



**OFFICE OF MUNICIPAL CORPORATION  
KORBA (C.G.)**

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**TEMPLATE FOR SERVICE LEVEL IMPROVEMENT PLAN**

**SEWERAGE AND SEPTAGE**

**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. For this City has to review all policy, plans, scheme documents etc. to identify service level gaps and hold discussions with officials and citizens. 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)

1. Census 2011
2. City Development Plan
3. City sanitation Plan
4. Detailed Topographical Survey
5. SLB Data 2014
6. LCS Survey Data

Zone wise information is collected from City development plan. The correlated data does not highlighted from the census 2011. The process is being take-up earlier.

PLEASE MENTION WHICH OF THE ABOVE MENTIONED REPORTS PROVIDE ZONE WISE INFORMATION? ALSO PLEASE STATE IF THE ULB HAS CORRELATED THE DATA IN ABOVE MENTIONED REPORTS WITH THE CENSUS 2011 DATA?

- 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(PLEASE MENTION THE SOURCE OF THE DATA BELOW)

Sr. No.	Indicators (as per SLB framework)	Existing Service Level	MOUD Benchmarks	Reliability
1	Coverage of latrines (individual or community)	81.6%	100%	B
2	Coverage of sewerage network services	0%	100%	D
3	Efficiency of collection of sewerage	0%	100%	D
4	Efficiency in Treatment: Adequacy of sewerage treatment capacity	0%	100%	D

The data has been prepared according to city development plan and as per actual status of city profile.

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

The following are the gaps which are to be achieved

1. Coverage of latrines (individual or community)–18.40%
2. Coverage of sewerage network services – 100% as there is no network available
3. Efficiency of collection of sewerage – 100% as there is no collection system available
4. Efficiency in Treatment: Adequacy of sewerage treatment capacity – 100% as there is no treatment done

- Does city has separate drainage system or sewer lines take care of storm water?  
(50 words)
  - No, there is no separate drainage system or sewer lines that take care of storm water. The storm water flows through open drains or as per natural drainage pattern.

#### Sewerage network And Collection of Sewerage

- 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.

Table 2.2: Zone Wise Coverage of Households

Zone No	Total No of Households	Households with Sewerage Network	Households with Septic Tank	Households without any outlets for toilets
1	11559	0	4432	5801
2	6968	0	3508	2680
3	17210	0	6767	4891
4	9649	0	2864	3527
5	17845	0	4635	9387
6	15575	0	5134	7828

- 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 wastes are not connected to sewerage system? (75 words)

- No, as there is no sewerage system and the city is dependent on septic tanks for waste discharge. There are sewerage lines laid in some places but household's kitchens or bathroom wastages are not connected to sewerage systems. The effluent from septic tank is connected to the sewer lines in some colonies.
- 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? (75 words)
  - Yes. Korba Municipal Corporation has a systematic and organized method to collect waste from household having septic tanks. The households inform the corporation when their septic tank gets filled. The Corporation then lends its sewer suction machine on chargeable basis which cleans septic tank. Overflows of septic tanks is collected into soakpit, it does not go to drains or in open field.
- 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? (100 words)
  - We do not have any sewage treatment facilities. Sewerage from households goes to combined septic tank through sewer lines which is being cleaned as and when required. We have 3 numbers sewer line cleaning jetting cleaning machine of different capacities.

### Sewage Treatment System

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

Table 2.3: Status of Existing STPs

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

- Does decentralized waste treatment system exist or planned in the city? If yes, provide details (75 words)
  - No, there is no decentralized waste treatment system exist or planned in the city.
- 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? (100 words)
  - The total sewerage generated in the city is 12.84 MLD. There is no STP facility in the city.
- 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? (75 words)
  - No, The sewage treatment system not available as well as STP isnot established

#### Institutional Framework

- 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
KMC	KMC	KMC

- 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? (75 words)

- The zonal sewerage systems and installation of STP's projects of some areas has been submitted to the State Authority of Chhattisgarh. Implementation of project shall be done by KMC.

## 2. Bridging 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 2.4

Table 2.4: Status of Ongoing/ Sanctioned

S . N O .	Name of Project	Scheme Name	Cost in Rs Crore	Month of Completion	Status (as on dd Month 2015)
1.	Development of Sewerage system of various Colonies.	14 <sup>th</sup> Finance Commission	4.10 Crore	December 2015.	80%work completed. (16.08.2015) The septic tank remaining work & STP has not constructed.  (PLEASE MENTION WHAT ACTIVITIES REMAINS TO BE COMPLETED UNDER THE PROJECT)

- How much the existing system will be 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. (100 words)
  - No completely planned underground drainage scheme with STP's is needed.
- Does the city require additional infrastructure to improve the services? What kind of services will be required to fulfill the gap?
  - Yes, The Whole city will be requiring sewerage networks & treatment facility We have to create substantial additional infrastructure.

The whole city complete required sewerage network with various sewerage treatment plants and requiring pumping Stations as per geographical status as well as project for reuse of treated sewage water for many purposes (PLEASE MENTION WHICH INFRASTRUCTURE FACILITIES ARE REQUIRED) to cover the entire city for efficient collection and processing of sewerage so collected. The possibility shall be explored to reuse the treated sewage water in various activities/uses.

- 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?

Provide information in Table 3.5.

Based on assessment of existing infrastructure and ongoing / sanctioned projects, calculate existing gaps and estimated demand by 2021 for sewerage network, number of household to be provided with connections, and required enhancement in capacity of STP (MLD), area to be covered under septage management. Based on the demand and gap assessment, evolve objectives to achieve bridging these gap.

### 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 reply following questions in not more than 200 words.

- What are the possible activities and source of funding for meeting out the objectives?
  - Source of funding will be 14<sup>th</sup> finance commission and AMRUT Mission. There is no sufficient available sourcing of local fund.
- How can the activities be converged with other programmes like JICA/ ADB funded projects in the city etc?
  - The project may be appraised in AMRUT.
- What are the options of completing the ongoing activities?
  - Funding is required for engagement of consultants for preparation of detailed project report and successful implementation of the project.
- How to address the bottlenecks in the existing project and lessons learnt during implementation of these projects?
  - In earlier project some problem were faced regarding ownership of land which had been identified for construction of septic tank. Moreover problems were also faced in work related to road restoration. In all the future projects will be planned after taking into consideration the issues related to land ownership and agency responsible for road restoration work.
- Has projects includes O&M of sewerage system?
  - O&M shall be essential component while finalizing the project cost of our sewerage system as per AMRUT guidelines.



- 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.
  - For recovery of O&M charges possibility shall be explored by implementation of user charges& also for sale of treated water to the nearby power plants even though this may cost little more. We may also explore possibility of selling sludge/manure.
- What are innovative alternative solutions explored in achieving objectives?
  - The corporation shall explore possibility of adopting latest treatment technologies including bio remediation.
- Are different options of PPP such as Design-build-Operate-Transfer (DBOT), Design Built Finance Operate and Transfer (DBFOT) are considered?
  - The above options are not considered yet but may be considered in the later stage especially the DBOT with incorporation of 5 years of O & M with the operator can definitely help in implementing the property Connection.
- How the recycle and reuse of water will be done? How much quantity of treated water may be reused?
  - Treated water shall be used for irrigation. Possibilities shall also be explored to use the water in various power plants located in Korba after further treatment. The treated water may also be used in coal washries. The total volume of treated sewage generated in 2021 shall be 19.18 MLD however 70% of the waste water is proposed to be reused.
- Have you analysed best practices and innovative solutions in sewerage sector? Is any of the practice be replicated in the city?
  - No.

- 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.
  - Yes, since the korba municipal corporation is having population spread along 215 sqkm . The best option available is decentralized / Zonal treatment facility .We are already going for bio – digester and bioremediation with the help of NEERI and experience of Nasik Municipal Corporation.

For each identified activity and alternative indicate the cost estimate with broad source of funding will be explored for each alternative in Table 3.6

#### 4. Citizen Engagement

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, 6.7 & 7.2). Please reply following questions in not more than 200 words.

- Has all stakeholders involved in the consultation?
  - Yes.
  - A) Details of consultation- Date- 13 /07/2015 on Monday consultation held in 20 Nos. of different wards within 709 participants.
  - B) Date- 14 /07/2015 on Tuesday consultation held in 20 Nos. of different wards within 666 participants.
  - C) Date- 15 /07/2015 on wednesday consultation held in 17 Nos. of different wards within 445 participants.
  - Date- 16 /07/2015 on Thursday consultation held in 09 Nos. of different wards within 261 participants.
  - (PLEASE MENTION IN DETAIL THE DATE AND DAY OF CONSULTATION, NUMBER OF PARTICIPANTS, WHO WERE INVITED, WHERE WAS THE CONSULTATION HELD, WHAT ISSUES WERE RAISED IN THE CONSULTATION BY THE CITIZENS, WHAT IDEAS/ SUGGESTIONS WERE GIVEN, HOW

**MANY CONSULTATION HAVE BEEN HELD IN THE CITY AND ARE THESE HELD IN EACH ZONE?)**

- Has ward/ zone level consultations held in the city?  
Yes, whole wards are covered regarding awareness of such activity and meeting conducted in 67 wards of the city. (CONSULTATIONS HAVE BEEN CONDUCTED IN HOW MANY WARDS)
- Has alternatives explored are crowd sourced?
  - Yes.
- What is feedback on the suggested alternatives and innovations?
  - The suggestion obtained by discussion with the zone wise consultation with consultants, elected representatives and publics.
- Has alternative taken up for discussions are prioritized on the basis of consultations?
  - Yes.
- What methodology adopted for prioritizing the alternatives?
  - Detailed survey of the city, contouring map, GIS surveys and the above alternatives will be smartly solved.

The corporation shall take care of above important point while making the DPR.

## **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?
  - 14<sup>th</sup> Finance Commission and Mission AMRUT.
- Has projects been converged with other program and schemes?
  - No.
- Has projects been prioritized based on “more with less” approach?
  - Yes.
- Has the universal coverage approach indiated in AMRUT guidelines followed for prioritization of activities?
  - Yes.

## **6. Conditionalities**

Describe 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. Please reply following questions in not more than 100 words.

- The corporation shall take care all above condition while planning for sewerage system.

## 7. Resilience

Required approvals will be sought from competent authority and organisations. The resilience factor would be built in to ensure environmentally sustainable sewerage scheme. Please reply following questions in not more than 100 words.

- After approval of the project, all norms of environmental measures will be followed by the KMC and required resilient measures will be adopted during execution. The treated sewage water will be utilized in gardening, recycling to the roads, washing yards, fire fighting purposes etc. **PLEASE MENTION THE RESILIENT MEASURES ADOPTED IN THE PROJECTS TO ENSURE ENVIRONMENTAL SUSTAINABILITY OF THE PROJECT.**

## 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 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 200 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.
  - Yes.
- Does it provide year-wise milestones and outcomes ?
  - Yes.

work and Service Levels

Sr. No.	Indicators	Existing Service Level	MOUD Benchmarks
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Table 3.2 Zone Wise Coverage of Households

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02. TP Nagar	6968	0	3508	2680
03. Kosabadi	17210	0	6767	4891
04. Balco	9649	0	2864	3527
05. Darri	17845	0	4635	9387

06. BankiMongra	15575	0	5134	7828
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Table 3.3: Status of Existing STPs

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

Table 3.4: Status of Ongoing/ Sanctioned

S.No.	Name of Project	Scheme Name	Cost in Rs Crore	Month of Completion	Status (as on dd Month 2015)
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Table 3.5: Demand Gap Assessment

Component	Existing	Ongoing projects	Existing + Ongoing	2021 (Short term)	
				Demand	Gap
Sewerage network (km)	35.6	4.5	40.10	280	239.90
No of Households covered under sewerage system	4500	1500	6000	46962	40962
Sewerage Treatment Plant (MLD)	0	0	0	19.18	19.18

Table 3.6: Cost Estimate for each Objective:

S.No	Activity	Basis	Amount in Rs.Cr
1	Septage Management	As per assessment	18.00

Commissioner  
Municipal Corporation Korba  
Chhattisgarh