

Generic Information System Improvement Plan (ISIP) for small cities

Water Supply System

15th July, 2014

Performance Assessment System (PAS)

Prepared by:

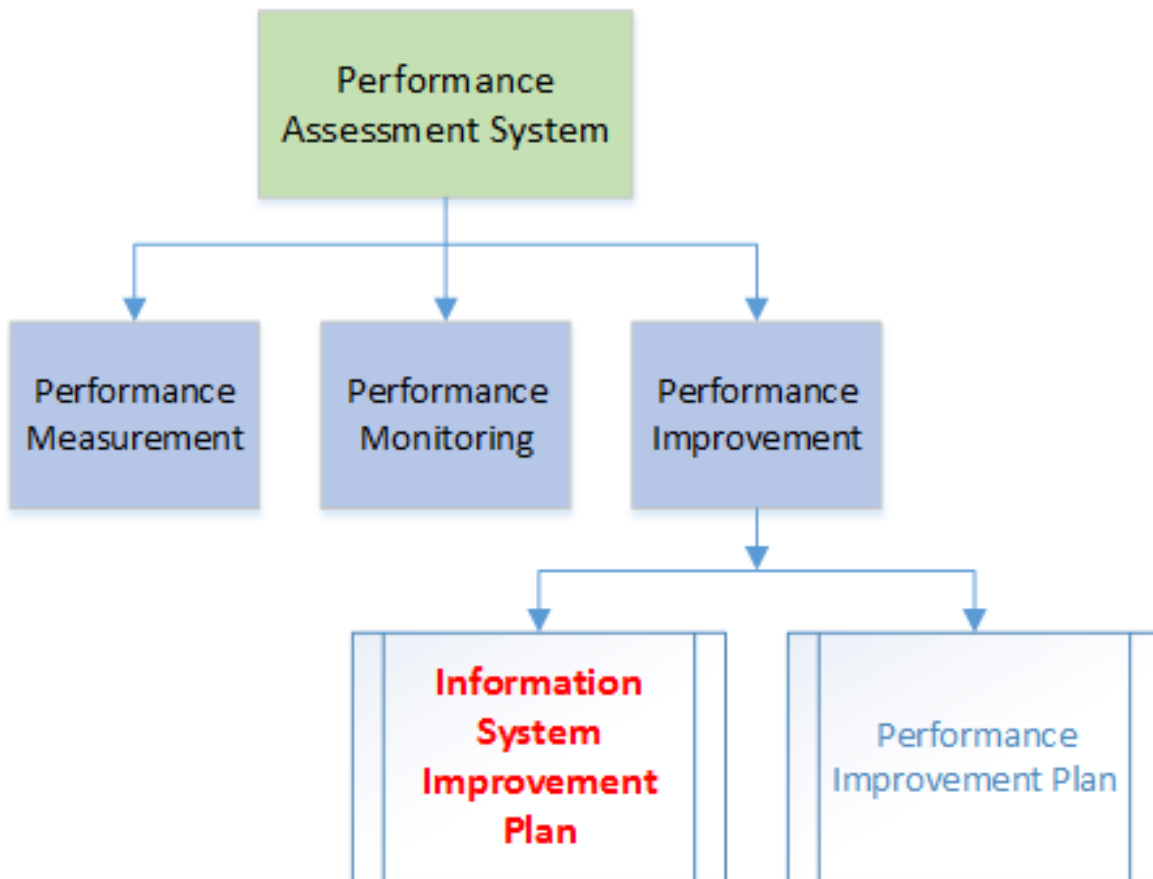
Urban Management Center (UMC)

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About Performance Assessment System (PAS)

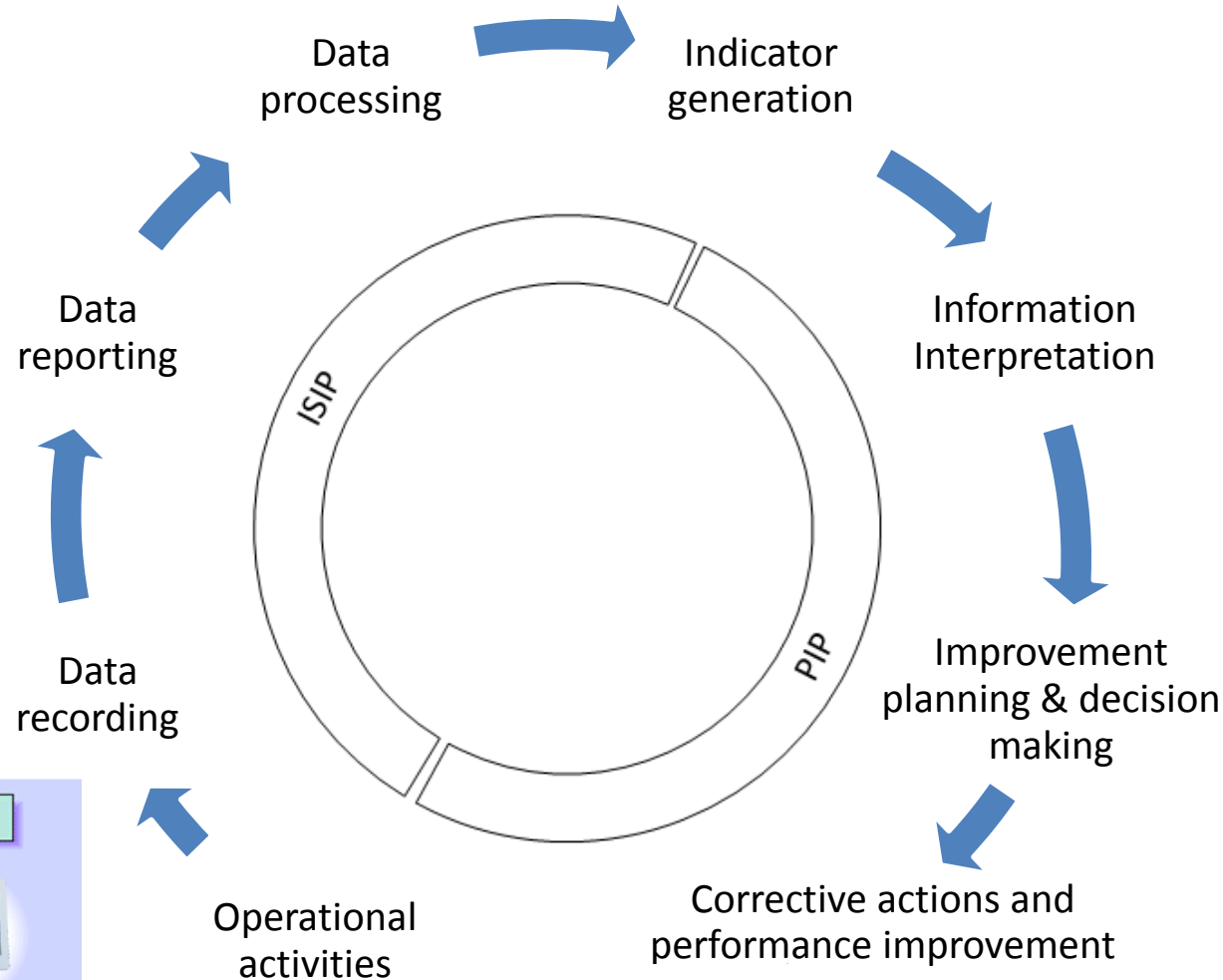
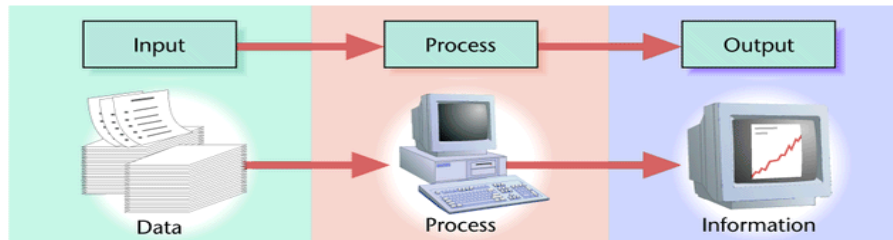


PAS components

- Performance Assessment System (PAS), a seven-year action research project.
- Three main components: **Performance Measurement, Performance Monitoring and Performance Improvement.**
- The project is monitoring and assessing the performance of all 167 cities in Gujarat over the last five years. UMC is working with the ULBs on various performance improvement and information system improvement initiatives.
- The comprehensive database and management system prepared under the PAS program will help decision makers and local governments bring efficiency in service delivery, effective budget allocation and inclusive coverage.

Information system for ULBs

Information system is an integrated set of components for recording and storing data, and processing data into useful information to generate performance indicators for planning the improvement in services.



Background of the study

- To measure the performance of any ULB, **32 performance indicators** and there benchmarks were introduced performance assessment system program.
- These indicators are generated from the data given by the ULBs records.
- Most of the cities are lacking recorded data from the operational activities
- The data **reliability is of D scale** in most of the cities.
- Decision making for performance improvement would be **defective with less reliable data** and would result in the waste of resources
- To generate a reliable data a efficient system is needed for data recording and management



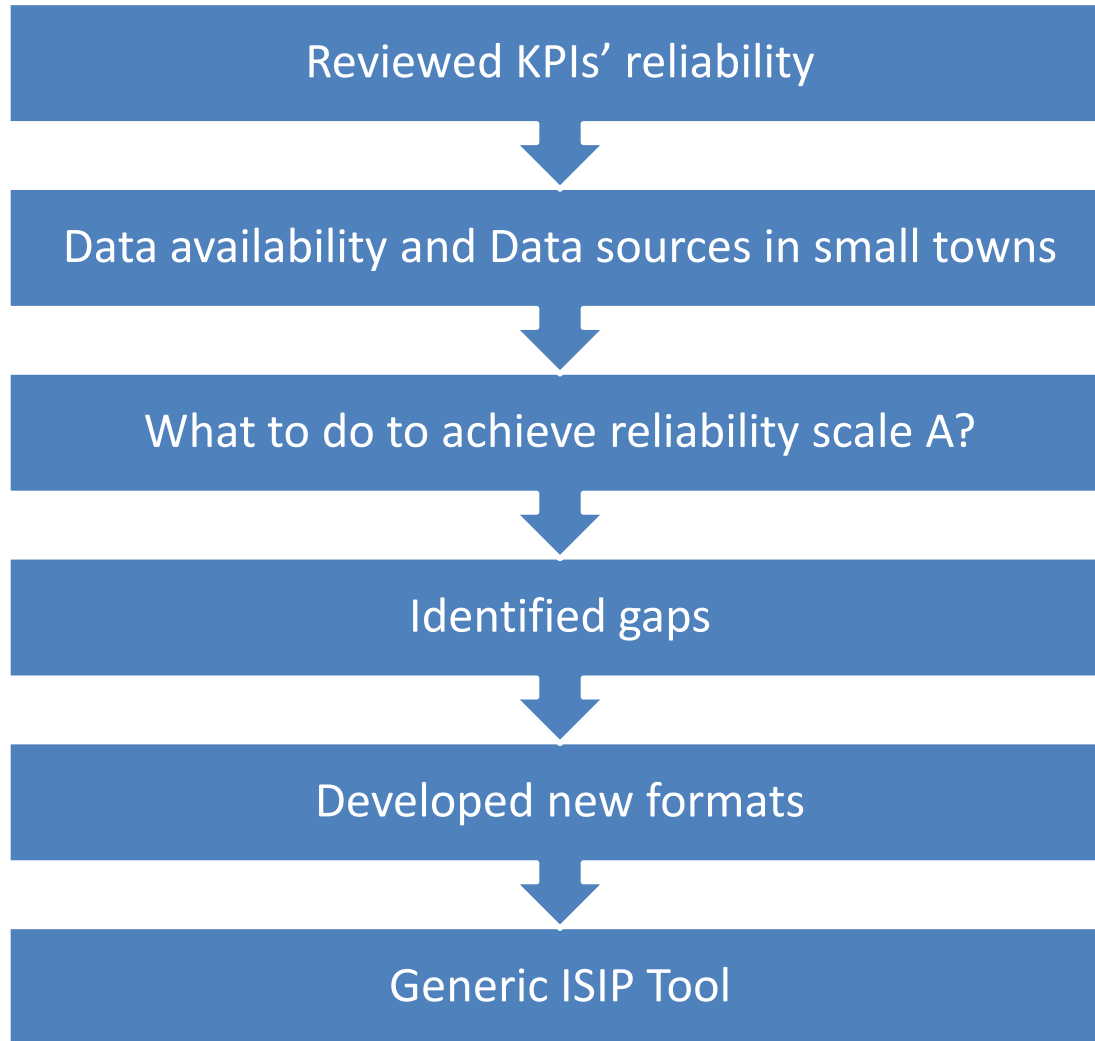
	Reliability - % Cities			
	A	B	C	D
Coverage of water supply connections	39	1	57	4
Per capita supply	1	13	32	55
Continuity of water supply	0	0	33	67
Extent of functional metering of water connections	0	5	0	95
Quality of water supplied	0	0	5	95
Extent of NRW to total water supplied	0	0	0	100
Efficiency in redressal of customer complaints	2	34	12	51
Cost recovery: O&M	2	96	0	1
Collection efficiency for water charges	29	70	0	1
Coverage of WS connections in slums	1	3	4	93

Objectives

1. Improve data recording, processing/usage and reporting
2. Improve data reliability as per SLB definitions
3. Implement innovative tech-solutions for information system
4. Subsequently, pave way for fully integrated municipal MIS



Methodology



Sl. No.	Location	Source	Reliability Scale	Reliability Score	Reliability Category
1	Chennai	Chennai	21.500/-	11.00/-	Chennai
2	Chennai	Chennai	21.500/-	11.00/-	Chennai
3	Chennai	Chennai	21.500/-	11.00/-	Chennai
4	Chennai	Chennai	21.500/-	11.00/-	Chennai
5	Chennai	Chennai	21.500/-	11.00/-	Chennai
6	Chennai	Chennai	21.500/-	11.00/-	Chennai
7	Chennai	Chennai	21.500/-	11.00/-	Chennai
8	Chennai	Chennai	21.500/-	11.00/-	Chennai
9	Chennai	Chennai	21.500/-	11.00/-	Chennai
10	Chennai	Chennai	21.500/-	11.00/-	Chennai

Scope of the ISIP

Prerequisites / Assumptions for ISIP

1. Bulk flow meters are needed to be installed at the outlet of treatment plant or chlorination plant or intake of purchased water.
2. Consumer end surveys has to be carried out for measuring service delivery.
3. The indicator related to Extent of metering of water connection at domestic consumer end is not taken into account.
4. ISIP follows CPHEEO guideline

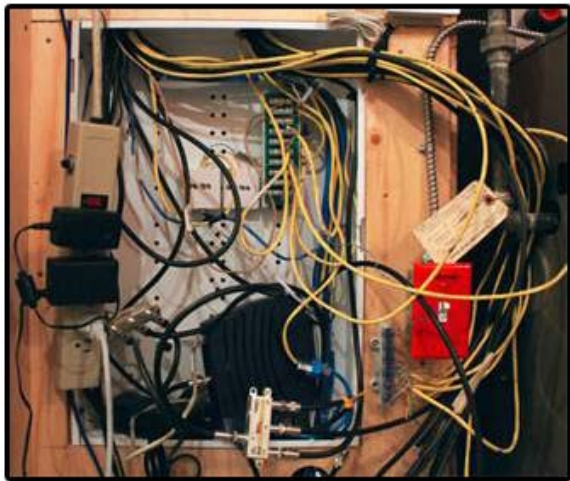
Indicators targeted for better reliability

1. Coverage of water supply connections
2. Per capita available of water at consumer end
3. Extent of metering of water connections
4. Extent of Non Revenue Water
5. Continuity of water supply
6. Quality of water supplied
7. Efficiency in redressal of customer complaints
8. Cost recovery in water supply services
9. Efficiency in collection of water supply related charges
10. Coverage of water supply service in slums



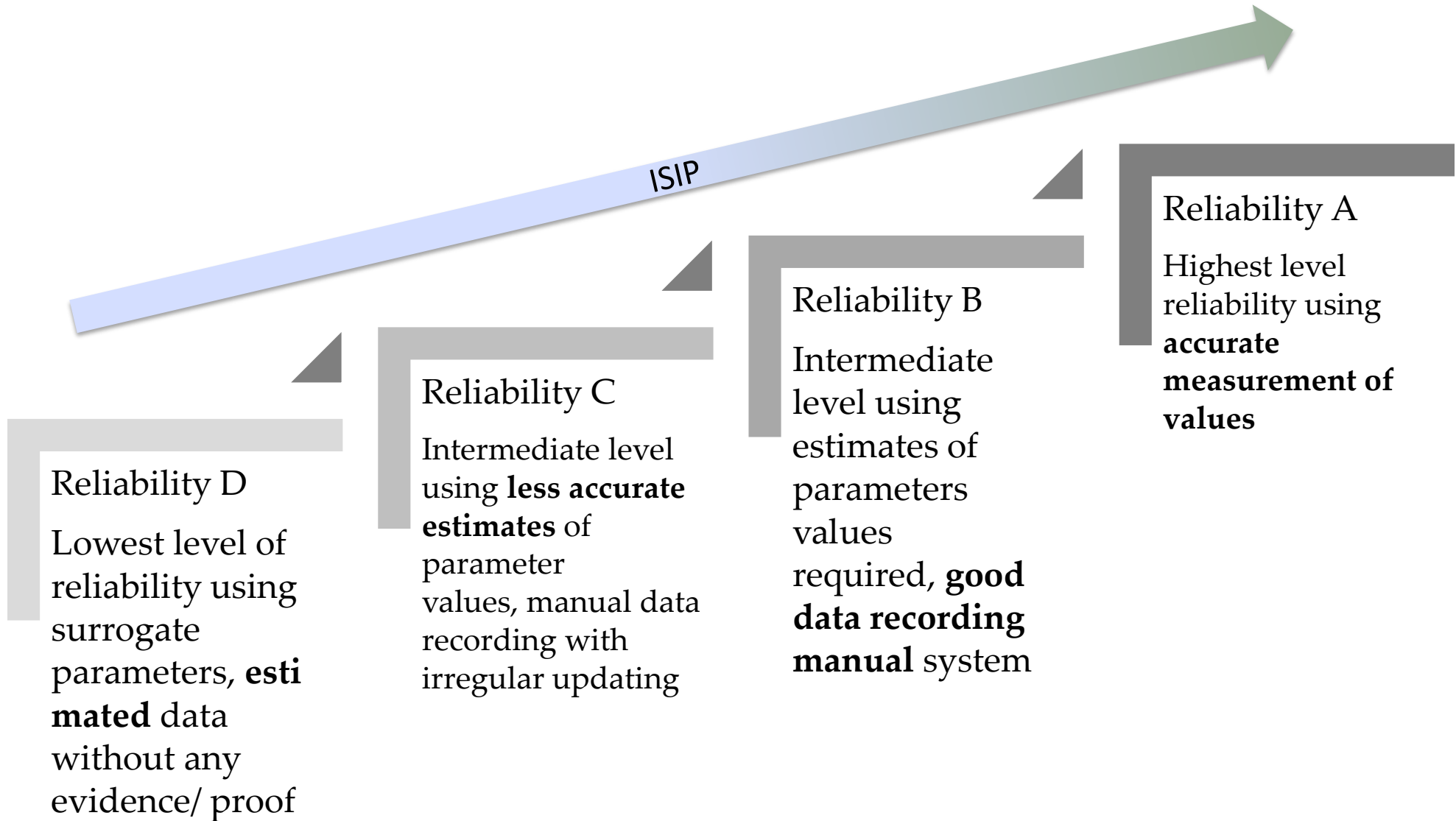
Issues in current system

1. Insufficient data recording from operational activities
2. Quantities are based on estimates
3. Database integration not channelized properly
4. No detailed analysis/interpretation of recorded data for decision making
5. Decision maker do not get adequate and reliable information to take decisions
6. Lack of computerized system
7. Limited personnel and funding
8. Data recording disparities



Unorganized to Organized system

Reliability scale



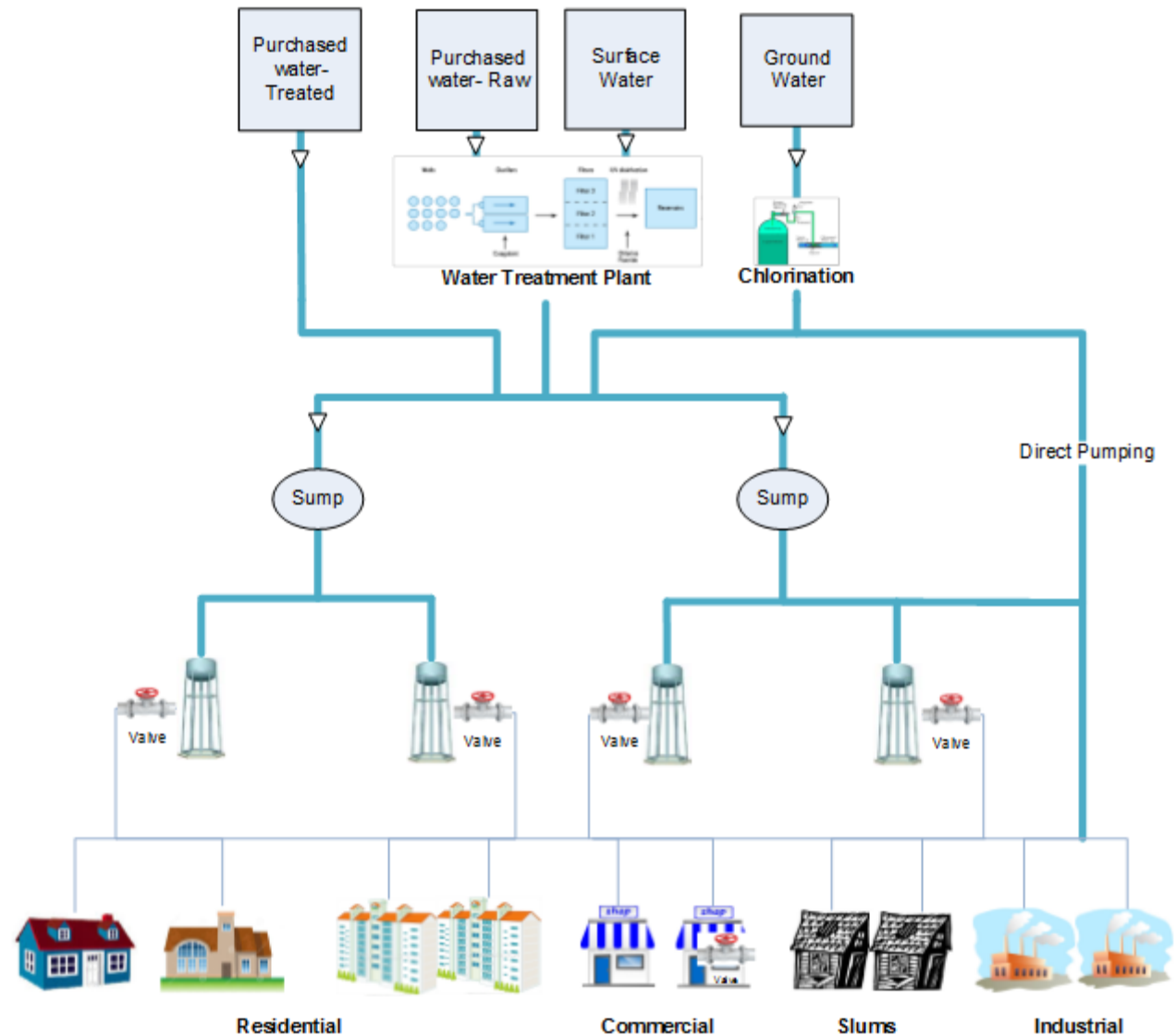
Generic water supply flow diagram

Source

Treatment

Transmission
and Distribution

Consumer End



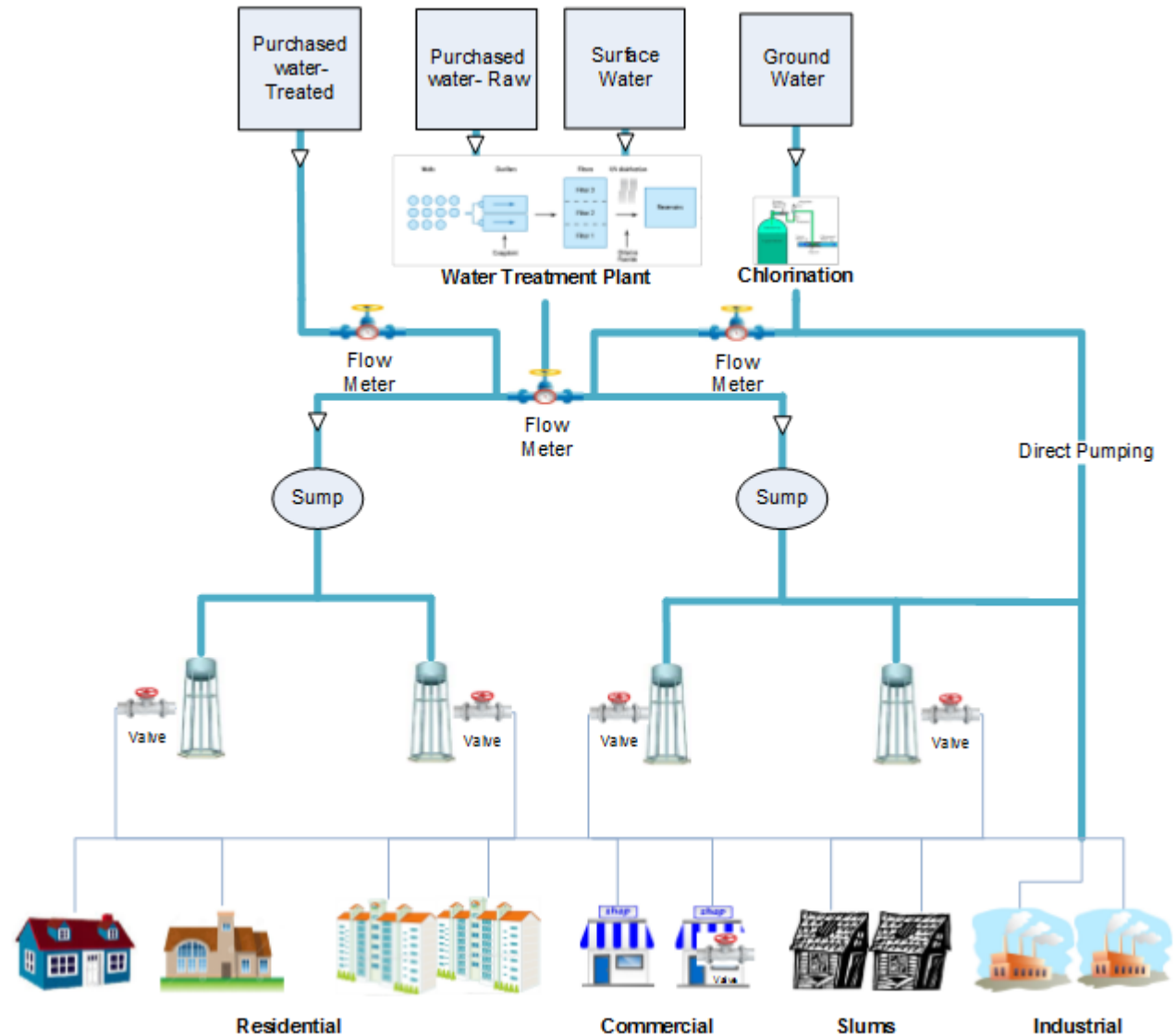
Generic water supply flow diagram

Source

Treatment

Transmission
and Distribution

Consumer End



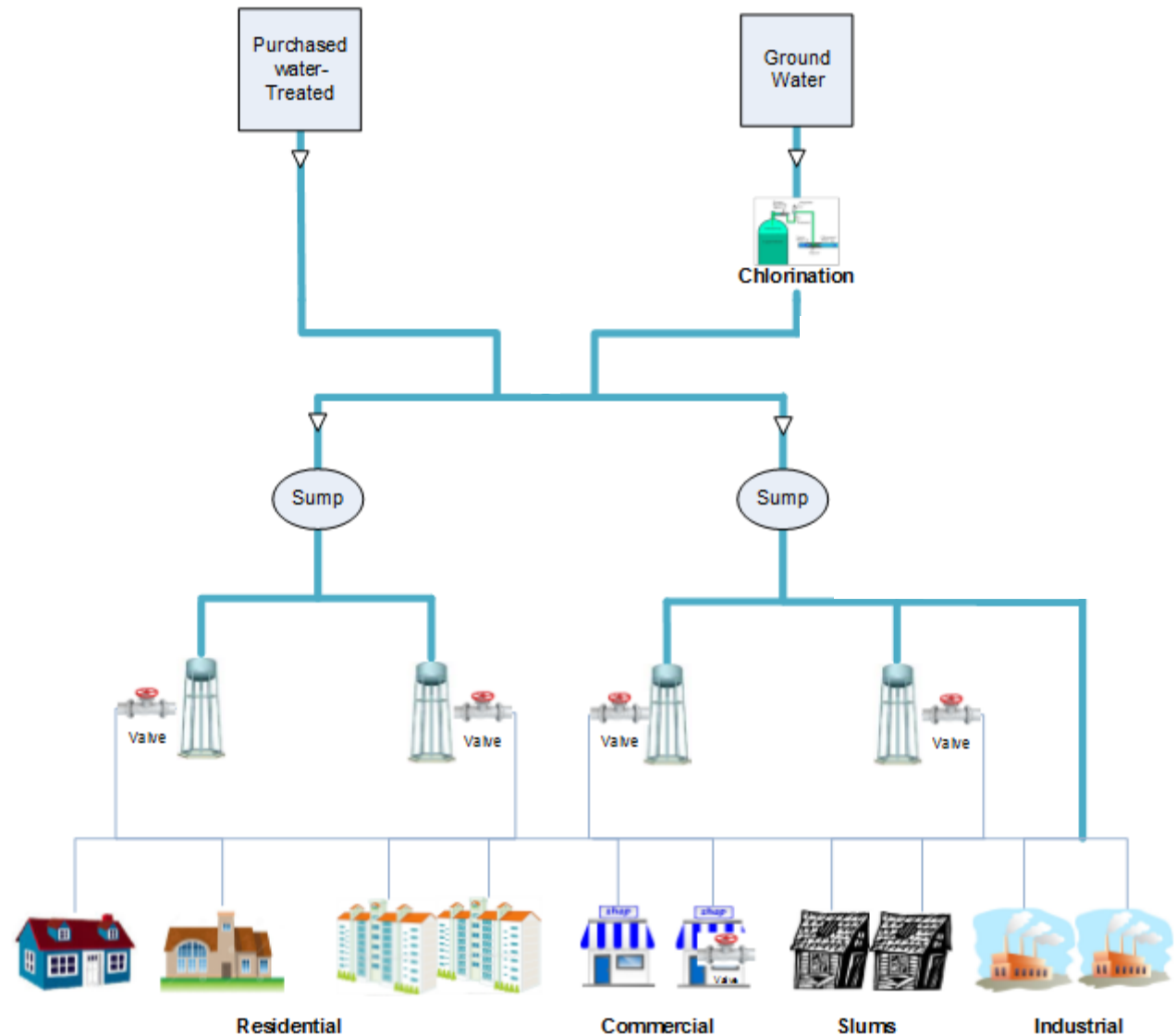
Example of Lathi water supply system

Source

Treatment

Transmission
and Distribution

Consumer End



3 types of forms created

Indicator forms

Compilation / Intermediate forms

Base level forms

ISIP for Municipalities Performance Assessment System

Form WS06: Quality of water supplied

About: This form is an indicator form to generate quality of water supplied indicator. Source of this information will be Form WS06A.

Name of Municipality: _____ Date: _____

For Year: _____

Location: _____
 Calculated by: Municipal Engineer / City Engineer
 Frequency of recording: ☐ Daily ☒ Monthly ☐ Quarterly ☐ Yearly
 Reported to: Chief officer
 Frequency of reporting: ☐ Daily ☒ Monthly ☐ Quarterly ☐ Yearly

Column	Month	Total samples tested	Samples passed
Unit	A	B	C
Source	-	Numbers	Numbers
		WS06A	WS06A
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
Average			

ISIP for Municipalities Performance Assessment System

Form WS06B: Water quality test results - Zone wise

About: Water quality is an important parameter as it directly related to health of the citizens. Water quality testing standard regime and proper documentations of test results are lacking in the cities. Quality testing for residual chlorine and physical parameters are recommended to be done on daily basis as per CPHEEO manual. This format is to be used for RC and physical test at consumer end.

Name of Municipality: _____ Date: _____

For Month: _____ Total test: _____

Location of test: ☒ At source ☒ Intermediate ☒ Consumer End
 Recorded by: Sanitary inspector / water supply engineer
 Frequency of recording: ☐ Daily ☒ Monthly ☐ Quarterly ☐ Yearly

Water zone no.	Water zone name	RC test	RC test passed	Physical test	Physical test passed	Bacteriological test	Bacteriological test passed	Chemical test	Chemical test passed	Total test	passed	Remarks
Test at source												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												

ISIP for municipalities under PAS Program Urban Management Center

Form WS06C: RC and Physical testing

About: Water quality is an important parameter as it directly related to health of the citizens. Water quality testing standard regime and proper documentations of test results are lacking in the cities. Quality testing for residual chlorine and physical parameters are recommended to be done on daily basis as per CPHEEO. This format is to be used separately at all source and intermediate location on daily basis.

Name of Municipality: _____ Date: _____

Address of the sample location: _____

Name & designation of staff collecting samples: _____

Location of test: ☒ At source ☒ Intermediate ☒ Consumer End
 Recorded by: Field staff or valve operator
☐ Monthly ☐ Quarterly ☐ Yearly
 Frequency of reporting: ☐ Daily ☒ Monthly ☐ Quarterly ☐ Yearly

Srno	Characteristics	Analytical value	Test Result (Pass/Fail)	Remarks
1	Physical test			
	1. Colour			
	2. Odor			
	3. Temperature			
	4. Taste			
	5. Turbidity			
	6. TDS			
2	Residual Chlorine Test			
3	PH value			

Data Flow

Form ID

WS 01 A

Letters: Sector

WS : Water supply

First two digits: Indicator number

01 : Indicator number 1

Letter after the digit: sub forms under indicator form

A : sub forms under indicator form

Proposed forms for improvement in information collection

Indicator	Indicator forms	Coalition form	Forms at the origin of data
	Number of forms: 10	Number of forms: 5	Number of forms: 7
Coverage of water supply connections	Form WS01_Indicator_1.docx		Form WS01A_Population Forecast.docx Form WS01B_HH with WS Connection.docx
Per capita available of water at consumer end	Form WS02_Indicator_2.docx		Form WS02A_Quantum of water supply.docx
Extent of Non Revenue Water	Form WS04_Indicator_4.docx	Form WS04A_Quantum of water sold.docx	
Continuity of water supply	Form WS05_Indicator_5.docx		Form WS05A_Duration of Water supply by valve operation.docx Or Form WS05B_Consumer end survey.docx
Quality of water supplied	Form WS06_Indicator_6.docx	Form WS06A_Water quality testing - Type wise and location wise compilation.docx Form WS06B_Water quality test - Water zone wise compilation.docx	Form WS06C_RC and physical Test - Field form.docx Form WS06D_Frequency of water quality tests.docx
Efficiency in redressal of customer complaints	Form WS07_Indicator_7.docx	PGR Tool	
Cost recovery in water supply	Form WS08_Indicator_8.docx		
Efficiency in collection of water supply charges	Form WS09_Indicator_9.docx		
Coverage of water supply service in slums	Form WS10_Indicator_10.docx	Form WS10A_Services in slums (Slum level).docx	Form WS10B_Slum Survey (Household level).docx

Coverage of water supply service

Data Requirements

- Number of households connected
- Number of households in service area

Currently

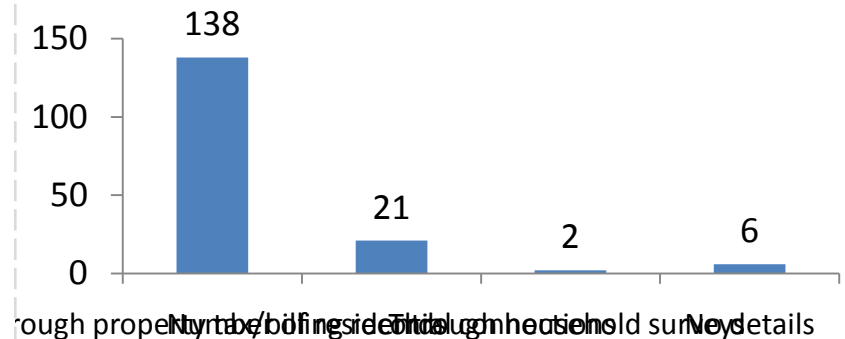
- Out-dated database
- No clarity on no. of HHs per property
- Lack of consumer information
- Loss of revenue
- Improper Demand Management

Improvement

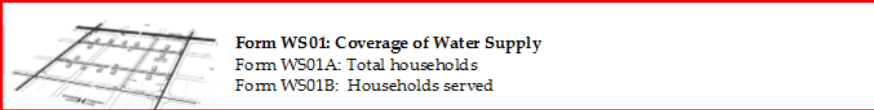
- HH survey for service area - customers and non-customers
- Setting up system for regular updates

Reliability Scale

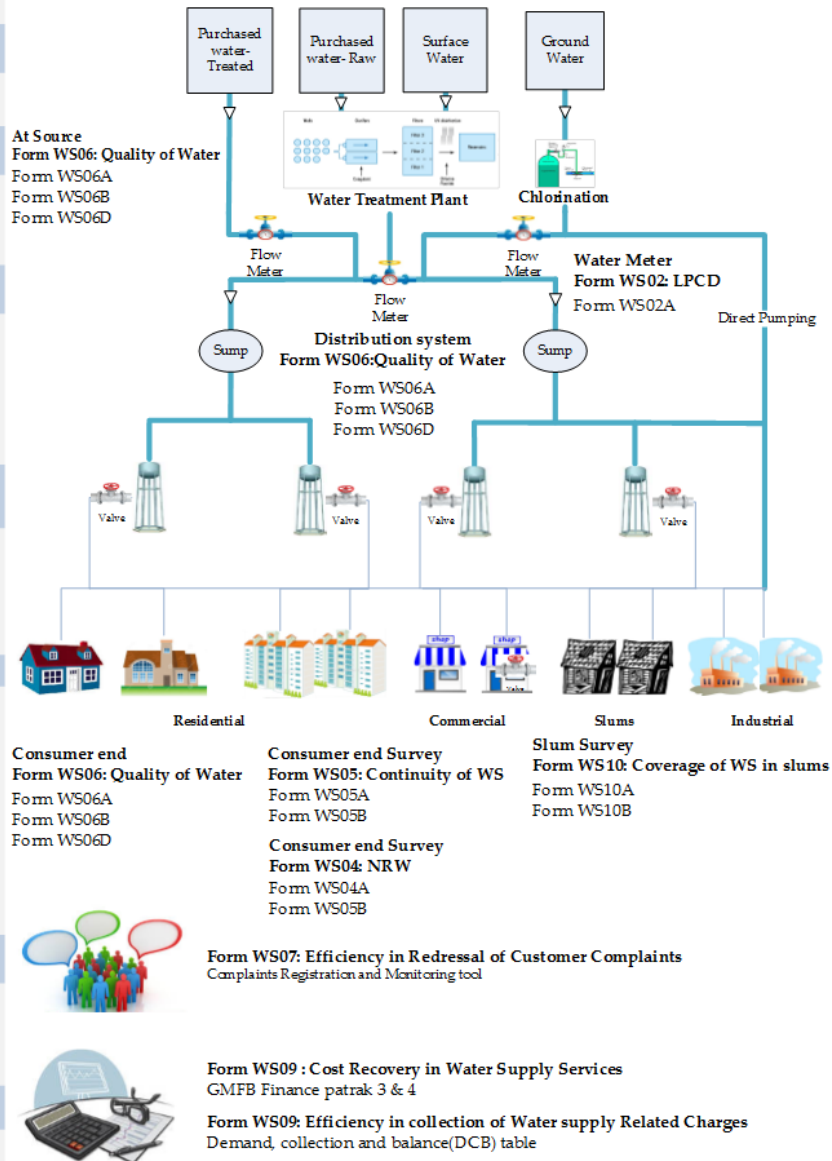
Source of water supply connections detail



- Population projections figures from existing DPRs
- Appropriate method of population forecast
- Consumer survey for service area
- Systematic periodic updates
- Computerization of database



* Coverage of water supply Service



$$\text{Coverage of Water Supply Connections} = \frac{\text{Total no. of HHs with direct water supply connection}}{\text{Total number of HH in service area}} \times 100$$

$$\text{Form WS01} = \frac{\text{Form WS01B}}{\text{Form WS01A}} \times 100$$

- Indicator form

Form WS01

- Total no. of HHs with direct water supply connection :

Form WS01A

- Total number of HH in service area:

Form WS01B

Per capita availability of water at consumer end

Data Requirements

- Water supplied to distribution system
- No. of days in month
- Population served

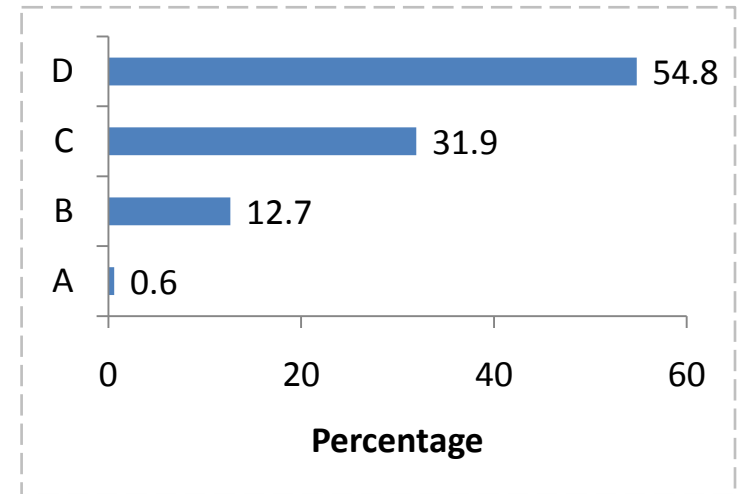
Currently

- No measurement of supplied water
- Estimations of quantity based on fill and draw of water tank

Improvement

- Bulk flow meter are required to install and monitored for exact amount of water supplied.
- Update the water supply connection data on monthly basis

Reliability Scale



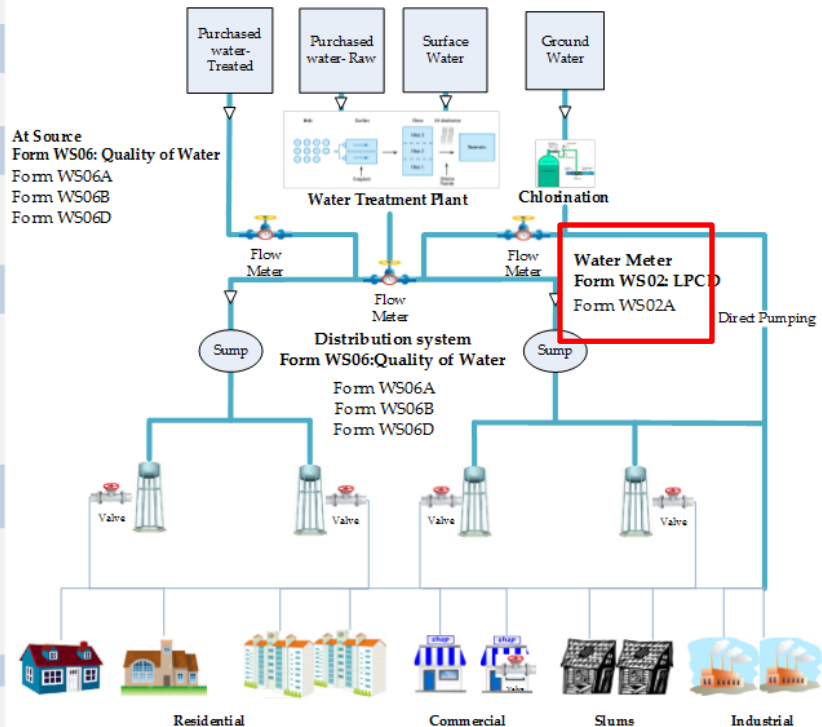
Reliability D Scale

- The quantity of water produced is estimated on the basis of assumed pump capacity and efficiencies, and the number of hours of operation. The population served is calculated on the basis of past census figures, extrapolated to current levels.



Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D

Consumer end Survey
Form WS05: Continuity of WS
Form WS05A
Form WS05B

Slum Survey
Form WS10: Coverage of WS in slums
Form WS10A
Form WS10B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Form WS07: Efficiency in Redressal of Customer Complaints
Complaints Registration and Monitoring tool

Form WS09 : Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table

* Per capita available of water at consumer end

$$\text{Per capita available of water at consumer end} = \frac{\text{Water supplied to distribution system}}{(\text{No. of days in month}) * (\text{Population served})} \times 100$$

$$\text{Form WS02} = \frac{\text{Form WS02A}}{(\text{No. of days in month}) * \text{Form WS01A}} \times 100$$

• Indicator form

→ [Form WS02](#)

– Water supplied to distribution system:

← [Form WS02A](#)

– Population served

← [Form WS01A](#)

Extent of Non-revenue water

Data Requirements

- Total Annual Production
- Total Billed consumption

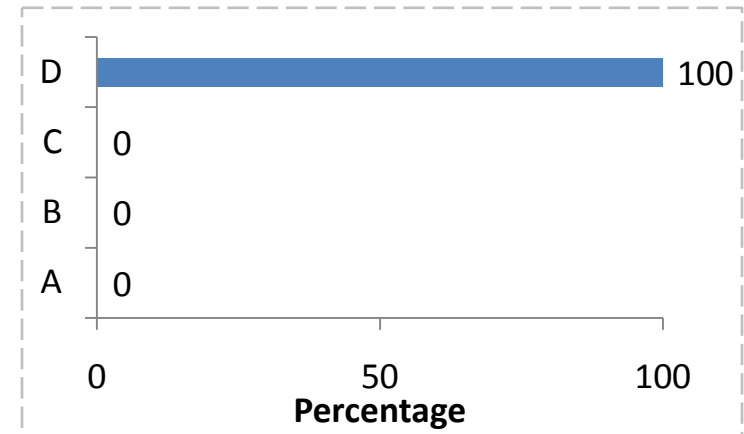
Currently

- Lack of production and consumption data
- NRW a guess-estimate – poor reliability
- No consumption-based tariff
- Differential pricing with lifeline supply at affordable cost not possible
- Inadequate cost recovery

Improvement

- Actual water supplied
- Improved cost recovery

Reliability Scale

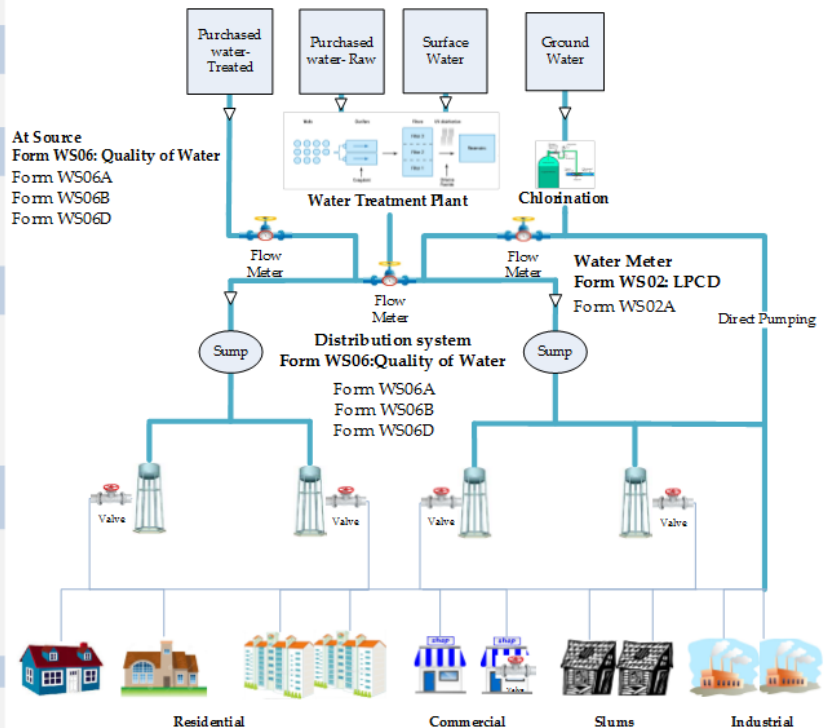


- Bulk meters at production points
- Bulk meters at key distribution points - ESR
- Non-domestic connections to be metered
- Meter checking practices to be in place



Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D

Consumer end Survey
Form WS05: Continuity of WS
Form WS05A
Form WS05B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Form WS07: Efficiency in Redressal of Customer Complaints
Complaints Registration and Monitoring tool

Form WS09: Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table

* Extent of Non-revenue water

$$\text{Extent of NRW} = \frac{(\text{Total water produced} - \text{Total quantum of water sold})}{\text{Total water produced}} \times 100$$

$$\text{Form WS04} = \frac{(\text{Form WS02A} - \text{Form WS04A})}{\text{Form WS02A}} \times 100$$

- Indicator form

Form WS04

- Total water produced

Form WS02A

- Total water received at consumer end

Form WS04A (Commercial + Domestic)

- Total water received at domestic connection

- Consumer end survey

Form WS05B

Continuity of water supply

Data Requirements

- Water supply duration
- Water Pressure measurements

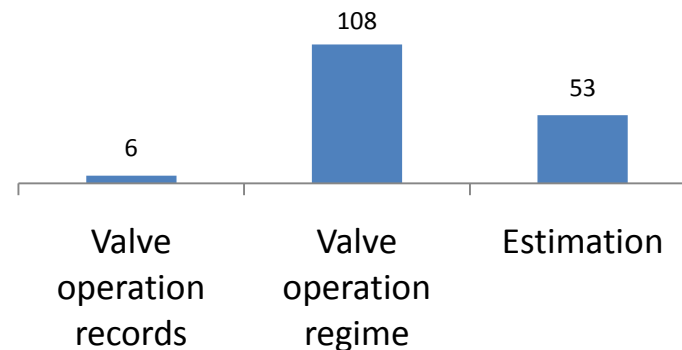
Currently

- Overall production data conceals inequities in distribution
- Lack of data to identify inequities in distribution
- Improper demand management
- Lack of pressure management - frequent pipe bursts / leakages
- Misplaced investment priorities

Improvement

- Consumer Survey
- Bulk flow meters at distribution points- ESR
- Pressure gauges for monitoring at WTP and key distribution points

Reliability Scale



- **Reliability A:** Detailed operational records at each of the valve operating points. Consumer end sample survey for pressure.
- **Reliability B:** The calculation is based on detailed operational records at each of the valve operating points.
- **Reliability D:** Estimation of the number of hours based on feedback from field level engineers. Zone-wise data are not available.

Example of sampling strategy : Lathi

City

- City population: 21219
- Total number of households: 4007
- Coverage of water supply connections: 85%
- 3 water distribution zones

Criteria

- Margin for error: 5%
- Confidence level: 95%

Sample size

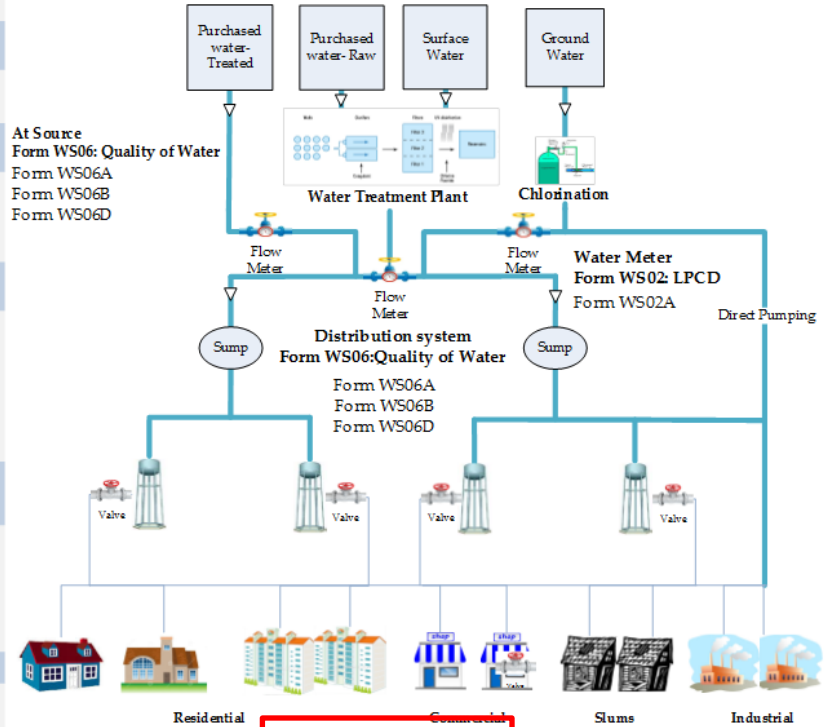
- 288 survey per water distribution zone per year
- **Total 864 Samples per year at consumer end for continuity of water supply**





Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D

Consumer end Survey
Form WS05: Continuity of WS
Form WS05A
Form WS05B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Slum Survey
Form WS10: Coverage of WS in slums
Form WS10A
Form WS10B



Form WS07: Efficiency in Redressal of Customer Complaints
Complaints Registration and Monitoring tool



Form WS09 : Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table

* Continuity of water supply

Continuity of Water Supply = No. of hours for which water is supplied at pressure greater than 7m head

Form WS05 = Form WS05A or Form WS05B

- Indicator form

Form WS05

- Method 1: Records of supply valve operations

Form WS05A

- Method 2: No. of hours for which water is supplied at pressure greater than 7m head

Form WS05B

Quality of water supplied

Data Requirements

- Total number of samples that meet potable water standards
- Total number of samples tested for quality

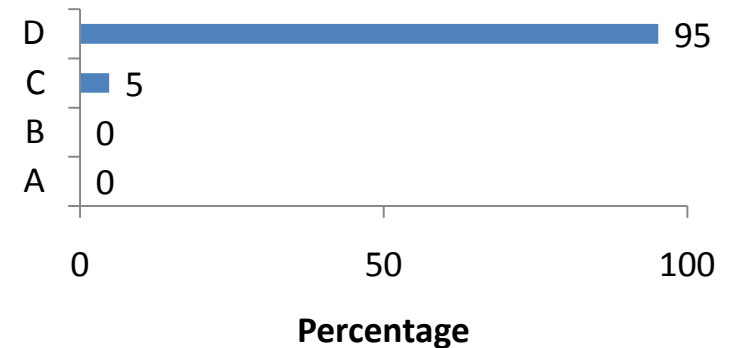
Currently

- No fixed regime of water quality testing
- Inadequate monitoring of water quality

Improvement

- Standard regime for water quality testing as per CPHEEO standards
- Zone wise and type wise compilation of quality test results for easy identification of problematic areas

Reliability Scale



Reliability D

- Sampling is done only at treatment plant outlets. There is absence of a sampling regimen and of required laboratory equipment, and only very basic tests are carried out

Water quality regime tool – Example of lathi

Input

Output – Daily

		Select Date	15-July				
Numbers			Physical	Residual Chlorine	Bacteriological	Chemical	Total (Location wise test-Daily)
Input only in green cells							
Number of Tube well/ French well/ dug well	1	Ground water					
Number of Hand pumps	0	Tube well/ French well/ dug well (If drinking water is directly supplied to consumer end, chlorine dosage needs to be added)	0	1	0	0	1
Number of Rivers/ Infiltration wells/Lakes/Dams/Canal intakes	1	Hand pumps	0	0	0	0	0
Number of WTP	0	Surface water					
Hours of operation of WTP	0	Raw Water: Rivers/ Infiltration wells/Lakes/Dams/Canal	1	0	0	1	2
Number of main sump/ Ground level Storage Reservoir/Elevated Service Reservoir	3	At Water Treatment Plant					
Number of water distribution zones	3	Outlet of WTP	0	0	0	0	0
		At Water Distribution System					
		Inlet of main sump/ Ground level Storage Reservoir/Elevated Service Reservoir	3	3	0	0	6
		At Consumer End					
		Consumer End	15	15	0	0	30
		Total (Type of tests- Daily)	19	19	0	1	39

Water quality regime tool – Example of lathi

Input

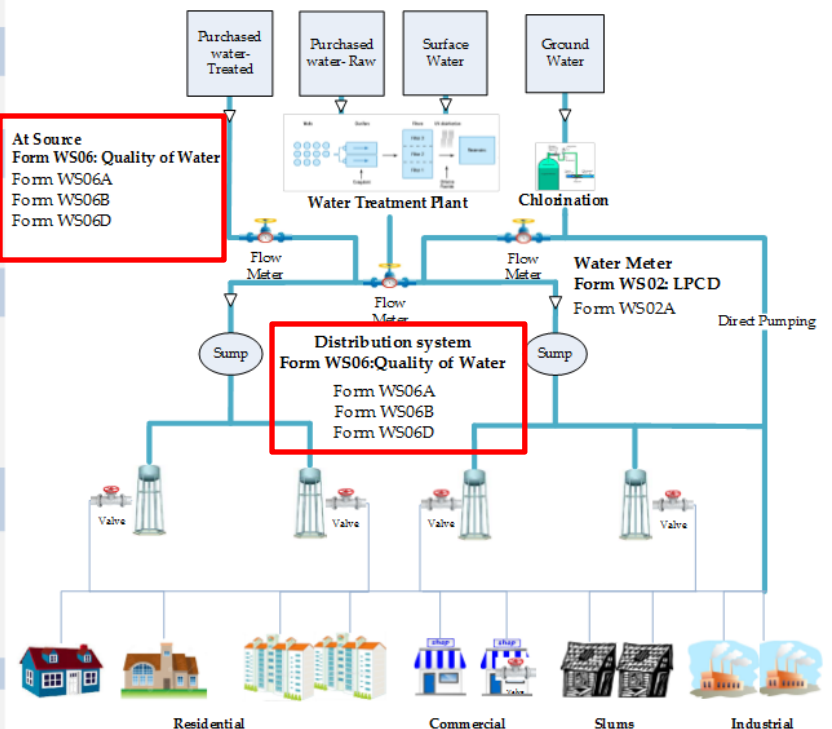
Output - Monthly

	Numbers	Select Month	Jan				
Input only in green cells			Physical	Residual Chlorine	Bacteriological	Chemical	Total (Location wise test-monthly)
Number of Tube well/ French well/ dug well	1	Ground water					
Number of Hand pumps	0	Tube well/ French well/ dug well (If drinking water is directly supplied to consumer end, chlorine dosage needs to be added)	1	31	1	1	34
Number of Rivers/ Infiltration wells/Lakes/Dams/Canal intakes	1	Hand pumps	0	0	0	0	0
Number of WTP	0	Surface water					
Hours of operation of WTP	0	Raw Water: Rivers/ Infiltration wells/Lakes/Dams/Canal	31	0	5	31	67
Number of main sump/ Ground level Storage Reservoir/Elevated Service Reservoir	3	At Water Treatment Plant					
Number of water distribution zones	3	Outlet of WTP	0	0	0	0	0
		At Water Distribution System					
		Inlet of main sump/ Ground level Storage Reservoir/Elevated Service Reservoir	93	93	15	3	204
		At Consumer End					
		Consumer End	465	465	15	15	960
		Total (Type of tests- monthly)	590	589	36	50	1265



Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
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Consumer end Survey
Form WS05: Continuity of WS
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Form WS05B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Slum Survey
Form WS10: Coverage of WS in slums
Form WS10A
Form WS10B



Form WS07: Efficiency in Redressal of Customer Complaints
Complaints Registration and Monitoring tool



Form WS09 : Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table

* Quality of water supplied

$$\text{Quality of Water Supplied} = \frac{\text{Total number of samples that meet potable water standards}}{\text{Total number of samples tested for quality}} \times 100$$

Total number of samples tested for quality and Total number of samples that meet potable water standards would be generated from following forms

- Indicator form
 - Form WS06
 - Water quality monthly report
 - Form WS06A
 - Water quality test results –Zone wise
 - Form WS06B
 - RC and physical test at consumer end
 - Form WS06C
- Frequency of water quality tests
 - Form WS06D

Bacteriological and chemical test results would be taken from the lab reports

Efficiency in redressal of customer complaints

Data Requirements

- Total number of complaints received
- Total number of complaints redressed

Currently

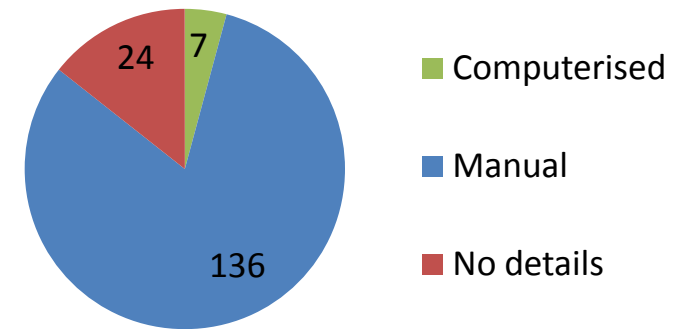
- No compilation of complaints
- Inadequate consumer orientation
- Lack of accountability
- Unable to capture system performance assessment

Improvement

- Central Complaint Recording and Monitoring
- Eventually, a computerise complaint recording and monitoring system

Reliability Scale

Computerized or manual system?



Multiple mechanisms to register complaints available

159

Records of types of complaints maintained

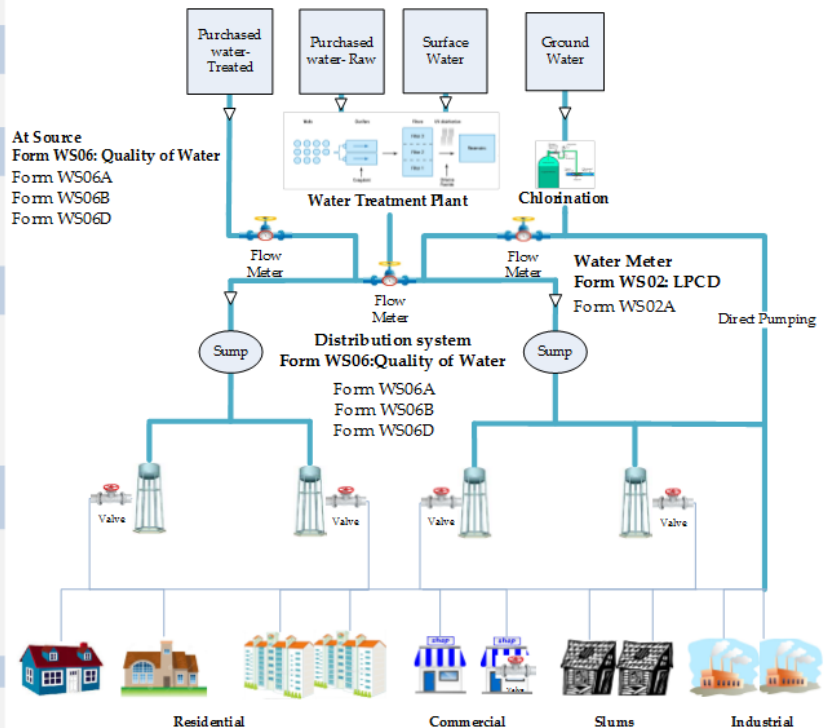
142

0 50 100 150 200



Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D

Consumer end Survey
Form WS05: Continuity of WS
Form WS05A
Form WS05B

Slum Survey
Form WS10: Coverage of WS in slums
Form WS10A
Form WS10B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Form WS07: Efficiency in Redressal of Customer Complaints
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Form WS09 : Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table

* Efficiency in redressal of customer complaints

Efficiency of redressal of customer complaints

Total number of water supply complaints received in a month

=

Total number of water supply complaints redressed within the month

X 100

Total number of complaints received in a month and total number of complaints resolved within 24 hours of complaint registration

- Indicator form

→ [Form WS07](#)
— Complaints Data
← [PGR Tool](#)

Cost recovery & Efficiency in collection of charges in water supply

Data Requirements

- Annual operating expenses
- Annual operating revenues
- Current year revenues billed
- Current year revenues collected

Currently

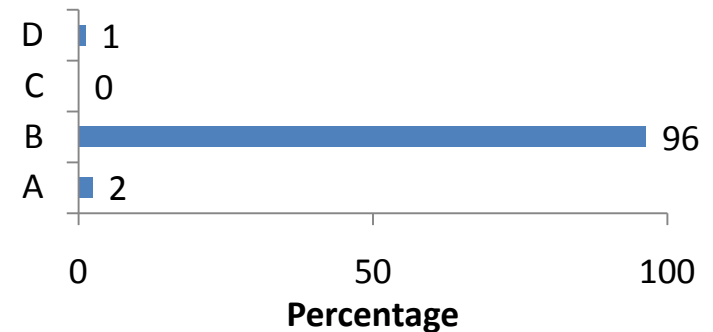
- Actual cost of service delivery not known
- Tariffs not linked to cost of service
- Lower cost recovery

Improvement

- Linking of the useful data from GMFB finance patrak.

Reliability Scale

Cost recovery reliability

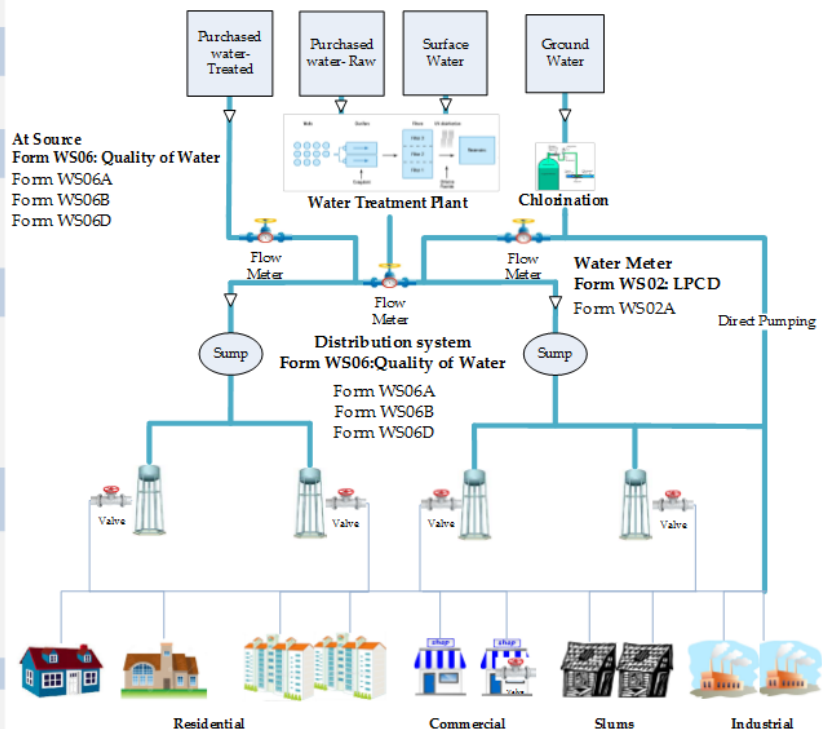


- Currently cash based and accrual based accounting system is running simultaneously
- However actual cost recovery can be taken form accrual based accounting system which is yet not legalized.



Form WS01: Coverage of Water Supply
Form WS01A: Total households
Form WS01B: Households served

At Source
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D



Consumer end
Form WS06: Quality of Water
Form WS06A
Form WS06B
Form WS06D

Consumer end Survey
Form WS05: Continuity of WS
Form WS05A
Form WS05B

Slum Survey
Form WS10: Coverage of WS in slums
Form WS10A
Form WS10B

Consumer end Survey
Form WS04: NRW
Form WS04A
Form WS05B

Form WS07: Efficiency in Redressal of Customer Complaints
Complaints Registration and Monitoring tool



Form WS09: Cost Recovery in Water Supply Services
GMFB Finance patrak 3 & 4

Form WS09: Efficiency in collection of Water supply Related Charges
Demand, collection and balance(DCB) table



Cost recovery in water supply services

Cost recovery in
waste supply

=

Annual operating
expenses
Annual operating
revenues

X 100

- Cost recovery in water supply
[Form WS08](#)



Efficiency in collection of water supply related charges

Efficiency in
collection of water
supply related
charges

=

Tax collection
Annual total tax
demand

X 100

- Efficiency in collection of WS related charges
[Form WS09](#)

Coverage of water supply service in slums

Data Requirements

- Number of HH having water supply connections in Slum
- Total number of households in slum

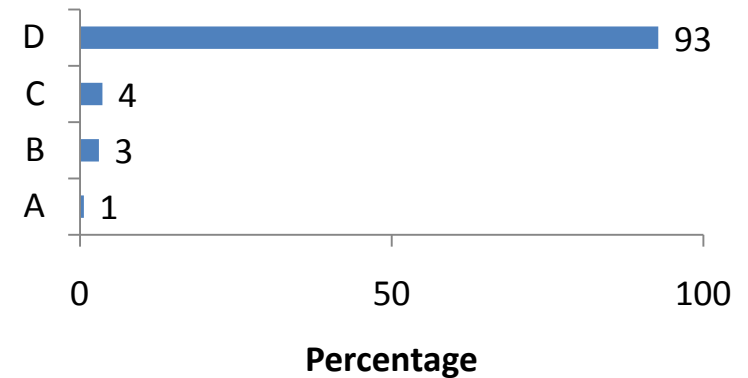
Currently

- Estimation based data for urban water and sanitation services in slum

ISIP

- Slum survey for initial data generation and regular update of data through monitoring.

Reliability Scale



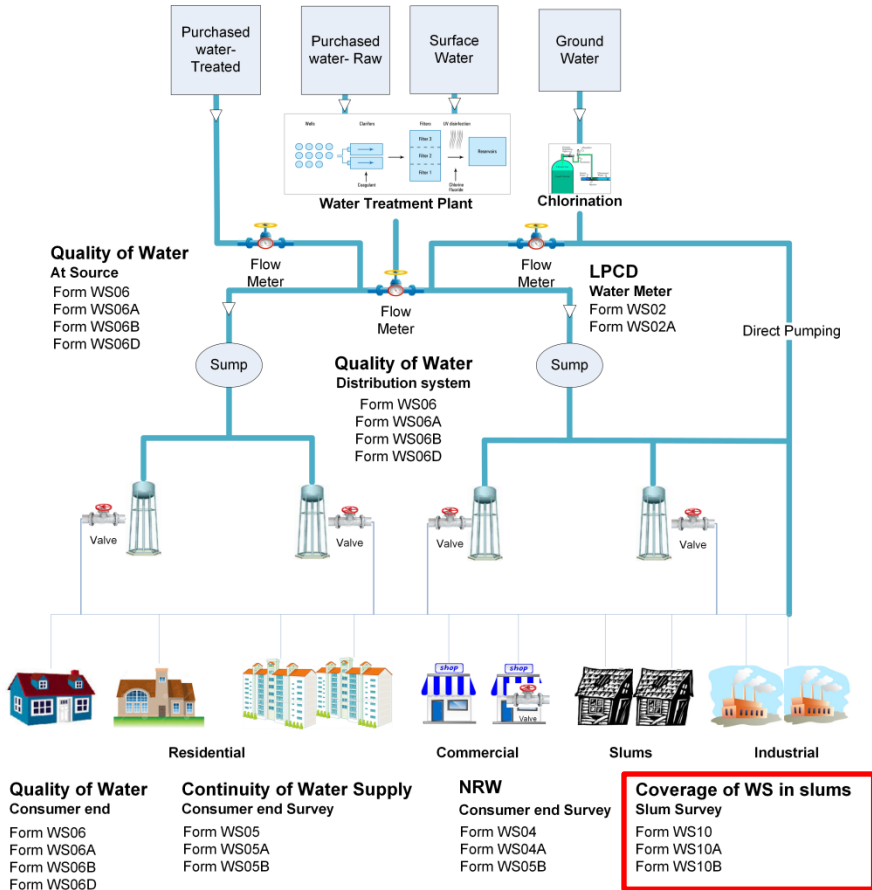
- Convergence with surveys carried out under other government programs.



Form WS01: Coverage of Water Supply

Form WS01A: Total households

Form WS01B: Households served



Efficiency in Redressal of Customer Complaints

Form WS07
Complaints Registration and Monitoring tool



Cost Recovery in Water Supply Services

Form WS09

Efficiency in collection of Water supply Related Charges

Form WS09



Coverage of water supply service in slums

Coverage of water supply service in slums

=

Number of HH having water supply connections in Slum
Total number of households in slum X 100

Total number of households and households having water supply connection in slums from slum survey

- Indicator form

[Form WS10](#)

– Services in slums (Slum level info)

[Form WS10A](#)

- Slum Household Survey Form

[Form WS10B](#)

ISIP Tool

- Excel based tool which has interlinking between the information thus minimizing the data input points and data input errors.
- 3 type of forms – indicator form, compilation form and base data form.
- Adaptable to different water supply systems in ulb
- Data to be generated on monthly basis have different sheet for all months.
- A easy to use and error free way of slb indicator generation.

Limitation of the tool

- Recording and calculation of the base data which is to be collected more frequently is not recorded directly in the tool. Indeed, the calculations can be inserted in the compilation form.

Excel interface showing the ISIP Tool form WS01: Coverage of water supply service.

Form WS01: Coverage of water supply service

About: This is an indicator form to generate coverage of water supply service indicator. Source of this information will be Form WS01A and Form WS01B.

Name of Municipality: Date:

For Year: 2014

Location: Municipal Head office

Calculated by: Municipal Engineer / City engineer

Frequency of recording: ☐ Daily ☐ Monthly ☐ Quarterly ☒ Yearly

Reported to: Chief officer

Frequency of reporting: ☐ Daily ☐ Monthly ☐ Quarterly ☒ Yearly

	Population	Connections	Water supply coverage
Column	A	B	C
Unit	Numbers	Numbers	In percentage
Source	Form WS01A	Form WS01B	(B / A)*100
Value	14149	12750	90.11%

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Excel sheet tabs: 01, 01A, 01B, 02, 02A, 04, 04A, 04B, 05, 05A, 05B, 06, 06A

Way forward

- ISIP for small cities of waste water and Solid waste management
- ISIP tool manual
- Implementation of ISIP on pilot basis
- Improvements from the lessons learned from pilot testing
- Open to use for all ULBs