CITY NAME – GHAZIABAD

SLIP 2017 - SEWERAGE AND SEPTAGE MANAGEMENT

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.

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)

Sewerage Master Plan of Ghaziabad was prepared by UPJN in the year 2006-07 which is available with ULB and UPJN. Moreover the previously handed over schemes data is available with Nagar Nigam Ghaziabad. YES zone wise information is available. DATA OF CENSUS 2011 IS AVAILABLE WITH ULB & the data has been co-related as shown in the table below.

	Location of source of drinking water Population	Total Number of Households	Total Number of Households with toilets
Total Population (Census, 2011)	**Total Population -1648643**		
	Within the premises	**277484**	**274120**
	Near the premises	**31287**	**27628**
	Away	**14609**	**12038**
	Total	**323380**	**313786**
Departmental Data (2015)	**Population-1790000**	**275998**	**256181**
Departmental Data (2017)	**1813900**	**307200**	**292620**

Waste water outlet connected	Close Drainage	Open Drainage	No Drainage
Number of HH	**184878**	**128628**	**9874**
Departmental Data2015	**HH Connected To existing sewerage**		**231359**
Departmental Data2017	**HH Connected To existing sewerage**		**232530**

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

TABLE 2.1 : STATUS OF SEWERAGE NETWORK AND SERVICE LEVELS

Sr. No.	Indicators	Service Level 2015	Service Level 2017	MOUD Benchmark	Reliability
1	Coverage of latrines (individual or community) (256181/275998)	92.82%	95.11% (292620/307200)	100%	D
2	Coverage of sewerage network services (231359 / 275998)	83.82%	75.69% (232530/307200)	100%	D
3	Efficiency of collection of sewerage (227 MLD / 215 MLD)	100%	100%	100%	D
4	Efficiency in Treatment: Adequacy of sewerage treatment capacity (227 MLD / 215 MLD)	100%	100%	100%	D

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

There exists gap in the following-

1. Coverage of latrines in 2015, the gap is about 7.18% i.e. 19817 nos. (275998 – 256181).
2. Coverage of latrines in 2017, the gap is about 4.89% i.e. 14580 nos. (307200-292620).
3. Coverage of sewer network in 2015 is about 16.18% i.e. sewerage network requirement is about 217 Km (2087 Km – 1870 Km)
4. Coverage of sewer network in 2017 is about 24.31%.

Rest of the existing services meets the MoUD norms.

Question: Does city has separate drainage system or sewer lines take care of storm water? (50 words)

Ghaziabad has separate drainage system but it is not enough to cater the complete city i.e. the network is insufficient to meet the norms of universal coverage. At certain places rain water gets mixed up with the sewerage.

Coverage of latrines (individual or community), Please provide information in Table 2.2 A

Zone	Total number of HH 2015	Total number of HH 2017	Total number of HH with individual or community toilets within walking distance 2015	Total number of HH with individual or community toilets within walking distance (2017)	Coverage of latrines (%), (b/a)*100% 2015	Coverage of latrines (%), (b/a)*100% 2017
1	56047	63212	51181	60200	91.31	92.07
2	52721	62170	48611	61100	92.20	93.63
3	28456	33903	25690	30152	90.28	91.89
4	103854	111000	97302	108868	93.69	98.08
5	34920	36915	33397	32300	95.63	98.04
Total	**275998**	**307200**	**256181**	**292620**	**92.82**	**95.25**

SEWERAGE NETWORK AND COLLECTION OF SEWERAGE

Question: 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**

Table: Zone/Ward Wise Coverage of Households

Zone	Total No. of Households (HH) 2015	Total No. of Households (HH) 2017	Households with Sewerage Network 2015	Households with Sewerage Network year 2017	Coverage of sewerage network services (b/a)*100% 2015	Coverage of sewerage network services (b/a)*100% 2017
1	56047	63212	46261	47997	82.53%	75.93
2	52721	62170	43948	43948	83.33%	70.69
3	28456	33903	23180	23180	81.45%	68.37
4	103854	111000	87897	87897	84.63%	79.18
5	34920	36915	30073	30073	86.11%	81.46

Zone	Total No. of Households (HH) 2015	Total No. of Households (HH) 2017	Households with Sewerage Network 2015	Households with Sewerage Network year 2017	Coverage of sewerage network services (b/a)*100% 2015	Coverage of sewerage network services (b/a)*100% 2017
Total	**275998**	**307200**	**231359**	**233095**	**83.82%**	**75.87%**

Question: 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? (75 words)

2015: YES, there are areas where households are not connected to sewer lines. Nos. being 42903 (275998-277734) i.e. 15.54% of total households.
2017: YES, there are areas where households are not connected to sewer lines. Nos. being 74105 (307200-233095) i.e. 24.13% of total households.
2015: Yes, there exists approximately 30% households where sewer lines are connected to toilets but kitchen or bathroom waste is not connected to sewerage network.

Question: 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)

NO, such system does not exists in Ghaziabad. The cleaning of septic tank is being done only at consumer levels. The overflow of the septic tanks flows through open drains.

Question: 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)

Presently operation and maintenance of the old sewer lines is being carried out by the Jal KalVibhag of Nagar Nigam Ghaziabad. Super suction machines (2 nos.) and jetting machines (15 nos.) are available with the Jal KalVibhag.
Yearly manhole cleaning is being done by Ghaziabad Nagar Nigam with super suckers etc.

SEWAGE TREATMENT SYSTEM

Question: 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 %
1	Indirapuram	56	51	91.07
2	Dundahera	70	52	74.28
3	Dundahera -2	56	44	78.57
4	Indirapuram -2	56	40	71.42
5	Indirapuram -3	74	40	54.05
TOTAL		**312**	**227**	**72.75**

Question: Does decentralized waste treatment system exist or planned in the city? If yes, provide details (75 words)

Decentralized waste treatment system does not exists in the city. Under SBM decentralization of waste treatment is being planned for 44639 households.

Question: 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)

Presently about 215 MLD sewage is generated in the town and about 227 MLD reaches at STPs. Incoming BOD for the STPs is about 350-400 mg/l. Effluent characteristics of different STPs are as under-

S.No.	Name of STP	Effluent characteristics		
		BODs	Suspended solid	Faecal coliform
1	Indirapuram	**<30 mg/l**	**<50 mg/l**	**<2500 MPN/100 ml**
2	Dundahera	**<30 mg/l**	**<50 mg/l**	**<2500 MPN/100 ml**

3	Dundahera -2	**<10 mg/l**	**<30 mg/l**	**<2500 MPN/100 ml**
4	Indirapuram -2	**<10 mg/l**	**<30 mg/l**	**<2500 MPN/100 ml**
5	Indirapuram -3	**<10 mg/l**	**<30 mg/l**	**<2500 MPN/100 ml**

Question: 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, treated water is not being reused or recycled.
Since the STPs are located in Urban areas irrigation use is not possible however water is available for industrial disposal. Rest of the effluent is being discharged into the Hindonriver.
The option of power generation has been explored via methane collection.

INSTITUTIONAL FRAMEWORK

Question: Define role and responsibilities in terms of O&M, policy planning, funding, service provision in table

Table: 2.4: Functions, roles, and responsibilities

Planning and Design	Construction/ Implementation	O&M
UP Jal Nigam	UP Jal Nigam	Municipal Corporation Ghaziabad

Question: 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)

As per the provision laid down in the water supply and sewerage act 1975, planning and implementation water supply and sewerage works in the state of Uttar Pradesh is responsibility of Uttar Pradesh Jal Nigam. And the O&M of the handed over scheme would be carried out by ULB i.e. Nagar Nigam Ghaziabad. Decentralized waste treatment works would be done by ULB.

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.

Question: 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

Table: Status of Ongoing/ Sanctioned

S.No.	Name of Project	Scheme Name	Cost in Rs Crore	Month of Completion	Status (as on DD MM 2015)
01	**Ongoing project in the city –SANCTIONED /APROVED BY SLTC& SHPSC IN 2015-16**				
	No ongoing projects in 2015-16	AMRUT	-	-	-
02	**PROPOSED project in the city. 2017-19**				
a	Sewerage house connections	AMRUT	32.11	Dec 2017	20%
b	De-silting & Rehabilitation of Dundahera, Trunk Sewer	AMRUT	119.93	Dec, 2018	10%
c	Ghaziabad sewerage Phase 1	AMRUT	150.14	--	--
d	Khareda STP& line	--	500	2019-2021	--
e	Extension of sewer line	--	300	2019-2021	--

Question: 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. (100 words)

Nil, as there is no ongoing scheme for sewerage in Ghaziabad.

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

Yes. the city requires the following-

A. For sewerage network services-
1. **217 Kms Sewerage network for universal coverage**
2. **Approx. 6 nos. IPS for collection & pumping of the sewerage to the STPs.**
3. **16 Km sewer line rehabilitation.**

B. For coverage of latrines-
1. **Toilets would be constructed under SBM.**

Question: How does the city visualize 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?

Yes city is looking towards use of energy efficient assets for its ongoing projects

Provide information in Table 2.6

Table 2.6: Demand Gap Assessment there is no sewer system.

Component	2015			2017			2021	
	Existing	Ongoing projects	Total	Existing	Ongoing projects	Total	Demand	Gap
Sewerage network (km)	1870 Km	-	1870 Km	1930 Km	-	1930	2430 Km	500 Km
No. of households covered under sewerage system	231359 HH	-	231359 HH	232530 HH	1736	233095 HH	388056 HH	153790 HH
No. of households covered under septage management	24822 HH	-	24822 HH	24822 HH	-	24822 HH	41633 HH	16811 HH
Sewerage treatment plant (MLD)	312 MLD	-	312 MLD	312 MLD	-	312 MLD	248 MLD	-

OBJECTIVES

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.

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

A. For sewerage network services- **1. 217 Kms Sewerage network for universal coverage** **2. Approx. 6 nos. IPS for collection & pumping of the sewerage to the STPs.** **3. 16 Km sewer line rehabilitation.** **4. 9594 nos. of house connections in existing and new sewer network**

B. For coverage of latrines-
1. Toilets would be constructed under SBM.

Plan has been prepared to bridge the current gap. After complete execution of the projects existing gap will be automatically bridged.

Question: Does each objective meet the opportunity to bridge the gap?

Yes the objectives meet the opportunity to bridge the gap. Population data has been collected and projected accordingly. So as per CPHEEO norms assessment of sewage production is carried out. Requirement of sewerage network and capacity of STP has been accordingly.

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.

Question: What are the possible activities and source of funding for meeting out the objectives?

Yes, The objective of network coverage will be covered under AMRUT under which Central Govt. share 33% while the State and ULB will share 67% funds, while the objectives of coverage of latrines would be covered under SBM.

Question: How can the activities be converged with other programmes like JICA/ ADB funded projects in the
city etc?

No such convergence is possible.

Question: What are the options of completing the ongoing activities?

No ongoing activity is being carried out.

Question: How to address the bottlenecks in the existing project and lessons learnt during implementation of these projects?

No ongoing activity/project is being carried out in the city as of now.

Question: Has projects includes O&M of sewerage system?

No ongoing activity/project is being carried out in the city as of now.

Question: 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.

Reforms including revision in tax structure are being implemented by the Municipal Corporation to meet out the expenses towards O&M of the different schemes maintained by them. Moreover sale of waste water for industrial and local use will be done to recover the O&M cost.

Question: What are innovative alternative solutions explored in achieving objectives?

Decentralization of sewerage collection will be explored with innovative technologies like bio remediation etc.
Approximately 20 Km. line needs renovation for effective collection of sewage, Hence renovation of dysfunctional line is required for achieving objectives.

Question: Are different options of PPP such as Design-build-Operate-Transfer (DBOT), Design Built Finance Operate and Transfer (DBFOT) are considered?

ULB will explore PPP options while preparing the DPRs.

Question: How the recycle and reuse of water will be done? How much quantity of treated water may be reused?

The treated water will be used for irrigation of parks and other green areas available to the city. About 20% of the STP effluent may be reused for the stated purpose.
Moreover the treated water may be used as replacement of Grey water in the city and for industrial purposes.

Question: Have you analyzed best practices and innovative solutions in sewerage sector? Is any of the practice be replicated in the city?

In the city sewerage plan, decentralized waste treatment system may be adopted for Universal coverage of sewerage network services.

Question: 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.

Areas for decentralized waste treatment are being identified under SBM and PPPP model will be considered

The alternative activities to meet these activities be defined as per Table 2.7 Table2.7 Alternative Activities To Meet Objectives

SL No.	Objective	Activities	Financing Source
1	IEC for preventing the open deification	Survey	SBM
2	Construction of individual & community latrines	Construction of Toilets	SBM
3	Septage waste collection and transportation	Septic management	AMRUT/ State Govt.
4	Treatment of Septage waste	Construction of bio-digester	AMRUT/ State Govt.
5	Expansion of current sewer network	Nil	--

SL No.	Objective	Activities	Financing Source
6	Treatment of sewerage waste	STP has to be constructed	--
7	Faecalslude management	--	--

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.

Question: Has all stakeholders involved in the consultation?

Yes, Nagar Palika Parishad passes the proposals which are put up by ward members. Thus all stakeholders involve in the consultations on 15 May2015

Question: Has ward/ zone level consultations held in the city?

Yes, In Nagar Palika Parishad ward/zone level consultations has held under the chairmanship of ward members. Ward Number 15 consultations on 21September 2015, Ward Number 18 consultations on 08 October 2015,

Question: Has alternative proposed above are crowd sourced?

Yes,Suggestions and views of the crowd are taken into consideration www.Ghaziabadpalika.nic.in

Question: What is feedback on the suggested alternatives and innovations?

60 % of the people are agreed to Construction of individual & community latrines, transportation and treatment of waste by bio digester& decentralized Septage management by bio digester

Question: Has alternative taken up for discussions are prioritized on the basis of consultations?

Yes, firstly Construction of individual & community latrines & transportation and treatment of waste by biodigester.

Question: What methodology adopted for prioritizing the alternatives?

On importance wise after consultation made in nagarpalikaparishadboard meetings firstly Construction of individual & community latrines & transportation and treatment of septage waste by bio-digester.

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.

Question: What are sources of funds?

The source of funding of activities shall be: 1. AMRUT, 2. 14th Finance Commission 3. State Government Funds.4 SBM

Question: Has projects been converged with other program and schemes?

Yes, IEC & Construction of individual and community latrines converge with SBM.

Question: Has projects been prioritized based on "more with less" approach?

Yes the projects are being prioritized based on "more with less" approach universal coverage through IEC activities.

Question: Has the universal coverage approach indicated in AMRUT guidelines followed for prioritization of activities?

Yes, universal coverage approach indicated in AMRUT guidelines followed for prioritization of activities.

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.

Yes, transportation of waste by sewer suction machine&treatment by decentralized Septage management through BioDigester.There will be need of land and NOC from concerning deptt. During construction work ULB did not demarked any land for bio-digester.

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

Yes. Disaster and environmental related factor will be considered while preparation of DPRs

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

Question: Does financial plan for the complete life cycle of the prioritized development?

As per the guidelines of the AMRUT, the structured plan of the project will be developed. In which 50% from GOI and remaining by state and ULB .

Question: Does financial plan include percentage share of different stakeholders (Centre, State, ULBs and)

Sewer & Sanitation scheme financed by GOI & State Government project will be financed as per AMRUT guidelines

Question: Does it include financial convergence with various ongoing projects.

No

Question: Does it provide year-wise milestones and outcomes?

No

DETAILS IN FINANCIAL PLAN SHALL BE PROVIDED AS PER TABLE 8.1, 8.2, 8.3, 8.4 AND 8.5. THESE TABLES ARE BASED ON AMRUT GUIDELINES TABLES 2.1, 2.2, 2.3.1, 2.3.2, AND 2.5.

TABLE 8.1 MASTER PLAN OF SEWERAGE PROJECTS FOR MISSION PERIOD
(As per Table 2.1of AMRUT guidelines)

(Amount in Rs. Cr)

S.No	Project Name	Priority number	Year in which to be implemented	Year in which to be completed	Estimated Cost (Cr)
1	Sewerage house connections		2017	2019	32.11
2	De-silting & Rehabilitation of Dundahera, Trunk Sewer		2017	2019	119.93
3	Ghaziabad sewerage Phase 1		2017	2019	150.14
4	Khareda STP&sewer line		2019	2021	500
5	Extension of sewer line		2019	2021	300
Total					**1102.18**

TABLE 8.2: MASTER SERVICE LEVELS IMPROVEMENTS DURING MISSION PERIOD
(As per Table 2.2 of AMRUT guidelines)

(Amount in Rs. Cr)

Sr. No.	Project Name	Physical Components	Change in Service Levels			Estimated Cost
	APPROVED BY SLTC/SHPSC		Indicator	Existing (As-Is) 2017	After (To-be) 2021	
1	Sewerage house connections	9594 Nos. Domestic House Connection along with road reinstatement work.	Coverage (HH)	2436 HH	9594 HH	32.11
2	De-silting & Rehabilitation of Dundahera, Trunk Sewer	450-1800mm. Dia.(16.2 Km.) Dundahera Sewer desiltings& Rehabilitation work as below. 1. Cleaning -16.2 Km. 2. Pre & Post CCTV Survey-16.2 Km. 3. CIPP structural lining-8.3 K.m. 4. Rehabilitation of damaged sewers- (a) 1.70 Km. (open trenching) (b) 0.28 Km. (micro tunneling) 5. Supply of safety equipment& cleaning Machines, referred to purchase committee at GoUP, level	Desilting Pre & Post CCTV survey CIPP structural lining Rehabilitation	3.9 Km 3.5 Km - -	16.2 Km 16.2 Km 8.3 KM 2.98 Km	119.93
3	Ghaziabad sewerage Phase 1	IPS Morti Zone- 41 mld-01 No. IPS Shalimar Garden- 17 mld-01 No. Sewer line- 47.164 km.	Network (Km)	-	47.16 Km	150.14
4	Khareda STP&sewer line	1 STP – 100 MLD New sewer line – 200 Km Household coverage - 34642	--	--	34642	500
5	Extension of sewer line	New sewer line – 250 Km Household coverage - 100000	--	--	100000	300
Total						**1102.18 Cr**

TABLE 8.3: ANNUAL FUND SHARING PATTERN FOR SEWERAGE PROJECTS

(As per Table 2.3.1 of AMRUT guidelines)

(Amount in Rs. Cr)

Sr. No.	Name of Project	Total Project Cost	Share				
			GOI	State	ULB	Others	Total
1	Sewerage house connections	35.345	9.4692	10.4181	8.5231	-	28.4104
2	De-silting & Rehabilitation of Dundahera, Trunk Sewer	131.2335	35.5732	39.1380	32.0190	-	106.7302
3	Ghaziabad sewerage Phase 1	150.1446	44.5555	49.0204	40.104	-	133.68
4	Khareda STP& sewer line	500	166.65	183.35	150	-	500
5	Extension of sewer line	300	99.99	110.01	90	-	300
Total							**1068.8206**

TABLE 8.4: ANNUAL FUND SHARING BREAK-UP FOR SEWERAGE PROJECTS

(As per Table 2.3.2 of AMRUT guidelines)

Sr. No.	Project	GOI	State			ULB			Convergence	others	Total
			14th FC	Others	Total	14th FC	Others	Total			
1	Sewerage house connections	10.70	--	11.77	11.77	--	9.63	9.63	--	--	32.11
2	De-silting & Rehabilitation of Dundahera, Trunk Sewer	39.98	--	43.97	43.97	--	35.98	35.98	--	--	119.93

3	Ghaziabad sewerage Phase 1	50.04	--	55.06	55.06	--	45.04	45.04	--	--	150.14
4	Khareda STP& sewer line	166.65	--	183.35	183.35	--	150	150	--	--	500
5	Extension of sewer line	99.99	--	110.01	110.01	--	90	90	--	--	300
	TOTAL	**367.36**			**404.16**			**330.65**			**1102.18**

YEAR WISE PLAN FOR SERVICE LEVELS IMPROVEMENTS

(As per Table 2.5of AMRUT guidelines)

Objective	**Proposed project**	**Project Cost**	**Indicator**	**Baseline**	**Annual Target(Increment from baseline value)**						
					FY 2016		**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**
					H1	**H2**					
Increase in household coverage	Sewerage house connections	32.11	Household coverage	95.3%	-	-	97%	99%	100%	-	-
Efficiency of cleaning of sewer lines	De-silting & Rehabilitation of Dundahera, Trunk Sewer	119.93	Cleaning & rehabilitation of damaged sewer lines		-	-				-	-
Coverage of sewerage network services	Ghaziabad sewerage Phase 1	150.14	Sewer networking in city	75.69%	-	-	80%	85%	90%	-	-

Efficiency in Treatment: Adequacy of sewerage treatment capacity	Khareda STP& sewer line	500	Treatment adequacy	119.27%	-	-	-	-	-	-	-
Coverage of sewerage network services	Extension of sewer line	300	Sewer networking in city	75.69%	-	-	-	-	-	95%	100%