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SECTOR WISE SLIP TEMPLATE: WATER SUPPLY

1. Assess the Service Level Gap

The first step is to assess the existing situation and service levels gaps for Water Supply (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 water supply system of the city? Detail out the data, information, plans, reports etc related to sector. Is zone wise information available? (75 words)

  1. **Census 2011**
  2. **City development Plan**
  3. **Detailed topographical survey**

- Have you collected census 2011 data? Are you aware of baseline survey data of MoUD? Have you correlated data from these and other sources? (75 words)

  Yes the data for census 2011 has been collected. Yes and we are aware of baseline survey data. Yes, the data has been correlated from which census 2011 has been published by the government.

- What are existing service levels for water supply in the city? What is the coverage of water supply Connections? What is per capita supply of water? How much is the extent of metering? How much is non-revenue water? Provide information in table 1.1

Table 1.1 Status of Water Supply service levels(PLEASE MENTION SOURCE OF THE DATA)

Sr. No.	Indicators	Present status	MOUD Benchmark	Reliability
1	Coverage of water supply connections	21.2%	100%	D
2	Per capita supply of water	57.26 LPCD	135 LPCD	D
3	Extent of metering of water connections	0%	100%	D
4	Extent of non-revenue water	37.59%	20%	D
5	Quality of water supplied	100%	100%	B
6	Cost recovery in water supply services	41.40%	100%	D
7	Efficiency in collection of water supply related charges	49.35%	90%	D

The data has been prepared according to actual expenditure and maintenance of the water supply scheme as found in financial year. And the said data does submitted to government for record.

- What is the gap in these service levels with regard to benchmarks prescribed by MoUD?(75 words)
  Following are the gaps which are to be achieved
  1. Coverage of the water supply connection – 78.80% (2785 households are covered but not shown in the above benchmark which will reduce the gap to 74.80%)
  2. Gap in per capita water supply 77.74 LPCD
  3. Gap in extent of metering of water connection – 100%
  4. Gap in extent of NRW – 17.59%
  5. No gap in quality
  6. Gap in cost recovery – 58.60%
  7. Gap in efficiency in collection charges –40.65%

Source of Water and Water Treatment System

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

- What is the existing source of water? Is it surface water source or underground water source? What is the capacity of these sources?
  The existing source of water is Hasdeo Barrage and underground water from Bore wells. The capacity of surface water is 14 MCuM (38.36 MLD). The capacity of ground water supplied is approximately 3.00 MLD at the rate of average 20 LPCD.
- Is there any treatment provided to water from these sources? How much water is required to be treated daily? What is the treatment capacity installed in the city?
  Yes. The installed capacity of the treated water is 38.81 MLD, however 38.81 MLD water is being treated daily.
- What per capita water supply in LPCD (liter per capita per day) comes out, if you divide total water supply by the total population.
  57.26 LPCD (23.28- NRW+1.29 form other source= 16.05/280322) rest population served by PSU's

Distribution Zones

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

- City is divided in how many zones for water supply?
  City is at present divided into two zones for water supply
- Provide details of total no of Households (HH) in each zone, no of HH with and without water tap connections in the Table 1.2.

Table 1.2: Zone Wise Coverage of Households

Zone No.	Zone Name	Total No of Households	Households with Water tap Connection	Households without water tap connections
1	Korba City Part I	46962	12771	34191

2	Korba City Part II	34622	446	34176
	Total	81584	13217	68367

Storage of Water

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

- What is the total water storage capacity in the city ? What is capacity of elevated and ground water reservoirs?
  The total elevated storage capacity in the city is 15700 KL. There is no GSR in the city……. (PLEASE MENTION THE CAPACITY OF GSR)
- In case of surface water, does city need to have ground level reservoirs to store raw treated water?
  No.
- Is water being supplied to consumers through direct pumping or through elevated reservoirs?
  The water is being supplied by partially direct pumping as well as mostly by elevated reservoirs
- Is storage capacity sufficient to meet the cities demand?
  No

Distribution Network

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

- What is the total length of water supply distribution pipe line laid in the city?
  The total length of water supply network in the city at present is 174 Kms only
- What is the total road length in the city? Is the pipe lines are laid in all streets? Is the objective of universal coverage of water supply pipe line is achieved?
  The total road length is 596 Kms. The pipe line are not laid in all the streets. No, the objective of universal coverage of water supply line has not been achieved yet.
- What are the kind of pipe materials used in distribution lines?
  Partially DI K-7, old CI pipes, AC pipes and UPVC pipes
- Provide zone wise details of street length with and without water distribution lines in the Table 1.3.

Table 1.3: Zone Wise length of distribution network

Zone No	Total Street Length	Street length with water distribution pipe line	Street length without water distribution pipe line
Part I 42	310 KM	146 Km AC/PVC/CI/DI Pipes	164 Km

Wards			
Part II 25 Wards	286 Km	28 Km AC/PVC pipes	258 Km
Total	596 Km	174 Km	422 Km

*After completion of 422 Kms 100% coverage shall be achieved.

Institutional Framework

Please provide information in 150 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 1.4.
    - The role of KMC for O & M and implementation of the water supply schemes with 100% coverage is vital and major steps have been taken to develop the skill levels with quality assurance and O & M of the schemes. The KMC is keen to implement 24 x 7 water supply in the city with proper management and creating awareness among the people for amicable use of water. Once the water supply is implemented it will be the responsibility of KMC to plan and implement the sewerage scheme for collection, treatment safe disposal of the waste water thus produced due to the implementation of the scheme. The KMC seeks financial support from GOI, GoCG and PPP model to raise the funds for the implementation of the project.

Table 1.4: Functions, roles, and responsibilities

Planning and Design	Construction/ Implementation	O&M
Existing water supply scheme of Korba Town	By KMC	By KMC
Augmentation to Korba water supply scheme Part I (Rs. 133.34 Crores)	By KMC	By KMC
Augmentation to Korba water supply scheme Part II (Rs. 284.69 Crores)	By KMC	By KMC

*Implementation of Water supply scheme is under progress through KMC

- How city is planning to execute projects ?

  The city is planning the scheme with the financial assistance of GOI and GOCG, under AMRUT Scheme.

- Shall the implementation of project be done by Municipal Corporation or any parastatal body? Please refer para 8.1 of AMRUT guidelines.

  Yes the implementation of the project shall be done by KMC under AMRUT

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 sector under different schemes with status and when the existing projects are scheduled to be completed? Provide information in Table 1.4

Table 1.4: Status of Ongoing/ Sanctioned

S. No.	Name of Project	Scheme Name	Cost	Month of Completion	Status (as on dd mm 2015)
1	Augmentation to Korba water supply scheme Part I	UIDSSMT	Rs. 133.34 Crores	30 Month	Agencies finalized and work under progress

- How much the existing system will able to address the existing gap in water supply system? Will completion of above improve the coverage of network and collection efficiency? If yes, how much. (100 words)
    - The ongoing scheme will definitely shorten the gap by raising the LPCD from 77 LPCD to 100 LPCD. After implementation of part I project 68% coverage in the water supply infrastructure can be achieved.
- Does the city require additional infrastructure to improve the services? What kind of services will be required to fulfill the gap?
    - Yes the additional infrastructure in shape of planning the scheme of water supply to the Part II (25 wards) of the city will make the city with 100% coverage of meters and distribution network. The infrastructure i.e. intake well WTP, ESR/ MBR, rising main, Gravity main, Distribution system, pumping machinery, etc. are required for improvement of water supply scheme to korba town. PLEASE MENTION THE SERVICES THAT ARE REQUIRED - PUMPING STATIONS, ESR/GSR ETC.
- How does the city visualizetaking the challenge to rejuvenate the projects by changing their orientation, away from expensive asset replacement programs, to focusing on optimum use of existing assets?
    - In the ongoing UIDSSMT scheme, KMC has taken efforts to utilize the existing infrastructure and optimization of the system by converting multi branch pumping network to gravity feed network with few modifications of the existing network. KMC is intending to achieve 100% coverage in Part II also based on the same principle. Thus

achieving less energy consumption to make the tariff affordable to the consumers, this will minimize the gap between O &M expenditure and revenue collection

- Has city conducted assessment of Non Revenue Water? if yes, what is the NRW level? Is city planning to reduce NRW?
    - Yes the KMC has calculated the NRW during preparation of SLB. The NRW level at present is 37.59% after 100% coverage of distribution network and metering the NRW level will be reduced to the desired extent.
- Based on assessment of existing infrastructure and ongoing / sanctioned projects, calculate existing gaps and estimated demand by 2021 for water supply pipe network, number of household to be provided with tap connections, and required enhancement in capacity of water source/ treatment plant (MLD). Gaps in water supply service levels be provided as per Table 1.5.

Table 1.5. Demand Gap Assessment for Water Supply Sector

Component	2015			2021	
	Present	**Ongoing projects**	**Total**	**Demand**	**Gap**
Source	7.40 MCum	4.38MCum	11.78	23.98	13.74MCuM
Treatment capacity	32+6.81 MLD	12 MLD	32.27 MLD	65.71 MLD	31.11MLD
Elevated Storage capacity	15700 KL	7450* KL	10758 KL	21902 KL	11144 KL
Distribution network coverage	174 Km*	268 Kms	310 Kms	596 Km	286 Km

*Out of which 119Kms to be discarded under the ongoing and proposed project

* Work just now started under UIDSSMT

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?
    - Yes the complete planning for the city with asset management plan to utilize the existing structures has been done and 100% coverage can be achieved for the projected year 2046. (The project design period for 30 years 2016-2046)
- Does each objective meet the opportunity to bridge the gap?

  Yes

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

As per the requirement of water, 36.15 MCuM of water has been already allocated to KMC by Water Resources Department, GOCG. The ongoing project shall minimise the gap to 14.16MCuM. The objectives targeted for 100% water supply coverage can be elaborated as below

1. To augment the source for the remaining 14 MCum of water by constructing Anicut
2. To construct treatment plant of 29 MLD capacity for future requirement.
3. To provide distribution network to the remaining 286 Kms for 100% area coverage
4. To install 31320 consumer meters in addition to the ongoing 47874 meters already covered in UIDSSMT scheme.
5. To achieve 24 x 7 water supply in a planned way

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. (AMRUTGuidelines; 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. 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.

- What are the possible activities and source of funding for meeting out the objectives? (75 words)
  - The objective is to find the financial solution for funding of Part II water supply scheme amounting to Rs. 201.36 Crores. The source of funding will be 50 % of central aid, 30 % state aid & 20 % ULB. (IDENTIFIED SOURCE OF FUNDING?)
- How can the activities be converged with other programme like JICA/ ADB funded projects in the city etc? (100 words)
  - The project may be appraised in AMRUT
- What are the options of completing the ongoing activities? (75 words)
  - The ongoing activities are already funded under UIDSSMT for Part I of the city and all the proposed components of the scheme shall be completed within the sanctioned cost within the stipulated time period.
- What are the lessons learnt during implementation of similar projects? (100 words)
  - Release of funds shall be the governing factor for timely completion of the project. During execution of the work, the statutory permissions from the concerned departments such as railways, mining authorities etc. delay the work time frame.Similarly the most important aspect being availability of water and land for the project must be ensured before the project implementation.
- Have you analyzed best practices and innovative solutions in sector? Is any of the practice be replicated in the city? (75 words)
  - The KMC has prepared the project for Part I of the city which is already sanctioned by GOI under UIDSSMT and under progress. The Part II project also has been framed on the same guidelines as per the norms of CPHEEO, MoUD. The automation of the complete system can lead to reduce the O&M cost. Incorporation of solar panel system may also reduce the energy charges thus making the water tariff affordable and sustainable. There is no prepared the best

practice studies till now, however after sanctioning the proposed scheme the same will be prepared. (LIST DOWN THE BEST PRACTICED STUDIES IF ANY)

- What measures may be adopted to recover the O&M costs?(100 words)
    - PPP method may be adopted by Korba Municipal Corporation for operation & maintenance of the project after commissioning, as the 24x7 water supply project needs dedicated monitoring. In this regard is being prepared the policies and searching the arties, after that will be finalised. At present there is no name of the arties at corporation level. (PLEASE MENTION TENTATIVE NAMES OF THE ARTIES THAT WILL BE INVOLVED IN PPP)

- Whether reduction in O&M cost by addressing NRW levels be applied? (75 words)
    - As the distribution network is being newly laid down, with provision of PRV's, 100% metering and provision of bulk flow meters at all the tapping points definitely reduce the NRW to allowable extent.
- Are different options of PPP such as Design-build-Operate-Transfer (DBOT), Design Built Finance Operate and Transfer (DBFOT) are considered? (100 words)
    - 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 House Service Connection.

The alternative activities to meet these activities be defined as per Table 1.6

Table1.6 Alternative Activities To Meet Objectives

Sr. No.	Objective	Activities	Financing Source
1	***To achieve 100% coverage of distribution network and HSC***	AUGMENTATION TO KORBA WATER SUPPLY SCHEME PART II	GOI and GOCG& ULB Fund under AMRUT

3. 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, 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
- Has ward/ zone level consultations held in the city?
  Yes, the information regarding said project has already been published in newspaper and uploaded on website. The Mayor council special summit meeting held on 15/07/2015 was conducted regarding the project. The ward wise meeting was conducted and the details are as under:-

Total Number of meetings-24, Total number of participants- 681 Nos.

(WARD OR ZONE LEVEL ALSO SPECIFY THE NUMBER OF MEETINGS, DATE AND NUMBER OF PARTICIPANTS)

- Has alternative proposed above are crowd sourced?
  Yes
- What is feedback on the suggested alternatives and innovations?
- Has alternative taken up for discussions are prioritized on the basis of consultations?
- What methodology adopted for prioritizing the alternatives?

In the General body meeting it was discussed in detail about the scarcity of water not because of the unavailability of water but due to lack of network and problems faced by the citizens for water. The part I coverage has been discussed in detail with all the stakeholders of the ULB and it was a unanimous demand that there should be 100% coverage for distribution as well as HSC but it was also discussed that the tariff structure should not create burden on the citizens. As more than half of the area is dependent on hand pumps, power pumps with cisterns and uses water without any kind of treatment, quality of water and related water borne diseases poses serious health issues. Thorough discussions were held and methodology was decided to plan water supply scheme Part II besides the ongoing water supply scheme of Part I of the city. Regarding such project has already been discussed in the General body meeting on dated **15/07/2015**. The number of meetings conducted in the city is 67. The methodology will be decided earlier after sanction of the project

(PLEASE MENTION THE DATE OF THE GENERAL BODY MEETING. HOW MANY MEETINGS HAVE BEEN CONDUCTED IN THE CITY SO FAR? ALSO PLEASE MENTION THE METHODOLOGY DECIDED TO PLAN PART II OF THE WATER SUPPLY SCHEME)

4. 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?
  The sources of fund are mainly financial assistance of GOI and GOCG under AMRUT, as PPP mode in form of DFBOT is not available in this sector
- Has projects been converged with other program and schemes?
  The projects hae not been converged with other programs and schemes. As the water supply Part I has been sanctioned by GOI with a commitment that the DPR for the Part II of the city must be prepared on the same lines hence the project has been framed as per the directives of the MoUD GOI seeking the financial assistance from GOI as well as GOCG
- Has projects been prioritized based on “more with less” approach?
  The project has been formulated for the first priority i.e. water supply as per the guidelines of AMRUT
- Has the universal coverage approach indicated in AMRUT guidelines followed for prioritization of activities?
  The project for water supply in city is immensely needed to achieve universal coverage approach

5. 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.

The following are the conditionalities which will govern the successful implementation of the project

Water allocation:- The water allocation was a major issue as just few years earlier the WRD has allocated 14 MCM water stating that no further water can be made available for this project from the hasdeo left bank canal. During the appraisal of the water supply part I project, it was instructed that water required for projected 30 Years for part I (14 MCuM + 8.15 MCum) and for part II (14 MCuM) shall be made available prior to the implementation of the project. It was convinced to the WRD for allocation of the water and finally KMC got the water allocation of 36.15 MCuM with a condition to draw additional water from the Sarveshawranicut which is just 3.3 Kms away from the existing canal intake.

Land:- All the land required for WTP and all the storages within the city are well identified and are in the possession of KMC, even the land for the future requirement of WTP after 15 years has been acquired by KMC so that there is no issue regarding acquisition of land which may hinder timely completion of water supply project.

Environmental obligation and clearance:-KMC has applied for clearances from all the concerned departments except Railways. Efforts are being made through regular followup to get permissions prior to the start of the project.

Approvals:- As the water supply scheme Part II is already planned and prepared, it will be much easier to submit the scheme for technical scrutiny as well as administrative sanction at an earliest.

6. Resilience

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

- The proposal has been framed by considering the source as Hasdeo river supplemented by SarveshwarAnicut. The formalities for seeking the water allocation from the source are also completed. The location of WTP, MBR's and OHSR's are also identified and the land required for these components are also under the possession of the KMC. The survey of all the alignments with sufficient alternatives has been carried out and alignments are finalised with due care so that minimum duplication of pipe lines shall occur.

7. 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 250 words

- How the proposed finance plan is structured for transforming and creating infrastructure projects?

GOI share in the project will be 50% + GOCG' s share will be 30% + ULB Funding shall be 20%
list of individual projects which is being financed by various stakeholders ?
Augmentation of Korba water supply scheme Part I has been financed under under UIDSSMT

- Has financial plan prepared for identified projects based on financial convergence and consultation with funding partners?
  Yes
- Is the proposed financial structure is sustainable? If so then whether project has been categorized based on financial considerations?
  Yes
- Have the financial assumptions been listed out ?
  Yes
- 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

Details in financial plan shall be provided as per Table 1.7,1.8,1.9,1.10 and 1.11. These tables are based on AMRUT guidelines tables 2.1, 2.2, 2.3.1, 2.3.2, and 2.5.

Table 1.7 MasterPlan of Water Supply Projects for Mission period
(As per Table 2.1of AMRUT guidelines)

(Amountin Rs. Cr)

Sr. No.	Project Name	Prioritynumber	Year inwhichto beimplemented	Year in which proposed to be completed	Estimated Cost
1	Augmentation Korba water supply scheme Part II	1	2016-17	2019-20	Rs. 284.69
Grand Total					Rs. 284.69

Table 1.8 Master Service Levels Improvements during Mission Period
(As per Table 2.2 of AMRUT guidelines) (Amountin Rs. Cr)

Sr. No.	Project Name	Physical Components	Change in Service Levels			Estimated Cost
			Indicator	Existing (As-Is)	After (To-be)	
	Augmentation Korba water supply scheme Part II	Intake Well, WTP, MBR, OHT, Raw water pumping main, Clear water pumping/ Gravity mains, Distribution network	There is no existing infrastructure regarding water supply	There is no existing infrastructure regarding water supply	100% after completion of project.	Rs. 201.36

Table1.9 Annual Fund Sharing Pattern for Water Supply Projects

(As per Table 2.3.1of AMRUT guidelines)

(Amountin Rs. Cr)

Sr. No.	Name of Project	Total Project Cost	Share				
			GOI	State	ULB	Others	Total
			50%	30%	20%		100%
1	Augmentation Korba water supply scheme Part II (Construction of RCC Anicut) Year 2015-16	Rs. 40	Rs. 20	Rs. 12	Rs. 8.0		Rs. 40
	Total						Rs. 40

Table 1.10 Annual Fund Sharing Break-up for Water Supply Projects
(As per Table 2.3.2 of AMRUT Guidelines)

(Amountin Rs.Cr)

Sr. No.	Project	GoI	State			ULB			Convergence	Others	Total
			14th FC	Others	Total	14th FC	Others	Total			
1	Augmentation Korba water supply scheme Part II	Rs. 142.345	Nil	Rs. 142.345	Rs. 142.345	N	Nil	Nil	Rs. 284.69	Nil	Rs. 284.69
	Total										Rs. 284.69

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

Proposed Projects	Project Cost	Indicator	Baseline	AnnualTargets (Incrementfrom theBaselineValue)					
				FY2016		FY 201	FY 2018	FY 2019	FY 2020
				H1	H2				
WaterSupply									
		Household level coverage of direct water supply connection	21.20%		35 %	50%	67%	80%	100%
Augmentation Korba water supply scheme Part II	Rs. 284.69 Crores	Per capita quantum of water supplied	77lit		87	97	107	117 lit	135 lit
		Quality of water supplied	100%						100%