



Government
of India



Government
of Maharashtra



NMC
We Care For Maharashtra



**Moving Towards
24x7 Water Supply**
An Endeavor of
Nagpur Municipal
Corporation through
Public Private Partnership

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MUNICIPAL COMMISSIONER, NAGPUR



Opinion of citizen for Nagpur City 24x7 Water Supply



Doctor's opinion for Nagpur City 24x7 Water Supply



Earlier water used to come for two
or three hours in a day...



Bulk water security

- For continuous water supply you need sufficient water...for that ...
 1. Reuse the water
 2. Augment the water supply capacity

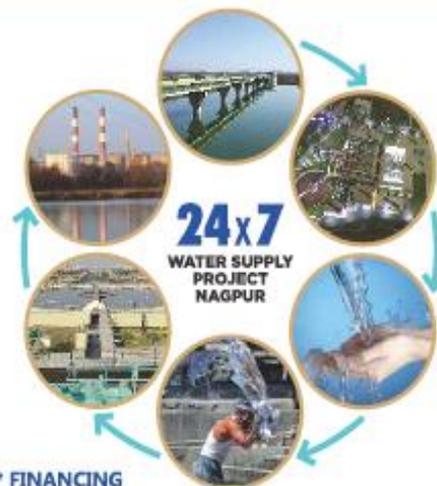
andewadi STP under up-gradation to 200 mld for Recycle & Reuse.



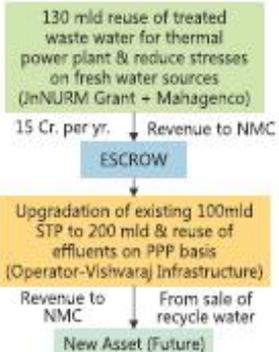
Power Plant, Koradi

130 mld STP to reuse water for TPS Koradi

NMC WATER REUSE = MORE WATER FOR CITY, IRRIGATION & INDUSTRY



INNOVATIVE* FINANCING



Consumer	Water Reuse Potential In mld
MAHAGENCO	130 (Agreement Executed)
Industrial / TPS	150 (PPP-Operator Appointed)
MIHAN	40
IRRIGATION	70
CITY BULK	25
TOTAL	415

*No financial burden on NMC





Augmentation to Water Supply

Before Jnnurm – 470 mld

Augmentation under Jnnurm

- 1 Upgrade of old WTP/Pumps 60 mld
2. Augmentation of Kanhan 120 mld
3. Augmentation of PENCH 115 mld

Total Investment Under Jnnurm – Appx
1200 crore

PPP – Investment – Rs 185 Crore
(Against ULB share)

**Present Water Supply Capacity
765 mld**

All new WTPs are fully automatic and
built under PPP mode and long term
10-15 years of performance based
contract

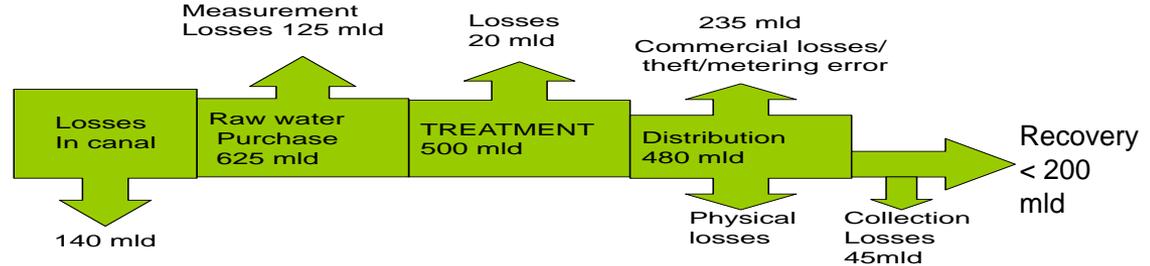




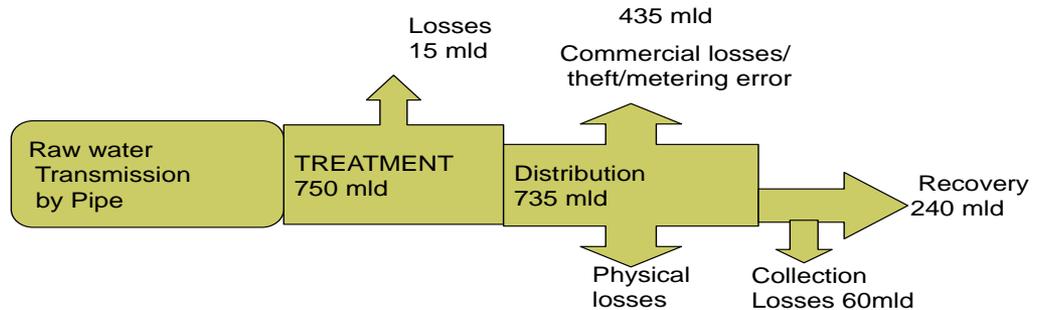
Bulk water Security – is not end of the problem ...

Low efficiency resulted in to higher water losses, poor financial position , deteriorated assets, frequent contamination of water affected the public health specially urban poor and overall unsatisfied citizen services.

Augmentation to water supply is not a answer to above challenges



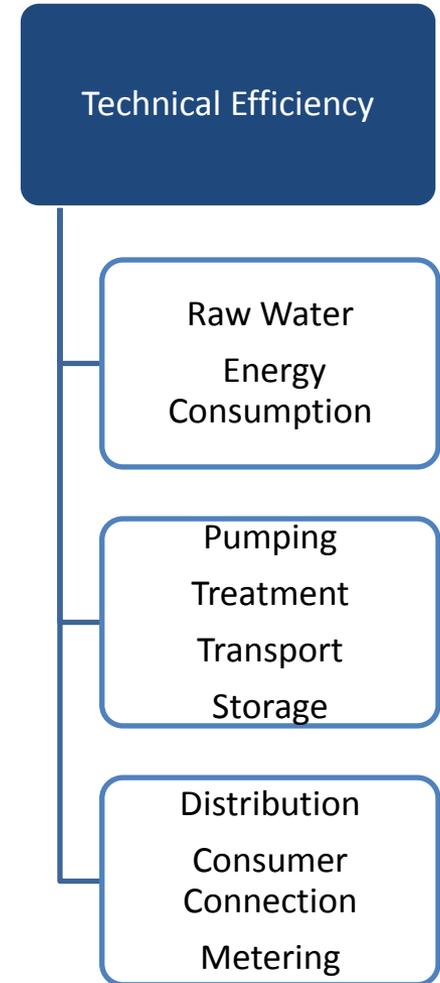
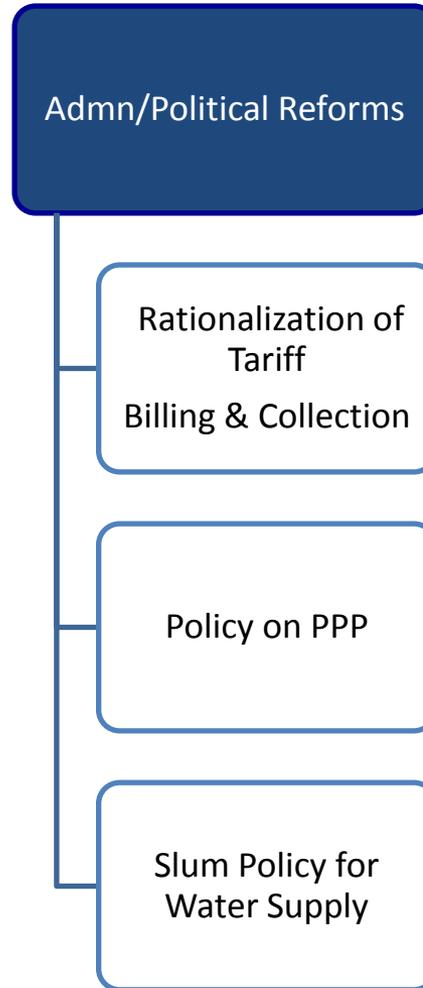
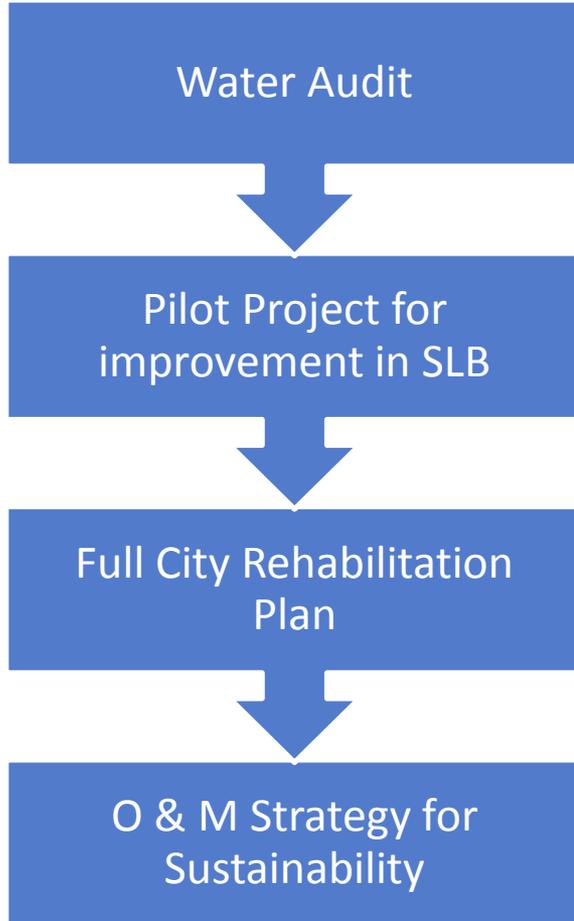
Expected Result After Investment of Jnnurm funds in Augumentation





Policy & Strategy for Implementation

Project at final leg towards implementation





Pilot project for 24x7 supply

Salient features of pilot project

- Pilot area identified as Dharampeth zone initiated in 2007
- 10,000 connections (including 10 slum areas)
- Implementation of continuous water supply, 100% metering, rehabilitation of tertiary network, hydraulic modelling, installation of new billing and customer management system.
- 5-year Performance Management Contract sequenced with 9 months preparatory work, 15 months for rehabilitation and 60 months of O&M at a cost of Rs. 27 crore.
- Performance-fee model with bonuses on Key Performance Indicators (KPIs) namely
 - Reduction in Unaccounted for Water level to below 30%,
 - 10% increase in volume billed over 2007-08 baseline,
 - 24x7 supply with pressure higher than 2m,
 - Water quality with residual chlorine greater than 0.2 ppm and
 - Handling of customer complaints within three days.



Impact assessment of Pilot project

ASCI Hyderabad conducted impact assessment study of Pilot Project reporting following outcomes

- 14500 connections converted to continuous water supply.
- Improved pressures, eliminating the need for booster pumps at households level
- Improvement on coverage with 5000 connections being given in slum households
- Billed water volume increased from 22 MLD to 33 MLD in the zone (increase of 50%)
- NRW reduced from 51% to 32% and was attributed to reduction in illegal connections and improved accuracy of meter reading.

Observations on challenges and shortcomings



- Poor Stakeholder communication
 - Consumers not informed of the need to fix internal leakages resulting in higher billed volumes due to transition to pressurised metered supply.
 - A tariff hike resulted in spikes in billing which triggered protests from citizen organisations.
- Continuous 24x7 supply was achieved only 90% of total connections due to
 - challenges in addressing last-mile connection within consumer premises and
 - non-replacement of pipelines in 70% of network



NMC 24/7 Demo Project –Slum Policy Results

- 100% dis-connections of public stand pipes resulted in saving of water & improvements in slum culture in term of hygiene, disputes.
- All slum dwellers (5200 nos) connected to water supply network through individual house service connection resulted in minimize the wastage of water.
- Slum dwellers are ready to pay water charges .
- Dedicated cash counters for payment collection.
- Total water bill distributed till date amounting Rs. 17,29,610 and collection made is Rs. 11,79,038 i.e. 68 % recovery compare to less than 20% earlier.
- Now demo zone urban poor people are happy with service provided to them.



Status - 24/7 Demo Project

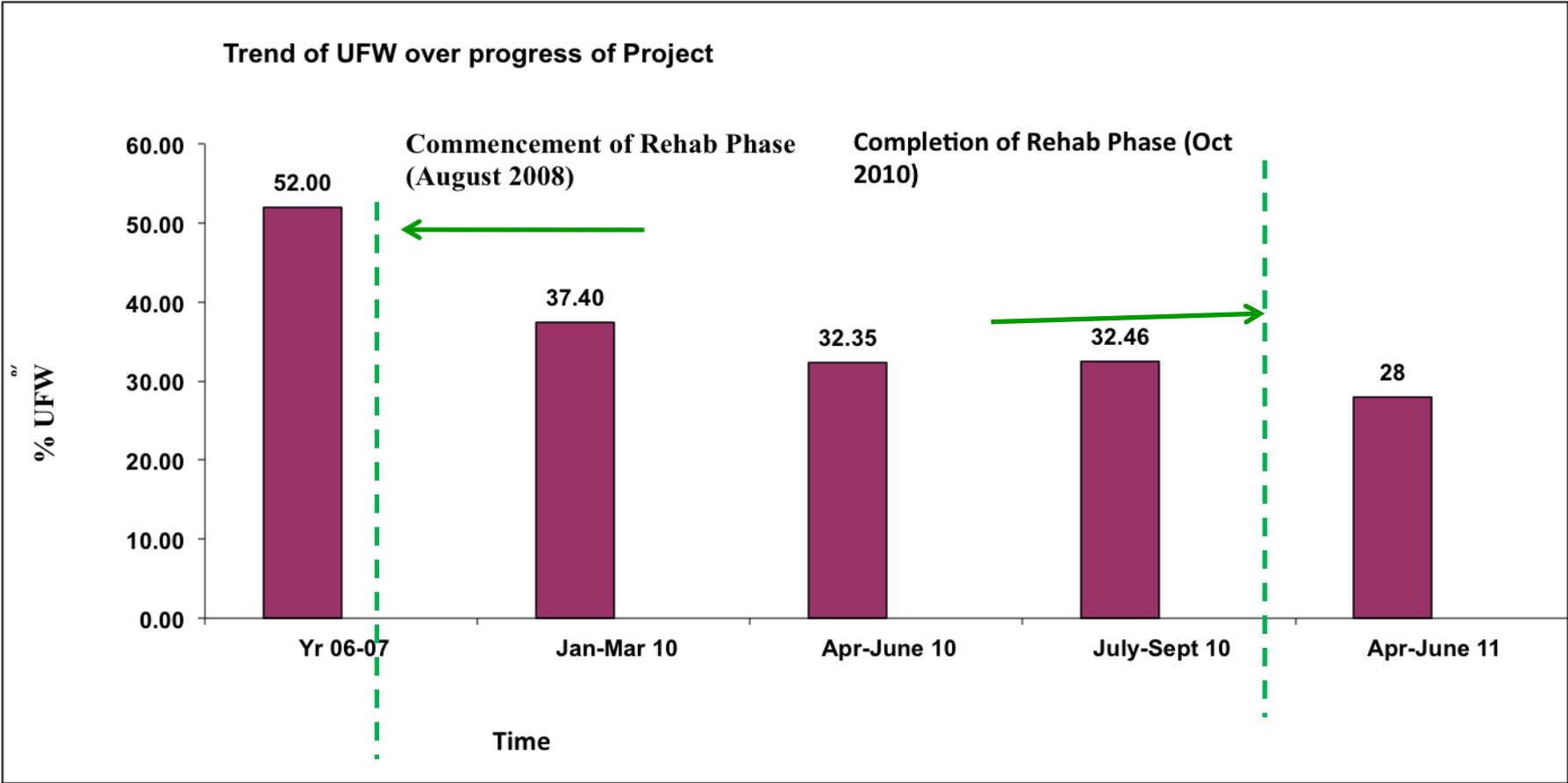


Indicator	Status in 2008	Status after Dec2010
No of Connection - Non Slum	9682	10727
No of Connection - Slum	1657	5168
No of Stand Post	179	15
Length of Network	180	204
% of existing network replacement		32%
Payment Collection Points	4	7
Supplied Volume (MLD)	43	52
Billed Volume (MLD)	21	36
UFW	51%	32% (28% 2011)
Bills Distributed	11339	15731
Pressure at Customer Point(m)	2-6	9-12
Hour of Supply	2-8	14550 Customers -24 Hrs
		1395 Customers - 12-16 Hrs
Chlorine content less than 0.2ppm	37%	0%
Average Pressure	3-5 m	12 m

Successful NMC 24/7 Pilot Project



UFW Reduction Program - Results





PPP for City-wide water supply -

Project inception

- In 2008, NMC' s General Body passed resolution for city-wide 24x7 water supply
- Ring-fencing of water supply assets was done by transferring of water supply functions to a separate company i.e. the Nagpur Environmental Services Limited (NESL) as a wholly owned subsidiary of NMC. This was first fully owned water supply company of any ULB and it has to go through legal department of NMC & GoM which result in to additional time required to complete the process
- Transparent bidding process adopted with extensive stakeholders consultations with editors, NGOs, ward members etc.
- Veolia-Vishvaraj consortium selected through bidding process
- Orange City water Pvt Ltd (SPC) formed by consortium has taken over the Operations of Full city water supply from 1st March 2012.



PPP Basic Principals

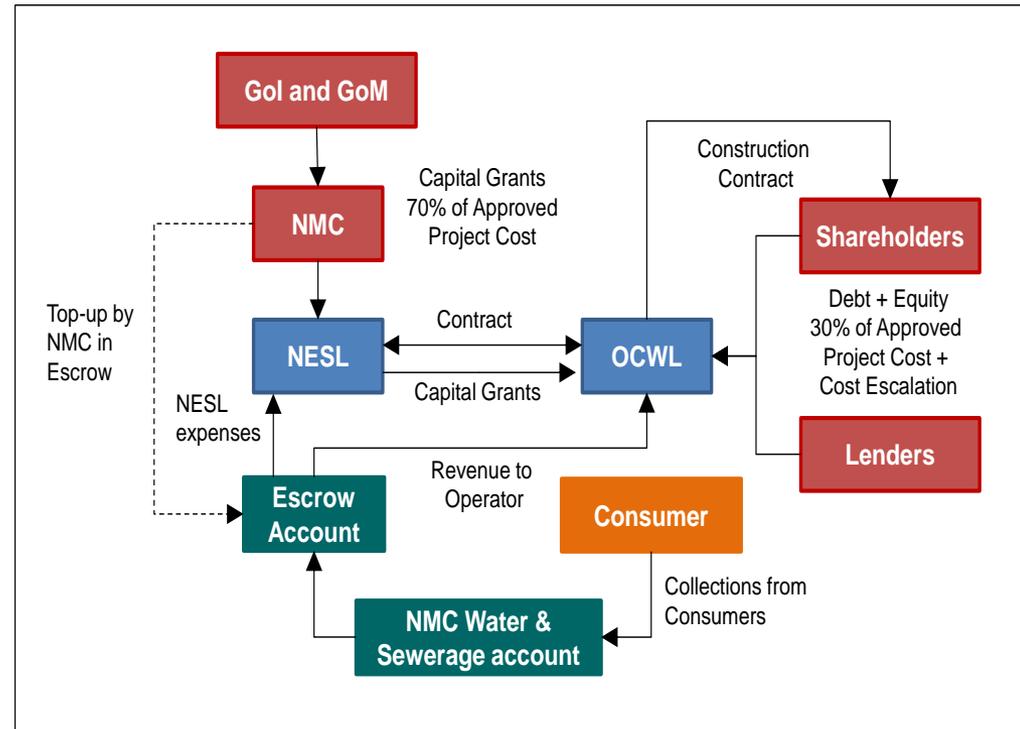
- Public Private Partnership with Foreign Partner
- Partnership
 - Asset Ownership : NMC
 - Operation: Private
 - Investment: Both GoI, GoM but ULB share by Private (Rs. 116 Crore)
- NMC to decide Tariff, collection by private partner
- NMC to decide Development Plan for City
- Private Partner to Operate and maintain the system (almost Rs. 80 crore per year by private).
- Private Operator to earn profit through efficiency in Implementation and operations against fees



Features of the PPP agreement

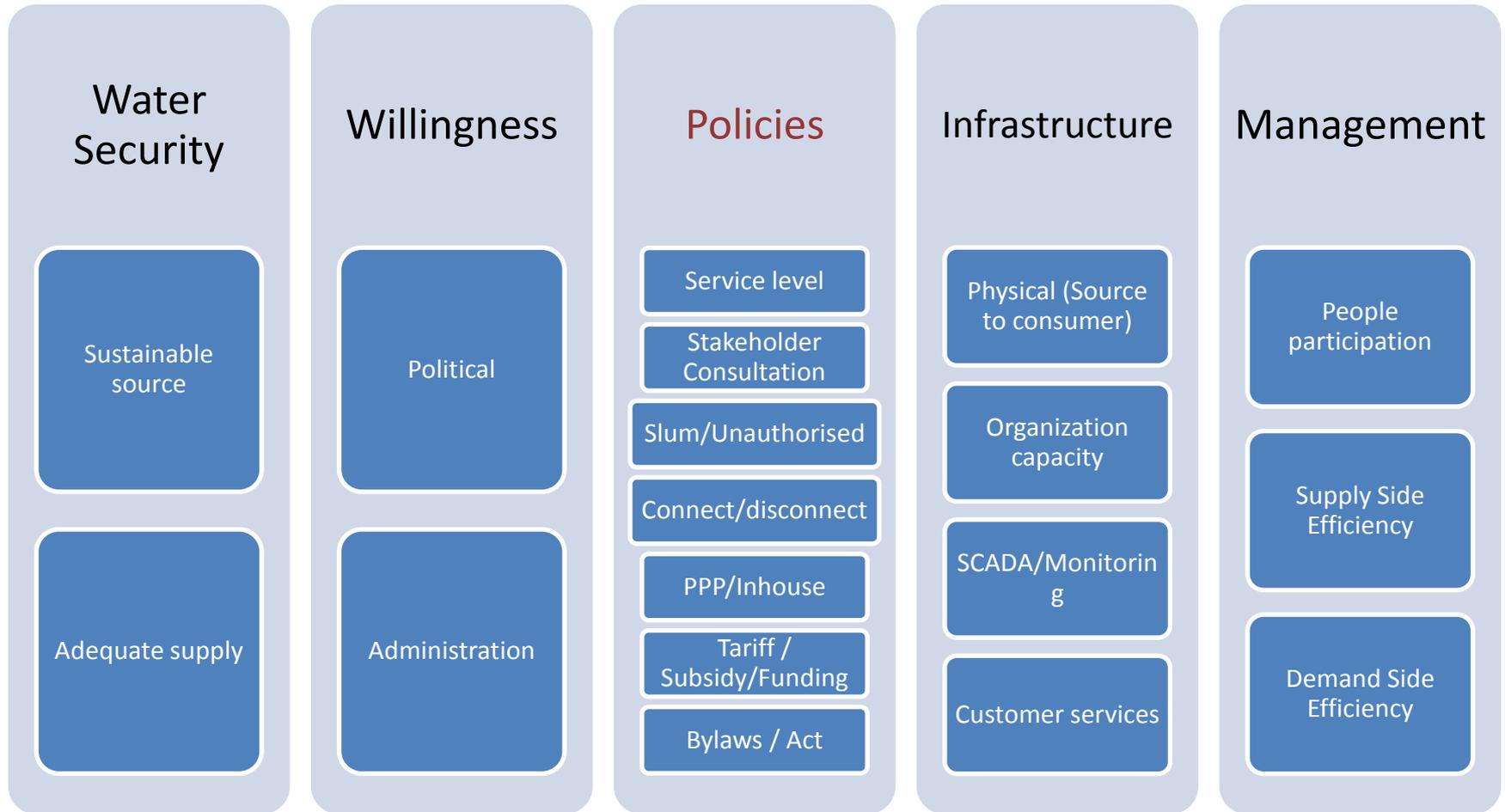
- **Project scope**

- 25-year Performance Management Contract (extendable for another 25 years)
- First 5-year OCWPL responsible for O&M of existing network and rehabilitation of the network
- O&M of the water supply system for next 20 years
- Revenue and collection risk loaded on Operator
- Operator's performance to be monitored against performance parameters
- Remuneration based on metered volume that is billed and collected.





Continuous Water Supply-Holistic Approach



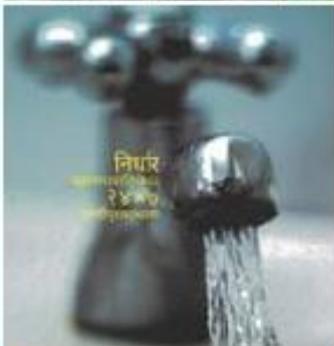
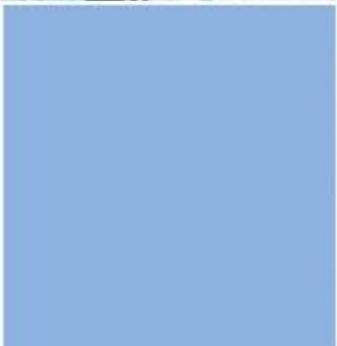
Nagpur Learning



Communication/Involvement with Citizens is most crucial

It should be **People**-Public-Private- Partnership

It demonstrated that Indian Urban water supply can be upgraded to 24x7
without 100% replacement of Network



THANK YOU



Challenges

- No role model in India to adapt efficient Urban Water system.
- Nagpur water PPP project was first of its kind in India – took its time to design the acceptable structure
- Water PPP was much more sensitive compared to electricity – long and repetitive stakeholder consultation needed
- Existing legal framework had provided limited freedom to NMC to adapt innovative approach
- Adapting even partial Cost recovery water tariff was a difficult political decision made by NMC
- Non-availability and delayed JnNRUM grants denied timely benefits and made things further difficult for NMC.



Challenges ahead

- Continued stakeholder engagement and communication to build trust and credibility.
- Sequencing and moving forward on tariff reforms.
- Replacement of consumer connections and addressing last-mile and internal plumbing issues need to be tackled head-on as these aspects are critical to consistently deliver 24x7 supply.
- Cost escalation in the Initial Performance Improvement Program Estimates.



Lessons learnt

- Holistic planning and integrated set of actions required for Implementation of city-scale PPPs
- Institutional clarity on the public side helps; needs to be backed with building adequate contract monitoring and administration capacity
- Sustained Political and Administrative commitment is critical; so is wider stakeholder engagement and achieving consumer support
- Sequencing tariff reform