HYDERABAD METROPOLITAN WATER SUPPLY & SEWERAGE BOARD

WELCOMES
ON
World Water Day Programme

Water Leadership and Conservation (WaLc)

22-Mar-2019

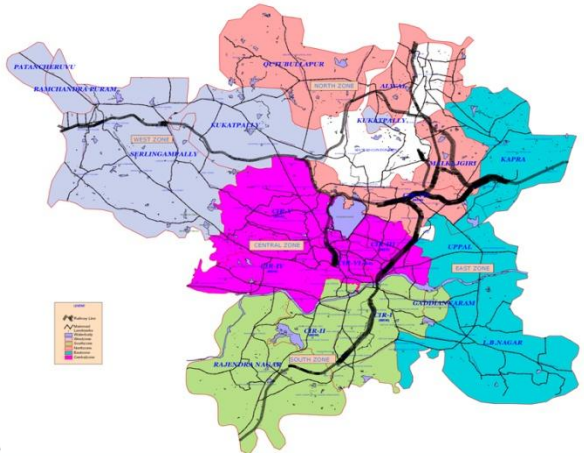
SALIENT FEATURES

HMWSSB

SERVICE AREA - **1628 Sq.kms**

- ❖ Core City area - 169.30 Sq.kms
- ❖ Peripheral Circles Area - 518.90 Sq.Kms
- ❖ ORR Villages Area - 939.80 Sq.Kms

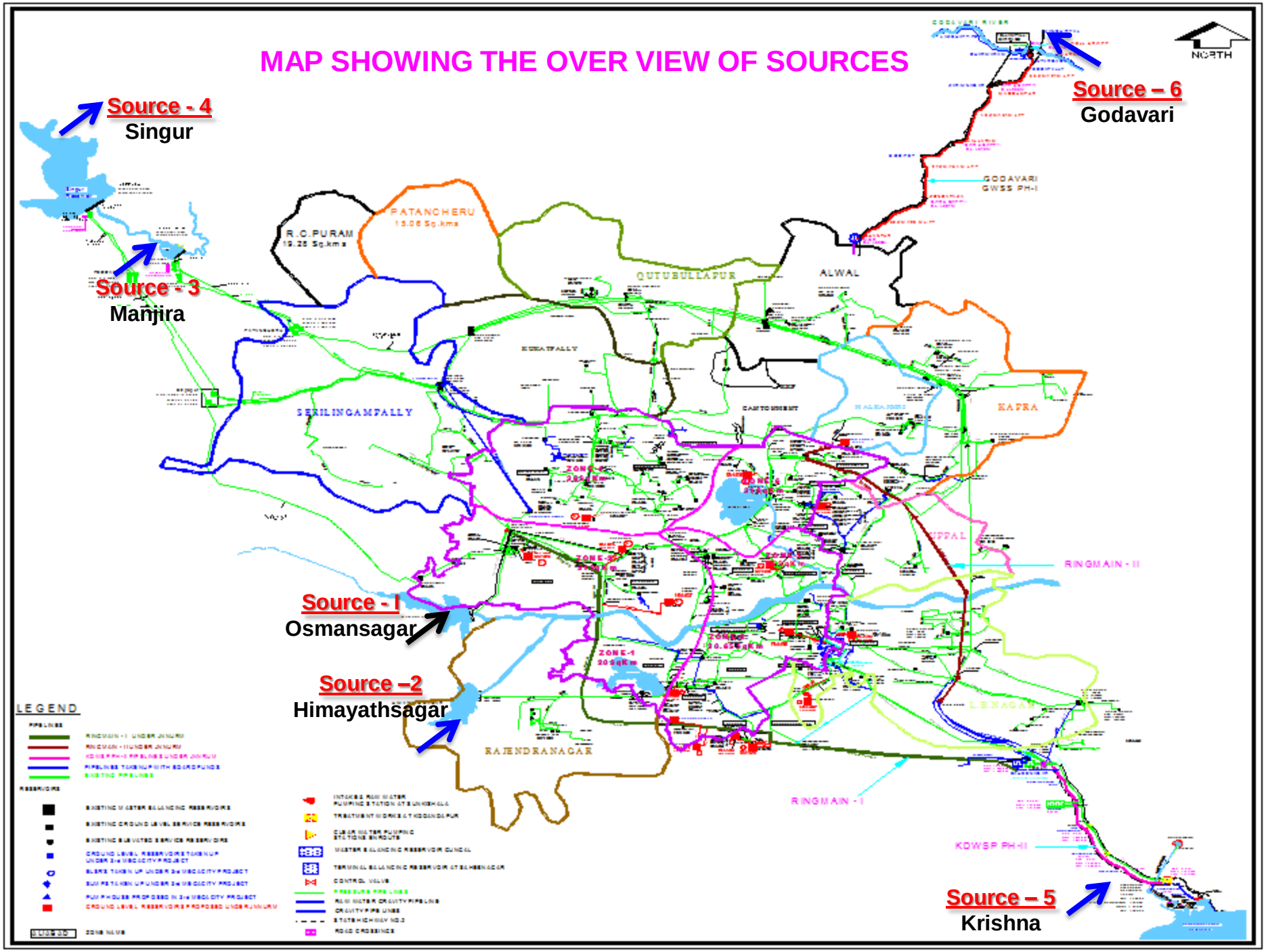
MCH & Peripheral Areas



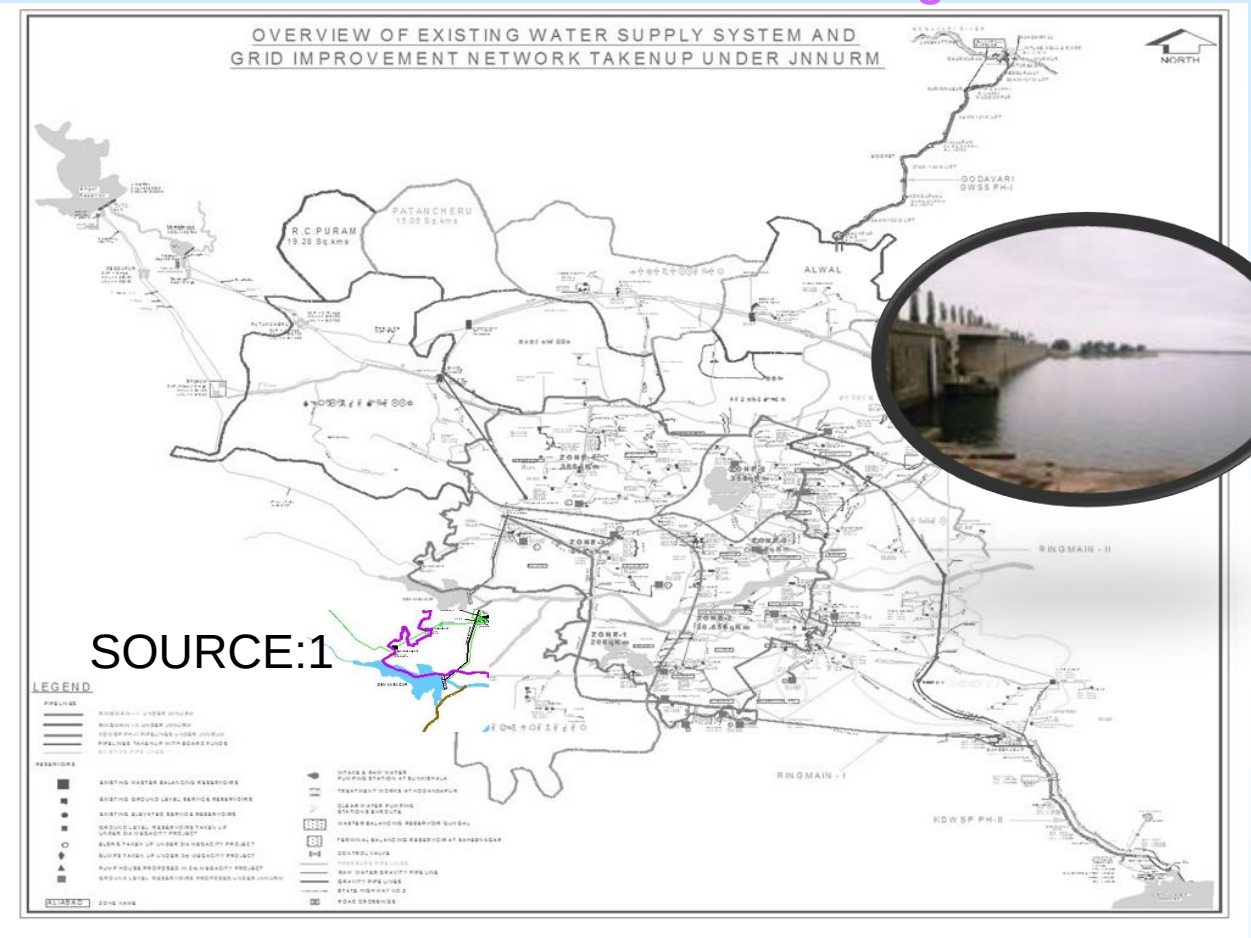
SALIENT DETAILS OF WATER SUPPLY

- ❖ **Length of Raw Water Mains : 144 Km**
- ❖ **Length of Treated Water Mains : 1200 Km**
- ❖ **Length of Distribution Network : 8051 Km**
- ❖ **Present Supply Quantity : 448 MGD**
- ❖ **No of Connections : 9.75 Lakhs**
- ❖ **Monthly operating Revenue : Rs. 114.00 Crores**
- ❖ **Monthly Operating Expenditure : Rs. 115.00 Crores**
- ❖ **Total No of Employees : 4631**

MAP SHOWING THE OVER VIEW OF SOURCES

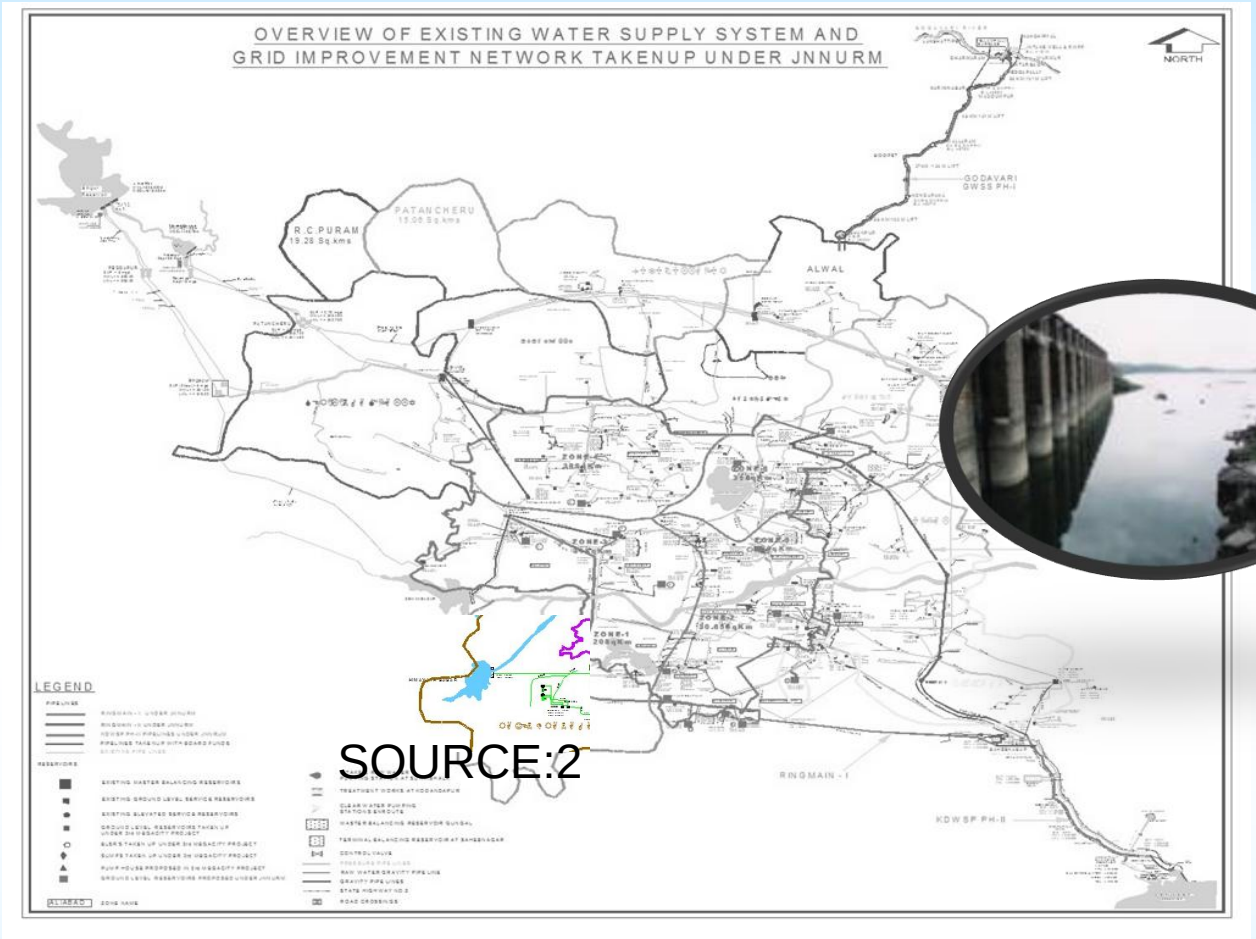


Details of Source 1 - Osmansagar



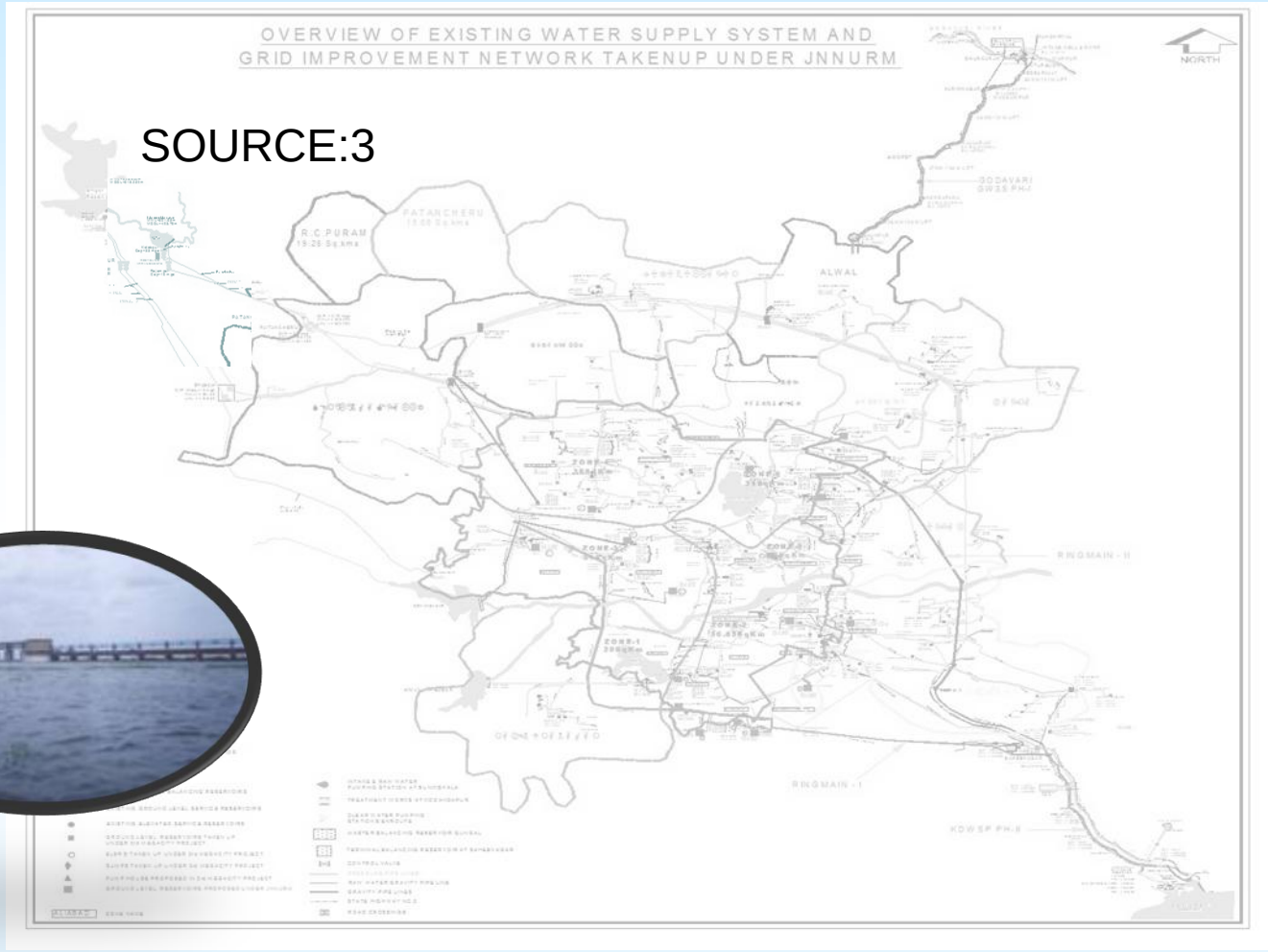
- **Name of Source** : Osman Sagar
- **Normal / Present Drawls** : 25 Mgd / 18 Mgd
- **Drawl mode from Source** : Gravity

Details of Source 2 - Himayatsagar



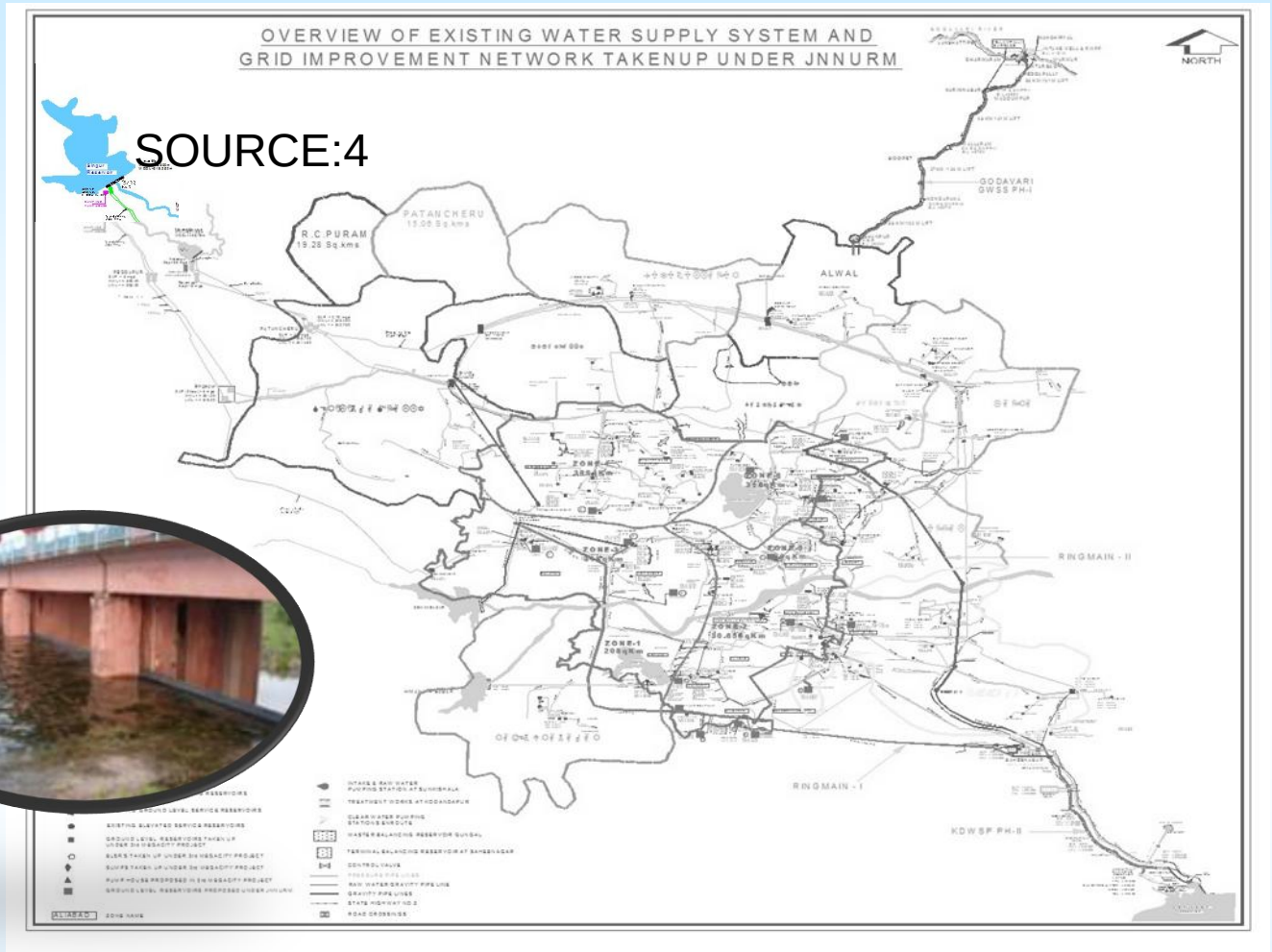
- **Name of Source** : Himayatsagar
- **Normal / Present Drawls** : 15 Mgd / 7 Mgd
- **Drawl mode from Source** : Gravity

Details of Source 3 - Manjira



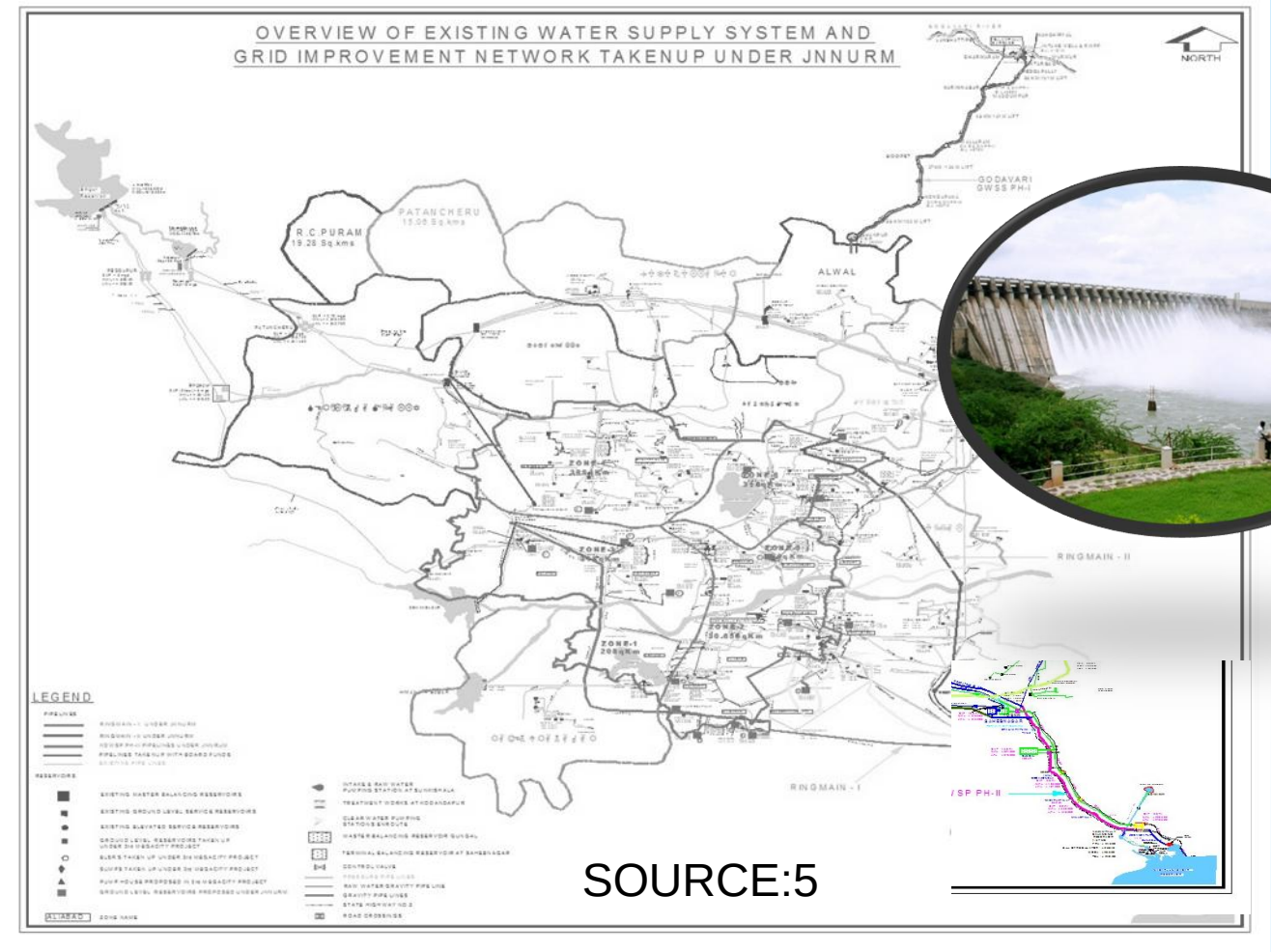
- **Name of Source** : Manjeera
- **Normal / Present Drawls** : 45 Mgd / NIL
- **Drawl mode from Source** : Pumping

Details of Source 4 - Singur



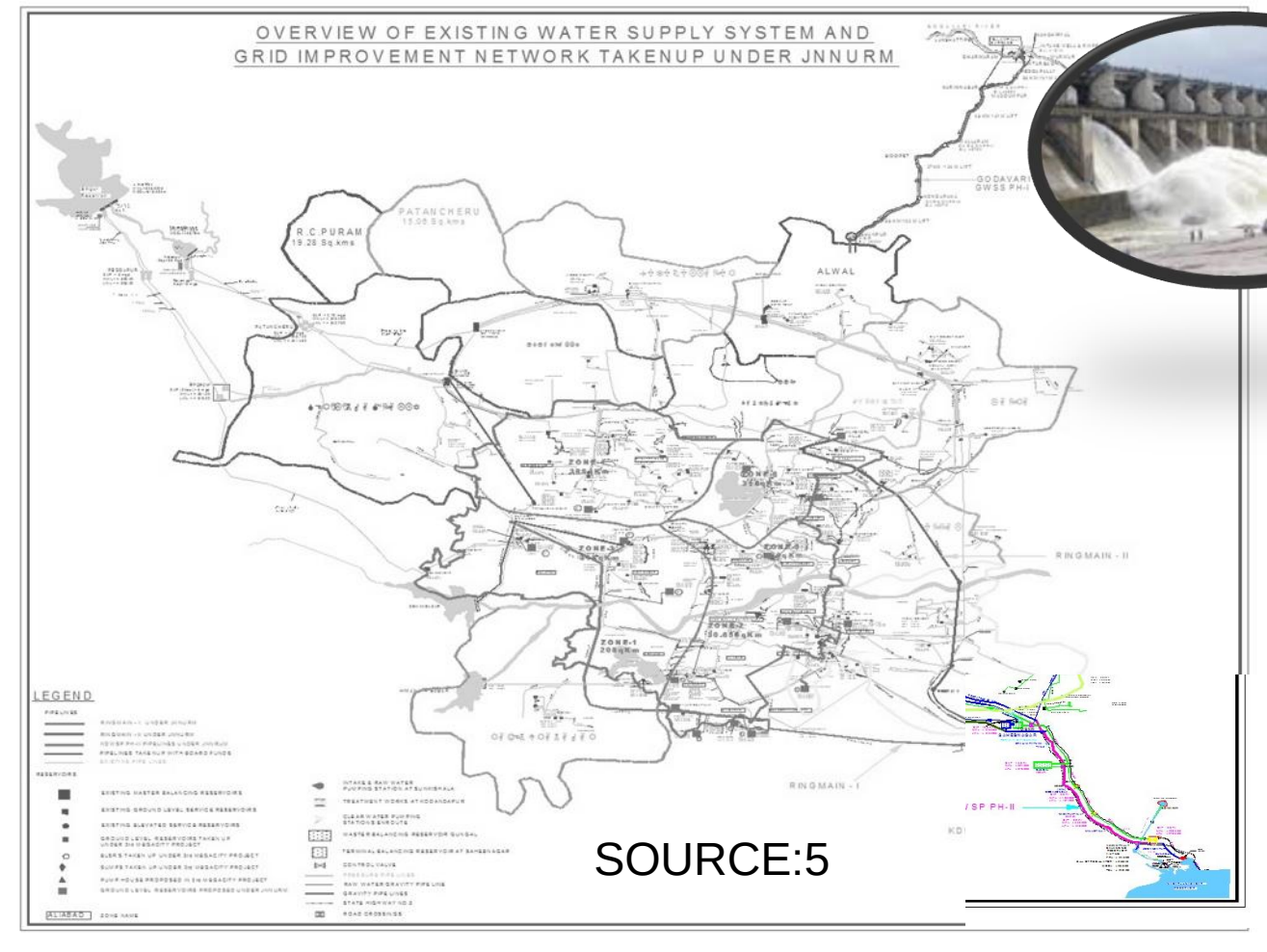
- **Name of Source** : Singur
- **Normal / Present Drawls** : 75 Mgd / NIL
- **Drawl mode from Source** : Pumping

Details of Source 5 - Krishna



- **Name of Source** : **Akkampally (Krishna Ph-I,II,III)**
- **Normal / Present Drawls** : **270 Mgd.**
- **Drawl mode from Source** : **Pumping**

Details of Source 6 - Godavari



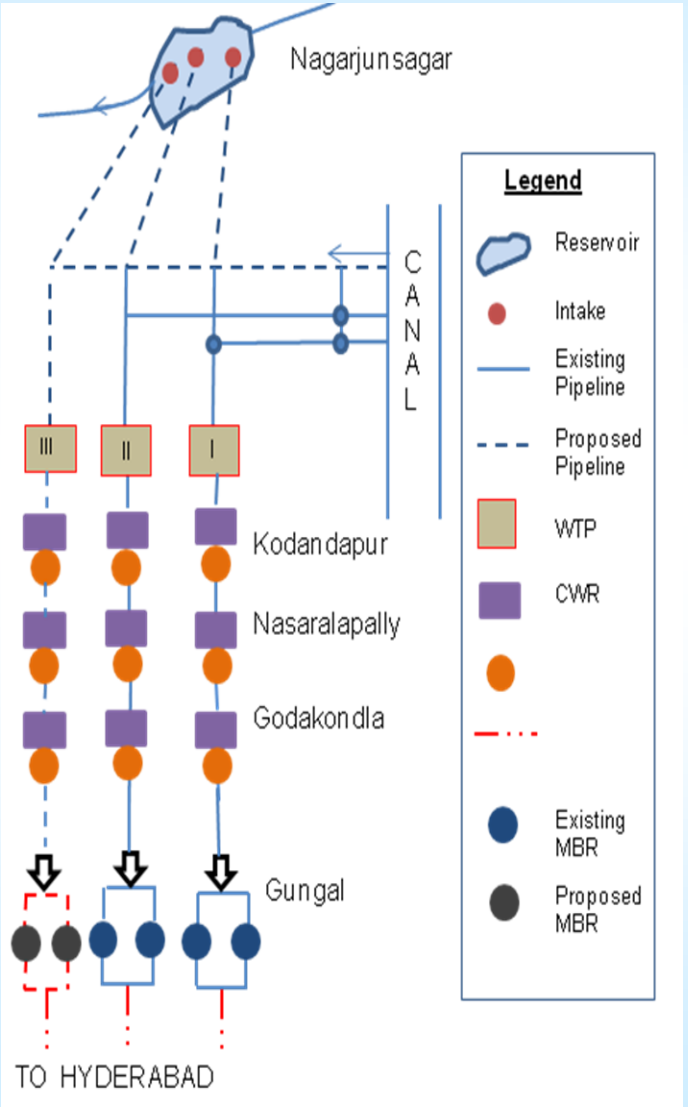
- **Name of Source** : **Yellampally (Godavari Ph-I)**
- **Normal / Present Drawls** : **172 Mgd / 153 Mgd**
- **Drawl mode from Source** : **Pumping**

Existing Water Supply Sources

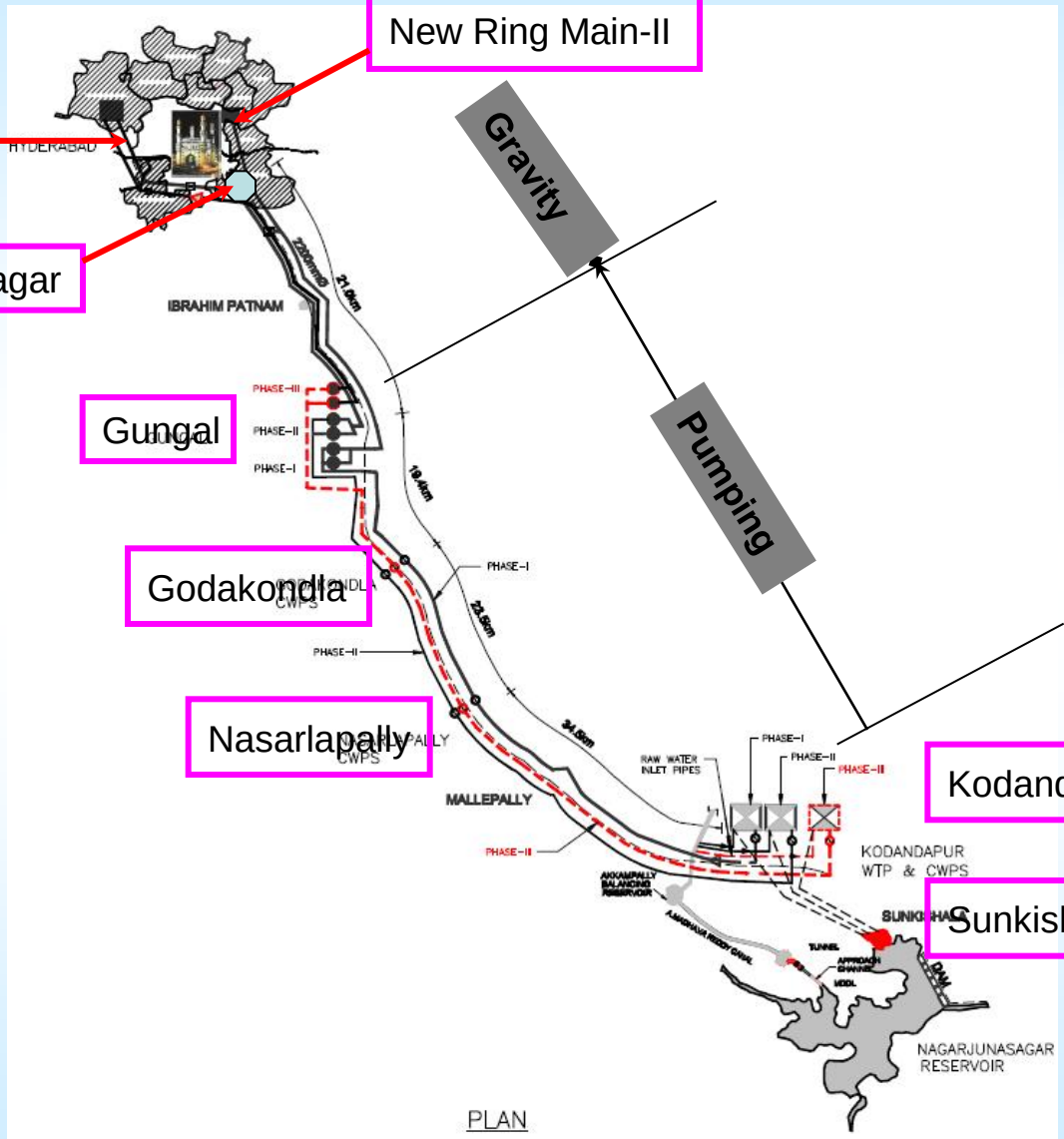
Name of Source		Normal Drawls (in Mgd)	Present Drawls (in Mgd)	Drawl mode from Source
	Osmansagar	25	18	Gravity
	Himayatsagar	15	7	Gravity
	Manjira	45	---	Pumping
	Singoor	75	---	Pumping
	Krishna Akkampally (Krishna Ph-I, II & III)	270	270	Pumping
	Godavari Yellampally (Godavari Ph-I)	172	153	Pumping
	TOTAL	602	448	

Krishna System – Salient Features

- Total Water Quantity - 270 Mgd (16.5 TMC)
- Length of pumping mains - 110 Km
- Length of Ring Mains - 56 Km
- Pumping Head - 402 M
- No of pumping stages - 3 stage
- Power Requirement - 32 MW
- Cost of production - 40/- per KL
- WTPs at Kodandapur
- Clear Water Reservoirs and Pumping Stations at Kodandapur, Nasarlapally, Godakondla
- MBRs at Gungal



Krishna 3 Stage Pumping System



Godavari System – Salient Features

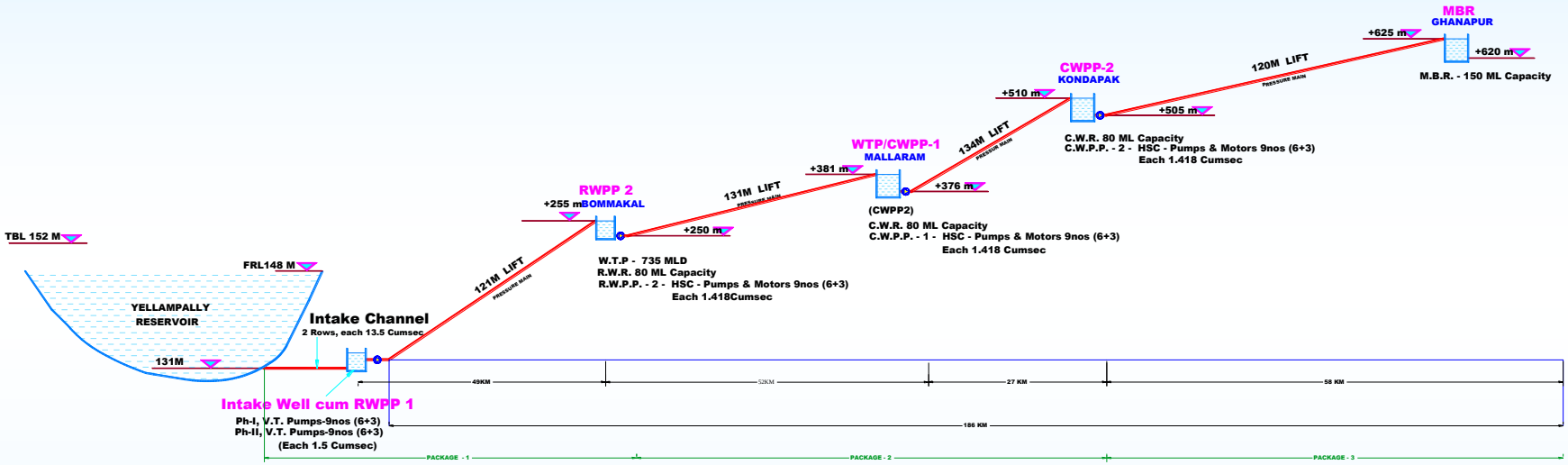
- Total Water Quantity - 172 Mgd (10 TMC)
- Length of Pumping Mains - 186 Km
- Length of Ring Mains - 58 Km
- Pumping Head - 489 M
- No of pumping stages - 4 stages
- Power Requirement - 72 MW
- Cost of production - 45 /- per KL

- Raw water channel & Intake sump-cum-Pump House at Murmur
- Raw Water Pipeline from Murmur to Bommakal to Mallaram
- Raw Water Reservoir & Pumping Station at Bommakal
- Water Treatment Plant (WTP) at Mallaram
- Clear Water Reservoirs and Pumping Stations at Mallaram, Kondapaka
- Clear Water Pipelines from Mallaram to Ghanpur
- MBR at Ghanpur

Godavari 4 Stage Pumping System

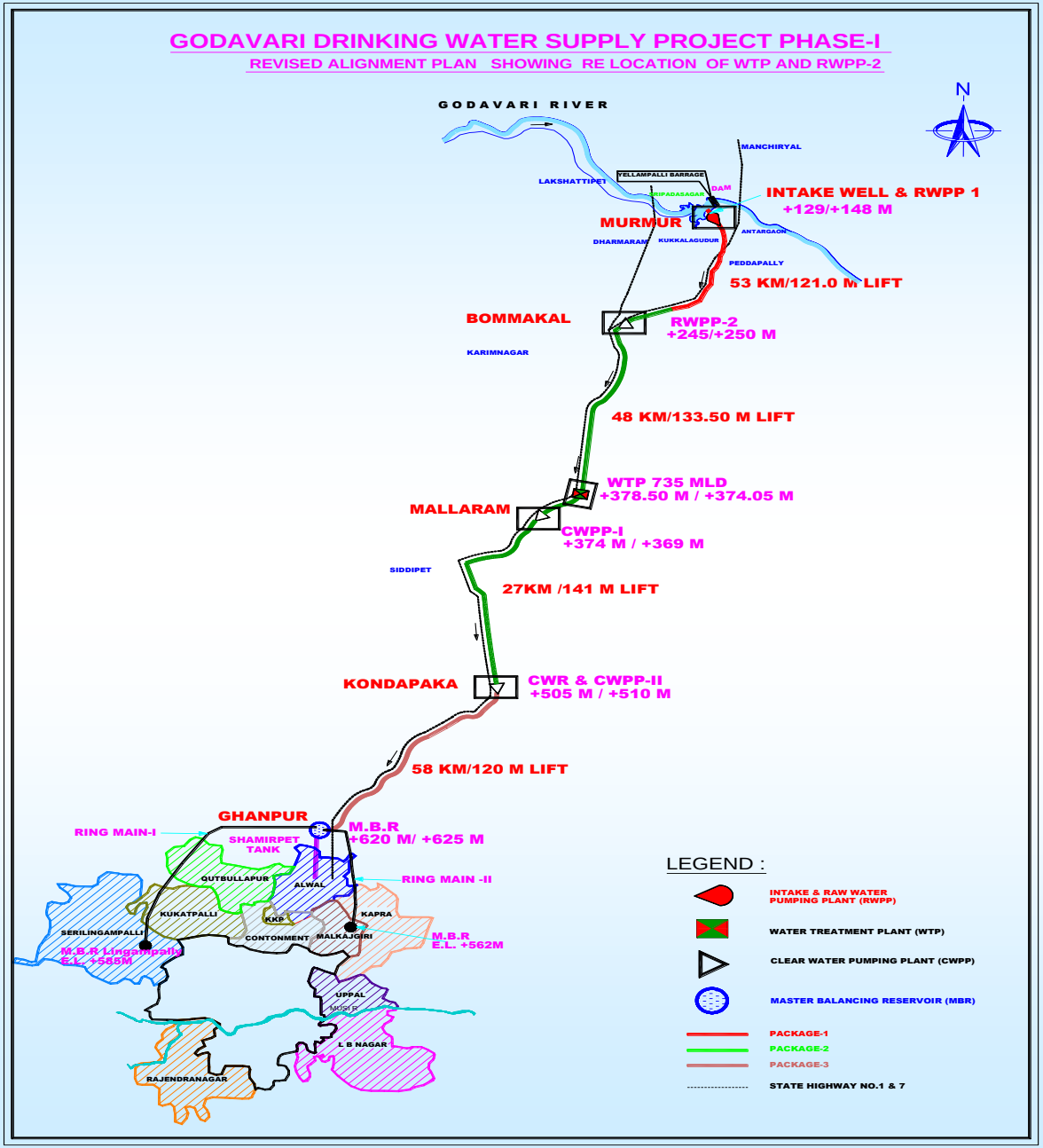
GODAVARI DRINKING WATER SUPPLY PROJECT PHASE - I

SCHEMATIC LONGITUDINAL PROFILE FOR WATER CONVEYANCE SYSTEM FROM YELLAMPALLI BARRAGE TO HUA(REVISED)



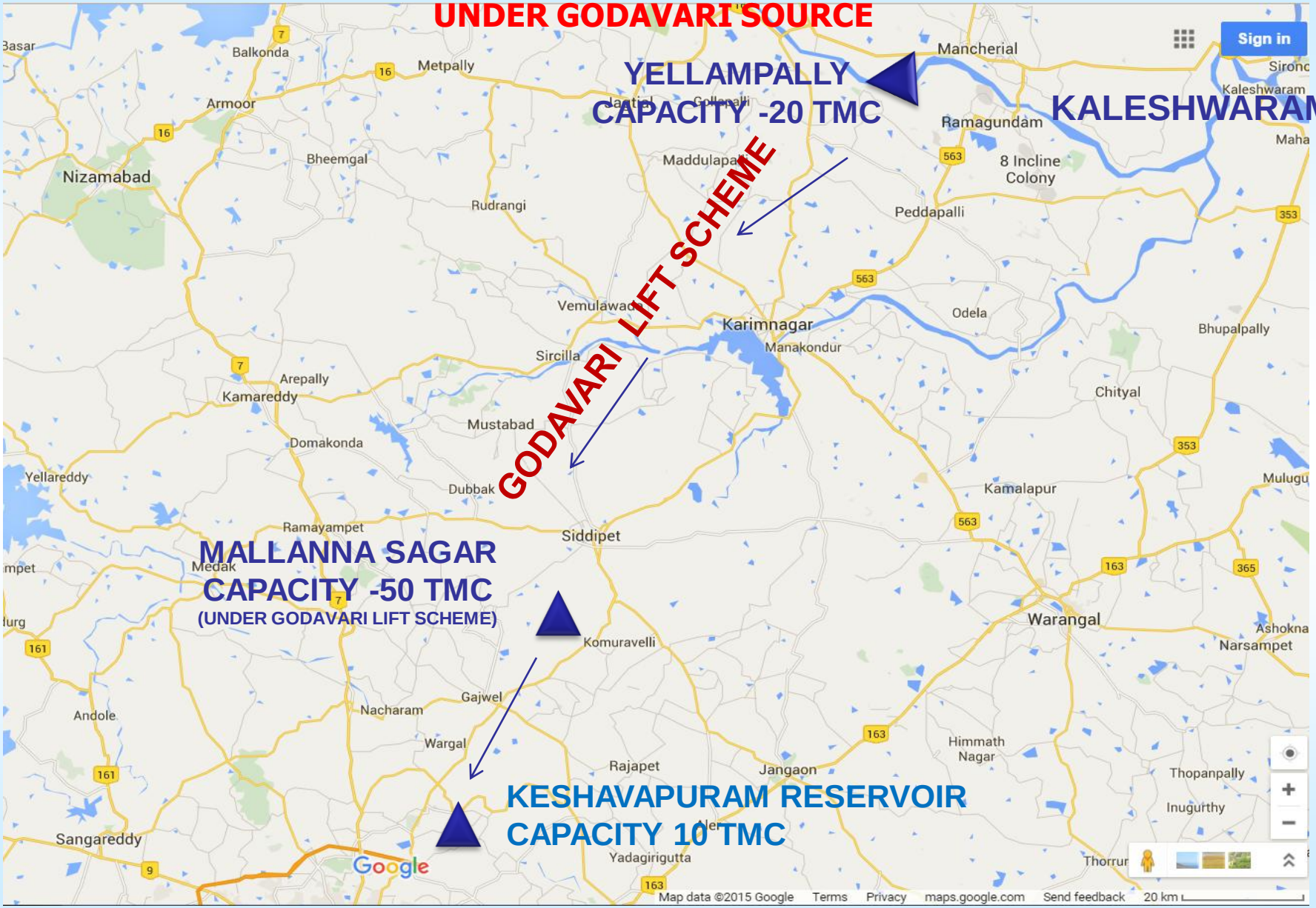
R.W.P.P.	RAW WATER PUMPING PLANT
W.T.P.	WATER TREATMENT PLANT
C.W.P.P.	CLEAR WATER PUMPING PLANT
C.W.R.	CLEAR WATER RESERVOIR
M.B.R.	MASTER BALANCING RESERVOIR

Godavari 4 Stage Pumping Alignment

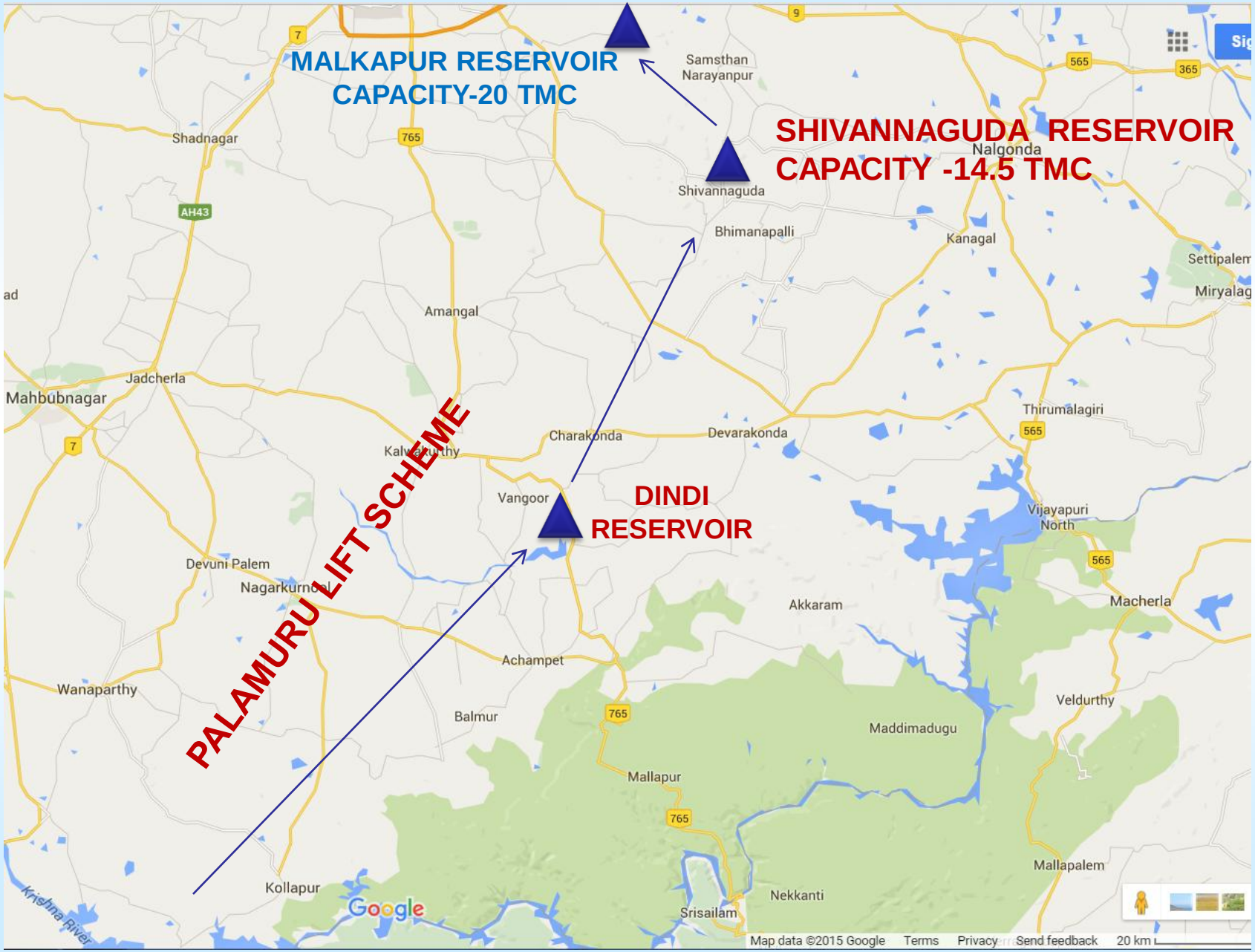


Future Sources

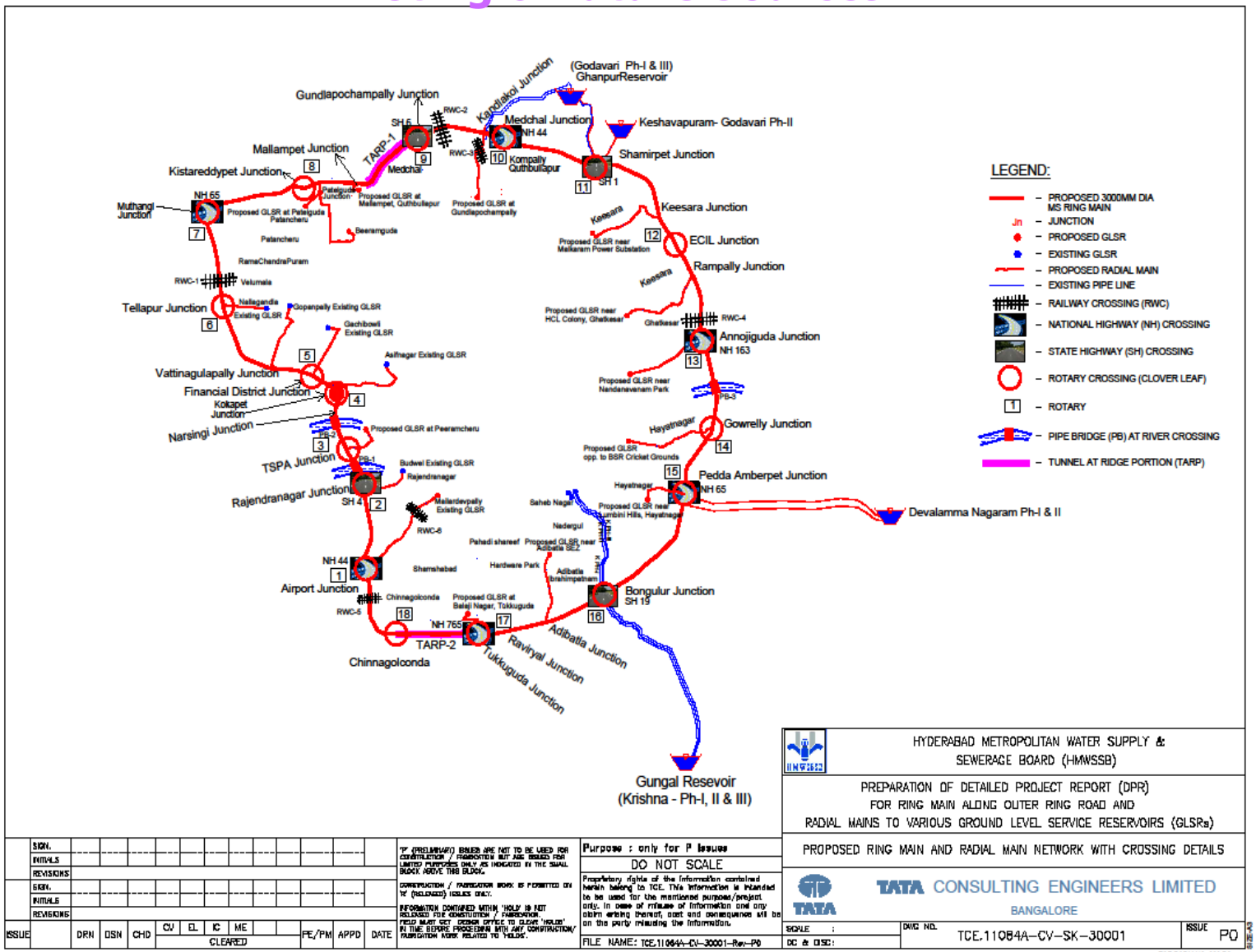
PROPOSED 10 TMC STORAGE RESERVOIR AT KESHAVAPURAM UNDER GODAVARI SOURCE



PROPOSED 10 TMC STORAGE RESERVOIR AT DEVALAMMANAGARAM UNDER KRISHNA SOURCE



Ring Main along the ORR for Integration of all Existing & Future Sources



HYDERABAD METROPOLITAN WATER SUPPLY & SEWERAGE BOARD (HMWSSB)

PREPARATION OF DETAILED PROJECT REPORT (DPR)
FOR RING MAIN ALONG OUTER RING ROAD AND
RADIAL MAINS TO VARIOUS GROUND LEVEL SERVICE RESERVOIRS (GLSRs)

PROPOSED RING MAIN AND RADIAL MAIN NETWORK WITH CROSSING DETAILS

TATA CONSULTING ENGINEERS LIMITED
BANGALORE

Purpose : only for P Issues

DO NOT SCALE

DWG NO. TCE.11084A-CV-SK-30001

ISSUE P0

FILE NAME: TCE.11084A-CV-SK-30001-Rev-P0

TCE FORM NO. 003 R0

Water Supply Consumer Categories

- BPL Families : 1,82,292 Nos (18.6%)
- Domestic : 7,52,263 Nos (77.1%)
- Commercial : 35,376 Nos (3.59%)
- Bulk & Industries : 2110 Nos
- PSPs : 3,589 Nos

Total : **9,75,560**

Size wise Connections:

15 mm	:	9,29,746 Nos (95.32%)	
20mm	:	35,341 Nos (3.6%)	
25mm	:	7,320 Nos	(1.08%)
40mm	:	1,171 Nos	
50mm	:	940 Nos	
More than 50mm	:	1042 Nos	
Total		**9,75,560 Nos**	

Production Cost

- Krishna System - Rs.40/- per KL

- Godavari System - Rs.45/- per KL

Water Tariff

DOMESTIC CATEGORY:

Slab (in Kilo Liters per Month)	Water Charges (in Rs.)	Sewerage Cess	
0-15	7.00	35%	Over Water Demand
0-15	10.00		
16-30	12.00		
31-50	22.00		
51-100	27.00		
101-200	35.00		
Above 200 (Entire Quantity)	40.00		

COMMERCIAL CATEGORY:

Slab (in Kilo Liters per Month)	Water Charges (in Rs.)	Sewerage Cess	
0-15	20.00	35%	Over Water Demand
16-100	35.00		
101-200	50.00		
Above 200 (Entire Quantity)			

INDUSTRIAL CATEGORY:

Slab (in Kilo Liters per Month)	Water Charges (in Rs.)	Sewerage Cess	
0-15	25.00	35%	Over Water Demand
16-100 (within GHMC)	40.00		
101-200 (within in GHMC)	60.00		
Above 200 (Within GHMC - Entire Quantity)			
Water Based Units within GHMC (Entire Quantity)	100.00	-	-
Water Based Units Outside GHMC area (Entire Quantity)	120.00	-	-

BULK & MSB CATEGORY:

Sl. No.	Category	Water Charges		Sewerage Cess
		Upto agreed quantity	Beyond agreed quantity	
I	**Within GHMC**			
a)	Housing Colonies / Gated Communities	Rs.10/- per KL	Rs.40/- per KL	35% on water demand
II	**Outside GHMC Area**			
a)	Housing Colonies / Gated Communities	Rs.13.50/- per KL	Rs.54/- per KL	No sewerage charges
b)	Cantonment Board	Rs.13.50/- per KL	Rs.54/- per KL	No sewerage charges
c)	Commercial / Industrial connections	Rs.90/- per KL for entire quantity	---	No sewerage charges

Category Wise Supplied Quantity

Sl.No	Category	No.of Connections	Quantity (in MGD)
1	Domestic	732604	172.00
2	Slums	182292	30.36
3	Commercial	35376	28.50
4	Bulk	529	130.00
5	MSBs	19659	45.06
6	Industries	1581	27.30
7	PSPs	3589	6.74
Total		**975560**	**448 MGD**

Supplied and Billed Quantity

Year	Supplied Qty (MGD)	Billed Qty (MGD)	Unbilled Qty (MGD)	Percentage Unaccounted
2014-15	340.00	199.26	140.74	41.39%
2015-16	340.00	201.03	138.97	40.87%
2016-17	380.00	228.00	152.00	40.0%
2017-18	430.00	261.66	168.34	39.15%
2018-19	448.00	277.55	170.45	38.04%

ANALAYSIS ON UNBILLED QUANTITY
UFW MATRIX - FEBRUARY-2019

(Qty. in MGD)

System Input Volume : 448.00 MGD	Authorised Consumption	Billed Authorised Consumption	1	Billed Metered Consumption	161.04	Revenue Water	277.55
			2	Billed Un-Metered Consumption	116.46		
		Unbilled Authorised Consumption	3	Unbilled Metered Consumption	4.31	Non-Revenue Water	170.45
			4	Unbilled Un-Metered Consumption	0.85		
	Water Losses	Apparent Losses	5	Unauthorised Consumption	21.99		
			6	Customer Metering Inaccuracies	38.30		
		Real Losses	7	Leakage on Transmission / Distribution Mains	35.00		
			8	Leakages & Seepages at Storage Tanks	35.00		
			9	Leakages on Service Connections / Wastage	35.00		

Division Wise UFW

UFW- 1 STATEMENT SHOWING THE DIVISION WISE DETAILS OF SUPPLIED QUANTITY AND BILLED QUANTITY FOR THE MONTH OF FEBRUARY- 2019

Sl No.	Divn. No.	No. of Connections	Supplied Qty. in MGD	Billed Qty.		NRW	TOTAL					UFW	UFW%
				in LKL	in MGD		PSP's	Religious / Charity	Qty. of Water Tanker	Total in KL	Total in MGD		
1	I	58686	24.50	11.67	8.56	15.94	11490	1060	38704	51254	0.38	15.57	3.47
2	II	94930	54.00	20.49	15.02	38.98	8235	969	15911	25115	0.18	38.79	8.65
3	III	68740	23.00	17.69	12.97	10.03	7000	2445	6570	16015	0.12	9.91	2.21
4	IV	43850	17.00	11.88	8.71	8.29	11338	6524	4916	22778	0.17	8.12	1.81
5	V	72286	26.00	20.54	15.06	10.94	17662	2192	12280	32134	0.24	10.70	2.38
6	VI	84872	41.00	28.55	20.93	20.07	9710	2833	106426	118969	0.87	19.19	4.28
7	VII	64439	30.00	17.63	12.93	17.07	28561	2927	29550	61038	0.45	16.63	3.71
8	VIII	130	13.00	10.60	7.77	5.23	0	0	0	0	0.00	5.23	1.16
9	IX	81458	23.00	27.10	19.87	3.13	7237	1020	68402.5	76659.5	0.56	2.57	0.57
10	X	107604	28.80	26.82	19.66	9.14	3200	1460	36471.5	41131.5	0.30	8.83	1.97
11	XI	41	25.20	22.18	16.26	8.94	0	0	6364.5	6364.5	0.05	8.89	1.98
12	XII	66771	17.00	15.49	11.36	5.64	870	1035	42550	44455	0.33	5.32	1.18
13	XIII	66803	16.50	15.41	11.30	5.20	11490	195	13321	25006	0.18	5.02	1.12
14	XIV	62415	16.05	15.68	11.50	4.55	6280	825	24908.5	32013.5	0.23	4.32	0.96
15	XV	58815	24.00	34.36	24.00	0.00	59365	540	66236	126141	0.92	0.00	0.00
16	XVI	33044	10.00	8.25	6.05	3.95	6600	3498	14470	24568	0.18	3.77	0.84
17	XVIII	2732	3.20	4.02	2.95	0.25	0	0	0	0	0.00	0.25	0.05
18	XIX	2774	5.50	3.71	2.72	2.78	0	0	0	0	0.00	2.78	0.62
19	XX	3018	2.25	2.64	1.94	0.31	0	0	0	0	0.00	0.31	0.07
20	XXI	66	48.00	81.61	48.00	0.00	0	0	0	0	0.00	0.00	0.00
TOTAL:		**973474**	**448.00**	**396.32**	**277.55**	**170.45**	**189038**	**27523**	**487081**	**703642**	**5.16**	**166.21**	**37.10**

UFW % =UFW Quantity/Total supplied Quantity
=166.49MGD/448MGD
=37.10%

Conventional Approaches to Reduce the Leakages / Unaccounted for Water

- Meters to be fixed for all consumer connections.
- Install Bulk meters for all reservoirs.
- Install Bulk meters for all DMA Units of Section

- Change of leaking house service connection pipes.

- Replace old distribution pipelines / valves.
- Replace leaking transmission lines.
- Arrest leakages from old reservoirs.

Conventional Approaches to Reduce the Leakages / Unaccounted for Water ....

- Increasing billing efficiency.
- Conduct Water audit.
- Conduct Energy audit.
- Use of latest leak detection equipment.
- Identify and remove illegal connections.

New Approaches for Reduction UFW –

Experts Opinions

- Formation of **WaLc** Network

THANK YOU