

# Service Level Benchmarking, Water Supply



**PUNE MUNICIPAL CORPORATION,**  
SHIVAJINAGAR, PUNE – 411 005

September 2010

# Pune Municipal Corporation

## City Profile

- 2001 Census Population – ( 25,38,473 )
- 2010 Population Estimate – ( 39,33,140 )
- Area in sq. kms – 243.84
- Slum Population – 655,494.00
- Whether JNNURM / UIDSSMT city – JNNURM city.

## Service Providers

- Water Supply – Pune Municipal Corporation
- Sewerage – Pune Municipal Corporation
- Storm Water Drainage – Pune Municipal Corporation
- Solid Waste Management - Pune Municipal Corporation

# Water Supply Indicators

Performance Indicator	Benchmark	Status	Reliability
<b>Coverage</b>	100%	94.19%	A
<b>Per Capita Supply of Water</b>	135 lpcd	194.00	C
<b>Extent of Metering</b>	100%	29.71%	C
<b>Extent of Non-revenue Water</b>	20%	30.00%	C
<b>Continuity of water supply</b>	24x7	4 TO 6 HRS/DAY	C
<b>Quality of Water Supplied</b>	100%	100%	A
<b>Eff. in redressal of customer complaints</b>	80%	98.36%	A
<b>Cost Recovery</b>	100%	70.67%	B
<b>Eff. In Collection of Water Charges</b>	90%	90.93%	A

# Benchmarking & ISIP for Water Supply Division

S. No.	Indicator	Bench mark	Current Value	Reliability Scale	Data	BASE FOR DATA	ISIP
1	Coverage of water supply connections	100%	94.19%	A	(a) No. of house holds in service area = 9,95,731. (b) Total No. of Households with direct water service connections =9,37,938 Coverage of water supply connections is $(b/a) \times 100 = (9,37,938 / 9,95,731) \times 100 = 94.19\%$	Data from property tax dept and estimated figurs up to may 2010 - 7,59,443. Data from slums dept and estimated figurs up to may 2010 - No of declared slums units - 2,12,135. Data from slums dept regarding No of undeclared slum units - 24,153.	Carrying out detailed survey of households having water connections as revealed in ground level survey and updating data periodically.
2	Per capita supply of water	135 LPCD	194 LPCD	C	a) Daily quantity of water put into the distribution system. Bulk water supplied should be excluded ( in liters ) = 762 MLD = $762 \times 10^6$ liters per day b) Total number of people in the service area served by the ULB =39,33,140 Per capita water supplied is $(b/a) \times 100 = (762 \times 10^6 \text{ liters per day} / 39,33,140) \times 100 = 193.74$ lpcd say 194 lpcd	a) 80% flow measuring bulk meters (records maintained) have been provided on the main distribution lines, and remaining 20% is based on the pump efficiency. b) Data caculated as per estimated house holds nos for the year 2010.	a) 100% bulk metering is under implementation. b) Adopting SCADA system for water supply net work. c) Regular watch on main trunks by leak detections squad to minimize leakages from estimated quantity of 25% to 20%.
3	Extent of metering of water connections	100%	29.71%	C	a) Total number of direct service connections., 1,19,969 Nos., b) Total number of public stand posts 2,674 Nos, c) Total number of functional metered connections 36,020 Nos., d) Number of metered public stand posts, 436 Nos Extent of Metering of water connections = $[(c+d) / (a+b)] \times 100, [(36020 + 436) / (119969 + 2674)] \times 100 = 29.71\%$	a) As per connection records available with Pune Municipal Corporation. b) do c) do d) do	1) Interlinking of installation of new connections, along with new meters & generation of water bills specially refered with GIS database to all the properties. 2) Regular monthly billing system will be adopted. 3) Maintaining standposts records. 4) Maintaining billing records & databases identifying consumers with meters serial numbers.

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S. No.	Indicator	Bench mark	Current Value	Reliability Scale	Data	BASE FOR DATA	ISIP
4	Extent of Non Revenue Water	20%	30%	C	<p>a) Total water produced and put into transmission and distribution system. =1123MLD.</p> <p>b) Total water sold =786MLD</p> <p>NRW = <math>[(a-b) / a] \times 100 = [(1123 - 786) / 1123] \times 100 = 30.00\%</math></p>	<p>a)80% data based on the records from flow meters installed at the treatment plants</p> <p>b) i) As per data generated from the revenue collected against the metered water supplied by the PMC.</p> <p>ii) As per data calculated from the revenue collected against the property tax by the PMC.</p>	<ol style="list-style-type: none"> <li>1) Metering at all key distribution nodes.</li> <li>2) Regular watch on main trunks by leak detections squad to minimize leakages from 25% to 20%.</li> <li>3)Regular monitoring on the bulk flow meter readings &amp; consumer meters readings to control NRW.</li> <li>4) Detecting unauthorised connections &amp; taking appropriate decision like regularising or disconnecting these connections.</li> <li>5) Adopting SCADA system for water supply net work.</li> <li>6) Improvement in billing system.</li> </ol>
5	Continuity of water supply	24 x 7	4- 6 Hrs	C	The number of hours of supply in each zone ( or DMA ) Duration = 4 – 6 Hours.	Though the average hours of water supply is between 4 – 6 hours as per the feedback from field engineers, there are some parts of the areas in the city with 24 hours of water supply.	<ol style="list-style-type: none"> <li>1) Preparing DMAs and adopting SCADA system for equitable water supply at all zones in the city.</li> <li>2) Regular monitoring of hydraulic pressures in the distribution network at all the key points.</li> </ol>
6	Quality of water supplied	100%	100.00%	A	<p>a) Total number of samples tested = 3689 per month</p> <p>b)Total number of samples that meet the specific potable water standards = 3689 per month</p> <p>Quality = <math>(b/a) \times 100 = 100\%</math></p>	<p>a) As per test records maintained at the treatment plants and consumer ends.</p> <p>b) As per the specifications of the WHO &amp; CPHEEO for water supply through surface sources. The minimum number of samples to be taken is one sample per 10,000 of population per month. Accordingly the number of samples to be taken is 350 per month.</p>	To maintain the existing system.

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S. No.	Indicator	Bench mark	Current Value	Reliability Scale	Data	BASE FOR DATA	ISIP
7	Efficiency in redressal of customer complaints	80%	98.36%	A	<p>a) Total number of water supply related complaints received = 2741 per month.</p> <p>b) Total number of water supply related complaints resolved in 24 hours = 2696 per month.</p> <p>Efficiency in redressal of complaints = <math>(b/a) \times 100 = (2696 / 2741) \times 100 = 98.36\%</math></p>	As per complaint registers maintained by the water supply department , Pune Municipal Corporation and complaints uploaded on partially running WEB based complaint redressal system.	<p>1) Multiple mechanism by which consumer can register their complaints will be adopted.</p> <p>2) All the complaints at all levels will be recorded at ward level &amp; central information collection system will be adopted on daily bases.</p> <p>3) Status of redressal of complaints will be maintained.</p>
8	Cost recovery in water supply services	100%	70.67%	B	<p>a) Total annual operating expenses = 176.41 crores</p> <p>b) Total annual operating revenue = 124.68 crores</p> <p>Cost recovery in Water Supply Services = <math>(b/a) \times 100 = (124.68 / 176.41) \times 100 = 70.67\%</math></p>	As per budget reconciliation done for the year 2009-2010( water supply department), Pune Municipal Corporation & Total revenue generated through property tax dept., slums dept. and water meters dept etc.	Adopting an accrual based double entry accounting system, the accounting standards will be made comparable to commercial accounting standards with clear guidelines for recognition of income and expenditure.
9	Efficiency in collection of water supply related charges	90%	90.93%	A	<p>a) Current revenue collected =Rs 124.68 crores</p> <p>b) Current revenue billed =Rs 137.11 crores</p> <p>Collection Efficiency = <math>(a/b) \times 100 = 124.68 / 137.11 \times 100 = 90.93\%</math></p>	As per revenue collected for the year 2009-2010 generated through property tax dept., slums dept. and water meters dept etc.	Collection records will be maintained for wardwise each billing cycle with overall accrual principles will be followed so as to avoid inclusion of deposits and advances in income and expenditure respectively.

## Water: Observations & Comments

- ◆ Pune Cantonment, Khadaki Cantonment & Commercial premises are metered. Phase wise metering in PMC area is under consideration.
- ◆ Telescopic tariff structure for water billing as per consumption of water is under consideration.
- ◆ Metering at all key nodes such as WTP's, ESR's, Junctions and Bulk supply points 80% completed and remaining 20% in progress.
- ◆ WEB based complaint monitoring system for redressal of complaints presently in operation.
- ◆ All complaints related to water supply are attended on priority basis.

# Water: Areas identified for improvement – Info Systems

- ◆ Adopting computerized system for analyzing various pump parameters viz. voltage, current, power, Water flow, power factor, running hours, etc.
- ◆ Adopting SCADA System for.
  - Flow measurements & water levels of all ESR.
  - Monitoring water quality parameters like residual chlorine, turbidity, PH etc.,.
- ◆ Regular monitoring of pressure in distribution networks at all key points
- ◆ Regular watch on main trunks by leak – detections squad to minimize leakages.
- ◆ Maintaining complaints records at all levels & Centralize monitoring system for complaint redressal.
- ◆ House to house survey to be carried out to capture the illegal connection.

# Water: Areas identified for improvement – Performance

- ◆ House to house survey is being carried out to identify connections.
- ◆ 100% metering will be achieved phase wise up to year 2012.
- ◆ For reducing NRW
  - PMC is implementing recycling of filter bed back wash water.
  - metering at trunk mains and ESR's.
- ◆ Adopting SCADA system for equitable distribution of water supply and monitoring of water quality through reports.
- ◆ Telescopic tariff structure for water billing for recovering O&M charges of water supply services.
- ◆ Powers delegated to a special committee to improve collection efficiency of water charges.

- ◆ Planning & designing distribution network for newly developed areas for equal distribution of water.
- ◆ Additional close pipeline from Khadkwasla dam to Parvati & Cantonment WTP for reducing losses, contamination & cost of raw water.
- ◆ Refurbishment of old WTP's at Parvati & Cantonment.
- ◆ Replacement of old Prestressed line with MS line to prevent frequent leakages.
- ◆ Effective use of ground water sources.
- ◆ Use of dual flush & plumbing fittings to be made compulsory for new constructions to reduce wastage of potable water.
- ◆ Citizens Awareness Program at various levels to be taken up for preventing the wastage of potable water.
- ◆ Individual household metering for Individual flats to be proposed for new constructions.

THANK YOU

