

# NAME OF ULB– CHANDIGARH

## 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. 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)

**Base line information of sewerage system in available with the Chandigarh Municipal Corporation, city development plan, Master plan 2031 ,Report Chandigarh Municipal Corporation. DPRs related to sewer projects available with PH division. Annual maintenance estimates of sector wise connections are available.**

**Yes we have co-related the census 2011 data with Existing data of Chandigarh Municipal corporation**

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  | Existing Service Level (in %)     | MOUD Benchmark | Reliability |
|---------|---|-----------------------------------|----------------|-------------|
| 1       | Coverage of Latrines (Individual/ Community)                      | 150615HH/156434HH = <b>96%</b>    | 100%           | B           |
| 2       | Coverage of Sewerage Network Services.                            | 150615 HH /150615 HH= <b>100%</b> | 100%           | B           |
| 3       | Efficiency of Collection of Sewerage.                             | 57 MGD /59.9MGD= <b>95%</b>       | 100%           | B           |
| 4       | Efficiency in Treatment: Adequacy of sewerage Treatment capacity. | 43.75MGD/52.9MGD = <b>83%</b>     | 100%           | B           |

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

**The Gap in these service levels with regard to Benchmarks –**  
**Gap in Coverage of latrines is 4%**  
**Gap in Coverage of sewerage Network services is 0%**  
**Gap in Efficiency of collection of sewerage is 5%**  
**Gap in Efficiency in treatment capacity is 17%**

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

**Yes the city of Chandigarh has separate drainage system to take care of storm water the overall length along the network is laid. Separate 1030 km of storm water network is available in the city to cater the storm water.**

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

| ZONES        | TOTAL NUMBER OF HH in UT+PERI | Total number of HH with individual or community | Toilets within walking distance b | Coverage of latrines (%), (b/a)*100% |
|--------------|-------------------------------|---|-----------------------------------|--------------------------------------|
| 1            | 10202 HH                      | 10202HH   | 10202HH                           | <b>100%</b>                          |
| 2            | 8498 HH                       | 8498 HH   | 8498 HH                           | <b>100%</b>                          |
| 3            | 32296 HH                      | 16296HH   | 14970 HH                          | <b>92%</b>                           |
| 4            | 35300 HH                      | 35300 HH  | 35300 HH                          | <b>100%</b>                          |
| 5            | 47741 HH                      | 46741HH   | 45095 HH                          | <b>96%</b>                           |
| 6            | 18542 HH                      | 18542 HH  | 17500 HH                          | <b>94%</b>                           |
| 7            | 22855 HH                      | 20855HH   | 19050HH                           | <b>100%</b>                          |
| <b>TOTAL</b> | <b>176434 HH</b>              | <b>156434 HH</b>                                | <b>150615 HH</b>                  | <b>96%</b>                           |

### **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 WISE COVERAGE OF HOUSEHOLDS**

| <b>SECTOR</b> | <b>Total No. of Households(HH)<br/>a</b> | <b>Households with Sewerage Network b</b> | <b>Coverage of sewerage network services<br/>(b/a)*100%</b> |
|---------------|--|---|---|
| <b>1</b>      | <b>24</b>                                | <b>24</b>                                 | <b>100%</b>   |
| <b>2</b>      | <b>202</b>                               | <b>202</b>                                | <b>100%</b>   |
| <b>3</b>      | <b>204</b>                               | <b>204</b>                                | <b>100%</b>   |
| <b>4</b>      | <b>187</b>                               | <b>187</b>                                | <b>100%</b>   |
| <b>5</b>      | <b>229</b>                               | <b>229</b>                                | <b>100%</b>   |
| <b>6</b>      | <b>45</b>                                | <b>45</b>                                 | <b>100%</b>   |
| <b>7</b>      | <b>2663</b>                              | <b>2663</b>                               | <b>100%</b>   |
| <b>8</b>      | <b>1194</b>                              | <b>1194</b>                               | <b>100%</b>   |
| <b>9</b>      | <b>707</b>                               | <b>707</b>                                | <b>100%</b>   |
| <b>10</b>     | <b>460</b>                               | <b>460</b>                                | <b>100%</b>   |
| <b>11</b>     | <b>832</b>                               | <b>832</b>                                | <b>100%</b>   |
| <b>12</b>     | <b>1253</b>                              | <b>1253</b>                               | <b>100%</b>   |
| <b>15</b>     | <b>2129</b>                              | <b>2129</b>                               | <b>100%</b>   |
| <b>16</b>     | <b>1077</b>                              | <b>1077</b>                               | <b>100%</b>   |
| <b>17</b>     | <b>746</b>                               | <b>746</b>                                | <b>100%</b>   |
| <b>18</b>     | <b>1252</b>                              | <b>1252</b>                               | <b>100%</b>   |
| <b>19</b>     | <b>2116</b>                              | <b>2116</b>                               | <b>100%</b>   |
| <b>20</b>     | <b>3834</b>                              | <b>3834</b>                               | <b>100%</b>   |
| <b>21</b>     | <b>1685</b>                              | <b>1685</b>                               | <b>100%</b>   |
| <b>22</b>     | <b>3240</b>                              | <b>3240</b>                               | <b>100%</b>   |

| <b>SECTOR</b> | <b>Total No. of Households(HH)<br/>a</b> | <b>Households with Sewerage Network b</b> | <b>Coverage of sewerage network services<br/>(b/a)*100%</b> |
|---------------|--|---|---|
| <b>23</b>     | <b>2350</b>                              | <b>2350</b>                               | 100%  |
| <b>24</b>     | <b>2153</b>                              | <b>2153</b>                               | 100%  |
| <b>25</b>     | <b>3040</b>                              | <b>3040</b>                               | 100%  |
| <b>26</b>     | <b>2831</b>                              | <b>2831</b>                               | 100%  |
| <b>27</b>     | <b>1924</b>                              | <b>1924</b>                               | 100%  |
| <b>28</b>     | <b>2118</b>                              | <b>2118</b>                               | 100%  |
| <b>29</b>     | <b>3190</b>                              | <b>3190</b>                               | 100%  |
| <b>30</b>     | <b>2195</b>                              | <b>2195</b>                               | 100%  |
| <b>31</b>     | <b>1950</b>                              | <b>1950</b>                               | 100%  |
| <b>32</b>     | <b>2314</b>                              | <b>2314</b>                               | 100%  |
| <b>33</b>     | <b>1374</b>                              | <b>1374</b>                               | 100%  |
| <b>34</b>     | <b>967</b>                               | <b>967</b>                                | 100%  |
| <b>35</b>     | <b>2455</b>                              | <b>2455</b>                               | 100%  |
| <b>36</b>     | <b>786</b>                               | <b>786</b>                                | 100%  |
| <b>37</b>     | <b>3026</b>                              | <b>3026</b>                               | 100%  |
| <b>38</b>     | <b>5718</b>                              | <b>5718</b>                               | 100%  |
| <b>39</b>     | <b>2352</b>                              | <b>2352</b>                               | 100%  |
| <b>40</b>     | <b>4201</b>                              | <b>4201</b>                               | 100%  |
| <b>41</b>     | <b>4765</b>                              | <b>4765</b>                               | 100%  |
| <b>42</b>     | <b>1716</b>                              | <b>1716</b>                               | 100%  |
| <b>43</b>     | <b>1749</b>                              | <b>1749</b>                               | 100%  |
| <b>44</b>     | <b>3684</b>                              | <b>3684</b>                               | 100%  |

| <b>SECTOR</b>                  | <b>Total No. of Households(HH)<br/>a</b> | <b>Households with Sewerage Network b</b> | <b>Coverage of sewerage network services<br/>(b/a)*100%</b> |
|--------------------------------|--|---|---|
| <b>45</b>                      | <b>3695</b>                              | <b>3695</b>                               | <b>100%</b>   |
| <b>46</b>                      | <b>3529</b>                              | <b>3529</b>                               | <b>100%</b>   |
| <b>47</b>                      | <b>4066</b>                              | <b>4066</b>                               | <b>100%</b>   |
| <b>48</b>                      | <b>2037</b>                              | <b>2037</b>                               | <b>100%</b>   |
| <b>49</b>                      | <b>4162</b>                              | <b>4162</b>                               | <b>100%</b>   |
| <b>50</b>                      | <b>1415</b>                              | <b>1415</b>                               | <b>100%</b>   |
| <b>51</b>                      | <b>1906</b>                              | <b>1906</b>                               | <b>100%</b>   |
| <b>52</b>                      | <b>2253</b>                              | <b>2253</b>                               | <b>100%</b>   |
| <b>53</b>                      | <b>2</b>                                 | <b>2</b>                                  | <b>100%</b>   |
| <b>54</b>                      | <b>1</b>                                 | <b>1</b>                                  | <b>100%</b>   |
| <b>55</b>                      | <b>502</b>                               | <b>502</b>                                | <b>100%</b>   |
| <b>56</b>                      | <b>4702</b>                              | <b>4702</b>                               | <b>100%</b>   |
| <b>61</b>                      | <b>507</b>                               | <b>507</b>                                | <b>100%</b>   |
| <b>ATTAWA (AT)</b>             | <b>202</b>                               | <b>202</b>                                | <b>100%</b>   |
| <b>BAPU DHAM COLONY (BC)</b>   | <b>1089</b>                              | <b>1089</b>                               | <b>100%</b>   |
| <b>BUDHERI (BR)</b>            | <b>403</b>                               | <b>403</b>                                | <b>100%</b>   |
| <b>BUTRELA (BT)</b>            | <b>265</b>                               | <b>265</b>                                | <b>100%</b>   |
| <b>BURAIL (BU)</b>             | <b>2405</b>                              | <b>2405</b>                               | <b>100%</b>   |
| <b>DADU MAJRA COLONY (DC)</b>  | <b>2577</b>                              | <b>2577</b>                               | <b>100%</b>   |
| <b>DHANAS (DH)</b>             | <b>434</b>                               | <b>434</b>                                | <b>100%</b>   |
| <b>DADU MAJRA VILLAGE (DM)</b> | <b>598</b>                               | <b>598</b>                                | <b>100%</b>   |
| <b>DHANAS (ED)</b>             | <b>235</b>                               | <b>235</b>                                | <b>100%</b>   |

| <b>SECTOR</b>                           | <b>Total No. of Households(HH)<br/>a</b> | <b>Households with Sewerage Network b</b> | <b>Coverage of sewerage network services<br/>(b/a)*100%</b> |
|---|--|---|---|
| <b>14 WEST (GWALA COLONY DHANAS-GD)</b> | <b>711</b>                               | <b>711</b>                                | <b>100%</b>   |
| <b>HALLO MAJRA (HM)</b>                 | <b>670</b>                               | <b>670</b>                                | <b>100%</b>   |
| <b>INDUSTRIAL AREA PHASE - 1 (IA)</b>   | <b>1187</b>                              | <b>1187</b>                               | <b>100%</b>   |
| <b>INDUSTRIAL AREA PHASE - 2 (IN)</b>   | <b>1112</b>                              | <b>1112</b>                               | <b>100%</b>   |
| <b>KAZHERI (KZ)</b>                     | <b>701</b>                               | <b>701</b>                                | <b>100%</b>   |
| <b>DHANAS (LD)</b>                      | <b>671</b>                               | <b>671</b>                                | <b>100%</b>   |
| <b>LAHORA KHUDA COLONY (LK)</b>         | <b>327</b>                               | <b>327</b>                                | <b>100%</b>   |
| <b>MAULI JAGRAN (MJ)</b>                | <b>7329</b>                              | <b>7329</b>                               | <b>100%</b>   |
| <b>MALOYA (ML)</b>                      | <b>3847</b>                              | <b>3847</b>                               | <b>100%</b>   |
| <b>MANIMAJRA (MZ)</b>                   | <b>11702</b>                             | <b>11702</b>                              | <b>100%</b>   |
| <b>PALSORA (PL)</b>                     | <b>354</b>                               | <b>354</b>                                | <b>100%</b>   |
| <b>RAM DARBAR (RD)</b>                  | <b>4082</b>                              | <b>4082</b>                               | <b>100%</b>   |
| <b>TOTAL HOUSEHOLDS</b>                 | <b>150615</b>                            | <b>150615</b>                             | <b>100%</b>   |

**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)**

**There are no such areas in the city which falls under above category.**

**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)**

**There are no House Holds with septic tank in the city.**

**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)**

**The sewerage system of Chandigarh is maintained through the regular staff of municipal corporation and also outsourcing of some areas of the city to private agencies which provide labor /T & P to carry out the work of routine maintenance /grievances of the sewerage system.**

**The routine maintenance of sewerage system is carried out by manual/mechanical means wherever required. Further the periodical maintenance of sewer line is carried out as & when any complaint regarding blockage/damage in the system is reported .sufficient machinery is available for dealing with the complaints in the city.**

**More machinery is being purchased order to provide efficient service and also to reduce the time period of catering to sewerage complaints**

### *SEWAGE TREATMENT SYSTEM*

**Question: Does city has Sewage Treatment Plant (STP)? Which areas are covered under each of the STPs?Table 2.3: Status of Existings STPSs**

| <b>Sr. No.</b> | <b>Location of STP</b>                 | <b>Capacity (MLD)</b>   | <b>Inflow In The STP (MLD)</b> | <b>Efficiency In %</b> |
|----------------|--|-------------------------|--------------------------------|------------------------|
| <b>1</b>       | <b>DIGGIAN</b>                         | <b>30 MGD =135MLD</b>   | <b>22.5 MGD=101 MLD</b>        | <b>75%</b>             |
| <b>2</b>       | <b>RAIPUR KALAN(MCPH DIV2)</b>         | <b>5 MGD=22.5MLD</b>    | <b>5 MGD=22.5 MLD</b>          | <b>100%</b>            |
| <b>3</b>       | <b>3 BRD OLD</b>                       | <b>5 MGD =22.5MLD</b>   | <b>4 MGD=18 MLD</b>            | <b>80%</b>             |
| <b>4</b>       | <b>3 BRD Latest</b>                    | <b>10 MGD =49.5 MLD</b> | <b>9.35 MGD=42 MLD</b>         | <b>84%</b>             |
| <b>5</b>       | <b>Raipur khurd+Dhanas (CHD Admin)</b> | <b>2.9 MGD=13.05MLD</b> | <b>U.T ADMIN-2.9 MGD</b>       | <b>100%</b>            |
|                | <b>TOTAL</b>                           | <b>52.9 MGD</b>         | <b>43.75 MGD</b>               | <b>83%</b>             |

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

**Decentralized system exists in the city, whole area of the city is divided in 5 ZONES.**

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)

**59.9 MGD is the amount of sewerage that is generated in the Chandigarh municipal limit .57 MGD OF SEWER REACHES THE PLANT .The B.O.D levels of these plants are –**

| TREATMENT PLANT  | INCOMING B.O.D | OUTGOING B.O.D |
|------------------|----------------|----------------|
| STP Diggian.     | 300 PPM        | 20 PPM         |
| STP Raipur Kalan | 260 PPM        | 30PPM          |
| 3 BRD OLD        | 280 PPM        | 30 PPM         |
| STP LATEST 3 BRD | 280 PPM        | 5 PPM          |
| Raipur khurd     | U.T ADMIN      | UT ADMIN       |

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)

**The treated sewage can used by farmers for agricultural manure. The water is treated up to tertiary level and is being pumped back to the city and utilized for Irrigating open spaces, parks, gardens, landscaping. Further Municipal Corporation Chandigarh has made it mandatory for houses having area 500 Sq. yards or more to have tertiary connection for irrigating open space. The charges of this tertiary water connection is significantly lower than potable water connections**

**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

PUBLIC HEALTH DIVISION, MCC

PUBLIC HEALTH DIVISION, MCC

PUBLIC HEALTH DIVISION, MCC

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)



**The Municipal Corporation Of Chandigarh has engineering wing of its own to undertake the execution of new projects related to Sewerage and its maintenance thereof .The implementation Is done by Municipal Corporation of Chandigarh.**

## 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 PROJECTS.**

| <b>S.No.</b> | <b>Name of Project</b>   | <b>Scheme Name</b>  | <b>Cost in crore</b> | <b>Month of Completion</b> | <b>Status (as on DD MM 2015)</b> |
|--------------|--|---------------------|----------------------|----------------------------|----------------------------------|
| <b>1</b>     | <b>WORK OF SHIFTING OF SEWERLINES FROM BACK COURTYARD TO FRONT SIDE – DADDU MAJRA COLONY</b> | <b>24-11-15 MCC</b> | <b>1.334 CR</b>      | <b>-----</b>               | <b>70%</b>                       |
| <b>2</b>     | <b>WORK OF SHIFTING OF SEWERLINES FROM BACK COURTYARD TO FRONT SIDE – MALOYA COLONY</b>      | <b>2015 MC C</b>    | <b>0.6753 CR</b>     |                            | <b>80%</b>                       |
| <b>3</b>     | <b>STRENGTHENING OF SEWERAGE SYSTEM HOUSING BOARD COLONY DHANAS UT</b>                       | <b>3-11-15 MCC</b>  | <b>0.3042 CR</b>     |                            | <b>70%</b>                       |
| <b>4</b>     | <b>STRENGTHENING OF SEWERAGE SYSTEM BACKSIDE</b>   | <b>MCC</b>          | <b>0.4549 CR</b>     |                            | <b>80%</b>                       |

| S.No. | Name of Project  | Scheme Name | Cost in crore | Month of Completion | Status (as on DD MM 2015) |
|-------|------------------|-------------|---------------|---------------------|---------------------------|
|       | OF SCOS SEC-35 C |             |               |                     |                           |

Question: 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)

**Above projects will replace encroached sewer line so that cleaning of sewer line can be done regularly.**

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

**100% houses are connected with the sewer line. However to improve the services replacement of old sewer lines,  
Laying of New sewer line to deep complex ,  
To lay new pipe line for tertiary treated waste water and  
22.5 MLD treatment plant at Maloya.  
Construction COMBINED SEWAGE & EFFLUENT TREATMENT PLANT in industrial PHASE 1, 2.  
To improve the operational efficiency of existing STPs.  
To rehabilitate the existing old sewerage system.**

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?

**The city is visualizing to take the challenge to Rejuvenate the projects by improving the operational efficiency of existing STPs, construction of ETP in industrial areas and by rehabilitating the old sewer system.**

**TABLE 2.6: DEMAND GAP ASSESSMENT**

| COMPONENT             | 2015     |                  |         | 2021    |       |
|-----------------------|----------|------------------|---------|---------|-------|
|                       | EXISTING | ONGOING PROJECTS | TOTAL   | DEMAND  | GAP   |
| SEWERAGE NETWORK (KM) | 1108km   | 0                | 1108 km | 1128 km | 20 km |

|  |   |          |                    |                    |                 |
|--|---|----------|--------------------|--------------------|-----------------|
| NO OF HOUSEHOLDS COVERED UNDER SEWERAGE SYSTEM | <b>1,50,615 HH PLUS + 9 M.C CHANDIGARH 13 VILLAGES UN DER CHD ADMIN+EXTEN DED +UT ADMIN</b> | <b>0</b> | <b>1,50,615 HH</b> | <b>1,76,434 HH</b> | <b>25819H H</b> |
| SEWERAGE TREATMENT PLANT (MLD)                 | <b>52.9 MGD</b>   | <b>0</b> |                    | <b>63 MGD</b>      | <b>11 MGD</b>   |

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? (75 words)

**YES the identified objectives are as follows-**

- 1. 100% houses are connected with the sewer line. However to improve the services replacement of old sewer lines,**
- 2. Laying of New sewer line in deep complex ,**
- 3. To lay new pipe line for tertiary treated waste water**
- 4. Establishment of 22.5 MLD Sewerage treatment plant at Maloya.**
- 5. Construction of Combined sewage & effluent treatment plant in industrial area PHASE 1 & 2.**
- 6. To improve the operational efficiency of existing STPs.**
- 7. To rehabilitate the existing old sewerage system.**

Question: Does each objective meet the opportunity to bridge the gap? (75 words)

**Yes each objective meets the opportunity in bridging the gap in terms of coverage of Households, tertiary treated waste water, treatment plant, combined sewage & effluent treatment plant and operational efficiency of existing STPs.**

**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?*

**POSSIBLE ACTIVITIES TO MEET THE OBJECTIVES ARE :**

- 1. 100% houses are connected with the sewer line. However to improve the services replacement of old sewer lines,**
- 2. Laying of New sewer line in deep complex ,**
- 3. To lay new pipe line for tertiary treated waste water and**
- 4. 22.5 MLD treatment plant at Maloya.**
- 5. Construction combined sewage treatment plant in industrial area PHASE 1, 2.**
- 6. To improve the treatment efficiency of existing STPs in terms BOD outgoing .**
- 7. To rehabilitate the existing old sewerage system majorly trunk replace.**

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

**There are no converging projects with JICA/ADB**

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

**There is no ongoing project.**

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

**There are no ongoing projects.**

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

**The O & M of sewerage system will be included in the preparation of DPR of above proposed projects.**

**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.**

**Yes and further details will be worked out while framing the DPR of STPs, ETPs.**

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

**Innovative solutions have been explored while framing the DPR and latest available technology will be proposed.**

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

**Above PPP options will be explored 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 recycling of waste water is done by treating it to tertiary level and treated water is presently being in the city by laying separate network.**

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

**Yes we have already using the innovative solutions and best practices at Diggian STP and the same will be replicated by upgrading the existing treatment plant and will also be proposed in upcoming projects**

**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.**

**There is no need of septage management the whole city is covered by sewerage system.**

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

| <b>SL No.</b> | <b>Objective</b>    | <b>Activities</b> | <b>Financing Source</b> |
|---------------|---------------------|-------------------|-------------------------|
|               | No ongoing Activity |                   |                         |

## **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 all the stakeholders have been consulted while preparing the projects.**

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

**Yes zone level consultations being held in the city available with Municipal Corporation Chandigarh.**

**Question: Has alternative proposed above are crowd sourced?**

**Yes the alternative proposed are crowd sourced.**

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

**Based on the feedback on alternatives and innovations projects have been formulated.**

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

**Yes the alternative taken up are on prioritized basis.**

**Question: What methodology adopted for prioritizing the alternatives?**

**After Consultation with all stakeholders projects have been prioritized.**

## **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?**

**Sources of fund are Government of India ,U.T. and M.C.C**

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

**There is currently no other scheme.**

**Question: Has projects been prioritized based on “more with less” approach?**

**Yes the projects been prioritized with more with less approach.**

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

**Yes the universal coverage approach been followed indicated In AMRUT while prioritization of activities.**

## 6. Conditionalities

Describe the Conditionality's 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.

**Land is available, Environmental clearance and other NOC will be obtained before approval of DPR.**

## 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.

**Environmentally sustainable and disaster factors will be considered at the time of preparation of DPR.**

## 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?

**Yes the financial plan of project includes capital cost as well as O & M cost.**

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

**Yes 1/3 share of GOI ,1/3 U.T,1/3 M.C.C.**

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

**There are no ongoing projects.**

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

**Yes it provides year wise phasing and targets.**

DETAILS IN FINANCIAL PLAN SHALL BE PROVIDED AS PER TABLE 8.1, 8.2, 8.3, 8.4 AND 8.5..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 |
|--------------------|--|-----------------|---------------------------------|-------------------------------|----------------|
| 1                  | RAMDARBAR RELAYING OF NEW SEWER NETWORK.   | 1               | 2016                            | 2017                          | 1 CR           |
| 2                  | PROVIDING TERTIARY TREATED WATER NETWORK IN THE LEFT OUT AREAS OF CHANDIGARH TO ACHIEVE 100%                               | 1               | 2017                            | 2018                          | 5 CR           |
| 3                  | MALOYA STP 5 MGD & MPS SEWAGE TREATMENT PLANT ON SBR TECHNOLOGY.   | 2               | 2016                            | 2017                          | 35.08 CR       |
| 4                  | PROVIDING CTP OF 5 MGD FOR INDUSTRIAL AREA PHASE 1 & 2 AND LAYING OF SEPARATE SEWER NETWORK.                               | 3               | 2018                            | 2019                          | 15 CR          |
| 5                  | UPGRADATION OF SEWER TREATMENT PLANT (< 30 PPM )PLANT AT DIGGIAN (30 MGD),RAIPUR KALAN(5 MGD),3 BRD OLD(5 MGD)@1.5 CR /MGD | 4               | 2018                            | 2019                          | 60 CR          |
| 6                  | REPLACEMENT OF OLD TRUNK SEWER NETWORK.  | 5               | 2019                            | 2021                          | 25 CR          |
| <b>TOTAL COST.</b> |  |                 | <b>141.08 CR</b>                |                               |                |

**8.2 DETAILS OF PRIORITIZED PROJECTS PREPARED UNDER AMRUT DURING CURRENT FY**(As per Table 2.2 of AMRUT guidelines) (Amount in Rs. Cr)

| Sr. No. | PROJECT NAME    | PHYSICAL COMPONENTS | CHANGE IN SERVICE LEVELS |          |               | EST COST |
|---------|-----------------|---------------------|--------------------------|----------|---------------|----------|
|         |                 |                     | INDICATOR                | EXISTING | AFTER (TO-BE) |          |
| 1       | RAMDARBAR sewer | NEW SEWER NETWORK   | NETWORK COVERAGE         | 92%      | 100%          | 1 CR     |



| Sr. No.      | PROJECT NAME                           | PHYSICAL COMPONENTS   | CHANGE IN SERVICE LEVELS      |          |               | EST COST |
|--------------|--|---|-------------------------------|----------|---------------|----------|
|              |  |   | INDICATOR                     | EXISTING | AFTER (TO-BE) |          |
|              | NETWORK                                |   |                               |          |               |          |
| 2            | SOUTH SECTOR-waste water network       | TERTIARY TREATED WATER NETWORK  | REUSE OF TREATED WASTE WATER  | 80%      | 100%          | 5 CR     |
| 3            | MALOYA Sewage Treatment Plant          | 5 MGD SEWAGE TREATMENT PLANT ON SBR TECHNOLOGY+ ADDITIONAL 5 MGD NEEDED | TREATMENT OF SEWERAGE         | 83%      | 100%          | 35.08 CR |
| 4            | CHANDIGARH Industrial AREA.            | CTP 5 MGD FOR INDUSTRIAL AREA PHASE 1 & 2                               | EFFICIENCY OF WASTE TREATMENT | 83%      | 100%          | 15 CR    |
| 5            | DIGGIAN ,RAIPUR KALAN,OLD BRD          | UPGRADATION OF 30 MGD,5 MGD ,5MGD SEWER TREATMENT PLANT                 | TREATMENT EFFICIENCY OF WASTE | 83%      | 100%          | 60 CR    |
| 6            | REPLACEMENT OF OLD TRUNK SEWER NETWORK | LAYING NEW TRUNK NETWORK LINE   | COVERAGE OF SEWER NETWORK     | 92%      | 100%          | 25 CR    |
| <b>TOTAL</b> |  | <b>141.08 CR</b>  |                               |          |               |          |

**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 COST | SHARE    |          |          |        |       |
|---------|--------------------------------|------------|----------|----------|----------|--------|-------|
|         |                                |            | GOI      | U.T.     | M.C.C.   | Others | Total |
| 1       | MALOYA SEWAGE TREATMENT PLANT. | 35.08 CR   | 11.69 CR | 11.69 CR | 11.69 CR |        | 35.08 |
| 2       | RAMDARBAR NETWORK              | 1 CR       | .33 CR   | .33 CR   | .33 CR   |        | 1     |

| Sr. No. | NAME OF PROJECT   | TOTAL COST | SHARE      |         |         |            |           |
|---------|---|------------|------------|---------|---------|------------|-----------|
|         |   |            | GOI        | U.T.    | M.C.C.  | Oth<br>ers | Total     |
| 3       | TERTIARY treated Waste water network in remaining areas.                | 5 CR       | 1.66 CR    | 1.66 CR | 1.66 CR |            | 5         |
| 4       | INDUSTRIAL AREA PHASE 1 & 2 COMBINED SEWAGE & EFFLUENT TREATMENT PLANT. | 15 CR      | 5 CR       | 5 CR    | 5 CR    |            | 15CR      |
| 5       | DIGGIAN ,RAIPUR KALAN,OLD BRD STP<300 ppm                               | 60 CR      | 20 CR      | 20 CR   | 20 CR   |            | 60 CR     |
| 6       | REPLACEMENT OF OLD TRUNK SEWER NETWORK                                  | 25 CR      | 8.33C<br>R | 8.33 CR | 8.33 CR |            | 25 CR     |
|         | TOTAL COST  | 141.08 CR  | 47.01      | 47.01   | 47.01   |            | 141.08 CR |

**TABLE-8.4: ANNUAL FUND SHARING BREAK-UP FOR SEWERAGE PROJECTS**(As per Table 2.3.2 of AMRUT guidelines)

| Sr. No | PROJECT NAME    | GOI      | U.T |            |          | MCC    |                |          | Con<br>ver<br>gen<br>ce | others | Tot<br>al |
|--------|-----------------|----------|-----|------------|----------|--------|----------------|----------|-------------------------|--------|-----------|
|        |                 |          | FC  | Oth<br>ers | Total    | F<br>C | Ot<br>he<br>rs | Total    |                         |        |           |
| 1      | MALOYA STP      | 11.69 CR |     |            | 11.69 CR |        |                | 11.69 CR |                         |        |           |
| 2      | RAMDARBAR       | .33 CR   |     |            | .33 CR   |        |                | .33 CR   |                         |        |           |
| 3      | SECTOR-TERTIRAY | 1.66 CR  |     |            | 1.66 CR  |        |                | 1.66     |                         |        |           |

| Sr. No | PROJECT NAME  | GOI           | U.T |            |                | MCC    |                |                | Convergence | others | Total |
|--------|---|---------------|-----|------------|----------------|--------|----------------|----------------|-------------|--------|-------|
|        |   |               | FC  | Oth<br>ers | Total          | F<br>C | Ot<br>he<br>rs | Total          |             |        |       |
|        |   |               |     |            |                |        |                | <b>CR</b>      |             |        |       |
| 4      | <b>CHANDIGARH INDUSTRIAL AREA COMBINED SEWAGE TREATMENT PLANT</b> | <b>5 CR</b>   |     |            | <b>5 CR</b>    |        |                | <b>5 CR</b>    |             |        |       |
| 5      | <b>DIGGIAN ,RAIPUR KALAN,OLD BRD STP</b>                          | <b>20 CR</b>  |     |            | <b>20 CR</b>   |        |                | <b>20 CR</b>   |             |        |       |
| 6      | REPLACEMENT OF OLD TRUNK NETWORK                                  | <b>8.33CR</b> |     |            | <b>8.33 CR</b> |        |                | <b>8.33 CR</b> |             |        |       |
|        |   | 47.01         |     |            | 47.01          |        |                | 47.01          |             |        |       |

**TABLE-8.5: YEAR WISE PLAN FOR SERVICE LEVELS IMPROVEMENTS**

(As per Table 2.5of AMRUT guidelines)

| Proposed Projects   | Project Cost    | Indicator            | Baseli<br>ne | Annual Targets<br>(Increment from the Baseline Value) |    |            |            |                |            |
|---|-----------------|----------------------|--------------|---|----|------------|------------|----------------|------------|
|   |                 |                      |              | FY 2016   |    | FY<br>2017 | FY<br>2018 | FY<br>201<br>9 | FY<br>2020 |
|   |                 |                      |              | H1  | H2 |            |            |                |            |
| <b>MALOYA STP 5 MGD &amp; MPS SEWERAGE TREATMENT PLANT ON SBR TECHNOLOGY.</b> | <b>35.08 CR</b> | TREATMENT EFFICINECY | 83%          |   |    | 85%        | 90%        | 95%            | 100 %      |

| Proposed Projects  | Project Cost | Indicator            | Baseline | Annual Targets<br>(Increment from the Baseline Value) |     |         |         |         |         |
|--|--------------|----------------------|----------|---|-----|---------|---------|---------|---------|
|  |              |                      |          | FY 2016   |     | FY 2017 | FY 2018 | FY 2019 | FY 2020 |
|  |              |                      |          | H1  | H2  |         |         |         |         |
| RAMDARBAR RE LAYING OF NEW SEWER NETWORK.  | 1 CR         | NETWORK SERVICES     | 100 %    |   |     | 100 %   | 100 %   |         |         |
| PROVIDING TERTIRAY TREATED WATER NETWORK IN THE LEFT OUT AREAS OF CHANDIGARH TO ACHIEVE 100%                               | 5 CR         | TERTIRAY WASTE WATER | 80%      |   |     | 90%     | 100 %   |         |         |
| PROVIDING ETP OF 5 MGD FOR INDUSTRIAL AREA PHASE 1 & 2, LAYING OF SEPARATE SEWER NETWORK.                                  | 15 CR        | TREATMENT            | 83%      | 83%   | 83% | 85%     | 90%     | 95%     | 100 %   |
| UPGRADATION OF SEWER TREATMENT PLANT (< 30 PPM )PLANT AT DIGGIAN (30 MGD),RAIPUR KALAN(5 MGD),3 BRD OLD(5 MGD)@1.5 CR /MGD | 60 CR        | TREATMENT            | 83%      |   |     |         |         | 85%     | 100 %   |
| REPLACEMENT OF OLD TRUNK SEWER NETWORK   | 25 CR        | NETWORK              | 100%     |   |     |         | 100 %   | 100 %   | 100 %   |