

SaniPlan Tool



Conventional Approach versus SANIPlan approach

Conventional Approach



'PROJECT'
based approach

Focus on achieving **OUTPUTS**

Starting point is an assessment of available grant funding – **SUPPLY DRIVEN**

Focus on developing **INDIVIDUAL PROJECTS** of various sectors

SANIPLAN Approach



'SERVICE'
based approach

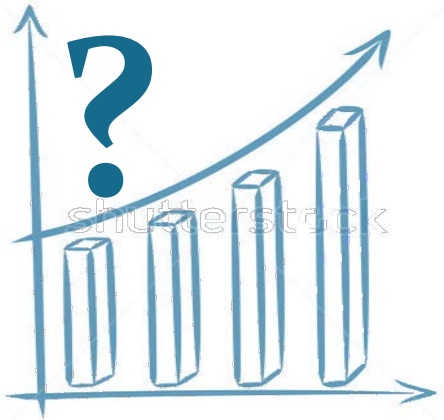
Focus on achieving **OUTCOMES**

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

Focus on developing integrated **SECTORAL SOLUTIONS**



Key Components of SANI Plan



Performance
Assessment



Action
Planning



Financial
Planning

Steps in SANI Plan

Baseline Information

BASELINE INFORMATION FOR PERFORMANCE ASSESSMENT

Demography and onsite sanitation info; Municipal finance
Excel sheet in SANIPLAN : FSM info, Finance info, Municipal Finance

PERFORMANCE ASSESSMENT

Step 1. ASSESS CITY PRIORITIES

Review trends of key performance indicators and peer comparison
Excel sheet in SANIPLAN : Performance assessment

Step 2. SELECT IMPROVEMENT ACTIONS

Identify improvement actions to meet sector goals
Excel sheet in SANIPLAN : Performance assessment

ACTION PLANNING

Step 3. DEVELOP IMPROVEMENT PLAN

Design of actions in Improvement Plan – Phasing, quantity and costs
Excel sheet in SANIPLAN : WW Plan

Step 4. REVIEW IMPROVEMENT PLAN

Review impact on service performance
Excel sheet in SANIPLAN : Summary of Action Plan

FINANCIAL PLANNING

Step 5. MAKE FINANCIAL DECISIONS

Sources of funds, Tariff structures & levels, Transfer surplus to WSS
Excel sheet in SANIPLAN : Action Plan finance, Financing Plan

Step 6. REVIEW FINANCING PLAN

Review feasibility of Financing plan for CapEx and OpEx
Excel sheet in SANIPLAN : Financing Plan



Performance Assessment



Action Planning



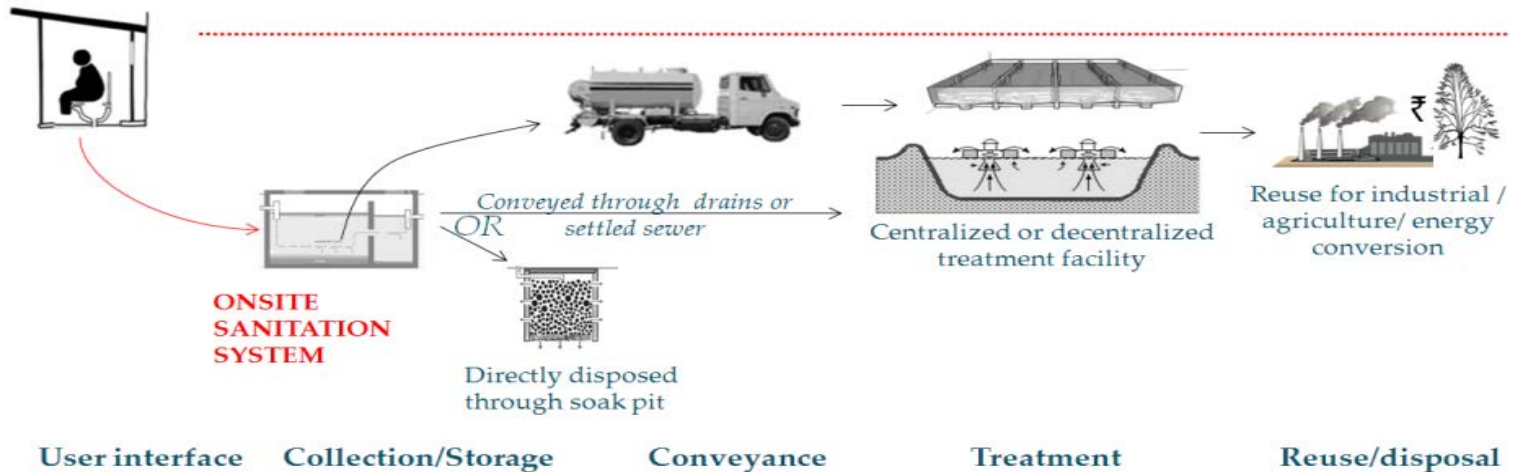
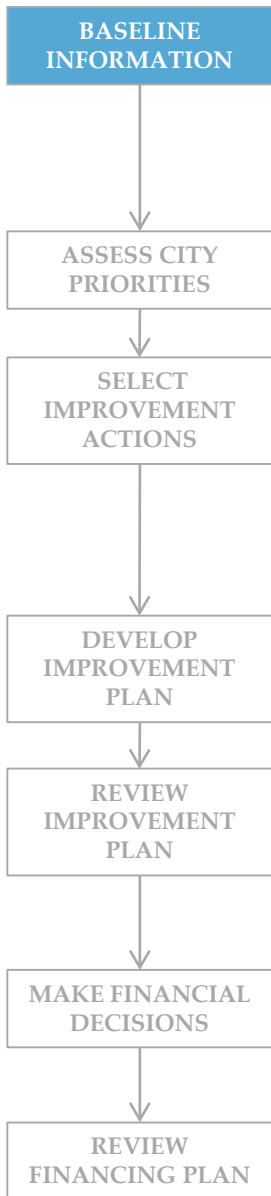
Financial Planning



Step-1 Baseline Information

Base line Information for WSS across Value chain

Performance assessment is envisaged as a sector-wide approach, assessing entire value chain rather than focusing it as separate compartments.



Current performance levels of sanitation services are assessed and quantified in terms of Key performance indicators. To arrive at these results, comprehensive compilation of baseline information is required. Sanitation sector is captured through various data sets across their respective value chain.

Snapshot of WSS Info input sheet

B Details of non-sewered areas in city

i) Households with individual toilet facility

Sr. No.	Particulars		Non-slum households	Slum households
	Black water disposal system of toilets	Effluent disposal system of toilets		
1	Septic tanks	Soak pits	424	
2	Septic tanks	Open/ closed drains (unsafe)	3,816	189
3	Pit latrines (unsafe)	Open/ closed drains (unsafe)	211	2
	Total		4,451	191

ii) Emptying of septic tanks

Sr. No.	Suggested emptying cycle (number of years between successive emptying)	
1	For household level septic tanks	3
2	For septic tanks of community/public toilets	1

The USEPA suggests 3-5 years, Govt. of India suggests a 2-3 years cleaning cycle

Sr. No.	Particulars	Urban local body (ULB)	Private service providers
1	Involvement in emptying septic tanks in the city (Yes/No)	Yes	No
2	Number of suction emptier trucks used for cleaning septic tanks	1	
3	Aggregate capacity of all suction emptier trucks (kl)	5	
4	Number of trips made by a suction emptier truck (Trips/working day/truck) <i>NOTE : If trips are not made daily, then convert trip frequency into per day ratio. Eg: 1 trip is made every week then, 1/6 = 0.17 trips/ day</i>	1.0	

iii) Faecal sludge treatment and disposal (FSTD) facility

Sr. No.	Particulars	Unit	Value
1	Installed capacity of FSTD facility	Cu.m./ month	-
2	Functional capacity of FSTD facility	Cu.m./ month	-
3	Estimated percentage of by-product (manure) derived from septage treated at the plant	%	0%
4	Quantity of manure reused, if any	Cu.m./ month	-

WSS Info
sheet of
SANIPlan

Snapshot of Finance Info input sheet

Status of budgets

Particulars	2009	2010	2011	2012	2013	2014
Select type of budget figures provided for each year	Actual figure	Actual figure	Actual figure	Actual figure	Revised estimate	Budget estimate
Abbreviation for budget type	(A)	(A)	(A)	(A)	(RE)	(BE)
Availability of budget (tick if available)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

I Municipal revenue and expenditure

All figures in INR Lakhs

Sr. No.	Particulars	2009 (A)	2010 (A)	2011 (A)	2012 (A)	2013 (RE)	2014 (BE)
	Opening balance	295.2	315.2	300.2	473.3	743.5	858.0
	Property tax	89.6	85.8	86.9	142.1	200.7	250.1
	Other taxes and charges	58.7	72.6	64.6	98.0	174.3	182.5
	Other receipts (non-tax + grants)	445.0	601.6	656.0	761.9	1,013.9	971.4
	Total revenue receipts	593.3	760.0	807.5	1,002.0	1,389.0	1,403.9
	Revenue expenditure	546.5	802.1	724.7	918.3	1,169.3	1,320.7
	Capital receipts	463.5	196.5	644.0	128.9	962.6	688.2
	Capital expenditure	365.0	188.3	958.6	215.0	939.1	471.2

Budget past trends

II WSS revenue and expenditure

All figures in INR Lakhs

B FSM and Wastewater

Sr. No.	Particulars	2009 (A)	2010 (A)	2011 (A)	2012 (A)	2013 (RE)	2014 (BE)
	Wastewater related taxes and charges	-	-	-	-	-	-
	Other receipts	-	-	-	-	-	-
	Total revenue receipts	-	-	-	-	-	-
	Revenue expenditure	55.5	68.5	84.9	111.6	121.2	108.0
	Capital receipts	-	-	-	-	-	-
	Capital expenditure	-	-	-	-	-	-

III Taxes and user charges

All figures in INR Lakhs

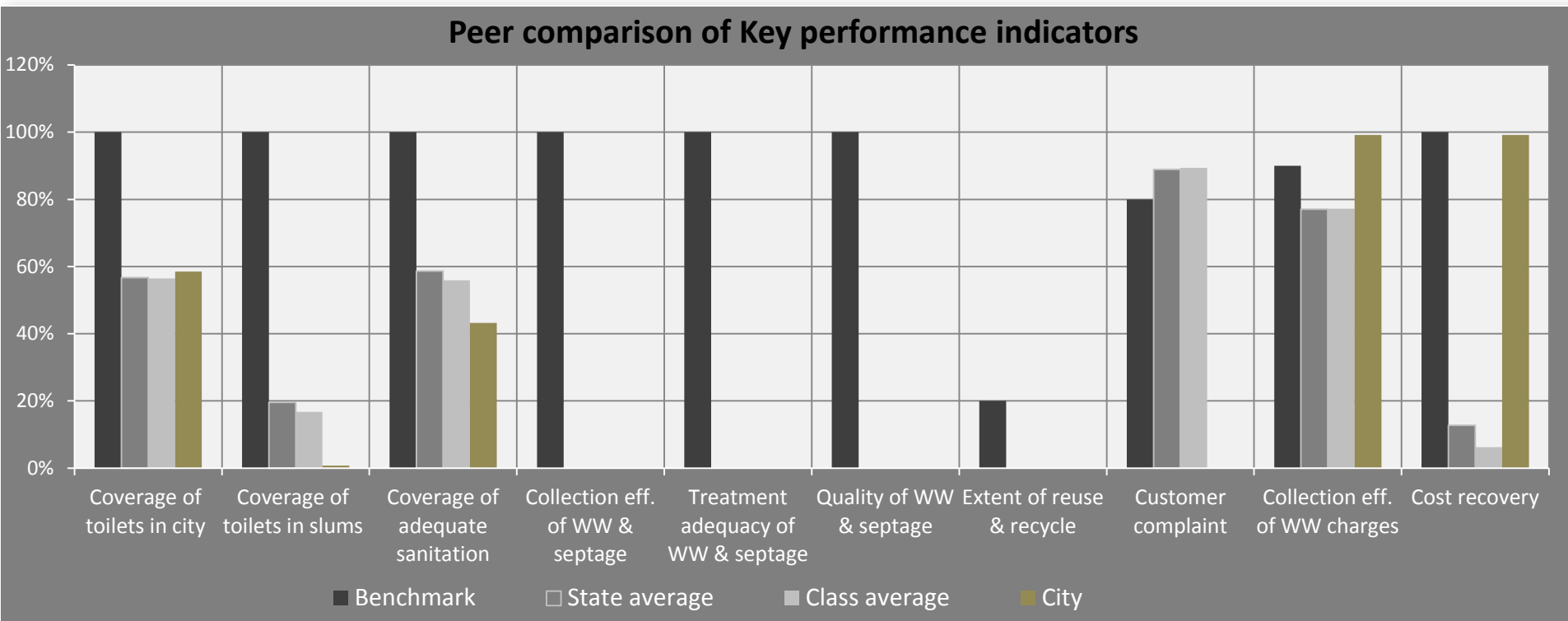
A Demand, Collection and Balance statement

Sr. No.	Particulars	2012 (A)		2013 (RE)		2014 (BE)	
		Demand	Collection	Demand	Collection	Demand	Collection
	CURRENT DEMAND						
1	General property tax	112.6	94.9	111.6	91.8	111.6	91.8
3	FSM and wastewater related taxes and charges						
5	Others	111.2	90.4	134.7	112.5	134.7	112.5
	Total	223.8	185.3	246.3	204.3	246.3	204.3
	ARREAR DEMAND						
1	General property tax	66.2	46.9	37.6	19.3	37.6	19.3
3	FSM and wastewater related taxes and charges						
5	Others	53.2	40.0	52.0	37.8	52.0	37.8
	Total	119.4	86.9	89.6	57.1	89.6	57.1

Step-2 Performance Assessment

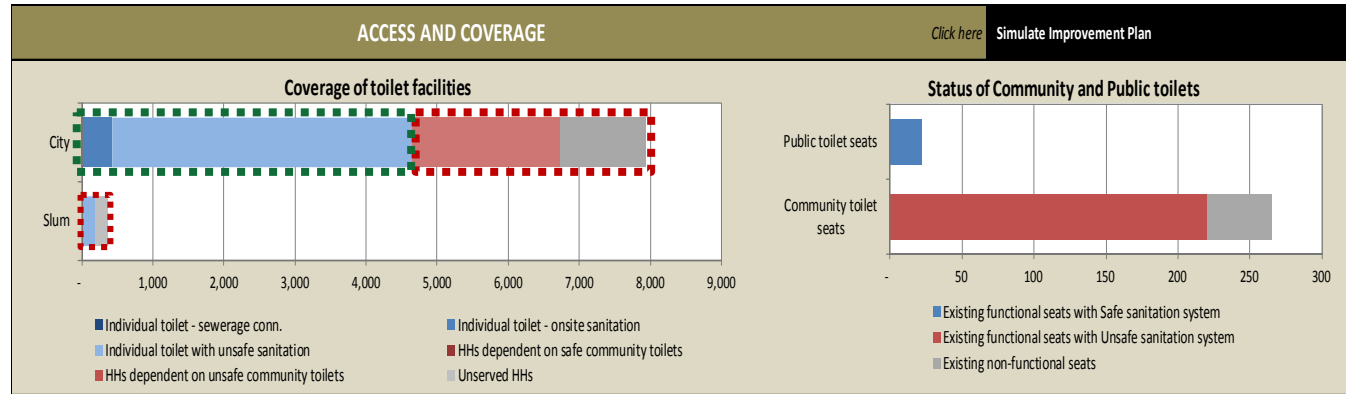
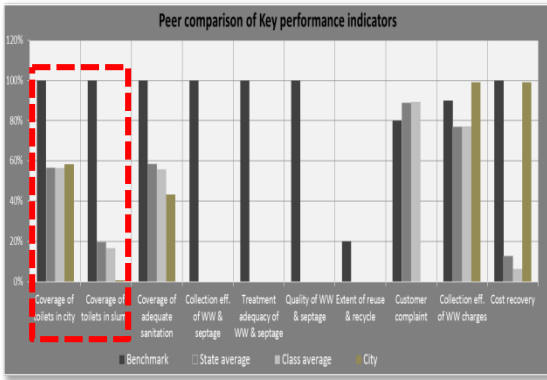


Assessment through City level Performance Indicators



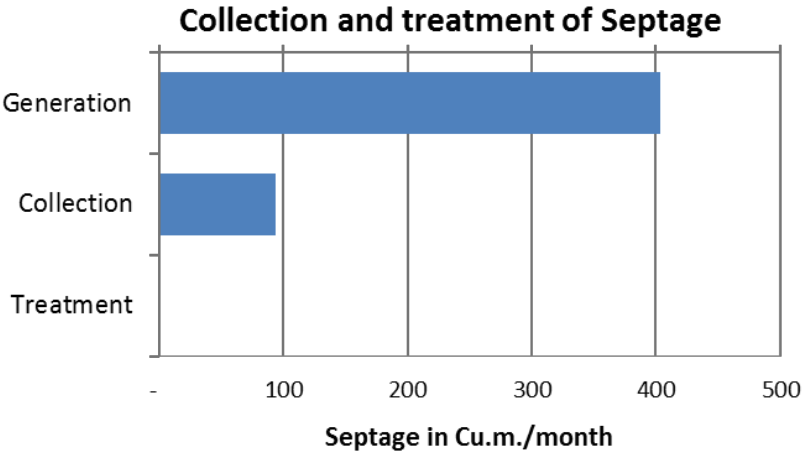
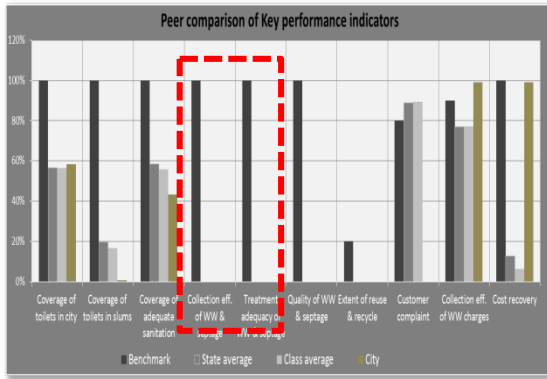
- ❑ Coverage of toilets in the city is almost at-par with the class and state average
- ❑ The city lacks adequate sanitation
- ❑ There is no proper collection and treatment of septage in the city
- ❑ Collection efficiency of wastewater and fecal sludge charges and cost recovery is better than the class and state average

Assessment through Local Action indicators



Households having latrines

Households not having latrines



Only 2% of the septic tanks are cleaned annually
No septage treatment facility

Step-3 Action Planning



FSM Related Improvement Actions

Select improvement actions

Data improvement

Process changes/ policy decisions

Improving existing infrastructure

New infrastructure

Sr No	Action
Access & coverage	
WW01	Household survey to assess onsite sanitation services
WW02	Surveys and monitoring of open defecation sites
WW03	Computerise sanitation records
WW04	Policy for providing sanitation services in slums
WW05	Improve condition of existing individual toilets by providing safe sanitation disposal system
WW06	Improve condition of existing Community toilets
WW07	Improve condition of existing Public toilets
WW08	Refurbishment of existing septic tanks in city
WW09	Information, education and communication (IEC) campaigns for sanitation awareness
WW10	Construct new individual toilets
WW11	Construct new group toilets
WW12	Construct new community toilet blocks
WW13	Construct new public toilet blocks

Sr No	Action
Service levels & quality	
WW19	Increase septage collection with existing suction emptier trucks
WW20	Increase efficiency of all existing treatment plants
WW26	Procure new suction emptier trucks
WW27	Construct/augment fecal sludge treatment plant
WW29	Construct/augment sewage treatment plant
Efficiency in services	
WW31	Improve septage quality surveillance
WW32	Improve processes for management of consumer complaints
WW33	Increase in reuse/recycling of treated septage
WW34	Conduct regular septage quality tests at laboratory, if not done
WW35	Improve consumer grievance redressal system
Financial sustainability	
WW36	Improve billing and collection of onsite sanitation bills
WW37	Improve collection efficiency of fecal sludge charges and taxes

Planning of improvement actions

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.

Calibrate selected actions

Phasing

Technology

Capital Cost

Operating cost and revenue generated

Activate/
Deactivate actions

Phasing of actions

PROVIDE WASTEWATER COLLECTION & CONVEYANCE SYSTEM TO HOUSEHOLDS

Learn more	Activate		2015	2016
Baseline	- Suction emptier trucks with LG at present - Suction emptier trucks with private operators at present	Numbers		1
		Numbers		-
Improvement	<u>Suction emptier trucks of LG</u>			
	- Additional trucks to be procured by LG	Numbers		2
	- Aggregate capacity of all new suction emptier trucks	kilo liters		7.0
	- Number of trips by a suction emptier truck	Trips/ truck/day		3.0
	<u>Suction emptier trucks of Private operators</u>			
	- Additional number of trucks expected to be procured by private operators to function within city limits	Numbers		
	- Aggregate capacity of all new suction emptier trucks	kilo liters		
	- Number of trips by a suction emptier truck within city limits	Trips/ truck/day		
Finance	- Block cost for a suction emptier truck to be procured by LG	Cost/truck		1,200,000
	- O&M expenses for new trucks procured by LG	% of CapEx/annum		50%

Baseline information

Improvement information

Cost and Finance information

Assess Impact of Improvement Actions

Performance levels	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Access and coverage											
Coverage of households with individual and group toilets in city	58%	67%	75%	82%	90%	97%	96%	96%	95%	95%	94%
Number of households with access to individual and group toilets as percentage of total households in city.											
Coverage of households with individual and group toilets in slums	53%	62%	71%	80%	88%	96%	95%	95%	94%	94%	93%
Number of households in slum settlements with access to individual and group toilets as percentage of total slum households.											
Coverage of households with improved sanitation facility in city	85%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Number of households with access to some kind of toilet facility (individual and community toilet), as percentage of total households in city (as defined by Joint Monitoring Program)											
Households resorting to open defecation in city	15%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Number of households in city without any safe sanitation facility and resort to open defecation, as percentage of total households in city.											
Households dependent on community toilet facilities	26%	28%	25%	18%	10%	3%	4%	4%	5%	5%	6%
Number of households dependent on functional community toilet facilities near their houses as percentage of total households in city.											
Non-functional community and public toilets	17%	11%	6%	0%	0%	0%	0%	0%	0%	0%	0%
Number of non-functional community and public toilet seats as percentage of total community and public toilet seats.											
Service level and quality											
Coverage of households with adequate sanitation system	5%	27%	49%	70%	90%	97%	96%	96%	95%	95%	94%
Number of households with access to safe and adequate sanitation system for wastewater disposal (sewerage or on-site) as percentage of total households in city.											
Efficiency of wastewater and septage collection system	5%	27%	49%	70%	90%	97%	96%	96%	95%	95%	94%
Aggregate quantum of wastewater collected (through sewerage and settled sewer network) at the intake of treatment plant and wastewater discharged through soak pits as percentage of normative wastewater generated in city. This indicator is calculated based on weighted average of households and wastewater collection systems.											
Adequacy of wastewater and septage treatment capacity	0%	0%	0%	3%	10%	27%	24%	21%	19%	17%	16%
Aggregate quantum of sewage, sludge and sullage to be treated with present treatment facilities as percentage of normative wastewater generated in city. This indicator is calculated based on weighted average of households and wastewater treatment facilities.											
Households with full on-site sanitation system	5%	27%	49%	70%	90%	97%	96%	96%	95%	95%	94%
Number of households with full on-site sanitation disposal system as septic tanks connected to soak pits for grey water disposal, as percentage of total households in city.											
Households with on-site sanitation and settled sewer	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Number of households with on-site black water disposal system as septic tanks connected to settled sewer/ small bore sewers for grey water disposal, as percentage of total households in city.											
Households with sewerage network services	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Number of households with individual connections to sewerage network, as percentage of total households in city.											
Spatial coverage of closed surface drains	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Municipal area covered by closed surface drains for storm water drainage as percentage of total jurisdictional area of city.											
Septic tanks cleaned annually in city	8%	34%	34%	34%	34%	32%	31%	31%	31%	31%	31%
Number of septic tanks (includes septic tanks of individual toilets, community and public toilets) cleaned annually as percentage of total septic tanks in city.											
Adequacy of sewage treatment capacity	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Quantum of sewage that can be treated at secondary treatment plants as percentage of normative sewage collected by sewerage network.											
Adequacy of treatment plant capacity for effluent and sullage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Quantum of effluent and sullage that can be treated at primary treatment plants as percentage of normative sewage and effluent collected by the sewerage network (as per JMW)											
Adequacy of septage treatment capacity	0%	0%	0%	118%	107%	100%	100%	99%	98%	98%	97%
Quantum of septage that can be treated at faecal sludge treatment plant as percentage of normative septage generated in city.											

Step-4 Financial Planning



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

Funding requirement for improvement action

Summary of improvement actions

Click to view Phasing, CapEx or OpEx

IMPROVEMENT ACTIONS		SUMMARY OF CAPITAL EXPENDITURE									
Sector colour code FSM and Wastewater		Click here to view Summary of <input type="radio"/> PHASING <input checked="" type="radio"/> CAPEX PLAN <input type="radio"/> O&M PLAN									
Actions	Type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Policy for providing sanitation services in slums	Process/ Policy										
Improve condition of existing individual toilets by providing safe sanitation	Exisiting system	64									
Improve condition of existing Community toilets	Exisiting system	23	25	26							
Construct new individual toilets	New infrastructure	198	212	226	242	259					
Construct new public toilet blocks	New infrastructure	11	12								
Increase septage collection with existing suction emptier trucks	Exisiting system										
Procure new suction emptier trucks	New infrastructure	24									
Construct/augment fecal sludge treatment plant	New infrastructure	45	48								

Select Sources of Funds for Capital Expenditure

IMPROVEMENT ACTIONS		SOURCES OF FUNDS FOR CAPITAL EXPENDITURE						
Sector colour code FSM and Wastewater		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)
Policy for providing sanitation services in slums	Process/ Policy	0						100%
Improve condition of existing individual toilets by providing safe sanitation	Exisiting system	64					60%	40% 26
Improve condition of existing Community toilets	Exisiting system	74						100% 74
Construct new individual toilets	New infrastructure	1,137	10%	30%			60%	
Construct new public toilet blocks	New infrastructure	23				100%		
Increase septage collection with existing suction emptier trucks	Exisiting system	0						100%
Procure new suction emptier trucks	New infrastructure	24				100%		
Construct/augment fecal sludge treatment plant	New infrastructure	93			50%			50% 47

Snapshot of setting tariff structures in SANIPLAN

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

TARIFFS FOR FSM AND WASTEWATER SERVICES

Click [Back to WSS O&M Plan](#)

3. Wastewater tax based on flat rate

Are wastewater charges based on flat rate levied presently by ULB?	NO					Mode of charging	Flat rate/unit					
						-	0					
If No, and if planned to levy then start it from which year?	Year					2015	Number of properties					200
Percentage increment in flat rate based user charges	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
					20%		20%	20%	20%			

4. Wastewater tax linked to general property tax

Is property tax linked wastewater tax levied presently by ULB?	NO					% of general property tax	0.0%				
If No, and if planned to levy then start it from which year?	Year										
Revised percentage of general property tax for wastewater tax	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

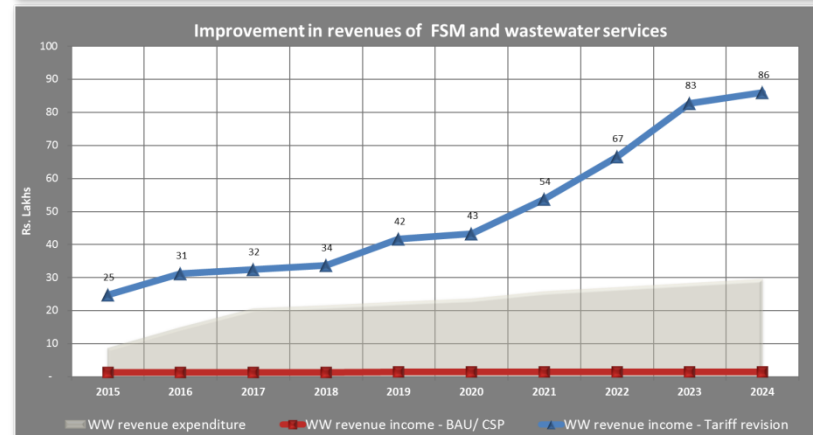
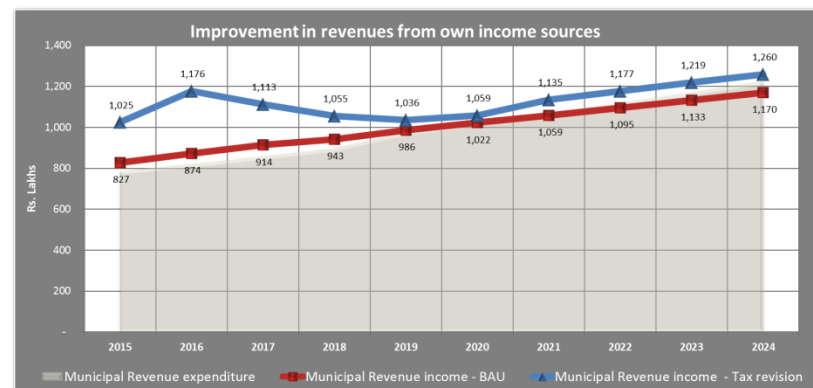
5. Septic tank emptying charges

Does the city provide septic tank emptying service	No					Mode of charging	Flatrate/unit					
						-	0					
If No and if planned to levy, then start it from which year?	Year					2017	Annual charge for scheduled emptying					
If Yes and charged at time of emptying, when does the city plan to charge annually and provide scheduled emptying	Year						Annual charge for scheduled emptying					
Percentage increment in flat rate based user charges	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		

6. Sewerage user charges

Is sewerage user charges levied presently by ULB?	NO					Rs/connection/annum	0				
If No, and if planned to levy then start it from which year?	Year										
Percentage increment in user charges	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
				20%			20%				

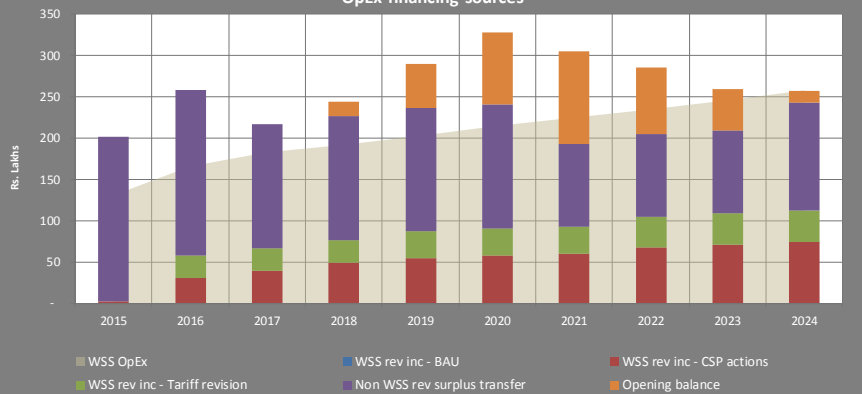
Visual display of impact on revenues



Snapshot of CapEx and OpEx plan summary in SANIPLAN

FSM AND WASTEWATER OPERATING PLAN

OpEx financing sources



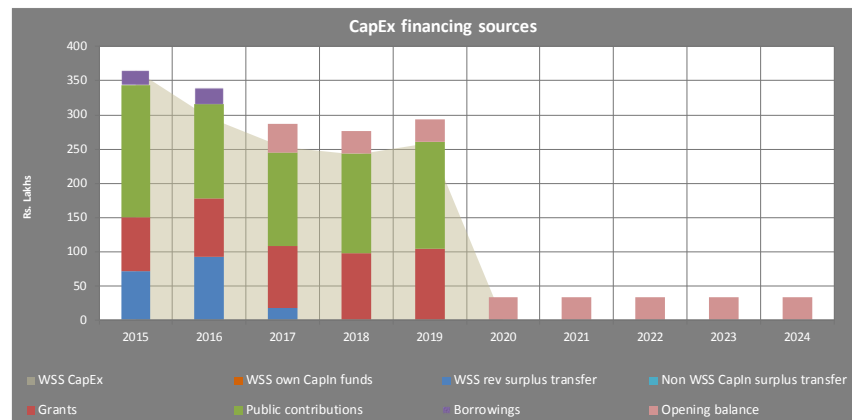
Snapshot of Operating plan summary and tariff structures

REVIEW OF TAXES AND CHARGES

Average tax demand (per household per annum)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Property tax	1156	1156	1156	1156	1156	1156	1156	1156	1156	1156	1156
Wastewater tax	0	0	0	0	0	0	0	0	0	0	0
Annual septic tank emptying charges	0	0	300	300	300	330	330	330	363	363	363
Sewerage tax	0	0	0	0	0	0	0	0	0	0	0
Annual demand from HHs depending on septic tanks	1156	1156	1456	1456	1456	1486	1486	1486	1519	1519	1519
Annual increment	-	0%	26%	0%	0%	2%	0%	0%	2%	0%	0%
Operating ratio feasible:	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FSM AND WASTEWATER CAPITAL PLAN

CapEx financing sources



REVIEW OF EXTERNAL FUNDING

Sources of funds	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Already approved CapIn	0	0	0	0	0	0	0	0	0	0	0
Internal fund transfers for CapEx	71	92	17	0	0	0	0	0	0	0	180
Grant-in-aids	79	85	91	97	104	0	0	0	0	0	455
Private contributions	192	139	136	145	155	0	0	0	0	0	767
Borrowings	23	24	0	0	0	0	0	0	0	0	47
Debt servicing requirement	0	2	5	5	7	5	8	8	7	7	57
DSCR feasible:	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-

Snapshot of Capital plan summary and external sources of funds

SANIPlan Dashboard

Sanitation options for comparison

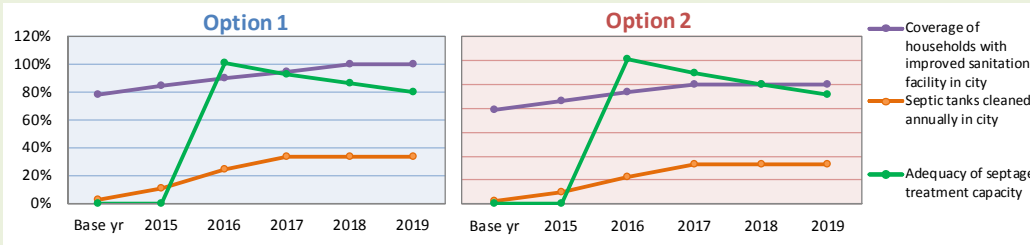
Create your options by selecting appropriate mode to improve coverage of toilets, wastewater management and financing mechanism

Select Toilet option	<input type="text" value="Individual toilets"/>	<input type="text" value="Individual toilets"/>	Select Toilet option
Select Conveyance regime	<input type="text" value="Regulated- 3 yrs"/>	<input type="text" value="Regulated- 3 yrs"/>	Select Conveyance regime
Select Treatment technology	<input type="text" value="SDB"/>	<input type="text" value="Sintex Package treatment Plant"/>	Select Treatment technology
Select financing mechanism	<input type="text" value="Innovative finance"/>	<input type="text" value="Innovative finance"/>	Select financing mechanism

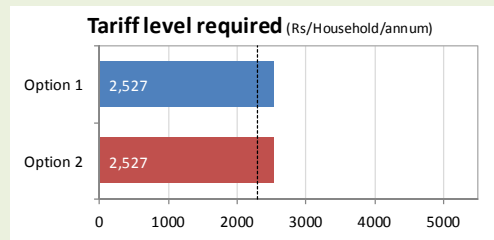
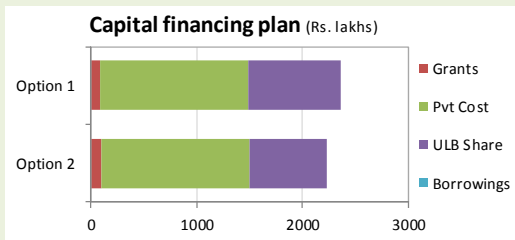
	Option 1	Option 2
Toilet	Individual toilets	Individual toilets
Conveyance	Regulated- 3 yrs	Regulated- 3 yrs
Treatment	SDB	Sintex Package treatment Plant
CapEx	2161.59	2177.36
O&M	19.91	29.15

All figures are in Rs. Lakhs

Impact on service levels



Financial implications



Summary of Action plan

Select mode:

	2015	2016	2017	2018	2019
Option 1					
Improve existing individual toilets	168.5	180.3	-	-	-
New individual toilets	292.8	313.2	335.2	358.6	383.7
Increase septage collection with	0.7	0.7	0.8	-	-
New suction emptier trucks	10.0	10.7	11.4	-	-
Fecal sludge treatment plant	95.0	-	-	-	-
Option 2					
Improve existing individual toilets	170.3	182.2	-	-	-
New individual toilets	292.8	313.2	335.2	358.6	383.7
Increase septage collection with	0.7	0.7	0.8	-	-
New suction emptier trucks	10.0	10.7	11.4	-	-
Fecal sludge treatment plant	107.0	-	-	-	-

SaniPlan Dashboard: Compare Options (1/2)

SANIPLAN Dashboards for IFSM enable easy selection and comparison of a set of options during a stakeholder consultation.

Users can choose across: a) toilet coverage, b) Conveyance mechanism c) treatment options and d) financing.

The dashboards compare their impacts on a) expenditure requirements, b) service performance, and c) financial implications.

The graphic illustrates a comparison - between septage treatment options - for a small town; though similar levels of service can be achieved in both options, Sludge Drying Bed (SDB) treatment option - comes out as economical and with low O&M cost.

Sanitation options for comparison

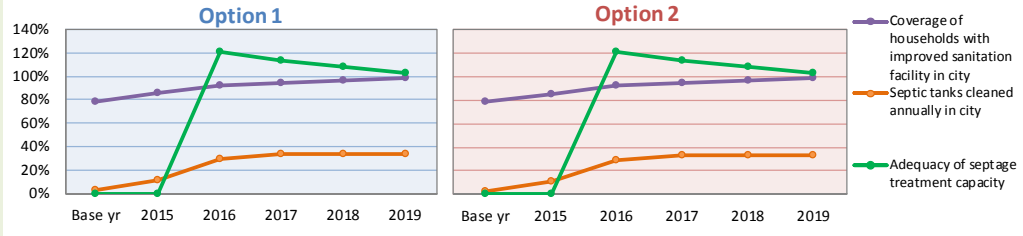
Create your options by selecting appropriate mode to improve coverage of toilets, wastewater management and financing mechanism

Select Toilet option	<input type="text" value="Individual + Community toilets"/>	<input type="text" value="Individual + Community toilets"/>	Select Toilet option
Select Conveyance regime	<input type="text" value="Regulated- 3 yrs"/>	<input type="text" value="Regulated- 3 yrs"/>	Select Conveyance regime
Select Treatment technology	<input type="text" value="SDB"/>	<input type="text" value="Sintex Package treatment Plant"/>	Select Treatment technology
Select financing mechanism	<input type="text" value="Innovative finance"/>	<input type="text" value="Innovative finance"/>	Select financing mechanism

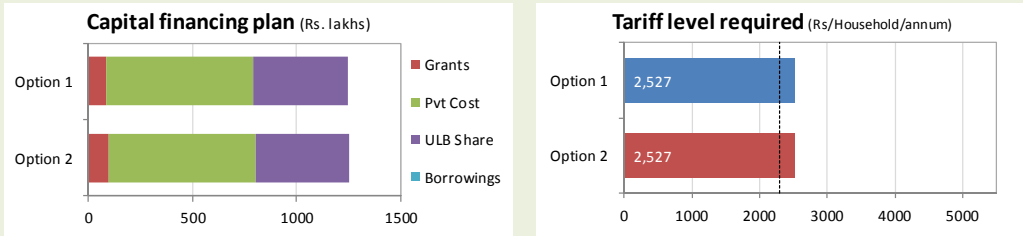
	Option 1	Option 2
Toilet	Individual + Community toilets	Individual + Community toilets
Conveyance	Regulated- 3 yrs	Regulated- 3 yrs
Treatment	SDB	Sintex Package treatment Plant
CapEx	1185.55	1196.11
O&M	22.39	31.63

All figures are in Rs. Lakhs

Impact on service levels



Financial implications



Summary of Action plan

Select mode: CAPITAL EXPENDITURE

Option 1	2015	2016	2017	2018	2019	Option 2	2015	2016	2017	2018	2019
Improve existing individual toilets	170.3	182.2	-	-	-	Improve existing individual toilets	170.3	182.2	-	-	-
Improve existing Community toilets	4.2	4.5	-	-	-	Improve existing Community toilets	4.2	4.5	-	-	-
New individual toilets	107.0	114.5	122.5	131.1	140.3	New individual toilets	106.8	114.2	122.2	130.8	139.9
New community toilet blocks	38.5	41.2	-	-	-	New community toilet blocks	38.5	41.2	-	-	-
Increase septage collection with	0.7	0.7	0.8	-	-	Increase septage collection with	0.7	0.7	0.8	-	-
New suction emptier trucks	10.0	10.7	11.4	-	-	New suction emptier trucks	10.0	10.7	11.4	-	-
Fecal sludge treatment plant	95.0	-	-	-	-	Fecal sludge treatment plant	107.0	-	-	-	-

SaniPlan Dashboard: Compare Options (2/2)

As compared to previous scenario of individual toilets, option of individual and community toilets are low in capital expenditure but has high lifecycle cost.

Sanitation options for comparison

WW disposal	Septic Tank + Soak pit	Settled Sewer	Conventional Sewer
Toilet			
Individual	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual + group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indiv + group + community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select Financing Option: Grants (GR)

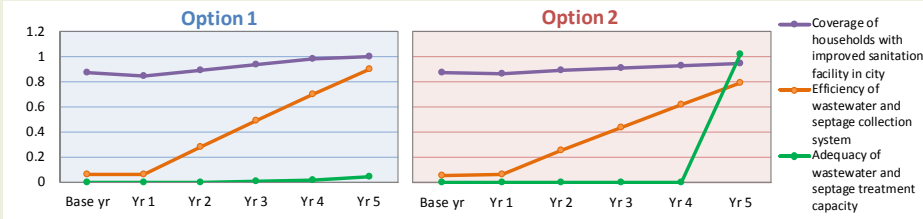
WW disposal	Septic Tank + Soak pit	Settled Sewer	Conventional Sewer
Toilet			
Individual	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Individual + group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indiv + group + community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select Financing Option: Creative finance (CF)

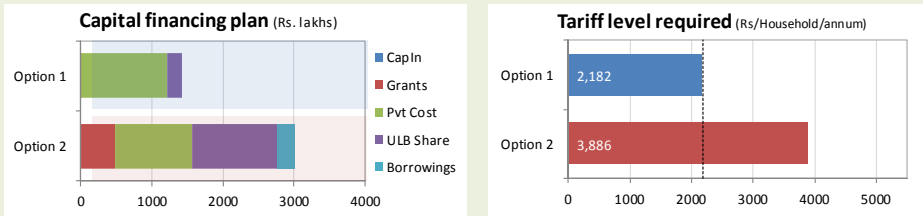
	Option 1	Option 2
Toilet	Individual	Individual
WW disposal	SS	CS
CapEx	1420.21	3006.76
O&M	3.01	43.47
Revenue	9.73	31.04

All figures are in Rs. Lakhs

Impact on service levels



Financial implications



Summary of Action plan

Select mode: CAPITAL EXPENDITURE

Base Year 2012

	2013	2014	2015	2016	2017
Option 1					
Improve collection efficiency of WS	-	-	-	-	-
Improve existing individual toilets	-	18.8	10.0	10.7	11.4
Refurbishment of existing septic	-	11.9	12.7	-	-
New individual toilets	-	228.8	244.8	262.0	280.3
New public toilet blocks	-	2.9	3.1	-	-
Increase septage collection with	-	0.6	-	-	-
Soak pits for WW disposal	-	-	-	-	-
New suction emptier trucks	-	-	11.4	-	-
Fecal sludge treatment plant	-	10.7	-	-	-
Option 2					
Improve collection efficiency of WS	-	-	-	-	-
Improve existing individual toilets	-	15.6	16.7	17.8	19.1
New individual toilets	-	163.4	174.9	187.1	200.2
New public toilet blocks	-	2.4	2.5	-	-
New sewerage network	-	290.7	311.0	332.8	356.1
Sewage treatment plant	-	99.9	106.9	114.3	-

Use of SaniPlan to compare sanitation options

The dashboards compare their impacts on a) expenditure requirements, b) service performance, and c) financial implications.

Application of SaniPlan

SaniPlan



A City Sanitation Planning Model

Application for a small town - Wai

Thank you

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