

SEWERAGE

1. Assess the Service Level Gap

The first step is to assess the existing situation and service levels gaps for Sewerage (AMRUT Guidelines; para 3 & 6). This will also include existing institutional framework for the sector. AMRUT is focused on improvement in service levels. The zone wise data shall be used in identifying the gaps. These zone-wise gaps will be added to arrive at city level service gaps. While assessing service level gap reply following questions not more than word indicated against each question.

- What kind of baseline information is available for sewerage system of the city? Detail out the data, information, plans, reports etc related to sewerage available with city. Is zone wise information available? Have you correlated your data with census 2011 data? (100 words)
- The city of Ashokenagar-Kalyangarh does not have any sewerage network system. The individual and community sanitary toilets of the city are connected to individual/ community septic tank and soak pit. The overflow of the septic tank goes directly to the drains.

City Development Plan (CDP),City sanitation Plan (CSP), Census data-2011,SECC data-2011, Economic census-2013 and Slum survey data(USHA), Water Pipeline survey report.

Zone Wise information is available.

- What are existing service levels for sewerage for coverage of sewerage network services, efficiency of collection of sewerage and efficiency in treatment. Provide information in table 2.1

Table 2.1: Status of sewerage network and Service Levels

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Sr. No.	Indicators (as per SLB framework)	Existing Service Level	MOUD Benchmarks
1	Coverage of latrines (individual or community)	68%	100%
2	Coverage of sewerage network services	0%	100%
3	Efficiency of collection of sewerage	0%	100%
4	Efficiency in Treatment: Adequacy of sewerage treatment capacity	0%	100%

- What is the gap in these service levels with regard to benchmarks prescribed by MoUD? (75 words)

With reference to the above table 2.1 the following gaps are noticed.

1. Coverage of latrines (individual or community) – 32%
2. Coverage of sewerage network services – 100%
3. Efficiency of collection of sewerage – 100%
4. Efficiency in Treatment: Adequacy of sewerage treatment capacity – 100%

- Does city has separate drainage system or sewer lines take care of storm water? (50 words)
 - The city has storm water drainage system to take care of the storm water, urinal/ septic tank/ soak pit effluents go directly to the drains as there is no sewerage network present in the city.

Coverage of latrines (individual or community)

Please provide information in Table 2.2 a

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Zone No	Total number of HH a	Total number of HH without individual or community toilets within walking distance b	Coverage of latrines (%) (a-b)/a*100%
I	4256	1968	53.76%
II	5093	1863	63.42%
III	6225	1142	81.65%
IV	5341	1067	80.02%
V	3995	1878	52.99%
Total	24910	7918	68.21%

Sewerage network And Collection of Sewerage

Please provide information in 150 words on the above responding to (however not limited to) following questions.

- How much of the area of the city is covered by sewerage network? What is the status of household connections in each zone?
What are the areas covered under septage? Provide information in Table 2.2 b.

Table 2.2 b: Zone Wise Coverage of Households

Zone No	Total No of Households (HH) A	Households with direct connection to Sewerage Network b	Coverage of sewerage network services (b/a)*100%
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1	4256	0	0%
2	5093	0	0%
3	6225	0	0%
4	5341	0	0%
5	3995	0	0%
Total	24910	0	0%

- Are there any areas where sewer lines have been laid but still households are not connected to sewer lines? Are there any areas where toilets may be connected to sewer lines but kitchen or bathroom waste are not connected to sewerage system?

There are no areas where sewer lines have been laid but still households are not connected to sewer lines.

There are no areas where toilets may be connected to sewer lines but kitchen or bathroom wastes are not connected to sewerage system that is connected directly to the drain.

- Is there any systematic and organized method to collect and treat waste from septic tanks? What is the duration of cleaning of septic tanks (monthly, quarterly, semiannually or annually)? Indicate status of overflows of septic tanks, either in the nearby drains /open fields/ sewerage lines etc?

Individual/ community septic tanks are cleaned once in 15/ 20 years. Overflow of the septic tanks goes directly to the nearby drains.

Duration of cleaning of septic tanks is based on need.

There is no such records of overflowing of septic tanks, either in the nearby drains /open fields/ sewerage lines etc.

- What is the situation of O&M of the existing sewerage system? Does the city has routine maintenance system or breakdown maintenance system? What is the duration of cleaning of sewer lines (monthly, quarterly, semiannually or annually)? Indicate infrastructure available for O&M of the sewerage system i.e sewer jetting machines etc?

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N.A., since we have no sewerage system.

Sewage Treatment System

Please provide information in 150 words on the above responding to (however not limited to) following questions.

- Does city has Sewage Treatment Plant (STP)? Which areas are covered under each of the STPs? Provide details in Table 2.3.

No seage treatment plant. N.A.

Table 2.3: Status of Existing STPs

Sr. No.	Location	Capacity (MLD)	Inflow in the STP (MLD)	Efficiency in %
1	Nil	Nil	Nil	Nil

- Does decentralized waste treatment system exists or planned in the city? If yes, provide details

Decentralized waste treatment system does not exist in the city , it is necessary and may be implemented under AMRUT scheme

- How much of sewerage is generated in the city? How much of this sewerage generated reaches the STPs? What is the Biological Oxygen Demand (BOD) of incoming and outgoing sewage of each STP?

At present sewerage generated in the city is 12.50 MLD. As there is no STP, reaching of sewerage to the STPs does not arise.

- Is treated sewage being reused or recycled? Is treated water being used for irrigation or industrial purpose? Does the option of power generation being explored?

- NA

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Institutional Framework

Please provide information in 100 words on the above responding to (however not limited to) following questions.

- Define role and responsibilities in terms of O&M, policy planning, funding, service provision in table 2.4.
- Table 2.4: Functions, roles, and responsibilities

Planning and Design	Construction/ Implementation	O&M
<ul style="list-style-type: none"> • The design is to be made in such a way that all the lines can converge to the STP. The quantum of affluent is to be assessed and accordingly the capacity of the pump to be determined. 	<ul style="list-style-type: none"> • Construction/ Implementation to be done within specific time period i.e. within 2-3 years including commissioning & trial run. 	<ul style="list-style-type: none"> • The tender will include O&M for 5 years based on recovery of expenditure by the ULB.
<ul style="list-style-type: none"> • As it is a gravity flow system, the invert levels of different location are to be recorded and followed. 	<ul style="list-style-type: none"> • All formalities for tendering would be completed within a period of 6 months. 	
<ul style="list-style-type: none"> • Pay & use Toilet system connected with the sewer lines is to be earmarked and to be constructed at different locations. 	<ul style="list-style-type: none"> • Sequential presentation of project implementation through bar charts and adhering to it for timely completion of the project. 	
<ul style="list-style-type: none"> • Finding out extent of coverage of Sewerage network 		
<ul style="list-style-type: none"> • Identification of location for laying of Sewerage line, pump houses and installing STP/s 		
<ul style="list-style-type: none"> • Identification of availability of land for pay & use toilet and STP. 		
<ul style="list-style-type: none"> • Cost effective designing for replacement/reuse of old usable pipelines. 		
<ul style="list-style-type: none"> • To assess the power requirement for augmentation/new installation of STP, if necessary. 		
<ul style="list-style-type: none"> • Cost analysis as per latest PHE/PWD schedules and market rate for framing estimates to derive at project cost. 		
<ul style="list-style-type: none"> • To find out the annual O&M cost and ways of recovering the same. 		

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- Please also detail that how city is planning to execute projects. Shall the implementation of project be done by Municipal Corporation or any parastatal body?

City is planning to execute the projects engaging professional agency through e-tendering and technical support from Municipal Engineering Directorate under Municipal Affairs Department, Government of West Bengal.

It will be implemented by the Urban Local Body

2. Bridge the Gap

Once the gap between the existing Service Levels is computed, based on initiatives undertaken in different ongoing programs and projects, objectives will be developed to bridge the gaps to achieve universal coverage. (AMRUT Guidelines; para 6.2 & 6.3, Annexure-2; Table 2.1). Each of the identified objectives will be evolved from the outcome of assessment and meeting the opportunity to bridge the gap.

- List out initiatives undertaken in different ongoing programs and projects to address these gaps. For this provide details of ongoing projects being carried out for sewerage system under different schemes with status and when the existing projects are scheduled to be completed? Provide information in Table 2.5

Table 2.5: Status of Ongoing/ Sanctioned

S.No.	Name of Project	Scheme Name	Cost in Rs Crore	Month of Completion	Status (as on dd Month 2015)
1	Nil	NA	NA	NA	NA

Please provide information in 150 words on the above responding to (however not limited to) following questions.

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- How much the existing system will able to address the existing gap in sewerage system? Will completion of above will improve the coverage of network and collection efficiency? If yes, how much.

NA ,As there is no existing sewerage system.

- Does the city require additional infrastructure to improve the services? What kind of services will be required to fulfill the gap?

Additional Infrastructure is required, like, additional land, machinery, power, pipe line and manpower.

- How does the city visualise to take the challenge to rejuvenate the projects by changing their orientation, away from expensive asset replacement programs, to focusing on optimum use of existing assets?

Not Applicable

Provide information in Table 2.6

Table 2.6: Demand Gap Assessment

Component	2015			2021	
	Existing	Ongoing projects	Total	Demand	Gap
Sewerage network (km)	0	0	0	225Km	225Km
No of Households covered under sewerage system	0	0	0	26500	26500
Sewerage Treatment Plant (MLD)	0	0	0	18 MLD	18 MLD

Objectives

Based on above, objectives will be developed to bridge the gaps to achieve universal coverage. While developing objectives following question shall be responded so as to arrive at appropriate objective.

- Does each identified objectives will be evolved from the outcome of assessment?

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Yes; Each identified objectives will be evolved from the outcome of assessment.

- Does each objective meet the opportunity to bridge the gap?

Yes; Each objective meets the opportunity to bridge the gap.

Please provide List out objectives to meet the gap in not more than 100 words.

List of objectives to meet the gap.

- To make the city Open Defecation Free.
- To make provision of Sanitary Latrine for Insanitary latrine users and ODF personnel.
- To make provision of Pay & Use Public Toilets with sanitary septage management for floating population and commercial area.
- To construct/rejuvenate the underground sewerage system for covering the whole city.
- To ensure treated waste water discharge.
- To ensure scientific septage management
- To recover the O&M cost through an appropriate model of collection

3. Examine Alternatives and Estimate Cost

The objective will lead to explore and examine viable alternatives options available to address these gaps. These will include out of box approaches. (AMRUT Guidelines; Para 6.4 & 6.8 & 6.9). This will also include review of smart solutions. The cost estimate with broad source of funding will be explored for each alternative. While identifying the possible activities, also examine the ongoing scheme and its solutions including status of completion, coverage and improvement in O&M. Please provide information on the above responding to (however not limited to) following questions.

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- What are the possible activities and source of funding for meeting out the objectives? (75 words)

S.No	Objective	Activities
1.	To make the city Open Defecation Free and removal of insanitary toilets	Provision of sanitary toilet to all HH
2.	To make provision of Pay & Use Public Toilets with sanitary septage management for floating population and commercial area.	Preparation of project report assessing the need for construction of toilet with septic tanks
3.	To construct comprehensive underground sewerage system throughout the city.	Preparation of comprehensive sewerage network scheme for Habra including provision of Sewerage Treatment Plants
4	To ensure treatment of sewage – provision of STPs	sewerage network scheme for Ashokenagar-Kalyangarh including provision of Sewerage Treatment Plants
5	To ensure all the sewage going to STPs	All the HH to be connected to sewer lines
6	To ensure treated waste water discharge, recycle and reuse of treated water	Preparation of project report for recycle and reuse of treated water
7	To ensure scientific septage management	Provision of septic tanks for all the HH
8	To recover the O&M cost through an appropriate model of collection	Imposing sewerage tax as percentage of property tax

Activities will be undertaken according to the objectives by the ULB

Source of Funding: Central & State Government, ULB and beneficiary

- How can the activities be converged with other programme like JICA/ ADB funded projects in the city etc? (75 words)

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- There is no scope of converging the activities with other programmes like JICA/ADB as the ULB did not receive any fund under these schemes.
- What are the options of completing the ongoing activities? (75 words) NA
- What are the lessons learnt during implementation of similar projects? (100 words) NA
- Has projects includes O&M of sewerage system? (75 words) NA
- What measures may be adopted to recover the O&M costs? Can the option of sale of treated wastewater be applicable to recover the O&M cost. (100 words)

Measure:

1. Selling of Fertilizer generated from Digester
 2. Selling treated waste water for fishery and irrigation.
 3. Imposing sewerage tax as percentage of property tax and collection from the HH
- What are innovative alternative solutions explored in achieving objectives? (100 words)
 - Monitor the sewerage level in manholes at strategic locations in the sewer pipe network
 - Raise alarms in the Central Monitoring station when the level in manhole exceeds the present limit value
 - Daily, weekly and monthly reports for all the mentioned parameters
 - Development of an ultrasonic level sensor with integrated GSM modem
 - Are different options of PPP such as Design-build-Operate-Transfer (DBOT), Design Built Finance Operate and Transfer (DBFOT) are considered? (100 words) No.

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- How the recycle and reuse of water will be done? How much quantity of treated water may be reused? (100 words)

Provisions can be kept that the less polluted sewage like the sullage coming from kitchen can be recycled as it would require lesser treatments.

- Have you analysed best practices and innovative solutions in sector? Is any of the practice be replicated in the city? (75 words)

Yes. The best practices would be observed in the project.

- Have you identified the areas for decentralized waste treatment system? Explore the approaches for septage management i.e People Public Private Partnership (PPPP) model or replacing septic tanks by bio-digesters, bioremediation etc. (100 words) No.

The alternative activities to meet these activities be defined as per Table 2.7

Table2.7 Alternative Activities to Meet Objectives

Sr. No.	Objective	Activities	Financing Source

4. Citizen Engagement

ULBs will organize and conduct city level citizen consultation and receive feedback on the suggested alternatives and innovations. Each alternative will be discussed with citizens and activities to be taken up will be prioritized to meet the service level gaps. ULB will prioritize these activities and their scaling up based on the available resources. (AMRUT Guidelines; Para 6.6,

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6.7 & 7.2). Please explain following questions in not more than 200 words detailing out the needs, aspirations and wishes of the local people.

- Has all stakeholders involved in the consultation?
- Yes, Stakeholders including Ward councilors, citizen groups, NGOs, Senior Citizen groups, local Clubs was involved in the consultation
- Has ward/ zone level consultations held in the city?
Yes, ward/ zone level consultations were held in the city.
- Has alternatives explored are crowd sourced?
Yes, all the alternative have been proposed above are crowd sourced.
- What is feedback on the suggested alternatives and innovations?
Citizen appreciated on the suggested alternatives and innovations.
- Has alternative taken up for discussions are prioritized on the basis of consultations?
Yes, alternative has been taken up for discussions are prioritized on the basis of consultations.
- What methodology adopted for prioritizing the alternatives?
Yes, projects been prioritized based on “more with less” approach.

5. Prioritize Projects

Based on the citizen engagement, ULB will prioritize these activities and their scaling up based on the available resources to meet the respective objectives. While prioritizing projects, please reply following questions in not more than 200 words.

- What are sources of funds?
Sources of funds are Central Government (50% Share), State Government (45% Share) and Ulb (5% Share).
- Has projects been converged with other program and schemes?
There is no such project for convergence.

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- Has projects been prioritized based on “more with less” approach?
Yes, projects been prioritized based on “more with less” approach.
- Has the universal coverage approach indicated in AMRUT guidelines followed for prioritization of activities?
Yes, the universal coverage approach has been indicated in AMRUT guidelines followed for prioritization of activities.

6. Conditionalities

Describe in not more than 300 words the Conditionalities of each project in terms of availability of land, environmental obligation and clearances, required NOC, financial commitment, approval and permission needed to implement the project.

For all the Projects, land will be available with the ULB, power requirement would be available from West Bengal Electricity Distribution Company Limited, all Statutory clearances will be sought for as per requirement say from Port Trust, Railways, pollution Control Board, Irrigation & Water Ways Department etc. Approval & Permission from State Level Technical Committee/State High Powered Steering Committee will be taken.

7. Resilience

Required approvals will be sought from competent authority and organizations. The resilience factor would be built in to ensure environmentally sustainable sewerage scheme. Describe in not more than 300 words regarding resilience built in the proposals.

Adequate steps will be taken during structural design considering earth quake, storms, lightning etc. All structures especially current sensitive structures would be constructed above the highest flood level.

8. Financial Plan

Once the activities are finalized and prioritized after consultations, investments both in terms of capital cost and O&M cost has to be estimated. (AMRUT Guidelines; para 6.5) Based on the investment requirements, different sources of finance have to be

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identified. Financial Plan for the complete life cycle of the prioritized development will be prepared. (AMRUT Guidelines; para 4, 6.6, 6.12, 6.13 & 6.14). The financial plan will include percentage share of different stakeholders (Centre, State and City) including financial convergence with various ongoing projects. While preparing finance plan please reply following questions in not more than 250 words

- does financial plan for the complete life cycle of the prioritized development? **Yes**
- does financial plan include percentage share of different stakeholders (Centre, State, ULBs and) **Yes**
- does it include financial convergence with various ongoing projects.
- Does it provide year-wise milestones and outcomes ? **Yes**

Details in financial plan shall be provided as per Table 2.7, 2.8, 2.9, 2.10 and 2.11. These tables are based on AMRUT guidelines tables 2.1, 2.2, 2.3.1, 2.3.2, and 2.5.

Table 1.7 Master Plan of Sewerage Projects for Mission period (As per Table 2.1of AMRUT guidelines)

(Amount in Rs. Cr)

Sr. No	Project Name	Priority number	Year in which to be implemented	Year in which proposed to be completed	Estimated Cost (Cr)
Augmentation of Sewerage System within Ashokenagar-Kalyangarh Municipality on whole town approach					
1	Installation/Augmentation of Sewage Treatment Plant	5	2016-17	2018-19	28.80

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2	Installation/Augmentation of Pumping Station	3	2016-17	2018-19	9.50
3	Laying of Pumping Main	4	2016-17	2018-19	11.50
4	Laying of Main Sewer Network	1	2016-17	2018-19	117.30
5	Sewer Links for House Service Connection	2	2016-17	2018-19	7.90
6	Infrastructure Works	6	2016-17	2018-19	7.50
Grand Total					182.50

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Table 1.8 Master Service Levels Improvements during Mission Period

(As per Table 2.2 of AMRUT guidelines)

(Amount in Rs. Cr)

Sl. No	Project Name	Physical Components	Change in Service Levels			Estimated Cost (Cr)
			Indicator	Existing (As-Is)	After (To-be)	
1	Augmentation of Sewerage System within Ashokenagar-Kalyangarh Municipality on whole town approach	1. Sewage Treatment Plant 2. Pumping Station 3. Pumping Main 4. Main Sewer Network 5. Sewer Links for House Service Connection 6. Infrastructure Works	Coverage of latrines (individual or community)	68%	100%	182.50
			Coverage of sewerage network services	0%	100%	
			Efficiency of collection of sewerage	0%	100%	
			Efficiency in Treatment: Adequacy of sewerage treatment capacity	0%	100%	

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Table1.9 Annual Fund Sharing Pattern for Sewerage Projects

(As per Table 2.3.1of AMRUT guidelines)

(Amount in Rs. Cr)

Sr. No.	Name of Project	Total Project Cost	Share				
			GOI	State	ULB	Others	Total
Augmentation of Sewerage System within Ashokenagar-Kalyangarh Municipality on whole town approach							
1	Installation/Augmentation of Sewage treatment Plant (14 MLD)	47.38	23.69	21.32	2.37		47.38
2	Installation/Augmentation of Pumping station (14 MLD)	21.15	10.575	9.52	1.055		21.15
3	Laying of Pumping Main (15 Km)	18.40	9.20	8.28	0.92		18.40
4	Laying of Main Sewer Network(130 Km)	59.40	29.70	26.73	2.97		59.40
5	Sewer Links for House Service connection (64Km)	21.36	10.68	9.615	1.065		21.36
6	Infrastructure Works	14.81	7.405	6.66	0.745		14.81
	Total	182.50	91.25	82.125	9.125		182.50

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Table 1.10 Annual Fund Sharing Break-up for Sewerage Projects

(As per Table 2.3.2 of AMRUT Guidelines)

(Amount in Rs.Cr)

Sr. No.	Project	GoI	State			ULB			Convergence	Othe rs	Total
			14 th FC	Others	Total	14 th FC	Others	Total			
1	Augmentation of Sewerage Scheme under Ashokenagar_Kalyangarh Municipality on whole town approach	91.25			82.125			9.125			182.50
	Total	91.25			82.125			9.125			182.50

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Table 1.11 Year wise Plan for Service Levels Improvements (As per Table 2.5 of AMRUT guidelines)

Proposed Projects	Project Cost	Indicator	Baseline	Annual Targets					
				FY2016		FY	FY	FY	FY
				H1	H2	2017	2018	2019	2020
Augmentation of Sewerage Scheme under ***** Municipality on whole town approach	Rs. 182.56 crore	Coverage of latrines (individual or community)	68%	0%	2%	15%	15%		
		Coverage of sewerage network services	0%	0%	0%	25%	35%	40%	
		Efficiency of collection of sewerage	0%	0%	0%	25%	35%	40%	
		Efficiency in Treatment: Adequacy of sewerage treatment capacity	0%	0%	0%	25%	35%	40%	



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