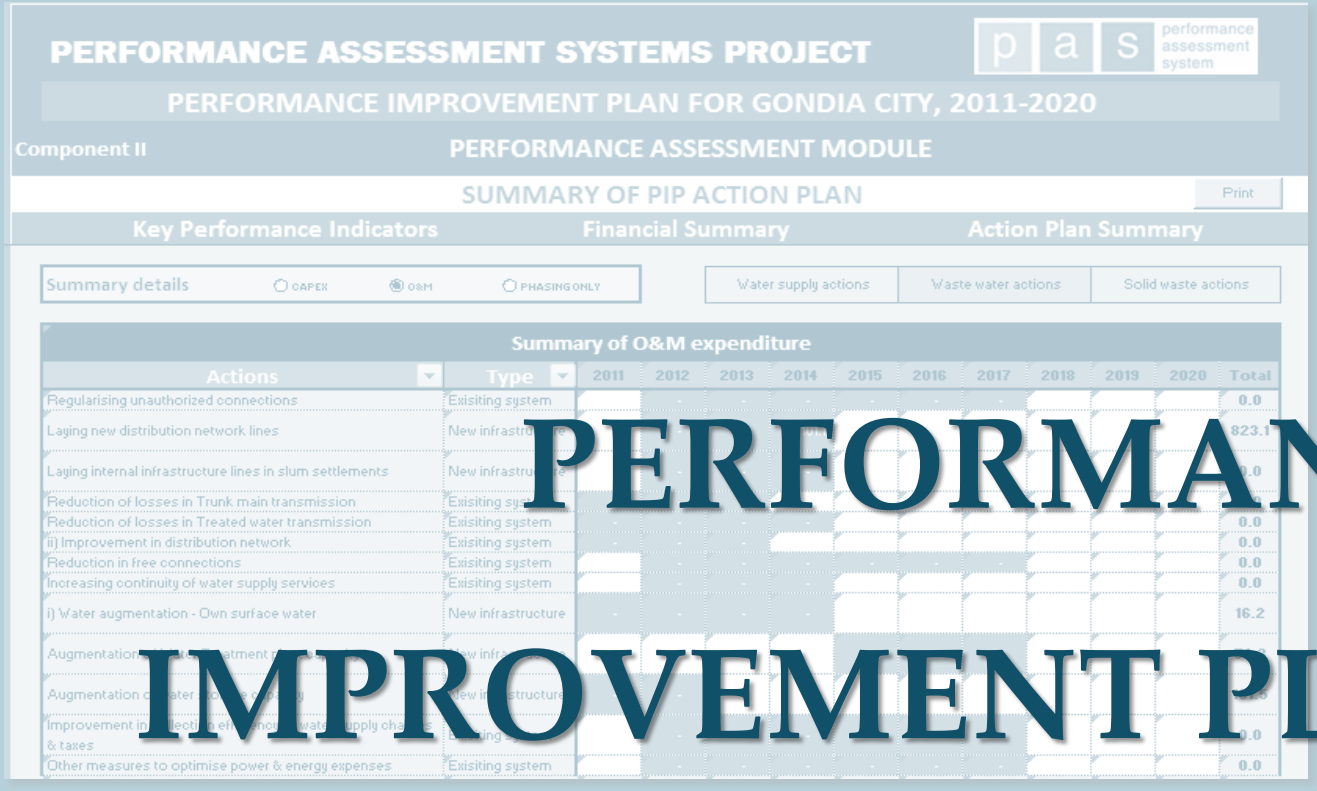
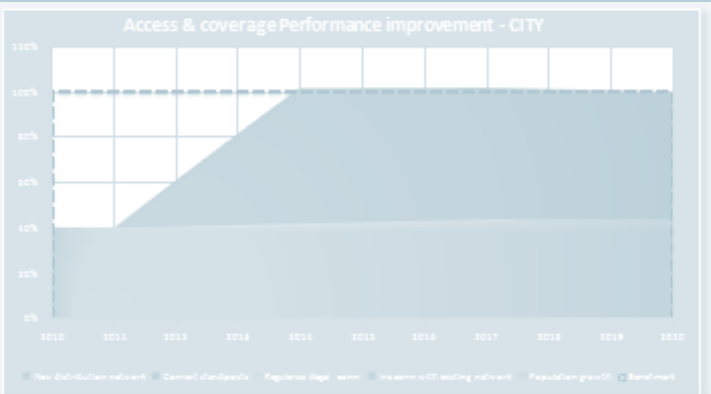
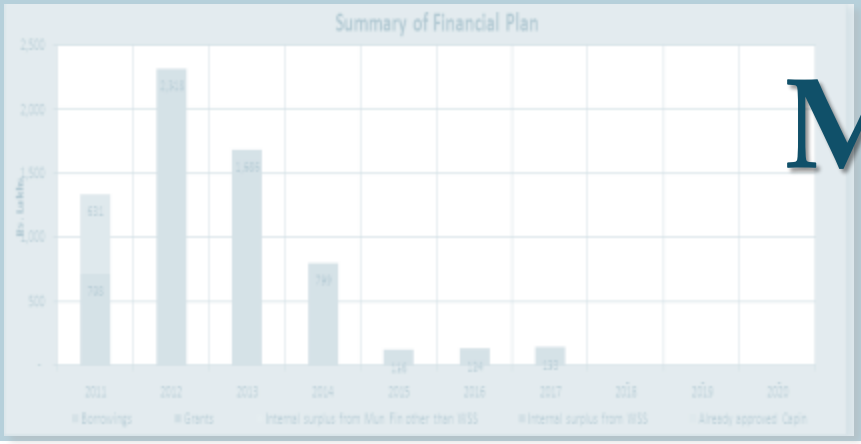




PERFORMANCE IMPROVEMENT PLANNING MODEL



WATER SUPPLY SERVICES		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cover [illegible]	%	39%	39%	60%	80%	100%	100%	100%	100%	99%	99%	99%
Co[illegible]age of in[illegible]	%	51%	51%	68%	86%	100%	100%	100%	100%	100%	100%	100%
Per [illegible]	lpcd	53	54	57	60	64	67	67	67	66	65	65
Continuity of water supply	hours	4.00	4.00	10.67	17.33	24.00	24.00	24.00	24.00	24.00	24.00	24.00
Extent of Non revenue water	%	37%	35%	30%	26%	20%	16%	15%	14%	14%	14%	14%
Extent of metering of water connections	%	99%	99%	99%	99%	100%	100%	100%	100%	100%	100%	100%
Quality of water supplied	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Efficiency in redressal of customer complaints	%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Efficieny in collection of WS charges	%	85%	85%	88%	90%	93%	95%	98%	100%	100%	100%	100%
Cost recovery in WS services	%	90%	88%	90%	90%	82%	82%	78%	89%	84%	75%	89%

performance assessment system

CEPT UNIVERSITY

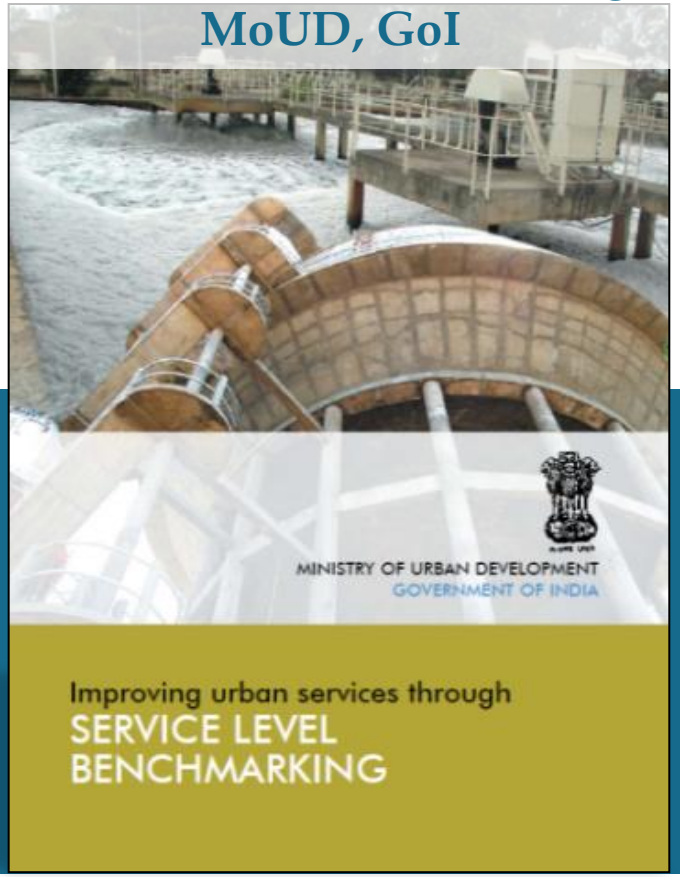
PERFORMANCE ASSESSMENT SYSTEM PROJECT

PAS

Performance Assessment System

pas performance assessment system

Service level benchmarking, MoUD, GoI



Annual Service delivery profile for 419

Cities in 2 States

covering 32 Key indicators and

89 local action indicators

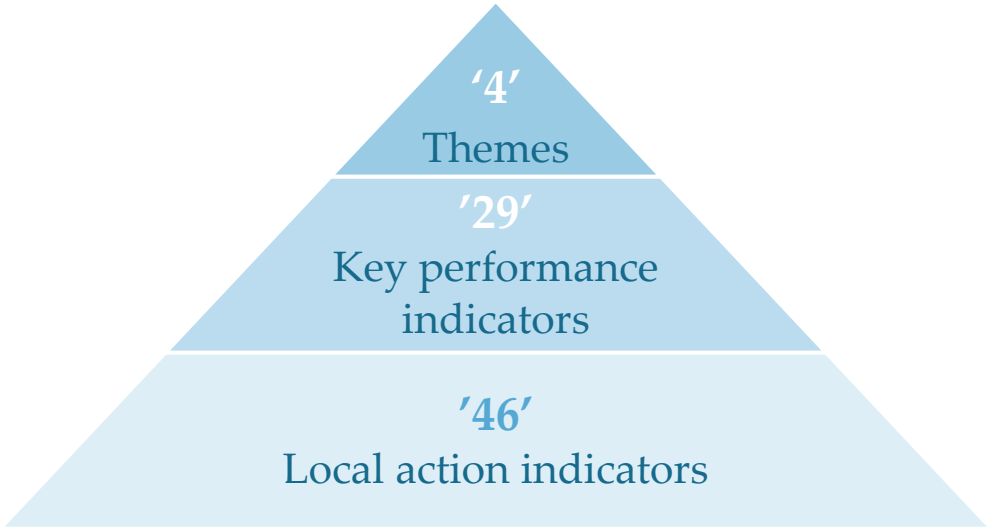
Sectors : Water supply, Waste Water, Solid waste Management & Storm Water

Focus on Measurement, Monitoring & Improvement

Performance Assessment

FOUR THEMES

1. Access, coverage & equity
2. Service levels and quality
3. Efficiency in service operations
4. Financial sustainability



Both states of Gujarat and Maharashtra have in their many development programs identified 'Goals' and 'Reforms' that need to be achieved for the water supply and sanitation sectors. The framework has adapted to these needs, and identified a set of Key Performance Indicators for Goals and Reforms, as well as Local Action Indicators that need to be achieved for city specific improvement.

Theme	Key performance indicators	Local action indicators
Access, coverage and equity	Coverage of individual household toilets in city	Households resorting to open defecation
		Households dependent on community toilet
	Coverage of individual household toilets in slums	Households with sewerage network services
		Households with adequate on-site sanitation system
	Coverage of households with adequate sanitation system	Community and public toilets with adequate sanitation system

Approach to Performance Improvement Planning

Conventional Approach

'PROJECT'
based approach

Oriented towards achieving OUTPUTS

Starting point is an assessment of funding resources available – SUPPLY DRIVEN

Focus on developing INDIVIDUAL PROJECTS of various sectors

PAS Approach

'SERVICE'
based approach

Oriented towards achieving OUTCOMES

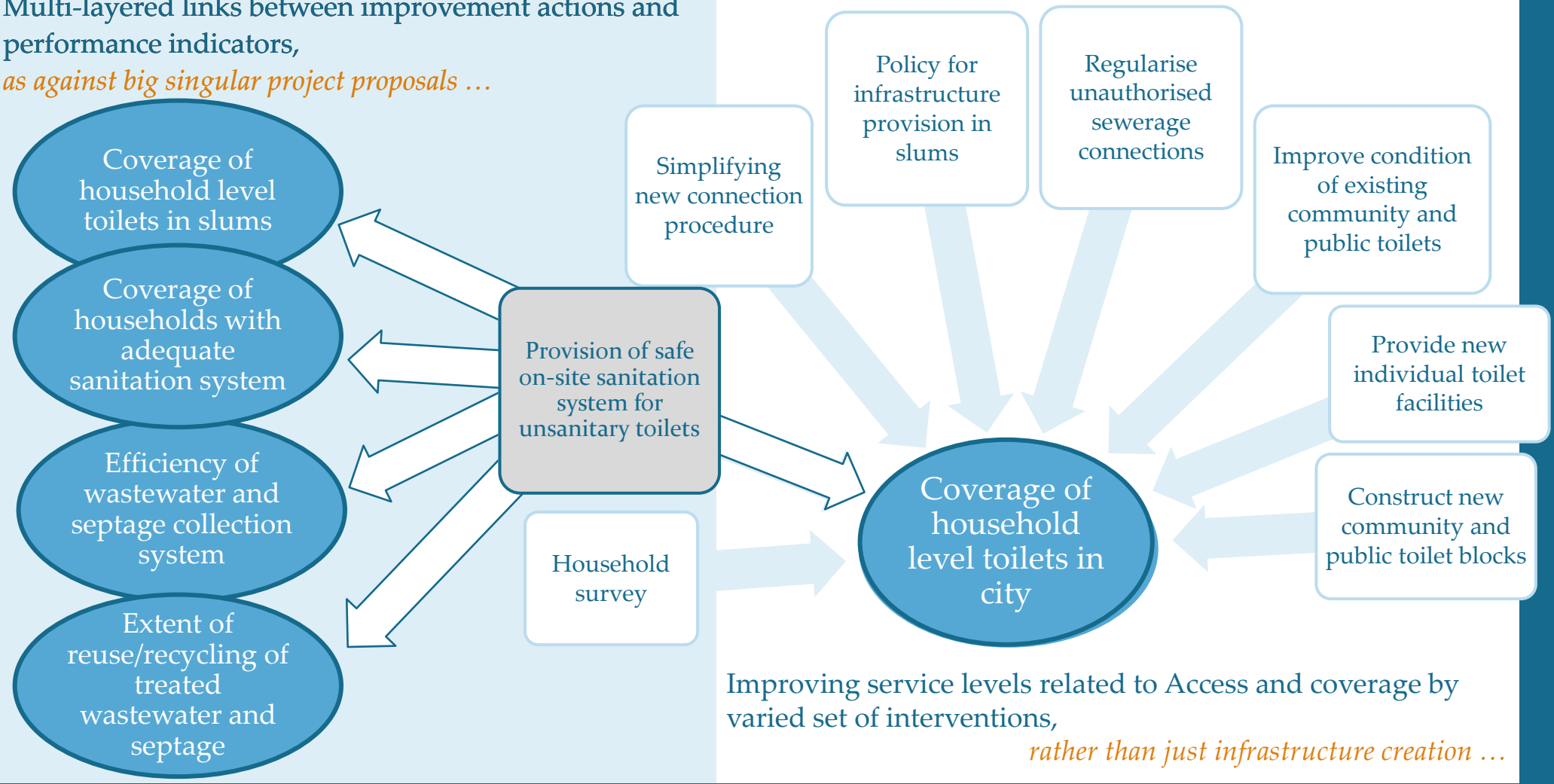
Starting point is measurement of current performance and local priorities – NEED DRIVEN

Focus on developing integrated SECTORAL SOLUTIONS

Integrated approach for ACTION PLANNING

Focus on moving away from 'infrastructure investment plans' to evolving 'service improvement plans' which include wide set of actions for improving service delivery.

Multi-layered links between improvement actions and performance indicators,
as against big singular project proposals …



Improving service levels related to Access and coverage by varied set of interventions,
rather than just infrastructure creation …

Inter-sectoral linkages are also captured in PIP model ... ***Impact of water augmentation on Per capita supply but also on wastewater generation, treatment capacity required, impact on finances***

Integrated approach for FINANCIAL PLANNING

Assess aggregate funding demand from all improvement actions

Financial implications of each Improvement action

- Capital expenditure
- Revenue generation
- Operating and maintenance expenditure
- Effect of inflation based on phasing

Aligning both these financial streams to evolve sustainable 'Financing Plan'

External sources of funds

Exploring funding pattern possible for each improvement action

Internal sources of funds

Exploring options to increase revenue from own income sources

Assess financial health and extent of revenue surplus available

Municipal finances of urban local bodies

- Past trends of municipal finances
- Forecasting for finances for Business as Usual scenario

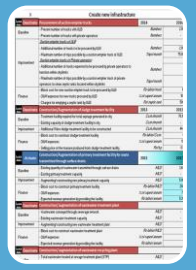
Performance Improvement Planning model

IMPROVEMENT PLAN OPTIONS

I. PERFORMANCE PRIORITIES

Sector Performance indicators used as the basis for assessing service performance

Actions (investments, policies, process changes) identified to achieve sector service objectives



II. ACTION PLANNING

Improvement Plan developed by designing actions for costs, phasing & revenue impact

Review Improvement Plan for impact on service performance

III. FINANCIAL PLANNING

Key financial decisions related to sources funds, tariffs and transfer of surplus to WSS

Review feasibility of Financing Plan for capital and operating expenditure

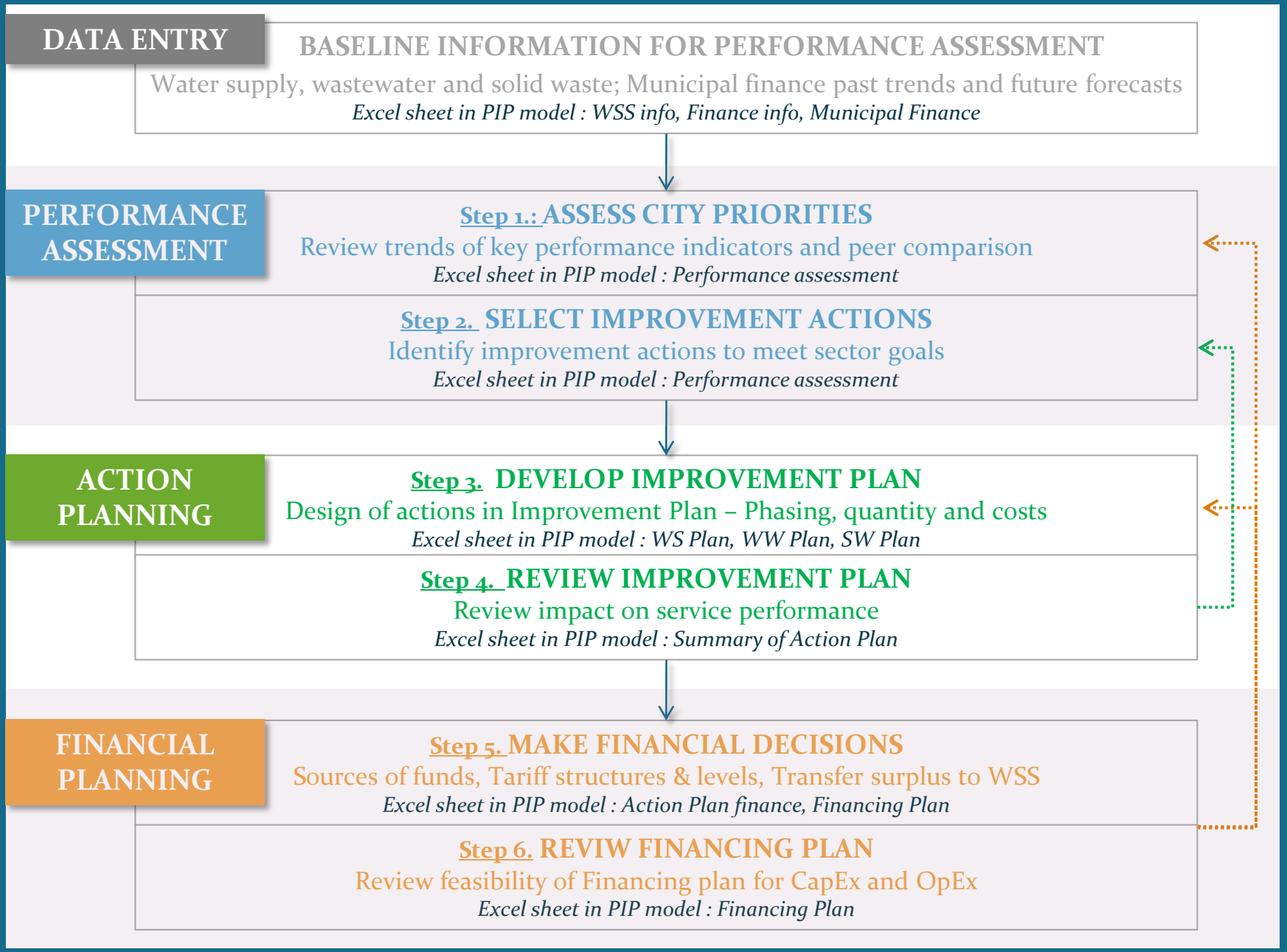
PIP Model starts with measurement of current performance levels. This is followed by identification and design of a set of actions to improve performance. Phasing and financial implications of these actions are assessed and a financing plan is developed. The Model enables comparison of various options in terms of their impacts on service levels and on ULB's financial capacity to operate and maintain new infrastructure.

Steps in Performance Improvement Planning model

PIP Model is developed as an excel based spreadsheet to facilitate interactive usage.

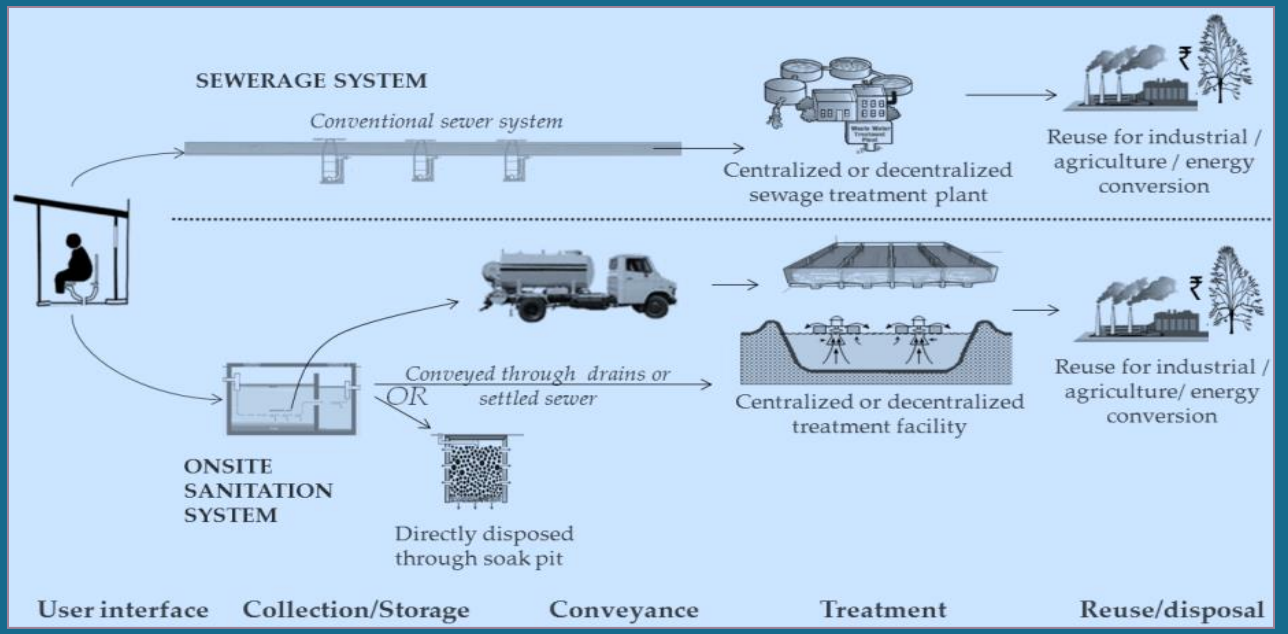
The structure of the Model has been aligned with PIP planning process. It has three distinct modules, each for a stage of PIP planning process.

The chart alongside denotes each sheet of excel workbook and its flow of sequence.



Data Entry and Forecasts for Performance assessment

Capturing entire value chain of a sector ....



Snapshot of sector input sheet in PIP model

I Demography information

A Population details

Sr. No.	Particulars	Census 2001	Census 2011
1	Total population	31,110	36,053
2	Slum population	1,867	2,140
3	Total number of households	6,538	7,580
4	Total number of slum households	298	342

B Population growth rate assumptions

Sr. No.	Particulars	Unit	Value
1	Decadal population growth rate: 2001 - 2011	Based on actual growth rate for 2001 and 2011	15.9%
2	Decadal population growth rate: 2011 - 2021	Estimated growth rate	15.9%

C Number of properties

Sr. No.	Particulars	Residential properties	Non-residential properties
1	Total number of properties in city at present *NOTE: Count all the properties irrespective of whether they are assessed for property tax or not*	9,000	657
2	Annual growth rate for increase in properties	5%	5%
3	Total number of properties assessed for taxation *NOTE: Count only those properties that are assessed in present year*	7,948	500

D City Area and wards

Sr. No.	Particulars	Unit	Value
1	Jurisdictional area of city	Sq. km	3.6
2	Inhabitated area of city	Sq. km	1.4
3	Number of municipal wards	Numbers	19
4	Number of slum settlements in city	Numbers	10

II Water supply sector information

A Water production

i) Source of water

Sr. No.	Particulars	Allocation in MLD	Actual Drawl in MLD
1	Surface water - Own Source		4.80
2	Bulk buying of raw water		
3	Bulk buying of treated water		0.03
4	Ground water source(s)		1.00
	Total	-	5.83
5	Water from non-ULB sources		

ii) Raw water transmission

Sr. No.	Particulars	Unit	Value
1	Length of transmission network	Km	3.40
2	Estimated raw water transmission losses	%	5.00%

ii) Raw water transmission

Sr. No.	Particulars	Unit	Value
1	Length of transmission network	Kms	18.00
2	Estimated raw water transmission losses	%	3.00%

B Water treatment

i) Water treatment plant (WTP)

Sr. No.	Particulars	Unit	Value
1	Total installed capacity of all WTPs	MLD	5.[illegible]
2	Estimated losses at WTPs	%	2.00%

ii) Quantity of treated water supply

Sr. No.	Particulars	Treated supply in MLD	Untreated supply in MLD
1	Ground water treated	1.00	-
2	Surface water routed through water treatment plants	4.56	-
3	Bulk buy of treated water	0.03	-
4	Total treated water supplied	5.50	-
5	Actual water production (treated and untreated)	5.50	

iii) Treated water transmission

Sr. No.	Particulars	Unit	Value
1	Length of treated water transmission network	Km	2.75
2	Estimated losses in treated water transmission	%	2.00%

C Water supply distribution

i) Water storage

Sr. No.	Particulars	Unit	Value
1	Total water storage capacity (Aggregate capacity of all elevated service reservoir - ESRs)	ML	1.81

ii) Water supply distribution network

Sr. No.	Particulars	Unit	Value
1	Total length of distribution network	Km	45.00
2	Area covered by distribution network	Sq. km	1.35
3	Slum settlements covered with water supply distribution network	Numbers	2

A Water production

i) Source of water

Sr. No.	Particulars	Allocation in MLD	Actual Drawl in MLD
1	Surface water - Own Source		
2	Bulk buy of raw water		5.63
3	Bulk buy of treated water		1.60
4	Ground water source(s)		
	Total	-	7.23
5	Water from non-ULB sources		

Sewerage connections

Sr. No.	Particulars	Number of sewerage connections	Number of households connected to sewerage	Number of sewerage connected households with individual toilets
1	Domestic non-slum connections			
2	Domestic slum connections			
3	Non-residential connections			
	Total	-	-	-
4	Estimated households having unauthorised sewerage connections (%)			

Solid waste secondary collection system

Sr. No.	Particulars	Unit	Value
1	Number of non-slum households dependent on secondary collection system (*These households are not served by door step collection and dump their waste in secondary collection bins*)	Numbers	1,400
2	Number of slum households dependent on secondary collection system	Numbers	65
3	Number of secondary collection bins in city	Numbers	95
4	Approximate aggregate storage capacity of all the bins	Metric tonnes	23.8
5	Number of solid waste transfer stations in city	Numbers	
6	Total storage capacity of all the transfer stations	Metric tonnes	

Situational assessment of municipal finance

BASELINE INFORMATION

ASSESS CITY PRIORITIES

SELECT IMPROVEMENT ACTIONS

DEVELOP IMPROVEMENT PLAN

REVIEW IMPROVEMENT PLAN

MAKE FINANCIAL DECISIONS

REVIW FINANCING PLAN

Functional classification of municipal budget :
(a) Revenue account, (b) Capital account, (c) Extraordinary account

BUDGET RECASTING

Municipal budgets are generally not aligned with proper accounting structure as per National municipal accounting manual (NMAM). It is imperative to first re-classify all budget item heads properly as per their functions for any analysis.

BUDGET PAST TRENDS

Municipal finance information related to overall municipal account and separately for water supply, wastewater and solid waste services are to be filled here. To arrive at best trend estimates for municipal finance projections, past five years' budget figures are compiled for reference.

BUDGET FORECASTING

Municipal finances are forecasted to assess financial strength of ULB for sustaining present services. They are projected for Business as Usual scenario for plan period of 10 years based on past trends. For revenue account, the budget estimates should relate to operating and maintaining of present services. Similarly, capital account should relate to ongoing or approved project for ULB.

Snapshot of municipal finance inputs

III Solid waste revenue and expenditure

A Solid waste revenue account

i) Solid waste revenue receipts

Sr.	Particulars	2007 (A)	2008 (A)	2009 (A)	2010 (A)	2011 (RE)	2012 (B)	2013	2014	2015	2016	201
1	Own source of revenues *1.1. Taxes and charges* *1.2. Others*	-	-	-	-	-	-	-	-	-	-	
2	Grants and contributions	11.3	10.6	30.6	33.7	0.8	0.3					
3	Miscellaneous	-	-	-	-	-	-					
4	**Additional income from PIP actions**							3.9	4.2	6.3	8.9	
	Total	**11.3**	**10.6**	**30.6**	**33.7**	**0.8**	**0.3**	**3.9**	**4.2**	**6.3**	**8.9**	

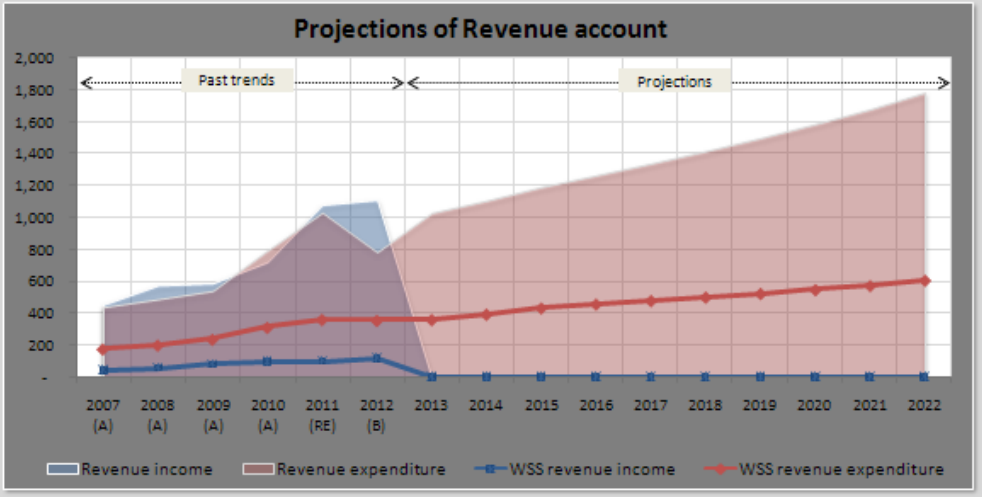
ii) Solid waste revenue expenditure

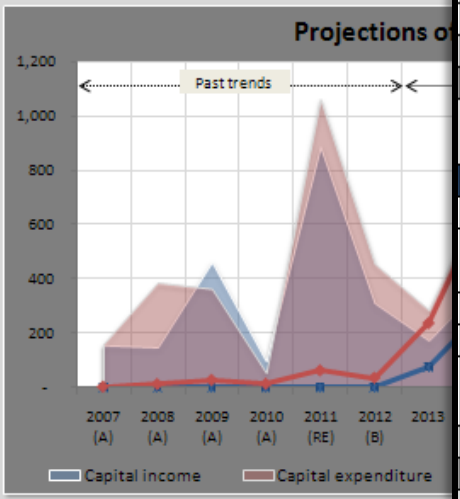
Sr.	Particulars	2007 (A)	2008 (A)	2009 (A)	2010 (A)	2011 (RE)	2012 (B)	2013	2014	2015	2016	201
1	Administrative and Establishment expenses	49.7	55.5	67.2	105.6	100.0	111.7	116.2	120.8	125.7	130.7	13
2	O&M expenses *(expenses like energy, repair and maintenance etc. for existing infrastructure only)*	29.2	23.0	37.9	34.8	57.8	36.8	38.1	39.2	40.4	41.6	4
3	Miscellaneous expenses	2.7	10.3	11.7	13.5	16.2	19.4	15.6	16.4	17.2	18.1	
4	Interest payment	-	-	-	-	-	-	-	-	-	-	
5	**O&M expenditure incurred from PIP**							-	0.4	13.0	13.7	
	Total	**81.6**	**88.8**	**116.7**	**153.9**	**173.9**	**167.9**	**170**	**177**	**196**	**204**	

B Solid waste capital account

i) Solid waste capital receipts

Sr.	Particulars	2007 (A)	2008 (A)	2009 (A)	2010 (A)	2011 (RE)	2012 (B)	2013	2014	2015	2016	201
1	Approved/expected State scheme grants	-	-	-	-	-	-					
2	Approved/expected Central scheme grants	-	-	-	-	-	-					
3	Approved/expected External funds	-	-	-	-	-	-					
4	Others	-	-	-	-	-	-					
5	**CapIn for PIP actions**							0.2	0.2	-	-	
	Total	**-**	**-**	**-**	**-**	**-**	**-**	**0.2**	**0.2**	**-**	**-**	





Solid waste revenue account

Solid waste revenue receipts

Particulars
Own source of revenues
1.1. Taxes and charges
1.2. Others
Grants and contributions
Miscellaneous
Additional income from PIP actions
Total

Solid waste revenue expenditure

Particulars
Administrative and Establishment expenses
O&M expenses *(expenses like energy, repair and maintenance etc. for existing infrastructure only)*
Miscellaneous expenses
Interest payment
O&M expenditure incurred from PIP actions
Total

Solid waste capital account

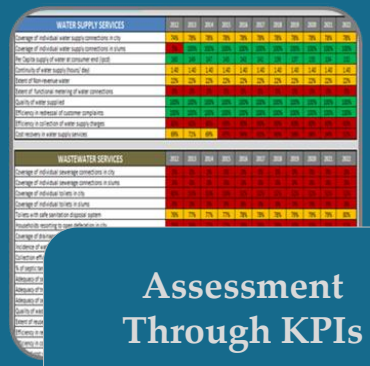
Solid waste capital receipts

Particulars
Approved/expected State scheme grants
Approved/expected Central scheme grants
Approved/expected External funds
Others
CapIn for PIP actions
Total

Solid waste capital expenditure

Particulars
Capital work in progress
Principal repayment of external funds/ borrowing for ongoing projects
Others
New approved projects
Expected principal repayments of external funds/borrowings for new projects
CapEx requirement of PIP actions
Total

Module I: Performance Assessment



Assessment Through KPIs

* GoI SLB indicators
* Additional indicators for equity, onsite sanitation etc.

Assessing Service Trends and Comparison

* Compare with peers
* Traffic light analysis
* Service level trends

Deciding Improvement Priorities

* Local priorities
* Consultation

Snapshot of performance assessment in PIP model - Identify city priorities

BASELINE INFORMATION

ASSESS CITY PRIORITIES

SELECT IMPROVEMENT ACTIONS

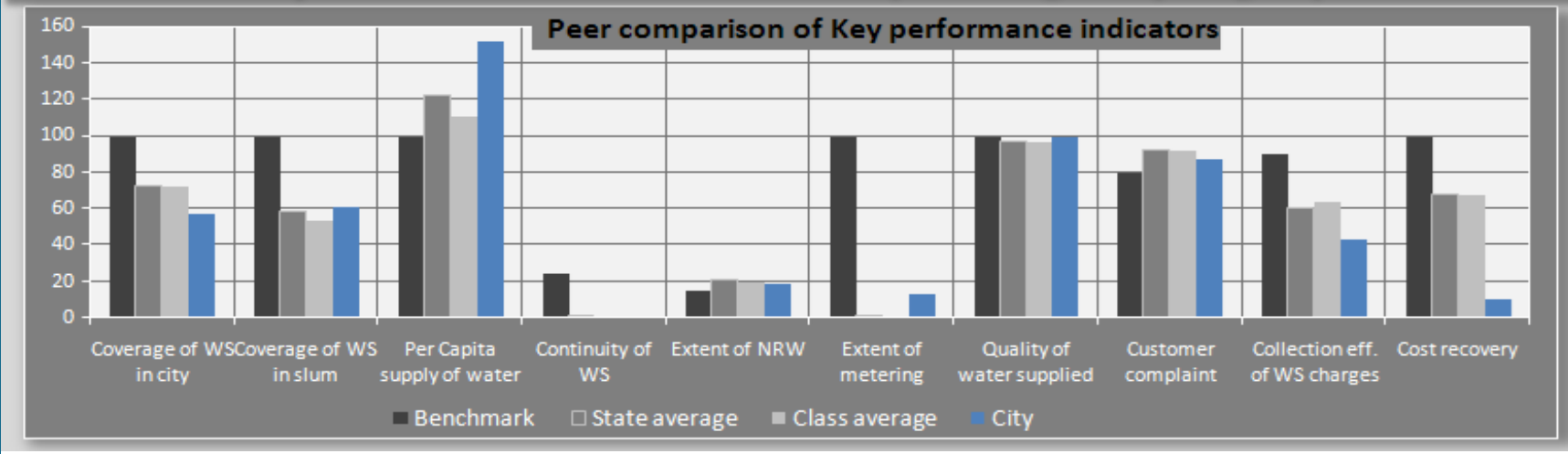
DEVELOP IMPROVEMENT PLAN

REVIEW IMPROVEMENT PLAN

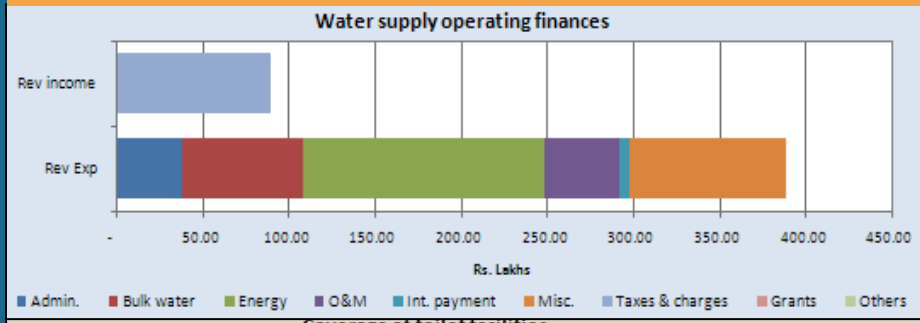
MAKE FINANCIAL DECISIONS

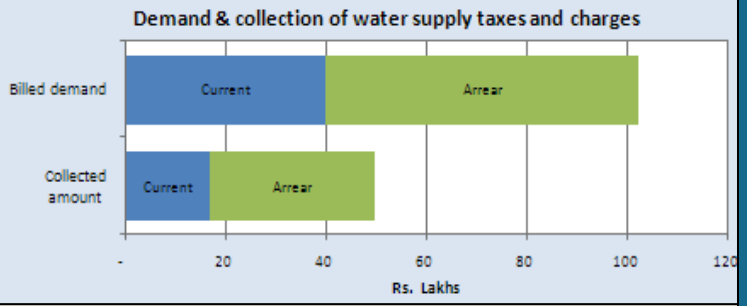
REVIW FINANCING PLAN

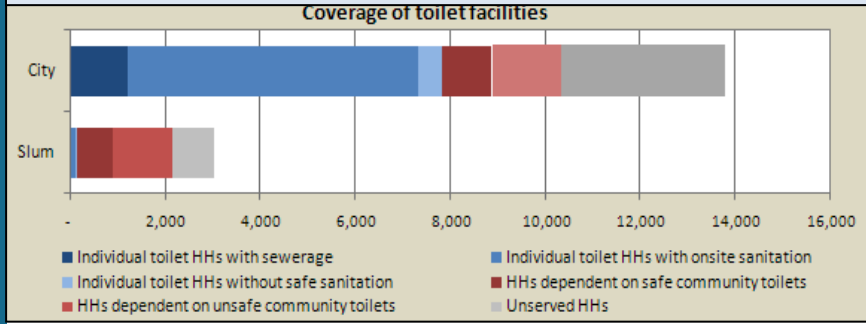
Key Performance Indicators - comparison against peer groups

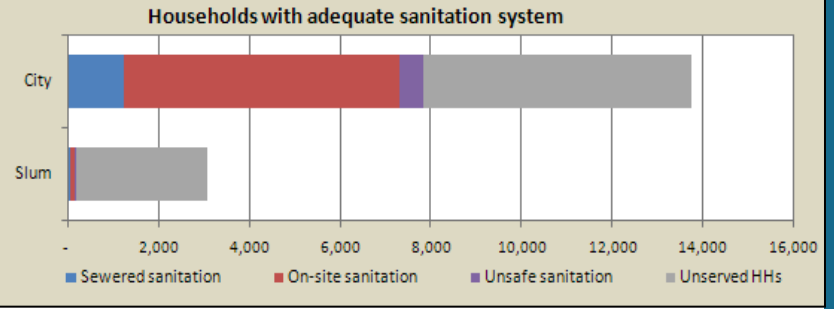


Local Action Indicators - indicated through graphs









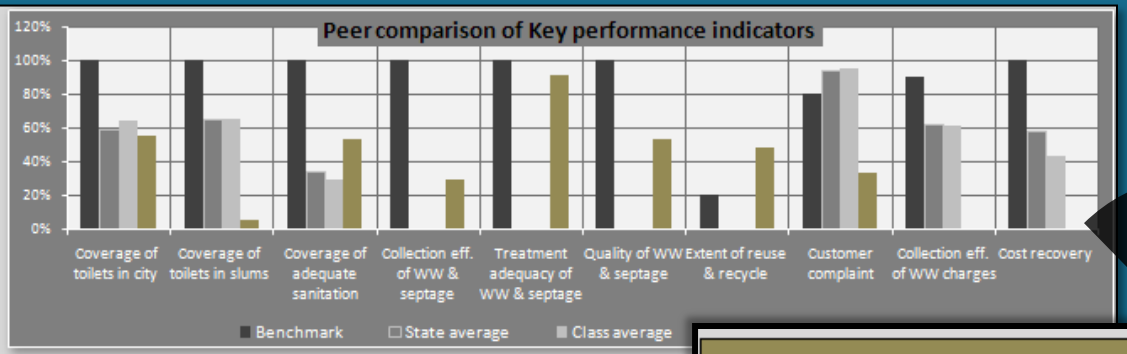
Actions for Performance Improvement

Sector wide approach of PIP is supported by wide range of improvement actions that are categorized under four types of intervention areas. These range from no cost to low-cost solutions like process and policy interventions and rehabilitation of existing infrastructure rather than concentrating only on creation of new assets.

Type of interventions	Description
1. Data improvement actions	For most of the ULBs, quality of data is very poor. These actions shall help improve it but will not directly impact the KPI values.
2. Process/policy improvement actions	This category highlights the understated process or policy areas that may have been primary hurdle in reform implementation.
3. Existing system improvement actions	This category highlights the scope for improving existing infrastructure to achieve desired results at low-cost by providing a range of options.
4. New infrastructure creation	This category complies a list of all the new infrastructure projects that can be undertaken.

Snapshot of performance assessment in PIP model – Select improvement actions

Key Performance Indicator	Value
☐ Coverage of individual household toilets in city	55%
☑ **Coverage of individual household toilets in slums**	**5%**
☑ **Coverage of households with adequate sanitation**	**53%**
☑ **Efficiency of wastewater and septage collection**	**29%**
☐ Adequacy of wastewater and septage treatment capacity	91%
☐ Quality of wastewater and septage treatment	53%
☐ Extent of reuse/ recycling of treated wastewater and septage	48%
☑ **Efficiency in redressal of customer complaints**	**33%**
☐ Efficiency in collection of wastewater charges and taxes	0%
☑ **Extent of cost recovery in wastewater services**	**0%**



ACCESS AND COVERAGE

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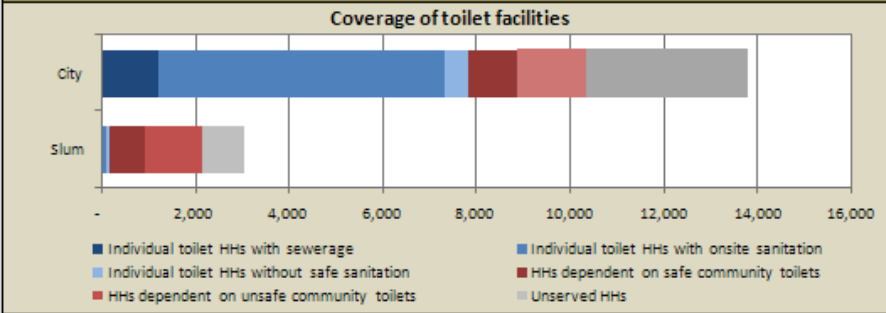

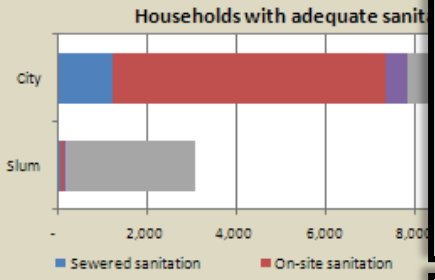

Actions for performance improvement	Impact of actions on KPIs: Coverage of HHs with individual toilets in city	Coverage of HHs with individual toilets in slums	HH coverage with adequate sanitation system	Collection efficiency of WW & septage disposal	Adequacy of treatment for WW & septage	Quality of treatment for WW & septage	Extent reuse/ rec of treated & septa
A) Data improvement measures							
☐ Household survey to assess wastewater services							
☑ Surveys and monitoring of open defecation sites							
☐ Computerisation of wastewater records							
B) Process/ Policy improvement measures – No cost							
☐ Process improvement for new sewerage connection							
☑ Policy for providing sanitation services in slums							
C) Existing system improvement measures – Low cost							
☐ Increasing connections using existing sewerage network							
☐ Regularising unauthorised sewerage connections							
☑ Provision of safe on-site sanitation system for individual toilets							
☑ Provision of safe sanitation for community/ public toilets							
☐ Improve condition of existing community and public toilet blocks							
☐ Information, education and communication (IEC) campaigns for sanitation awareness							
D) Create new infrastructure – High cost							
☐ Provide sewered sanitation system in city							
☐ Provide sewered sanitation system in slums							
☑ Provide on-site sanitation system in city and slums							
☑ Construction of new community/ public toilet blocks							

Key Performance Indicator	Value
☐ Coverage of individual household toilets in city	55%
☑ **Coverage of individual household toilets in slums**	**5%**
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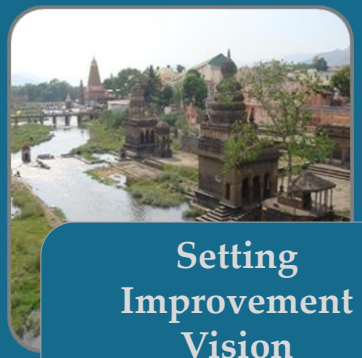
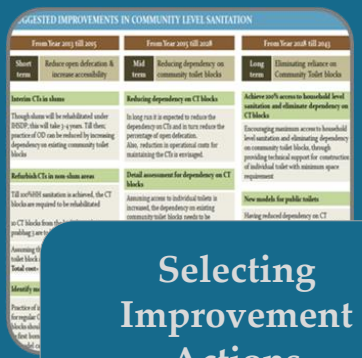
A) Data improvement measures
☐ Household survey to assess wastewater services
☑ Surveys and monitoring of open defecation sites
☐ Computerisation of wastewater records
B) Process/ Policy improvement measures – No cost
☐ Process improvement for new sewerage connection
☑ Policy for providing sanitation services in slums
C) Existing system improvement measures – Low cost
☐ Increasing connections using existing sewerage network
☐ Regularising unauthorised sewerage connections
☑ Provision of safe on-site sanitation system for individual toilets
☑ Provision of safe sanitation for community/ public toilets
☐ Improve condition of existing community and public toilet blocks
☐ Information, education and communication (IEC) campaigns for sanitation awareness
D) Create new infrastructure – High cost
☐ Provide sewered sanitation system in city
☐ Provide sewered sanitation system in slums
☑ Provide on-site sanitation system in city and slums
☑ Construction of new community/ public toilet blocks

Module II: Action Planning



Setting Improvement Vision

* Sector vision (eg. ODF, slum free city, zero waste water discharge)
* Local level vision



Selecting Improvement Actions

* Type of actions
* Identification of issues
* Selection of actions

Designing Improvement Actions

* Time frame, costing & sequencing
* Impacts of actions

Planning of improvement actions

BASELINE INFORMATION
↓
ASSESS CITY PRIORITIES
↓
SELECT IMPROVEMENT ACTIONS
↓
DEVELOP IMPROVEMENT PLAN
↓
REVIEW IMPROVEMENT PLAN
↓
MAKE FINANCIAL DECISIONS
↓
REVIW FINANCING PLAN

Individual actions are calibrated as output based tangible targets. A set of these calibrated actions will form an implementation plan for ULB across ten years of plan period. Hence, this Action Plan must evolve through an iterative process of identifying appropriate actions, phasing and financing pattern.

To facilitate action planning, all the actions are compiled in an easy to use tabular structure along with pictorial graphs to show its impact in terms of performance improvement and financial requirement.

Component	Description
Activate/Deactivate action	To include or exclude a particular action in proposed PIP Action plan.
Phasing of actions	Implementation period of activated action.
Baseline information	Baseline information about action to facilitate decision-making.
Improvement information	Improvement in performance envisaged by implementing the action.
Costs and finance information	Financial details to implement the Action like basic block cost estimates, O&M expenses and revenue generation.
Description of Action	This is provided in an annex with guidelines on explanation of action, assumption for calibrating it and finance block costs.

Components of action calibration box

Snapshot of Action calibration box

Learn more	Activate	Lay new water supply distribution network	2015	2018
Baseline		- Inhabited area not served by distribution network	*Sq. km*	-
		- Existing length of distribution network	*Km*	45.00
		- Existing percentage of households served with piped water supply	*%*	74%
Improvement		- Increase in length of new distribution network	*Km*	10
		- Additional area to be covered with new distribution network	*Sq. km*	1.00
		- New connections that can be given by laying distribution network	*Number*	1,500
Finance		- Block cost to lay distribution network	*Rs lakhs/ km*	20
		- O&M expenses to maintain new distribution network	*% of CapEx/ annum*	5%

Planning of improvement actions

BASELINE INFORMATION

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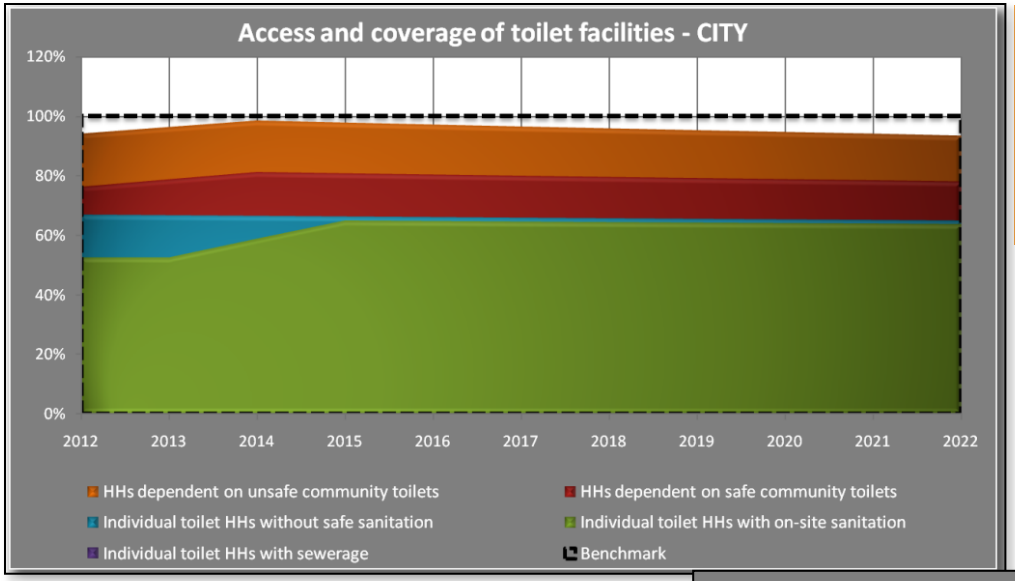
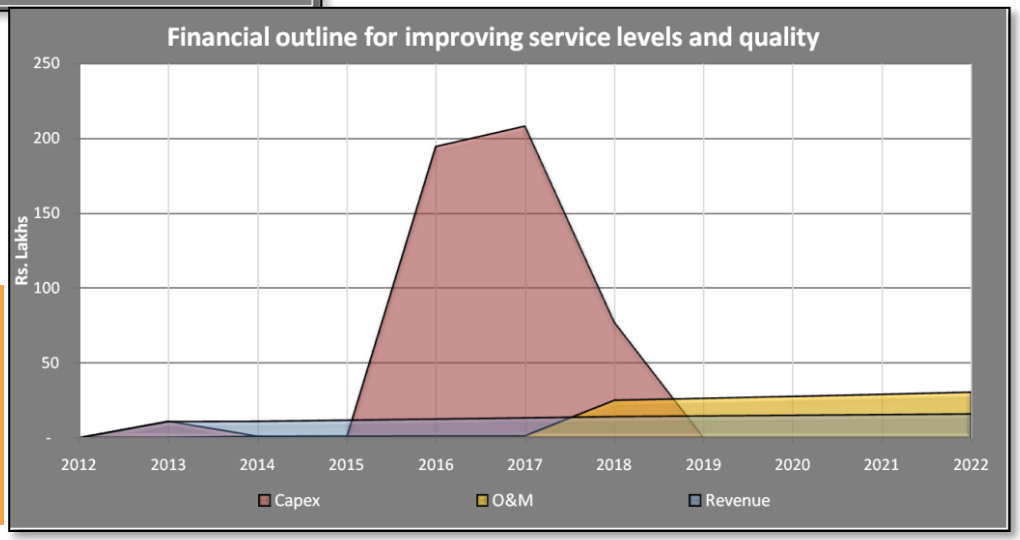
Actions that are calibrated has cumulative impact on performance levels of a particular KPI. To represent this visually for easy interpretation, area graphs are prepared for each KPI/ theme. Impact of each action is represented through separate colours in each graph. Another set of graphs are prepared for each theme showing financial implications of calibrating all the actions under that theme.



Snapshot of graph showing impact of each activated action



Snapshot of graph showing financial implication of activated actions

Snapshot of entire structure for Action Planning

Tabular boxes for calibration of improvement actions

1 Process/Policy improvement measures

Activate	Improve processes for regular cleaning of drains and sewers	

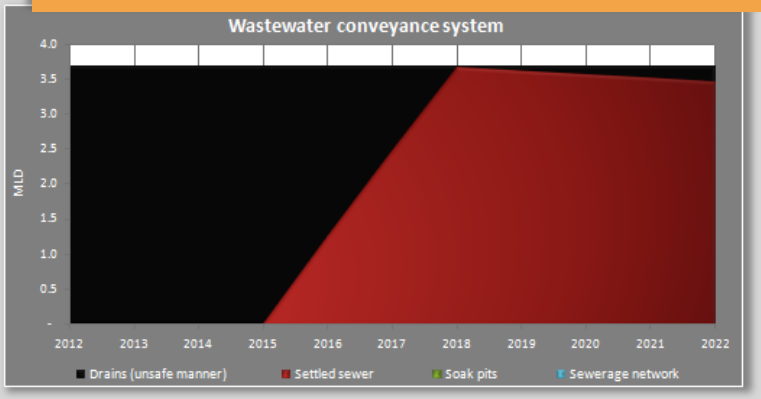
2 Existing system improvement measures

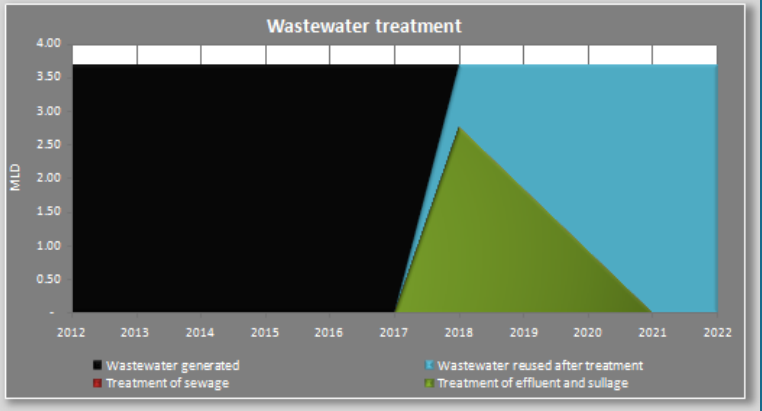
leactivat	Improve efficiency of septage collection		
Baseline	Suction emptier trucks of ULB	Numbers	2.0
	Average number of trips by a suction emptier truck of ULB	Trips/ month	2.1
	Average number of trips by a suction emptier truck of private operator	Trips/ month	-
Improvement	Suction emptier trucks of ULB that need repair and	Numbers	
	Additional trips that can be made by a suction emptier truck of	Trips/truck/month	
	Additional trips that can be made by a suction emptier truck of private operator	Trips/truck/month	
Finance	Cost of all repair and maintenance job of suction emptier trucks of ULB (lump-sum)	Rs. lakhs	
	O&M expenses incurred for additional trips made by suction emptier trucks of ULB	Rs./additional trip	
leactivat	Plug leaks in sewerage network		
Baseline	Present level of losses in sewerage network	%	0%
Improvement	Targeted level of losses in sewerage network	%	
Finance	Total cost of carrying out of this activity (lump-sum)	Rs. lakhs	
leactivat	Improve existing sewerage network		
Baseline	Existing length of sewerage network	Km	-
Improvement	Length of sewerage network to be replaced/refurbished	Km	
Finance	Total cost of carrying out of this activity (lump-sum)	Rs. lakhs	
Activate	Upgrade open surface drains to closed drains for storm water drainage	2016	2018
Baseline	Length of existing open surface drains	Km	33.80
	Area covered with open surface drains	Sq. km	1.89
	Length of existing closed surface drains	Km	18.20
	Area covered with closed surface drains	Sq. km	1.02
Improvement	Length of open drains to be upgraded to closed drains	Km	22.00
	Incremental area that shall be upgraded with closed drains	Sq. km	1.00
Finance	Block cost to cover open surface drains	Rs. lakhs/km	7.5
leactivat	Reduce water logging/flooding in city		
Baseline	Flood prone points in city at present	Numbers	-
	Average frequency of flooding at these points	Frequency/annum	-
Improvement	Flood prone points to be reduced with improvement measures	Numbers	
	Reduce average frequency of flooding	Frequency/ annum	
Finance	Total cost of carrying out of this activity (lump-sum)	Rs. lakhs	
	O&M expenses, if any	Rs./annum	

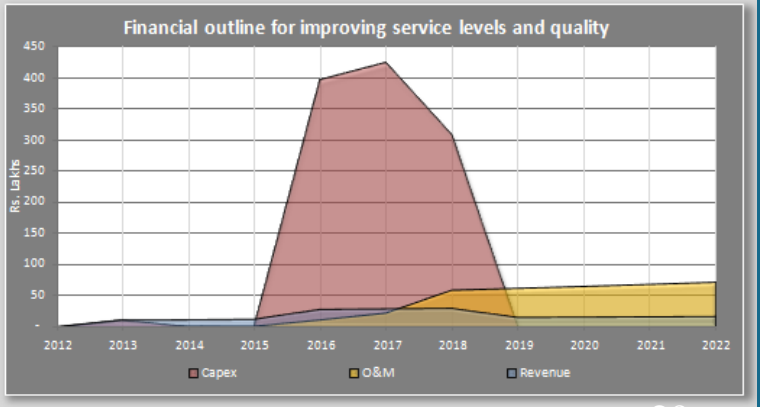
3 Create new infrastructure

Activate	Expand or lay new settled sewer for wastewater	2016	2018
Baseline	Non-slum households (HHs) connected to existing settled sewer as compared to total non-slum households	Settled sewer HHs/ Total non-slum HHs	0 / 7353
	Slum households connected to settled sewer as compared to total slum households	Settled sewer HHs/ Total slum HHs	0 / 347
Improvement	Increase in length of settled sewer	Km	67.90
	Additional area to be covered with new settled sewer	Sq. Km	1.40
	Non-slum households to be connected with settled sewer	Numbers	8,000
	Slum households to be connected with settled sewer	Numbers	400
Finance	Block cost to lay settled sewer network	Rs. lakhs/ km	7.25
	O&M expenses	% of CapEx/ annum	5.0%
	New settled sewer connection charges for non-slum	Rs./connection	500
	New settled sewer connection charges for slum households	Rs./connection	500
leactivat	Construct closed surface drains for storm		
Baseline	Area covered by closed surface drains	Sq. Km	1.02
	Existing length of closed surface drains	Km	18.20
Improvement	Additional area to be covered with closed surface drains	Sq. Km	
	Incremental length of surface drains required	Km	
Finance	Block cost to construct surface drains	Rs. lakhs/km	
	O&M expenses	% of CapEx/ annum	
Activate	Construct/augment sewage treatment plant		
Baseline	Quantity of sewage conveyed through existing sewerage	MLD	-
	Capacity of existing sewage treatment plant	MLD	-
Improvement	Augmenting/constructing new sewage treatment plant	MLD	
	Percentage of treated wastewater derived from total sewage treated at the plant	%	

Visual display of impact of activated actions on performance







Snapshot of time series analysis of performance in PIP model

BASELINE INFORMATION

ASSESS CITY PRIORITIES

SELECT IMPROVEMENT ACTIONS

DEVELOP IMPROVEMENT PLAN

REVIEW IMPROVEMENT PLAN

MAKE FINANCIAL DECISIONS

REVIW FINANCING PLAN

Analysis of WSS performance with PIP Action Plan

Performance of Water supply services

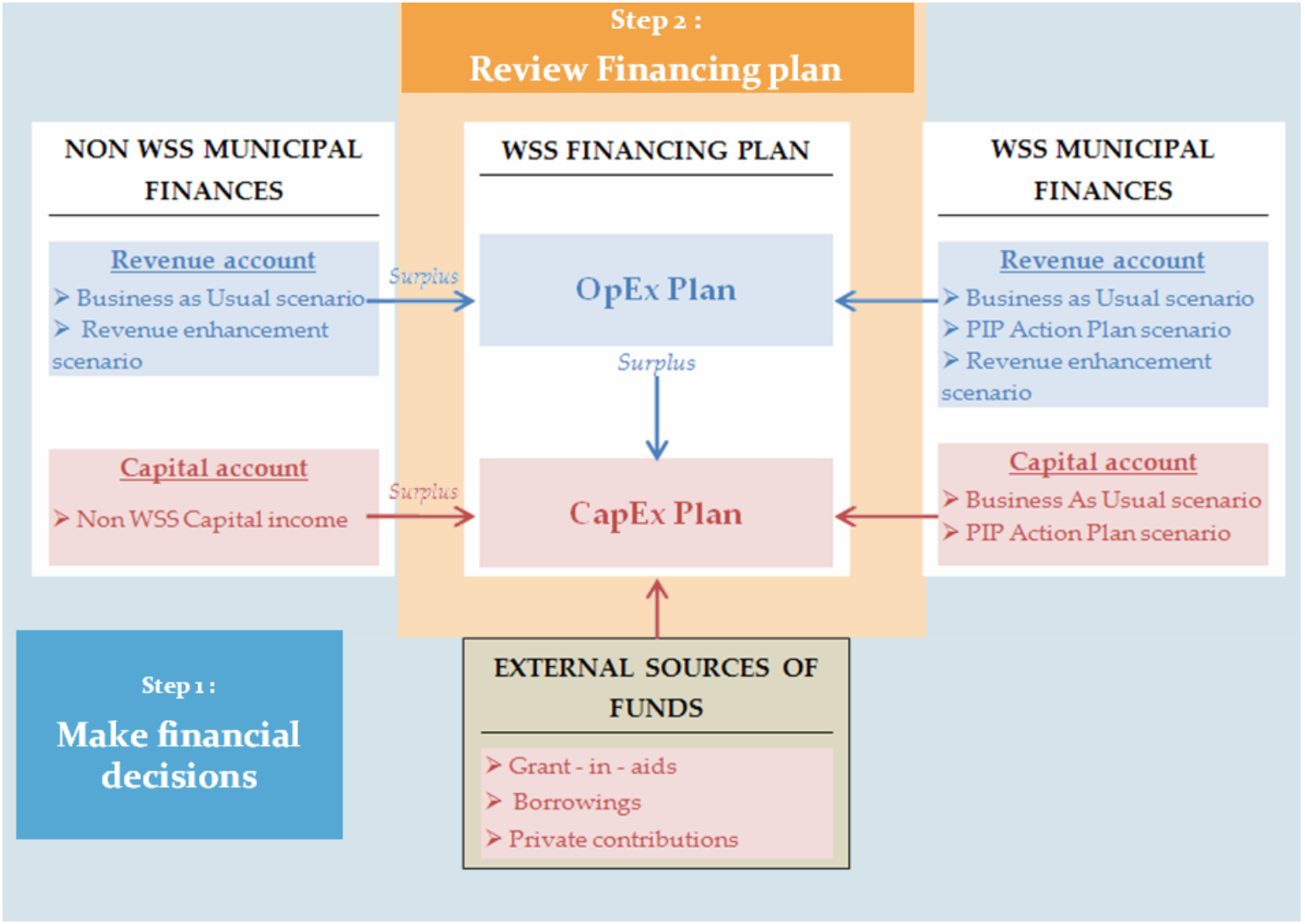
Performance levels	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Access and coverage											
Coverage of individual water supply connections in city	57%	69%	76%	83%	84%	85%	84%	84%	83%	83%	83%
Coverage of individual water supply connections in slum	61%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Population with access to improved water services	59%	47%	31%	39%	41%	42%	43%	43%	44%	44%	45%
Spatial coverage of distribution network	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Unauthorised water supply connections	5%	5%	4%	3%	1%	0%	0%	0%	0%	0%	0%
Service levels and quality											
Per Capita supply of water at consumer end (lpcd)	152	182	269	206	194	183	177	171	166	160	155
Continuity of water supply (hours/ day)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Quality of water supplied	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Adequacy of treatment capacity	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Adequacy of storage capacity	244%	249%	249%	249%	249%	249%	249%	249%	249%	249%	249%
Per capita water supplied in ULB	180	221	327	250	235	222	215	208	202	195	188
Days of supply in a month	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Efficiency in service operations											
Extent of Non-revenue water	19%	17%	14%	14%	13%	12%	12%	12%	12%	12%	12%
Extent of metering of water supply connections	13%	14%	20%	27%	32%	36%	36%	36%	36%	36%	36%
Efficiency in redressal of customer complaints	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%
% Losses from source to water treatment plant (WTP)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
% Losses from WTP to water distribution station (WDS)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
% Losses from WDS to final consumption	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
% of water supply connections that have meters	19%	17%	22%	27%	32%	37%	37%	37%	37%	37%	37%
Financial sustainability											
Efficiency in collection of water supply charges and taxes	43%	58%	74%	74%	74%	74%	74%	74%	74%	74%	74%
Cost recovery in water supply services	10%	61%	66%	105%	101%	97%	93%	116%	112%	108%	105%
Unit production cost of water supply (Rs/ kl)	5373	2885	3052	3218	3378	3545	3722	3906	4101	4304	4518
Per capita revenue expenditure	567	297	307	317	325	334	344	353	363	372	381
Per capita revenue income	131	268	292	360	336	336	327	406	418	422	418
Billed arrears to total billed demand	36%	42%	37%	19%	24%	24%	25%	20%	24%	24%	25%
Collection efficiency of arrear demand	52%	65%	77%	77%	77%	77%	77%	77%	77%	77%	77%

Module III: Financing Plan

Approach to Financial Planning

BASELINE INFORMATION
ASSESS CITY PRIORITIES
SELECT IMPROVEMENT ACTIONS
DEVELOP IMPROVEMENT PLAN
REVIEW IMPROVEMENT PLAN
MAKE FINANCIAL DECISIONS
REVIW FINANCING PLAN

Financial planning essentially involves a balancing act between meeting funding requirement from external and internal ULB sources of funds. It also assesses sustainability of these sources in long run.



Financial implications of Action Plan

The financial implications of each activated action is reported in terms of capital expenditure required to implement the action, its operational and maintenance costs and additional revenue to be generated. Financial summary of all the activated actions together is evaluated year-on-year basis to assess funding requirement across plan period.

Phasing of improvement actions | **Capital expenditure requirement** | **Operating requirement**

IMPROVEMENT ACTIONS

SUMMARY OF CAPITAL EXPENDITURE

Sector colour code | Water supply | Waste water | Solid waste

Click here to view **Summary of** ○ PHASING ◉ CAPEX PLAN ○ O&M PLAN

Actions	Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Regularise unauthorised water supply connections	Exisiting system										
Convert stand posts/public taps into group connections	Exisiting system										
Lay internal infrastructure of water supply lines in slums	New infrastructure	40	43	46							
Conduct energy audit	Data system	1									
Repair non-functional metered water supply connections	Exisiting system	1	1	1							
Improve collection efficiency of water supply charges and taxes	Exisiting system										
Computerise wastewater records	Data system		3	3							
Process improvement for new sewerage connection applications	Process/ Policy										
Regularise unauthorised sewerage connections	Exisiting system										
Increase connections using existing sewerage network	Exisiting system										
Provision of safe on-site sanitation system for individual toilets in non-	Exisiting system	3	20	22							
Improve condition of existing community and public toilets	Exisiting system	3	0								
Information, education and communication (IEC) campaigns for	Exisiting system		11	11	12	13					
Provide on-site sanitation system in city and slums	New infrastructure			114	123	131					
Procure new suction emptier trucks	New infrastructure										
Construct closed surface drains for storm water drainage	New infrastructure				15	16	18	19			
Construct/augment faecal sludge treatment plant	New infrastructure		71	76	82						
Improve wastewater and septage quality surveillance	Process/ Policy										
Improve consumer grievance redressal system	Exisiting system										
Prepare management plan to efficiently deploy manpower and	Process/ Policy										
Procure equipments for door to door solid waste collection (collection	Exisiting system	5									
Engage with private service providers to provide solid waste services	New infrastructure										

External sources for financing improvement actions

To prepare feasible Financing Plan, various external sources of funds are explored to fund improvement actions. These are evaluated separately for each activated action.

Grant – in – aids | External debts | Private participation (PPP) | Beneficiary contribution

IMPROVEMENT ACTIONS		SOURCES OF FUNDS FOR CAPITAL EXPENDITURE							
Sector colour code: Water supply / Wastewater / Solid waste		Against each action, mention percentage share of funding possible through either of these funding sources (%) NOTE: RE-ENTER INPUTS IN THIS TABLE EACH TIME ACTIONS ARE ACTIVATED OR DEACTIVATED							
Actions	Type	Total CapEx	Central Grants	State Grants	Debt	Private/ PPP	Beneficiary	ULB share (% and Rs. lakhs)	
Regularise unauthorised water supply connections	Exisiting system	0							
Increase connections using existing water supply distribution network	Exisiting system	0							
Lay internal infrastructure of water supply lines in slums	New infrastructure	59	50%	40%				10%	6
Improve collection efficiency of water supply charges and taxes	Exisiting system	0							
Provision of safe on-site sanitation system for individual toilets in non-	Exisiting system	0							
Provision of safe sanitation system for community and public toilet	Exisiting system	25						100%	25
Improve condition of existing community and public toilets	Exisiting system	23						100%	23
Provide on-site sanitation system in city and slums	New infrastructure	401			50%		50%		
Construct new community and public toilet blocks	New infrastructure	25						100%	25
Improve efficiency of septage collection system	Exisiting system	0							
Upgrade open surface drains to closed drains for storm water drainage	Exisiting system	217						100%	217
Procure new suction emptier trucks	New infrastructure	0							
Expand or lay new settled sewer for wastewater conveyance	New infrastructure	482		40%				60%	289
Construct/augment treatment plant for effluent and sullage	New infrastructure	83						100%	83
Construct/augment faecal sludge treatment plant	New infrastructure	44				70%		30%	13
De-silting of drains	Customise action	222						100%	222
Information, education and communication (IEC) campaign for	Exisiting system	33						100%	33
Segregation of collection and transportation of solid waste	Exisiting system	1			50%			50%	0
Repair existing solid waste processing plant	Exisiting system	2						100%	2
Procure new vehicles for solid waste collection and transportation	Exisiting system	4						100%	4

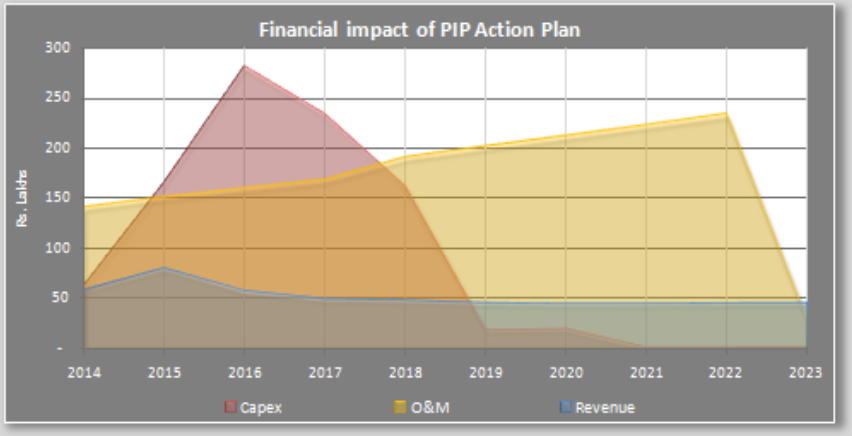
Snapshot of entire structure for Action Plan Finances in PIP model

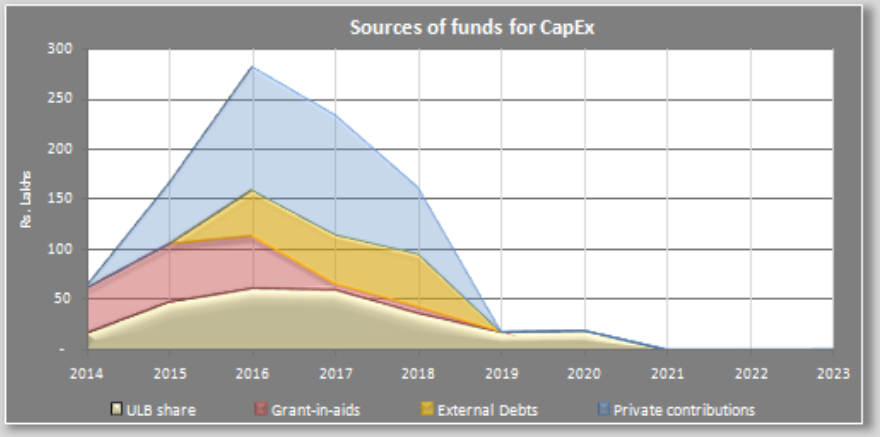
Financial summary

Select SECTOR: **TOTAL WSS**

Financial Summary	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Capital expenditure	63	166	282	234	162	19	20	2	2	2	952
Additional O&M expense	141	151	159	168	190	201	212	222	233	30	###
Additional revenue	59	80	58	50	49	46	45	45	46	46	523

Sources of funds	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Central Grants	25	29	26	-	-	-	-	-	-	-	79
State Grants	20	29	26	6	7	-	-	-	-	-	87
External Debts	-	-	46	43	52	-	-	-	-	-	147
Private/ PPP	-	50	53	57	-	-	-	-	-	-	161
Beneficiary share	2	11	63	62	66	1	1	1	1	1	215
ULB share	16	47	60	53	36	18	19	-	-	-	255





Action Plan summary

IMPROVEMENT ACTIONS

Sector colour: Water supply | Waste water | Solid waste

PHASING OF PIP ACTIONS

Click here to view Summary of: PHASING | CAPEX PLAN | O&M PLAN

SOURCES OF FUNDS FOR CAPITAL EXPENDITURE

Against each action, mention percentage share of funding possible through either of these funding sources (%)

NOTE : RE-ENTER INPUTS IN THIS TABLE EACH TIME ACTIONS ARE ACTIVATED OR DEACTIVATED

Actions	Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total CapEx	Central	State Grants	Debt	Private	Beneficiary	ULB share (% and Rs. lakhs)	
Regularise unauthorised water supply connections	Exisiting system											0							
Convert stand posts/public taps into group connections	Exisiting system											0							
Lay internal infrastructure of water supply lines in slums	New infrastructure											129	50%	40%				10%	13
Conduct energy audit	Data system											1						100%	1
Repair non-functional metered water supply connections	Exisiting system											2					50%	50%	1
Improve collection efficiency of water supply charges and taxes	Exisiting system											0							
Computerise wastewater records	Data system											6						100%	6
Process improvement for new sewerage connection applications	Process/ Policy											0							
Regularise unauthorised sewerage connections	Exisiting system											0							
Increase connections using existing sewerage network	Exisiting system											0							
Provision of safe on-site sanitation system for individual toilets in non-	Exisiting system											45					50%	50%	23
Improve condition of existing community and public toilets	Exisiting system											4						100%	4
Information, education and communication (IEC) campaigns for	Exisiting system											48		50%				50%	24
Provide on-site sanitation system in city and slums	New infrastructure											368			40%		50%	10%	37
Procure new suction emptier trucks	New infrastructure											0							
Construct closed surface drains for storm water drainage	New infrastructure											68						100%	68
Construct/augment faecal sludge treatment plant	New infrastructure											223				70%		30%	67
Improve wastewater and septage quality surveillance	Process/ Policy											0							
Improve consumer grievance redressal system	Exisiting system											0							

Preparation of Operating Plan

Financing Plan for water supply and sanitation is linked to overall municipal finance as most ULBs do not have a separate account. It results in transfer of revenue surplus from other sectors (Non-WSS) to WSS for revenue and capital expenditure as required. The investment requirement from PIP Action Plan is linked to funding sources calibrated in Action Plan finances.

1. Additional income generated by improvement actions
2. Revise tariff structure
3. Non-WSS revenue surplus transfer to WSS

Sources of revenue to meet operating expenditure

Snapshot of financial decisions to meet operating expenditure

KEY FINANCING DECISIONS

Financing Plan	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WSS OPERATING AND MAINTENANCE PLAN										
1. Income generated from PIP actions										
Income generated	108	160	162	148	174	190	214	216	218	219
2. Revise WSS charges and tariffs							*Link to*	Revise WSS tariffs		
Additional income generated	-	-	70	86	93	95	183	201	245	256
3. Revise own municipal sources of funds							*Link to*	Revise own tax sources		
Additional income generated	49	57	80	84	156	183	191	196	425	466
4. Transfer Non WSS revenue surplus for WSS services							*Link to*	*Review past trends*		
Non WSS revenue surplus	392	506	584	640	761	854	927	995	1,293	1,451
Propose transfer of surplus for WSS services	314	405	467	512	609	683	742	796	1,034	1,161
	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Operating ratio *	**0.9**	**0.7**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.7**	**0.6**	**0.4**

Snapshot of setting tariff structures in PIP model

Revision in tariffs for revenue enhancement to meet funding requirement of capital expenditure, operating expenditure & debt servicing.

Tabular boxes for setting of tariffs sector-wise

Visual display of impact on revenues

TARIFFS FOR WASTE WATER SERVICES

Click Back to InSS O&M Plan

1. New connection charges for sewerage connection

Does the city have sewerage network?					NO		Connection charges: 0		% Subsidy for poor: 0.0%	
If there is any proposal for laying new sewerage network, then charges for new connections are ?					NO		3,000		100.0%	
% age increment in connection charge	2013	2014	2015	2016	2017	2018	2013	2020	2021	2022: 20%
% age increment in subsidy in connection charges for poor										

2. Sanitation charges based on flat rate

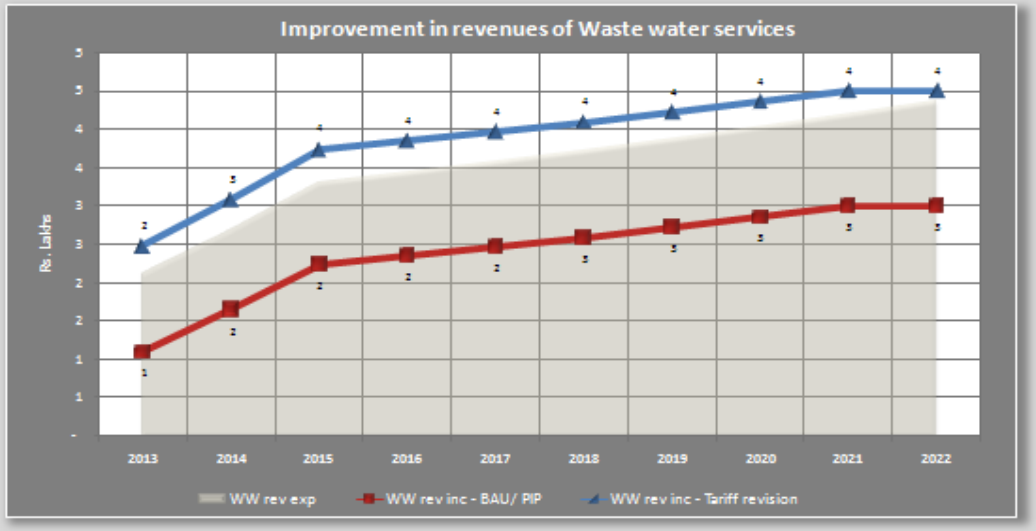
Are sanitation charges based on flat rate levied in city presently?					NO		Mode of charging: -		Flat rate / unit: 0	
If No, and if planned to levy then start it from which year ?					Year		Number of properties			
% age increment in flat rate based user charges	2013	2014	2015	2016	2017	2018	2013	2020	2021	2022

3. Property tax linked wastewater tax

Is property tax linked WW tax levied in city presently ?					NO				% of general property tax: 0.0%	
If No, and if planned to levy then start it from which year ?					Year	2013			2.00%	
% age increment in Waste water tax as percentage of	2013	2014	2015	2016	2017	2018	2013	2020	2021	2022

4. Sewerage benefit tax

Is sewerage benefit tax levied in city presently ?					NO				Rs/ connection/ annum: 0	
If No, and if planned to levy then start it from which year ?					Year					
% age increment in Sewerage benefit tax	2013	2014	2015	2016	2017	2018	2013	2020	2021	2022



TARIFFS FOR SOLID WASTE MANAGEMENT SERVICES

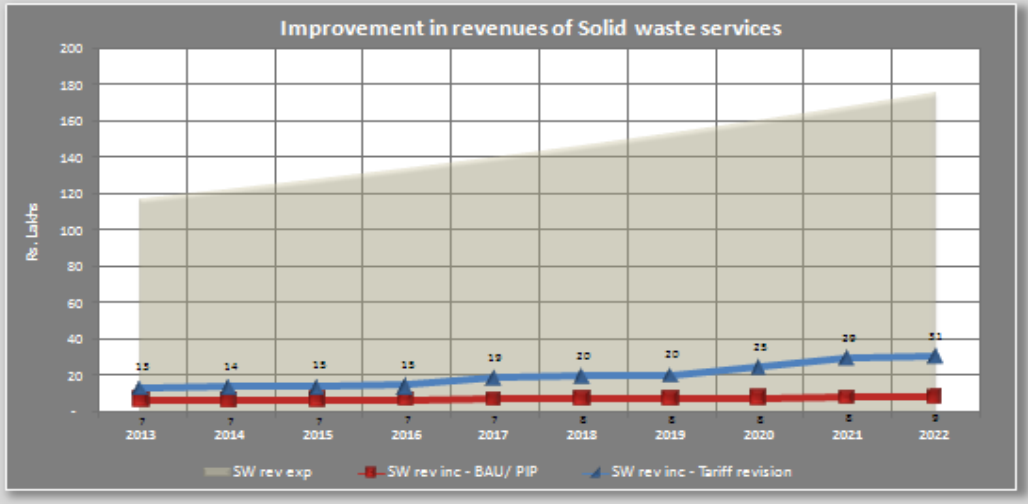
Click Back to InSS O&M Plan

1. Solid waste charges based on flat rate

Is SW user charges levied in city presently ?					Yes		Mode of charging: Number of HHs & estab.		Flat rate / annum: 40	
If No and if planned to levy, then mention year to start it ?					Year		Number of properties			
% age increment in Flat rate based user charges	2013: 200%	2014	2015	2016	2017: 100%	2018	2013	2020: 100%	2021: 100%	2022

2. Property tax linked Solid waste tax

Is property tax linked SW charges levied in city presently ?					No				% of general property tax: 0.00%	
If No, and if planned to levy then start it from which year ?					Year					
% age increment in Solid waste tax as percentage of	2013	2014	2015	2016	2017	2018	2013	2020	2021	2022



Preparation of Capital Plan

Sources of revenue to meet capital expenditure

1. Review of funds determined in 'Action plan finances' – Grants, debt, private players, beneficiary contributions
2. Determine transfer of revenue surplus from WSS revenue account
3. Determine transfer of CapIn surplus from Non-WSS capital account
4. Determine additional debt requirement and terms & condition of debts

Snapshot of financial decisions to meet capital expenditure

WSS CAPITAL EXPENDITURE PLAN

1. WSS own fund sources and external funds for PIP

Already approved WSS CapIn	17	17	18	19	20	21	22	23	24	26
Grant-in-aid from Central & State government	20	25	26	4	2	2	2	-	-	-
Public contribution through PPP & Beneficiaries	29	39	99	461	491	453	485	0	0	0

2. Allocate WSS revenue surplus for capital funding

WSS revenue surplus	70	202	342	405	486	566	731	594	746	1,444
Dedicate funds for CapEx funding	35	101	171	203	243	283	365	297	58	
	50%	50%	50%	50%	50%	50%	50%	50%	8%	0%

NOTE: Aggregation of funds dedicated for debt servicing and CapEx should not exceed WSS revenue surplus amount.

3. Transfer Non WSS CapIn for WSS projects *Link to* Review past trends

Non WSS CapIn surplus	11	37	79	139	217	315	434	575	741	933
Propose transfer of surplus for WSS CapEx (% transfer)										
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

4. External borrowings

Debt for funding PIP projects	-	5	6	20	21	16	17	-	-	-
Additional debt required	175	259	201	276	109	131	140	187		
Terms of conditions	Rate of interest (%)					10%				
	Moratorium period (No. of years)					1				
	Period of Borrowing (No. of years)					15				
Debt servicing requirement	-	18	54	90	129	155	172	189	209	211
Debt service coverage ratio*	**NA**	**12.22**	**7.33**	**5.50**	**4.77**	**4.65**	**5.25**	**4.14**	**4.57**	**7.84**

Snapshot of CapEx and OpEx plan summary in PIP model

BASELINE INFORMATION

ASSESS CITY PRIORITIES

SELECT IMPROVEMENT ACTIONS

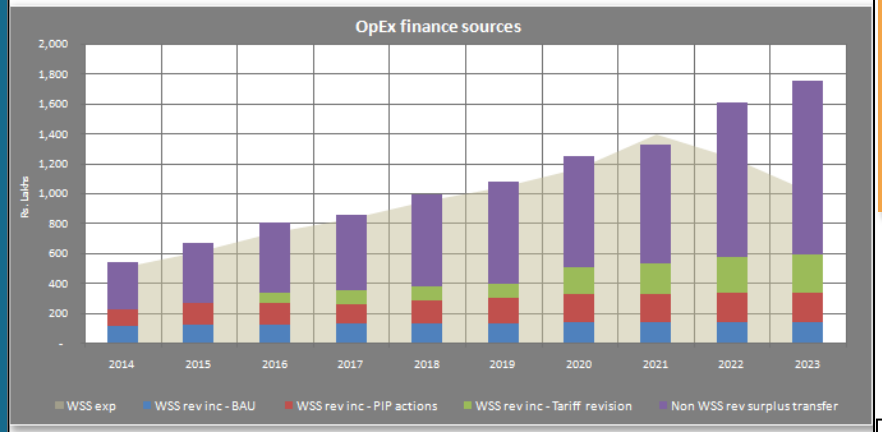
DEVELOP IMPROVEMENT PLAN

REVIEW IMPROVEMENT PLAN

MAKE FINANCIAL DECISIONS

REVIW FINANCING PLAN

WSS OPERATING PLAN

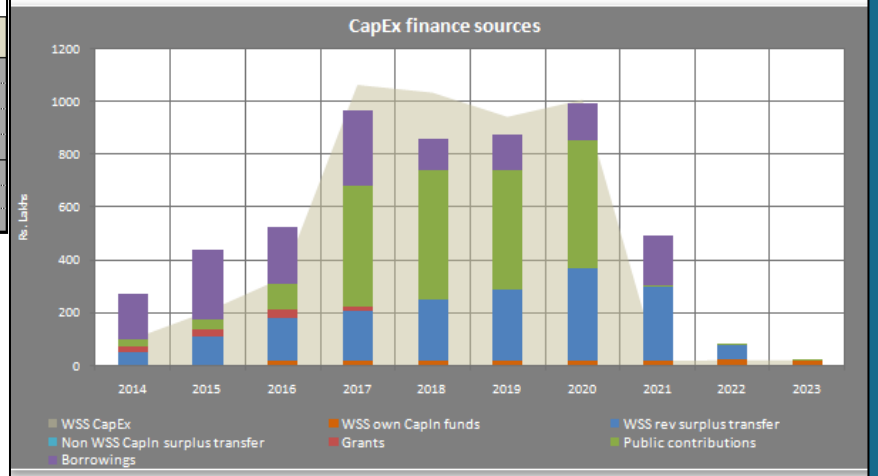


TAXES AND CHARGES REVIEW

Average demand/ household/ annum	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Property tax demand	694	1041	1041	1041	1041	1561	1561	1561	1561	3123	3123
Water supply demand	960	960	960	1920	1920	1920	1920	2880	2880	2880	2880
Waste water demand	35	52	52	104	104	156	156	187	187	375	375
Solid waste demand	40	40	40	153	153	189	189	394	394	628	628
Total demand/ HH/ annum	1729	2093	2093	3218	3218	3827	3827	5023	5023	7006	7006
Annual increment	-	21%	0%	54%	0%	19%	0%	31%	0%	39%	0%
Operating ratio feasible :-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Snapshot of Operating plan summary and tariff structures

WSS CAPEX PLAN



EXTERNAL FUNDING REVIEW

Sources of funds for CapEx	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Already approved CapIn	17	17	18	19	20	21	22	23	24	26
Grant-in-aids	20	24	34	11	0	0	0	0	0	0
Public contributions	29	39	99	461	491	453	485	0	0	0
Internal funds transfer	35	96	163	193	231	270	350	282	58	0
Borrowings	175	265	212	286	120	131	140	187	0	0
Debt servicing requirement	0	18	55	90	129	154	168	182	202	204
DSCR feasible :-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Snapshot of Capital plan summary and external sources of funds

BASELINE INFORMATION

ASSESS CITY PRIORITIES

SELECT IMPROVEMENT ACTIONS

DEVELOP IMPROVEMENT PLAN

REVIEW IMPROVEMENT PLAN

MAKE FINANCIAL DECISIONS

REVIW FINANCING PLAN

Snapshot of Municipal finance summary in PIP model

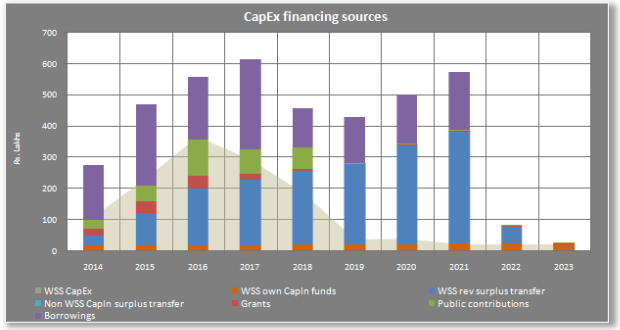
IMPACT OF FINANCING PLAN ON MUNICIPAL FINANCES

Budget heads	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
REVENUE ACCOUNT										
Water supply and sanitation services (WSS)										
Starting balance	-	35	101	171	202	243	283	366	297	688
Revenue receipts	537	681	817	872	1,004	1,099	1,272	1,348	1,635	1,777
Revenue expenditure	502	615	747	841	963	1,059	1,189	1,417	1,244	1,021
WSS Revenue account status	35	101	171	202	243	283	366	297	688	1,444
Services other than water supply and sanitation (Non WSS)										
Starting balance	1	78	101	117	128	152	171	185	199	259
Revenue receipts	883	943	1,022	1,087	1,223	1,320	1,402	1,487	1,802	1,934
Revenue expenditure	806	920	1,006	1,076	1,199	1,301	1,388	1,473	1,742	1,903
Non WSS Revenue account status	78	101	117	128	152	171	185	199	259	290
CAPITAL ACCOUNT										
Water supply and sanitation services (WSS)										
Starting balance	-	178	421	612	533	387	353	379	869	933
Capital receipts	276	446	521	982	886	906	1,031	507	82	26
Capital expenditure	98	203	330	1,061	1,032	940	1,005	17	18	19
WSS Capital account status	178	421	612	533	387	353	379	869	933	940
Services other than water supply and sanitation (Non WSS)										
Starting balance	-	11	37	79	139	217	315	434	576	742
Capital receipts	500	525	551	579	608	638	670	704	739	776
Capital expenditure	489	499	509	519	530	540	551	562	573	585
Non WSS Capital account status	11	37	79	139	217	315	434	576	742	933
EXTRAORDINARY ACCOUNT										
Starting balance	-	38	78	120	165	211	260	311	365	422
Receipts	135	142	149	157	164	173	181	190	200	210
Expenditure	97	102	107	112	118	124	130	136	143	150
Extraordinary account status	38	78	120	165	211	260	311	365	422	482
OVERALL MUNICIPAL FINANCE										
Total receipts	2,332	3,077	3,798	4,776	5,052	5,346	5,938	5,911	6,764	7,767
Total expenditure	1,992	2,339	2,699	3,609	3,842	3,964	4,263	3,605	3,720	3,678
Closing balance*	**340**	**738**	**1,099**	**1,167**	**1,210**	**1,382**	**1,675**	**2,306**	**3,044**	**4,089**

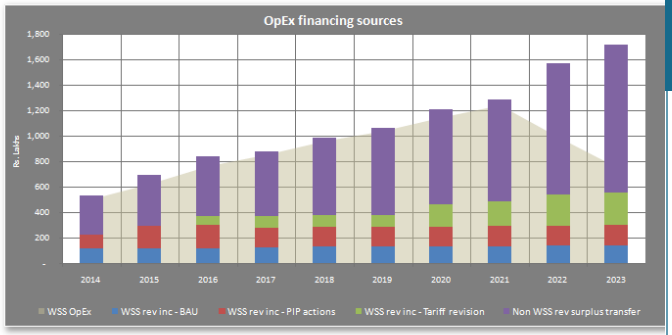
Closing balance of WSS & overall municipal account shows surplus – Feasible financing plan

Snapshot of entire structure of Financing plan in PIP model

WATER SUPPLY AND SANITATION CAPITAL PLAN



WATER SUPPLY AND SANITATION OPERATING PLAN



REVIEW OF EXTERNAL FUNDING

Sources of funds	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Already approved CapIn	17	17	18	19	20	21	22	23	24	26
Grant-in-aids	20	37	43	21	8	2	2	0	0	0
Public contributions	30	51	115	77	69	1	1	1	1	1
Internal fund transfers	33	106	182	209	236	259	319	364	58	0
Borrowings	177	259	201	290	124	147	157	187	0	0
Debt servicing requirement	0	18	54	89	127	152	168	186	206	208
DSCR feasible -	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

REVIEW OF TAXES AND CHARGES

Average tax demand (per household per annum)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Property tax demand	634	1041	1041	1041	1041	1561	1561	1561	1561	3123	3123
Water supply demand	960	960	960	1920	1920	1920	1920	2880	2880	2880	2880
Wastewater demand	35	52	52	104	104	156	156	187	187	375	375
Solid waste demand	40	40	40	153	153	189	189	394	394	628	628
Total demand/household/annum	1729	2093	2093	3218	3218	3827	3827	5023	5023	7006	7006
Annual increment	-	21%	0%	54%	0%	19%	0%	31%	0%	39%	0%
Operating ratio feasible -	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Water supply and sanitation Financing Plan

KEY FINANCING DECISIONS

Financing Plan	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WATER SUPPLY AND SANITATION OPERATING PLAN										
1. Income generated from PIP actions										
Additional income generated	106	174	183	155	160	153	153	155	157	159
2. Revise WSS charges and tariffs							Link to	Revise WSS tariffs		
Additional income generated	-	-	70	85	91	93	179	198	242	252
3. Revise own income sources like Property tax							Link to	Revise own tax sources		
Additional income generated	43	57	80	84	156	183	131	196	425	466
4. Allocate Non-WSS revenue surplus for WSS services							Link to	Review past trends		
Non-WSS revenue surplus	392	506	584	640	761	854	327	995	1,293	1,451
Propose allocation of surplus for WSS OpEx	314	405	467	512	609	683	742	796	1,034	1,161
	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Operating ratio	**0.9**	**0.7**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**	**0.3**
WATER SUPPLY AND SANITATION CAPITAL PLAN										
1. External sources of funds										
Already approved WSS CapIn *	17	17	18	19	20	21	22	23	24	26
Grants from Central & State government #	20	37	43	21	8	2	2	0	0	0
Public contribution through PPP and Beneficiaries #	30	51	115	77	69	1	1	1	1	1
* *Linked from Municipal Finance sheet* # *Linked from Action Plan finance sheet*										
2. Allocate WSS revenue surplus for capital funding										
WSS revenue surplus	66	212	364	417	473	517	639	727	1,004	1,306
Propose allocation of surplus for WSS CapEx	33	106	182	209	236	259	319	364	58	
	50%	50%	50%	50%	50%	50%	50%	50%	6%	0%
3. Allocate Non-WSS CapIn for WSS capital funding							Link to	Review past trends		
Non-WSS CapIn surplus	11	37	79	139	217	315	434	575	741	933
Propose allocation of surplus for WSS CapEx										
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4. External borrowings										
Debt from Action Plan finance	2	0	-	14	15	16	17	-	-	-
Additional debt required	175	259	201	276	109	131	140	187		
Terms of conditions	Rate of interest (%)					10%				
	Moratorium period (Number of years)					1				
	Period of Borrowing (Number of years)					15				
Debt servicing requirement	-	18	54	89	127	152	168	186	206	208
Debt service coverage ratio	**NA**	**12.78**	**7.74**	**5.69**	**4.72**	**4.40**	**4.80**	**4.91**	**5.87**	**10.16**

IMPACT OF FINANCING PLAN ON MUNICIPAL FINANCES

Budget heads	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
REVENUE ACCOUNT										
Water supply and sanitation services (WSS)										
Opening balance	-	33	106	182	208	237	258	320	363	946
Revenue receipts	534	694	837	877	987	1,058	1,206	1,282	1,570	1,711
Revenue expenditure	501	621	761	851	958	1,037	1,144	1,239	987	751
WSS Revenue account status	33	106	182	208	237	258	320	363	946	1,906
Services other than water supply and sanitation (Non-WSS)										
Opening balance	1	78	101	117	128	152	171	185	199	259
Revenue receipts	883	943	1,022	1,087	1,223	1,320	1,402	1,487	1,802	1,934
Revenue expenditure	806	920	1,006	1,076	1,199	1,301	1,388	1,473	1,742	1,903
Non-WSS Revenue account status	78	101	117	128	152	171	185	199	259	290
CAPITAL ACCOUNT										
Water supply and sanitation services (WSS)										
Opening balance	-	170	408	599	922	1,192	1,586	2,050	2,606	2,670
Capital receipts	277	470	558	616	457	423	501	575	83	27
Capital expenditure	107	232	367	293	187	35	37	19	19	20
WSS Capital account status	170	408	599	922	1,192	1,586	2,050	2,606	2,670	2,677
Services other than water supply and sanitation (Non-WSS)										
Opening balance	-	11	37	79	139	217	315	434	576	742
Capital receipts	500	525	551	579	608	638	670	704	739	776
Capital expenditure	489	499	509	519	530	540	551	562	573	585
Non-WSS Capital account status	11	37	79	139	217	315	434	576	742	933
EXTRAORDINARY ACCOUNT										
Opening balance	-	38	78	120	165	211	260	311	365	422
Receipts	135	142	149	157	164	173	181	190	200	210
Expenditure	97	102	107	112	118	124	130	136	143	150
Extraordinary account status	38	78	120	165	211	260	311	365	422	482
OVERALL MUNICIPAL FINANCE										
Total receipts	2,330	3,104	3,847	4,413	5,001	5,627	6,550	7,538	8,503	9,697
Total expenditure	2,000	2,374	2,750	2,851	2,992	3,037	3,250	3,429	3,464	3,409
Closing balance	**330**	**730**	**1,097**	**1,562**	**2,009**	**2,590**	**3,300**	**4,109**	**5,039**	**6,288**

PIP Plan options

Preparation of PIP plan options for evaluation

Each improvement option can comprise of

- Discrete set of actions to achieve different performance level
- Assess different technologies
- Capture varying phasing of actions
- Vary financing arrangements
- Assess improving efficiency & low-no cost actions and capital asset projects

Parameters for development of improvement options

Sector vision, type of actions, technology choices, costs

Phasir

Financ

Improvement Options

Business as Usual

Criteria for assessment of improvement options

Sector vision
Service levels achieved

Snapshot of PIP option comparison

KEY ASPECTS OF PERFORMANCE IMPROVEMENT PLAN

☑ CLICK HERE TO CUSTOMIZE KPI WIGHTAGES FOR SECTOR SCORE. BY DEFAULT ALL KPIs ARE GIVEN EQUAL WEIGHTAGES.

Name of PIP option: City sanitation plan

PERFORMANCE ASSESSMENT

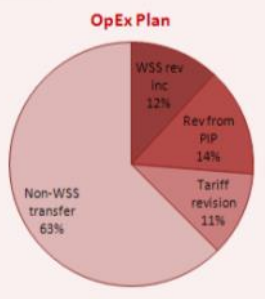
Sector scores (% improvement)	Water supply	Wastewater	Solid waste
Start year of Plan - 2013	63%	46%	46%
End year of Plan - 2023	92%	120%	66%

ACTION PLAN SUMMARY

Improvement actions (Nos. of actions)	Water supply	Wastewater	Solid waste
Data improvement	1	1	2
Process/ policy improvement	0	2	4
Existing system improvement	5	10	4
New infrastructure	2	10	7

Financial implications (Rs. Lakhs)	Water supply	Wastewater	Solid waste
Capital expenditure	157	966	38
Operating expenditure/ annum	2.9	21.9	155.9
Revenue generation/ annum	75.6	79.3	0.7

FINANCING PLAN SUMMARY



Average DSCR = 6.8

Average Operating ratio = 0.6

Tariffs (Rs/HH/ annum)	Property tax	Water supply	Waste water	Solid waste
Start year of Plan - 2013	694	960	35	40
End year of Plan - 2023	3123	2880	375	628

Performance Assessr

Application of PIP model for a city - Comparison of PIP Options for a City

Three sanitation options were simulated for a city in PIP Model to assess its impact on services and finances:

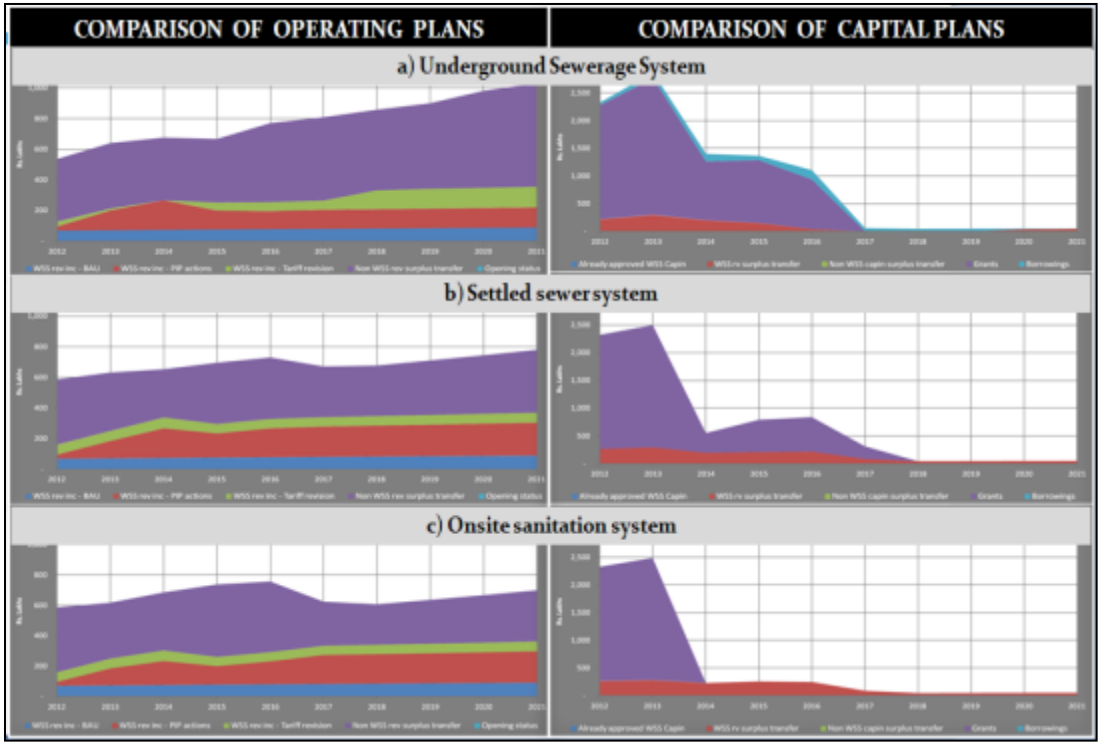
i)Conventional underground sewerage

ii)Settled sewer system

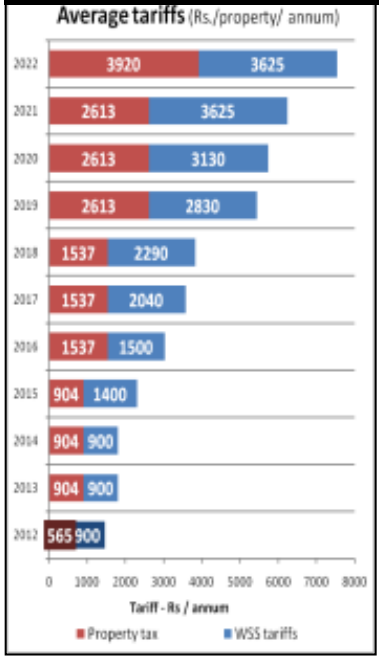
iii)On-site sanitation system

The Model was simulated to provide similar outreach of services with all sanitation options, the financial impact of these options varied considerably. A sample result of these results are shown here.

PIP options	Capital Finances Sources of funds (Rs cr)					Operating Finances Average/yr (Rs cr)		Tariff increase required Base tariff = Rs.1465/HH/yr
	Grants	ULB funds		Private	Total Capex	Add. Opex	Add. Revenue	
		Internal funds	Debt					
I) Business as Usual scenario with committed projects	42.6	9.1	-	-	**51.7**	0.9	0.9	Rs. 2066
II) Proposal with only Wastewater Technology Options								
A. Citywide Sewerage	76.1	9.9	7.0	1.5	**94.5**	2.3	1.2	Rs. 3602
B. Citywide Settled sewer	60.5	14.7	-	2.0	**77.2**	1.4	1.7	Rs. 2055
C. On-site sanitation system	42.6	15.7	-	4.7	**63**	1.0	1.5	Rs. 2055



Annual tariff increment required



Thank you

PIP Model is available at

www.pas.org.in

For more info write to us at

pas@cept.ac.in