

# NAME OF ULB - JHANSI

## 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.

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)

**City Sanitation Plan 2014**

**Transportation Plan**

**Master Plan 2021 for Jhansi City**

**DPR Water Supply Re-organization Scheme for Jhansi City.**

**Yes Zone wise information is available.**

Question: 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)

| S.No | Source                 | Particulars                      | Numbers       | Tap Water Connection |
|------|------------------------|----------------------------------|---------------|----------------------|
| 01   | Census 2011            | <b>Total Population = 505693</b> |               |                      |
|      |                        | <b>Household</b>                 | <b>88884</b>  | <b>49520</b>         |
|      |                        | <b>Within the premises</b>       | <b>65254</b>  | <b>44169</b>         |
|      |                        | <b>Near the premises</b>         | <b>16975</b>  | <b>4563</b>          |
|      | <b>Away</b>            | <b>6655</b>                      | <b>788</b>    |                      |
| 02   | Departmental Data 2015 | <b>Total Population =605000</b>  |               |                      |
|      |                        | <b>Household</b>                 | <b>106515</b> | <b>37445</b>         |

Census population of Jhansi is available for last 5 decades. It is assumed that the execution of works proposed in the estimate would be completed by the year 2018. As such population for the different years i.e. Base year (2018), middle year (2033) and design year (2048) has been forecasted adopting different methods given in manual (detail calculations given in technical statement). The populations forecast in different years are as follows:- Hence the population figures adopted in this project are:- Population as per census 2011 = 505693 for base year 2018 = 651350 for mid design year 2033 = 939200 for design year 2048 = 1354250 The re-organization of water supply has been taken on top priority because BundelKhand and specially Jhansi which is divisional head quarter needs it so as to support the development of other in fracture facilities. By Implementing water supply Re-organization scheme the piped water supply will be extended to newly added villages which has become a part of

Nagar Nigam area. The re-organization will also provide water supply in adequate quantity. Quality and required pressure in the scarcity areas as intimated by Jhansi Division Jal Sansthan.

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

Table: Status of Water Supply service levels

| Sr. No. | Indicators  | Present Status | MOUD Benchmark | Reliability |
|---------|---|----------------|----------------|-------------|
| 1       | Coverage of water supply connections<br>(37445/106515)      | 35%            | 100%           | D           |
| 2       | Per capita supply of water (With NRW)<br><b>75.73/0.605</b> | 126<br>LPCD    | 135 LPCD       | D           |
| 3       | Extent of metering of water connections                     | 22 %           | 100%           | D           |
| 4       | Extent of non-revenue water                                 | 37%            | 20%            | D           |
| 5       | Quality of water supplied                                   | 100%           | 100%           | D           |
| 6       | Cost recovery in water supply services                      | 49.3%          | 100%           | D           |
| 7       | Efficiency in collection of water supply related charges    | 62.8           | 90%            | A           |

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

**Gaps under:-**

- 1. Coverage of Water supply is 65%.**
- 2. Currently we are supply 11LPCD .**
- 3. Extent of metering is only 78%.**
- 4. Extent of non-revenue water 17%**
- 5. Cost recovery in water supply services 50.7%,**
- 6. Efficiency in collection of water supply related charges 37.2%**

## SOURCE OF WATER AND WATER TREATMENT SYSTEM.

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

Question: What is the existing source of water? Is it surface water source or under ground water source?

What is the capacity of these sources?

Question: 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?

Question: What per capita water supply in LPCD (liter per capita per day) comes out, if you divide total water supply by the total population?

**AVAILABILITY OF WATER AT PRESENT 1 Matatila Dam a. Jhansi – Babina w/s Scheme (1967) =40MLD b. Jhansi – Augmentation w/s scheme (1997) =100MLD 2. Pahuj Dam -(Jhansi w/s 1976) =6MLD Water from the above sources are treated by Rapid Gravity Filter followed by Chlorination at Babina and Datia gate filter of respective Capacities. Out of total available water **75.73 (69.73from Babina Treatment plant and 6.00 mld from Datia Gate filter) mld** is falls in share of Jhansi city, 42.61 mld of water is given to bulk consumers (Army establishments, BHEL etc) and 14.34 mld is given to rural consumers. Thus the total available water from the existing plants adds up to 132.68 mld the remaining 13.32 mld is wasted in losses due to leakages etc  
Per capita of water supply is  $75.73/0.605= 125$  LPCD**

## DISTRIBUTION ZONES

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

Question: City is divided in how many zones for water supply ?

**After commissioning of Jhansi Water Supply Augmentation Scheme in year 1997, the sufficient quantity of water was available for Jhansi town. Hence reorganization of water supply zones in terms of increasing storage capacity and strengthening, the existing distribution system and extending distribution network to newly developed localities was necessary. As huge amount of funds were required, hence it was not possible to take up the works in all zones at a time due to financial constraints hence to decide the priorities a high level committee was formed. The priorities were decided, considering the actual conditions of water supply and need or urgency required after detailed discussions and deliberations. The reorganization works were taken up in phases on the basis priorities fixed as above and as per availability of funds at present out of 16 zones, works in 14 zones have been taken up. The actual works done and the water supply status in 16 zones is summarized as given in table below which is based on discussions with UPJN, Jal Sansthan authorities and local people of the area. SI No Name of Zone Storage Actual Condition OHT In KL CWR in KL 1 Narsingh Rao Toria 800 350+900 Partially covered 2 Darigarar 1600 - Partially covered 3 Khanderao Gate 1800+1800 1400 Fully completed but problem of unequal distribution and low pressure in some area. 4 Sagargate 1500 - Completed but new areas**

have been developed and population outside Sagargate increased considerably hence a new zone may have to be created. 5 Talpura 1800 1500 Completed but new areas have come up along the Jhansi-Kanpur road from Medical college to Engineering college and due to rapid growth of population on water demand has increased considerably hence a new zone may have to be created. 6 Old Bus Stand Zone - - Completed but due to non-availability of land for construction of OHT. The storage capacity in the area is not sufficient resulting in low pressure and interrupted water supply. 7 Khusipura 1600 2050 Completed in all respects and running satisfactorily 8 Civil Lines 650 3200 Partially Covered 9 Sipri 900 - Partially Covered 10 Masihaganj - 100+200 Completed in all respects and running satisfactorily 11 Ayurvedic College 2500 1200 Completed in all respects and running satisfactorily 12 Khatibaba 1800 1000 Completed in all respects and running satisfactorily but a new zone is required for newly development avas. 13 Silvertganj - - Not yet taken up 14 Nagara 450 1500 Partially Covered 15 Pulia No. 9 450 680 Completed in all respects and running satisfactorily 16 Lahargird - - Not yet taken up

Table: Zone Wise Coverage of Households

Question: Provide details of total no of Households (HH) in each zone, no of HH with and without water tap connections in the Table

| No. | Zone/ Ward/ Mohalla No | Total No of Households in each Zone/ Ward/ Mohalla | Households with water tap Connection in each Zone/ Ward/ Mohalla | Household without water tap connection in each Zone/ Ward/ Mohalla |
|-----|------------------------|--|--|--|
| 1   | 2                      | 3  | 4  | 5  |
| 1   | Toria Narsingh Rao.    | 3675 HH  | 2059 HH  | 2116 HH  |
| 2-A | Darigaraan             | 2079 HH  | 0 HH   | 2079 HH  |
| 2-B | Darigaraan             | 5361 HH  | 3559 HH  | 1802 HH  |
| 3   | Khanderao Gate         | 5909 HH  | 4239 HH  | 1670 HH  |
| 4-A | Sagar Gate             | 4832 HH  | 4329 HH  | 503 HH   |
| 4-B | Sagar Gate             | 1681 HH  | 0 HH   | 1681 HH  |
| 5-A | Talpura                | 4625 HH  | 1786 HH  | 2839 HH  |
| 5-B | Talpura                | 2523 HH  | 975 HH   | 1548 HH  |
| 6   | Old Bus Stand          | 4712 HH  | 1596 HH  | 3116 HH  |
| 7   | Khushi pura            | 2745 HH  | 1624 HH  | 1121 HH  |
| 8   | Civil Lines            | 5742 HH  | 3907 HH  | 1835 HH  |
| 9   | Sipri                  | 2010 HH  | 1903 HH  | 107 HH   |

| No.          | Zone/ Ward/ Mohalla No | Total No of Households in each Zone/ Ward/ Mohalla | Households with water tap Connection in each Zone/ Ward/ Mohalla | Household without water tap connection in each Zone/ Ward/ Mohalla |
|--------------|------------------------|--|--|--|
| 10           | Masihaganj             | 4540 HH  | 1954 HH  | 2586 HH  |
| 11           | Ayurvedic College      | 4801 HH  | 1875 HH  | 2926 HH  |
| 12-A         | Khatibaba              | 2686 HH  | 1186 HH  | 1500 HH  |
| 12-B         | Khatibaba              | 3183 HH  | 1405 HH  | 1778 HH  |
| 13           | Silvertganj            | 4821 HH  | 0 HH   | 4821 HH  |
| 14           | Nagara                 | 3916 HH  | 3530 HH  | 386 HH   |
| 15           | Puliya No.-9           | 2627 HH  | 1518 HH  | 1109 HH  |
| 16           | Lahargird              | 4461 HH  | 0 HH   | 4461 HH  |
| 17           | Hasari                 | 5406 HH  | 0  | 5406 HH  |
| 18           | Simardha               | 2598 HH  | 0  | 2598 HH  |
| 19           | Kochha Bhavar          | 2468 HH  | 0  | 2468 HH  |
| 20           | Bhagwant pura          | 2342 HH  | 0  | 2342 HH  |
| 21           | Medical College        | 4290 HH  | 0  | 4290 HH  |
| 22           | Nandan pura            | 4262 HH  | 0  | 4262 HH  |
| 23           | Bijauli                | 3695 HH  | 0  | 3695 HH  |
| 24           | Simraha                | 4525 HH  | 0  | 4525HH   |
| <b>Total</b> |                        | <b>106515 HH</b>                                   | <b>37445 HH</b>  | <b>69570 HH</b>  |

## STORAGE OF WATER

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

Question: What is the total water storage capacity in the city ? What is capacity of elevated and ground water reservoirs?

**Total required Capacity of underground reservoir is 26.68ML against which only 12.78ML is available presently, to ensure proper piped water supply in the city 17.10ML additional storage is required. Since power availability in Jhansi city is for 16 to 17 hours hence it is not possible to ensure proper water supply by direct pumping, therefore water supply is done through elevated**

**reservoirs (Over Head Tank). The available capacity of elevated reservoir is 19600KL against the requirement of 60.60ML thus requiring capacity of 41.00ML of storage.**

Question: In case of surface water, does city need to have ground level reservoirs to store raw treated water?

**Total required Capacity of underground reservoir is 26.68ML against which only 12.78ML is available presently, to ensure proper piped water supply in the city 17.10ML additional storage is required. Since power availability in Jhansi city is for 16 to 17 hours hence it is not possible to ensure proper water supply by direct pumping, therefore water supply is done through elevated reservoirs (Over Head Tank). The available capacity of elevated reservoir is 19600KL against the requirement of 60.60ML thus requiring capacity of 41.00ML of storage.**

Question: Is water being supplied to consumers through direct pumping or through elevated reservoirs?

**Since power availability in Jhansi city is for 16 to 17 hours hence it is not possible to ensure proper water supply by direct pumping, therefore water supply is done through elevated reservoirs (Over Head Tank).**

Question: Is storage capacity sufficient to meet the cities demand?

**Against the total capacity of reservoir(Ground+ Elevated) is 87.28 ML. available storage is 53.78ML .Approximately 40 % of the required capacity of the storage is short in Jhansi city.**

## DISTRIBUTION NETWORK

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

Question: What is the total length of water supply distribution pipe line laid in the city?

**Existing length of the pipeline laid in the city is 532 KM. The total Street length (As per city sanitation plan 2014) of 1702 KM. the required length of pipeline to be laid is 562 KM hence city is not 100 % covered with pipe water supply.**

Question: 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 Street length of 1702 KM.the required length of pipeline to be laid is 562 KM hence city is not 100 % covered with pipe water supply.**

Question: What are the kind of pipe materials used in distribution lines?

**Currently DI,GI,CI, AC,PVC and PSC lines are laid in the city.**

Question: Provide zone wise details of street length with and without water distribution lines in the Table?

Table: Zone Wise length of distribution network

| <b>Zone/ Ward/ Mohalla No</b> | <b>Total Street Length in each Zone/ Ward/ Mohalla (KM)</b> | <b>Street length with water distribution pipe line in each Zone/ Ward/ Mohalla (KM)</b> | <b>Street length without water distribution pipe line in each Zone/ Ward/ Mohalla (KM)</b> |
|-------------------------------|---|---|--|
| ToriaNarsingh Rao.            | 33.84 KM  | 16.19 KM  | 17.65 KM   |
| Darigaraan                    | 18.41 KM  | 0.00 KM   | 18.41 KM   |
| Darigaraan                    | 37.21 KM  | 31.63 KM  | 5.59 KM  |
| Khanderao Gate                | 27.26 KM  | 24.38 KM  | 2.88 KM  |
| Sagar Gate                    | 22.65 KM  | 18.13 KM  | 4.53 KM  |
| Sagar Gate                    | 15.82 KM  | 2.23 KM   | 13.58 KM   |
| Talpura                       | 29.99 KM  | 24.43 KM  | 5.56 KM  |
| Talpura                       | 45.00 KM  | 42.70 KM  | 2.31 KM  |
| Old Bus Stand                 | 22.45 KM  | 9.91 KM   | 12.54 KM   |
| Khushipura                    | 30.24 KM  | 15.30 KM  | 14.94 KM   |
| Civil Lines                   | 106.01 KM   | 92.83 KM  | 13.17 KM   |
| Sipri                         | 28.92 KM  | 9.14 KM   | 19.78 KM   |
| Masihaganj                    | 53.04 KM  | 47.44 KM  | 5.59 KM  |
| Ayurvedic College             | 55.12 KM  | 34.03 KM  | 21.09 KM   |
| Khatibaba                     | 4.85 KM   | 1.44 KM   | 3.41 KM  |
| Khatibaba                     | 29.63 KM  | 26.79 KM  | 2.84 KM  |
| Silvertganj                   | 57.27 KM  | 44.67 KM  | 12.60 KM   |
| Nagara                        | 76.38 KM  | 73.37 KM  | 3.01 KM  |
| Puliya No.-9                  | 21.64 KM  | 15.30 KM  | 6.34 KM  |
| Lahargird                     | 42.59 KM  | 2.31 KM   | 40.29 KM   |
| Hasari                        | 40.59 KM  | 0.00 KM   | 40.59 KM   |
| Simardha                      | 23.13 KM  | 0.00 KM   | 23.13 KM   |

| <b>Zone/ Ward/ Mohalla No</b> | <b>Total Street Length in each Zone/ Ward/ Mohalla (KM)</b> | <b>Street length with water distribution pipe line in each Zone/ Ward/ Mohalla (KM)</b> | <b>Street length without water distribution pipe line in each Zone/ Ward/ Mohalla (KM)</b> |
|-------------------------------|---|---|--|
| KochhaBhavar                  | 12.71 KM  | 0.00 KM   | 12.71 KM   |
| Bhagwantpura                  | 5.32 KM   | 0.00 KM   | 5.32 KM  |
| Medical College               | 75.61 KM  | 0.00 KM   | 75.61 KM   |
| Nandanpura                    | 36.52 KM  | 0.00 KM   | 36.52 KM   |
| Bijauli                       | 92.16 KM  | 0.00 KM   | 92.16 KM   |
| Simraha                       | 49.26 KM  | 0.00 KM   | 49.26 KM   |
| <b>Total</b>                  | <b>1093.61 KM</b>   | <b>532.21 KM</b>  | <b>561.40 KM</b>   |

## INSTITUTIONAL FRAMEWORK

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

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

Table: Functions, roles, and responsibilities

| <b>Planning and Design</b> | <b>Construction/ Implementation</b> | <b>O&amp;M</b> |
|----------------------------|-------------------------------------|----------------|
| UP Jal Nigam               | UP Jal Nigam & Jal Sansthan Jhansi  | Jal Sansthan   |

Question: How city is planning to execute projects ?

In this re-organization scheme it is proposed to draw 210 mld of raw water. Thus the Intake works and other connected works of carrying water from Matatila to Babina Treatment works have been proposed and designed for 210 mld and the Treatment works at Babina is proposed of 200 MLD capacity the clear water carrying works viz the clear water main from Babina to Jhansi has been proposed and designed for 200 MLD of clear water considering the quantity of water drawn for zones at different intermediate points between Babina and Jhansi. The feeder mains from these take off points has been designed for the ultimate requirement of clear water of the zone. The Distribution system has also been designed for ultimate year requirement.

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

The Planning & Implementation of this scheme will be done by U.P. Jal Nigam Jhansi and later O& M will be carried out by Jhansi Jal Sansthan.



## 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 sector 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 | Month of Compilation | Status (as on dd mm 2015) |
|-------|-----------------|-------------|------|----------------------|---------------------------|
| 1.    | NIL             |             | NIL  | -                    | -                         |

Question: How much the existing system will able to address the existing gap in water supply system? Will completion of above will improve the coverage of network and collection efficiency? If yes, how much. (100 words)

**The re-organization of water supply has been taken on top priority because BundelKhand and specially Jhansi which is divisional head quarter needs it so as to support the development of other in fracture facilities.**

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

**By Implementing water supply Re-organization scheme the piped water supply will be extended to newly added villages which has become a part of Nagar Nigam area. The re-organization will also provide water supply in adequate quantity, Quality and required pressure in the scarcity areas as intimated by Jhansi Division Jal Sansthan.**

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?

**In this re-organization scheme is framed to provide 200 mld clear water to Jhansi nagar nigam. The proposed works included are as under:-**

**Intake well to draw 210 mld raw water. Presently raw water for 110 mld and 40 mld Treatment plant it drawn from tapping done by penstock of Jal Vidut Nigam. Lately jal Vidut Nigam has asked to remove our connection from penstock and make our own arrangement. Hence additional capacity of 110 mld has to be provided therefore it is proposed construct intake well**

for 320 mld raw water capacity, accordingly raw pumping plant for the same are proposed Similarly rising main 1500 dia for new treatment plant and 1400 mm dia for old 110 mld treatment plant is proposed. C.P. tank and raw water Conveyance from C.P tank to water works at Babina for new treatment plant only is proposed. For catering potable water for Jhansi nagar nigam a treatment plant of 200mld is required. Proposal includes Clear water feeder from Baina to Bijauli, and there after feeders to various Zonal Pumping Station. For all 28 Zones CWR, OHT, Pumping plants, distribution system and other appurtenant works are proposed.

Question: Has city conducted assessment of Non Revenue Water ? if yes, what is the NRW level? Is city planning to reduce NRW ?

**No city has not conducted any assessment related to NRW but city is planning to conduct a study related to NRW. In this above table we have quoted NRW is 37%. On the basic of production and number household having connection. In this regard we have proposed 100% metering to minimize the NRM**

Question: 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

| Component                     | 2015      |         |           | 2021     |           |
|-------------------------------|-----------|---------|-----------|----------|-----------|
|                               | Present   | Ongoing | Total     | Demand   | Gap       |
| Source                        | 75.73 MLD | -       | 75.73 MLD | 115 MLD  | 40.73 MLD |
| Treatment capacity            | 75.73 MLD | -       | 75.73 MLD | 115 MLD  | 40.73 MLD |
| Elevated Storage capacity     | 19.60 ML  | -       | 19.60 ML  | 60.60 ML | 41.00 ML  |
| Distribution network coverage | 532KM     | -       | 532KM     | 1094KM   | 562KM     |

\*As per the city master plan the population will be 850000 in 2021

## 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.

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

- **To achieve Universal Coverage**
- **To make system efficient by NRW reduction**
- **To increase Per Capita Supply**

- To improve Quality of water.

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

**Based on above proposal the development of above components will ensure proper water supply for next 30 years (design year 2048) as the demand has been evaluated from by proper assessment of demand and availability of infrastructure. It is also proposed to install proper metering for proper O&M of the scheme.**

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

**Yes, the objective meets the opportunity to bridge the gap.**

### 3. Examine Alternatives and Estimate Cost

The objective will lead to explore and examine viable alternatives options available to address these gaps.. These will include out of box approaches. (AMRUT Guidelines; Para 6.4 & 6.8 & 6.9). This will also include review of smart solutions. The cost estimate with broad source of funding will be explored for each. 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.

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

| Sr. No. | Objective                            | Activities   | Cost in Cr.   | Financing Source |
|---------|--------------------------------------|--|---------------|------------------|
| 1.      | <b>To achieve Universal Coverage</b> | Gap in existing water supply-length with household connections<br>House old connection<br>Expansion of water supply distribution wih household connection-uncovered pockets<br>House old connection  | <b>224.5</b>  | <b>AMRUT</b>     |
| 2.      | <b>To reduce NRW</b>                 | Leakage detection and its removal<br>Replacement of old lines ( chocked,damaged,defunged,sluice valve)<br>Water supply zoning of service area .<br>100% implementation of metering .<br>Automisation of pumping plantl thorough scada                          | <b>151.23</b> | <b>AMRUT</b>     |
| 3.      | <b>To increase Per Capita Supply</b> | AUGMENTATION OF NEW WATER PRODUCTION SYSTEMS (Intake Well, Raw water Conveynce, Pumping Plants, CP tank, Tranmission Lines etc for catering water demend upto year 2048)<br>New Over Head Water Tanks (O.H.T) MI<br>Rehabilitation Of Existing Over Head Tanks | <b>414.75</b> | <b>AMRUT</b>     |

| Sr. No. | Objective                                      | Activities   | Cost in Cr. | Financing Source |
|---------|--|--|-------------|------------------|
|         |  | Rehabilitation Of Existing Zps & Cwr For Only Surface Water Supply<br>NEW ZPS & CWR (includes rising main, pumping plant, transmission lines)<br>ENHANCEMENT IN EFFICIENCY OF EXISTING WATER Treatment Plant<br>AUGMENTATION OF NEW WATER WORKS (Water Treatment Plant, Clear water feeder main, Campus works, Staff quarters etc. For catering water demand upto year 2048) |             |                  |
| 4.      | To improve Quality of water.                   | Establishment/Rehab Of Water Testing Lab<br>Implementation Of Online Water Testing & Monitoring Systems<br>Water Testing Devices   | 8.50        | ULB              |
| 5.      | To increase recovery Cost & service efficiency | Online Billing , Tracking System & Spot Billing Machine<br>Rehabilitation And Expansion Of Payment Collection Center   | 14.28       | AMRUT            |

Question: How can the activities be converged with other programme like JICA/ ADB funded projects in the city etc? (100 words)

NA

Question: What are the options of completing the ongoing activities? (75 words)  
There is no ongoing activity.

Question: How to address the bottlenecks in the existing project and lessons learnt during implementation of these projects? (75 words)

**While conducting similar projects the delay has been encountered in railway crossing, or Pipe lying in forest AREA, or crossing river canal via NHAI bridges The permission do so may consume lot of time.**

Question: What measures may be adopted to recover the O&M costs? (100 words)

- 100% metering should be insured.
- The house connections shall be given in open for more that 2-3 houses.

- **Volumetric tariff shall be apply.**

Question: Will metering system for billing introduced?

**Yes. Metering will be introduce under AMRUT**

Question: Whether reduction in O&M cost by addressing NRW levels be applied? (75 words)

**Yes**

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

Yes

**THE ALTERNATIVE ACTIVITIES TO MEET THESE ACTIVITIES BE DEFINED AS PER TABLE**

Table: Alternative Activities To Meet Objectives

| <b>Sr. No.</b> | <b>Objective</b>                     | <b>Activities</b>  | <b>Cost in Cr.</b> | <b>Financing Source</b> |
|----------------|--------------------------------------|--|--------------------|-------------------------|
| <b>1.</b>      | <b>To achieve Universal Coverage</b> | Gap In Existing Water Supply-Length With Household Connections<br>House Old Connection<br>Expansion Of Water Supply Distribution Wih Household Connection-Uncovered Pockets<br>House Old Connection  | <b>224.5</b>       | <b>AMRUT</b>            |
| <b>2.</b>      | <b>To reduce NRW</b>                 | Leakage Detection And Its Removal<br>Replacement Of Old Lines ( Chocked, Damaged, Defunged, Sluice Valve)<br>Water Supply Zoning Of Service Area .<br>100% Implementation Of Metering .<br>Automisation Of Pumping Plantl Thorough Scada   | <b>151.23</b>      | <b>AMRUT</b>            |
| <b>3.</b>      | <b>To increase Per Capita Supply</b> | AUGMENTATION OF NEW WATER PRODUCTION SYSTEMS (Intake Well, Raw Water Conveyance, Pumping Plants, CP Tank, Transmission Lines Etc For Catering Water Demend Upto Year 2048)<br>NEW OVER HEAD WATER TANKS (O.H.T) ML<br>REHABILITATION OF EXISTING OVER HEAD TANKS<br>REHABILITATION OF EXISTING ZPS & CWR FOR ONLY SURFACE WATER SUPPLY<br>NEW ZPS & CWR (Includes Rising Main, Pumping Plant, Transmission Lines)<br>ENHANCEMENT IN EFFICIENCY OF EXISTING WATER Treatment Plant<br>AUGMENTATION OF NEW WATER WORKS (Water Treatment Plant, Clear Water Feeder Main, Campus Works, Staff Quarters Etc. For Catering Water Demend Upto Year 2048) | <b>414.75</b>      | <b>AMRUT</b>            |

| Sr. No. | Objective                                      | Activities   | Cost in Cr. | Financing Source |
|---------|--|--|-------------|------------------|
| 4.      | To improve Quality of water.                   | Establishment/Rehab Of Water Testing Lab<br>Implementation Of Online Water Testing & Monitoring Systems<br>Water Testing Devices | 8.50        | ULB              |
| 5.      | To increase recovery Cost & service efficiency | Online Billing , Tracking System & Spot Billing Machine<br>Rehabilitation And Expansion Of Payment Collection Center             | 14.28       | AMRUT            |

## 4. Citizen Engagement

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

Question: Has all stakeholders involved in the consultation?

**Yes stakeholders involved in consultation on 28 July 2015 in Board meeting held in Nagar Nigam Jhansi**

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

**YES Ward/zone level consultation held in the city details is below**

| Sl.No. | Type of Consultation  | Date of the Consultation | Mode of Consultation   |
|--------|---|--------------------------|--|
|        | (e.g. Board Meeting, Ward Committee meeting, Zone Committee, Public Meetings etc. ) |                          | (eg. through media, newspaper, internet, website, pamphlets, Audio ) |
| 1      | Public Meetings   | 23-07-2015               | Pamphlets  |
| 3      | Ward Committee/Public Meeting   | 05-08-2015               | Other  |
| 4      | Ward Committee/Public Meeting   | 17-09-2015               | Other  |
| 5      | Ward Committee/Public Meeting   | 22-09-2015               | Other  |
| 6      | Ward Committee/Public Meeting   | 22-09-2015               | Other  |

|    |                               |            |       |
|----|-------------------------------|------------|-------|
| 7  | Ward Committee/Public Meeting | 23-09-2015 | Other |
| 8  | Ward Committee/Public Meeting | 24-09-2015 | Other |
| 9  | Ward Committee/Public Meeting | 29-09-2015 | Other |
| 10 | Ward Committee/Public Meeting | 05-10-2015 | Other |

Question: Has alternative proposed above are crowd sourced?

**No**

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

**The feedback on the suggestion will be invited on web site [www.jnnjhasi.com](http://www.jnnjhasi.com)**

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

**YES**

Question: What methodology adopted for prioritizing the alternatives?

**More benefit with low cost.**

## 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?

AMRUT is only source of funding as per the Guideline State Government, Central Government and ULB.

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

**Yes, projects is being converged with other program and schemes**

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

**Yes, projects have been prioritized based on “more with less” approach**

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

**Yes, the universal coverage approach indicated in AMRUT guidelines are being followed for prioritization of activities**

## 6. Conditionalities

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

The land requirements for water works for zones and treatment Plants are available. No environmental clearance is required for this project. At three places pipeline has to cross railway track, for which provision of trenchless laying of pipe is done. Approximately 500 mts pipeline has to be laid in cantonment area discussion which has been done and application for clearance has been initiated.

## 7. 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.

**ULB will ensure environmentally sustainable water supply scheme and resilience factor would be built in.**

## 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 250 words

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

Once the activities of water supply project is finalized and prioritize after consultations the total estimated cost is considered to be financed under AMRUT. The O&M cost is to be beard by the revenue collected by the scheme. The financial plan and percentage share will be as per the guidelines of AMRUT and as per the discussions with ULB after the DPR of this project is prepared.

Question: list of individual projects which is being financed by various stakeholders ?

**Project will be funded by GOI, State & ULB funds under AMRUT**

Question: Has financial plan prepared for identified projects based on financial convergence and consultation with funding partners?

As per government guidelines.

Question: Is the proposed financial structure is sustainable? If so then whether project has been categorized based on financial considerations ?



**Yes, the financial structure is sustainable**

Question: Have the financial assumptions been listed out ?

**Yes, 50% funds will be provided by GOI and remaining will be provided by state and uLB.**

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

YES

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

**Yes, financial plan includes percentage share of different stakeholders**

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

**Yes, it includes financial convergence with various ongoing projects**

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

**Yes, it provides year-wise milestones and outcomes**

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.

| S.No. | Objective                                 | Project Name   | Priority number | Year in which to be implemented | Year in which to be completed | Estimated Cost |
|-------|---|--|-----------------|---------------------------------|-------------------------------|----------------|
| 1     | To achieve Universal Coverage             | GAP IN EXISTING WATER SUPPLY-LENGTH WITH HOUSEHOLD CONNECTIONS<br>House old connection<br>EXPANSION OF WATER SUPPLY DISTRIBUTION WITH HOUSEHOLD CONNECTION- UNCOVERED POCKETS<br>House old connection                                |                 | 2016                            | 2018                          | 224.5          |
| 2     | To make system efficient by NRW REDUCTION | LEAKAGE DETECTION AND ITS REMOVAL<br>REPLACEMENT OF OLD LINES ( CHOKED,DAMAGED,DEFUNDED,SLUICE VALVE)<br>WATER SUPPLY ZONING OF SERVICE AREA .<br>100% IMPLEMENTATION OF METERING .<br>AUTOMISATION OF Pumping PlantL THOROUGH SCADA | 2               | 2016                            | 2018                          | 151.23         |
| 3     | To increase Per Capita Supply             | AUGMENTATION OF NEW WATER PRODUCTION SYSTEMS (Intake Well, Raw water Conveyance, Pumping Plants, CP tank, Transmission Lines etc for catering water demend upto year 2048)<br>NEW OVER HEAD WATER TANKS (O.H.T) ML                   |                 | 2017                            | 2020                          | 414.75         |

|   |                                     |  |   |      |      |               |
|---|-------------------------------------|--|---|------|------|---------------|
|   |                                     | REHABILITATION OF EXISTING OVER HEAD TANKS<br>REHABILITATION OF EXISTING ZPS & CWR FOR ONLY SURFACE WATER SUPPLY<br>NEW ZPS & CWR (includes rising main, pumping plant, transmission lines)<br>ENHANCEMENT IN EFFICIENCY OF EXISTING WATER Treatment Plant<br>AUGMENTATION OF NEW WATER WORKS (Water Treatment Plant, Clear water feeder main, Campus works, Staff quarters etc. for catering water demand upto year 2048) |   |      |      |               |
| 4 | <b>To improve Quality of water.</b> | ESTABLISHMENT/REHAB OF WATER TESTING LAB<br>IMPLEMENTATION OF ONLINE WATER TESTING & MONITORING SYSTEMS<br>WATER TESTING DEVICES   | 4 | 2016 | 2017 | 8.50          |
| 5 | <b>To increase recovery Cost</b>    | ONLINE BILLING , TRACKING SYSTEM & SPOT BILLING MACHINE<br>REHABILITATION AND EXPANSION OF PAYMENT COLLECTION CENTER   | 5 | 2016 | 2018 | 14.28         |
|   |                                     | <b>Total</b>   |   |      |      | <b>812.16</b> |

Table 8.1 Master Plan of Water Supply Projects for Mission period  
(As per Table 2.1 of AMRUT guidelines)

(Amount in Rs. Cr)

## 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 |
|---------|--|---|--------------------------|------------------|---------------|----------------|
|         |  |   | Indicator                | Existing (As-Is) | After (To-be) |                |
| 1       | <b>To achieve Universal Coverage</b>             | Coverage of water supply connections    | 100%                     | 35%              | 100%          | 224.5          |
| 2       | <b>To make system efficient by NRW REDUCTION</b> | Extent of metering of water connections | 20%                      | 37%              | 20%           | 151.23         |
| 3       | <b>To increase Per Capita Supply</b>             | Per capita supply of water              | 135 LPCD                 | 125 LPCD         | 135 LPCD      | 414.75         |
| 4       | <b>To improve Quality of</b>                     | Quality of water supplied               | 100%                     | 100%             | 100%          | 8.50           |

| Sr. No. | Project Name                     | Physical Components   | Change in Service Levels |                  |               | Estimated Cost |
|---------|----------------------------------|---|--------------------------|------------------|---------------|----------------|
|         |                                  |   | Indicator                | Existing (As-Is) | After (To-be) |                |
|         | <b>water.</b>                    |   |                          |                  |               |                |
| 5       | <b>To increase recovery Cost</b> | Online Billing , Tracking System & Spot Billing Machine Rehabilitation And Expansion Of Payment Collection Center | 49.3 %                   | 100%             | 100%          | 14.28          |
|         | <b>Total</b>                     |   |                          |                  |               | <b>812.16</b>  |

## ANNUAL FUND SHARING PATTERN FOR WATER SUPPLY 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       | <b>To achieve Universal Coverage</b>             | <b>224.5</b>       | <b>112.25</b>    | <b>112.25</b>    |     |        | <b>224.5</b>  |
| 2       | <b>To make system efficient by NRW REDUCTION</b> | <b>151.23</b>      | <b>75.615</b>    | <b>75.615</b>    |     |        | <b>151.23</b> |
| 3       | <b>To increase Per Capita Supply</b>             | <b>414.75</b>      | <b>207.375</b>   | <b>207.375</b>   |     |        | <b>414.75</b> |
| 4       | <b>To improve Quality of water.</b>              | <b>8.50</b>        | <b>4.25</b>      | <b>4.25</b>      |     |        | <b>8.50</b>   |
| 5       | <b>To increase recovery Cost</b>                 | <b>14.28</b>       | <b>7.14</b>      | <b>7.14</b>      |     |        | <b>14.28</b>  |
|         | <b>Total</b>                                     | <b>812.16 Cr</b>   | <b>406.08 Cr</b> | <b>406.08 Cr</b> |     |        | <b>812.16</b> |

## YEAR WISE PLAN FOR SERVICE LEVELS IMPROVEMENTS

(As per Table 2.5of AMRUT guidelines)

| Proposed Projects                                | Project Cost  | Indicator       | Baseline        | Annual (Incremet from the Baseline Value) Targets |              |             |             |         |                 |
|--|---------------|-----------------|-----------------|---|--------------|-------------|-------------|---------|-----------------|
|  |               |                 |                 | FY 2016   |              | FY 2017     | FY 2018     | FY 2019 | FY 2020         |
|  |               |                 |                 | H1  | H2           |             |             |         |                 |
| <b>To achieve Universal Coverage</b>             | <b>224.5</b>  | <b>100%</b>     | <b>35%</b>      | -   | <b>48%</b>   | <b>74%</b>  | <b>100%</b> |         |                 |
| <b>To make system efficient by NRW REDUCTION</b> | <b>151.23</b> | <b>100%</b>     | <b>37%</b>      | -   | <b>30</b>    | <b>25%</b>  | <b>20%</b>  |         |                 |
| <b>To increase Per Capita Supply</b>             | <b>414.75</b> | <b>135 LPCD</b> | <b>125 LPCD</b> | -   | -            | -           | -           | -       | <b>135 LPCD</b> |
| <b>To improve Quality of water.</b>              | <b>8.50</b>   | <b>100%</b>     | <b>100%</b>     | -   | <b>-100%</b> | <b>100%</b> | -           | -       |                 |
| <b>To increase recovery Cost</b>                 | <b>14.28</b>  | <b>100%</b>     | <b>49.3%</b>    | -   | <b>60%</b>   | <b>80%</b>  | <b>100%</b> |         |                 |