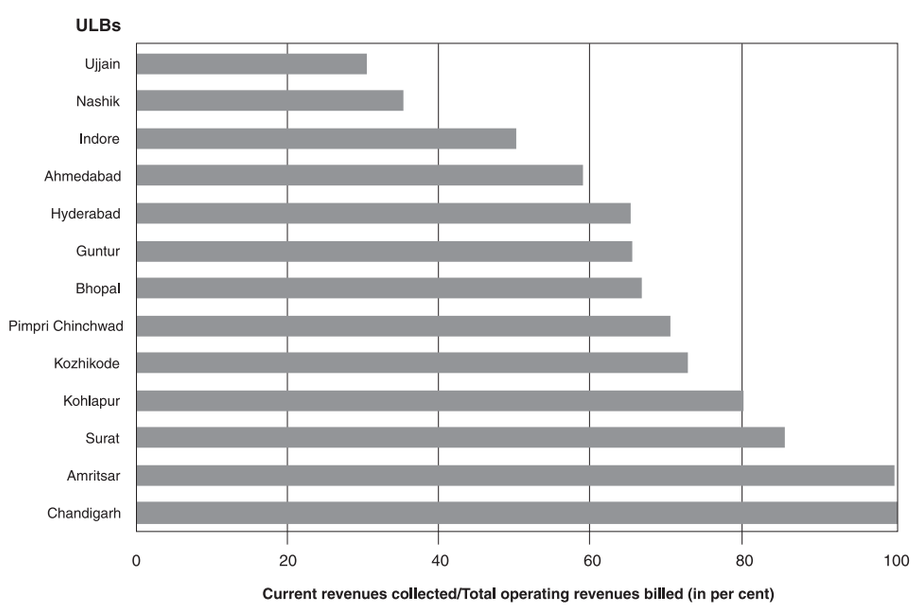


Figure 34 Complaints redressal: Solid waste management

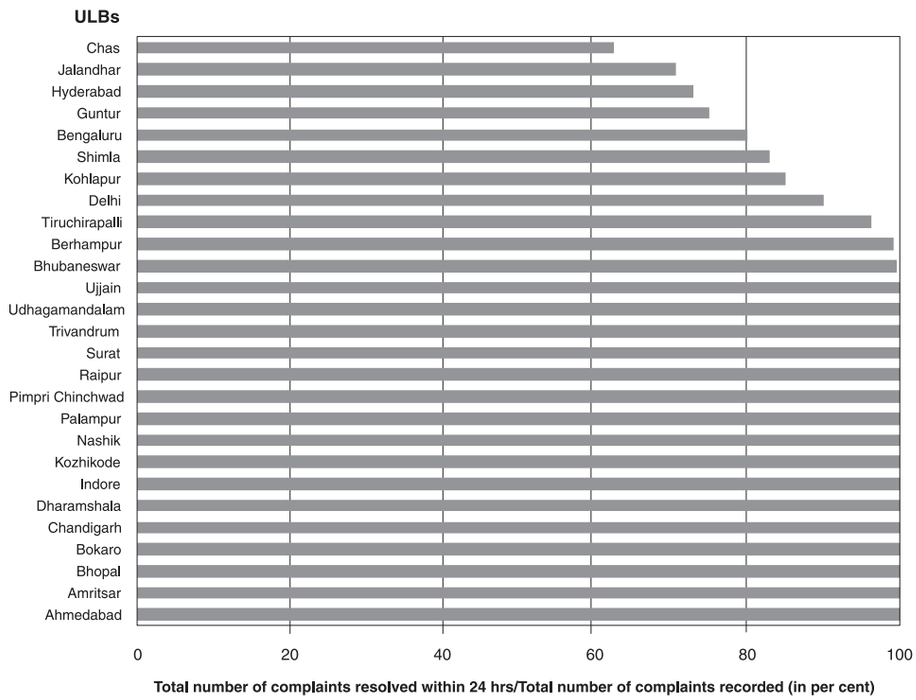


Figure 35 Number of staff required per ton of municipal solid waste collected

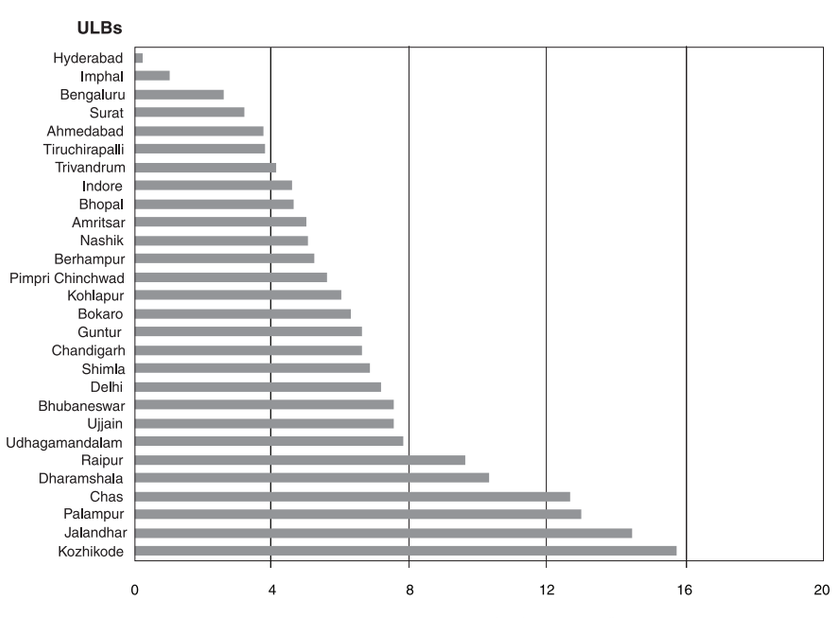
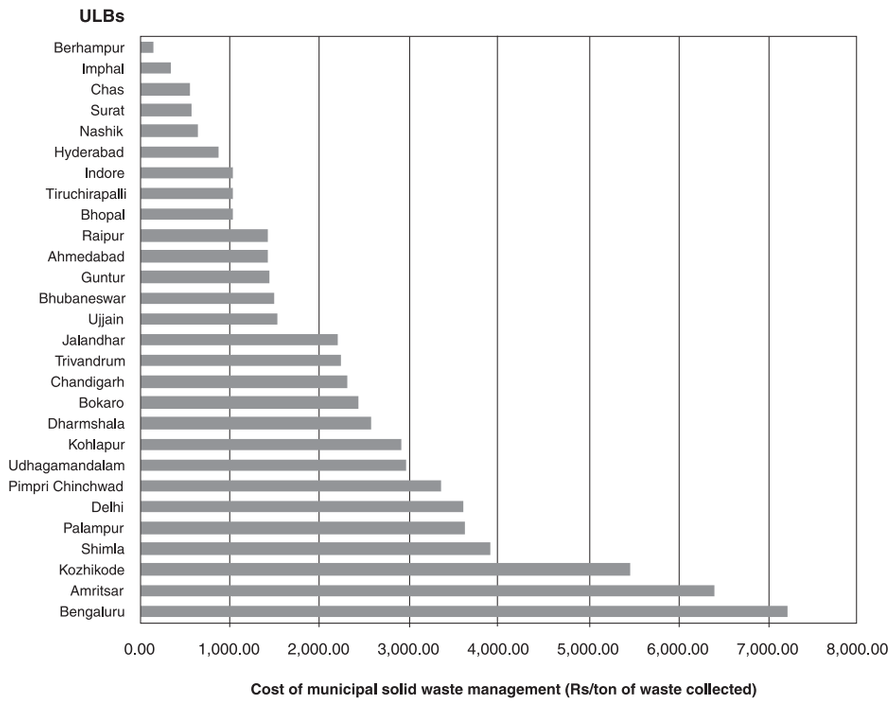


Figure 36 **Cost of municipal solid waste management**



PART 3

ULB and Utility Services Profiles

AHMEDABAD Utility Profile

Urban Local Body: Ahmedabad Municipal Corporation (AMC)

Sardar Patel Bhavan, Mahanagar Seva Sadan, Danapith, Ahmedabad 380001, India, Telephone: (91-79) 2535 2828, Fax: (91-79) 2535 4638, Contact: Municipal Commissioner

The city of Ahmedabad has a total population of 56,06,728 people of which 16,16,237 are in 1,813 slum settlements. The present urban area of AMC is 466.14 sq km composed of 57 wards. There are a total of 15,97,525 properties in Ahmedabad of which 12,57,152 are residential and 3,40,373 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone or e-mail. The ULB has no specific policy of providing water supply, sewerage, and sanitation services to the urban poor.

Water Supply

Utility Name: Ahmedabad Municipal Corporation

Water connections:	5,98,648 (Residential: 5,69,067 Non-residential: 29,581)
Staff:	1,988 (Staff/1,000 connections: 3.3)
Production:	925 MLD (Source: Groundwater - 12% Surface water - 88%)
Consumption:	648.22 MLD (Residential: 577.23 MLD Non-residential: 70.99 MLD)
Water treatment capacity:	925 MLD
Treated water storage:	750.46 ML
Distribution pipe length:	3,000 km
Average pressure:	1 meter
Number of water samples tested:	74,214
Number of samples passing test:	70,379

Service and Financial Data

Service contracts:	5 - repairs, treatment, distribution O&M
Contracted service cost:	Rs 2,77,00,000
Complaints received:	2,71,442
Rectified:	2,69,307
Leaks repaired:	34,776
Annual operating revenues:	Rs 63,52,64,000
Annual operating expenses:	Rs 1,17,69,25,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 60,50,82,000
Sources of capital investments:	no data
Tariff - Fixed rate:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Ahmedabad Municipal Corporation

Properties w/access to toilets:	12,44,926
Properties connected to sewer:	9,52,030
Number of staff:	2,305 (Staff/1,000 connections: 2.4)
Area covered by sewerage network:	344.8 km^2
Wastewater produced/collected:	518.55 MLD/336.7 MLD
Number of ST Plants:	4 (Total STP capacity: 490 MLD)
Sewage volume treated:	336.7 MLD
Volume of treated water reused:	nil
Number of tested effluent samples:	504
Number of samples passing test:	378

Service and Financial Data

Service contracts:	5 - O&M for STP, drainage and repairs
Contracted service cost:	Rs 1,73,40,000
Number of sewer blockages:	2,96,310
Complaints recorded:	3,31,020
Rectified:	3,29,961
Annual operating revenues:	Rs 29,55,86,000
Annual operating expenses:	Rs 35,19,63,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 57,56,01,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Ahmedabad Municipal Corporation

Total length of drains:	1,049.58 km
Primary drains:	569.69 km
Secondary drains:	376.20 km
Tertiary drains:	103.69 km
Frequency of desilting of drains:	annually
Number of flood-prone areas:	95

Service and Financial Data

Name of major flood-prone areas:	Mostly in South, West and North Zones
Number of staff:	n.a. (part of sewerage unit)
Annual operating expenses:	Rs 1,30,79,000
2009 capital expenditure:	Rs 65,27,12,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Ahmedabad Municipal Corporation

Total number of establishments:	15,97,525
Waste generation:	97,557 tons/month
Door-to-door collection:	Yes
Number of establishments w/DTD collection:	12,08,565
Waste segregation at source:	Yes
Quantity of recycled waste:	441 tons/month
Quantity to processing/ disposal facility:	1,500 tons/month
Waste collected/transported:	71,151 tons/month
Waste processing facility:	Yes
Total waste processed:	12,441 tons/month
Number of waste disposal facilities:	2
Compliant landfills:	1 (Waste quantity: nil)
Open dumpsites:	1 (Waste quantity: 58,710 tons/month)

Service and Financial Data

Number of staff:	8,221
Service contracts:	3 - Hotel and hospital waste collection, municipal waste collection and transport
Complaints recorded:	1,194 (Rectified: 1,194)
Annual revenues (billed):	Rs 29,60,00,000
Annual revenues (collected):	Rs 17,35,24,000
Annual operating expenses:	Rs 1,12,99,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 2,96,34,000
Sources of capital investments:	no data
Tariffs - User charges:	nil
- Tax (solid waste):	conservancy tax - 30% of property tax for sewerage, storm water and solid waste management

ULB Service Profile AHMEDABAD

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	85.4%
Per capita consumption[2]	121 lpcd
Non-revenue water[3]	31.0%
Consumption metering	nil
Continuity of supply	2.3 hours/day
Quality of water supply	94.8% samples passed
Cost recovery: water supply	54.0%
Collection efficiency	60.4%
Complaints redressal	99.2%

Sewerage and Sanitation Services

Toilet coverage	81.7%
Sewerage network coverage	65.8%
Wastewater collection efficiency[4]	64.9%
Wastewater treatment adequacy[5]	94.5%
Quality of wastewater treatment	75.0%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	98.5%
Collection efficiency	58.7%
Complaints redressal	99.7%

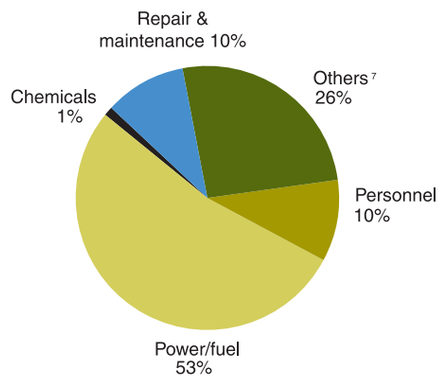
Storm Drainage Management

Drainage network coverage	69.6%
Incidence of water logging	214 per year

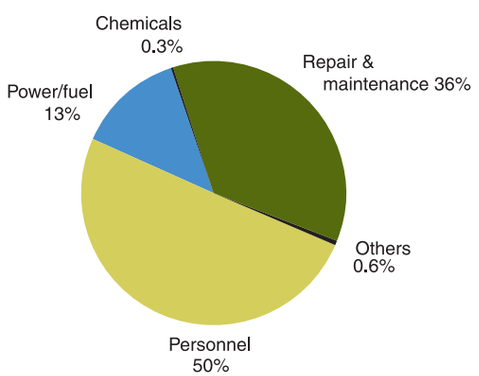
Solid Waste Management

Household level coverage	75.7%
Collection efficiency of MSW	72.9%
Segregation of MSW	2.7%
MSW recovery	17.5%
Scientific disposal of MSW[6]	nil
Cost recovery: SWM	26.2%
Collection efficiency	58.6%
Complaints redressal	100%

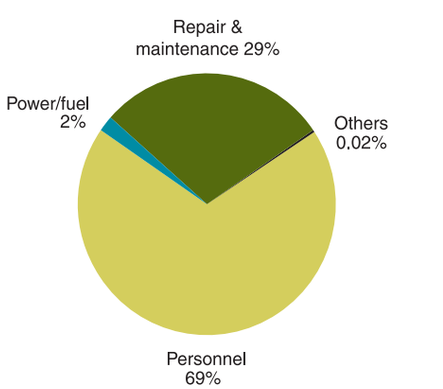
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 1,17,69,25,000



Annual O&M Costs: Sewerage
Rs 35,19,63,000



Annual O&M Costs: Solid Waste
Rs 1,12,98,55,000

Notes:
1 Coverage for house connections only; coverage is 93.7% if public standposts are included.
2 Per capita supply is 193 lpcd.
3 Only one surface water source is metered; 9.8 MLD is provided free through standposts.
4 Wastewater generation based on total water consumption.
5 Based on secondary treatment capacity; there are 9 ULBs and 10 private desludging machines.
6 There is a landfill constructed but is not yet commissioned.
7 Others include cost of raw water.

AMRITSAR Utility Profile

Urban Local Body: Municipal Corporation of Amritsar (MCA)

Municipal Corporation of Amritsar, Town Hall, Amritsar 143001, Punjab, India, Telephone: (91-183) 509 1922, Fax: (91-183) 254 5155, Contact: Municipal Commissioner

The city of Amritsar has a total population of 11,01,200 people of which 3,67,967 are in 63 slum settlements. The present urban area of MCA is 139 sq km composed of 65 wards. There are a total of 4,02,695 properties in Amritsar of which 2,31,995 are residential and 1,70,700 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone or e-mail. The ULB has a specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Municipal Corporation of Amritsar

Number of connections:	1,50,129 (Residential: 136,148 Non-residential: 13,981)
Number of staff:	520 (common staff with sewerage) Staff/1,000 connections: 3.5
Production:	201 MLD (Source: Groundwater - 100% Surface water - nil)
Consumption:	88.5 MLD (Residential: 84.5 MLD Non-residential: 4.0 MLD)
Water treatment capacity:	201 MLD
Treated water storage:	24.0 ML
Distribution pipe length:	600 km
Average pressure:	2 meters
Number of water samples tested:	1,463 (bacteriological)
Number of samples passing test:	878

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Complaints received:	8,464
Rectified:	8,404
Leaks repaired:	121
Annual operating revenues:	Rs 18,74,45,000
Annual operating expenses:	Rs 30,30,60,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 17,97,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 105/month - Residential
- Cost/volume:	Rs 3.80/m^3 - Residential Rs 7.60/m^3 - Commercial

Sewerage and Sanitation

Utility Name: Municipal Corporation of Amritsar

Properties w/access to toilets:	1,70,700
Properties connected to sewer:	1,27,443
Number of staff:	520 (common staff with water supply)
Staff/1,000 connections:	4.1
Area covered by sewerage network:	118 km^2
Wastewater produced/collected:	70.8 MLD/ nil
Number of ST Plants:	No STP in Amritsar
Sewage volume treated:	n.a.
Volume of treated water reused:	n.a.
Number of tested effluent samples:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Number of sewer blockages:	355
Complaints recorded:	12,876
Rectified:	12,876
Annual operating revenues:	Rs 18,71,89,000
Annual operating expenses:	Rs 28,15,69,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 82,19,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Billing is split between water and sewerage

Storm Water Drainage

Utility Name: Municipal Corporation of Amritsar

Total length of drains:	528 km
Primary drains:	29 km
Secondary drains:	nil
Tertiary drains:	499 km
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	5

Service and Financial Data

Name of major flood-prone areas:	5 locations listed
Number of staff:	Part of water and sewerage staff
Annual operating expenses:	Part of water and sewerage costs
2009 capital expenditure:	nil
Sources of capital investments:	n.a.

Solid Waste Management

Utility Name: Municipal Corporation of Amritsar

Total number of establishments:	4,02,695
Waste generation:	18,600 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,00,000)
Waste segregation at source:	No
Quantity of recycled waste:	nil
Quantity to processing/disposal facility:	nil
Waste collected/transported:	16,000 tons/month
Waste processing facility:	No
Total waste processed:	n.a
Number of waste disposal facilities:	1
Compliant landfills:	nil (Waste quantity: n.a.)
Open dumpsites:	1 (Waste quantity: 16,000 tons/month)

Service and Financial Data

Number of staff:	2,795
Service contracts:	1 - DTD collection and transport to open dumpsite
Complaints recorded:	260 (Rectified: 260)
Annual revenues (billed):	Rs 48,16,000
Annual revenues (collected):	Rs 48,00,000
Annual operating expenses:	Rs 1,28,48,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil (conservancy tax levied but is credited as Health Department revenue)

ULB Service Profile AMRITSAR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	66.4%
Per capita consumption[2]	104 lpcd
Non-revenue water[3]	57.0%
Consumption metering	8.5%
Continuity of supply	11.0 hours/day
Quality of water supply	60.0% samples passed
Cost recovery: water supply	61.9%
Collection efficiency	40.7%
Complaints redressal	99.3%

Sewerage and Sanitation Services

Toilet coverage	100%
Sewerage network coverage	74.8%
Wastewater collection efficiency	nil
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	n.a.
Cost recovery: wastewater	66.6%
Collection efficiency	40.7%
Complaints redressal	100%

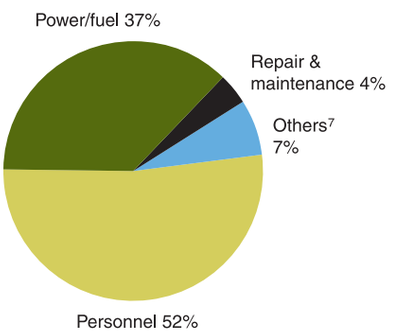
Storm Drainage Management

Drainage network coverage	5.5%
Incidence of water logging[5]	no data

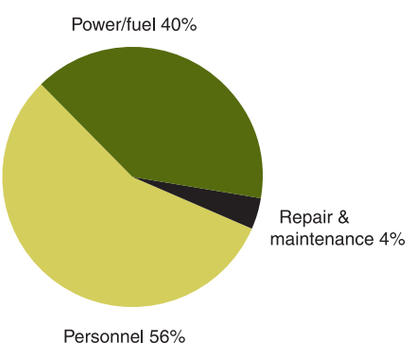
Solid Waste Management

Household level coverage	24.8%
Collection efficiency of MSW	86.0%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[6]	0.4%
Collection efficiency	99.7%
Complaints redressal	100%

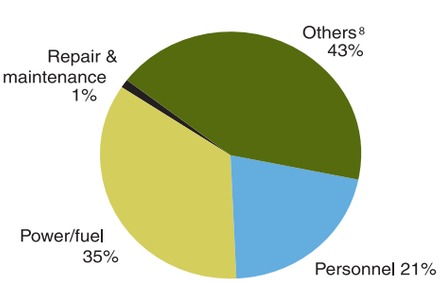
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 30,30,60,000



Annual O&M Costs: Sewerage
Rs 28,15,69,000



Annual O&M Costs: Solid Waste
Rs 1,28,48,01,000

Notes:
1 Coverage for house connections only; coverage is 73.7% if public standposts are included.
2 Per capita supply is 248 lpcd.
3 None of the groundwater sources are metered; 2 MLD is provided free through standposts.
4 There is no sewage treatment plant; there are two ULBs and two privately-owned desludging machines.
5 The ULB does not maintain flooding records.
6 Only conservancy tax is collected but this is credited to Health Department.
7 Common costs for water supply and sewerage except for additional cost of Rs. 21,491,000 for water.
8 This includes grants to 297 Mohalla Sudhar Committees doing door-to-door collection.

BENGALURU Utility Profile

Urban Local Body: Bruhat Bengaluru Mahanagara Palike (BBMP)

N.R. Square, Bengaluru, Karnataka 560002, India, Telephone: (91-80) 2222 1896, Fax: (91-80) 2222 3194, Contact: Municipal Commissioner

The city of Bengaluru has a total population of 78,06,000 people of which 7,80,600 are in 542 slum settlements. The present urban area of BBMP is 793.47 sq km composed of 198 wards. There are a total of 21,05,589 properties in Bengaluru of which 17,34,870 are residential and 3,70,719 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone or e-mail. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Bangalore Water Supply and Sewerage Board

Number of connections:	5,62,581 (Residential: 5,09,392 Non-residential: 53,189)
Number of staff:	4,410 (common with sewerage)
Staff/1,000 connections:	7.8
Production:	930 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	504.1 MLD (Residential: 400.8 MLD Non-residential: 103.3 MLD)
Water treatment capacity:	945 MLD
Treated water storage:	793.7 ML
Distribution pipe length:	4,699 km
Average pressure:	4 meters
Number of water samples tested:	10,559
Number of samples passing test:	8,730

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Complaints received:	92,168 (Rectified: 79,946)
Leaks repaired:	1,16,091
Annual operating revenues:	Rs 4,15,26,00,000
Annual operating expenses:	Rs 3,86,69,00,000
Debt service for the year:	Rs 1,26,03,00,000
2009 capital expenditure:	Rs 2,80,81,00,000
Sources of capital investments:	Government grants and loans; loans from multilateral agencies
Tariff - Fixed rate:	Rs 48.00/month for domestic Rs 360.00/month for non-domestic
- Cost/volume:	Starts at Rs 6.00/m^3 for domestic and Rs 36.00/m^3 for non-domestic

Sewerage and Sanitation

Utility Name: Bangalore Water Supply and Sewerage Board

Properties w/access to toilets:	15,18,986
Properties connected to sewer:	5,71,859
Number of staff:	4,410 (Staff/1,000 connections: 7.7)
Area covered by sewerage network:	381.5 km^2
Wastewater produced/collected:	669.6 MLD/ 369 MLD
Number of ST Plants:	16 (Total STP capacity: 781 MLD)
Sewage volume treated:	369 MLD
Volume of treated water reused:	7.53 MLD
Number of tested effluent samples:	3,650
Number of samples passing test:	3,650

Service and Financial Data

Service contracts:	Staff and STP services
Contracted service cost:	no data
Number of sewer blockages:	14,080
Complaints recorded:	23,208 (Rectified: 21,897)
Annual operating revenues:	Rs 46,14,00,000
Annual operating expenses:	Rs 31,38,30,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 23,02,95,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 15-Rs 50/month for domestic Rs 300/month for non-domestic

Storm Water Drainage

Utility Name: Bruhat Bengaluru Mahanagara Palike

Total length of drains:	842.0 km
Primary drains:	415.5 km
Secondary drains:	426.5 km
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	135

Service and Financial Data

Name of major flood-prone areas:	9 areas were listed
Number of staff:	62
Annual operating expenses:	Rs 2,13,80,000
2009 capital expenditure:	Rs 29,25,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Bruhat Bengaluru Mahanagara Palike

Total number of establishments:	21,05,589
Waste generation:	1,51,020 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 15,67,959)
Waste segregation at source:	Yes (Quantity of recycled waste: nil Quantity to processing/disposal facility: 152 tons/month)
Waste collected/transported:	81,569 tons/month
Waste processing facility:	Yes
Total waste processed:	63,029 tons/month
Number of waste disposal facilities:	7 (Compliant landfills: 3 Waste quantity: 25,200 tons/month, Open dumpsites: 4, Waste quantity: 18,540 tons/month

Service and Financial Data

Number of staff:	12,273
Service contracts:	1 - sweeping and secondary transport
Complaints recorded:	9,600 (Rectified: 7,680)
Annual revenues (billed):	no data
Annual revenues (collected):	Rs 2,11,00,000
Annual operating expenses:	Rs 12,22,10,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 7,88,00,000
Sources of capital investments:	no data
Tariffs - User charges:	Commercial establishment Rs 17.58/month
- Tax (solid waste):	nil

ULB Service Profile BENGALURU

Service Level Benchmark Indicators

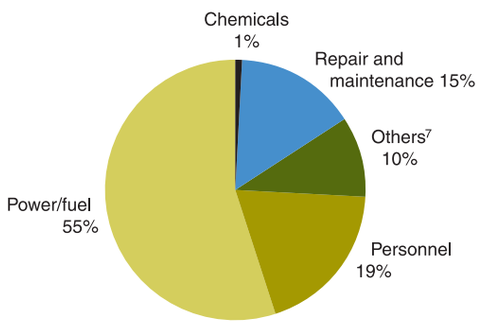
Water Supply	
Water supply coverage[1]	50.8%
Per capita consumption[2]	88 lpcd
Non-revenue water[3]	50.9%
Consumption metering	97.6%
Continuity of supply[4]	3.0 hours/day
Quality of water supply	82.7% samples passed
Cost recovery: water supply	92.2%
Collection efficiency	97.1%
Complaints redressal	86.7%

Sewerage and Sanitation Services	
Toilet coverage	100%
Sewerage network coverage	37.6%
Wastewater collection efficiency	55.1%
Wastewater treatment adequacy[5]	106.2%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	35.9%
Cost recovery: wastewater	110.4%
Collection efficiency	97.1%
Complaints redressal	94.4%

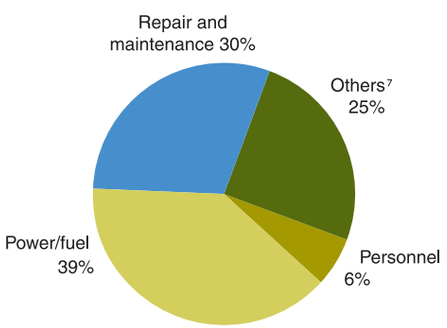
Storm Drainage Management	
Drainage network coverage	5.3%
Incidence of water logging	135 per year

Solid Waste Management	
Household level coverage	74.5%
Collection efficiency of MSW	54.0%
Segregation of MSW	30.0%
MSW recovery	77.3%
Scientific disposal of MSW	57.6%
Cost recovery: SWM[6]	nil
Collection efficiency	n.a.
Complaints redressal	80.0%

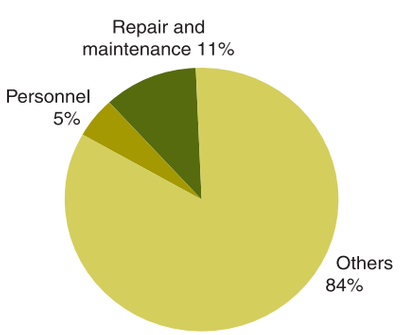
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 3,86,69,00,000



Annual O&M Costs: Sewerage
Rs 31,38,30,000



Annual O&M Costs: Solid Waste
Rs 12,22,10,00,000

Notes:
1 Coverage for house connections only; coverage is 55.5% if public standposts are included.
2 Per capita supply is 204 lpcd.
3 All production sources are metered; 47.1 MLD is provided free through standposts.
4 Water is serviced every alternate day.
5 Septic tanks are desludged by 72 ULB desludging machines.
6 Record for current demand is not maintained.
7 Depreciation costs for water supply and sewerage O&M costs are not included.

BERHAMPUR Utility Profile

Urban Local Body: Berhampur Municipal Corporation (BMC)

Berhampur, District Ganjam, Odisha 760001, India, Telephone: (91-680) 220 6290, Fax: (91-680) 220 5480, Contact: Municipal Commissioner

The city of Berhampur has a total population of 3,85,356 people of which 1,17,541 are in 109 slum settlements. The present urban area of BMC is 79.8 sq km composed of 37 wards. There are a total of 72,748 properties in Berhampur of which 72,360 are residential and 388 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person or telephone. The ULB has no specific policy of providing water supply and sanitation services to the urban poor.

Water Supply

Utility Name: Public Health Engineering Organisation

Number of connections:	21,397 (Residential: 21,157 Non-residential: 240)
Number of staff:	320 Staff/1,000 connections: 15.0
Production:	38.59 MLD (Source: Groundwater - 61.1% Surface water - 38.9%)
Consumption:	25.47 MLD (Residential: 21.36 MLD Non-residential: 4.10 MLD)
Water treatment capacity:	54.51 MLD
Treated water storage:	28.91 ML
Distribution pipe length:	216.9 km
Average pressure:	no data
Number of water samples tested:	3,305
Number of samples passing test:	3,305

Service and Financial Data

Service contracts:	1 - Security services
Contracted service cost:	Rs 50,000
Complaints received:	7,960
Rectified:	5,834
Leaks repaired:	1,613
Annual operating revenues:	Rs 3,16,19,000
Annual operating expenses:	Rs 6,44,03,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 4,15,87,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Public Health Engineering Organisation

Properties w/access to toilets:	50,847
Properties connected to sewer:	nil
Number of staff:	nil Staff/1,000 connections: nil
Area covered by sewerage network:	no sewerage network
Wastewater produced/collected:	20.37 MLD/ n.a.
No. of ST Plants:	nil (Total STP capacity: n.a.)
Sewage volume treated:	n.a.
Volume of treated water reused:	n.a.
Number of tested effluent samples:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	no data
Contracted service cost:	no data
Number of sewer blockages:	n.a.
Complaints recorded:	no data
Rectified:	no data
Annual operating revenues:	no data
Annual operating expenses:	no data
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed cost:	no data

Storm Water Drainage

Utility Name: Berhampur Municipal Corporation

Total length of drains:	487.6 km
Primary drains:	37.2 km
Secondary drains:	60.0 km
Tertiary drains:	390.4 km
Frequency of desilting of drains:	annually
Number of flood-prone areas:	89

Service and Financial Data

Name of major flood-prone areas:	Mostly located in Ward Nos. 20, 27, 12, 25 and 36
Number of staff:	54
Annual operating expenses:	Rs 1,17,75,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 15,00,000
Sources of capital investments:	Government grant

Solid Waste Management

Utility Name: Berhampur Municipal Corporation

Total number of establishments:	72,748
Waste generation:	4,587 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,913)
Waste segregation at source:	No
Quantity of recycled waste:	nil (Quantity to processing/disposal facility: nil
Waste collected/transported:	3,741 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1 (Compliant landfills: nil Waste quantity: n.a. Open dumpsites: 1 Waste quantity: 3,741 tons/month)

Service and Financial Data

Number of staff:	792
Service contracts:	2 - DTD and point-to-point collection services
Complaints recorded:	108
Rectified:	107
Annual revenues (billed):	nil
Annual revenues (collected):	n.a.
Annual operating expenses:	Rs 81,21,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 5,56,50,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile BERHAMPUR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	29.2%
Per capita supply[2]	81 lpcd
Non-revenue water[3]	34.0%
Consumption metering	nil
Continuity of supply	1.0 hour/day
Quality of water supply	100% samples passed
Cost recovery: water supply	49.1%
Collection efficiency	50.8%
Complaints redressal	73.3%

Sewerage and Sanitation Services

Toilet coverage	70.3%
Sewerage network coverage[4]	nil
Wastewater collection efficiency[4]	nil
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	nil
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	n.a.
Collection efficiency	n.a.
Complaints redressal	no data

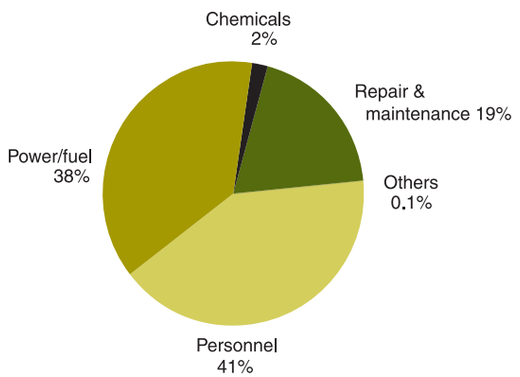
Storm Drainage Management

Drainage network coverage	126.6%
Incidence of water logging	62 per year

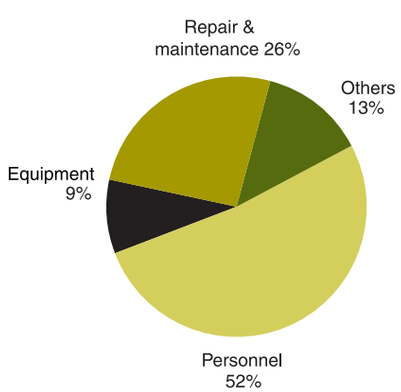
Solid Waste Management

Household level coverage	2.6%
Collection efficiency of MSW	81.6%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[5]	nil
Collection efficiency[5]	n.a.
Complaints redressal	99.1%

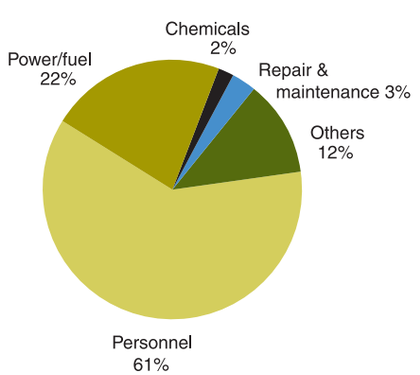
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 6,44,03,000



Annual O&M Costs: Drainage[6]
Rs 1,17,75,000



Annual O&M Costs: Solid Waste
Rs 81,21,000

Notes:
1 Coverage for house connections only; coverage is 59.7% if public standposts are included.
2 Per capita supply is 168 lpcd.
3 None of the production sources are metered; no free supplies are provided.
4 There is no sewerage network nor is there a sewage treatment plant.
5 No users charges nor taxes for solid waste are collected.
6 Annual O&M costs are for drainage in the absence of sewerage services.

BHOPAL Utility Profile

Urban Local Body: Bhopal Municipal Corporation (BMC)

Municipal Corporation, Sadar Manzil, Bhopal 462001, India, Telephone: (91-755) 254 2070, Fax: (91-755) 253 9806, Contact: Municipal Commissioner

The city of Bhopal has a total population of 18,36,000 people. The present urban area of BMC is 285 sq km, composed of 66 wards. There are a total of 355,822 residential properties in Bhopal. The ULB has a redressal system and complaints can be made through letter, in person, telephone or e-mail. The ULB has a specific policy of providing water supply services to the urban poor with free supply for freedom fighters and slum bastis (settlements) through public standposts.

Water Supply

Utility Name: Bhopal Municipal Corporation

Number of connections:	1,29,423 (Residential: 1,27,480 Non-residential: 1,943
Number of staff:	1,293 Staff/1,000 connections: 10.0
Production:	300.78 MLD (Source: Groundwater - 4.5% Surface water - 95.5%)
Consumption:	273.69 MLD (Residential: 231.63 MLD Non-residential: 42.1 MLD)
Water treatment capacity:	300.78 MLD
Treated water storage:	100 ML
Distribution pipe length:	900 km
Average pressure:	2 meters
Number of water samples tested:	1,05,485
Number of samples passing test:	94,937

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Complaints received:	1,865
Rectified:	1,680
Leaks repaired:	no data
Annual operating revenues:	Rs 32,78,66,000
Annual operating expenses:	Rs 64,08,50,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 97,27,76,000
Sources of capital investments:	Government grants and loans, public banks
Tariff - Fixed rate:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Bhopal Municipal Corporation

Properties w/access to toilets:	3,38,609
Properties connected to sewer:	15,000
Number of staff:	1,376 Staff/1,000 connections: 4.1
Area covered by sewerage network:	25 sq km
Wastewater produced/collected:	219 MLD/ 25 MLD
No. of ST Plants:	6
Total STP capacity:	58 MLD
Sewage volume treated:	25 MLD
Volume of treated water reused :	nil
Number of effluent samples tested:	nil
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Number of sewer blockages:	no data
Complaints recorded:	14,149
Rectified:	13,150
Annual operating revenues:	Rs 9,24,000 (desludging only)
Annual operating expenses:	Rs 3,29,50,000
Debt service for the year:	nil
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Bhopal Municipal Corporation

Total length of drains:	71 km
Primary drains:	71 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	25

Service and Financial Data

Name of major flood-prone areas:	Midway, Kohlar Triangle and 98 Square
Number of staff:	124
Annual operating expenses:	Rs 60,000,000
2009 capital expenditure:	Rs 48,277,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Bhopal Municipal Corporation

Total number of establishments:	3,55,822 (residential only)
Waste generation:	13,170 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 20,000)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil
Waste collected/transported:	12,750 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a
Open dumpsites:	1
Waste quantity:	12,750 tons/month

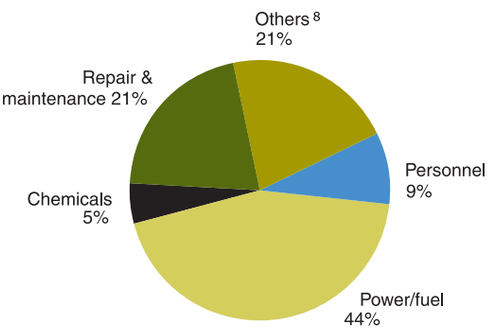
Service and Financial Data

Number of staff:	1,958
Service contracts:	nil
Complaints recorded:	4,417
Rectified:	4,417
Annual revenues (billed):	Rs 1,04,00,000
Annual revenues (collected):	Rs 69,00,000
Annual operating expenses:	Rs 15,83,00,000
Debt service for the year:	nil
2009 capital expenditure:	no data
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil

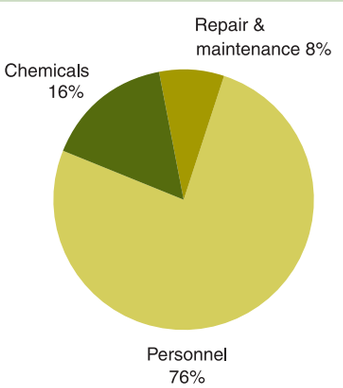
ULB Service Profile BHOPAL

Service Level Benchmark Indicators

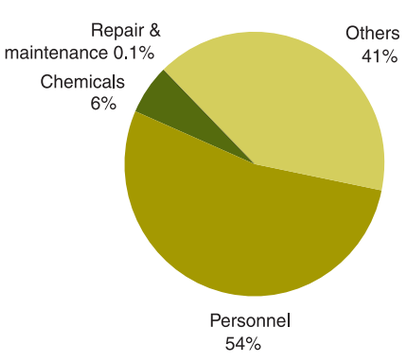
Water Supply	
Water supply coverage[1]	34.8%
Per capita consumption[2]	126 lpcd
Non-revenue water[3]	30.0%
Consumption metering	1.4%
Continuity of supply	0.5 hour/day
Quality of water supply	90.0%
Cost recovery: water supply	51.2%
Collection efficiency	68.2%
Complaints redressal	90.1%
Sewerage and Sanitation Services	
Toilet coverage	95.2%
Sewerage network coverage	4.2%
Wastewater collection efficiency	11.4%
Wastewater treatment adequacy[4]	26.5%
Quality of wastewater treatment	no data
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater[5]	no data
Collection efficiency[5]	no data
Complaints redressal	92.9%
Storm Drainage Management	
Drainage network coverage	7.0%
Incidence of water logging[6]	no data
Solid Waste Management	
Household level coverage	5.6%
Collection efficiency of MSW	96.8%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[7]	6.5%
Collection efficiency	66.4%
Complaints redressal	100%
Data as of 2008–09	



Annual O&M Costs: Water Supply
Rs 64,08,50,000



Annual O&M Costs: Sewerage
Rs 3,29,50,000



Annual O&M Costs: Solid Waste
Rs 15,83,00,000

Notes:
1 Coverage for house connections only; coverage is 65.3% if public standposts are included.
2 Per capita supply is 251 lpcd.
3 Total production values are estimated; 63.2 MLD are provided free from public standposts.
4 The ULB has three desludging machines; there is no data on private sector desludging.
5 No data on billing and collection were given.
6 No data were given on water logging but three areas were identified as flood-prone.
7 Only revenue comes from share of property taxes.
8 Others include cost of bulk raw water supply.

BHUBANESWAR Utility Profile

Urban Local Body: Bhubaneswar Municipal Corporation (BMC)

Bhubaneswar Municipal Corporation, Bhubaneswar, India, Telephone: (91-674) 239 0145, Fax: (91-674) 239 0145, Contact: Municipal Commissioner

The city of Bhubaneswar has a total population of 10,60,464 people of which 3,04,337 are in 337 slum settlements. The present urban area of BMC is 149 sq km composed of 60 wards. There are a total of 237,321 properties in Bhubaneswar of which 2,36,231 are residential and 1,090 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person or telephone. The ULB has no specific policy of providing service water supply, sewerage and sanitation, and solid waste services to the urban poor.

Water Supply

Utility Name: Public Health Engineering Organisation

Number of connections:	54,670 (Residential: 53,649 Non-residential: 1,021)
Number of staff:	1,392 Staff/1,000 connections: 25.5
Production:	269.38 MLD (Source: Groundwater - 16% Surface water - 84%)
Consumption:	82.14 MLD (Residential: 68.20 MLD Non-residential: 13.94 MLD)
Water treatment capacity:	268.73 MLD
Treated water storage:	99.24 ML
Distribution pipe length:	916.6 km
Average pressure:	no data
Number of water samples tested:	22,524
Number of samples passing test:	22,524

Service and Financial Data

Service contracts:	1 - Security services
Contracted service cost:	Rs 5,14,000
Complaints received:	10,262
Rectified:	10,196
Leaks repaired:	4,500
Annual operating revenues:	Rs 11,62,12,000
Annual operating expenses:	Rs 36,22,75,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 26,21,59,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 116/month
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Public Health Engineering Organisation

Properties w/access to toilets:	1,81,256
Properties connected to sewer:	40,788
Number of staff:	549 Staff/1,000 connections: 13.5
Area covered by sewerage network:	32.0 km^2
Wastewater produced/collected:	183.2 MLD/5.2 MLD
No. of ST Plants:	3 (Total STP capacity: 5.2 MLD)
Sewage volume treated:	4.5 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	2
Number of samples passing test:	2

Service and Financial Data

Service contracts:	no data
Contracted service cost:	no data
Number of sewer blockages:	51,492
Complaints recorded:	51,492
Rectified:	51,492
Annual operating revenues:	Rs 97,57,000
Annual operating expenses:	Rs 40,373,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 3,44,88,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 20/month

Storm Water Drainage

Utility Name: Bhubaneswar Municipal Corporation

Total length of drains:	574.86 km
Primary drains:	54.98 km
Secondary drains:	318.48 km
Tertiary drains:	201.40 km
Frequency of desilting of drains:	annually
Number of flood-prone areas:	34

Service and Financial Data

Name of major flood-prone areas:	Mostly in Ward Nos. 5, 36, 51, 3, 12, 31, 35, 56 and 58
Number of staff:	66
Annual operating expenses:	Rs 98,79,000
2009 capital expenditure:	Rs 5,87,76,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Bhubaneswar Municipal Corporation

Total number of establishments:	2,37,321
Waste generation:	14,636 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 66,872)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	10,907 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	10,907 tons/month

Service and Financial Data

Number of staff:	3,162
Service contracts:	1 - DTD and point-to-point collection
Complaints recorded:	2,187
Rectified:	2,178
Annual revenues (billed):	Rs 1,69,000
Annual revenues (collected):	nil
Annual operating expenses:	Rs 22,56,50,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 1,00,59,000
Sources of capital investments:	Government grants
Tariffs - User charges:	Yes Rs 5/month - Residential flats Rs 500 - Rs 4,000/month - Hotels and restaurants
- Tax (solid waste):	nil

ULB Service Profile BHUBANESWAR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	45.0%
Per capita consumption[2]	92 lpcd
Non-revenue water[3]	69.5%
Consumption metering	0.8%
Continuity of supply	2.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	32.1%
Collection efficiency	93.9%
Complaints redressal	99.4%

Sewerage and Sanitation Services

Toilet coverage	76.4%
Sewerage network coverage	17.2%
Wastewater collection efficiency	2.8%
Wastewater treatment adequacy[4]	2.5%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	24.2%
Collection efficiency	64.6%
Complaints redressal	100%

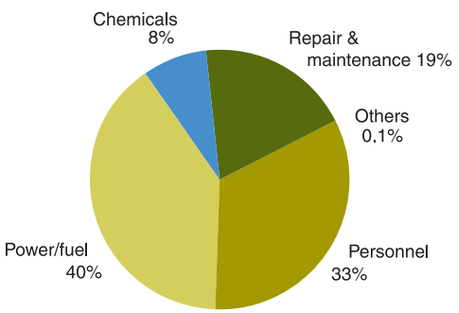
Storm Drainage Management

Drainage network coverage	47.4%
Incidence of water logging[6]	51 per year

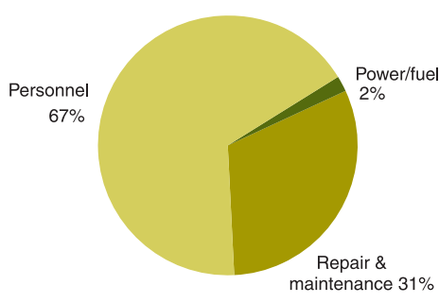
Solid Waste Management

Household level coverage[5]	28.2%
Collection efficiency of MSW	74.5%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[6]	0.1%
Collection efficiency	nil
Complaints redressal	99.6%

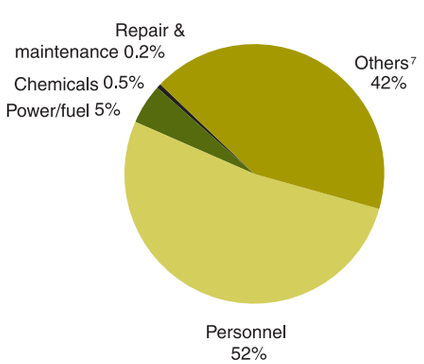
Data as of 2008–09



Annual O&M Costs:Water Supply
Rs 36,22,76,000



Annual O&M Costs: Sewerage
Rs 4,03,74,000



Annual O&M Costs: Solid Waste
Rs 22,56,50,000

Notes:
1 Coverage is for house connections only; slum population are served by wells with handpumps.
2 Per capita supply is 564 lpcd; population served by handpumps not included.
3 Only two production sources are metered; no free piped supplies are provided.
4 The ULB has one desludging machine while the private sector has six machines.
5 More than half of door-to-door collection is done by the private sector.
6 The only sources of revenues are fixed charges based on property tax which are minimal.
7 Others are cost of contracted out services.

BOKARO Utility Profile

Urban Local Body: Bokaro Steel City Administration (BSCA)

Ispat Bhavan, Sector I, Bokaro Steel City, Bokaro 827001, India, Telephone: (91-654) 224 0279, Fax: (91-654) 224 0359, Contact: ED (P&A)

Bokaro Steel City Administration (BSCA) provides water supply, sewerage and sanitation, drainage and solid waste management services for the city of Bokaro which has a total population of 1,51,284 people of which 35,000 people live in 23 slum settlements. The present urban area under Bokaro Steel Limited is 40 sq km composed of 10 wards/sectors. There are a total of 46,563 properties in Bokaro of which 39,430 are residential and 7,133 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, or by telephone. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Bokaro Steel City Administration

Number of connections:	38,643 (Residential: 37,646 Non-residential: 997)
Number of staff:	127 Staff/1,000 connections: 3.3
Production:	123.12 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	44.84 MLD (Residential: 44.84 MLD Non-residential: nil)
Water treatment capacity:	123.12 MLD
Treated water storage:	126 ML
Distribution pipe length:	400 km
Average pressure:	2.3 meters
Number of water samples tested:	6,570
Number of samples passing test:	6,570

Service and Financial Data

Service contracts:	OT Services
Contracted service cost:	Rs 1,50,00,000
Complaints received:	no data
Rectified:	no data
Leaks repaired:	no data
Annual operating revenues:	no data
Annual operating expenses:	no data
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed rate:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Bokaro Steel City Administration

Properties w/access to toilets:	37,756
Properties connected to sewer:	37,752
Number of staff:	48 Staff/1,000 connections: 1.3
Area covered by sewerage network:	40 km^2
Wastewater produced/collected:	35.9 MLD/ 22.9 MLD
No. of ST Plants:	6 (Total STP capacity: 22.9 MLD)
Sewage volume treated:	22.9 MLD (primary treatment only)
Volume of treated water reused:	nil
Number of effluent samples tested:	12
Number of samples passing test:	12

Service and Financial Data

Service contracts:	O&M services
Contracted service cost:	Rs 71,00,000
Number of sewer blockages:	77,250
Complaints recorded:	77,250
Rectified:	77,250
Annual operating revenues:	no data
Annual operating expenses:	Rs 99,80,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Bokaro Steel City Administration

Total length of drains:	496 km
Primary drains:	496 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	annually
Number of flood-prone areas:	no data

Service and Financial Data

Name of major flood-prone areas:	no data
Number of staff:	60
Annual operating expenses:	Rs 87,00,000
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Bokaro Steel City Administration

Total number of establishments:	46,563
Waste generation:	2,400 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 46,563)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	1,248 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1 (Compliant landfills: nil Waste quantity: n.a. Open dumpsites: 1 Waste quantity: 1,200 tons/month)

Service and Financial Data

Number of staff:	251
Service contracts:	1 - Collection, segregation and disposal
Complaints recorded:	1,824
Rectified:	1,824
Annual revenues (billed):	nil
Annual revenues (collected):	n.a.
Annual operating expenses:	Rs 3,49,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile BOKARO

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	99.5%
Per capita supply[2]	298 lpcd
Non-revenue water[3]	63.6%
Consumption metering	2.4%
Continuity of supply	1.3 hour/day
Quality of water supply	100% samples passed
Cost recovery: water supply	no data
Collection efficiency	no data
Complaints redressal	no data

Sewerage and Sanitation Services

Toilet coverage[4]	100%
Sewerage network coverage	99.9%
Wastewater collection efficiency	63.8%
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater[5]	nil
Collection efficiency[5]	n.a.
Complaints redressal	100%

Storm Drainage Management

Drainage network coverage	No data
Incidence of water logging[6]	nil

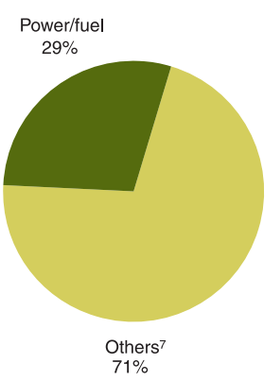
Solid Waste Management

Household level coverage	100%
Collection efficiency of MSW	52.0%
Segregation of MSW	3.8%
MSW recovery	3.8%
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	n.a.
Complaints redressal	100%

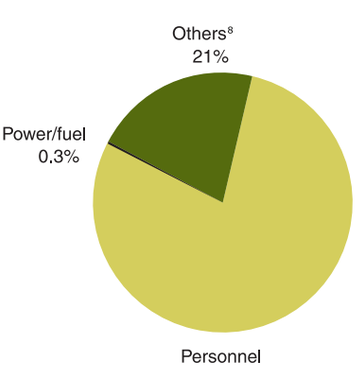
Data as of 2008–09

Notes:
1 Coverage is for house connections only; there are no data for households served by standposts.
2 Per capita supply is 818 lpcd.
3 Production is claimed to be metered; no free supplies are provided.
4 There is no secondary treatment; treatment is done in oxidation ponds.
5 No sewerage charges are collected.
6 There is no water logging due to the city's terrain.
7 Other cost for sewerage is for contractor cost for O&M services.
8 Other cost for SWM is for contracted out services.

Annual O&M Costs: Water Supply
No data



Annual O&M Costs: Sewerage
Rs 99,80,000



Annual O&M Costs: Solid Waste
Rs 3,49,00,000

CHANDIGARH Utility Profile

Urban Local Body: Municipal Corporation of Chandigarh (MCC)

New Deluxe Building, Sector 17, Chandigarh 380 001, India, Telephone: (91-172) 502 1418, Fax: (91-172) 270 8765, Contact: Municipal Commissioner

The city of Chandigarh has a total population of 11,30,225 people of which 1,46,537 are in four slum settlements. The present urban area of MCC is 79.74 sq km composed of 26 wards. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB has no specific policy of providing water supply and sanitation services to the urban poor.

Water Supply

Utility Name: Municipal Corporation of Chandigarh

Number of connections:	1,43,966 (Residential: 1,29,212 Non-residential: 14,754)
Number of staff:	792 Staff/1,000 connections: 5.5
Production:	381.36 MLD (Source: Groundwater - 21% Surface water - 79%)
Consumption:	275.21 MLD (Residential: 174.87 MLD Non-residential:100.331 MLD)
Water treatment capacity:	340.5 MLD
Treated water storage:	245 ML
Distribution pipe length:	1,500 km
Average pressure:	15-45 meters
Number of water samples tested:	13,870
Number of samples passing test:	13,870

Service and Financial Data

Service contracts:	Meter reading services
Contracted service cost:	no data
Complaints received:	6,107
Rectified:	6,107
Leaks repaired:	266
Annual operating revenues:	Rs 47,96,68,382
Annual operating expenses:	Rs 74,70,22,362
Debt service for the year:	nil
2009 capital expenditure:	Rs 19,78,80,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	nil
- Cost/volume: Domestic -	Rs 1.75/m^3 to Rs 6.00/m^3
Institutional -	Rs 9.00/m^3
Commercial -	Rs 11.00/m^3

Sewerage and Sanitation

Utility Name: Municipal Corporation of Chandigarh

Properties w/access to toilets:	1,45,026
Properties connected to sewer:	1,45,026
Number of staff:	87 Staff/1,000 connections: 0.6
Area covered by sewerage network:	114.7 sq km
Wastewater produced/collected:	220.2 MLD
No. of ST Plants:	4 (Total STP capacity: 187.3 MLD)
Sewage volume treated:	187.3 MLD
Volume of treated water reused:	45.4 MLD
Number of effluent samples tested:	1,095
Number of samples passing test:	1,095

Service and Financial Data

Service contracts:	Public toilets and STP operations
Contracted service cost:	no data
Number of sewer blockages:	7,800
Complaints recorded:	271
Rectified:	271
Annual operating revenues:	Rs 2,53,75,000
Annual operating expenses:	Rs 3,64,80,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 26,66,76,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data

Storm Water Drainage

Utility Name: Municipal Corporation of Chandigarh

Total length of drains:	1,724.7 km
Primary drains:	733.9 km
Secondary drains:	405.1 km
Tertiary drains:	585.6 km
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	nil

Service and Financial Data

Name of major flood-prone areas:	none
Number of staff:	110
Annual operating expenses:	Rs 1,33,67,000
2009 capital expenditure:	Rs 1,05,45,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Municipal Corporation of Chandigarh

Total number of establishments:	no data
Waste generation:	14,011 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: no data)
Waste segregation at source:	No (Quantity of recycled waste: 1,848 tons/month; Quantity to processing/ disposal facility: nil)
Waste collected/transported:	10,267 tons/month
Waste processing facility:	Yes
Total waste processed:	8,119 tons/month
Number of waste disposal facilities:	2
Compliant landfills:	1
Waste quantity:	nil
Open dumpsites:	1
Waste quantity:	3,126 tons/month

Service and Financial Data

Number of staff:	3,174
Service contracts:	1 - street sweeping
Complaints recorded:	1,224
Rectified:	1,224
Annual revenues (billed):	Rs 3,12,000
Annual revenues (collected):	Rs 3,12,000
Annual operating expenses:	Rs 39,75,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 47,00,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile CHANDIGARH

Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	86.7%
Per capita consumption[2]	158 lpcd
Non-revenue water[3]	31.3%
Consumption metering	73.5%
Continuity of supply	17.5 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	64.2%
Collection efficiency	89.0%
Complaints redressal	100%

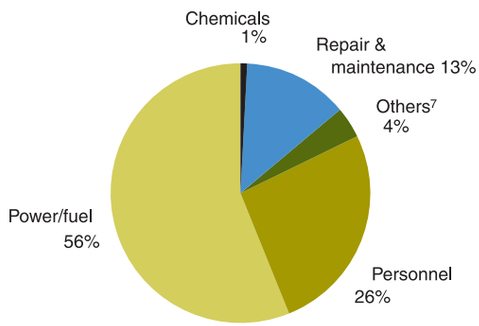
Sewerage and Sanitation Services	
Toilet coverage[4]	100%
Sewerage network coverage	100%
Wastewater collection efficiency	85.1%
Wastewater treatment adequacy	85.1%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	24.2%
Cost recovery: wastewater	93.1%
Collection efficiency	83.0%
Complaints redressal	100%

Storm Drainage Management	
Drainage network coverage	100%
Incidence of water logging	nil

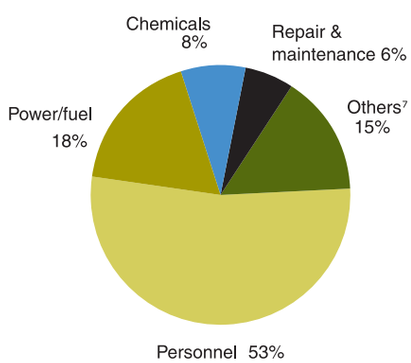
Solid Waste Management	
Household level coverage[5]	96.2%
Collection efficiency of MSW	73.3%
Segregation of MSW	18.0%
MSW recovery	97.1%
Scientific disposal of MSW	nil
Cost recovery: SWM[6]	0.1%
Collection efficiency	100%
Complaints redressal	100%

Data as of 2008–09

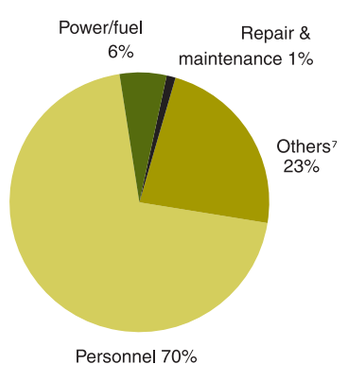
Notes:
1 Coverage is for house connections only; coverage is 99.7% if public standposts are included.
2 Per capita supply is 339 lpcd.
3 All production sources are metered; 13.3 MLD is provided free from public standposts.
4 All toilets are connected to sewer lines.
5 About 74% of door-to-door collection is done by NGOs/CBOs; the rest by RWA and the ULB.
6 No user charges are collected; revenue comes from fines.
7 Other costs for water supply, sewerage and SWM include contracted services costs.



Annual O&M Costs: Water Supply
Rs 74,70,22,362



Annual O&M Costs: Sewerage
Rs 3,64,80,000



Annual O&M Costs: Solid Waste
Rs 39,75,00,000

CHAS Utility Profile

Urban Local Body: Chas Municipality

Chas Municipality, Puralia Road, Chas, Bokaro, Jharkhand, India, Telephone: (91-654) 226 5416, Fax: (91-654) 226 5416, Contact: Special Officer

Chas has a total population of 1,17,393 people of which 20,172 are in 10 slum settlements. The present urban area of Chas is 20.25 sq km, composed of 18 wards. There are a total of 18,987 properties in Chas of which 16,808 are residential and 2,179 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, or telephone. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Chas Municipality

Number of connections:	1,296 (Residential: 1,296 Non-residential: nil)
Number of staff:	no data Staff/1,000 connections: no data
Production:	1.13 MLD (Source: Groundwater - 20.3% Surface water - 79.7%)
Consumption:	0.65 MLD (Residential: 0.65 MLD Non-residential: nil)
Water treatment capacity:	no data
Treated water storage:	2.0 ML
Distribution pipe length:	8.0 km
Average pressure:	no data
Number of water samples tested:	no data
Number of samples passing test:	no data

Service and Financial Data

Service contracts:	1 - Annual maintenance services
Contracted service cost:	Rs 3,20,000
Complaints received:	987
Rectified:	987
Leaks repaired:	no data
Annual operating revenues:	Rs 7,20,000
Annual operating expenses:	Rs 11,72,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 9,90,000
Sources of capital investments:	Government grants and loans
Tariff - Fixed rate:	Rs 135/month per connection
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Chas Municipality

Properties w/access to toilets:	no data
Properties connected to sewer:	no data
Number of staff:	no data Staff/1,000 connections: no data
Area covered by sewerage network:	no data
Wastewater produced/collected:	0.52 MLD
No. of ST Plants:	none (Total STP capacity: n.a.)
Sewage volume treated:	n.a.
Volume of treated water reused:	n.a.
Number of effluent samples tested:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	1- Annual maintenance
Contracted service cost:	Rs 3,00,000
Number of sewer blockages:	no data
Complaints recorded:	no data
Rectified:	no data
Annual operating revenues:	Rs 3,90,000
Annual operating expenses:	Rs 5,68,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a.
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Chas Municipality

Total length of drains:	46.14 km
Primary drains:	46.14 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	nil

Service and Financial Data

Name of major flood-prone areas:	none
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	Rs 40,26,000
Sources of capital investments:	Government grants and loans

Solid Waste Management

Utility Name: Chas Municipality

Total number of establishments:	18,987
Waste generation:	1,650 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 7,367)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	750 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	750 tons/month

Service and Financial Data

Number of staff:	316
Service contracts:	1 - Collection and dumping of waste
Complaints recorded:	120
Rectified:	75
Annual revenues (billed):	no data
Annual revenues (collected):	no data
Annual operating expenses:	Rs 44,38,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 1,35,00,000
Sources of capital investments:	Government grants
Tariffs - User charges: Residential	- Rs 20/month;
Commercial	- Rs 20/month (User fee charged by agencies involved in DTD service and do not go to municipal revenue)
- Tax (solid waste):	nil

ULB Service Profile CHAS

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	9.3%
Per capita consumption[2]	37 lpcd
Non-revenue water[3]	42.6%
Consumption metering	nil
Continuity of supply	Intermittent, hours/day
Quality of water supply	no data
Cost recovery: water supply	61.4%
Collection efficiency	25.0%
Complaints redressal	100%

Sewerage and Sanitation Services

Toilet coverage[4]	no data
Sewerage network coverage[5]	nil
Wastewater collection efficiency	n.a.
Wastewater treatment adequacy[5]	n.a.
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	68.7%
Collection efficiency	55.6%
Complaints redressal	no data

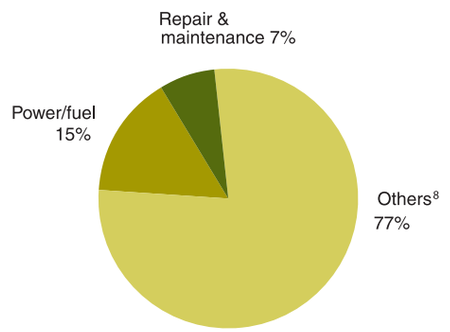
Storm Drainage Management

Drainage network coverage	57.9%
Incidence of water logging[6]	nil

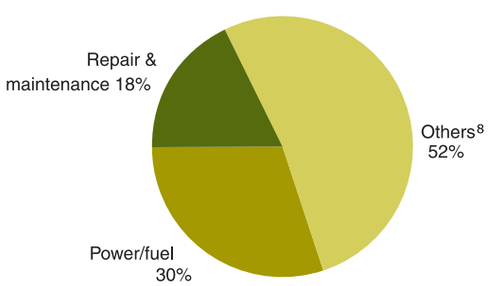
Solid Waste Management

Household level coverage[7]	38.8%
Collection efficiency of MSW	45.5%
Segregation of MSW	no data
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	nil
Complaints redressal	62.5%

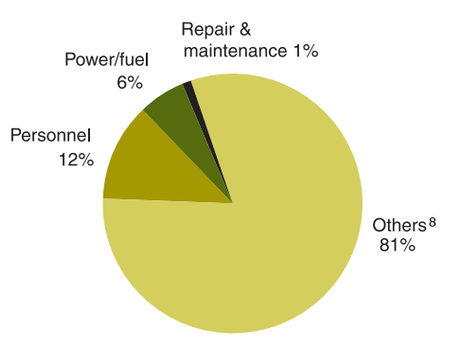
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 11,72,000



Annual O&M Costs: Sewerage
Rs 5,68,000



Annual O&M Costs: Solid Waste
Rs 44,38,000

Notes:
1 Coverage is for house connections only; coverage is 10.6% if public standposts are included.
2 Per capita supply is 91 lpcd; does not include households using tubewells or tanker delivery.
3 Both consumption and production are not metered; no free water is provided.
4 Toilets are assumed to be connected to septic tanks and soakpits.
5 There is neither sewerage network nor sewage treatment plant.
6 Terrain does not allow water logging.
7 About 20% of door-to-door collection is done by NGOs/CBOs.
8 Others for water supply, sewerage and SWM include contracted services costs.

DELHI Utility Profile

Urban Local Body: Municipal Corporation of Delhi (MCD)

Ambedkar Stadium, Delhi Gate, Delhi, India, Telephone: (91-11) 2396 1191, Fax: (91-11) 2383 0040, Contact: Municipal Commissioner

Delhi has a total population of 1,77,52,011 people of which 22,79,364 are in 643 slum settlements. The present urban area of MCD is 1,397 sq km composed of 272 wards. There are a total of 41,39,453 properties in Delhi of which 33,85,000 are residential and 7,54,453 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone, e-mail or SMS text messaging. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Delhi Jal Board

Number of connections:	17,18,957 (Residential: 16,00,807 Non-residential: 1,18,150)
Number of staff:	24,848 Staff/1,000 connections: 14.5
Production:	3,677.4 MLD (Source: Groundwater - 12.3% Surface water - 87.7%)
Consumption:	3,061.8 MLD (Residential: 2,789.4 MLD Non-residential: 272.3 MLD)
Water treatment capacity:	3,677.4 MLD
Treated water storage:	2,000 ML
Distribution pipe length:	9,600 km
Average pressure:	4 meters
Number of water samples tested:	1,35,266
Number of samples passing test:	1,34,642

Service and Financial Data

Service contracts:	O&M of treatment plants and pumping stations, tubewells and tankers services
Contracted service cost:	no data
Complaints received:	10,796
Rectified:	7,881
Leaks repaired:	1,725
Annual operating revenues:	Rs 2,94,52,00,000
Annual operating expenses:	Rs 7,08,68,99,000
Debt service for the year:	Rs 8,37,06,79,000
2009 capital expenditure:	no data
Sources of capital investments:	Government grants and loans
Tariff - Fixed rate:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Delhi Jal Board

Properties w/access to toilets:	24,55,740
Properties connected to sewer:	17,01,000
Number of staff:	1,358 Staff/1,000 connections: 0.8
Area covered by sewerage network:	670 km^2
Wastewater produced/collected:	2,812 MLD/ 1768 MLD
No. of ST Plants:	18 (Total STP capacity: 2,496.7 MLD)
Sewage volume treated:	1,768.1 MLD
Volume of treated water reused:	484.3 MLD
Number of effluent samples tested:	7,104
Number of samples passing test:	6,720

Service and Financial Data

Service contracts:	STP services
Contracted service cost:	no data
Number of sewer blockages:	3,156
Complaints recorded:	3,735
Rectified:	2,614
Annual operating revenues:	Rs 1,64,19,00,000
Annual operating expenses:	Rs 4,11,07,00,000
Debt service for the year:	Rs 5,74,45,60,000
2009 capital expenditure:	Rs 5,39,78,00,000
Sources of capital investments:	Government grants and loans
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Municipal Corporation of Delhi

Total length of drains:	3,070.7 km
Primary drains:	1,466.5 km
Secondary drains:	1,604.2 km
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	102

Service and Financial Data

Name of major flood-prone areas:	Mostly in Civil Lines, Shahdra, Rohini, Central and West Zones
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	nil
Sources of capital investments:	n.a.

Solid Waste Management

Utility Name: Municipal Corporation of Delhi

Total number of establishments:	41,39,453
Waste generation:	2,63,500 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 174,200)
Waste segregation at source:	Yes (Quantity of recycled waste: 46,500 tons/month. Quantity to processing/disposal facility: 20,708 tons/month)
Waste collected/transported:	2,12,908 tons/month
Waste processing facility:	Yes
Total waste processed:	67,208 tons/month
Number of waste disposal facilities:	3 (Compliant landfills: nil, Waste quantity: n.a., Open dumpsites: 3 Waste quantity: 145,700 tons/month)

Service and Financial Data

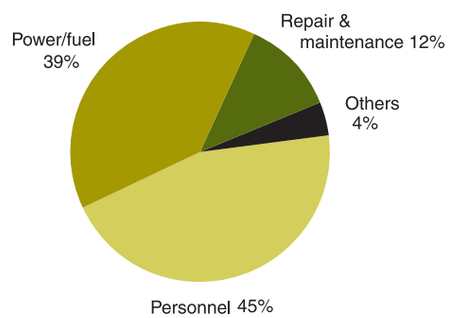
Number of staff:	50,932
Service contracts:	1 - Collection, segregation and transport
Complaints recorded:	1,110
Rectified:	990
Annual revenues (billed):	Rs 10,56,00,000
Annual revenues (collected):	no data
Annual operating expenses:	Rs 9,20,00,00,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 3,25,00,00,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile DELHI

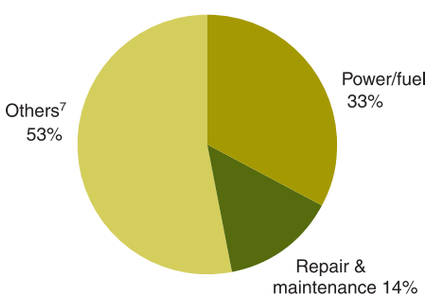
Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	71.6%
Per capita consumption[2]	144 lpcd
Non-revenue water[3]	52.4%
Consumption metering	55.3%
Continuity of supply	3.0 hours/day
Quality of water supply	99.5% samples passed
Cost recovery: water supply	41.6%
Collection efficiency	86.3%
Complaints redressal	73.0%
Sewerage and Sanitation Services	
Toilet coverage	78.0%
Sewerage network coverage[4]	54.0%
Wastewater collection efficiency	62.9%
Wastewater treatment adequacy	88.8%
Quality of wastewater treatment	94.6%
Reuse and recycling of treated WW	27.4%
Cost recovery: wastewater	39.9%
Collection efficiency	85.0%
Complaints redressal	70.0%
Storm Drainage Management	
Drainage network coverage	5.4%
Incidence of water logging	206 per year
Solid Waste Management	
Household level coverage	4.2%
Collection efficiency of MSW	80.8%
Segregation of MSW	31.6%
MSW recovery	31.6%
Scientific disposal of MSW	nil
Cost recovery: SWM	1.1%
Collection efficiency[5]	nil
Complaints redressal	90.0%
Data as of 2008–09	

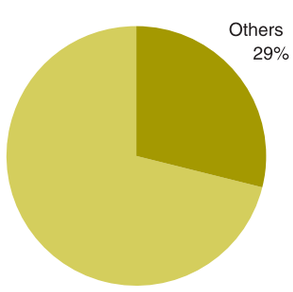
Notes:
1 Coverage is for house connections only; coverage is 92.1% if public standposts are included.
2 Per capita supply is 249 lpcd.
3 Production is not metered; 1,311 MLD is provided free through public standposts.
4 Toilets not connected to sewer lines are connected to soakpits/pit latrines.
5 No collection data were given.
6 Annual O&M costs for water supply and sewerage do not include depreciation costs.
7 Other costs for sewerage include administrative and personnel costs.



Annual O&M Costs: Water Supply[6]
Rs 5,83,09,99,000



Annual O&M Costs: Sewerage[6]
Rs 3,26,07,00,000



Annual O&M Costs: Solid Waste
Rs 9,20,00,00,000

DHARAMSHALA Utility Profile

Urban Local Body: Municipal Council Dharamshala (MCD)

IPH Sub-Division, Dharamshala, India, Telephone: (91-189) 222 2115, Fax: (91-189) 222 2115, Contact: Executive Officer

Dharamshala has a total population of 19,124 people of which 1,987 are in six slum settlements. The present urban area of MCD is 10.63 sq km composed of 11 wards. There are a total of 4,850 properties in Dharamshala of which 3,315 are residential and 1,535 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, or by telephone. The ULB has no specific policy for providing water supply, sewerage, and sanitation services for the urban poor.

Water Supply

Utility Name: Irrigation and Public Health Department

Number of connections:	4,626 (Residential: 3,924 Non-residential: 702)
Number of staff:	61 Staff/1,000 connections: 13.2
Production:	4.84 MLD (Source: Groundwater - 7% Surface water - 93%)
Consumption:	5.17 MLD (Residential: 4.53 MLD Non-residential: 0.64 MLD)
Water treatment capacity:	4.84 MLD
Treated water storage:	2.0 ML
Distribution pipe length:	85 km
Average pressure:	10 meters
Number of water samples tested:	1,419
Number of samples passing test:	1,419

Service and Financial Data

Service contracts:	nil
Contracted service cost:	nil
Complaints received:	3,244
Rectified:	3,244
Leaks repaired:	81
Annual operating revenues:	Rs 45,46,000
Annual operating expenses:	Rs 1,07,80,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 41,00,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	none
- Cost/volume:	Rs 5.85/m^3 domestic rate Rs 11.70/m^3 commercial rate

Sewerage and Sanitation

Utility Name: Irrigation and Public Health Department

Properties w/access to toilets:	600
Properties connected to sewer:	600
Number of staff:	11
Staff/1,000 connections:	18.3
Area covered by sewerage network:	9.9 km^2
Wastewater produced/collected:	4.1 MLD/0.5 MLD
No. of ST Plants:	1 (Total STP capacity : 5.2 MLD)
Sewage volume treated:	0.5 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	730
Number of samples passing test:	730

Service and Financial Data

Service contracts:	Annual maintenance services
Contracted service cost:	Rs 26,00,000
Number of sewer blockages:	150
Complaints recorded:	350
Rectified:	350
Annual operating revenues:	Rs 4,95,000
Annual operating expenses:	Rs 64,20,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 61,00,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Municipal Council Dharamshala

Total length of drains:	79.0 km
Primary drains:	79.0 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	half-yearly
Number of flood prone areas:	nil

Service and Financial Data

Name of major flood-prone areas:	none
Number of staff:	44
Annual operating expenses:	Rs 40,45,000
2009 capital expenditure:	Rs 97,50,000
Sources of capital investments:	Government grants/UIDSSMT

Solid Waste Management

Utility Name: Municipal Council Dharamshala

Total number of establishments:	4,850
Waste generation:	180 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,024)
Waste segregation at source:	No (Quantity of recycled waste: 10 tons/ month. Quantity to processing/disposal facility: nil)
Waste collected/transported:	180 tons/month
Waste processing facility:	Yes
Total waste processed:	10 tons/month
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	170 tons/month

Service and Financial Data

Number of staff:	67
Service contracts:	3 - Composting of waste
Complaints recorded:	510
Rectified:	510
Annual revenues (billed):	nil
Annual revenues (collected):	n.a
Annual operating expenses:	Rs 62,84,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile DHARAMSHALA

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	97.3%
Per capita consumption[2]	198 lpcd
Non-revenue water[3]	6.0%
Consumption metering	39.7%
Continuity of supply	1.5 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	42.2%
Collection efficiency	97.8%
Complaints redressal	100%

Sewerage and Sanitation Services

Toilet coverage	61.5%
Sewerage network coverage	61.5%
Wastewater collection efficiency	12.1%
Wastewater treatment adequacy[3]	124.5%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	7.7%
Collection efficiency	66.0%
Complaints redressal	100%

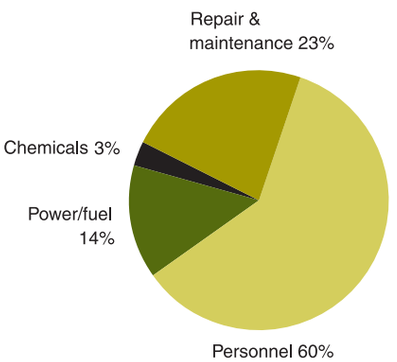
Storm Drainage Management

Drainage network coverage	100%
Incidence of water logging[4]	nil

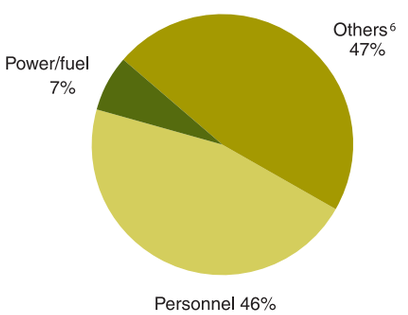
Solid Waste Management

Household level coverage[5]	21.1%
Collection efficiency of MSW	100%
Segregation of MSW	5.6%
MSW recovery	5.6%
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	n.a.
Complaints redressal	100%

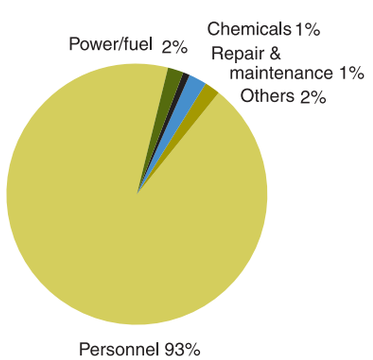
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 1,07,80,000



Annual O&M Costs: Sewerage
Rs 64,20,000



Annual O&M Costs: Solid Waste[7]
Rs 57,84,000

Notes:
1 Coverage is for house connections only; coverage is 100% if public standposts are included.
2 Per capita supply is 233 lpcd; does not include households using tubewells.
3 Production is not metered; 0.62 MLD are provided free through public standposts.
4 Water logging is not present due to hilly terrain.
5 About 41% of door-to-door collection is done by NGO/CBOs.
6 Other costs include contracted out services cost.
7 Annual O&M costs for SWM do not include depreciation cost.

GUNTUR Utility Profile

Urban Local Body: Guntur Municipal Corporation (GMC)

GMC Road Guntur, Opp. to Gandhi Park, Guntur 522002, India, Telephone: (91-863) 222 4202, Fax: (91-863) 232 4704, Contact: Municipal Commissioner

The city of Guntur has a total population of 6,15,796 people of which 1,98,007 are in 133 slum settlements. The present urban area of GMC is 45.7 sq km composed of 52 wards. There are a total of 1,44,246 properties in Guntur of which 1,31,075 are residential and 13,171 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone, e-mail or SMS text messaging. The ULB provides free water connection including materials cost to BPL families.

Water Supply

Utility Name: Guntur Municipal Corporation

Number of connections:	65,197 (Residential: 63,277 Non-residential: 1,920)
Number of staff:	262 (common with sewerage) Staff/1,000 connections: 4.0
Production:	74.57 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	35.75 MLD (Residential: 33.21 MLD Non-residential: 2.54 MLD)
Water treatment capacity:	74.57 MLD
Treated water storage:	29.76 ML
Distribution pipe length:	611 km
Average pressure:	nil
Number of water samples tested:	51,100
Number of samples passing test:	50,735

Service and Financial Data

Service contracts:	no data
Contracted service cost:	no data
Complaints received:	1,021
Rectified:	408
Leaks repaired:	252
Annual operating revenues:	Rs 11,60,50,000
Annual operating expenses:	Rs 8,00,83,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 1,65,41,000
Sources of capital investments:	no data
Tariff - Fixed rate:	Rs 80/month for unmetered residential
- Cost/volume:	Rs 25/m^3 for metered commercial

Sewerage and Sanitation

Utility Name: Guntur Municipal Corporation

Properties w/access to toilets:	1,04,099
Properties connected to sewer:	17,239
Number of staff:	262 (common with water supply) Staff/1,000 connections: 15.2
Area covered by sewerage network:	11.4 km^2
Wastewater produced/collected:	28.2 MLD/Nil
No. of ST Plants:	1 - still to be commissioned
Sewage volume treated:	n.a. (Volume of treated waste water reused: n.a.)
Number of effluent samples tested:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	no data
Contracted service cost:	no data
Number of sewer blockages:	no data
Complaints recorded:	931
Rectified:	372
Annual operating revenues:	Rs 66,00,000
Annual operating expenses:	Rs 1,05,63,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Residential	Rs 14-22/month, 35% of water tariff

Storm Water Drainage

Utility Name: Guntur Municipal Corporation

Total length of drains:	905.22 km
Primary drains:	60.35 km
Secondary drains:	108.30 km
Tertiary drains:	736.57 km
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	37

Service and Financial Data

Name of major flood-prone areas:	Mostly in Wards 16, 2, 25, 29, 18 and 27
Number of staff:	common with water and sewerage*
Annual operating expenses:	part of sewerage
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Guntur Municipal Corporation

Total number of establishments:	1,44,246
Waste generation:	10,572 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,22,500)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	8,955 tons/month
Waste processing facility:	No
Total waste processed:	n.a
Number of waste disposal facilities:	1 (Compliant landfills: nil Waste quantity: n.a., Open dumpsites: 1 Waste quantity: 8,955 tons/month)

Service and Financial Data

Number of staff:	1,971
Service contracts:	nil
Complaints recorded:	1,975
Rectified:	1,481
Annual revenues (billed):	Rs 1,15,00,000
Annual revenues (collected):	Rs 75,00,000
Annual operating expenses:	Rs 15,52,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a

Tariffs - User charges: Restaurant/lodge - Rs 5,000/month; restaurants/bar - Rs 1,500/month; modern hotels - Rs 5,000/month; fruit juice stalls - Rs 200/month; Tax (solid waste): Rs 10/month (through property tax)

ULB Service Profile GUNTUR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	49.5%
Per capita consumption[2]	109 lpcd
Non-revenue water[3]	52.7%
Consumption metering	2.4%
Continuity of supply	1.0 hour/day
Quality of water supply	99.3% samples passed
Cost recovery: water supply	144.9%
Collection efficiency	46.3%
Complaints redressal	40.0%

Sewerage and Sanitation Services

Toilet coverage	79.1%
Sewerage network coverage	13.1%
Wastewater collection efficiency	nil
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	n.a.
Cost recovery: wastewater	62.5%
Collection efficiency	74.2%
Complaints redressal	40.0%

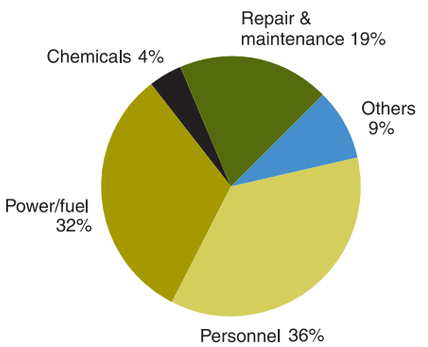
Storm Drainage Management

Drainage network coverage	10.8%
Incidence of water logging[5]	no data

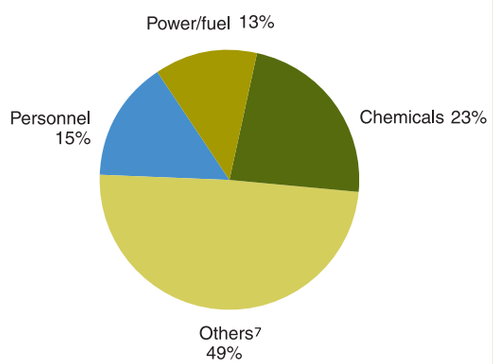
Solid Waste Management

Household level coverage[6]	84.9%
Collection efficiency of MSW	84.7%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	7.4%
Collection efficiency	65.1%
Complaints redressal	75.0%

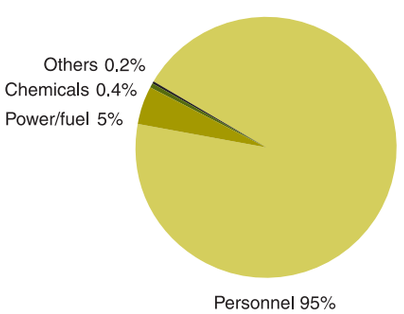
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 8,00,83,000



Annual O&M Costs: Sewerage
Rs 1,05,63,000



Annual O&M Costs: Solid Waste
Rs 15,52,05,000

Notes:
1 Coverage is for house connections only; coverage is 70.1% if public standposts are included.
2 Per capita supply is 173 lpcd.
3 Production is not metered; 0.47 MLD is provided free through public standposts.
4 The ULB has 2 desludging machines; STP is still to be commissioned.
5 Incidence of water logging are not recorded.
6 Door-to-door collection is done by ULB in all wards of the city.
7 Other costs for sewerage is for contracted out services.

HYDERABAD Utility Profile

Urban Local Body: Greater Hyderabad Municipal Corporation (GHMC)

5th Floor, Municipal Complex, Tank Bund Road, Hyderabad, Andhra Pradesh 500063, India, Telephone: (91-40) 2326 2266, 2322-7558, Fax: (91-40) 2326 1262, Contact: Municipal Commissioner

Hyderabad has a total population of 75,97,058 people of which 19,66,345 are in 1,444 slum settlements. The present urban area of GHMC is 617.1 sq km composed of 150 wards in 18 circles. There are a total of 20,28,435 properties in Greater Hyderabad of which 19,08,849 are residential and 1,19,586 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone, e-mail or SMS text messaging. The ULB charges fixed flat rate for water supply services to white card holders in urban poor areas.

Water Supply

Utility Name: Hyderabad Metropolitan Water Supply and Sewerage Board

Number of connections:	8,14,813 (Residential: 8,00,063 Non-residential: 14,750)
Number of staff:	4,466 (2,308 common with sewerage) Staff/1,000 connections: 5.5
Production:	1,503 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	1,095.6 MLD (Residential: 753.2 MLD Non-residential: 342.3 MLD)
Water treatment capacity:	1,543.5 MLD
Treated water storage:	454 ML
Distribution pipe length:	3,500 km
Average pressure:	2-3 meters
Number of water samples tested:	1,032
Number of samples passing test:	1,025

Service and Financial Data

Service contracts:	4 - billing contracts
Contracted service cost:	Rs 16,05,76,000
Complaints received:	37,020
Rectified:	19,248
Leaks repaired:	2,206
Annual operating revenues:	Rs 3,99,47,73,000
Annual operating expenses:	Rs 4,73,06,43,000
Debt service for the year:	Rs 80,16,37,000
2009 capital expenditure:	Rs 3,53,36,95,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 100/month for unmetered residential
- Cost/volume:	Rs 6-25/m^3 for metered residential

Sewerage and Sanitation

Utility Name: Hyderabad Metropolitan Water Supply and Sewerage Board

Properties w/access to toilets:	11,71,066
Properties connected to sewer:	5,51,026
Number of staff:	3,142 (2,308 common with water supply) Staff/1,000 connections: 5.7
Area covered by sewerage network:	294 km^2
Wastewater produced/collected:	1,097.7 MLD/435.1 MLD
No. of ST Plants:	11 (Total STP capacity: 606.1 MLD)
Sewage volume treated:	435.1 MLD
Volume of treated waste water reused:	10 MLD
Number of effluent samples tested:	312
Number of samples passing test:	310

Service and Financial Data

Service contracts:	none
Contracted service cost:	n.a.
Number of sewer blockages:	41,400
Complaints recorded:	95,160
Rectified:	53,280
Annual operating revenues:	Rs 1,39,81,71,000
Annual operating expenses:	Rs 1,65,57,15,000
Debt service for the year:	Rs 28,05,73,000
2009 capital expenditure:	Rs 1,23,67,93,000
Sources of capital investments:	Government grants
Tariff -	35% of water tariff

Storm Water Drainage

Utility Name: Greater Hyderabad Municipal Corporation

Total length of drains:	2,637.19 km
Primary drains:	387.64 km
Secondary drains:	nil
Tertiary drains:	2,249.55 km
Frequency of desilting of drains:	half-yearly
Number of flood-prone areas:	209

Service and Financial Data

Name of major flood-prone areas:	Mostly in Circle Nos. 16, 3, 4, 10 and 14
Number of staff:	477
Annual operating expenses:	Rs 49,30,22,000
2009 capital expenditure:	Rs 97,66,80,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Greater Hyderabad Municipal Corporation

Total number of establishments:	20,28,435
Waste generation:	1,56,352 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 14,32,266)
Waste segregation at source:	Yes (Quantity of recycled waste: 15,635 tons/month. Quantity to processing/ disposal facility: n.a)
Waste collected/transported:	1,22,036 tons/month
Waste processing facility:	Yes
Total waste processed:	15,000 tons/month
Number of waste disposal facilities:	1 (Compliant landfills: nil Waste quantity: n.a, Open dumpsites: 1 Waste quantity: 1,07,036 tons/month)

Service and Financial Data

Number of staff:	908
Service contracts:	4 - Vehicle and equipment hire with driver and labour services
Complaints recorded:	2,400
Rectified:	1,752
Annual revenues (billed):	Rs 16,21,00,000
Annual revenues (collected):	Rs 10,54,00,000
Annual operating expenses:	Rs 1,26,96,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	Rs 11/month (through property tax)

ULB Service Profile HYDERABAD

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	65.9%
Per capita consumption[2]	122 lpcd
Non-revenue water[3]	37.5%
Consumption metering	63.0%
Continuity of supply	0.3 - 2.0 hours/day
Quality of water supply	99.3% samples passed
Cost recovery: water supply	84.4%
Collection efficiency	77.1%
Complaints redressal	52.0%

Sewerage and Sanitation Services

Toilet coverage	98.5%
Sewerage network coverage	46.3%
Wastewater collection efficiency	39.6%
Wastewater treatment adequacy[4]	55.2%
Quality of wastewater treatment	99.4%
Reuse and recycling of treated wastewater	2.3%
Cost recovery: wastewater	84.4%
Collection efficiency	77.1%
Complaints redressal	56.0%

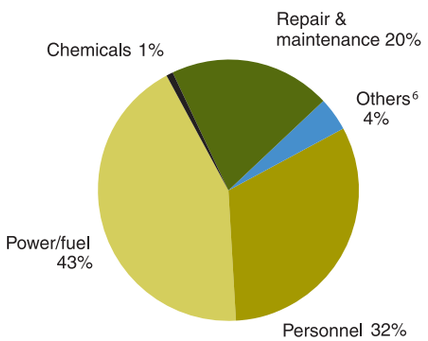
Storm Drainage Management

Drainage network coverage	17.8%
Incidence of water logging	18 per year

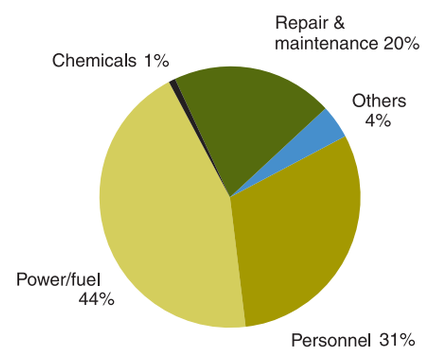
Solid Waste Management

Household level coverage[5]	70.6%
Collection efficiency of MSW	78.1%
Segregation of MSW	12.8%
MSW recovery	12.3%
Scientific disposal of MSW	nil
Cost recovery: SWM	12.8%
Collection efficiency	65.0%
Complaints redressal	73.0%

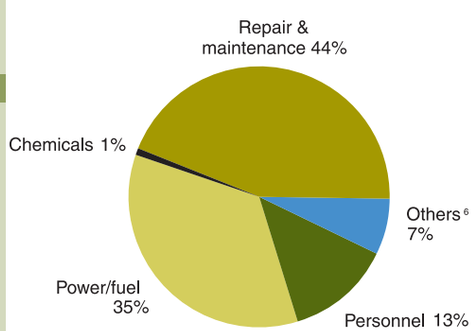
Data as of 2008–09



Annual O&M Costs: Water Supply[7]
Rs 4,14,71,43,000



Annual O&M Costs: Sewerage[7]
Rs 1,45,14,90,000



Annual O&M Costs: Solid Waste[7]
Rs 1,21,76,00,000

Notes:
1 Coverage is for house connections only; coverage is 83.9% if public standposts are included.
2 Per capita supply is 236 lpcd.
3 Production sources are metered; 156.5 MLD is provided free through public standposts.
4 The ULB is providing desludging services with 35 desludging trucks.
5 About 58% of door-to-door collection is done by the ULB and the rest by RWAs, private contractors and NGOs.
6 Other costs for water supply and SWM include contracted out services.
7 Annual O&M costs for water supply, sewerage and SWM do not include depreciation cost.

IMPHAL Utility Profile

Urban Local Body: Imphal Municipal Council (IMC)

PHE Department, PHD Complex Khuyathang PO, Imphal 795001, India, Telephone: (91-986) 202 7281, Fax: (91-385) 245 0122, Contact: Executive Officer

Imphal has a total population of 2,67,815 people. The present urban area of IMC is 32.7 sq km composed of 27 wards. There are a total of 53,639 properties in Imphal of which 52,386 are residential and 1,255 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person and telephone. The ULB has no specific policy of providing water supply and sanitation services to the urban poor.

Water Supply		Service and Financial Data	
Utility Name: Imphal Municipal Council			
Number of connections:	19,119 (Residential: 18,664 Non-residential: 455)	Service contracts:	no data
Number of staff:	471 Staff/1,000 connections: 24.6	Contracted service cost:	no data
Production:	78.37 MLD (Source: Groundwater - 9% Surface water - 91%)	Complaints received:	3,400
Consumption:	21.2 MLD (Residential: 17.0 MLD Non-residential: 4.2 MLD)	Rectified:	2,800
Water treatment capacity:	112.6 MLD	Leaks repaired:	350
Treated water storage:	8.95 ML	Annual operating revenues:	Rs 2,01,56,000
Distribution pipe length:	222.3 km	Annual operating expenses:	Rs 12,15,74,000
Average pressure:	10 meters	Debt service for the year:	Rs 24,29,000
Number of water samples tested:	144	2009 capital expenditure:	Rs 17,62,84,000
Number of samples passing test:	144	Sources of capital investments:	Government grants
		Tariff - Fixed cost:	Rs 75/month for domestic connections; Rs 120/month for small industrial; Rs 750 for medium industry; and hostel
		- Cost/volume:	Rs 3.00/m^3 for bulk supply

Sewerage and Sanitation		Service and Financial Data	
Utility Name: Imphal Municipal Council			
Properties w/access to toilets:	53,607	Service contracts:	none
Properties connected to sewer:	nil	Contracted service cost:	nil
Number of staff:	nil	Number of sewer blockages:	n.a.
Staff/1,000 connections:	nil	Complaints recorded:	no data
Area covered by sewerage network:	nil	Rectified:	no data
Wastewater produced/collected:	16.98 MLD	Annual operating revenues:	no data
No. of ST Plants:	nil (Total STP capacity: nil)	Annual operating expenses:	no data
Sewage volume treated:	nil	Debt service for the year:	no data
Volume of treated water reused:	nil	2009 capital expenditure:	no data
Number of effluent samples tested:	n.a.	Sources of capital investments:	no data
Number of samples passing test:	n.a.	Tariff - Fixed cost:	n.a.

Storm Water Drainage		Service and Financial Data	
Utility Name: Imphal Municipal Council			
Total length of drains:	7.16 km	Name of major flood-prone areas:	none
Primary drains:	7.16 km	Number of staff:	111
Secondary drains:	nil	Annual operating expenses:	Rs 1,42,13,000
Tertiary drains:	nil	2009 capital expenditure:	nil
Frequency of desilting of drains:	annually	Sources of capital investments:	n.a.
Number of flood-prone areas:	nil		

Solid Waste Management		Service and Financial Data	
Utility Name: Imphal Municipal Council			
Total number of establishments:	53,639	Number of staff:	168
Waste generation:	3,810 tons/month	Service contracts:	1 - collection and disposal
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 13,287)	Complaints recorded:	no data
		Rectified:	no data
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)	Annual revenues (billed):	nil
		Annual revenues (collected):	n.a
Waste collected/transported:	2,820 tons/month	Annual operating expenses:	Rs 2,00,39,000
Waste processing facility:	No	Debt service for the year:	nil
Total waste processed:	n.a	2009 capital expenditure:	Rs 19,40,000
Number of waste disposal facilities:	1	Sources of capital investments:	Government grants
Compliant landfills:	nil	Tariffs - User charges:	Residential - Rs 50/month Commercial - Rs 100/month
Waste quantity:	n.a.	- Tax (solid waste):	nil
Open dumpsites:	1		
Waste quantity:	2,820 tons/month		

ULB Service Profile IMPHAL

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	47.2%
Per capita consumption[2]	110 lpcd
Non-revenue water[3]	72.9%
Consumption metering	nil
Continuity of supply	2.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	16.6%
Collection efficiency	42.8%
Complaints redressal	82.4%

Sewerage and Sanitation Services

Toilet coverage	99.9%
Sewerage network coverage[4]	nil
Wastewater collection efficiency	n.a.
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	n.a.
Cost recovery: wastewater	no data
Collection efficiency	no data
Complaints redressal	no data

Storm Drainage Management

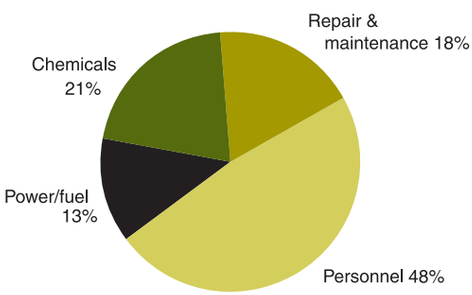
Drainage network coverage	1.5%
Incidence of water logging	no data

Solid Waste Management

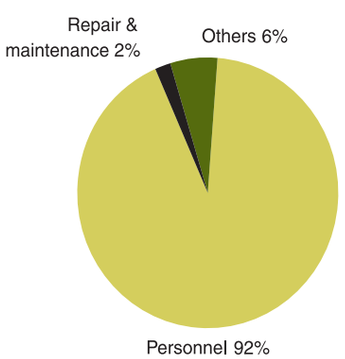
Household level coverage[5]	33.4%
Collection efficiency of MSW	74.0%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[6]	nil
Collection efficiency	n.a.
Complaints redressal	no data

Data as of 2008–09

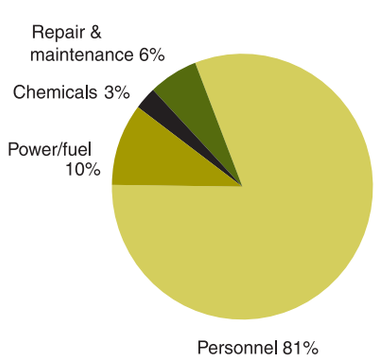
Notes:
1 Coverage is for house connections only; coverage is 54.4% if public standposts are included.
2 Per capita supply is 611 lpcd; does not include households served by tankers and tubewells.
3 Production is not metered; minimal 20,000 liters per day is provided free through standposts.
4 There is neither sewerage network nor sewage treatment plant.
5 Door-to-door collection is done completely by NGOs/CBOs.
6 No user charges are levied.
7 Annual O&M costs is for drainage in the absence of a sewerage system.



Annual O&M Costs: Water Supply
Rs 12,15,74,000



Annual O&M Costs: Drainage[7]
Rs 1,42,13,000



Annual O&M Costs: Solid Waste
Rs 2,00,39,000

INDORE Utility Profile

Urban Local Body: Indore Municipal Council (IMC)

576/1, Dr Nandlal Bordia Marg, M.G. Road, Indore, Madhya Pradesh 452001, India, Telephone: (91-731) 243 1610, Fax: (91-731) 243 1614, Contact: Municipal Commissioner

Indore has a total population of 19,65,004 people of which 3,11,492 are in slum settlements and 2,00,000 are floating population. The present urban area of IMC is 130.7 sq km composed of 69 wards. There are a total of 4,80,919 properties in Indore of which 4,15,434 are residential and 65,484 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person and telephone. The ULB has no specific policy of providing water supply and sanitation services to the urban poor.

Water Supply

Utility Name: Indore Municipal Corporation

Number of connections:	1,65,002 (Residential: 1,62,484 Non-residential: 2,518)
Number of staff:	1,103
Staff/1,000 connections:	6.7
Production:	184.5 MLD (Source: Groundwater - 12% Surface water - 78%)
Consumption:	89.4 MLD (Residential: 69.4 MLD Non-residential: 20.0 MLD)
Water treatment capacity:	254.0 MLD
Treated water storage:	94.6 ML
Distribution pipe length:	1,800 km
Average pressure:	5 meters
Number of water samples tested:	2,325
Number of samples passing test:	2,096

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	7,634
Rectified:	6,274
Leaks repaired:	4,834
Annual operating revenues:	Rs 31,99,93,000
Annual operating expenses:	Rs 92,04,74,000
Debt service for the year:	Rs 4,57,78,000
2009 capital expenditure:	Rs 15,45,87,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:*	Rs 185/month residential rate (1/2" pipe); Rs 450/month commercial rate (1/2" pipe); Rs 450/month industrial rate (1/2" pipe). *Rs 5/quarter service charge for all connections
- Cost/volume:	none

Sewerage and Sanitation

Utility Name: Indore Municipal Corporation

Properties w/access to toilets:	4,62,852
Properties connected to sewer:	4,59,852
Number of staff:	932 (Staff/1,000 connections: 2.0)
Area covered by sewerage network:	77.0 sq km
Wastewater produced/collected:	150.9 MLD/83.5 MLD
No. of ST Plants:	2 (Total STP capacity: 90.0 MLD)
Sewage volume treated:	83.5 MLD
Volume of treated water reused:	1.0 MLD
Number of effluent samples tested:	180
Number of samples passing test:	180

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	200
Complaints recorded:	20,000
Rectified:	20,000
Annual operating revenues:	Rs 10,17,50,000
Annual operating expenses:	Rs 5,75,69,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 87,79,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	nil

Storm Water Drainage

Utility Name: Indore Municipal Corporation

Total length of drains:	1,385.75 km
Primary drains:	1,035.75 km
Secondary drains:	350.00 km
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	no data

Service and Financial Data

Name of major flood-prone areas:	no data
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Indore Municipal Corporation

Total number of establishments:	4,80,919
Waste generation:	23,580 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,36,000)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	17,866 tons/month
Waste processing facility:	No
Total waste processed:	n.a
Number of waste disposal facilities:	1
Compliant landfills:	nil (Waste quantity: n.a, Open dumpsites: 1 Waste quantity: 17,866 tons/month)

Service and Financial Data

Number of staff:	3,314
Service contracts:	1
Complaints recorded:	2,460
Rectified:	2,460
Annual revenues (billed):	Rs 42,74,00,000
Annual revenues (collected):	Rs 21,37,00,000
Annual operating expenses:	Rs 26,72,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 8,45,00,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil (Tax, solid waste: part of property tax goes to SWM)

ULB Service Profile INDORE

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	38.3%
Per capita consumption[2]	73.0 lpcd
Non-revenue water[3]	58.5
Consumption metering	0.04
Continuity of supply	0.75 hour/day
Quality of water supply	90.2% samples passed
Cost recovery: water supply	34.8%
Collection efficiency	61.6%
Complaints redressal	82.2%

Sewerage and Sanitation Services

Toilet coverage	95.7%
Sewerage network coverage	95.1%
Wastewater collection efficiency	55.3%
Wastewater treatment adequacy[4]	59.7%
Quality of wastewater treatment	100%
Extent of reuse and recycling of treated wastewater	1.2%
Cost recovery: wastewater	176.7%
Collection efficiency	82.3%
Complaints redressal	100%

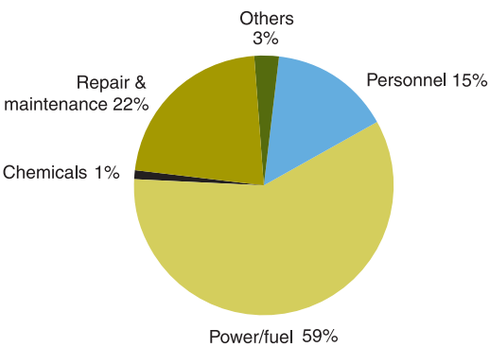
Storm Drainage Management

Drainage network coverage	20.0
Incidence of water logging	40-50 per year

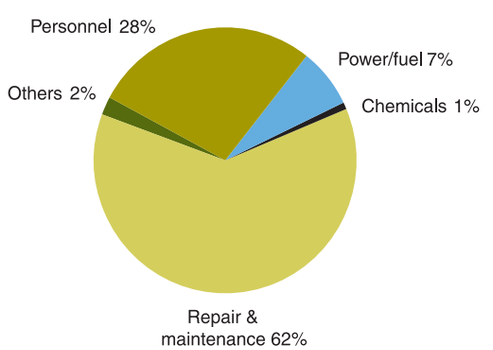
Solid Waste Management

Household level coverage[5]	28.3%
Collection efficiency of MSW	75.8%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM[6]	159.9%
Collection efficiency	50.0%
Complaints redressal	100%

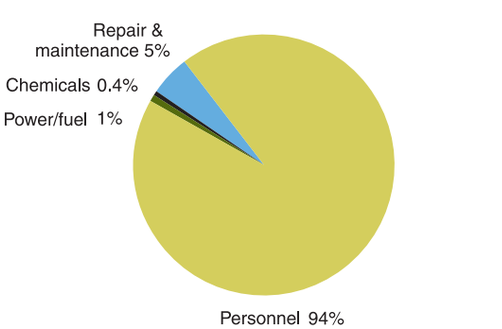
Data as of 2008–09



Annual O&M Costs: Water Supply[7]
Rs 91,84,74,000



Annual O&M Costs: Sewerage
Rs 5,75,69,000



Annual O&M Costs: Solid Waste
Rs 26,72,05,000

Notes:
1 Coverage is for house connections only; coverage is 54.0% if public standposts are included.
2 Per capita supply is 174 lpcd; does not include households using tubewells or tanker supply.
3 Production is partially metered; 12.85 MLD is provided free through standposts.
4 Desludging of septic tanks is done by the ULB (two desludging trucks) and private operators.
5 Door-to-door collection is done by the ULB in collaboration with RWAs.
6 Part of the property tax is charged for SWM services.
7 Annual O&M costs for water supply include depreciation cost.

JALANDHAR Utility Profile

Urban Local Body: Municipal Corporation of Jalandhar (MCJ)

Municipal Corporation of Jalandhar, O&M Cell, Near Nehru Garden, Jalandhar, Punjab, India, Telephone: (91-181) 222 7015, Fax: (91-181) 505 3070, Contact: Municipal Commissioner

Jalandhar has a total population of 845,404 people of which 180,691 are in 142 slum settlements. The present urban area of MCJ is 101.4 sq km composed of 60 wards. There are a total of 188,036 properties in Jalandhar of which 162,658 are residential and 25,378 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, by telephone, or e-mail. The ULB provides water supply, sewerage and sanitation services at special reduced rates to urban poor yellow card holders.

Water Supply

Utility Name: Jalandhar Municipal Corporation

Number of connections:	1,17,203 (Residential: 1,13,814 Non-residential: 3,389)
Number of staff:	252 Staff/1,000 connections: 2.2
Production:	211.3 MLD (Source: Groundwater - 100% Surface water - nil)
Consumption:	101.5 MLD (Residential: 99.3 MLD Non-residential: 2.2 MLD)
Water treatment capacity:	563.3 MLD
Treated water storage:	19.0 ML
Distribution pipe length:	930.5 km
Average pressure:	2 meters
Number of water samples tested:	61
Number of samples passing test:	44

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	7,746
Rectified:	7,644
Leaks repaired:	267
Annual operating revenues:	Rs 13,42,48,000
Annual operating expenses:	Rs 20,05,08,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 3,88,69,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 100/month up to 5 marla Rs 105/month above 5 - up to 10 marla Rs 140/month above 10 marla
- Cost/volume:	Rs 3.80/m^3 above 1 kanal

Sewerage and Sanitation

Utility Name: Jalandhar Municipal Corporation

Properties w/access to toilets:	1,46,005
Properties connected to sewer:	1,08,702
Number of staff:	250
Staff/1,000 connections:	2.3
Area covered by sewerage network:	no data
Wastewater produced/collected:	105.2 MLD/100.0 MLD
No. of ST Plants:	1 (Total STP capacity: 100.0 MLD)
Sewage volume treated:	100 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	103
Number of samples passing test:	102

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	1,275
Complaints recorded:	19,255
Rectified:	19,255
Annual operating revenues:	Rs 8,29,61,000
Annual operating expenses:	Rs 9,98,34,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 8,64,28,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	Rs 70/month up to 5 marla Rs 105/month above 5 - up to 10 marla

Storm Water Drainage

Utility Name: Jalandhar Municipal Corporation

Total length of drains:	24.37 km
Primary drains:	24.37 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	no data

Service and Financial Data

Name of major flood-prone areas:	14 areas named
Number of staff:	part of water and sewerage
Annual operating expenses:	part of water and sewerage
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Jalandhar Municipal Corporation

Total number of establishments:	1,88,036
Waste generation:	11,413 tons/month
Door-to-door collection:	No (Number of establishments w/DTD collection: n.a.)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	10,635 tons/month
Waste processing facility:	No (Total waste processed: n.a.)
Number of waste disposal facilities:	1 (Compliant landfills: nil Waste quantity: n.a., Open dumpsites: 1 Waste quantity: 10,635 tons/month)

Service and Financial Data

Number of staff:	5,132
Service contracts:	nil
Complaints recorded:	205
Rectified:	145
Annual revenues (billed):	nil
Annual revenues (collected):	n.a
Annual operating expenses:	Rs 28,14,39,000
Debt service for the year:	nil
2009 capital expenditure:	no data
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile JALANDHAR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	69.9%
Per capita consumption[2]	165 lpcd
Non-revenue water[3]	52.8%
Consumption metering	2.9%
Continuity of supply	12.0 hours/day
Quality of water supply	72.1% samples passed
Cost recovery: water supply	67.0%
Collection efficiency	44.9%
Complaints redressal	98.7%

Sewerage and Sanitation Services

Toilet coverage	89.7%
Sewerage network coverage	66.9%
Wastewater collection efficiency	95.1%
Wastewater treatment adequacy[4]	95.1%
Quality of wastewater treatment	99.0%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	83.1%
Collection efficiency	36.6%
Complaints redressal	100%

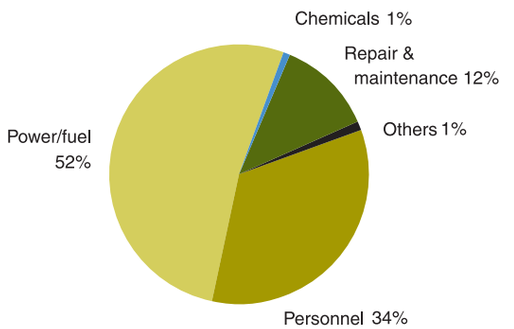
Storm Drainage Management

Drainage network coverage	1.5%
Incidence of water logging	no data

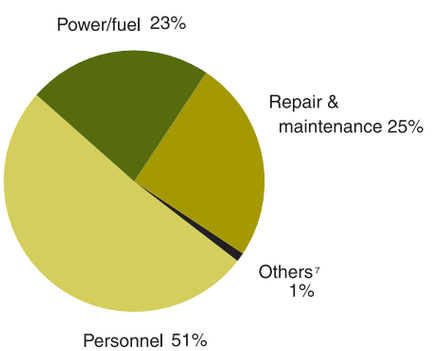
Solid Waste Management

Household level coverage[5]	nil
Collection efficiency of MSW	93.2%
Segregation of MSW[4]	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery - SWM[6]	nil
Collection efficiency	n.a.
Complaints redressal	70.7%

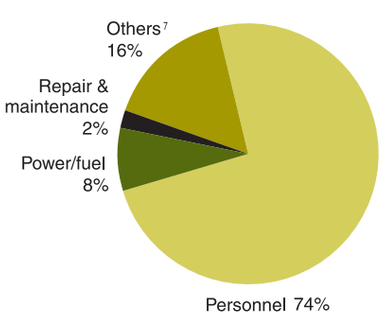
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 20,05,08,000



Annual O&M Costs: Sewerage
Rs 9,98,34,000



Annual O&M Costs: Solid Waste
Rs 28,14,39,000

Notes:
1 Coverage is for house connections only; coverage is 72.9% if public standposts are included.
2 Per capita supply is 343 lpcd; does not include households served by handpumps.
3 Production is not metered; 1.75 MLD is provided free through public stanposts.
4 No desludging services for septic tanks are provided in the city.
5 No door-to-door collection is done in the city.
6 No user charges are levied.
7 Other costs for sewerage and SWM include cost of contracted services.

KOLHAPUR Utility Profile

Urban Local Body: Municipal Corporation of Kolhapur (MCK)

Shivaji Market, Kolhapur 416006, India, Telephone: (91-231) 254 3844/ 254 6118/ 254 1082, Fax: (91-231) 254 1830, Contact: Municipal Commissioner

Municipal Corporation of Kolhapur (KMC) provides water supply, sewerage and sanitation, drainage and solid waste management services for the city of Kolhapur which has a total population of 5,60,973 people of which 56,261 are in 54 slum settlements and 1,50,000 are floating population. The present urban area of KMC is 66.82 sq km composed of four zones. There are a total of 1,16,367 properties in Kolhapur of which 92,736 are residential and 23,631 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB provides public standposts for water and pay-and-use community toilets for the urban poor.

Water Supply

Utility Name: Municipal Corporation of Kolhapur

Number of connections:	87,899 (Residential: 81,842 Non-residential: 6,057)
Number of staff:	424 (Staff/1,000 connections: 4.8)
Production:	123.7 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	70.0 MLD (Residential: 62.1 MLD Non-residential: 7.9 MLD)
Water treatment capacity:	163.0 MLD
Treated water storage:	36.0 ML
Distribution pipe length:	500 km
Average pressure:	2-8 meters
Number of water samples tested:	151
Number of samples passing test:	138

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	600
Rectified:	450
Leaks repaired:	3,200
Annual operating revenues:	Rs 20,92,49,000
Annual operating expenses:	Rs 19,81,13,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 22,17,04,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	Rs 140/2 months up to 20 m^3 domestic
- Cost/volume:	Rs 8/m^3 from 20-40 m^3 for domestic; Rs 9/m^3 above 40 m^3 for domestic; Rs 25.00/m^3 for commercial; Rs 45.00/m^3 for industrial

Sewerage and Sanitation

Utility Name: Municipal Corporation of Kolhapur

Properties w/access to toilets:	105,756
Properties connected to sewer:	44,604
Number of staff:	36 (Staff/1,000 connections: 0.8)
Area covered by sewerage network:	35 km^2
Wastewater produced/collected:	72.0 MLD/ 43.5 MLD
No. of ST Plants:	1 (Total STP capacity: 43.5 MLD)
Sewage volume treated:	nil
Volume of treated water reused:	15.0 MLD
Number of effluent samples tested:	144
Number of samples passing test:	48

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	205
Complaints recorded:	2,200
Rectified:	1,985
Annual operating revenues:	Rs 71,40,000
Annual operating expenses:	Rs 1,61,26,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 2,88,90,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	4% of ratable value (through house tax)

Storm Water Drainage

Utility Name: Flood and Drainage Department

Total length of drains:	294.42 km
Primary drains:	46.42 km
Secondary drains:	248.00 km
Tertiary drains:	nil
Frequency of desilting of drains:	annually
Number of flood-prone areas:	16

Service and Financial Data

Name of major flood-prone areas:	Ward Nos. 2, 4, and 1
Number of staff:	Part of SWM department
Annual operating expenses:	Part of SWM department
2009 capital expenditure:	nil
Sources of capital investments:	n.a.

Solid Waste Management

Utility Name: Municipal Corporation of Kolhapur

Total number of establishments:	1,16,367
Waste generation:	4,950 tons/month
Door-to-door collection:	Yes (Establishments w/DTD collection: 1,05,893)
Waste segregation at source:	Yes (Recycled waste: 450 tons/month. Quantity to processing/ disposal facility: 900 tons/month)
Waste collected/transported:	4,750 tons/month
Waste processing facility:	Yes (Total waste processed: 4,500 tons/month)
Number of waste disposal facilities:	1 (Compliant landfills: nil, Waste quantity: n.a. Open dumpsites: 1, Waste quantity: 1,125 tons/month)

Service and Financial Data

Number of staff:	907
Service contracts:	2 - Waste collection transportation, MSW processing
Complaints recorded:	413 (Rectified: 515)
Annual revenues (billed):	Rs 3,37,00,000
Annual revenues (collected):	Rs 2,69,00,000
Annual operating expenses:	Rs 15,80,00,000
Debt service for the year:	Rs 56,000
2009 capital expenditure:	Rs 1,41,99,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste): 3% of ratable value (property tax)	

ULB Service Profile KOLHAPUR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	83.5%
Per capita consumption[2]	133 lpcd
Non-revenue water[3]	45.8%
Consumption metering	100%
Continuity of supply	3.0 hours/day
Quality of water supply	91.4% samples passed
Cost recovery: water supply	105.6%
Collection efficiency	95.6%
Complaints redressal	75.0%

Sewerage and Sanitation Services

Toilet coverage	90.9%
Sewerage network coverage	42.2%
Wastewater collection efficiency	60.4%
Wastewater treatment adequacy[4]	60.4%
Quality of wastewater treatment	33.3%
Reuse and recycling of treated wastewater	34.5%
Cost recovery: wastewater	45.9%
Collection efficiency	78.9%
Complaints redressal	90.2%

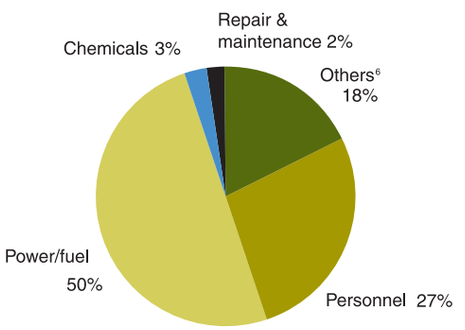
Storm Drainage Management

Drainage network coverage	24.9%
Incidence of water logging	47 per year

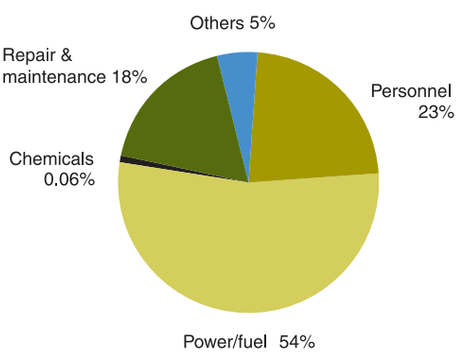
Solid Waste Management

Household level coverage[5]	91.0%
Collection efficiency of MSW	96.0%
Segregation of MSW	20.0%
MSW recovery	100%
Scientific disposal of MSW	nil
Cost recovery: SWM	21.3%
Collection efficiency	79.8%
Complaints redressal	85.0%

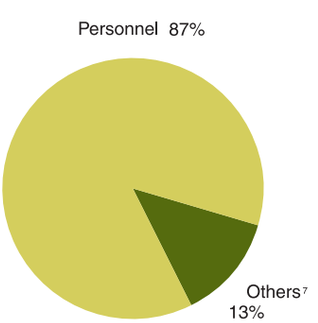
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 19,81,13,000



Annual O&M Costs: Sewerage
Rs 1,61,26,000



Annual O&M Costs: Solid Waste
Rs 15,80,00,000

Notes:
1 Coverage is for house connections only; coverage is 92.9% if public standposts are included.
2 Per capita supply is 238 lpcd;
3 Production is fully metered; 3 MLD is provided free through public standposts.
4 The ULB has only one desludging machine.
5 Door-to-door collection is totally done through private contractors.
6 Other costs for water supply is for bulk supply.
7 Other costs for SWM is for contracted services.

KOZHIKODE Utility Profile

Urban Local Body: Kozhikode Municipal Corporation (KMC)

Kozhikode Municipal Corporation, Corporation Building, Beach Road, Kozhikode, India, Telephone: (91-495) 236 5040, Fax: (91-495) 236 6875, Contact: Municipal Commissioner

Kozhikode has a total population of 4,48,551 people of which about 54,060 are in 79 slum settlements. The present urban area of KMC is 84.23 sq km composed of 55 wards. There are a total of 1,59,721 properties in Kozhikode of which 93,660 are residential and 66,061 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB has no specific policy of providing water supply and sanitation services to the urban poor.

Water Supply

Utility Name: Kerala Water Authority

Number of connections:	38,397 (Residential: 36,079 Non-residential: 2,318)
Number of staff:	282
Staff/1,000 connections:	7.3
Production:	83.3 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	45.0 MLD (Residential: 37.8 MLD Non-residential: 7.2 MLD)
Water treatment capacity:	83.3 MLD
Treated water storage:	10.8 ML
Distribution pipe length:	636.4 km
Average pressure:	6 meters
Number of water samples tested:	24,090
Number of samples passing test:	24,090

Service and Financial Data

Service contracts:	Pipeline repair services
Contracted service cost:	Rs 1,00,78,000
Complaints received:	1,510
Rectified:	1,200
Leaks repaired:	2,612
Annual operating revenues:	Rs 16,37,38,000
Annual operating expenses:	Rs 15,47,30,000
Debt service for the year:	Rs 74,73,00,000
2009 capital expenditure:	Rs 10,95,00,00,000
Sources of capital investments:	Government grants and loans, and public banks loan
Tariff - Fixed cost:	Rs 20/month - domestic
- Cost/volume:	Rs 4-Rs 25/m^3 - domestic Rs 10-Rs 25/m^3 - non-domestic

Sewerage and Sanitation

Utility Name: Kerala Water Authority

Properties w/access to toilets:	1,56,683
Properties connected to sewer:	nil
Number of staff:	nil (Staff/1,000 connections: n.a.)
Area covered by sewerage network:	n.a.
Wastewater produced/collected:	n.a./n.a.
No. of ST Plants:	n.a. (Total STP capacity: n.a.)
Sewage volume treated:	n.a.
Volume of treated water reused:	n.a.
Number of effluent samples tested:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	n.a.
Contracted service cost:	n.a.
Number of sewer blockages:	n.a.
Complaints recorded:	n.a.
Rectified:	n.a.
Annual operating revenues:	n.a.
Annual operating expenses:	n.a.
Debt service for the year:	n.a.
2009 capital expenditure:	n.a.
Sources of capital investments:	n.a.
Tariff - Fixed cost:	n.a.

Storm Water Drainage

Utility Name: Kozhikode Municipal Corporation

Total length of drains:	249.95 km
Primary drains:	95.40 km
Secondary drains:	102.30 km
Tertiary drains:	52.25 km
Frequency of desilting of drains:	no data
Number of flood-prone areas:	21

Service and Financial Data

Name of major flood-prone areas:	21 areas listed
Number of staff:	227
Annual operating expenses:	Rs 96,00,000
2009 capital expenditure:	Rs 16,65,000
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Kozhikode Municipal Corporation

Total number of establishments:	1,59,721
Waste generation:	9,598 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 38,664)
Waste segregation at source:	Yes (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	4,148 tons/month
Waste processing facility:	Yes
Total waste processed:	2,107 tons/month
Number of waste disposal facilities:	2
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	2
Waste quantity:	2,041 tons/month

Service and Financial Data

Number of staff:	788
Service contracts:	1 - Waste processing
Complaints recorded:	1,620
Rectified:	1,620
Annual revenues (billed):	Rs 31,20,000
Annual revenues (collected):	Rs 22,63,000
Annual operating expenses:	Rs 9,79,20,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a.
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile KOZHIKODE

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	38.5%
Per capita consumption[2]	197 lpcd
Non-revenue water[3]	45.9%
Consumption metering	83.7%
Continuity of supply	7.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	105.8%
Collection efficiency	86.2%
Complaints redressal	79.5%

Sewerage and Sanitation Services

Toilet coverage	91.6%
Sewerage network coverage[4]	nil
Wastewater collection efficiency	n.a.
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	n.a.
Cost recovery: wastewater	n.a.
Collection efficiency	n.a.
Complaints redressal	n.a.

Storm Drainage Management

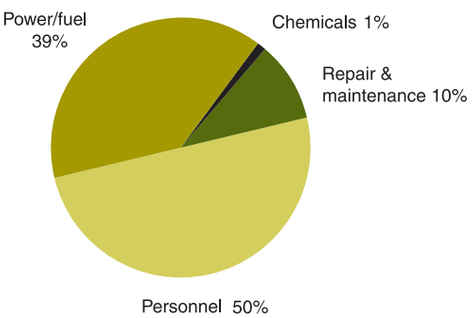
Drainage network coverage	12.0%
Incidence of water logging	32 per year

Solid Waste Management

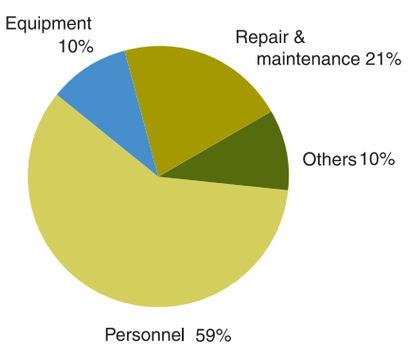
Household level coverage[5]	24.2%
Collection efficiency of MSW	43.2%
Segregation of MSW	50.8%
MSW recovery	50.8%
Scientific disposal of MSW	nil
Cost recovery: SWM	3.2%
Collection efficiency	72.5%
Complaints redressal	100%

Data as of 2008–09

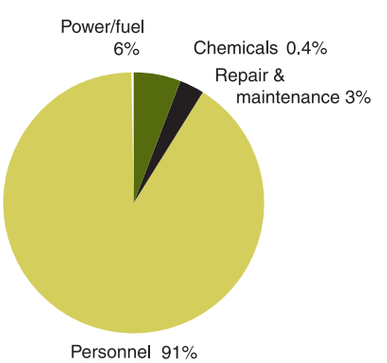
Notes:
1 Coverage is for house connections only; coverage is 41.5% if public standposts are included.
2 Per capita supply is 456 lpcd.
3 Production is not metered; no free supplies are provided.
4 There are no sewer lines and sewage treatment plant.
5 About 31% of door-to-door collection is done by NGOs/CBOs and 5% by private contractors.
6 Annual O&M costs is for drainage in the absence of a sewerage system.



Annual O&M Costs: Water Supply
Rs 15,47,30,000



Annual O&M Costs: Drainage[6]
Rs 96,00,000



Annual O&M Costs: Solid Waste
Rs 9,79,20,000

NASHIK Utility Profile

Urban Local Body: Nashik Municipal Corporation (NMC)

Rajiv Gandhi Bhavan, Sharanpur Road, Nashik 422002, India, Telephone: (91-253) 258 1252; 257 3151, Fax: (91-253) 258 1252, Contact: Municipal Commissioner

Nashik has a total population of 15,91,000 people of which 1,93,714 are in 175 slum settlements. The present urban area of NMC is 259 sq km composed of six wards. There are a total of 3,45,289 properties in Nashik of which 2,97,893 are residential and 47,396 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB provides free water supply services to the urban poor in slum areas.

Water Supply		Service and Financial Data	
Utility Name: Nashik Municipal Corporation			
Number of connections:	1,50,331 (Residential: 1,44,212 Non-residential: 6,119)	Service contracts:	none
Number of staff:	555	Contracted service cost:	nil
Staff/1,000 connections:	3.7	Complaints received:	1,832
Production:	345.0 MLD (Source: Groundwater - nil Surface water - 100%)	Rectified:	1,710
Consumption:	154.5 MLD (Residential: 144.0 MLD Non-residential: 10.5 MLD)	Leaks repaired:	4,412
Water treatment capacity:	348.0 MLD	Annual operating revenues:	Rs 27,16,00,000
Treated water storage:	135.0 ML	Annual operating expenses:	Rs 35,02,64,000
Distribution pipe length:	1,800 km	Debt service for the year:	Rs 29,56,000
Average pressure:	6 meters	2009 capital expenditure:	Rs 35,68,62,000
Number of water samples tested:	1,05,100	Sources of capital investments:	Government grants
Number of samples passing test:	1,04,771	Tariff - Fixed cost:	free water to slum colonies
		- Cost/volume:	Rs 5/m^3 for residential consumers; Rs 22/m^3 for non-residential consumers; Rs 27/m^3 for commercial consumers

Sewerage and Sanitation		Service and Financial Data	
Utility Name: Nashik Municipal Corporation			
Properties w/access to toilets:	3,41,322	Service contracts:	Operation of 6 STPs
Properties connected to sewer:	3,04,338	Contracted service cost:	Rs 1,09,65,000
Number of staff:	148	Number of sewer blockages:	6,239
Staff/1,000 connections:	0.5	Complaints recorded:	6,933
Area covered by sewerage network:	92 km^2	Rectified:	6,914
Wastewater produced/collected:	139.6 MLD/138.6 MLD	Annual operating revenues:	Rs 3,54,67,000
No. of ST Plants:	6 (Total STP capacity: 126.1 MLD)	Annual operating expenses:	Rs 8,12,99,000
Sewage volume treated:	138.6 MLD	Debt service for the year:	Rs 45,60,000
Volume of treated water reused:	nil	2009 capital expenditure:	Rs 38,84,00,000
Number of effluent samples tested:	396	Sources of capital investments:	Government grants
Number of samples passing test:	360	Tariff - Fixed cost:	5% of ratable value (through property tax)

Storm Water Drainage		Service and Financial Data	
Utility Name: Nashik Municipal Corporation			
Total length of drains:	93.88 km	Name of major flood-prone areas:	Panchavati, Nashik Road, Nashik West and New Nashik Divisions
Primary drains:	93.88 km		
Secondary drains:	nil	Number of staff:	55
Tertiary drains:	nil	Annual operating expenses:	Rs 2,27,60,000
Frequency of desilting of drains:	annually	2009 capital expenditure:	Rs 23,15,00,000
Number of flood-prone areas:	131	Sources of capital investments:	Government grants

Solid Waste Management		Service and Financial Data	
Utility Name: Nashik Municipal Corporation			
Total number of establishments:	3,45,289	Number of staff:	2,175
Waste generation:	15,000 tons/month	Service contracts:	1 - Waste collection and transport
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 2,99,996)	Complaints recorded:	311
		Rectified:	311
Waste segregation at source:	No (Quantity of recycled waste: 4,500 tons/month. Quantity to processing/disposal facility: n.a)	Annual revenues (billed):	Rs 3,31,00,000
		Annual revenues (collected):	Rs 1,16,00,000
		Annual operating expenses:	Rs 10,00,00,000
Waste collected/transported:	13,035 tons/month	Debt service for the year:	nil
Waste processing facility:	Yes	2009 capital expenditure:	Rs 37,63,00,000
Total waste processed:	9,060 tons/month	Sources of capital investments:	Government grants
Number of waste disposal facilities:	2 (Compliant landfills: nil, Waste quantity: n.a. Open dumpsites: 2, Waste quantity: 4,980 tons/month)	Tariffs - User charges:	nil
		- Tax (solid waste):	3% of ratable value (through property tax)

ULB Service Profile NASHIK

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	99.5%
Per capita consumption[2]	91 lpcd
Non-revenue water[3]	57.8%
Consumption metering	96.9%
Continuity of supply	3.0 hours/day
Quality of water supply	99.7% samples passed
Cost recovery: water supply	77.5%
Collection efficiency	92.4%
Complaints redressal	93.3%

Sewerage and Sanitation Services

Toilet coverage	100%
Sewerage network coverage	90.1%
Wastewater collection efficiency	99.3%
Wastewater treatment adequacy[4]	90.3%
Quality of wastewater treatment	90.9%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	47.9%
Collection efficiency	71.8%
Complaints redressal	99.7%

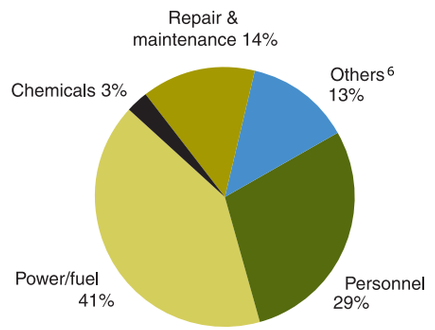
Storm Drainage Management

Drainage network coverage	4.1%
Incidence of water logging	12 per year

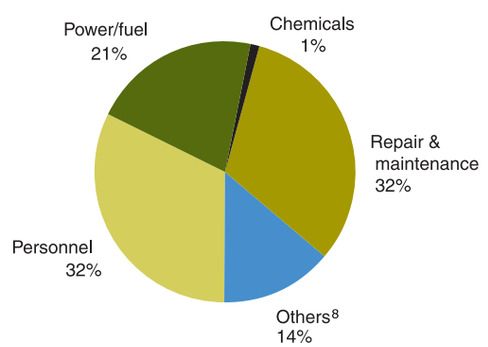
Solid Waste Management

Household level coverage[5]	86.9%
Collection efficiency of MSW	86.9%
Segregation of MSW	34.5%
MSW recovery	100%
Scientific disposal of MSW	nil
Cost recovery: SWM	33.1%
Collection efficiency	35.0%
Complaints redressal	100%

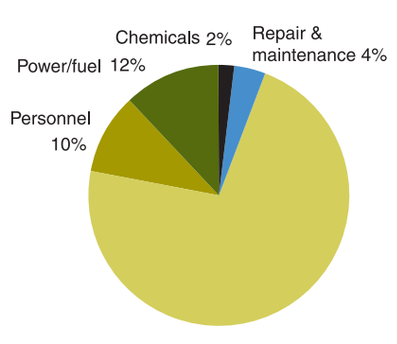
Data as of 2008–09



Annual O&M Costs: Water Supply
Rs 35,02,64,000



Annual O&M Costs: Sewerage[7]
Rs 8,00,49,000



Annual O&M Costs: Solid Waste
Rs 10,00,00,000

Notes:
1 Coverage is for house connections only; coverage is 100% with public standposts.
2 Per capita supply is 218 lpcd.
3 Production is metered; 9 MLD is provided free through public standposts.
4 The ULB provides desludging services through six desludging trucks.
5 Door-to-door collection is provided completely through private contractors.
6 Other costs for water supply include bulk supply cost.
7 Annual O&M costs for sewerage include depreciation cost.
8 Other costs for sewerage and SWM include contract services costs.

PALAMPUR Utility Profile

Urban Local Body: Palampur Municipal Council (PMC)

V & PO - Palampur, Tehsil Palampur, District Kangra, Himachal Pradesh 176061, India, Telephone: (91-189) 423 0895, Fax: (91-189) 423 0895, Contact: Executive Officer

Palampur has a total population of 4,006 people of which 1,151 are in four slum settlements. The present urban area of PMC is 0.67 sq m composed of seven wards. There are a total of 943 properties in Palampur of which 878 are residential and 65 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, or telephone. The ULB is considering separate drinking water from tubewells and connecting BPL families to sewers.

Water Supply

Utility Name: Palampur Municipal Council

Number of connections:	975 (Residential: 807 Non-residential: 168)
Number of staff:	11 (Staff/1,000 connections: 11.3)
Production:	2.1 MLD (Source: Groundwater - 5% Surface water - 95%)
Consumption:	1.02 MLD (Residential: 0.66 MLD Non-residential: 0.36)
Water treatment capacity:	2.1 MLD
Treated water storage:	1.2 ML
Distribution pipe length:	15.0 km
Average pressure:	no data
Number of water samples tested:	1,728
Number of samples passing test:	1,728

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	720
Rectified:	720
Leaks repaired:	6
Annual operating revenues:	Rs 3,73,000
Annual operating expenses:	Rs 23,11,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed cost:	Rs 30/month - residential Rs 20/month - BPL families
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Irrigation and Public Health Department

Properties w/access to toilets:	928
Properties connected to sewer:	765
Number of staff:	8 (Staff/1,000 connections: 10.5)
Area covered by sewerage network:	0.5 km^2
Wastewater produced/collected:	0.82 MLD/ 0.29 MLD
No. of ST Plants:	1 (Total STP capacity: 0.35 MLD)
Sewage volume treated:	0.29 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	12
Number of samples passing test:	12

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	48
Complaints recorded:	62
Rectified:	62
Annual operating revenues:	Rs 1,02,000
Annual operating expenses:	Rs 3,62,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed cost:	Rs 20/seat

Storm Water Drainage

Utility Name: Palampur Municipal Council

Total length of drains:	10.58 km
Primary drains:	3.90 km
Secondary drains:	2.93 km
Tertiary drains:	3.75 km
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	nil

Service and Financial Data

Name of major flood-prone areas:	no flooding due to terrain
Number of staff:	7
Annual operating expenses:	Rs 12,50,000
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Palampur Municipal Council

Total number of establishments:	943
Waste generation:	40 tons/month
Door-to-door collection:	No (Number of establishments w/DTD collection: n.a.)
Waste segregation at source:	No (Quantity of recycled waste: 6 tons/month Quantity to processing/disposal facility: nil)
Waste collected/transported:	40 tons/month
Waste processing facility:	No (Total waste processed: n.a.)
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	34 tons/month

Service and Financial Data

Number of staff:	26
Service contracts:	1 - Cleaning and collection of waste
Complaints recorded:	675
Rectified:	675
Annual revenues (billed):	nil
Annual revenues (collected):	n.a.
Annual operating expenses:	Rs 25,54,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile PALAMPUR

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	93.7%
Per capita consumption[2]	176 lpcd
Non-revenue water[3]	59.5%
Consumption metering	nil
Continuity of supply	12.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	16.1%
Collection efficiency	61.9%
Complaints redressal	100%

Sewerage and Sanitation Services

Toilet coverage	98.4%
Sewerage network coverage	81.1%
Wastewater collection efficiency	35.5%
Wastewater treatment adequacy[4]	42.9%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	28.2%
Collection efficiency	78.4%
Complaints redressal	100%

Storm Drainage Management

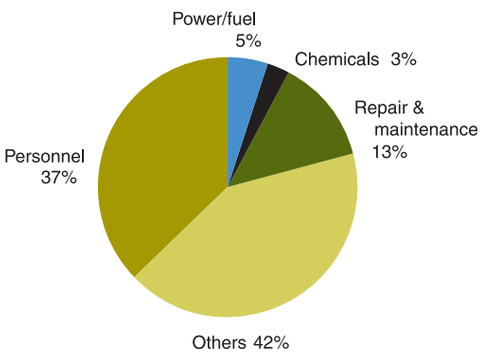
Drainage network coverage	60.5%
Incidence of water logging[5]	nil

Solid Waste Management

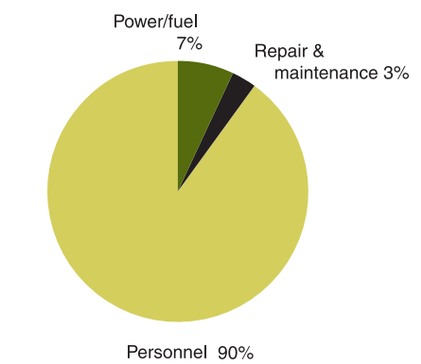
Household level coverage[6]	nil
Collection efficiency of MSW	100%
Segregation of MSW	15.0%
MSW recovery	15.0%
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	n.a.
Complaints redressal	100%

Data as of 2008–09

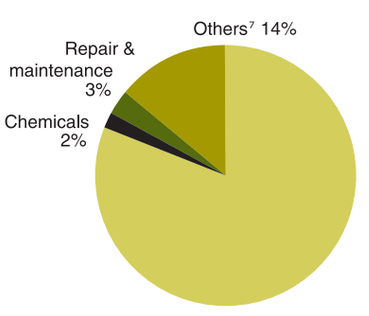
Notes:
1 Coverage is for house connections only; no data on households served by public standposts.
2 Per capita supply is 559 lpcd.
3 Production is not metered; 0.16 MLD is provided free through public standposts.
4 The ULB does not provide desludging services in the city.
5 There is no incident of water logging due to hilly terrain.
6 The ULB collects waste from specific points but not door-to-door.
7 Other costs for SWM is for contracted services.



Annual O&M Costs: Water Supply
Rs 23,11,000



Annual O&M Costs: Sewerage
Rs 3,62,000



Annual O&M Costs: Solid Waste
Rs 25,54,000

PIMPRI CHINCHWAD Utility Profile

Urban Local Body: Pimpri Chinchwad Municipal Corporation (PCMC)

Pimpri, Pune 411018, India, Telephone: (91-202) 742 5519 to 20, Fax: (91-202) 742 5600, Contact: Municipal Commissioner

Pimpri Chinchwad has a total population of 13,90,280 people of which 1,47,979 are 72 slum settlements. The present urban area of PCMC is 170.56 sq km composed of four wards. There are a total of 2,64,537 properties in Pimpri Chinchwad of which 2,19,617 are residential and 44,920 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone, e-mail and SMS. The ULB charges lower flat rate tariff per annum and only half of connection charges for water connections for the urban poor.

Water Supply

Utility Name: Pimpri Chinchwad Municipal Corporation

Number of connections:	1,11,229 (Residential: 1,07,748 Non-residential: 3,481)
Number of staff:	723 (Staff/1,000 connections: 6.5)
Production:	361.0 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	278.7 MLD (Residential: 277.3 MLD Non-residential: 1.4 MLD)
Water treatment capacity:	393.0 MLD
Treated water storage:	137.3 ML;
Distribution pipe length:	1,277 km
Average pressure:	7 meters
Number of water samples tested:	48,910
Number of samples passing test:	48,849

Service and Financial Data

Service contracts:	WTP operations
Contracted service cost:	Rs 29,00,000
Complaints received:	n.a. (Rectified: n.a.)
Leaks repaired:	1,400
Annual operating revenues:	Rs 26,95,47,000
Annual operating expenses:	Rs 65,46,39,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 1,29,84,99,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	Rs 1,276/annum for residential flats; Rs 885/annum for slum dwellers
- Cost/volume:	Metered charges to start October 2010 (Rs 2.50/m^3 for residential up to 30 m^3)

Sewerage and Sanitation

Utility Name: Pimpri Chinchwad Municipal Corporation

Properties w/access to toilets:	2,59,423
Properties connected to sewer:	1,85,025
Number of staff:	97 (Staff/1,000 connections: 0.5)
Area covered by sewerage network:	120 km^2
Wastewater produced/collected:	218.7 MLD/156.0 MLD
No. of ST Plants:	5 (Total STP capacity: 207.0 MLD)
Sewage volume treated:	156.0 MLD
Volume of treated water reused:	5.0 MLD
Number of effluent samples tested:	2,920
Number of samples passing test:	2,920

Service and Financial Data

Service contracts:	O&M for pump houses and STPs
Contracted service cost:	Rs 18,361,000
Number of sewer blockages:	5,443
Complaints recorded:	3,000 (Rectified: 3,000)
Annual operating revenues:	Rs 5,94,54,000
Annual operating expenses:	Rs 14,15,20,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 13,60,00,000
Sources of capital investments:	Government grants and loans from government and multilateral funding agencies
Tariff - Fixed cost:	4% of ratable value

Storm Water Drainage

Utility Name: Pimpri Chinchwad Municipal Corporation

Total length of drains:	120.38 km
Primary drains:	120.38 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	half-yearly
Number of flood-prone areas:	223

Service and Financial Data

Name of major flood-prone areas:	Mostly in Ward Nos. 4 and 1
Number of staff:	Maintenance by Health Department
Annual operating expenses:	n.a.
2009 capital expenditure:	nil
Sources of capital investments:	n.a.

Solid Waste Management

Utility Name: Pimpri Chinchwad Municipal Corporation

Total number of establishments:	2,64,537
Waste generation:	17,408 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,72,399
Waste segregation at source:	No (Quantity of recycled waste: 2,323 tons/month. Quantity to processing/disposal facility: n.a.
Waste collected/transported:	17,354 tons/month
Waste processing facility:	Yes (Total waste processed: 570 tons/month)
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	14,515 tons/month

Service and Financial Data

Number of staff:	2,814
Service contracts:	2 - Waste collection and transportation
Complaints recorded:	556
Rectified:	556
Annual revenues (billed):	Rs 2,35,00,000
Annual revenues (collected):	Rs 1,65,00,000
Annual operating expenses:	Rs 60,68,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 8,62,00,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	2.5% of property tax

ULB Service Profile PIMPRI CHINCHWAD

Service Level Benchmark Indicators

Water Supply

Water supply coverage[1]	81.0%
Per capita consumption[2]	246 lpcd
Non-revenue water[3]	24.3%
Consumption metering	24.0%
Continuity of supply	24.0 hours/day
Quality of water supply	24.0% samples passed
Cost recovery: water supply	24.0%
Collection efficiency	24.0%
Complaints redressal	24.0

Sewerage and Sanitation Services

Toilet coverage	100%
Sewerage network coverage	71.3%
Wastewater collection efficiency	71.3%
Wastewater treatment adequacy[4]	94.6%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	3.2%
Cost recovery: wastewater	42.0%
Collection efficiency	86.1%
Complaints redressal	100%

Storm Drainage Management

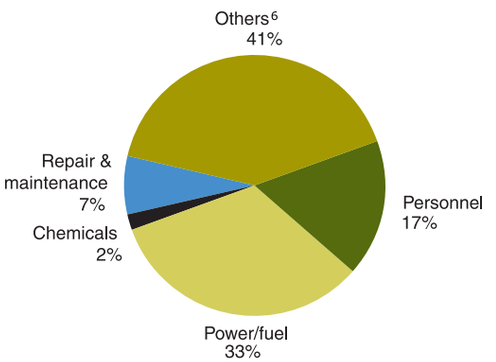
Drainage network coverage	12.4%
Incidence of water logging	16 per year

Solid Waste Management

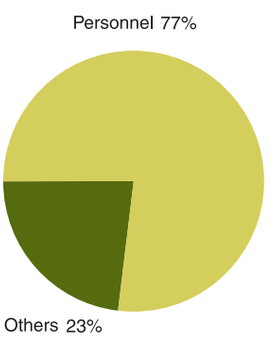
Household level coverage[5]	65.2%
Collection efficiency of MSW	99.7%
Segregation of MSW	13.4%
MSW recovery	16.6%
Scientific disposal of MSW	nil
Cost recovery: SWM	3.9%
Collection efficiency	70.2%
Complaints redressal	100%

Data as of 2008–09

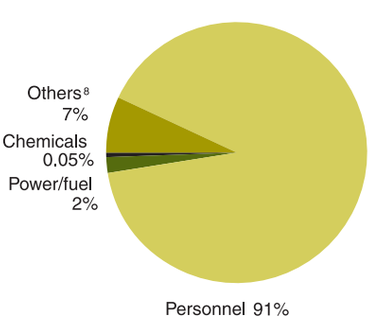
Notes:
1 Coverage is for house connections only; there is no data on households served by public standposts.
2 Per capita supply is 320 lpcd.
3 Production is fully metered; 4.3 MLD is provided free through public standposts.
4 The ULB provides desludging services through 14 desludging trucks.
5 Door-to-door waste collection services are provided by the ULB and private contractors.
6 Other costs for water supply is mostly for bulk supply and a small amount for contracted services.
7 Personnel includes power/fuel, chemicals and repairs; others is for contracted services.
8 Other costs is for contracted services.



Annual O&M Costs: Water Supply
Rs 65,46,39,000



Annual O&M Costs: Sewerage[7]
Rs 14,15,20,000



Annual O&M Costs: Solid Waste
Rs 60,68,00,000

RAIPUR Utility Profile

Urban Local Body: Raipur Municipal Corporation (RMC)

Raipur Nagar Nigam Head Office, Opposite Main Post Office, Near Jaistambh Chowk, Raipur (C.G.), India, Telephone: (91-771) 253 5780 to 253 5790, Fax: (91-771) 222 7395, Contact: Municipal Commissioner

Raipur has a total population of 10,03,832 people of which 5,16,829 are in 282 slum settlements. The present urban area of RMC is 148.04 sq km composed of 70 wards. There are a total of 2,38,726 properties in Raipur of which 2,02,426 are residential and 36,300 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone, or e-mail. The ULB has no specific policy of providing water supply, sewerage, and sanitation services to the urban poor.

Water Supply

Utility Name: Raipur Municipal Corporation

Number of connections:	44,184 (Residential: 43,723 Non-residential: 461)
Number of staff:	201 (Staff/1,000 connections: 4.5)
Production:	149.0 MLD (Source: Groundwater - 15% Surface water - 85%)
Consumption:	no data (Residential: no data Non-residential: no data)
Water treatment capacity:	149.0 MLD
Treated water storage:	90 ML
Distribution pipe length:	363 km
Average pressure:	6 meters
Number of water samples tested:	9,048
Number of samples passing test:	8,844

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	no data
Rectified:	no data
Leaks repaired:	no data
Annual operating revenues:	Rs 3,25,42,000
Annual operating expenses:	Rs 12,59,49,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed rate:	Rs 720/year domestic rate (1/2" pipe) Rs 1,800/year commercial rate (1/2" pipe)
- Cost/volume:	none

Sewerage and Sanitation

Utility Name: Raipur Municipal Corporation

Properties w/access to toilets:	6,000
Properties connected to sewer:	6,000
Number of staff:	250 (Staff/1,000 connections: 41.7)
Area covered by sewerage network:	no data
Wastewater produced/collected:	120.0 MLD
No. of ST Plants:	nil (Total STP capacity: n.a.)
Sewage volume treated:	n.a.
Volume of treated water reused:	n.a.
Number of effluent samples tested:	n.a.
Number of samples passing test:	n.a.

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	no data
Complaints recorded:	no data
Rectified:	no data
Annual operating revenues:	Rs 66,83,000
Annual operating expenses:	Rs 10,12,29,000
Debt service for the year:	Rs 45,60,000
2009 capital expenditure:	nil
Sources of capital investments:	n.a.
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Raipur Municipal Corporation

Total length of drains:	63.58 km
Primary drains:	63.28 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	half-yearly
Number of flood-prone areas:	32

Service and Financial Data

Name of major flood-prone areas:	32 areas were named
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	nil
Sources of capital investments:	n.a.

Solid Waste Management

Utility Name: Raipur Municipal Corporation

Total number of establishments:	2,38,726
Waste generation:	10,950 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 38,955)
Waste segregation at source:	No
Quantity of recycled waste:	nil (Quantity to processing/disposal facility: nil)
Waste collected/transported:	9,060 tons/month
Waste processing facility:	No
Total waste processed:	n.a
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	9,060

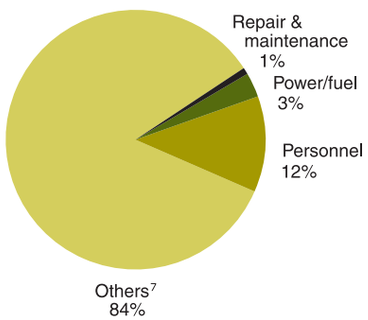
Service and Financial Data

Number of staff:	2,904
Service contracts:	nil
Complaints recorded:	432
Rectified:	432
Annual revenues (billed):	no data
Annual revenues (collected):	no data
Annual operating expenses:	Rs 15,40,81,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	n.a.
Tariffs - User charges:	no data
- Tax (solid waste):	no data

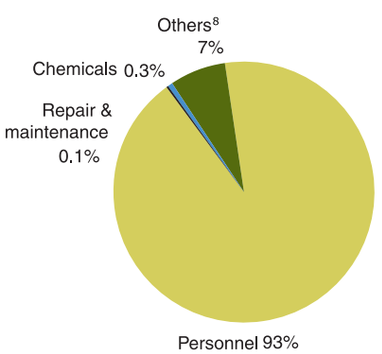
ULB Service Profile RAIPUR

Service Level Benchmark Indicators

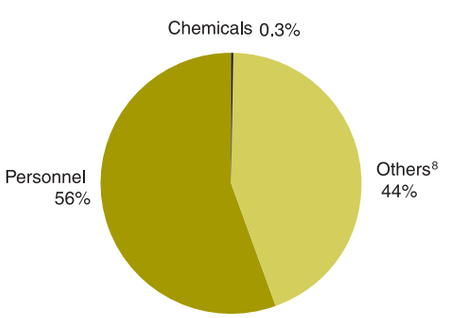
Water Supply	
Water supply coverage[1]	19.9%
Per capita consumption[2]	no data
Non-revenue water[3]	no data
Consumption metering	nil
Continuity of supply	1.5 hours/day
Quality of water supply	97.7% samples passed
Cost recovery: water supply	25.8%
Collection efficiency	no data
Complaints redressal	no data
Sewerage and Sanitation Services	
Toilet coverage	16.8%
Sewerage network coverage	16.8%
Wastewater collection efficiency	no data
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	6.6%
Collection efficiency	no data
Complaints redressal	no data
Storm Drainage Management	
Drainage network coverage	6.5%
Incidence of water logging[5]	no data
Solid Waste Management	
Household level coverage[6]	16.4%
Collection efficiency of MSW	82.7%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	no data
Collection efficiency	no data
Complaints redressal	100%
Data as of 2008–09	



Annual O&M Costs: Water Supply
Rs 12,59,49,000



Annual O&M Costs: Sewerage
Rs 10,12,29,000



Annual O&M Costs: Solid Waste
Rs 15,40,81,000

Notes:
1 Coverage is for house connections only; coverage is 45.3% if public stanposts are included.
2 No consumption data is provided. Per capita supply is 327 lpcd.
3 Production is metered; no free supplies are provided.
4 There is no sewage treatment plant; wastewater is treated in seven oxidation ponds.
5 About 32 areas were identified as water logged and flooded.
6 About 20% of door-to-door collection is done by the ULB.
7 Other cost for water supply is for bulk supply.
8 Other costs for sewerage and SWM are for contracted services.

SHIMLA Utility Profile

Urban Local Body: Shimla Municipal Corporation (SMC)

The Mall, Shimla, India, Telephone: (91-177) 280 2771 to 76 , Fax: (91-177) 280 2346, Contact: Municipal Commissioner

Shimla has a total population of 190,136 people of which 11,655 are in 52 slum settlements. The present urban area of SMC is 35.54 sq km composed of 25 wards. There are a total of 57,347 properties in Shimla of which 51,645 are residential and 5,702 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB has no specific policy for providing water supply and sanitation services for the urban poor.

Water Supply

Utility Name: Shimla Municipal Corporation

Number of connections:	23,009 (Residential: 16,314 Non-residential: 6,695)
Number of staff:	264 (Staff/1,000 connections: 11.5)
Production:	35.05 MLD (Source: Groundwater - 3% Surface water - 97%)
Consumption:	26.83 MLD (Residential: 23.33 MLD Non-residential: 3.5 MLD)
Water treatment capacity:	43.0 MLD
Treated water storage:	35.0 ML
Distribution pipe length:	200 km
Average pressure:	12 meters
Number of water samples tested:	2,244
Number of samples passing test:	2,244

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	2,000 (Rectified: 1,700)
Leaks repaired:	1,480
Annual operating revenues:	Rs 4,93,00,000
Annual operating expenses:	Rs 5,03,36,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed cost:	none
- Cost/volume:	Rs 4.25/m^3 - domestic Rs 18.15/m^3 - commercial Rs 36.00/m^3 - construction

Sewerage and Sanitation

Utility Name: Shimla Municipal Corporation

Properties w/access to toilets:	55,374
Properties connected to sewer:	42,463
Number of staff:	47 (Staff/1,000 connections: 1.1)
Area covered by sewerage network:	28 sq km
Wastewater produced/collected:	19.92 MLD/3.27 MLD
No. of ST Plants:	6 (Total STP capacity: 35.63 MLD)
Sewage volume treated:	3.27 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	no data
Number of samples passing test:	no data

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	500
Complaints recorded:	1,000 (Rectified: 1,000)
Annual operating revenues:	no data
Annual operating expenses:	Rs 1,16,00,000
Debt service for the year:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data
Tariff - Fixed cost:	no data

Storm Water Drainage

Utility Name: Shimla Municipal Corporation

Total length of drains:	42.33 km
Primary drains:	42.33 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	annually
Number of flood-prone areas:	nil

Service and Financial Data

Name of major flood-prone areas:	none
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Shimla Municipal Corporation

Total number of establishments:	57,347
Waste generation:	1,950 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 14,925)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	1,200 tons/month
Waste processing facility:	Yes (Total waste processed: 900 tons/month)
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	570 tons/month

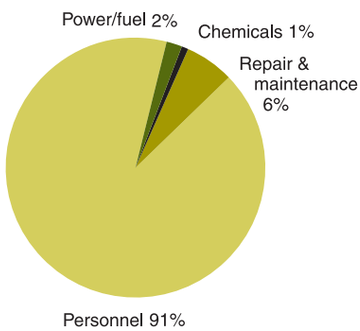
Service and Financial Data

Number of staff:	479
Service contracts:	3 - Street sweeping and O&M of B/C plant
Complaints recorded:	117
Rectified:	97
Annual revenues (billed):	nil
Annual revenues (collected):	n.a.
Annual operating expenses:	Rs 9,77,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a.
Tariffs - User charges:	nil
- Tax (solid waste):	nil

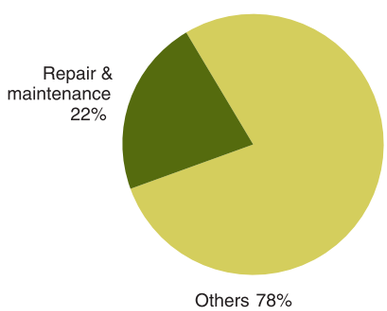
ULB Service Profile SHIMLA

Service Level Benchmark Indicators

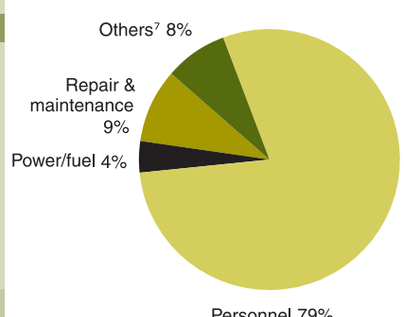
Water Supply	
Water supply coverage[1]	97.8%
Per capita consumption[2]	113 lpcd
Non-revenue water[3]	23.7%
Consumption metering	59.8%
Continuity of supply	1.5 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	97.9%
Collection efficiency	82.6%
Complaints redressal	85.0%
Sewerage and Sanitation Services	
Toilet coverage	100%
Sewerage network coverage	76.7%
Wastewater collection efficiency	16.4%
Wastewater treatment adequacy[4]	178.9%
Quality of wastewater treatment	no data
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	nil
Collection efficiency	n.a.
Complaints redressal	100%
Storm Drainage Management	
Drainage network coverage	29.4%
Incidence of water logging[5]	nil
Solid Waste Management	
Household level coverage[6]	26.0%
Collection efficiency of MSW	61.5%
Segregation of MSW	32.5%
MSW recovery	75.0%
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	n.a.
Complaints redressal	82.9%
Data as of 2008–09	



Annual O&M Costs: Water Supply
Rs 5,03,36,000



Annual O&M Costs: Sewerage
Rs 1,16,00,000



Annual O&M Costs: Solid Waste
Rs 9,77,00,000

Notes:
1 Coverage is for house connections only; coverage is 100% if public standposts are included.
2 Per capita supply is 184 lpcd.
3 No data were given on production metering; 0.08 MLD is provided free through public standposts.
4 No desludging services is provided by the ULB in the city.
5 There was no incident of water logging due to hilly terrain.
6 About 64% of door-to-door waste collection is done by NGOs/CBOs and 36% by the ULB.
7 Other costs for SWM is for contracted services.

SURAT Utility Profile

Urban Local Body: Surat Municipal Corporation (SMC)

Muglisara, Surat 395001, India, Telephone: (91-261) 242 3750, Fax: (91-261) 245 1935, Contact: Municipal Commissioner

Surat has a total population of 38,74,185 people of which 3,95,955 are in 406 slum settlements. The present urban area of SMC is 326.5 sq km composed of 88 wards. There are a total of 10,29,538 properties in Surat of which 8,60,930 are residential and 1,68,608 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, telephone and e-mail. The ULB has a policy of providing water supply and sanitation services to the urban poor through its BSUP policy.

Water Supply

Utility Name: Surat Municipal Corporation

Number of connections:	3,49,675 (Residential: 3,48,282 Non-residential: 1,393)
Number of staff:	860 (Staff/1,000 connections: 2.5)
Production:	692 MLD (Source: Groundwater - 2% Surface water - 98%)
Consumption:	554.1 MLD (Residential: 493.1 MLD Non-residential: 61.0 MLD)
Water treatment capacity:	1,200 MLD
Treated water storage:	596.85 ML
Distribution pipe length:	2,550 km
Average pressure:	3 meters
Number of water samples tested:	3,84,745
Number of samples passing test:	3,84,560

Service and Financial Data

Service contracts:	O&M for WTPs and labour for water sampling, leak repair and valve operations
Contracted service cost:	Rs 2,03,79,073
Complaints received:	6,831 (Rectified: 6,477)
Leaks repaired:	6,419
Annual operating revenues:	Rs 64,19,86,000
Annual operating expenses:	Rs 69,57,83,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 1,04,01,60,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Surat Municipal Corporation

Properties w/access to toilets:	10,78,789
Properties connected to sewer:	8,47,788
Number of staff:	1,473 (Staff/1,000 connections: 3.7)
Area covered by sewerage network:	120 km^2
Wastewater produced/collected:	555.23 MLD/508.0 MLD
No. of ST Plants:	6 (Total STP capacity: 602.5 MLD)
Sewage volume treated:	508.0 MLD
Volume of treated water reused:	3 MLD
Number of effluent samples tested:	4,085
Number of samples passing test:	3,637

Service and Financial Data

Service contracts:	O&M of 6 STPs
Contracted service cost:	Rs 6,59,53,600
Number of sewer blockages:	1,37,388
Complaints recorded:	1,37,388 (Rectified: 1,36,461)
Annual operating revenues:	Rs 14,81,75,000
Annual operating expenses:	Rs 39,72,82,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 92,14,74,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data

Storm Water Drainage

Utility Name: Surat Municipal Corporation

Total length of drains:	455.69 km
Primary drains:	164.01 km
Secondary drains:	139.17 km
Tertiary drains:	152.51 km
Frequency of desilting of drains:	half-yearly
Number of flood-prone areas:	76

Service and Financial Data

Name of major flood-prone areas:	Mostly in the wards of the West, South-west and South Zones
Number of staff:	339
Annual operating expenses:	Rs 1,65,83,000
2009 capital expenditure:	Rs 89,37,41,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Surat Municipal Corporation

Total number of establishments:	10,29,538
Waste generation:	46,200 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 9,29,519)
Waste segregation at source:	No (Quantity of recycled waste: 5,303 tons/month. Quantity to processing/disposal facility: n.a)
Waste collected/transported:	40,463 tons/month
Waste processing facility:	Yes
Total waste processed:	7,838 tons/month
Number of waste disposal facilities:	2
Compliant landfills:	1
Waste quantity:	250 tons/month
Open dumpsites:	1
Waste quantity:	32,625 tons/month

Service and Financial Data

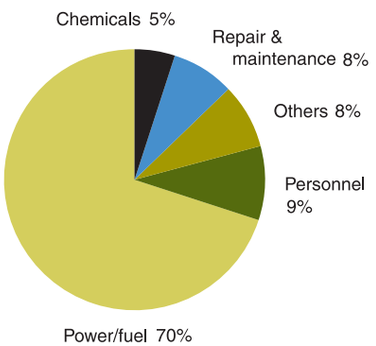
Number of staff:	5,988
Service contracts:	4 - DTD collection, container lifting and secondary transport, and tractors for garbage lifting
Complaints recorded:	19,741 (Rectified: 19,741)
Annual revenues (billed):	Rs 31,83,00,000
Annual revenues (collected):	Rs 27,12,00,000
Annual operating expenses:	Rs 38,36,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 8,62,02,000
Sources of capital investments:	Government grants
Tariffs - User charges:	Slums and commercial establishment - Rs 20/month Others - Rs 40/month
- Tax (solid waste):	Residential - Rs 20/month

ULB Service Profile SURAT

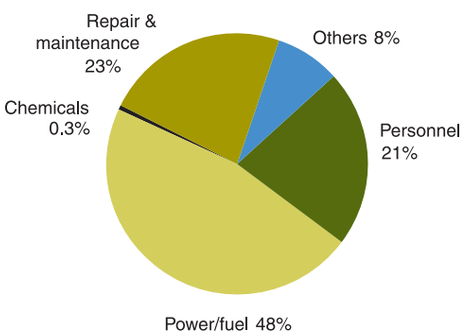
Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	86.6%
Per capita consumption[2]	147 lpcd
Non-revenue water[3]	20.4%
Consumption metering	0.4%
Continuity of supply	3.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	92.3%
Collection efficiency	93.9%
Complaints redressal	94.8%
Sewerage and Sanitation Services	
Toilet coverage	94.8%
Sewerage network coverage	74.5%
Wastewater collection efficiency	91.5%
Wastewater treatment adequacy[4]	108.5%
Quality of wastewater treatment	89.0%
Reuse and recycling of treated wastewater	0.6%
Cost recovery: wastewater	37.3%
Collection efficiency	78.7%
Complaints redressal	99.3%
Storm Drainage Management	
Drainage network coverage	44.1%
Incidence of water logging	239 per year
Solid Waste Management	
Household level coverage[5]	90.3%
Collection efficiency of MSW	87.6%
Segregation of MSW	13.1%
MSW recovery	19.4%
Scientific disposal of MSW	0.8%
Cost recovery: SWM	83.0%
Collection efficiency	85.2%
Complaints redressal	100%
Data as of 2008–09	

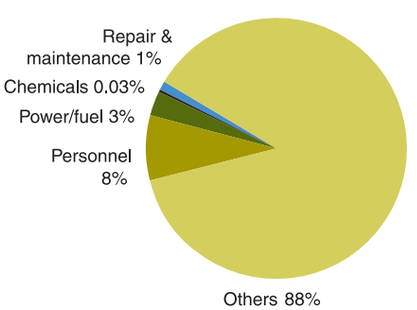
Notes:
1 Coverage is for house connections only; coverage is 95.9% if public standposts are included.
2 Per capita supply is 187 lpcd; this does not include households served by tankers.
3 Production is partly metered; 3 MLD is provided free through public standposts.
4 The ULB provides desludging services through 45 desludging trucks.
5 Septic tank desludging services is totally provided through private contractors.
6 Annual O&M costs for water supply, sewerage and SWM do not include depreciation.
7 Other costs for water supply and SWM include contracted services costs.



Annual O&M Costs: Water Supply[6]
Rs 54,80,41,000



Annual O&M Costs: Sewerage[6]
Rs 25,00,70,000



Annual O&M Costs: Solid Waste[6]
Rs 37,84,00,000

TIRUCHIRAPALLI Utility Profile

Urban Local Body: Tiruchirapalli City Corporation

69, Bharathidasan Salai, Cantonment, Tiruchirapalli, India, Telephone: (91-431) 241 5393 to 241 5396, Fax: (91-431) 241 5329, Contact: Commissioner

Tiruchirapalli has a total population of 8,21,377 people of which 1,77,089 are in 286 slum settlements. The present urban area of TMC is 146.9 sq km composed of 60 wards. There are a total of 1,92,403 properties in Tiruchirapalli of which 1,78,973 are residential and 13,430 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person and on telephone. The ULB has a policy of providing water supply and sanitation services to the urban poor through the shelter upgrading work under IHSDP.

Water Supply

Utility Name: Tiruchirapalli City Corporation

Number of connections:	82,845 (Residential: 81,323 Non-residential: 1,522)
Number of staff:	1,397 (122 common with sewerage)
Staff/1,000 connections:	16.9 (Production: 92.45 MLD Source: Groundwater - nil Surface water - 100%)
Consumption:	62.37 MLD (Residential: 47.41 MLD Non-residential: 14.96 MLD)
Water treatment capacity:	94 MLD
Treated water storage:	42.29 ML
Distribution pipe length:	610.10 km
Average pressure:	1 meter
Number of water samples tested:	48
Number of samples passing test:	48

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	1,944 (Rectified: 1,944)
Leaks repaired:	2,763
Annual operating revenues:	Rs 20,35,11,000
Annual operating expenses:	Rs 10,31,03,000
Debt service for the year:	Rs 5,11,33,000
2009 capital expenditure:	Rs 2,76,85,000
Sources of capital investments:	Own revenue
Tariff - Fixed cost:	Rs 85-Rs 100/month - domestic/institutional;
- Cost/volume:	Rs 8/m^3 - domestic/ institutional; Rs 25/m^3 - commercial/industrial

Sewerage and Sanitation

Utility Name: Tiruchirapalli City Corporation

Properties w/access to toilets:	1,75,924
Properties connected to sewer:	44,289
Number of staff:	160 (Staff/1,000 connections: 3.6)
Area covered by sewerage network:	36.4 km^2
Wastewater produced/collected:	83.14 MLD/56.0 MLD
No. of ST Plants:	1 (Total STP capacity: 56.0 MLD)
Sewage volume treated:	56.0 MLD (primary treatment only)
Volume of treated water reused :	nil
Number of effluent samples tested:	12
Number of samples passing test:	12

Service and Financial Data

Service contracts:	UGD pumping stations operations
Contracted service cost:	Rs 10,08,000
Number of sewer blockages:	2,564
Complaints recorded:	2,587 (Rectified: 2,587)
Annual operating revenues:	Merged with water supply
Annual operating expenses:	Rs 85,27,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 1,00,00,000
Sources of capital investments:	no data
Tariff - Fixed cost:	Rs 30/month for domestic Rs 50/month/WC for non-domestic

Storm Water Drainage

Utility Name: Tiruchirapalli City Corporation

Total length of drains:	615.26 km
Primary drains:	119.42 km
Secondary drains:	219.44 km
Tertiary drains:	276.40 km
Frequency of desilting of drains:	quarterly
Number of flood-prone areas:	88

Service and Financial Data

Name of major flood-prone areas:	Mostly in Abhishekapuram Golden Rock and Srirangan
Number of staff:	Common staff with water and sewerage
Annual operating expenses:	Rs 5,62,000
2009 capital expenditure:	Rs 6,68,53,000
Sources of capital investments:	Own revenues

Solid Waste Management

Utility Name: Tiruchirapalli City Corporation

Total number of establishments:	1,92,403
Waste generation:	12,465 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,55,833)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	11,790 tons/month
Waste processing facility:	No (Total waste processed: n.a.)
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	11,790 tons/month

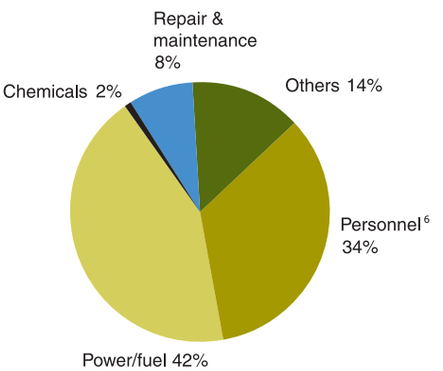
Service and Financial Data

Number of staff:	2,035
Service contracts:	1 - Primary collection
Complaints recorded:	3,927 (Rectified: 3,777)
Annual revenues (billed):	Rs 2,23,000
Annual revenues (collected):	nil
Annual operating expenses:	Rs 20,04,00,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	Commercial establishment - variable averaging Rs 1,678.50/month
- Tax (solid waste):	nil

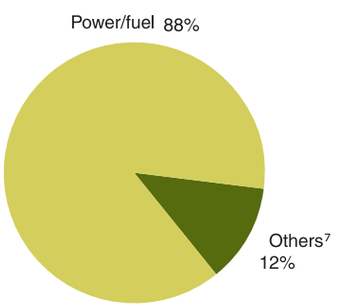
ULB Service Profile TIRUCHIRAPALLI

Service Level Benchmark Indicators

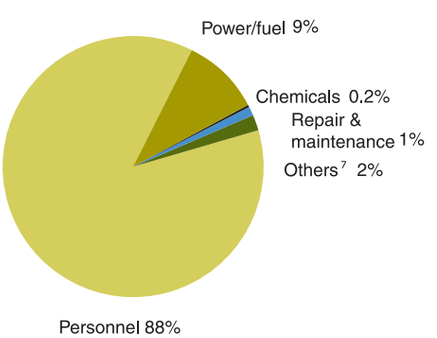
Water Supply	
Water supply coverage[1]	41.7%
Per capita consumption[2]	79 lpcd
Non-revenue water[3]	37.1%
Consumption metering	37.6%
Continuity of supply	2.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	197.4%
Collection efficiency	57.6%
Complaints redressal	100%
Sewerage and Sanitation Services	
Toilet coverage	87.9%
Sewerage network coverage	22.1%
Wastewater collection efficiency	67.4%
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	no data
Collection efficiency	no data
Complaints redressal	100%
Storm Drainage Management	
Drainage network coverage	12.0%
Incidence of water logging	175 per year
Solid Waste Management	
Household level coverage[5]	81.0%
Collection efficiency of MSW	94.6%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	0.1%
Collection efficiency	nil
Complaints redressal	96.2%
Data as of 2008–09	



Annual O&M Costs: Water Supply
Rs 10,31,03,000



Annual O&M Costs: Sewerage[1]
Rs 85,27,000



Annual O&M Costs: Solid Waste
Rs 20,04,00,000

Notes:
1 Coverage is for house connections only; coverage is 71.3% if public taps are included.
2 Per capita supply is 158 lpcd; does not include households using handpumps and tanker delivery.
3 Production is fully metered; 4.2 MLD is provided free through public standposts.
4 Desludging of septic tanks is done through 10 ULB and six private contractor desludging trucks.
5 About 81% of door-to-door waste collection is done by the ULB.
6 Personnel cost for water is combined cost with sewerage and drainage services.
7 Other costs for sewerage and SWM include cost of contracted services.

TRIVANDRUM Utility Profile

Urban Local Body: Municipal Corporation Trivandrum

Vikas Bhawan, PO Trivandrum Corporation, Trivandrum, India, Telephone: (91-471) 232 0821, Fax: (91-471) 233 2083, Contact: Mayor

Trivandrum has a total population of 9,52,833 people of which 14,014 are in 35 slum settlements. The Kerala Water Authority provides water supply and sewerage services. The present urban area of MCT is 142 sq km composed of 86 wards. There are a total of 2,46,471 properties in Trivandrum of which 2,33,888 are residential and 12,583 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person, or telephone. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Kerala Water Authority

Number of connections:	1,81,639 (Residential: 1,62,743 Non-residential: 18,896)
Number of staff:	323 (Staff/1,000 connections: 1.8)
Production:	225 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	184.1 MLD (Residential: 91.7 MLD Non-residential: 92.4 MLD)
Water treatment capacity:	225.0 MLD
Treated water storage:	59.4 ML
Distribution pipe length:	2,280 km
Average pressure:	4 - 7 meters
Number of water samples tested:	4,800
Number of samples passing test:	3,696

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	1,138 (Rectified: 1,138)
Leaks repaired:	15,002
Annual operating revenues:	Rs 72,85,50,000
Annual operating expenses:	Rs 32,69,85,000
Debt service for the year:	Rs 74,73,00,000
2009 capital expenditure:	Rs 10,95,00,00,000
Sources of capital investments:	Government grants and loans from Government and public banks
Tariff - Fixed rate:	Rs 20/month for domestic, Rs 125/month for non-domestic
- Cost/volume:	Rs 4-5/m^3 for domestic/ non-domestic

Sewerage and Sanitation

Utility Name: Kerala Water Authority

Properties w/access to toilets:	2,08,321
Properties connected to sewer:	1,43,427
Number of staff:	534 (Staff/1,000 connections: 3.7)
Area covered by sewerage network:	50.3 km^2
Wastewater produced/collected:	147.01 MLD/nil
No. of ST Plants:	1 (Total STP capacity: 107 MLD)
Sewage volume treated:	nil (STP under construction)
Volume of treated water reused:	nil
Number of effluent samples tested:	nil
Number of samples passing test:	nil

Service and Financial Data

Service contracts:	Annual sewer lines maintenance
Contracted service cost:	Rs 64,17,000
Number of sewer blockages:	12,078
Complaints recorded:	12,078 (Rectified: 12,078)
Annual operating revenues:	nil (with water supply)
Annual operating expenses:	Rs 9,15,91,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 9,15,91,000
Sources of capital investments:	Government grants
Tariff - Fixed rate:	no data

Storm Water Drainage

Utility Name: Trivandrum Municipal Corporation

Total length of drains:	698.92 km
Primary drains:	698.92 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	no data
Number of flood-prone areas:	6

Service and Financial Data

Name of major flood-prone areas:	Thampanoor, East Fort, Chenghalchola, Karumadom, Barton Hill and Kannamoola
Number of staff:	no data
Annual operating expenses:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Trivandrum Municipal Corporation

Total number of establishments:	2,46,471
Waste generation:	12,205 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 1,05,844)
Waste segregation at source:	Yes (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	6,645 tons/month
Waste processing facility:	Yes
Total waste processed:	1,994 tons/month
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	4,651 tons/month

Service and Financial Data

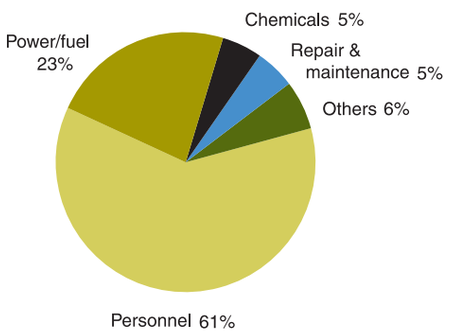
Number of staff:	963
Service contracts:	1 - Waste processing
Complaints recorded:	1,500
Rectified:	1,500
Annual revenues (billed):	nil
Annual revenues (collected):	nil
Annual operating expenses:	Rs 18,77,42,000
Debt service for the year:	nil
2009 capital expenditure:	nil
Sources of capital investments:	n.a
Tariffs - User charges:	Residential - Rs 40/month Commercial - Rs 9,000 to Rs 15,000 per month
- Tax (solid waste):	nil

ULB Service Profile TRIVANDRUM

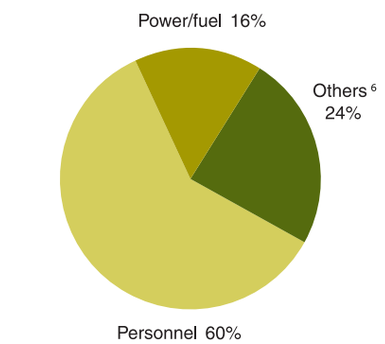
Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	68.3%
Per capita consumption[2]	125 lpcd
Non-revenue water[3]	18.2%
Consumption metering	81.4%
Continuity of supply	18.0 hours/day
Quality of water supply	77.0% samples passed
Cost recovery: water supply	222.8%
Collection efficiency	35.1%
Complaints redressal	100%
Sewerage and Sanitation Services	
Toilet coverage	95.4%
Sewerage network coverage	65.7%
Wastewater collection efficiency	nil
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	n.a.
Reuse and recycling of treated wastewater	no data
Cost recovery: wastewater	no data
Collection efficiency	no data
Complaints redressal	100%
Storm Drainage Management	
Drainage network coverage	56.3%
Incidence of water logging	12 per year
Solid Waste Management	
Household level coverage[5]	42.9%
Collection efficiency of MSW	54.4%
Segregation of MSW	64.9%
MSW recovery	30.0%
Scientific disposal of MSW	nil
Cost recovery: SWM	nil
Collection efficiency	n.a.
Complaints redressal	100%
Data as of 2008–09	

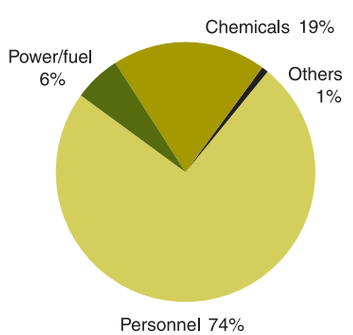
Notes:
1 Coverage is for house connections only; coverage is 69.6% if public standposts are included.
2 Per capita supply is 339 lpcd; does not include households served through tanker delivery.
3 No data were given for production metering; no free supplies are provided.
4 Sewage treatment plant is under construction; the ULB has only one desludging truck.
5 About 59% of door-to-door waste collection is done by NGOs/CBOs and 2% by private contractors.
6 Most of the other costs for sewerage is for contracted services.



Annual O&M Costs: Water Supply
Rs 32,69,85,000



Annual O&M Costs: Sewerage
Rs 9,15,91,000



Annual O&M Costs: Solid Waste
Rs 18,77,42,000

UDHAGAMANDALAM Utility Profile

Urban Local Body: Udhagamandalam Municipality (UM)

92/81 Commissioner's Road, Udhagamandalam 643001, India, Telephone: (91-423) 222 3242, Fax: (91-423) 222 3242, Contact: Commissioner

Udhagamandalam has a total population of 1,03,800 people of which 24,396 are in 36 slum settlements. The present urban area of UM is 30.67 sq km composed of 36 wards. There are a total of 20,270 properties in Udhagamandalam of which 17,720 are residential and 2,550 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person and telephone. The ULB provides water supply and sanitation services to the urban poor through its major slum improvement programs.

Water Supply

Utility Name: Udhagamandalam Municipality

Number of connections:	10,104 (Residential: 9,539 Non-residential: 565)
Number of staff:	32 (Staff/1,000 connections: 3.2)
Production:	10.35 MLD (Source: Groundwater - nil Surface water - 100%)
Consumption:	6.17 MLD (Residential: 4.54 MLD Non-residential: 1.62 MLD)
Water treatment capacity:	14 MLD
Treated water storage:	3.8 ML
Distribution pipe length:	94.6 km
Average pressure:	23 meters
Number of water samples tested:	36
Number of samples passing test:	36

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	1,440
Rectified:	1,056
Leaks repaired:	5,400
Annual operating revenues:	Rs 98,97,000
Annual operating expenses:	Rs 3,59,78,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 15,00,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data
- Cost/volume:	no data

Sewerage and Sanitation

Utility Name: Udhagamandalam Municipality

Properties w/access to toilets:	8,879
Properties connected to sewer:	7,224
Number of staff:	38 (Staff/1,000 connections: 5.3)
Area covered by sewerage network:	12.95 sq km
Wastewater produced/collected:	4.01 MLD/ 2.5 MLD
No. of ST Plants:	1 (Total STP capacity: 5 MLD)
Sewage volume treated:	2.50 MLD (primary treatment only)
Volume of treated water reused:	nil
Number of effluent samples tested:	4
Number of samples passing test:	4

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	1,300
Complaints recorded:	315 (Rectified: 315)
Annual operating revenues:	Rs 6,09,000
Annual operating expenses:	Rs 1,42,87,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 5,72,00,000
Sources of capital investments:	Government grants and loans from multilateral funding agencies
Tariff - Fixed cost:	Rs 20/month - domestic Rs 100/month - non-domestic

Storm Water Drainage

Utility Name: Udhagamandalam Municipality

Total length of drains:	no data
Primary drains:	no data
Secondary drains:	no data
Tertiary drains:	no data
Frequency of desilting of drains:	annually
Number of flood-prone areas:	4

Service and Financial Data

Name of major flood-prone areas:	Koddapamand, Kelso Lane, Green Fields and Agragaram
Number of staff:	37
Annual operating expenses:	no data
2009 capital expenditure:	no data
Sources of capital investments:	no data

Solid Waste Management

Utility Name: Udhagamandalam Municipality

Total number of establishments:	20,270
Waste generation:	1,289 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 4,468)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	1,155 tons/month
Waste processing facility:	No
Total waste processed:	n.a.
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	1,155 tons/month

Service and Financial Data

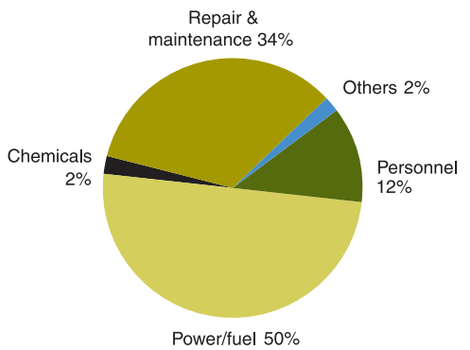
Number of staff:	300
Service contracts:	2 - Private scavenging (tourist and market places)
Complaints recorded:	556
Rectified:	556
Annual revenues (billed):	Rs 8,00,000
Annual revenues (collected):	nil
Annual operating expenses:	Rs 4,14,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 12,50,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	nil

ULB Service Profile UDHAGAMANDALAM

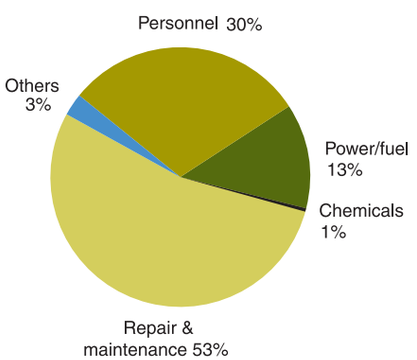
Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	51.5%
Per capita consumption[2]	71 lpcd
Non-revenue water[3]	44.0%
Consumption metering	87.2%
Continuity of supply	4.0 hours/day
Quality of water supply	100% samples passed
Cost recovery: water supply	27.5%
Collection efficiency	77.6%
Complaints redressal	73.3%
Sewerage and Sanitation Services	
Toilet coverage	100%
Sewerage network coverage	81.4%
Wastewater collection efficiency	61.0%
Wastewater treatment adequacy[4]	nil
Quality of wastewater treatment	no data
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	4.3%
Collection efficiency	18.7%
Complaints redressal	100%
Storm Drainage Management	
Drainage network coverage	no data
Incidence of water logging	4 per year
Solid Waste Management	
Household level coverage[5]	22.0%
Collection efficiency of MSW	89.6%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	1.9%
Collection efficiency	no data
Complaints redressal	100%
Data as of 2008–09	

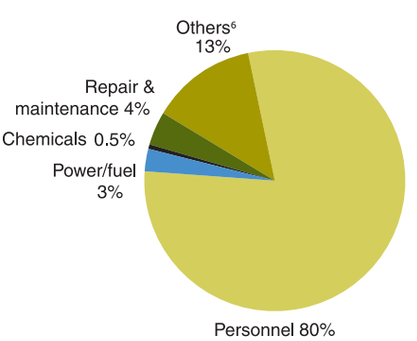
Notes:
1 Coverage is for house connections only; coverage is 61.5% if public standposts are included.
2 Per capita supply is 162 lpcd.
3 Production is not fully metered; 0.38 MLD is provided free through public standposts.
4 Only primary treatment is provided; the ULB has only one desludging truck.
5 The ULB provides 21% door-to-door waste collection.
6 Other costs for SWM is for contracted services.



Annual O&M Costs: Water Supply
Rs 3,59,78,000



Annual O&M Costs: Sewerage
Rs 1,42,87,000



Annual O&M Costs: Solid Waste
Rs 4,14,00,000

UJJAIN Utility Profile

Urban Local Body: Ujjain Municipal Corporation (UMC)

Chhatrapati Shivaji Bhavan Agar Road Ujjain, India, Telephone: (91-734) 253 5205, Fax: (91-734) 253 5200, Contact: Municipal Commissioner

Ujjain has a total population of 4,32,860 people of which 79,425 are in 129 slum settlements. The present urban area of UMC is 92.7 sq km composed of 54 wards. There are a total of 82,800 properties in Ujjain of which 70,189 are residential and 12,611 are non-residential. The ULB has a redressal system and complaints can be made through letter, in person and telephone. The ULB has no specific policy of providing water supply, sewerage and sanitation services to the urban poor.

Water Supply

Utility Name: Ujjain Municipal Corporation

Number of connections:	52,281 (Residential: 51,865 Non-residential: 416)
Number of staff:	988 (Staff/1,000 connections: 18.9)
Production:	72.84 MLD (Source: Groundwater - 1% Surface water - 99%)
Consumption:	41.33 MLD (Residential: 36.08 MLD Non-residential: 5.25 MLD)
Water treatment capacity:	115.75 MLD
Treated water storage:	3,109.9 ML
Distribution pipe length:	600 km
Average pressure:	15 meters
Number of water samples tested:	1,994
Number of samples passing test:	1,994

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Complaints received:	1,800 (Rectified: 1,800)
Leaks repaired:	1,936
Annual operating revenues:	Rs 4,41,57,000
Annual operating expenses:	Rs 15,78,88,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 2,43,83,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	Rs 60/month - domestic (8 mm ferul) Rs 600/month - commercial (8 mm ferul)
- Cost/volume:	Rs 2.00/m^3 - domestic Rs 20/m^3 - commercial

Sewerage and Sanitation

Utility Name: Ujjain Municipal Corporation

Properties w/access to toilets:	92,424
Properties connected to sewer:	no data
Number of staff:	163 (Staff/1,000 connections: n.a.)
Area covered by sewerage network:	n.a.
Wastewater produced/collected:	60.28 MLD/52.74 MLD
No. of ST Plants:	1 (Total STP capacity: 52.74 MLD)
Sewage volume treated:	52.74 MLD
Volume of treated water reused:	nil
Number of effluent samples tested:	48
Number of samples passing test:	48

Service and Financial Data

Service contracts:	none
Contracted service cost:	nil
Number of sewer blockages:	60
Complaints recorded:	174 (Rectified: 174)
Annual operating revenues:	nil
Annual operating expenses:	Rs 3,55,80,000
Debt service for the year:	no data
2009 capital expenditure:	Rs 1,65,00,000
Sources of capital investments:	Government grants
Tariff - Fixed cost:	no data

Storm Water Drainage

Utility Name: Ujjain Municipal Corporation

Total length of drains:	73.17 km
Primary drains:	73.17 km
Secondary drains:	nil
Tertiary drains:	nil
Frequency of desilting of drains:	half-yearly
Number of flood-prone areas:	9

Service and Financial Data

Name of major flood-prone areas:	9 areas are listed
Number of staff:	163
Annual operating expenses:	Rs 2,37,00,000
2009 capital expenditure:	Rs 2,15,00,000
Sources of capital investments:	Government grants

Solid Waste Management

Utility Name: Ujjain Municipal Corporation

Total number of establishments:	82,800
Waste generation:	6,662 tons/month
Door-to-door collection:	Yes (Number of establishments w/DTD collection: 5,000)
Waste segregation at source:	No (Quantity of recycled waste: nil Quantity to processing/disposal facility: nil)
Waste collected/transported:	4,800 tons/month
Waste processing facility:	No (Total waste processed: n.a.)
Number of waste disposal facilities:	1
Compliant landfills:	nil
Waste quantity:	n.a.
Open dumpsites:	1
Waste quantity:	4,800 tons/month

Service and Financial Data

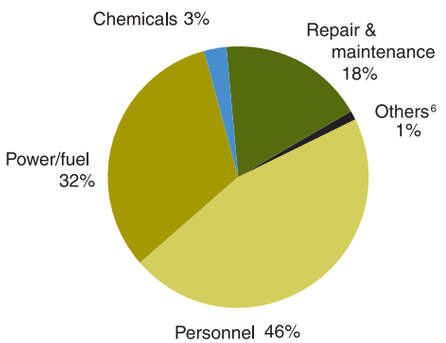
Number of staff:	1,263
Service contracts:	nil
Complaints recorded:	2,460
Rectified:	2,460
Annual revenues (billed):	Rs 88,00,000
Annual revenues (collected):	Rs 27,00,000
Annual operating expenses:	Rs 9,19,00,000
Debt service for the year:	nil
2009 capital expenditure:	Rs 23,00,000
Sources of capital investments:	Government grants
Tariffs - User charges:	nil
- Tax (solid waste):	Rs 5/month through property tax

ULB Service Profile UJJAIN

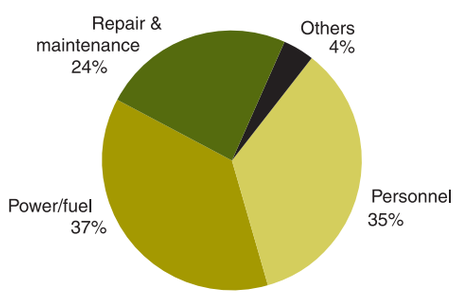
Service Level Benchmark Indicators

Water Supply	
Water supply coverage[1]	50.0%
Per capita consumption[2]	96 lpcd
Non-revenue water[3]	50.5%
Consumption metering	4.3%
Continuity of supply	1.0 hour/day
Quality of water supply	100% samples passed
Cost recovery: water supply	28.0%
Collection efficiency	65.5%
Complaints redressal	100%
Sewerage and Sanitation Services	
Toilet coverage	92.9%
Sewerage network coverage	nil
Wastewater collection efficiency	n.a.
Wastewater treatment adequacy[4]	87.5%
Quality of wastewater treatment	100%
Reuse and recycling of treated wastewater	nil
Cost recovery: wastewater	nil
Collection efficiency	n.a.
Complaints redressal	100%
Storm Drainage Management	
Drainage network coverage	19.4%
Incidence of water logging	12 per year
Solid Waste Management	
Household level coverage[5]	6.0%
Collection efficiency of MSW	72.1%
Segregation of MSW	nil
MSW recovery	nil
Scientific disposal of MSW	nil
Cost recovery: SWM	9.6%
Collection efficiency	30.2%
Complaints redressal	100%
Data as of 2008–09	

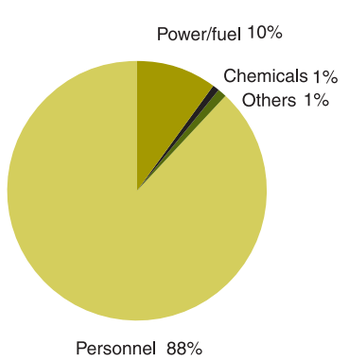
Notes:
1 Coverage is for house connections only; coverage is 75.4% if public standposts are included.
2 Per capita supply is 196 lpcd; does not include households served by handpumps and tankers.
3 Production is not metered; 5.24 MLD is provided free through public standposts.
4 The ULB has two desludging trucks.
5 About 20% door-to-door waste collection is done by RWAs.
6 Other costs for water supply includes cost for raw water.



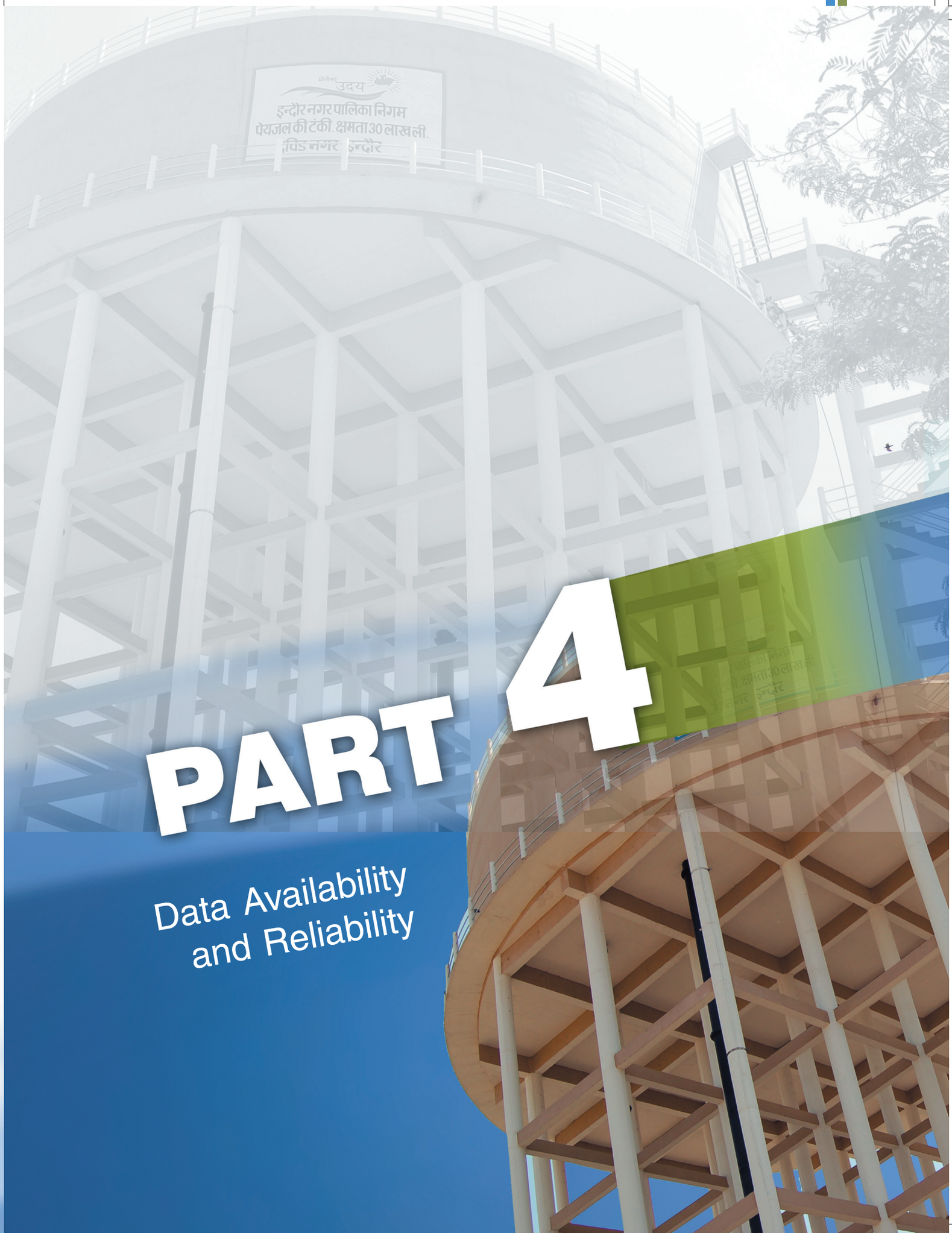
Annual O&M Costs: Water Supply
Rs 15,78,88,000



Annual O&M Costs: Sewerage
Rs 3,55,80,000



Annual O&M Costs: Solid Waste
Rs 9,19,31,000



PART 4

Data Availability and Reliability

Background

The SLB programme initiated by the MoUD in the last two years has included monitoring of water supply, sewerage, drainage and SWM services. The aim of benchmarking is to promote sustainable performance improvement in these sectors in the urban areas.

However, a fundamental challenge in benchmarking is the issue of data availability and reliability. Data inadequacies could result from lack of appropriate infrastructure and systems to measure and record data. The utility staff should also have the motivation to collect the required data and maintain a database on a regular basis for any benchmarking programme to become successful and sustainable.

For instance, in the case of water supply services, measurement infrastructure could include production meters for measuring production coming from wells or surface water sources, consumer meters to measure consumption at each connection, district meters to measure water released within a water distribution network area. It could also include handheld computers for recording readings of water meters of connected consumers.

Computers for data input and management would also be required, especially in sizeable systems with a large number of connections, for ease in data processing and analysis. These would be required for recording financial transactions such as billing and collection, operation and maintenance and capital costs incurred. In SWM systems, such infrastructure would include weighbridges.

Service Level Benchmarking Indicators and Measurements

The Handbook on SLB developed by the MoUD provides a standardised framework for performance monitoring with respect to water supply, sewerage, solid waste management services and storm water drainage. Apart from the definition for each of the SLB indicators, the Handbook specifies a system of rating the reliability of measurements for each of the indicators. The reliability scale incorporates the following grading system:

A: Highest/preferred level of reliability using accurate measurements of values.

B: Intermediate level using estimates of parameter values required.

C: Intermediate level using less accurate estimates of parameter values.

D: Lowest level of reliability using surrogate parameters or least reliable estimates.

The reliability scale associated with each SLB indicator is defined in the Handbook in terms of availability and accuracy of measurements, frequency of collection and recording of the parameters that define the indicator. The rating has nothing to do with the indicator value itself (whether it is high or low) but only on the reliability of the value given.

Reliability of SLB Indicators

Table 5 (a–d) shows SLB indicator values for each of the ULBs that participated in the benchmarking programme with the corresponding reliability rating for the indicators. The ratings are important to allow the reader, who will use the SLB indicators, to make a judgment on how to use a particular indicator value given its reliability rating.

In the following section a brief discussion is provided on the reliability of the indicator values for each SLB indicator. This will help provide insights on underlying issues and strategies for improving the reliability and availability of the performance data, whether this is in the form of placing measurement devices, putting up a system of recording and storing measurement information in data systems for easy retrieval and use, or for improving the skills of utility staff in measuring, recording and storing this information.

Water Supply Indicators

Water supply coverage

This indicator is determined by the number of households connected directly to the piped water supply system and the total number of households in the area served by the water utility.

Only three utilities have a reliability rating of A where calculations were based on actual number of households with direct service connections and total number of households are based on ground level surveys. Most of the utilities (21) were rated B where total number of households are estimated using total population. Of the rest, three utilities were rated D while one utility was not rated. This suggests that most of the utilities are estimating households covered as the number of house connections and the total households from population in the service area and average household size. The only way to improve data reliability is to determine the actual coverage through a survey that can be done by the billing sections of utilities.

Per capita consumption

This is total water supplied to consumers expressed by population served per day.

Two utilities were rated A where the total water consumed is based on metered consumption and population served is known with reasonable accuracy. Two utilities were rated B where consumption is not based on total metering. Eight utilities were rated C where consumption is estimated from periodic measurements in sample surveys and population was based on extrapolation from past census figures. Fifteen utilities were rated D where consumption figures are based on estimates of production figures and assumed losses and population from past census figures. One utility was not rated since no data were provided. The 26 utilities with less than A rating could start with estimating consumption through periodic sample surveys of consumption in a representative sample size of residential costumers if total consumption metering is not immediately possible. Population figures can be extrapolated using past Census figures.

Non-revenue water (NRW)

This indicator highlights the extent of water produced that does not earn the utility any revenue. It is computed as the difference between the total water produced and the total water sold expressed as a percentage of the total water produced.

Only two utilities were rated A where both production and consumption are based on metered measurements. Eight utilities were rated B where only bulk and commercial supplies and production are metered. Three utilities were rated C where production is estimated based on periodic measurements and limited number of connections are metered. Fourteen utilities were rated D where well production is estimated based on pump capacity and efficiency and number of operating hours, and few connections are metered. One utility was not rated since no data were provided. Only 10 utilities claimed full metering of production; none of the utilities have 100 per cent consumption metering. The 26 utilities with less than A rating can start improving reliability of NRW with periodic estimates of production and surveys of household consumptions based on ferrule size. In the absence of full metering, periodic consumption measurements in a representative number of connections per category can be made, which can be the basis for estimating and averaging consumption per category of consumers.

Extent of metering of water connections

This indicator is expressed as the total number of functional metered water connections expressed as a percentage of the total number of water supply connections including public standpost connections.

Six utilities were rated A where billing records and databases clearly identify consumers with meters that are regularly read and checked for accuracy. Twelve utilities were rated B where there is a list of consumers with meters but without any indication of their

functionality and use for billing. Two utilities were rated C where meters are installed for only certain categories of consumers; two utilities were rated D while six utilities were not rated as they have zero metering. Apart from updating the database of metered connections, the utility should institute a system for tracking the functionality of meters to get an accurate assessment of the extent of metering.

Continuity of water supply

Continuity of supply is measured as the average number of hours of water supply per day at 7 meters equivalent pressure at the consumer end. This is based on recording the number of hours of supply in each operational zone of the utility as well as measuring water pressure in a number of consumer ends.

Two utilities were rated A where there are records of hours of supply daily at valve operating points for distribution and determination of pressure in a representative number of consumer ends. Ten utilities were rated B where only the operating hours are recorded and pressure is presumed to be adequate if water is able to supply a single-storey building. Fifteen utilities were rated D where no records of daily supply are available but data are provided based on estimates of field level engineers. One utility was not rated since no data were provided. Among the indicators, continuity of supply is amongst the easiest to improve by including the measurements of hours of supply and pressure indication to be taken on a regular basis within each operational area of a utility.

Complaints redressal

This indicates the total number of water-related complaints redressed within 24 hours of receipt of complaint, as a percentage of the total number of water-related complaints received in the given time period.

Eight utilities were rated A where complaints are registered from letters, e-mail, in person, by telephone; are segregated in different categories and collated through a computer network; and tracked on a daily basis and addressed. Nine utilities were rated B where systems do not exist for aggregating, sorting and tracking the complaints; and trends for some months are used for monthly reporting. Five utilities were rated C where complaints received are assumed to be resolved quickly without tracking. Five utilities were rated D and one utility was not rated due to absence of complaints data. Considering that one-third of the utilities were rated A, the other utilities can adopt the multiple methods of receiving complaints and the tracking system for complaints to improve the reliability of this indicator.

Quality of water supply

This is measured as the percentage of water supplies that meet or exceed the specified potable water standards defined by the Central Public Health and Environmental Engineering Organisation.

Thirteen utilities were rated A, meaning that samples are collected and tested regularly, recorded properly and results independently audited. Eight utilities were rated B with no independent audit of results. Four utilities were rated C, one rated D, and two had no reliability rating. Those rated B could improve their reliability by having an independent audit done of their sampling test results.

Cost recovery in water supply services

This is measured as the ratio of total operating revenues over total operating expenses expressed in percentage.

Five utilities were rated A with clear separation of water supply accounts from ULB accounts, accounting systems comparable to commercial accounting, manuals in place and used and financial statements fully disclosed and audited regularly. Seventeen utilities were rated B, where complete segregation of water supply expenses from the urban local body (ULB) expenses (such as electricity) is not practiced. Four utilities were rated D while two were not rated. All it takes for the two-thirds of the utilities with B rating is to segregate their water supply accounts from those of the ULB to move to A rating. The remaining six utilities can learn from the accounting practices of the five utilities that were rated A.

Efficiency in collection of water supply-related charges

This indicator is defined as current year revenues collected, expressed as a percentage of the total operating revenues for the corresponding time period.

Seven utilities were rated A with collection and billing records for each account properly maintained, for each billing cycle and accrual accounting principle followed. Sixteen utilities were rated B with revenue collection not matched against each specific bill issued. Three utilities were rated D and two were not rated because no data were provided. The 16 B-rated utilities need to improve by clearly identifying collections against each specific bill that has been issued. The remaining five utilities will need to adopt the best practices of the top rated utilities.

Sewerage Indicators

Coverage of toilets

This indicator denotes the extent to which citizens have access to a toilet (whether individual or community) in a service area.

Only two utilities were rated A where the number of citizens covered were based on actual number of properties and actual count of properties with or without toilet facilities as indicated by periodic field surveys and with records updated regularly. Twelve utilities were rated B with the number of properties estimated without benefit of periodic field surveys. Five utilities were rated C; another five were rated D; and four were not given any rating. The B-rated utilities need to improve their estimation of people with access to toilets with periodic surveys once every five years. The 12 remaining utilities will have to improve their reliability through periodic surveys and regular updates of their records.

Sewerage coverage

This indicator denotes the extent to which the underground sewage (or sewerage collection) network has reached out to individual properties across the service area.

Only two utilities were rated A where the total number of properties and number of properties connected to the sewer mains were determined through field survey and data are regularly updated with each new connection. Fifteen utilities were rated B where coverage is based on total number of connections and estimates of the total number of properties without the benefit of a field survey. Two utilities were rated C with coverage estimates based on road length; three were rated D with coverage estimates based on the geographical area of the ULB. Six utilities were not rated, with five having no sewer lines. The only way to improve reliability is through field surveys of properties and those connected to sewer lines together with regular updates of data with each new connection.

Collection efficiency of the sewage network

This indicator is measured as the quantum of wastewater collected as a percentage of normative sewage generation in the ULB.

Only three utilities were rated A where sewage generation is based on metered water production and consumption and estimates from other water sources as well as sewage flow assessment at STP inlets. Three utilities were rated B where sewage generation is estimated based on bulk meter measurement of water consumption and no estimate of water consumption from other sources. Four utilities were rated C and nine were rated D where water production and consumption and sewage collection are based on estimates; nine utilities were not rated, with five having no sewer networks. The best way to improve data reliability is to base sewage generation from metered water measurements and sewage collection using flow assessment methods at STP inlets.

Wastewater treatment adequacy

Wastewater treatment adequacy is expressed as secondary treatment (removing oxygen demand as well as solids, normal biological) capacity available as a percentage of normative wastewater generation for the same time period.

Three utilities were rated A where sewage generation is based on metered water production and consumption and estimates from other water sources; STP capacity is assessed through rigorous testing and commissioning procedures. Eight utilities were rated B where sewage generation is estimated based on bulk meter measurement of water consumption and no estimate of water consumption from other sources; reliable operational data is available for assessing STP capacity. One utility was rated C and six rated D where water production and consumption and STP capacity are based on estimates. Ten utilities have no secondary treatment plants.

Quality of sewage treatment

Quality of treatment is measured as a percentage of wastewater samples that pass the specified secondary treatment standards.

Out of the 18 utilities with wastewater treatment, five utilities were rated A where the sampling regimen is well documented and practiced completely, tests are done on all parameters in their own laboratories and results are independently audited. Nine utilities were rated B where not all parameters were assessed. The remaining four utilities were rated D where a sampling regimen and the required laboratory equipment are absent. Improvement in data reliability for the B-rated utilities can be made by including all the required parameters in the testing procedures. The others will have to adopt a well documented sampling regimen and invest in laboratory equipment to conduct the tests.

Extent of reuse and recycling of sewage

This indicator is a measure of wastewater received at the treatment plant that is recycled or reused after appropriate treatment for various purposes (gardens, parks, irrigation and so on).

Only eight utilities have reported any recycling or reuse of sewage. Five utilities were rated A where data from flow measurements at STP inlets and outlets is measured daily and aggregated for the monthly total. Eight utilities, including five without any recycling and reuse, were rated D where estimates are based on observation and STP capacity. Actual flow measurements using meters or accepted flow assessment methods are needed to improve data reliability.

Cost recovery in sewage management

The extent of cost recovery is expressed as wastewater revenues as a percentage of wastewater expenses for the corresponding period.

Three utilities were rated A where budget heads related to wastewater are clearly separated from those of the ULB, cost allocation standards for common costs are in place, accounting standards are comparable to commercial accounting standards, manuals are in place and financial statements are fully disclosed and audited regularly. Fifteen utilities were rated B where complete segregation of budget heads related to wastewater from those of the ULB is not practiced. Two utilities were rated D where none of the A-rated practices are in place. Eight utilities were not rated, including five with no sewerage network.

Complaints redressal

This indicates the total number of sewage-related complaints redressed within 24 hours of receipt of complaint, as a percentage of the total number of sewage-related complaints received in the given time period.

Four utilities were rated A where complaints are registered from letters, e-mail, in person, by telephone; are segregated in different categories and collated through a computer network; tracked on a daily basis and complaints addressed. Ten utilities were rated B where systems do not exist for aggregating, sorting and tracking the complaints; trends for some months are used for monthly reporting. Seven utilities were rated C where complaints received are assumed to be resolved quickly without tracking. Three utilities were rated D, while four utilities were not rated. Multiple methods of receiving complaints and a tracking system for complaints are necessary to improve reliability of this indicator.

Efficiency in collection of sewage charges

Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding period.

Five utilities were rated A where collection and billing records for each account are properly maintained for each billing cycle, and accrual accounting principle is followed. Eleven utilities were rated B where revenue collection is not matched against each specific bill issued. Two utilities were rated D while 10 were not rated, including five without any sewerage operations. The B-rated utilities need to improve data reliability by clearly identifying collections against each specific bill that has been issued. The others needing more improvement can adopt the best practices of the A-rated utilities.

Storm Water Drainage Indicators

Drainage network coverage

Coverage is defined in terms of the percentage of road length covered by storm water drainage network.

Four ULBs were rated A where actual ground level surveys are carried out to measure drain and road length (that is, drains that are pucca and are covered). Twelve ULBs were rated B where lengths are estimated from updated, scaled city road maps. Eight ULBs were rated C where maps used are not updated. Four ULBs were not rated. The only way to improve data reliability for this indicator is to base lengths on actual surveys.

Incidence of water logging or flooding

This is indicated as the number of times water logging is reported in a year at flood-prone points within the city.

Four ULBs were rated A where instances of flooding are regularly recorded and monitored according to time, date, location and extent of flooding. Sixteen ULBs were rated B where reports are based on citizens' complaints and not on systematic monitoring. One ULB was rated D while seven ULBs were not rated – these are mostly from terrains where there is little or no incidence of water logging or flooding. A monitoring system for observing and recording flooding from strategically located monitoring stations in a city will be needed to improve water logging and flooding data reliability.

Solid Waste Management Indicators

Household level coverage of solid waste management coverage

This indicator gives the percentage of households and establishments that are covered by a daily doorstep collection system.

Nine ULBs were rated A where calculation is based on the actual number of households and establishments with doorstep collection as stated by the agency involved in doorstep collection, and the total number of households/establishments are measured from updated geographic information system (GIS) special data of the city. Two ULBs were rated B where estimates of coverage is based on daily waste collected by doorstep collection and the total daily waste generation by the entire city. Nine ULBs were rated C where coverage is estimated based on the number of wards serviced by doorstep collection as a percentage of the total number of wards in the ULB. Six ULBs were rated D where coverage is based on aggregate city level estimates by the service provider. Two ULBs with no doorstep collection were not rated. Improvements can be made by determining the number of households and establishments with doorstep collection through surveys, and the total number of households and establishments determined from updated GIS spatial data of the city.

Collection efficiency of municipal solid waste

This indicator is the total waste collected by the ULB and authorised service providers as a percentage of the total waste generated within the ULB, excluding recycled or processed waste at the generation point.

None of the ULBs were rated A. Twelve were rated B where waste generation is estimated based on empirical

standards of per capita waste generation based on the size of the city, and data on waste collection are based on waste weighed at the disposal site. Sixteen ULBs were rated D, where waste generation is based on empirical standards and waste collected is based on the number of trips of collection vehicles to the disposal site. Data reliability can be improved by estimating waste generation from sample surveys of households done quarterly for seasonal variation and waste collection is based on actual weighing of waste on a weighbridge at the disposal site.

Segregation of municipal solid waste

This indicator is the percentage of waste from households and establishments that is segregated.

No segregation is done in 13 ULBs. Of those practising segregation, only one ULB was rated A where measurements on segregated waste and unsegregated waste are based on actual weighing at treatment and disposal points. Eight ULBs were rated B where estimates of segregation are based on the input from agencies engaged in doorstep collection. One ULB was rated C where estimates of segregation are based on the number of households with two bins, assuming that they are segregating waste at home. Five ULBs were rated D where estimates given by the service provider have no documentation of measurements made. Best practice dictates that segregated waste as well as total wastes should be based on actual weight measurements using weighbridges.

Municipal solid waste recovery

This is an indication of the quantum of waste collected that is either recycled or processed expressed in terms of percentage of total waste collected. Thirteen ULBs are not practising solid waste recovery.

Two ULBs were rated A where recovery estimates are based on measured consumption/inputs at waste processing facilities done daily plus those coming from the unorganised sector. Eight ULBs were rated B where the recovery estimates are based on only the waste from the organised sector. One ULB was rated C where the estimate of waste recovery is based on an aggregate mass balance. Four ULBs were rated D where recovery estimates are based on the installed capacity of waste processing facilities. Recovery estimates can be improved by appropriate measurements, accounting for all the sources of waste and its reuse/recovery.

Scientific disposal of municipal solid waste

This indicator is a measure of the amount of waste that is disposed in properly designed, built, operated and maintained landfills as per standards laid down by central agencies as a percentage of the total amount of wastes disposed at all landfills including dump sites.

Only two ULBs have properly built and maintained landfills. One ULB was rated A where accurate and detailed records on the amount of waste being disposed at landfill sites as well as those on O&M operations are regularly collected and maintained. Another ULB was rated B where there are no clear O&M operations records at the landfill site.

Cost recovery in solid waste management services

This indicator denotes the extent to which the ULB is able to recover all operating expenses relating to SWM services from operating revenues of sources related exclusively to SWM.

Three ULBs were rated A where budget heads related to SWM are clearly separated from those of the ULB, cost allocation standards for common costs are in place, accounting standards are comparable to commercial accounting standards, manuals are in place, and financial statements are fully disclosed and audited regularly. Ten ULBs were rated B where complete segregation of budget heads related to SWM from those of the ULB is not practised. One ULB was rated C and four were rated D where none of the A-rated practices are in place. Ten ULBs were not rated, with nine having no cost recovery and one with no data. Data reliability can be improved by the ULBs by adopting the practices of the A-rated ULBs.

Efficiency in collection of solid waste management charges

Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding period.

Two ULBs were rated A where collection and billing records for each account are properly maintained, done for each billing cycle, and accrual accounting principle is followed. Six ULBs were rated B where revenue collection is not matched against each specific bill issued. One ULB was rated C, four were rated D, and 15 were not given any reliability rating, with 11 having no cost recovery. The ULBs needing data improvement can adopt the best practices of the A-rated utilities.

Complaints redressal

This indicates the total number of SWM-related complaints redressed within 24 hours of receipt of complaint, as a percentage of the total number of SWM-related complaints received in the given time period.

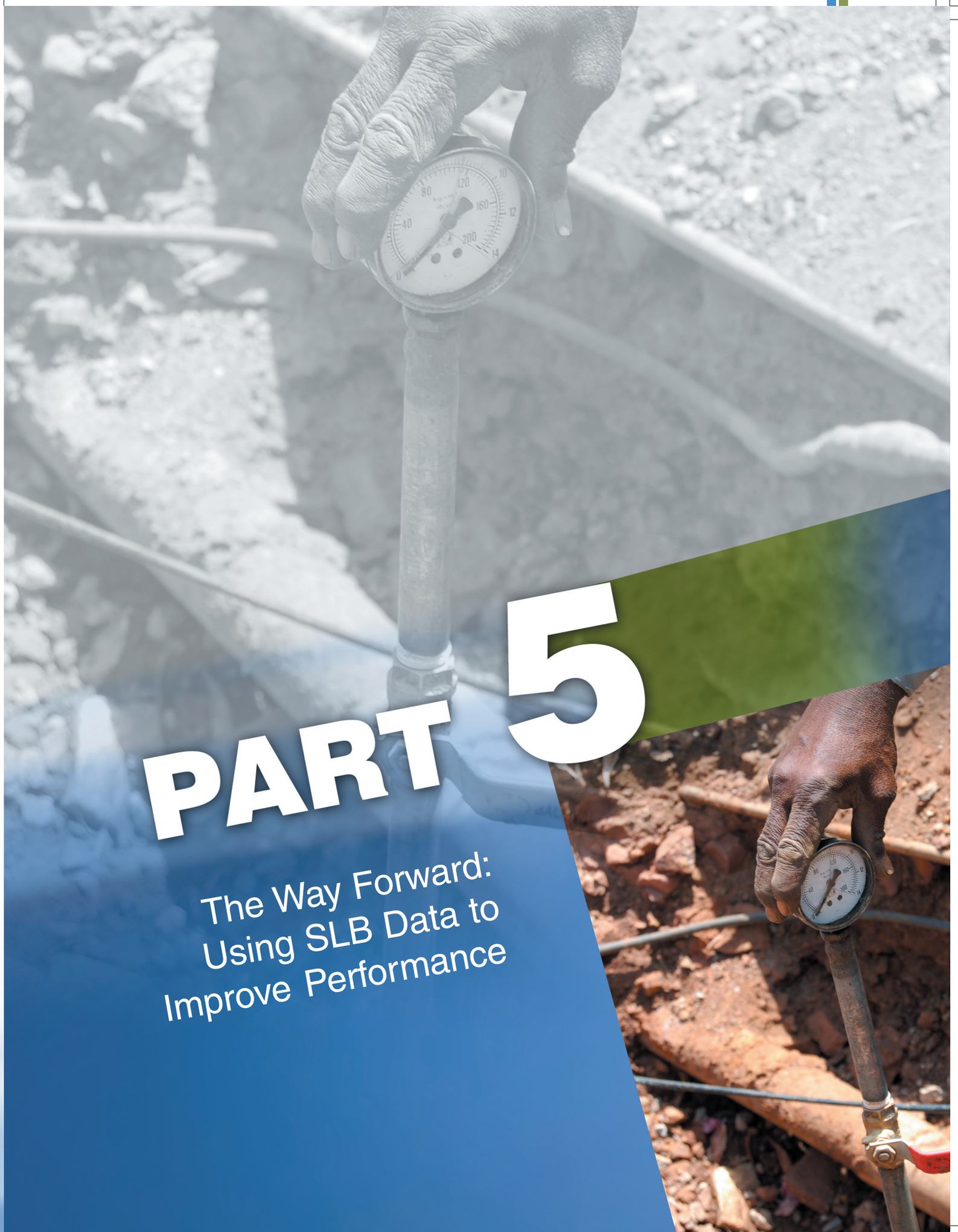
Three ULBs were rated A where complaints are registered from letters, e-mail, in person, by telephone; are segregated in different categories and collated through a computer network; tracked on a daily basis; and complaints addressed. Nine ULBs were rated B where systems do not exist for aggregating, sorting and tracking the complaints; trends for some months are used for monthly reporting. Eight ULBs were rated C where complaints received are assumed to be resolved quickly without tracking. Six ULBs were rated D while two utilities were not rated. Multiple methods of receiving complaints and a tracking system for complaints are necessary to improve the reliability of this indicator.

Overall Rating Summary

The summary of ratings per sector is shown in Table 6. Overall, about 14 per cent of the indicators have an A rating, 36 per cent have a B rating, and 29 per cent have a C or D rating. This shows that there is a lot of data systems improvement to be done, particularly in water supply and in SWM, since these sectors have a high percentage of C and D ratings. A large number (21 per cent) have no rating since the ULBs are not measuring the indicators, such as when there are no sewer lines or no STPs, or when they are not practising waste reuse or segregation and so on. As is evident from the data, this is especially the case for sewerage (29 per cent) and SWM (36 per cent).

Table 6: Summary of ratings by sector

Rating	Water	Sewerage	Drainage	SWM	Overall
A	18%	14%	14%	11%	14%
B	39%	32%	50%	25%	36%
C	11%	7%	14%	7%	11%
D	25%	18%	4%	21%	18%
None	7%	29%	18%	36%	21%
Total	100%	100%	100%	100%	100%



PART 5

The Way Forward: Using SLB Data to Improve Performance

The MoUD supports the adoption of the SLB framework in four key sectors, those of water supply, sewerage, solid waste management and storm water drainage, through its capacity-building programme. The primary objective of this initiative is to put in place an operational framework for monitoring performance, undertaking performance analysis and initiating steps to improve performance.

Through the SLB pilot initiative, the MoUD supported implementation of the SLB framework in 28 cities across the country. The initiative was aimed at not only demonstrating the applicability of the monitoring framework in various operating environments, but also encouraging cities to use the data for identifying and initiating steps to improve their performance. Accordingly, as part of this initiative, cities were required to deliver the following outputs:

- Performance data as per the SLB framework;
- Information Systems Improvement Plans (ISIP); and
- Performance Improvement Plans (PIP).

In doing this, it is expected that cities would recognise the value of the performance data in local decision making, and thereby get encouraged to take steps towards institutionalising performance monitoring processes.

The pilot cities have been successful not only in collecting SLB baseline data, but also in using this data to highlight the gaps and weaknesses in their current information systems and performance. In December 2009, a national consultation workshop was organised jointly by the MoUD and Water and Sanitation Program–South Asia (WSP–SA), where each of the 27[4] ULBs presented their performance data as per the SLB framework and also identified focus areas requiring performance improvement. Some of the key messages that emerged from the workshop are discussed here.

- Importance of data quality was highlighted using the example of data inconsistencies in presentations made by some of the cities. Systematic improvement in data quality could be effected through the development and implementation of an ISIP.
- Discussions revealed that significant potential exists for improving performance through adoption of 'low cost, no cost' strategies.
- While the benchmarks were perceived to be ambitious, cities were encouraged to set intermediate targets and gradually move towards the service level benchmarks as given in the Handbook over a period of time. Conversely, cities could also choose to set more stringent targets than the stated benchmarks.
- Cities were encouraged to report their performance status vis-à-vis the performance benchmarks in local languages to ensure wider coverage. The Public Disclosure Law could be used to mandate disclosure of ULB performance using the SLB framework.
- Municipal councillors and other political representatives also need to be informed and involved in the SLB exercise.
- International experience highlighted the potential for benchmarking to be leveraged for the provision of financing to service providers.
- Participants emphasised the need for skill development of employees of ULBs and assistance in acquisition of software and hardware for monitoring.
- SLB data at the disaggregated level have helped ward level accountability in some cities.
- International experience suggests that benchmarking is often closely associated with regulatory processes and might even be the starting point for the introduction of service regulation.

An Information Systems Improvement Plan consists of actions required for improving reliability of data required for the SLB indicators. The improvement is expected to be captured in terms of the reliability grading scale provided in the SLB Handbook.

A Performance Improvement Plan consists of actions required for improving performance in terms of the SLB indicators for each of the four service areas. The improvement is expected to be captured in terms of the indicator value.

[4] Out of the 28 SLB towns/cities, 27 are urban local bodies, except Bokaro Steel City which is not a municipality. Its WatSan services are provided by a division of the Steel Authority of India (a corporate entity). Presentations at the workshop were made by representatives of the other 27 urban local bodies.

- International benchmarking databases such as International Benchmarking Network for Water and Sanitation Utilities (IBNET) provide ready access to performance data for utilities in the international context and can be leveraged for the SLB initiative as well.

At a systemic level, the deliberations highlighted that for SLBs to be effectively adopted, it is important to (a) incentivise service providers to improve service levels; (b) develop local level leadership to engage people in improvement of service provision; and (c) develop human capacities and skills to enhance the quality of service provision.

As a follow up to the workshop, cities are now developing ISIPs and PIPs. Improved information systems would help provide a sound basis for development and sustained implementation of PIPs. ISIPs would consist of actions to address data gaps, improve reliability of data where it already exists and institute processes to integrate performance data in decision making at various levels. A sample PIP and ISIP developed for a particular city is provided in Tables 7 and 8.

To encourage cities to proceed with the implementation of ISIPs, funding support is being provided by the MoUD for ISIP-linked proposals. Already, 13 cities have submitted their ISIP proposals totalling Rs 1.5 billion, of which Rs 600 million have been approved by the MoUD. A quick summary of proposals is provided in Table 9.

Concurrent to the above steps, cities are also initiating development of PIPs for their cities. The PIPs seek to capture 'low cost, no cost' opportunities for bringing about service level improvements along with efficiency of capital investments through an integrated approach for examination of individual projects in the city-wide context. To ensure performance monitoring on an on-going basis, some pilot cities have set up SLB Cells; similar Cells are expected to be set up at the state level. In addition, efforts are being made to institutionalise performance monitoring by integrating it with decision processes linked to financing (for example, budgetary proposals, project proposals). The MoUD is integrating the framework in its various funding programmes. In a significant development in this direction, the 13th Finance Commission (FC XIII) Report covering 2011–15 has included the SLB framework in the conditionalities for the release of performance grants to local bodies (see Box 1).

The inclusion of the MoUD's SLB framework in the FC XIII Report serves as a significant endorsement. By linking it to a potential funding allocation of Rs 80 billion, the FC XIII could provide a significant impetus to the adoption of performance monitoring and benchmarking by States and ULBs.

Box 1: 13th Finance Commission Report and MoUD's Service Level Benchmarking framework

The 13th Finance Commission (FC XIII) Report has been released, bringing with it some important shifts.

- For the first time, local bodies have been devolved a share (2.28 per cent) of the divisible tax pool (over and above the share of the States), providing them access to a buoyant source of revenue.
- A part of this devolution will be in the form of a Performance Grant, which would constitute 0.78 per cent of the divisible tax pool.
- The share of urban local bodies (ULBs) in the total allocation for local bodies (including Panchayati Raj Institutions), has increased from 20 per cent (under earlier FC allocations) to 26.8 per cent.

A quick summary of numbers for the urban sector suggests a five-fold increase in allocation for ULBs, to its proposed level of Rs 230 billion. Of this, Rs 80 billion would be in the form of a performance grant (almost double the entire ULB allocation under the FC XII).

The Performance Grant component is linked to nine conditionalities, one of which requires State Governments to institute service standards for essential services provided by local bodies. With respect to municipalities, it draws reference to the performance indicator framework in the MoUD's Handbook on Service Level Benchmarking covering water supply, sewerage, solid waste management and storm water drainage. State Governments would be expected to issue a declaration (notification) of minimum service standards to be achieved by ULBs for each year, against the suggested indicators.

Source: FC XIII Report, p 179–180.

Table 7: Sample Performance Improvement Plan

SLB indicator	Performance improvement steps	Action plan	Timelines	Budget	One-year target
Water supply coverage	Reduce illegal connections	Revisit historical disconnections and identify illegal tappings Amnesty scheme for regularising One-time penalty and regular billing Recovery of penalty in instalments along with monthly consumption bill	3 months and ongoing process	–	20% increase in number of connections ~ about 10,000 new connections to be added
	Encourage legal connection and simplify application procedures	Simplify connection application Provide sanction to a connection within 24 hours from the time of payment of connection fees. Improve data capture for new commissioned connections and reduce data loss Delink approved building plans for availing connections Connections 'melas'	Two months	–	
	Make water connections accessible to urban poor	Connection fee to slum and low income households, particularly BPL Card Holders, from Rs 3,060 to Rs 500 (payable in five interest-free equal instalments)	Two months and ongoing process	–	
	Conduct household survey	Check with property tax department for GIS database for information on water supply, sewerage and population Design appropriate questionnaire which is simple and captures required information Questionnaire to be approved by H&UDD Prepare an estimate Engage survey teams to be supervised by junior engineers Public awareness campaign Orientation workshop for survey teams and JEs Physical survey and validation through sample checks by JEs Compilation of survey results Mapping of connection with number of households served Integrate survey output into GIS database Additional information sought as supplement to new connection application	Six months	Rs 40 lakh	
	Expand distribution system into un-serviced areas	Expand distribution network in slum areas and private layouts	Ongoing process	–	
	Set up Monitoring Cell for reviewing progress	Monitoring Cell to consist of CE, SE and EEs Chief engineer will review progress every month Circle SE to review on a fortnightly basis	One month and ongoing	–	
Continuity of supply	Achieve 24x7 water supply in a phased manner	Prepare ToR for 24x7 supply Appoint consultant for preparing DPR for pilot areas Prepare DPR for the project areas based on findings of the systems study Appoint implementation agency IEC activities; meetings with stakeholders Implement project Capacity building of PHE staff	Twelve months	DPR – Rs 10 lakh; Pilot project Rs 10 crore	

SLB indicator	Performance improvement steps	Action plan	Timelines	Budget	One-year target
Metering	Production level metering	Identify all WTPs that need flow meters to be installed Remove dysfunctional meters wherever found Replace/install new meters	Three months	Rs 10 lakh	All
	Distribution level metering	Installation of bulk flow meters Prepare ToR for distribution system study and network modelling Appoint technical consultant for conducting study Based on study recommendations create DMAs In two DMAs, take up 24x7 water supply – one water-stressed DMA and one with abundant water supply	Five months	Rs 180 lakh	100 bulk flow meters to be installed
	Consumer level metering	Conduct workshop on water conservation, rainwater harvesting and recycle and reuse of waste water Exposure visit for officials including mayor and local MLAs and citizen groups Prepare Metering Strategy Note for incentivising installation of meters Meters to be provided by the department on rental basis	One month	Rs 60 lakh – Rs 2,400 per meter for 2,500 connections	5% of the connections to be metered
Non-revenue water	Valve checking programme	Check all valves for leakages Plug all identified leaking points at valves	One month and ongoing	Rs 1,500 per leakage	Revenue target of Rs 13 crore for 2009-10 and a cost reduction of 10%
	Prevent reservoir overflows	Identify all overflowing reservoirs Devise system for opening and closing of valves to prevent overflows	One month and ongoing	–	
	Reduce energy costs	Optimise system operating hours to benefit from lower electricity charges during night time Prepare an operating schedule to lower electricity charges	One month and ongoing	–	
	Categorise consumers as per use	Identify commercial consumers which are classified as domestic consumers Regularise such connections as per use Make changes in billing category for identified consumers	One month and ongoing	–	
	Conduct energy audit	Conduct energy audit on approval from State Govt.	Six months	–	
	Conduct water audit	Prepare ToR for water audit – long term Begin award of contract after completion of Distribution System and Network Modelling Study Award Contract Based on findings of study, prepare NRW reduction plan	Six months	Rs 25-50 lakh	

Table 8: Sample Information Systems Improvement Plan

1) Data collection and updation

				Reliability grade			
SLB indicator	**Data required**	**Current system**	**Information Systems Improvement Plan**	**Current**	**Target**	**Budget**	**Deadline**
Water supply coverage	# households connected # households in service area	Outdated database Unclear service boundaries; Census-based; No clarity on number of households per property	Household survey for service area – customers and non-customers (Coverage PIP) Setting up periodicity for regular updates	B	A	Rs 40 lakh	September 2010
Non-revenue water	Annual production Annual consumption	76% of current production metered Distribution level metering absent Less than 1% of connections metered	Install bulk meters at all production points Install bulk flow meters at key distribution points (ESR level, etc) 5% of connections to be metered	D	C	Rs 240 lakh	September 2010
Continuity of supply	Population covered zone-wise Zone level hours of supply Quantity of supply Pressure	Outdated database Hours of supply being documented at zonal level Quantity of water supplied not known Pressure levels not measured regularly	Household survey for service area – customers and non-customers (Coverage PIP) Strengthen documentation of hours of supply at zonal level Install bulk flow meters at key distribution points (ESR level, etc) Use of pressure of gauges to monitor pressure levels at WTP, critical distribution points and consumer points when required	B	A	–	September 2010
Complaint redressal	Total # of complaints received/month Total # of complaints redressed/month	Complaint recording mechanism not comprehensive Data on complaint status not maintained System not computerised Complaints are not segregated into different categories	Under process – NIC is developing a complaint recording and monitoring system	D	A	–	September 2010
Cost recovery	Annual operating expenses Annual operating revenues	Water and sewerage expenditure not segregated completely Single entry cash-based accounting system Accounts are not ring fenced	Under process – State Government ring fencing a Circle account and migrating to double entry accrual-based accounting system	D	A	–	September 2010
Revenue collection efficiency	Current revenues collected for year Annual operating revenues billed	Single entry cash-based accounting system	Under process – State Government ring fencing a Circle account and migrating to double entry accrual-based accounting system	D	A		September 2010

Table 8: Sample Information Systems Improvement Plan (contd)

2) Data analysis and review: Institutionalisation

SLB Cell	Composition	Functions	Frequency of review (meetings)
Division level	JE identified	Data collection – formats provided to JEs	Monthly
SE level	EE, Estimator	Collation and analysis – software provided	Monthly
CE level	SE, EE	Collation, review and submission to State Government	Once in two months
State level	Reform unit	Collation, review and submission to Central Government	Quarterly

Table 9: Information Systems Improvement Plans approved by the Ministry of Urban Development

Name of city	Name of implementing organisation	Timeframe	ISIP proposal	Total cost
Amritsar	Amritsar Municipal Corporation	Nine months	• Comprehensive household survey for water supply, sewerage and solid waste management • Installation of bulk flow meters • Proposal for 1,000 consumer level meters • Proposal for feasibility study for Introducing 24x7 in pilot zone • Procurement of 100 pressure gauges for entire city • Study for establishing water quality protocol and feasibility for establishing a state-of-the-art water quality laboratory facility • Proposal for comprehensive mapping of drainage and road network	Rs 343 lakh
Jalandhar	Punjab Water Supply and Sewerage Board and Municipal Corporation of Jalandhar	Nine months	• Comprehensive household survey for water supply, sewerage and solid waste management • Installation of bulk flow meters • Hydraulic modelling of the entire city network • Domestic metering on pilot basis to arrive at NRW and lpcd • Procurement of pressure gauges for each zone • Study for development of quality protocol and upgradation of existing facility • Weighbridge at the dump site • Preparation of drainage master plan	Rs 350 lakh
Bengaluru	Bruhat Bengaluru Mahanagara Palike (BBMP) and Bangalore Water Supply and Sewerage Board (BWSSB)	Nine months	• Household level basic urban services assessment survey for the service area (a comprehensive household survey for water supply, sewerage and SWM) • Installing automatic meter reading mechanism • Developing a framework on water quality monitoring protocol • Developing a centralised data centre with customer grievance cell • Installation of weighbridges, handheld devices at landfill/dumpsites	Rs 1,158.03 lakh
Trivandrum	Kerala Water Authority	One year	• Postal survey and verification (a postal household survey for water supply and sewerage) • Procurement and installation of bulk flow meters • Procurement of pressure gauges • Water quality testing – third party • Survey on toilet coverage/estimate of water use from other sources • Upgradation of software for monitoring customer grievances • Installation of radio frequency identification device to monitor coverage of SWM • Sample survey on waste generation • Procurement of weighbridges and platform weighing machines • R&D laboratory for SWM • Comprehensive software to monitor SWM services • Information system for ULB on roads and drains • Monitoring incidence of water logging and occurrence of flooding	Rs 322.6 lakh
Kozhikode	Kerala Water Authority	One year	• Postal survey and verification (a postal household survey for water supply and sewerage) • Procurement and installation of bulk flow meters • Procurement of pressure gauges • Water quality testing – third party • Survey on toilet coverage/estimate of water use from other sources • Upgradation of software for monitoring customer grievances • Installation of radio frequency identification device to monitor coverage of SWM	Rs 164 lakh

Name of city	Name of implementing organisation	Timeframe	ISIP proposal	Total cost
			• Sample survey on waste generation • Procurement of weighbridges and platform weighing machines • R&D laboratory for SWM • Comprehensive software to monitor SWM services • Monitoring incidence of water logging and occurrence of flooding	
Raipur	Raipur Municipal Corporation	One year	• Comprehensive household survey for water supply, sewerage and solid waste management • Hydraulic modelling and installation of bulk flow meters • Procurement of pressure gauges to measure pressure of water at critical points • Installation of bulk flow meters at oxidation plant • Electronic weighbridge at dumping site • Consumer level meters • Water quality monitoring protocol • Sample survey for characteristic of waste generated at source and also the per capita generation of waste at source, over a period of 30 days at 14 points each in 108 wards • Purchase of hardware and software for establishing efficient complaint redressal cell, (for water supply, sewerage, solid waste management and storm water drainage)	Rs 517.75 lakh
Nashik	Nashik Municipal Corporation	Six months	• Comprehensive household survey (for water supply, sewerage, solid waste management and storm water drainage) • Sample survey for characteristic of waste generated at source and also the per capita generation of waste at source, over a period of 30 days at 14 points each in 108 wards • Purchase of hardware and software for establishing efficient complaint redressal cell (for water supply, sewerage, solid waste management and storm water drainage)	Rs 103.59 lakh
Delhi	Delhi Jal Board	One year	• Comprehensive household survey for water supply, sewerage and solid waste management mapping of including spatial mapping of customer data on the existing network map • Establishment of a water quality protocol	Rs 855 lakh
Hyderabad	Greater Hyderabad Municipal Corporation	One year	• Undertaking a comprehensive household survey for water supply, sewerage and solid waste management • Installation of automatic meter reading system • Installation of weighbridges	Rs 693 lakh
Guntur	Guntur Municipal Corporation	One year	• Installation of supervisory control and data acquisition (SCADA) • Network modelling • Undertaking a comprehensive household survey for water supply, sewerage and solid waste management • Installation of electronic weighbridges at dumping sites • Purchase of portable pressure gauges • Installing consumer level metering on pilot basis • Study for formulation and implementation of comprehensive water quality testing and monitoring protocol	Rs 438.40 lakh
Bhubaneswar	PHEO	Nine months	• Household survey • System study and network modelling • Production level metering • Zonal bulk metering	Rs 307.43 lakh
Berhampur	PHEO	Nine months	• Household survey • System study and network modelling • Production level metering • Zonal bulk metering	Rs 113.84 lakh

SLB Pilot Phase Implementation Arrangement