



HMWSSB



HYDERABAD  
METROPOLITAN  
WATER SUPPLY &  
SEWERAGE BOARD

**Presentation**

On

**THE STATUS OF WATER & SANITATION  
IN HYDERABAD METRO CITY**

**ICRIER's Workshop on Water & Sanitation**

**06-Feb-2013**

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# SOURCES

Source Name	River	Year of construction	Storage Capacity (TMC)	Distance from city "Km"	Installed Capacity (Mgd)	Present Drawls ( Mgd)
Osmansagar	Musi	1920	3.90	15 (Gravity)	25	25
Himayatsagar	Esi	1927	2.967	9.6 (Gravity)	15	15
Manjira – Phase I & II	Manjira	1965 & 1981	1.500	58 (Pumping)	45 (15+30)	45
Manjira – Phase III & IV	Manjira	1991 & 1994	30.00	80 (Pumping)	75 (37 + 38)	75
Krishna Ph-I	Krishna	2004/05	90.00	116 (Pumping / Gravity)	90	90
Krishna Ph-II	Krishna	2006-08	90.00	116 (Pumping / Gravity)	90	90
<b>Total</b>			<b>39.816</b>		<b>340</b>	<b>340</b>



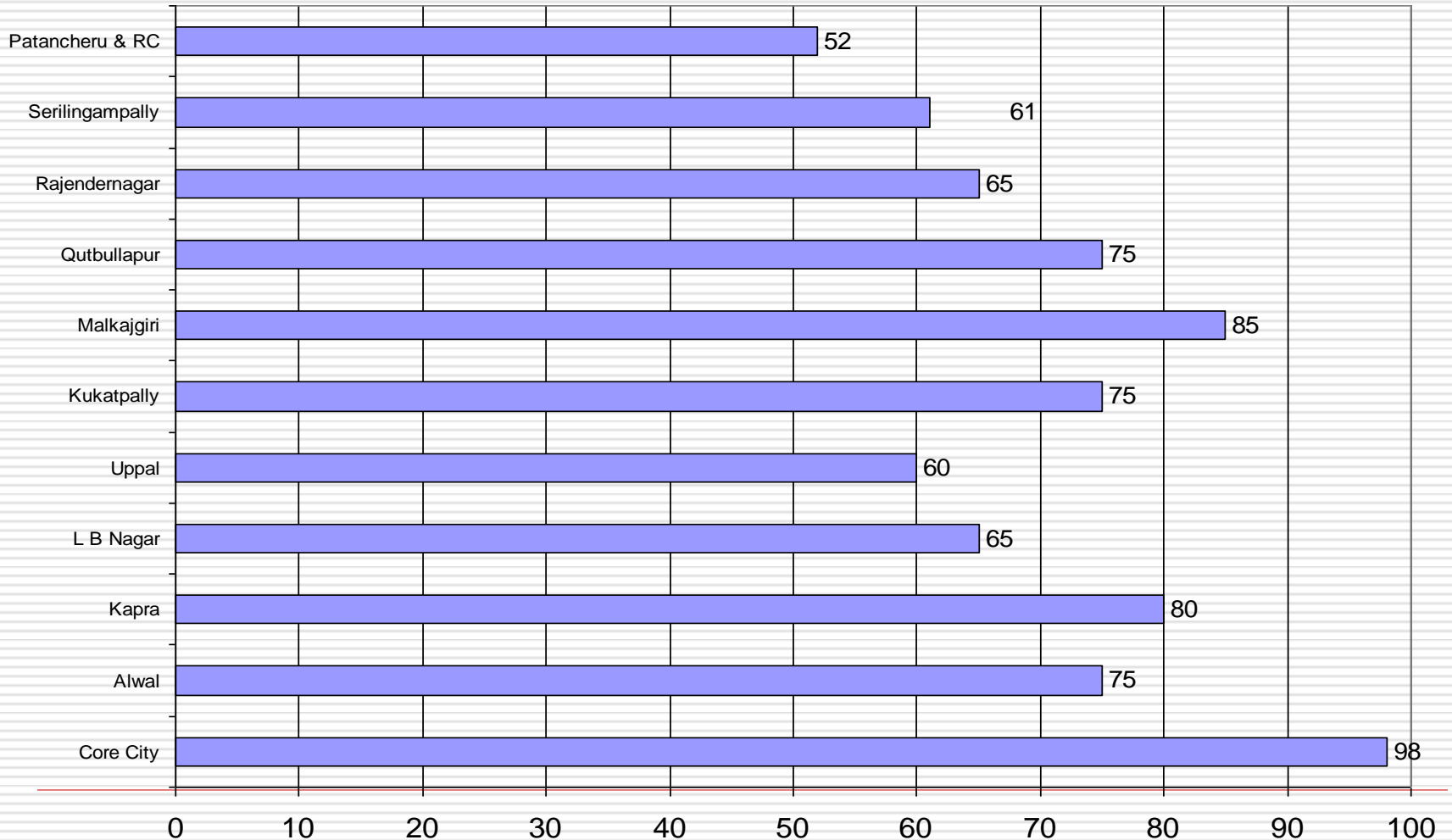
## Population, Demand, Supply, Surplus / Deficit

Year	Population projections for GHMC area In Lakhs	Projected Water Demand (in Mgd)	Dependable draws from existing sources (in Mgd)	Proposed Augmentation (in Mgd)	Deficit / Surplus (in Mgd)
2012	87.52	459.00	271.50	---	(-) 187.50
2013	90.34	480.20	443.50	172.00 **	(-) 36.70
2014	91.75	490.80	533.50	90.00 *	(+) 42.70
2017	100.06	522.60	533.50	---	(+) 10.90

\*\* Addition is subject to commissioning of Godavari Phase-I Project.

\* Addition is subject to commissioning of Krishna Phase-III Project.

# Water Supply Coverage (Core City & Peripheral Areas)





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# **Challenges and Steps Taken /Steps Proposed to Meet the Challenges**

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# Challenges



## Gap between demand and supply

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- ❖ **The Present demand is 480 Mgd. Supply is 340.00 Mgd i.e. gap is 140 Mgd**
  - ❖ **Heavy Urbanisation and Industrialisation.**
  - ❖ **Merger of peripheral Municipalities in GHMC Without completion of new schemes.**
  - ❖ **Even without peripheral municipalities, already there was a gap.**
  - ❖ **Pressure from surrounding villages and municipalities for additional draws from the schemes meant for the City.**
  - ❖ **Not much emphasis on water recycling.**
  - ❖ **Depletion of Ground Water levels because of poor RWH and encroachment of lakes and development in catchment areas.**
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# Ground Water Levels during December month

## (For the period from 2005 to 2012)

Sl. no	Mandal / Zone	Dec'05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Rise / fall of Dec'12 with ref Dec'05	Rise / fall of Dec'12 with ref Dec'11
1	Ameerpet	11.75	18.61	18.05	17.0 <sub>1</sub>	7.5	17.98	19	19.10	-7.35	-0.10
2	Asifnagar	2.10	2.93	5.74	2.98	3.4	2.7	5.8	3.50	-1.5	2.20
3	Bandlaguda	5.88	7.75	7.96	7.05	7.04	6.12	9.6	8.20	-2.32	1.40
4	Charminar	4.70	5.85	5.96	4.4	6	3	8.7	8.22	-3.52	0.48
5	Maredpally	8.70	13.2	17.09	11.4	14.25	14.51	24	19.65	-10.95	4.35
6	Nampally	2.21	2.56	3.41	3.8	5.4	4.34	9.2	5.20	-2.99	4.00
7	Shaikpet	2.40	2.58	1.92	2.47	3.2	2.83	3.6	2.90	-0.50	0.70
8	Saidabad	4.15	4.75	5.4	3.04	5	2.95	5.8	3.80	0.35	2.00
<b>AVERAGE</b>		<b>5.24</b>	<b>7.28</b>	<b>8.19</b>	<b>6.52</b>	<b>6.47</b>	<b>6.8</b>	<b>10.71</b>	<b>8.33</b>	<b>-5.47</b>	<b>2.38</b>



# Challenges

## Infrastructure deficiencies:

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- ❖ Old and insufficient network, Old pumps and motors resulting frequent breakdowns in core city area system
  - ❖ Absence / inadequate network i.e. storage reservoirs, feeder mains, distribution network etc., in merged peripheral municipal areas.
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# Steps taken

## Old Network & Insufficient Network

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- ❖ The water supply system in the old city was developed in phases since 1927 onwards after construction of Osmansagar & Himayatsagar Reservoir systems.
  - ❖ Particularly in the old city, the pipeline network has become very old and also the pipe material was also AC/RCC resulting frequent leakages and breakdowns including the old pumps and motors.
  - ❖ As such, as a part of remodelling the system in old city areas, seven new reservoirs with inlet, outlet mains and distribution network is taken up under the JnNURM which is nearing completion at a cost of Rs.150 Crores.
  - ❖ Further, the minor extensions and improvements at old network areas are also being taken up with the State Budget
  - ❖ Whereas, in the newly merged municipal areas, there was insufficient network and inadequate storage reservoirs. As such, detailed project reports for creation of infrastructure are formulated and posed for JICA loan assistance
  - ❖ Replacement of old pumps and motors are being taken up under State budget programme.
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# Challenges

## **Problems with existing sources:**

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- ❖ Osmansagar and Himayatsagar sources contributes about 40 Mgd out of 340 Mgd
  - ❖ These sources have become unreliable because:
    - Developments in the catchment areas
    - Siltation
    - Poor rainfall in catchment areas
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# Steps taken

## Problems with Existing Sources:

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- ❖ Government of Andhra Pradesh issued orders vide GO Ms.No.111 restricting the developmental activities within 10 Km radius in and around the catchment areas of these sources
  - ❖ Monitoring committees were constituted with the revenue authorities, police for prevention of encroachments, habitations and developments etc
  - ❖ Plantation taken up along the foreshore at full reservoir levels
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# Challenges

## High Cost of Production of Water:

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- ❖ Hyderabad is situated at elevated location of average 500 M contour.
  - ❖ Whereas, the raw water sources are situated at lower levels with long distances. For example
  - ❖ Singur source is at 510 M contour at a distance of 75 Km but it has to cross the ridge of 620 m contour to bring water to Hyderabad city
  - ❖ Krishna source is at 220 M contour at a distance of 110 Km
  - ❖ Godavari source is at 120 M contour at a distance of 186 Km
  - ❖ Cost of water of existing sources is Rs.22.28/-KL. The Krishna Phase-III cost works out to Rs.33/- KL and Godavari Phase-I cost works out to Rs.38/- KL. Presently the average cost being charged at Rs.26/- KL which is just meeting the O&M cost.
  - ❖ Old infrastructure also contributes high maintenance and power cost
  - ❖ Regular steep increase in power tariff. Presently they are charging at Rs 3.90 per unit which resulted increased of additional Rs.4 Crores per month to HMWSSB. TRANSCO is planning another 30% increase in tariff.
  - ❖ Increased cost of chemicals, wages and other maintenance cost.
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# Steps taken

## High Cost of Production of Water

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- ❖ Requested the Government to consider the concessional power tariff for the major pumping stations of HMWSSB on par with lift irrigation schemes, to reduce the production cost
  - ❖ Manning & operations of major installations are outsourced to reduce the cost than the departmental staff costs
  - ❖ Energy saving steps are being taken up at all major pumping stations by way of energy audits
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# Challenges

## Huge gap between Revenue and Expenditure:

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- ❖ Tariffs are highly subsidised for domestic sector.
  - ❖ Resistance to tariff increase to meet increased costs.
  - ❖ Issue of UFW
    - Physical losses because of age old network.
    - No metering for 78% consumers and use of averages for billing.
    - Absence of sufficient metering in Transmission and distribution networks.
    - Illegal connections
    - Difficulty in getting new connections
  - ❖ HMWSSB is a purely public utility service organization intended for the service of people. It is a non profit organization. However, IT Department is levying IT on HMWSSB. Request made to Central Board for Direct Taxes (CBDT) to register HMWSSB as a non-profit organization is pending.
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# Steps taken

## **Tariffs are highly subsidised for domestic sector**

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- ❖ 80% of total supplies accounts to domestic needs, wherein the tariff was highly subsidized compared to the production costs
  - ❖ Requested the Government to establish Water Tariff Regulatory Authority.
  - ❖ Proposing for automatic revision of water tariff to compensate for the increased power tariff.
  - ❖ Fixing of AMRs for all Bulk Connections is in progress.
  - ❖ We are Adopting metering policy making meters compulsory and revision of non metered tariff.
  - ❖ Taken up the SCADA project under JnNURM on pilot basis, wherein 184 flow meters are installed with which it is proposed to take up water accounting of each O&M Division.
  - ❖ Taking up reduction in Physical Losses by arresting all the visible leakages and replacement of age old network
  - ❖ Filing of cases on detected illegal connections.
  - ❖ Attempting to simplify procedure for providing new water supply connections similar to the procedure of Electricity Distribution companies.
  - ❖ Use of IT in Revenue Billing system
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# Sewerage Issues

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- ❖ Inadequate and old networks
    - ❖ Core city network coverage is about 80%. Most of it is 30 to 40 years old and is not sufficient to cater to the current sewage flows.
    - ❖ Peripheral city network coverage is about 30%
  - ❖ Inadequate treatment capacities.
    - ❖ We need about 1300 MLD Treatment Capacity.
    - ❖ We have about 700 MGD treatment capacity.
  - ❖ O&M issues.
    - ❖ Frequent chokages as the line capacities are inadequate.
    - ❖ Grit entering the lines.
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# Sewerage Issues

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- ❖ Inadequate finances to maintain.
    - ❖ It is mostly a non revenue activity.
    - ❖ We depend on water cess to maintain these lines.
  - ❖ High Cost of land in urban areas for construction of new STPs.
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# Steps taken

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- ❖ For strengthening and improvement of existing sewer network, refurbishment project taken up in the Old city area of core city and in two municipalities of peripheral areas under JnNURM.
  - ❖ Certain remodelling sewer works are being taken up under the State Budget
  - ❖ For newly merged municipal areas, detailed project reports for creation of sewer network are posed for JICA loan assistance
  - ❖ For treatment of sewage generated in the core city and peripheral areas, steps are taken to formulate the DPR proposals under National River Conservation Plan of NRCD, GoI, for creation of 610 Mld capacity of STPs at various locations
  - ❖ Models being worked out to recycle the STPs water.
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# Sanitation Issues

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- ❖ **Sweeping - Forenoon / Afternoon / Night sanitation**  
19500 working, SWG units - 2500 Nos, Self Help Groups, 6800 Km road length being swept - 7 days sweeping, Safety measures to the personnel, provided road accident policies, radium jackets, Quality implements etc
  - ❖ **Monitoring and evaluation by resident welfare associations and self help groups, women groups**
  - ❖ **Community based sanitation involving local welfare associations & self help groups.**
  - ❖ **Mechanization of sanitation - introduced street sweeping machines - 31 Nos.**
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# Sanitation Issues ....

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- ❖ Collection of solid waste – Tricycles provided at free of cost to rag pickers for collecting the household waste at minimal cost.
  - ❖ Dumper bins provided at every 500 M distance intervals
  - ❖ Rag pickers are also permitted to segregate the waste at dumper bin locations
  - ❖ Pin point programme prepared for lifting of dumber bins.
  - ❖ Solid waste getting transported from dumper bin location through designated transfer station and then to major dumping yard at 40 Km away from the city.
  - ❖ Initiatives taken up for scientific disposal of solid waste through BOOT / PPP Modes (i.e. compost, RDF, landfill & leachate treatment)
  - ❖ Reclamation and reuse of existing dump sites
  - ❖ Development of scientific landfills
  - ❖ Developed 137 public toilets with good facilities
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THANK YOU