

Telangana Drinking Water Supply Project–Mahabunagar District -Achampet Constitunecy

Objectives and Scope:

Telangana drinking water supply project (TDWSP) is the flagship programme of the newly constituted state of Telangana. The State Government has embarked on a vision to provide safe, adequate, permanent and sustainable water supply to rural, urban and industrial areas by 2019. Apart from water for domestic use, the project is planned to meet the water needs of commercial entities, industrial units, Special Economic Zones, etc.

The project will be integrated with the existing and ongoing water supply schemes which are sustainable. Balance surface water requirements will be planned from the proposed Telangana Drinking Water Supply Project. The requirement of water for drinking, cooking, domestic need will be taken into account at 100 liters per capita per day (LPCD) for rural areas, 135 LPCD for municipalities/Nagar Panchayaths and 150 LPCD for municipal corporations. It is planned to supply water at the door step of every household. Samithis headed by women will manage the rural water supply systems at village level.

Need of the Project

The proposed project is to supply water needs of rural, urban, institutional, commercial and industrial excluding GHMC and its surrounding habitations within ORR of Hyderabad.

The following are major challenges in the water supply which promote to go for state wide several water networks(Grid)utilizing surface water sources mainly major irrigation projects and perennial rivers.

i) Ground water depletion

One of the major problems in this sector is depletion of ground water mainly due to over exploitation and short fall in rainfall.

ii) Ground Water Quality

In parts of Telngana ground water contains high concentration of fluoride and iron deposits in the subsurface strata. With depletion of ground water, the concentration of fluoride, iron and salinity is increasing in the ground water outside range of acceptable standard limits for drinking water requiring treated surface water for human consumption. Total 12 quality affected habitations are identified in the districts with excess fluoride (12Habs), salinity (0Habs), TDS(0Habs.), Nitrates (0Habs.) and Iron(25Habs). However, some of these quality affected habitations are covered in the existing schemes/ongoing schemes with limited supply of quality water.

iii) Ground water pollution

Pollution is also a critical problem both from natural resources, Industrial pollutants, pesticides, nitrates and due to improper disposal of solid and liquid waste etc.,

iv) Sustainability

In water supply sector sustainability of drinking water sources and systems is a major challenge in view of demand for adverse seasonal conditions and simultaneous demand for irrigation.

v) Increasing demand

Due to change in life styles & urbanization, most of the villagers are demanding household connections and increased level of water supply at their door step. Change in perception of people for better living standards is also leading to increased demand for water.

vi) Rural Areas and Urban Areas

Presently separate networks from the same water source are planned for rural areas and urban areas due to which the cost of the project is increasing as the urban areas i.e total 01 municipalities/Nagar Panchayaths are scattered in the Constituency in between rural habitations.

National rural drinking water programme Guidelines provides for "Gradual shift from over dependence on ground water to surface water sources, and conjunctive use of ground water, surface water and rainwater".

District at Glance

Mahabunagar is one of the biggest and backward district in the state, having 14 assembly Constituencies, 02 Parliament Constituencies, spread over 64 Mandals with 3417 Habitations. The population of the district is 40, 53, 028 (2011) of which 6,07,690 is urban population and 34,45,336 is rural population. The geographical area is about 18432 Sqkm, having average annual rain fall about 604.56 mm.

మహబూబ్ నగర్ జిల్లా - అసెంబ్లీ నియోజకవర్గాలు

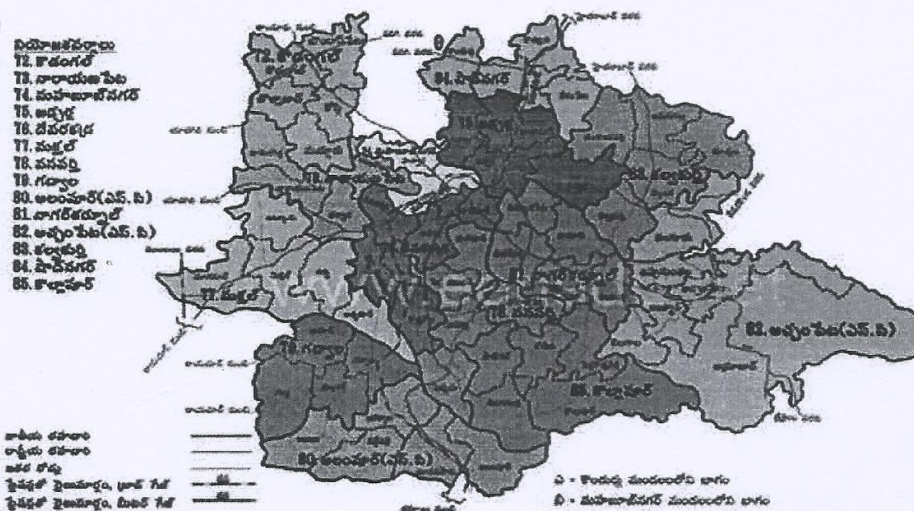


Table 1

| S.No | Constituency Name | Municipalities/Nagar Panchayaths/Corporations | No of Mandals | No of Habs. | SC Habs | ST Habs | Pop 2011 | | |
|-------|-------------------|---|---------------|-------------|---------|---------|----------|--------|--------|
| | | | | | | | Urban | Rural | Total |
| 1 | Achampet | 1 | 6 | 286 | 37 | 119 | 32969 | 245124 | 278093 |
| Total | | 1 | 6 | 286 | 37 | 119 | 32969 | 245124 | 278093 |

Status of Water Supply in the Achampet Constituency

| | | |
|----------|--|------|
| A | The infrastructure available in the Rural areas | |
| 1 | Hand pumps fitted to bore well | 1815 |
| 2 | Single Village Schemes (SVS) | 629 |
| 3 | Multi Village Schemes (MVS) | 1 |
| 4 | Water Quality Testing Laboratories | 1 |
| B | Status of rural habitations as on 1.4.2014 | - |
| 1 | Fully covered habitations (FC) | 79 |
| 2 | Partially covered habitations (PC) | 122 |
| 3 | Quality affected habitations (QA) | 12 |

Salient Features of the TDWSP in Achampet Constituency:

| | | |
|--|---|-----------------|
| Raw Water Source utilized to Cover the Constituency | : | Achampet |
| WTP sutilized to cover the Constituency with capacit | : | Achampet/77 Mld |
| OHBRs/GLBRs No/ Cap.in KL | : | 18/1030 |
| Sumps No/ Cap.In KL | : | 3/2200 |
| Pumping Stations No | : | 03 |
| Power Requirement(MW) | : | 0.373 |
| Transmission Pipeline (Km) | : | 620 |

| Mandals/ ULBs Covered | | Achampet(Rural) | Amrabad | Balmur | Lingala | Uppunuthala | Vangoor | Achampet(Municipalitie) | Total |
|------------------------|------------|-----------------|---------|--------|---------|-------------|---------|-------------------------|--------|
| Habs Covered | | 56 | 39 | 36 | 29 | 40 | 55 | 1 | 256 |
| Population (2011) | | 41450 | 45589 | 38768 | 34979 | 34225 | 50113 | 28425 | 273549 |
| Total Raw Water in TMC | 2018 | 0.05 | 0.05 | 0.04 | 0.03 | 0.04 | 0.05 | 0.05 | 0.31 |
| | 2048 | 0.06 | 0.06 | 0.05 | 0.04 | 0.05 | 0.07 | 0.06 | 0.39 |
| Clear Water 2018 | Domestic | 0.09 | 0.05 | 0.04 | 0.03 | 0.04 | 0.05 | 0.05 | 0.35 |
| | Industries | 0.01 | 0 | 0 | 0 | 0 | 0.01 | 0.01 | 0.03 |
| Clear Water 2048 | Domestic | 0.14 | 0.06 | 0.05 | 0.04 | 0.05 | 0.01 | 0.08 | 0.43 |
| | Industries | 0.02 | 0.01 | 0.01 | 0 | 0 | 0.07 | 0.01 | 0.12 |

Methodology of Coverage of Achampet Constituency:

It is proposed to tap cleare Water from Segment-I at Nagapoor village of Gopalpet Mandal to cover all the 5 Mandals of Achampet Assembly Constituency both rural and Urban areas and 2 Habitations including Achampet Municipalitie of Achampet Assembly Constituency,remaining 55 habitations of Vangoor Mandal which are considering under Kalwakurthy secondary Segment as per existing Topography.

i) Design Population :-

Population Forecast

The design population is worked out by duly considering @ 0.80% growth rate for rural habitations and 2% growth rate for urban areas of Census-2011 respectively, and industrial demand is considered.

ii) Design parameters are as follows:

1. Raw water demand for Rural : 105 liters per capita per day
2. Raw water demand for Urban : 152 liters per capita per day
3. Clear water demand for Rural : 100 liters per capita per day
4. Clear water demand for Urban : 135 liters per capita per day
5. Hours of Operation : 22 Hours
6. Population Census year : 2011
7. Base Year Considered : 2018
(Commissioning)


| AREA STATEMENT - SEGMENT - 1 / 8 - Achampeta (WLM) | | | | | | |
|--|----------------|----------|-------------|---------|---------|---------------|
| Set | Structure type | Pipe Dia | Length In m | width m | Area_Ha | Total Area_Ha |
| 1 | PIPELINE | 75 | 1735.056 | 0.700 | 0.121 | 0.121 |
| 2 | PIPELINE | 400 | 1402.829 | 3.500 | 0.491 | 1.926 |
| | PIPELINE | 400 | 937.000 | 3.500 | 0.328 | |
| | PIPELINE | 400 | 1302.819 | 3.500 | 0.456 | |
| | SUMP | - | - | - | 0.35 | |
| | SUMP | - | - | - | 0.301 | |
| 3 | PIPELINE | 180 | 5697.294 | 1.000 | 0.570 | 0.570 |
| 4 | PIPELINE | 75 | 1358.486 | 0.700 | 0.095 | 0.095 |
| 5 | PIPELINE | 125 | 1444.366 | 0.700 | 0.101 | 0.101 |
| 6 | PIPELINE | 160 | 2377.398 | 0.700 | 0.166 | 0.166 |
| 7 | PIPELINE | 75 | 937.462 | 0.700 | 0.066 | 0.066 |
| 8 | PIPELINE | 180 | 751.963 | 1.000 | 0.075 | 0.204 |
| | PIPELINE | 75 | 1836.371 | 0.700 | 0.129 | |
| 9 | PIPELINE | 180 | 6986.160 | 1.000 | 0.699 | 0.699 |
| 10 | PIPELINE | 100 | 2338.116 | 0.700 | 0.164 | 0.285 |
| | PIPELINE | 100 | 759.642 | 0.700 | 0.053 | |
| | PIPELINE | 80 | 299.614 | 0.700 | 0.021 | |
| | PIPELINE | 100 | 667.147 | 0.700 | 0.047 | |
| 11 | PIPELINE | 80 | 8078.143 | 0.700 | 0.565 | 0.607 |
| | PIPELINE | 80 | 603.557 | 0.700 | 0.042 | |
| 12 | PIPELINE | 140 | 1448.779 | 0.700 | 0.101 | 0.101 |
| 13 | PIPELINE | 75 | 638.875 | 0.700 | 0.045 | 0.045 |
| TOTAL | | | 41601.077 | | 4.986 | 4.986 |

Statement of Forest area for Achampet segment (1/8)

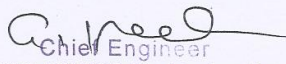
| S.No | DIVISION | BLOCKNAME | SECTION | RANGE | BEAT | COMP_NO | Length | Width | Dia | AREA IN Ha |
|------|--------------|-----------|-------------|----------|-----------------|---------|----------|-------|-----|------------|
| 1 | 4 | 5 | 6 | 7 | 8 | 9 | | | | 10 |
| 1 | ACHAMPET WLM | AMRABAD | RANGAPUR | ACHAMPET | BOMMANAPALLY | 60 | 1735.056 | 0.700 | 75 | 0.121 |
| 2 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | MACHARAM-(S) | 61 | 1402.829 | 3.500 | 400 | 0.491 |
| 3 | ACHAMPET WLM | AMRABAD | RANGAPUR | ACHAMPET | BOMMANAPALLY | 61 | 937.000 | 3.500 | 400 | 0.328 |
| 4 | ACHAMPET WLM | AMRABAD | MANNANUR | MANNANUR | MANNANUR-(N) | 61 | 1302.819 | 3.500 | 400 | 0.456 |
| 5 | ACHAMPET WLM | AMRABAD | SIDDAPUR | ACHAMPET | SIDDAPUR-(E) | 67 | 5697.294 | 1.000 | 180 | 0.570 |
| 6 | ACHAMPET WLM | PADMARAM | SIDDAPUR | ACHAMPET | SIDDAPUR-(E) | 482 | 1358.486 | 0.700 | 75 | 0.095 |
| 7 | ACHAMPET WLM | GHANPUR | SIDDAPUR | ACHAMPET | MANNEVARI PALLY | 486 | 1444.366 | 0.700 | 125 | 0.101 |
| 8 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | AMRABAD | 194 | 2377.398 | 0.700 | 160 | 0.166 |
| 9 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | MACHARAM-(S) | 229 | 937.462 | 0.700 | 75 | 0.066 |
| 10 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | PADARA | 79 | 751.963 | 1.000 | 180 | 0.075 |
| 11 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | PADARA | 81 | 1836.371 | 0.700 | 75 | 0.129 |
| 12 | ACHAMPET WLM | AMRABAD | AMRABAD | AMRABAD | PADARA | 158 | 6986.160 | 1.000 | 180 | 0.699 |
| 13 | ACHAMPET WLM | AMRABAD | IPPALAPALLY | AMRABAD | MAREDUGU | 141 | 2338.116 | 0.700 | 100 | 0.047 |
| 14 | ACHAMPET WLM | AMRABAD | IPPALAPALLY | AMRABAD | MAREDUGU | 144 | 759.642 | 0.700 | 100 | 0.164 |
| 15 | ACHAMPET WLM | AMRABAD | IPPALAPALLY | AMRABAD | MAREDUGU | 144 | 299.614 | 0.700 | 80 | 0.053 |
| 16 | ACHAMPET WLM | AMRABAD | MADDIMADUGU | AMRABAD | MADDIMADUGU | 146 | 667.147 | 0.700 | 100 | 0.021 |
| 17 | ACHAMPET WLM | AMRABAD | MADDIMADUGU | AMRABAD | MADDIMADUGU | 133 | 8078.143 | 0.700 | 80 | 0.565 |
| 18 | ACHAMPET WLM | AMRABAD | MADDIMADUGU | AMRABAD | MADDIMADUGU | 133 | 603.557 | 0.700 | 80 | 0.042 |
| 19 | ACHAMPET WLM | AMRABAD | LINGAL | LINGAL | LINGAL | 27 | 1448.779 | 0.700 | 140 | 0.101 |
| 20 | ACHAMPET WLM | AMRABAD | LINGAL | LINGAL | LINGAL | 480 | 638.875 | 0.700 | 75 | 0.045 |
| 21 | ACHAMPET WLM | AMRABAD | RANGAPUR | ACHAMPET | INOLE | 60 | Sump | | | 0.350 |
| 22 | ACHAMPET WLM | AMRABAD | MANNANUR | MANNANUR | MANNANUR-(N) | 61 | Sump | | | 0.301 |
| | | | | | | | | | | 4.986 |

DETAILS OF SURVEY INSTRUMENTS USED

| S.No | Name of the Agency | Instruments used | Persons involved | Period of Survey |
|------|--------------------|------------------------------|-----------------------|------------------|
| 1 | M/s MEIL | 1.DGPS make:Trimble (R3 &R4) | Mr.Gopal Rao,Surveyor | December,2015 |

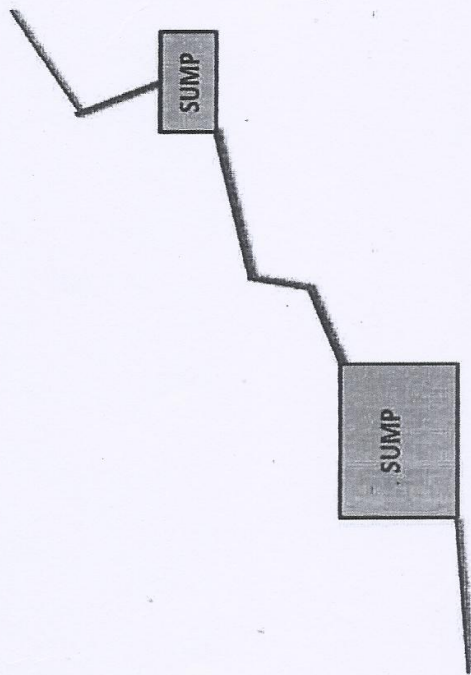

 Superintending Engineer
Superintending Engineer
 TDWSP Circle, Mahabubnagar
 Mahabubnagar.

"Counter Signed"


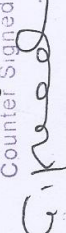

 Chief Engineer
 TDWSP (RWS&S), Hyderabad.
 Chief Engineer

TDWSP, Hyderabad

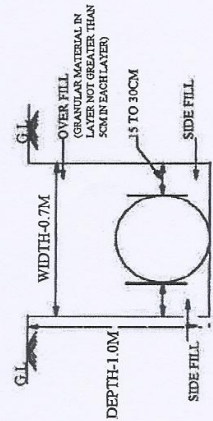
FLOW DIAGRAM
TELANGANA DRINKING WATER SUPPLY PROJECT
SEGMENT-1/8, MAHABOBNAGAR DISTRICT.
ACHAMPETA SEGMENT



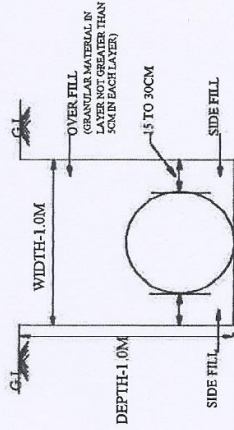
| LEGEND | |
|---------------------|----------|
| ITEM | PROPOSED |
| PIPE LINES | |
| FOREST LINE | |
| STRUCTURE IN FOREST | |



 Superintending Engineer
 TDWSP Circle, Mahabobnagar
 Mahabobnagar
 "Counter Signed"
 Counter Signed
 Chief Engineer
 TDWSP Circle, Mahabobnagar
 Mahabobnagar

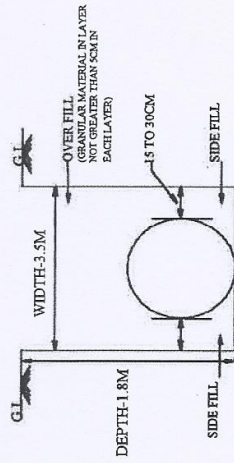
TELANGANA DRINKING WATER SUPPLY PROJECT SEGMENT-1/8 ACHAMPETA
MAP SHOWING PIPELINE CROSS-SECTION IN FOREST AREA OF ACHAMPETA DIVISON



HDPE PIPE DETAIL
(75 MM TO 160MM)



HDPE PIPE DETAIL
(160 MM TO 180MM)



DI PIPE DETAIL
(180 MM TO 400MM)

