

PERFORMANCE
IMPROVEMENT PLAN
FOR

ICHALKARANJI

(WITH FOCUS ON 24*7 AND ODF)



Our Team :-

Jitendra Sali
Mangesh
Madhura
Samruddhi

Under the guidance of

Shri Rajeev Jadhav, IAS,
Director, DMA, GoM

Dr. Sneha Palnitkar, Director,
RCUES, AILSG, Mumbai



AILSG

PERFORMANCE ASSESSMENT SYSTEM



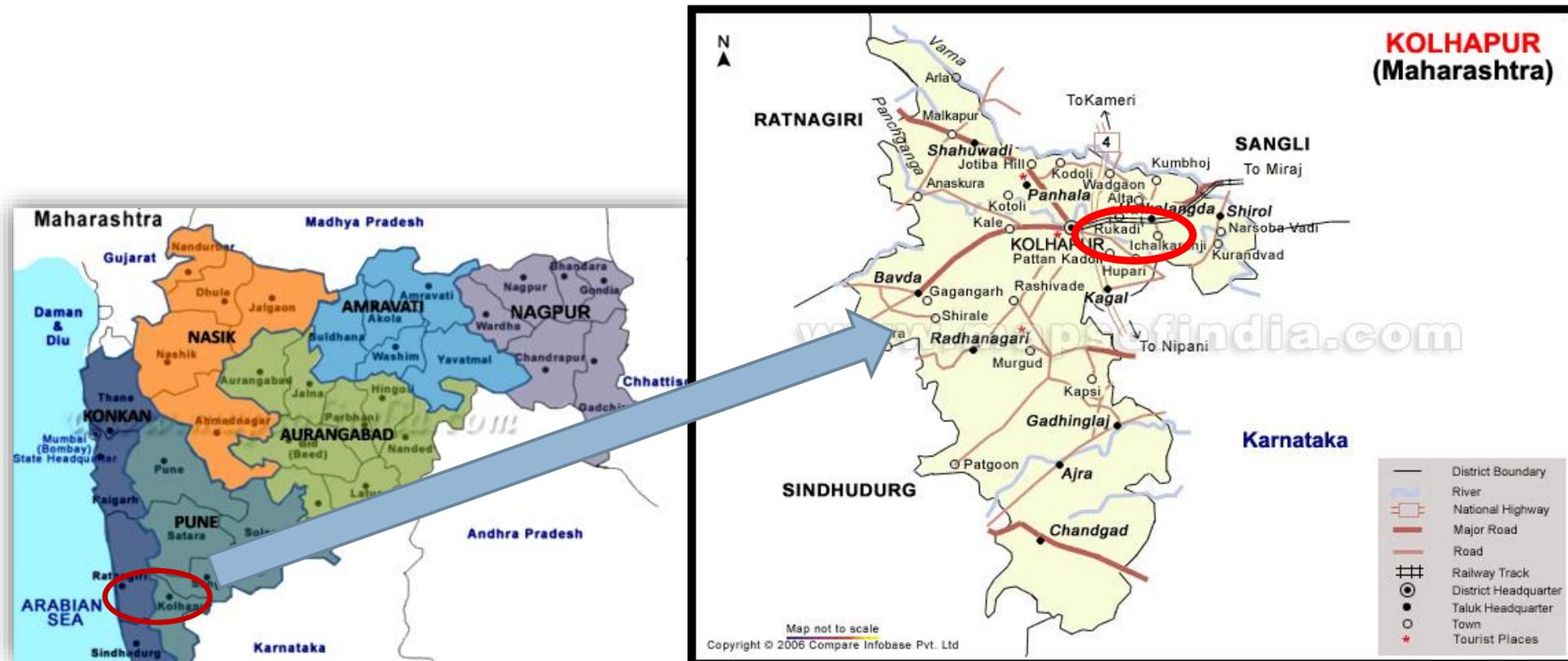
STRUCTURE OF PRESENTATION

- City profile
- Water supply
- Sewerage
- Slum profile
- Finance
- Issues



ICHALKARANJI –THE TEXTILE CITY

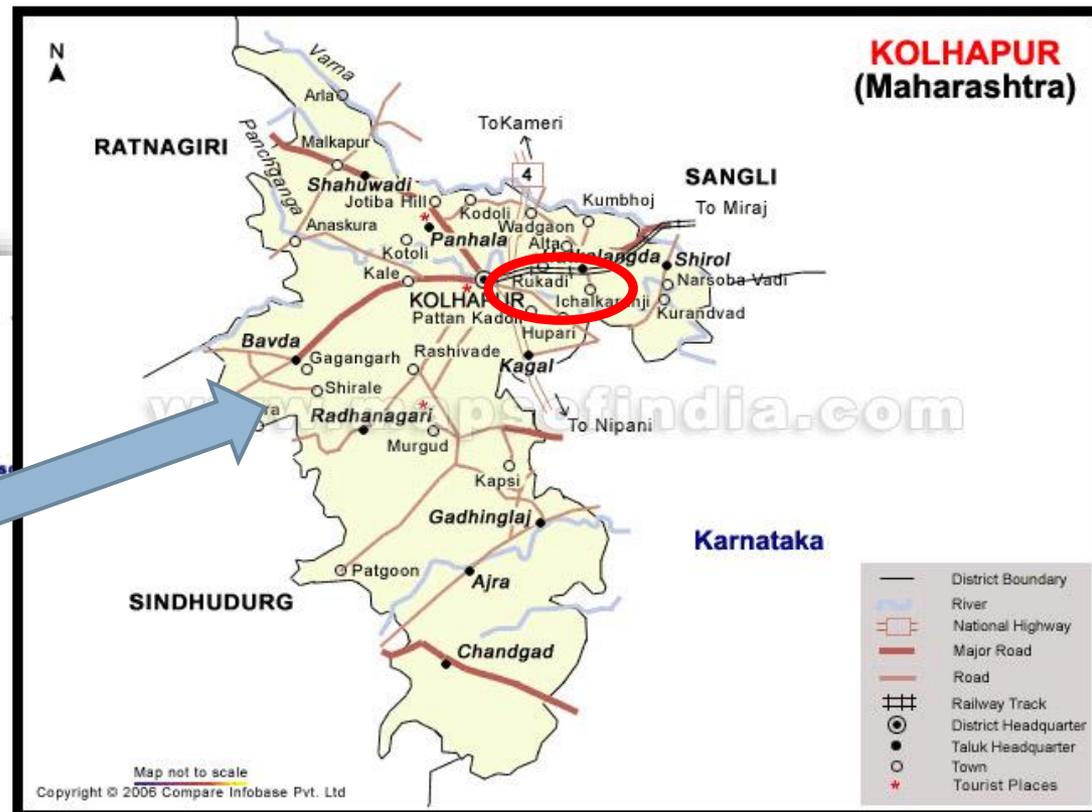
- 'A' class municipal council
- Manchester of Maharashtra 425 km from Mumbai in Western India. The town is rapidly growing as the largest satellite suburb of Sangli and Kolhapur cities which are 24 and 22 km away respectively
- 25 wards and 57 election wards



ICHALKARANJI –THE TEXTILE CITY

Ichalkaranji	2001	2011
Area (sq.km)	29.64	29.64
Population	257610	287695
Density	8691	9706
Households	51952	65095
Slum pockets	12	19
Slum population	6535	28171
Slum households	1307	5533

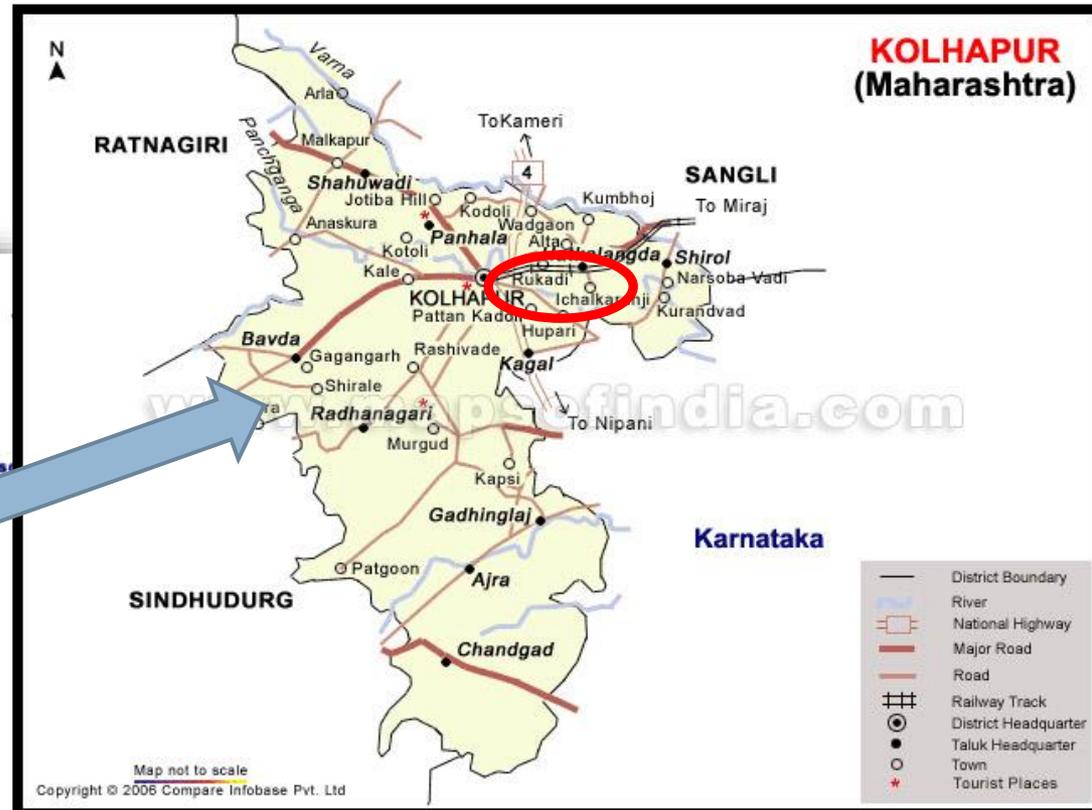
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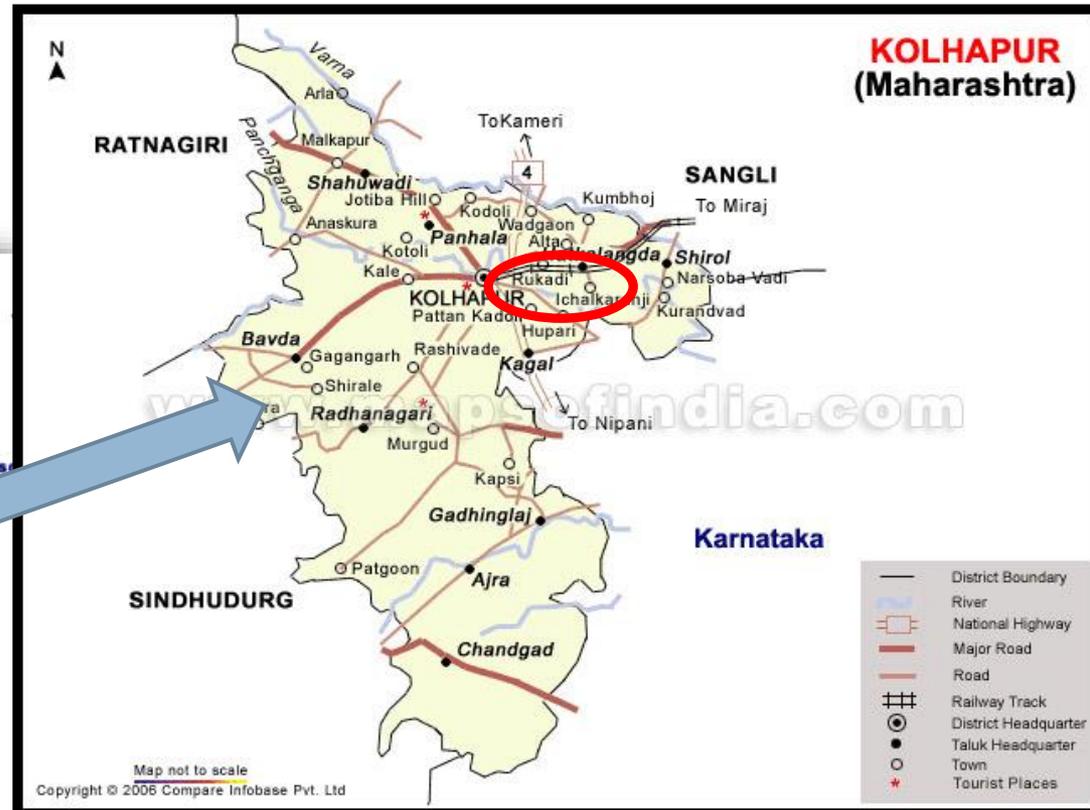
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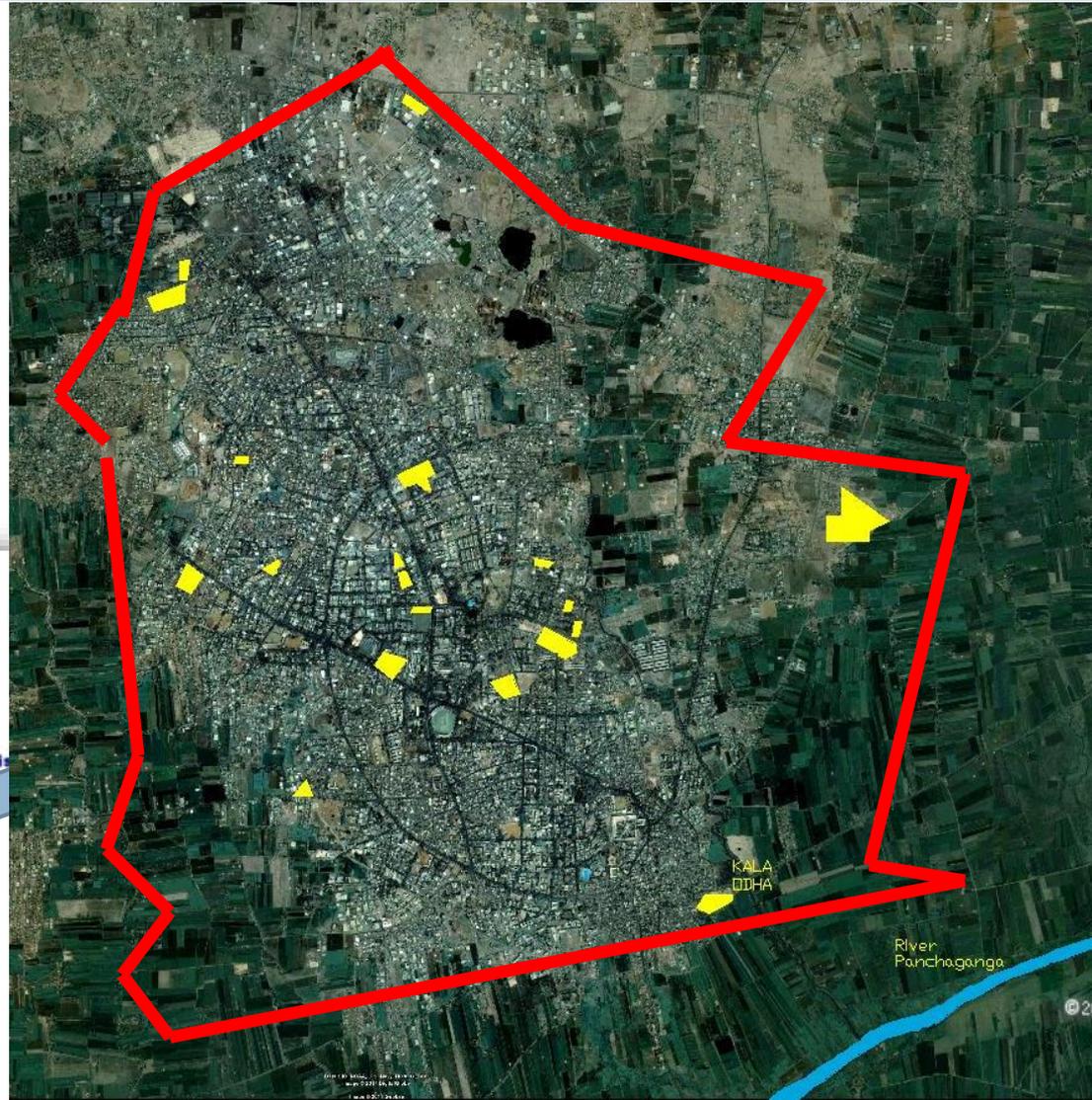
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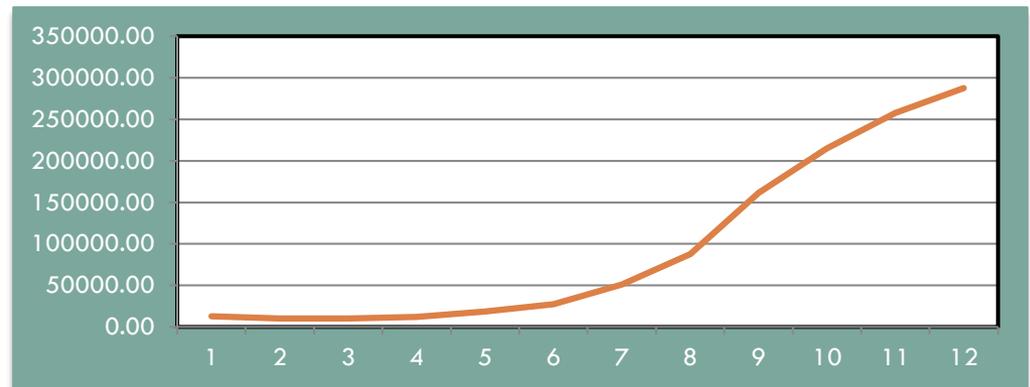
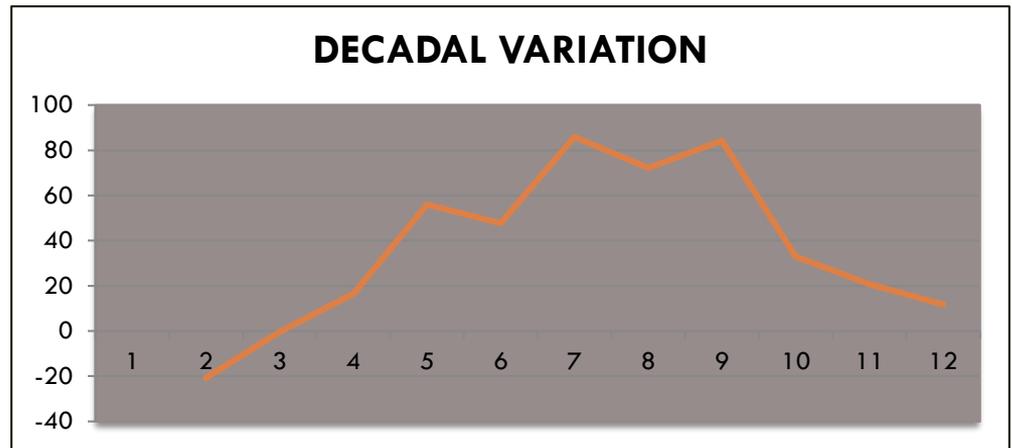
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DEMOGRAPHIC PROFILE

YEAR	POPULATION	DECADAL VARIATION
1901	12920	
1911	10239	-20.75
1921	10211	-00.27
1931	11904	16.58
1941	18573	56.02
1951	27423	47.65
1961	50978	85.90
1971	87731	72.10
1981	161636	84.24
1991	214950	32.98
2001	257610	20.77
2011	287695	11.68



Source : ESR 2008-09, IMC

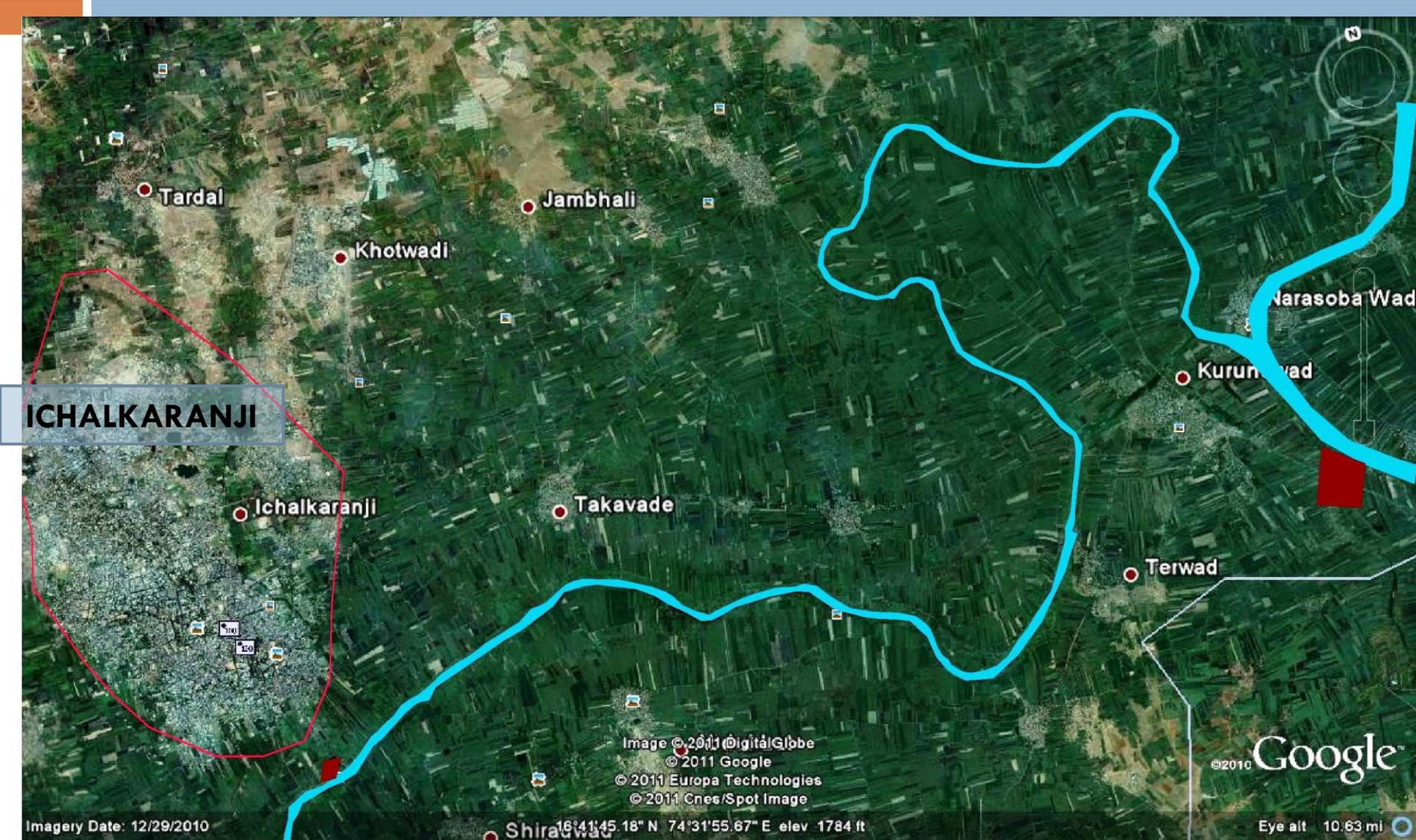
- Population growth has shown variations because of industries
- Now population is decreasing because of the recession in market



WATER

SUPPLY OF ICHALKARANJI

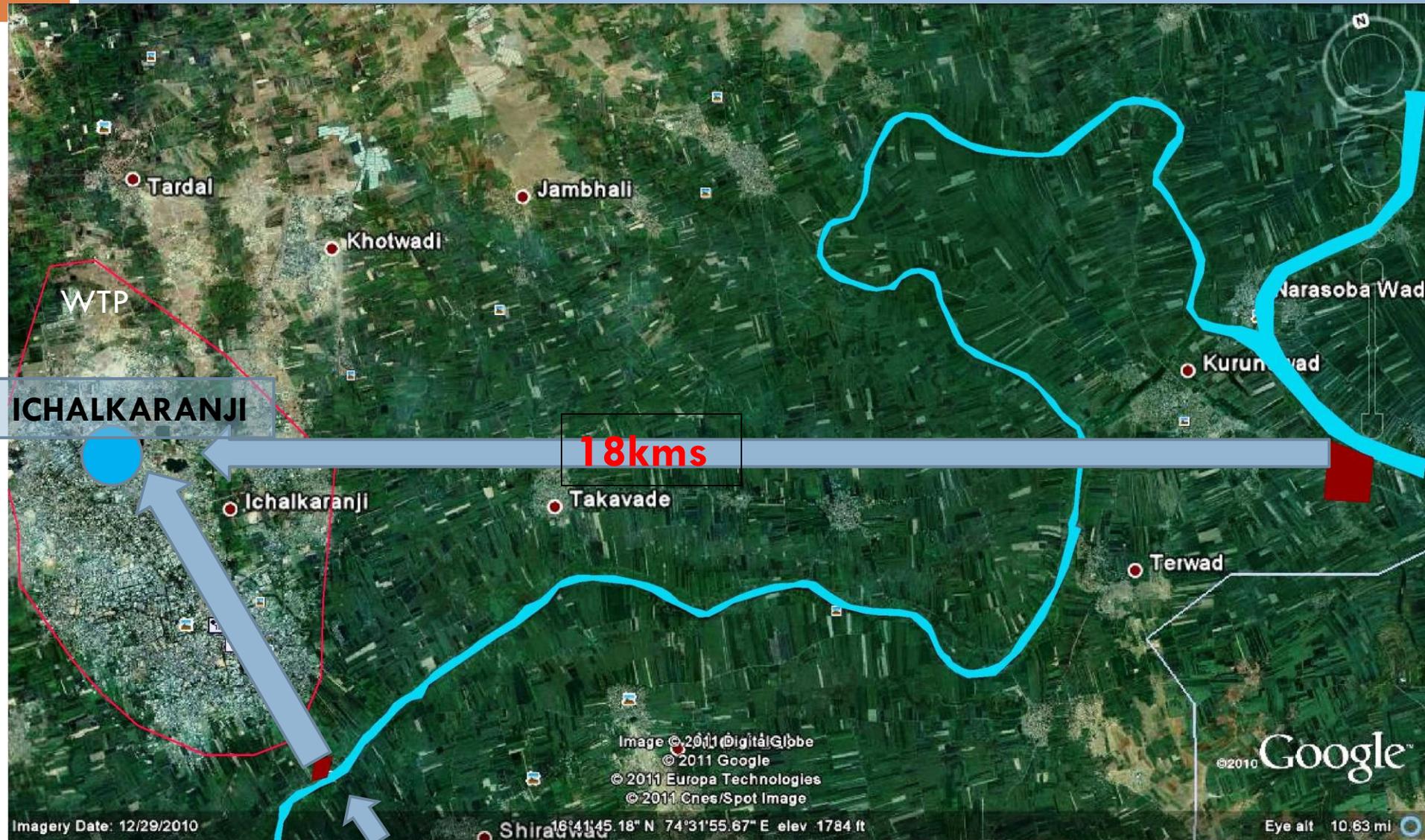
WATER SUPPLY SCENARIO



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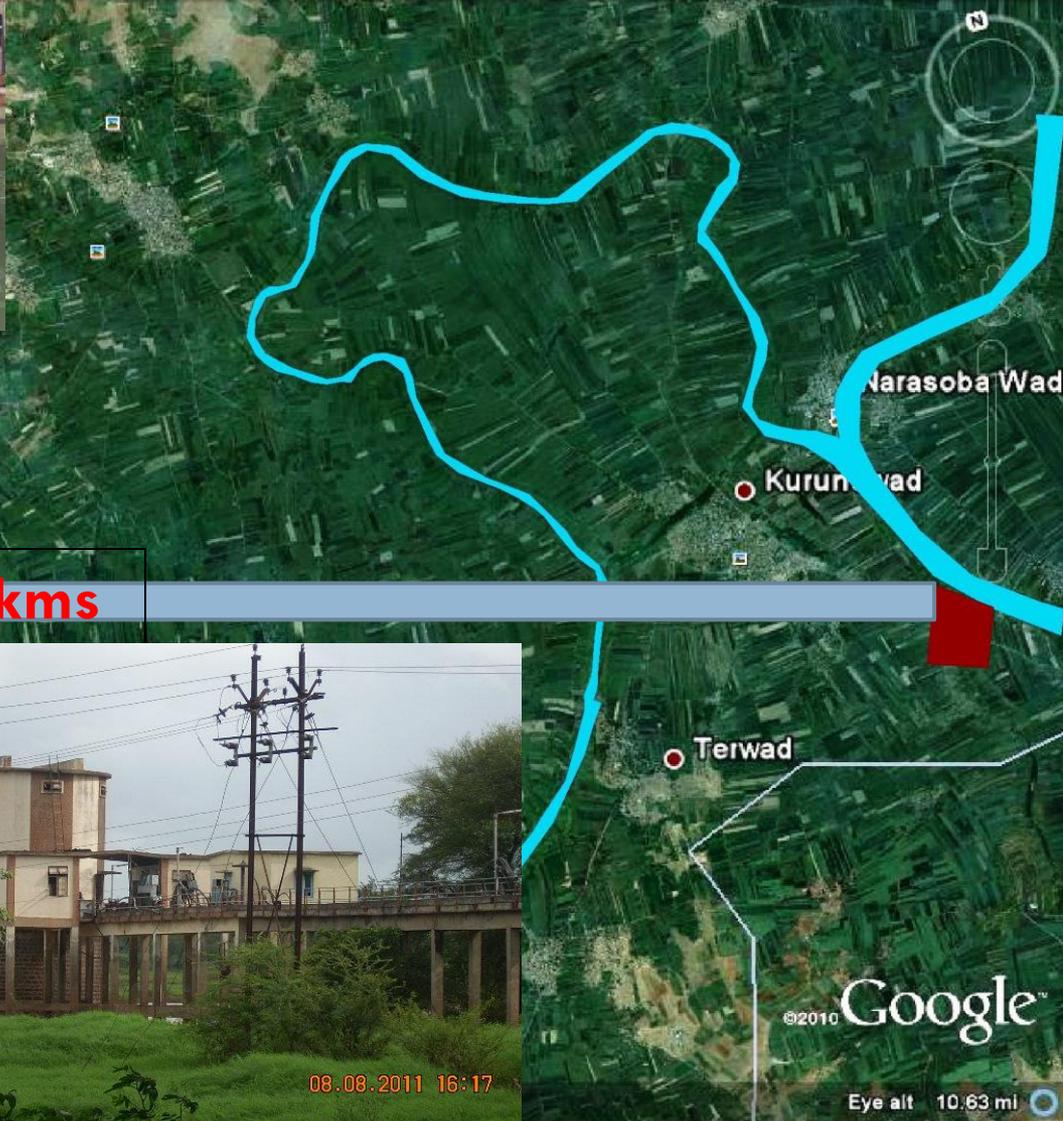
CENARIO



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18kms

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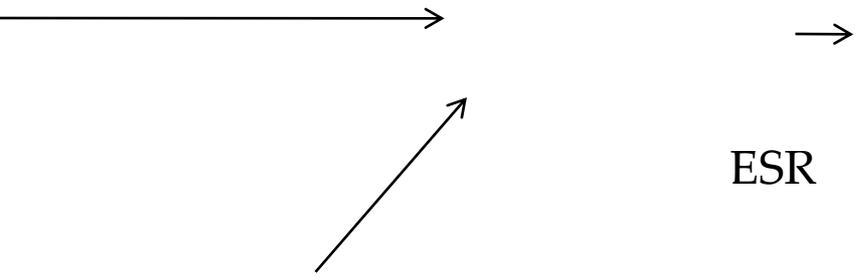








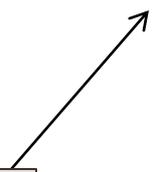
Schematic diagram of water supply system in Ichalkaranji



I. WATER SOURCE & TREATMENT

Supply system in Ichalkaranji

Source:
66 MLD
(allocation
108 MLD)



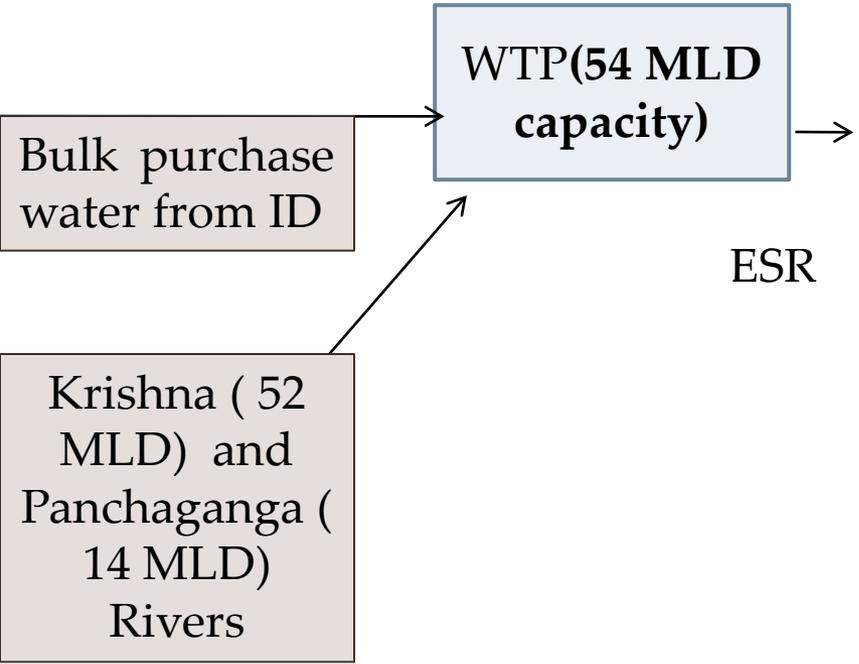
ESR

Krishna (52
MLD) and
Panchaganga (14 MLD)
Rivers

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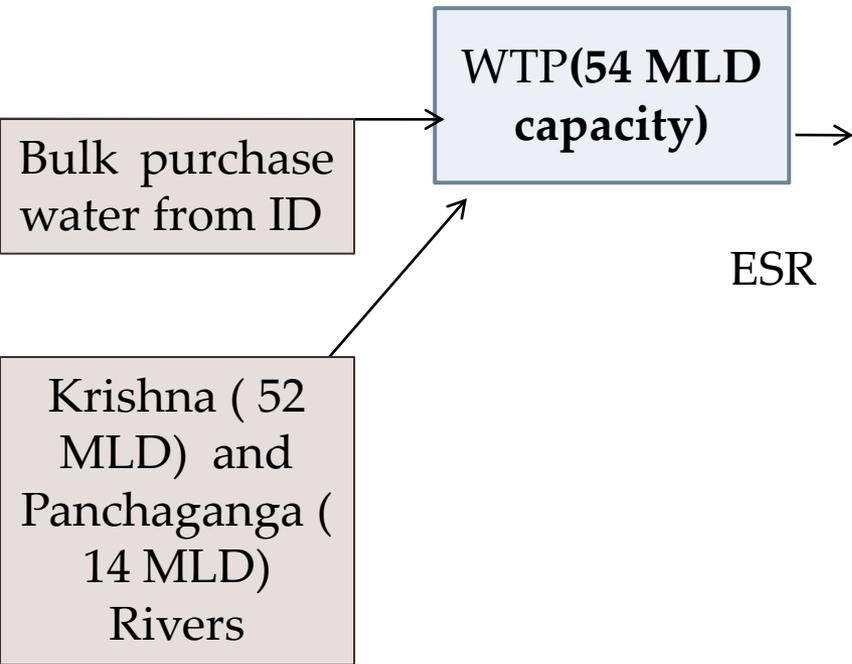


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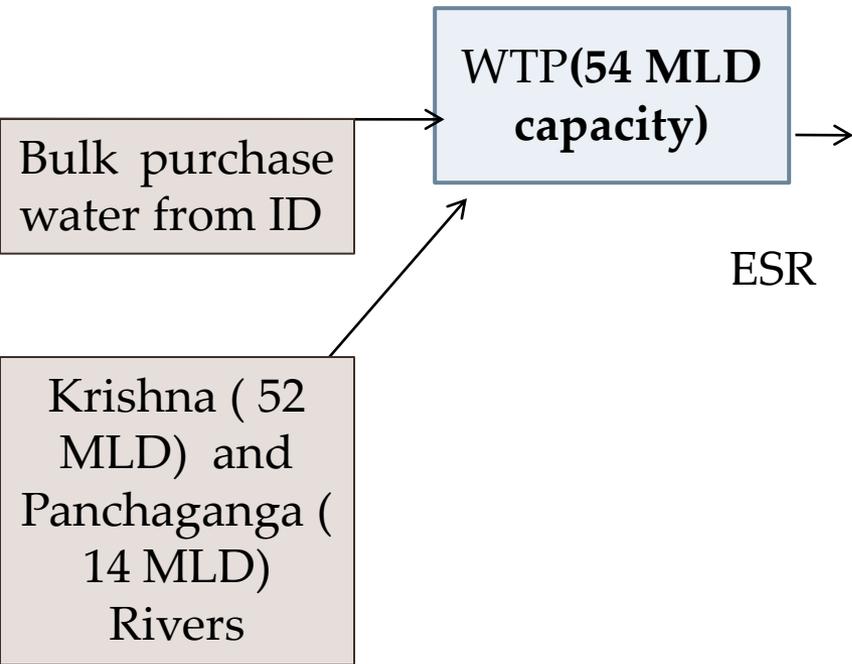


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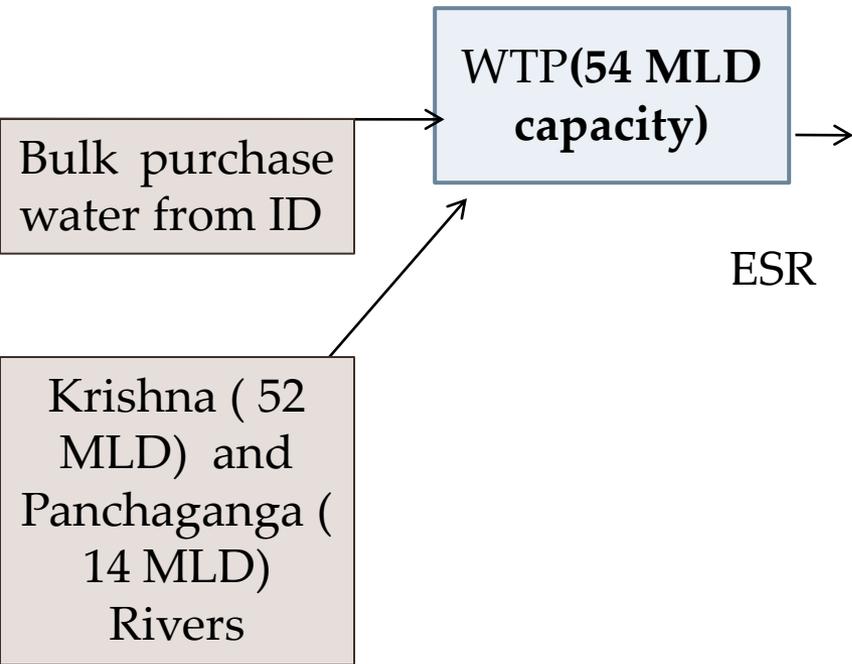
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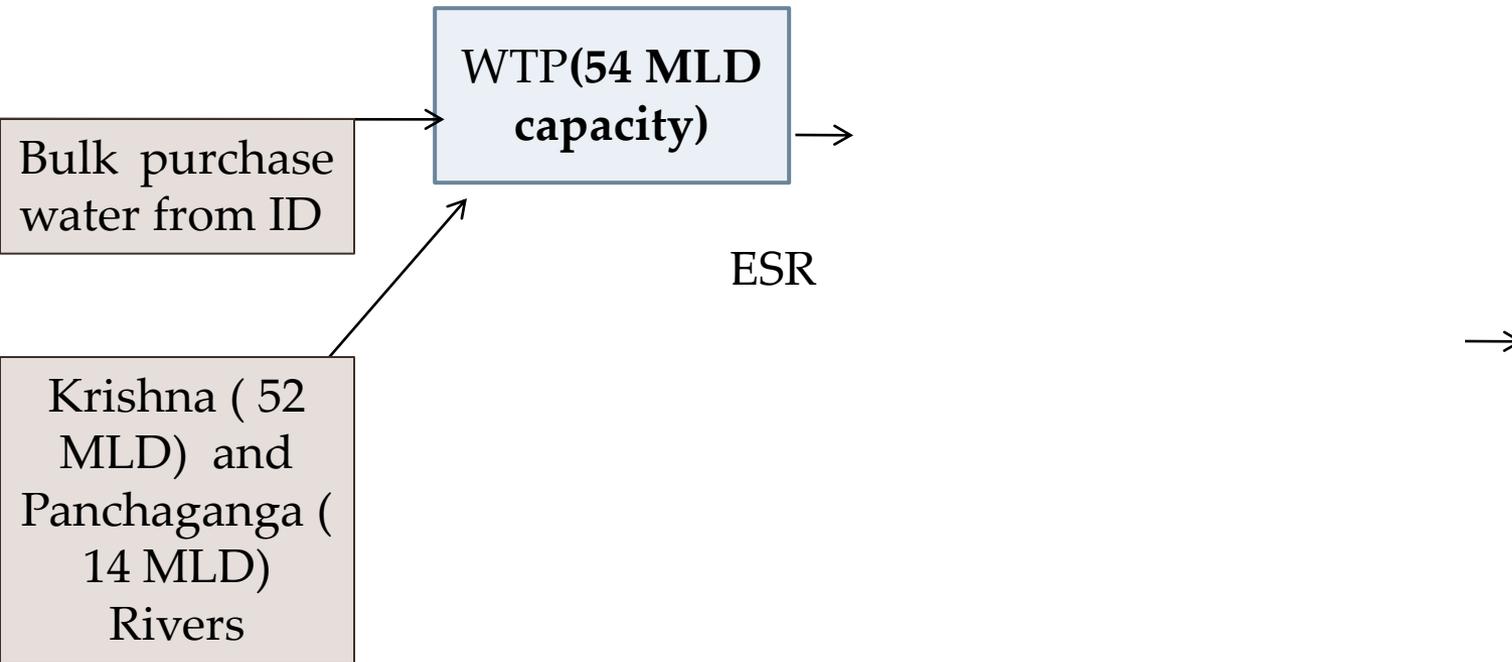
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 A Zone 10.1 MLD



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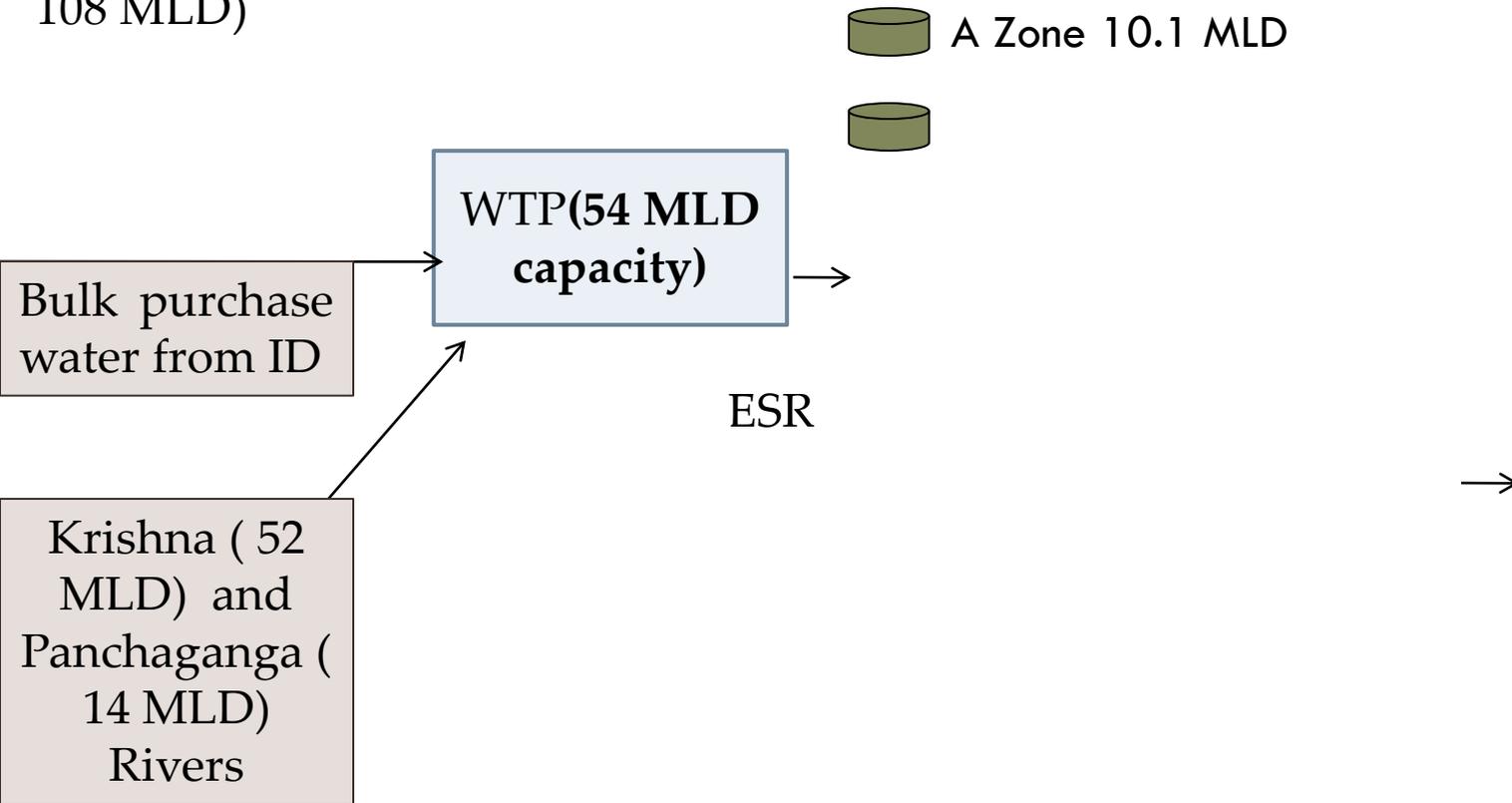
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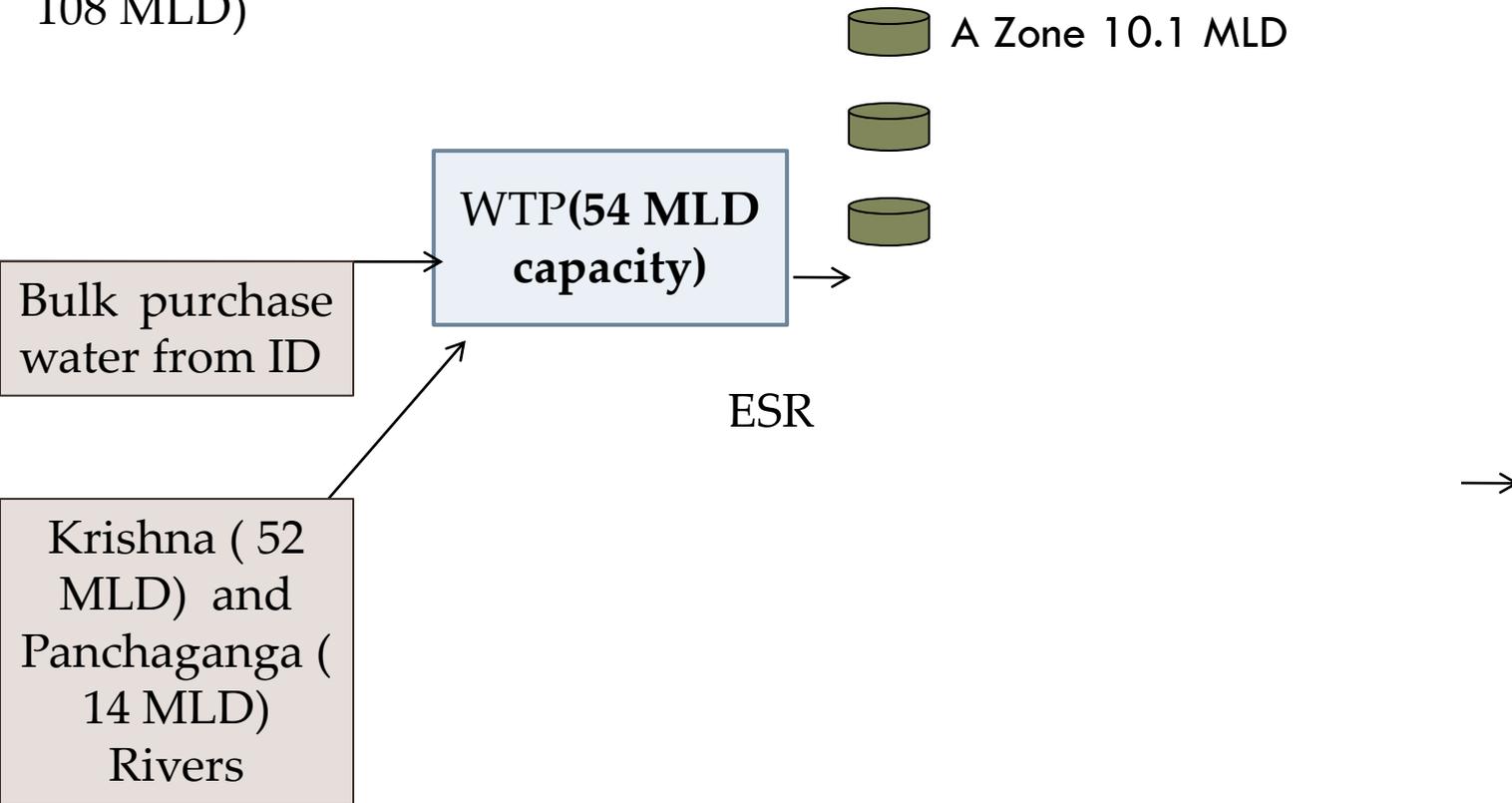
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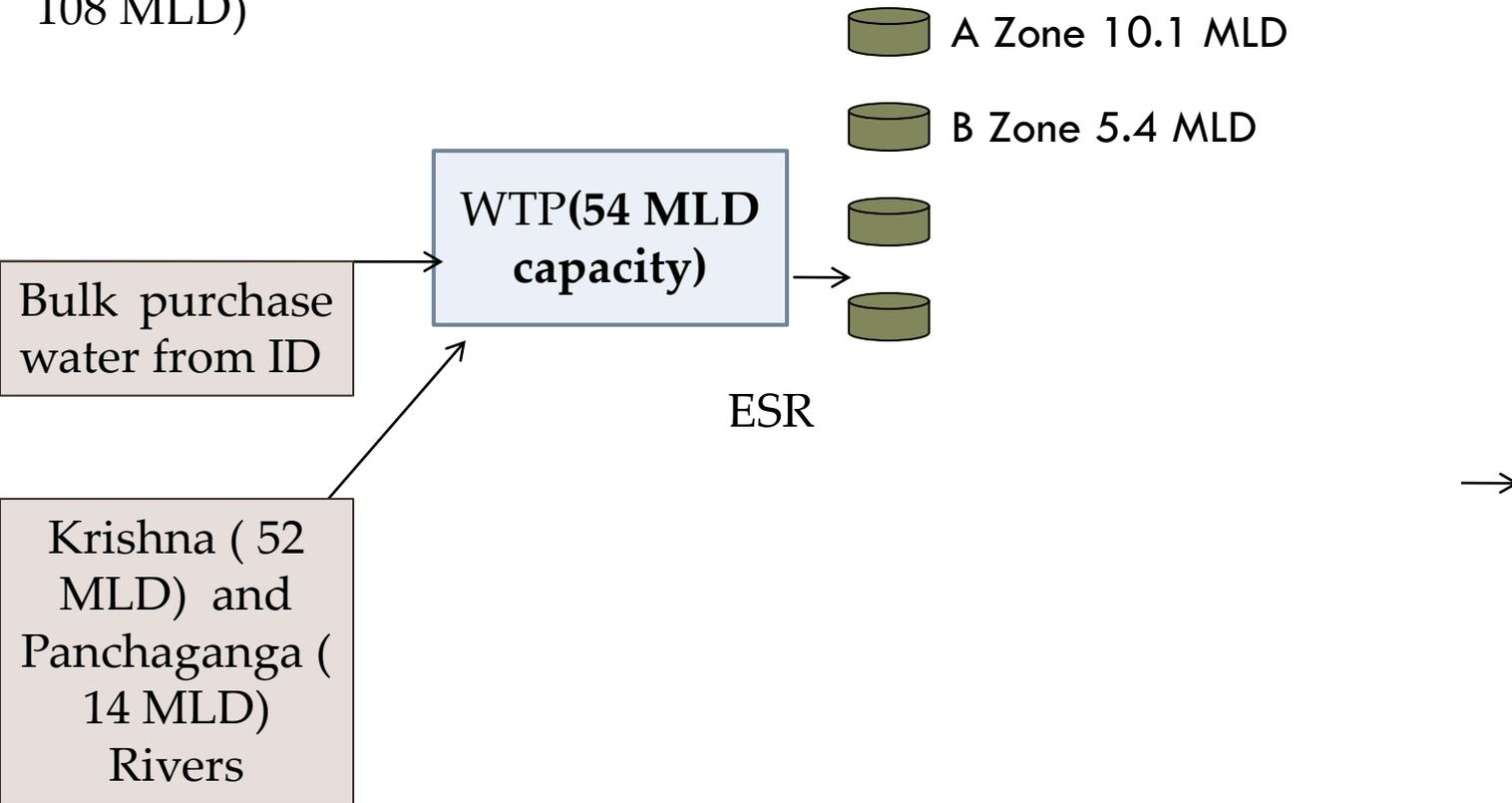
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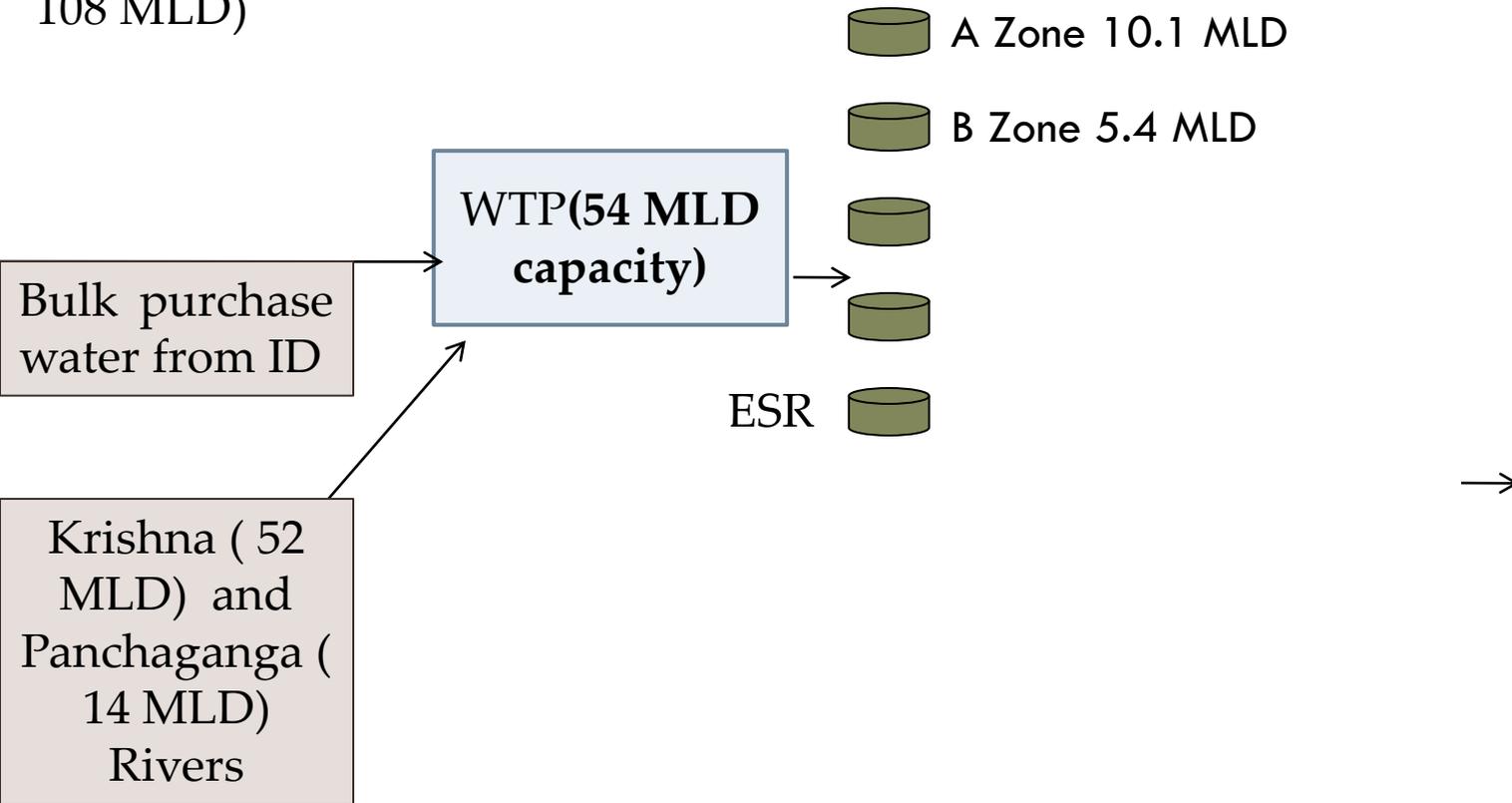
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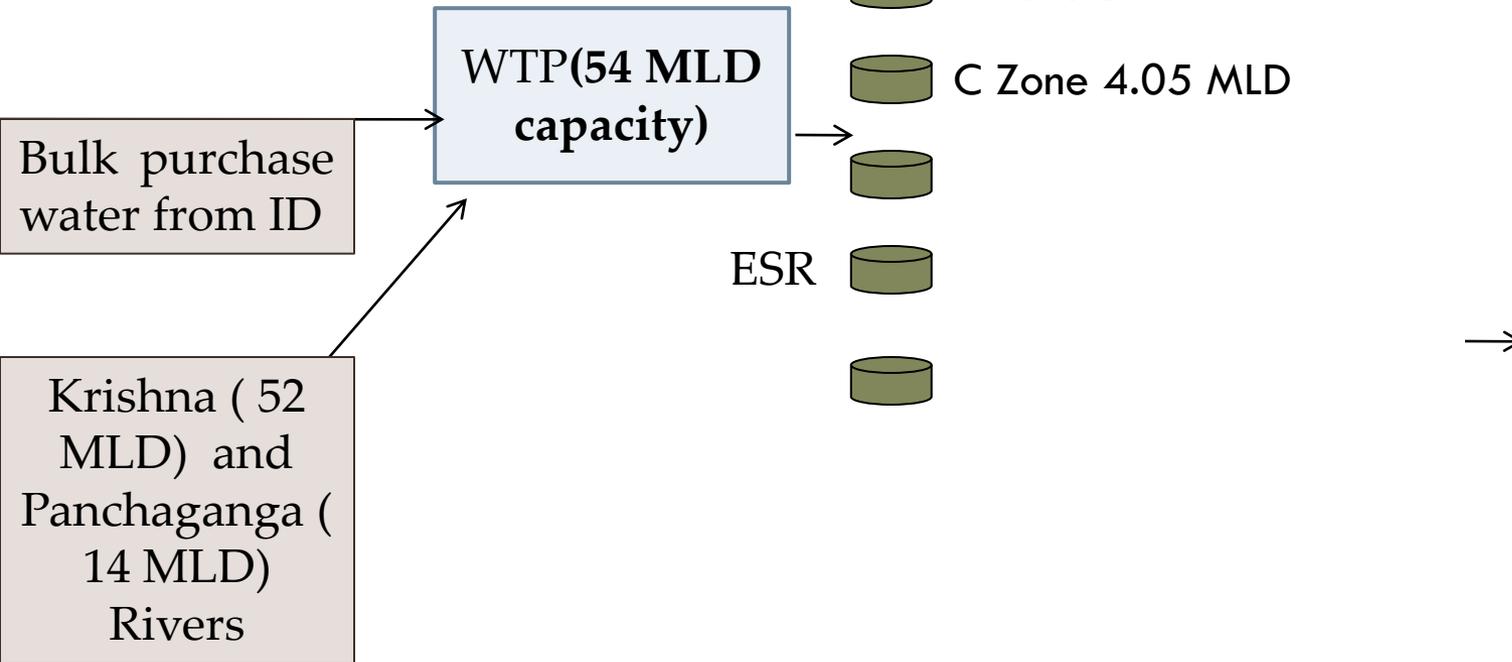
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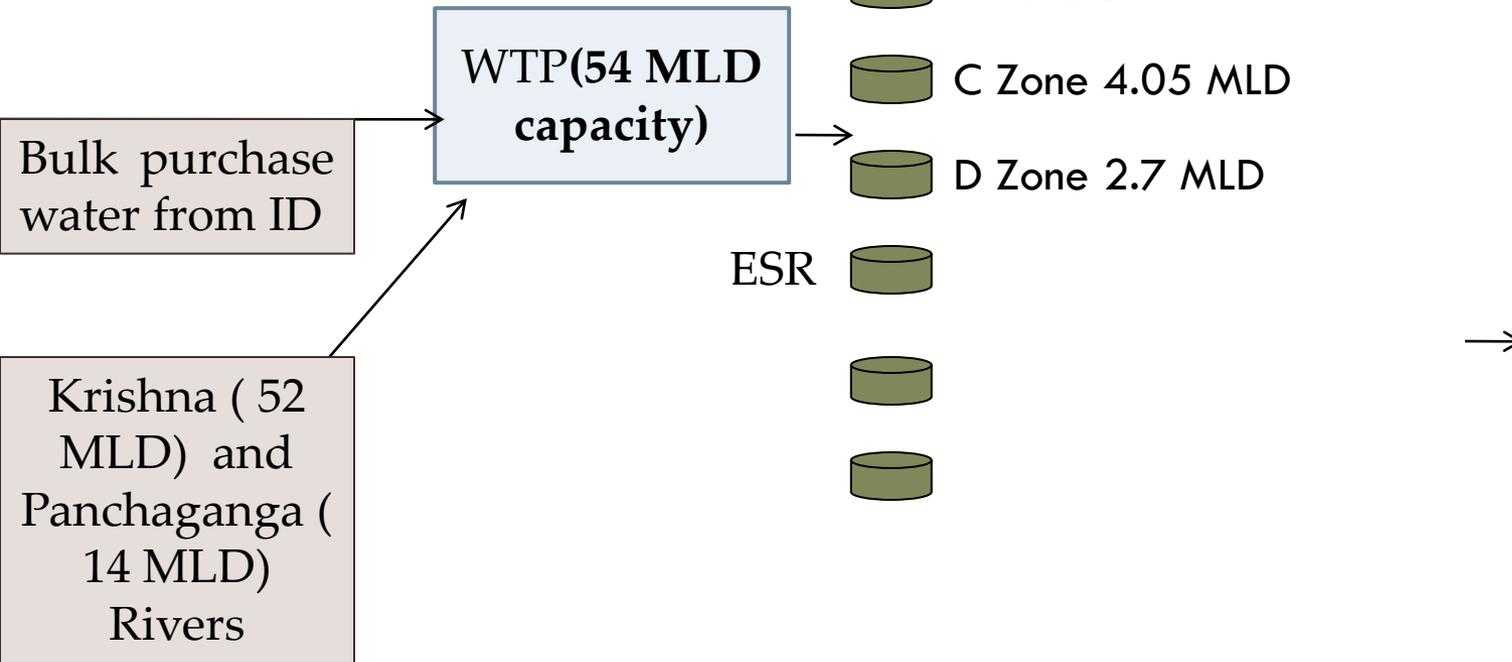
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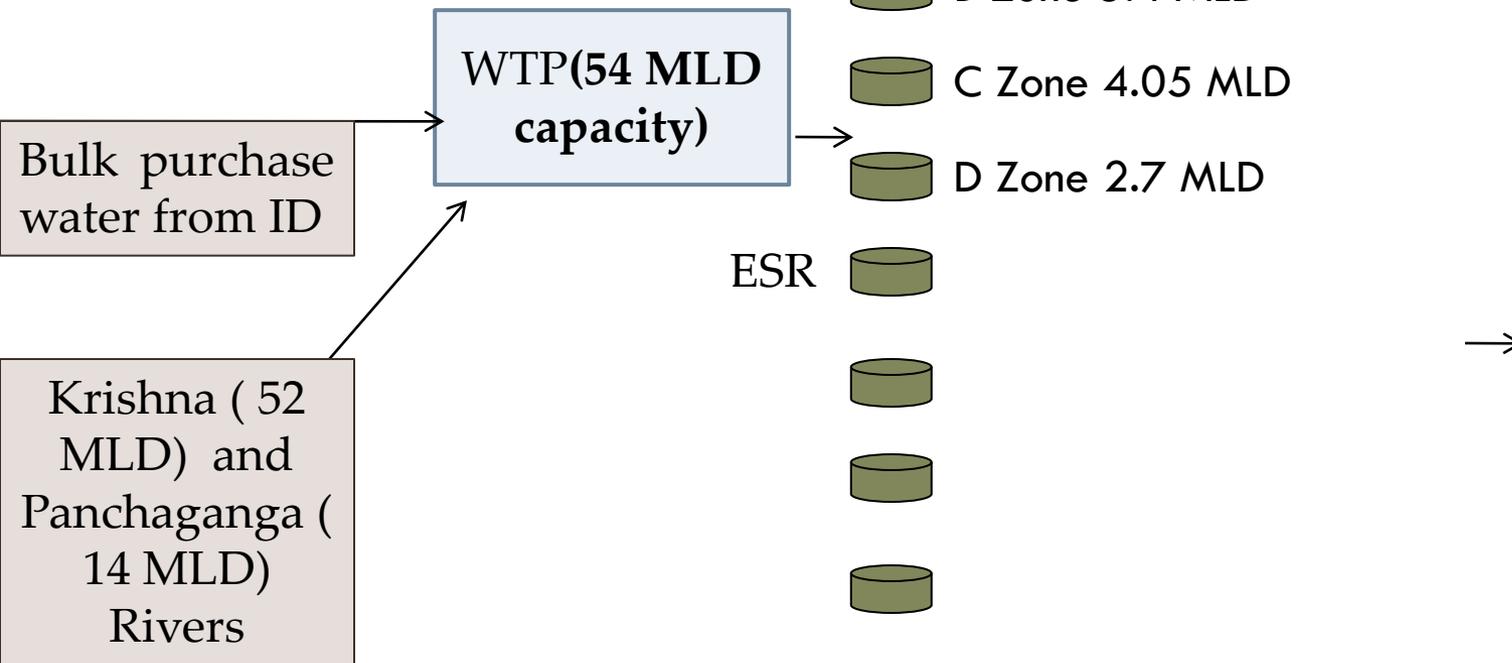
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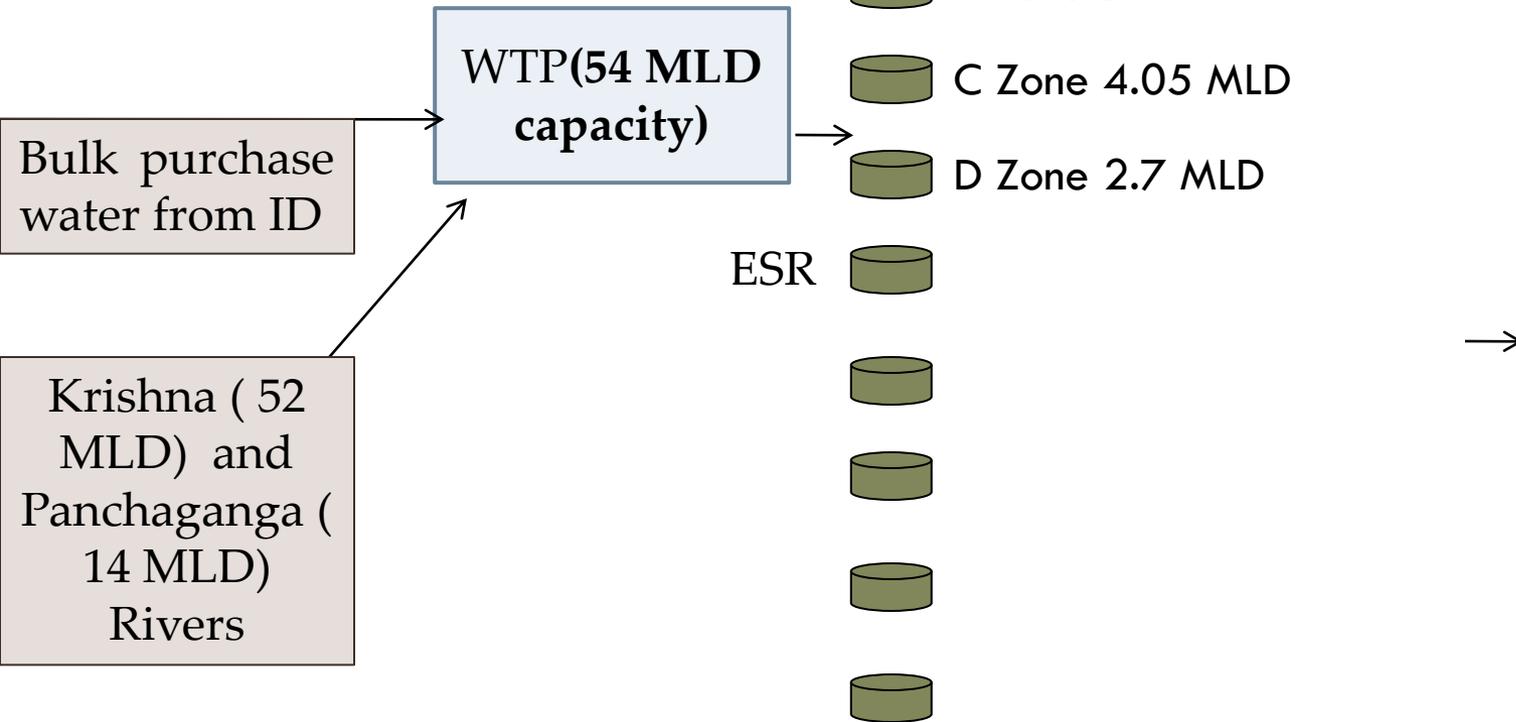
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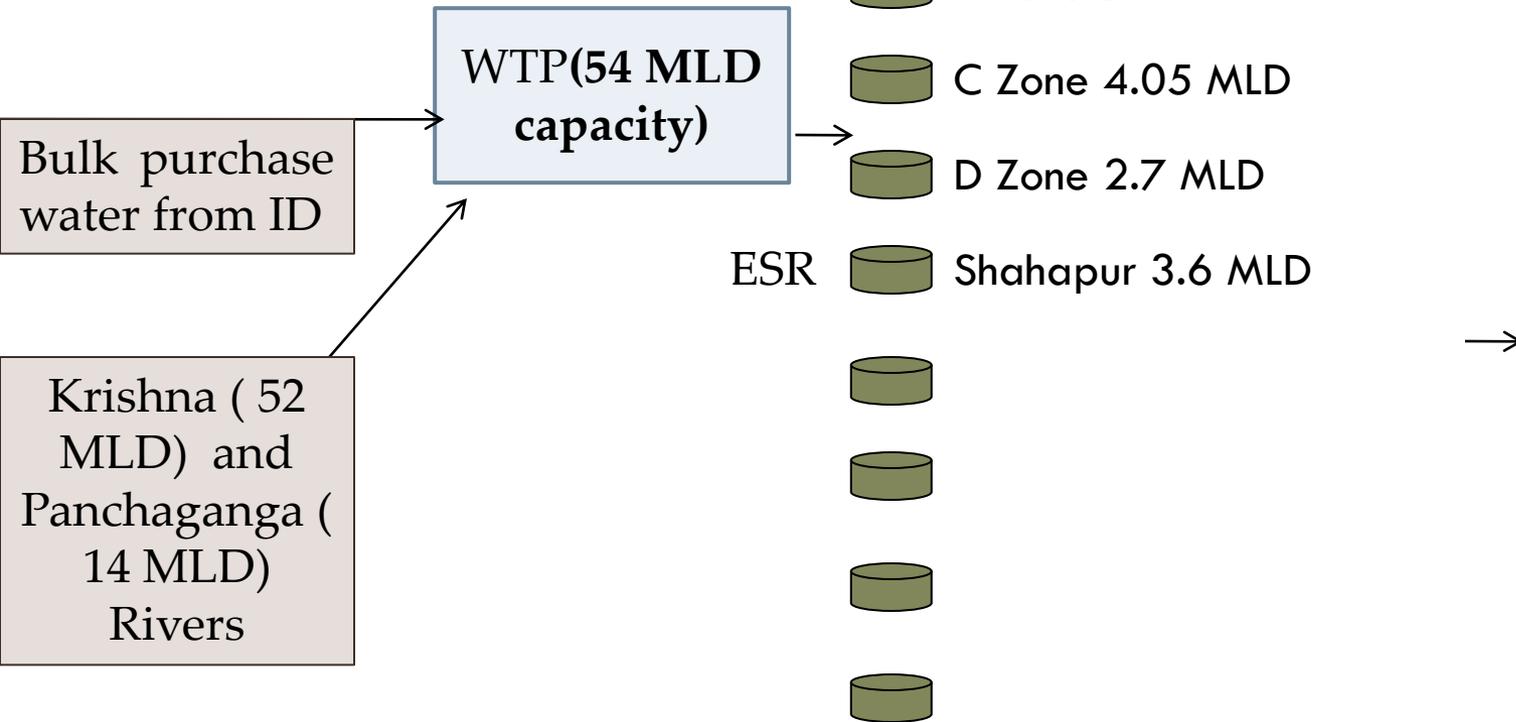
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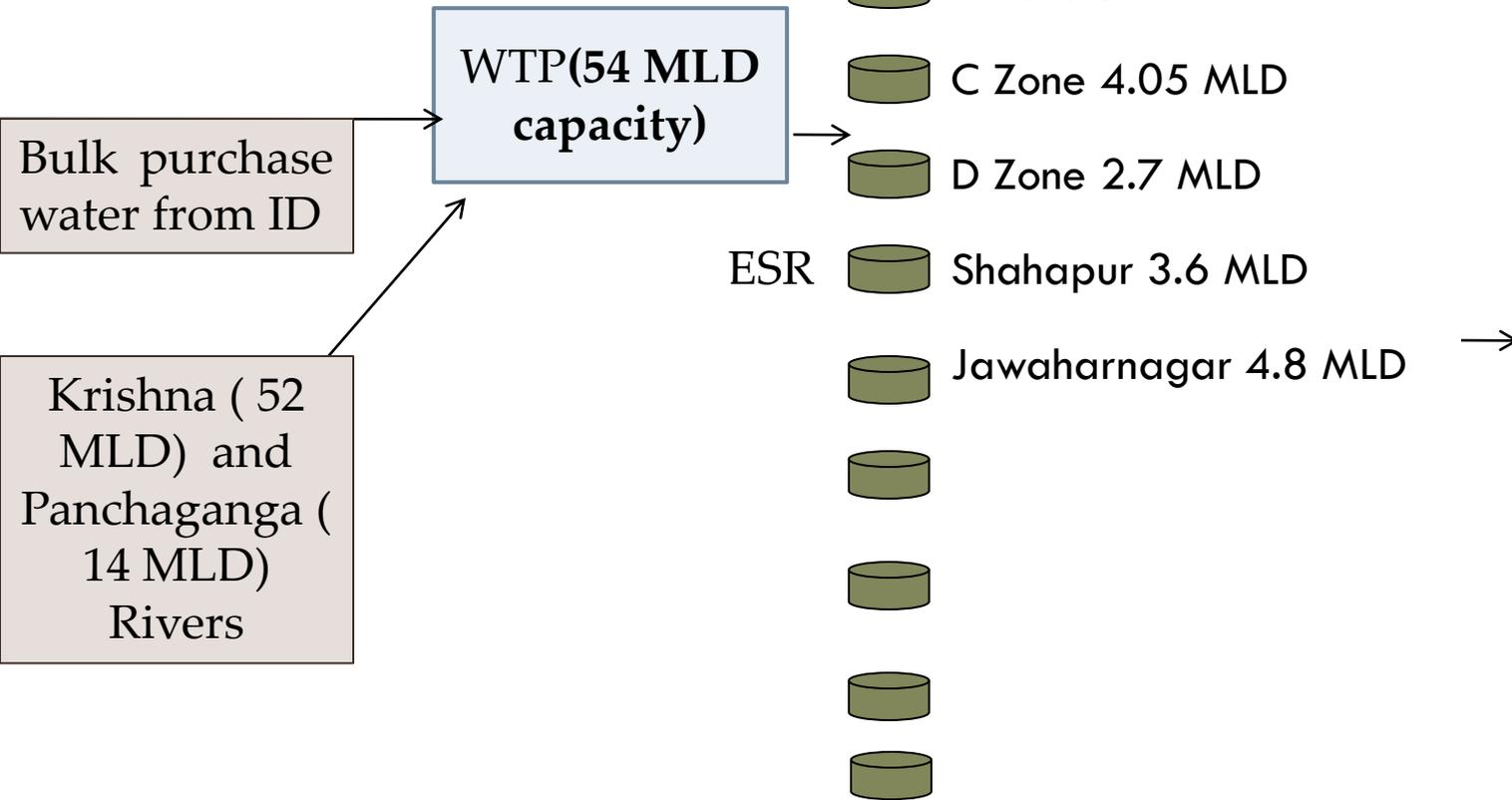
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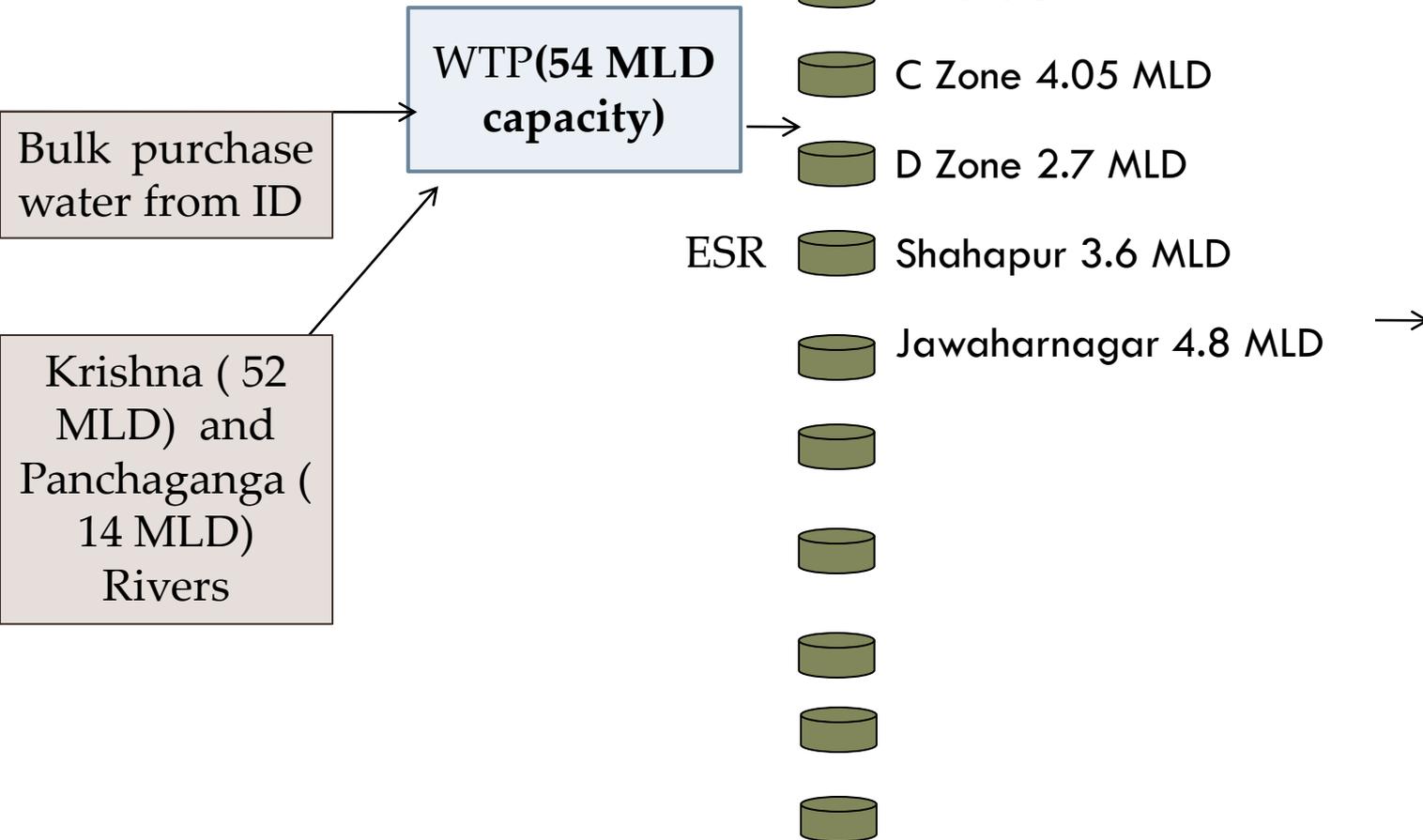
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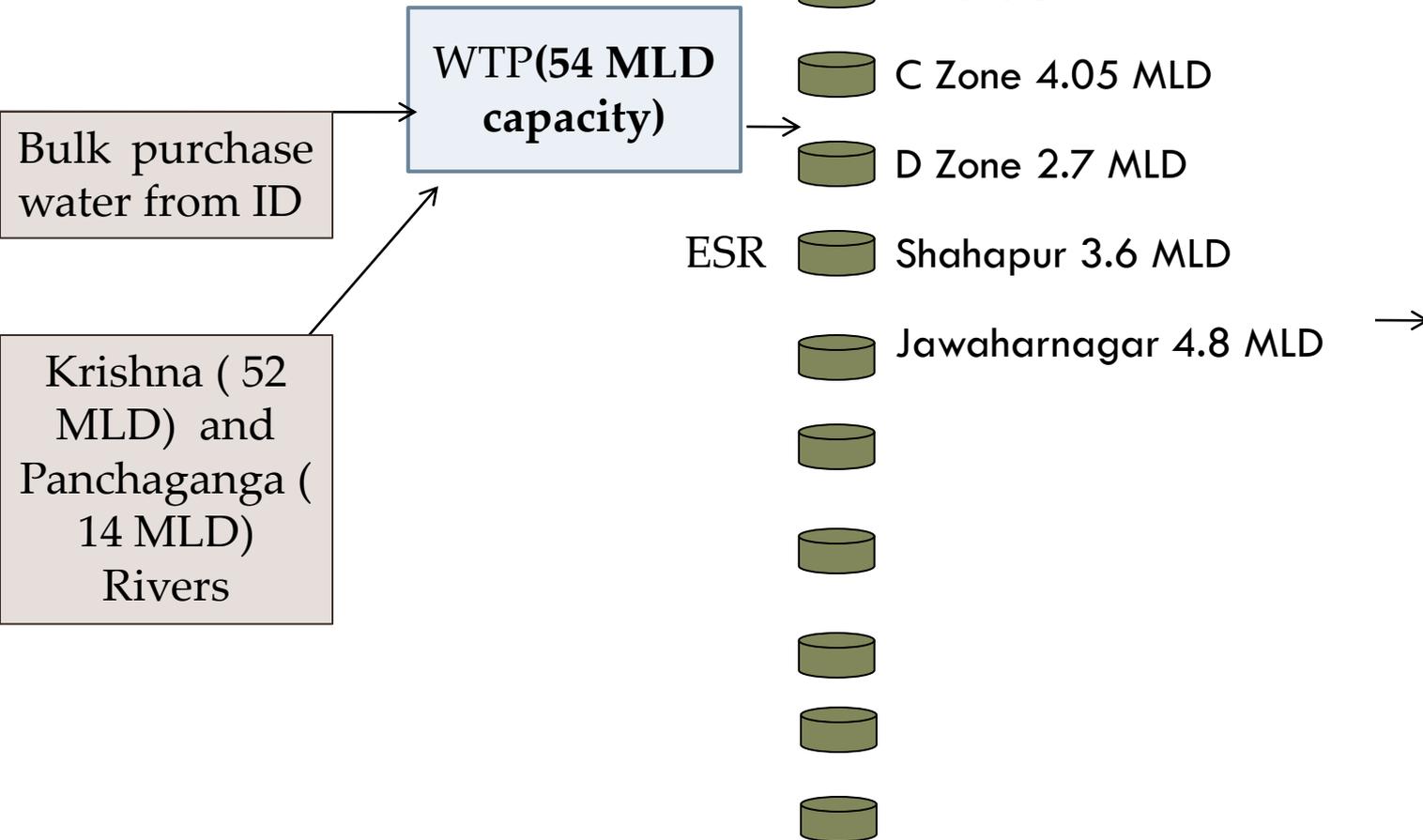
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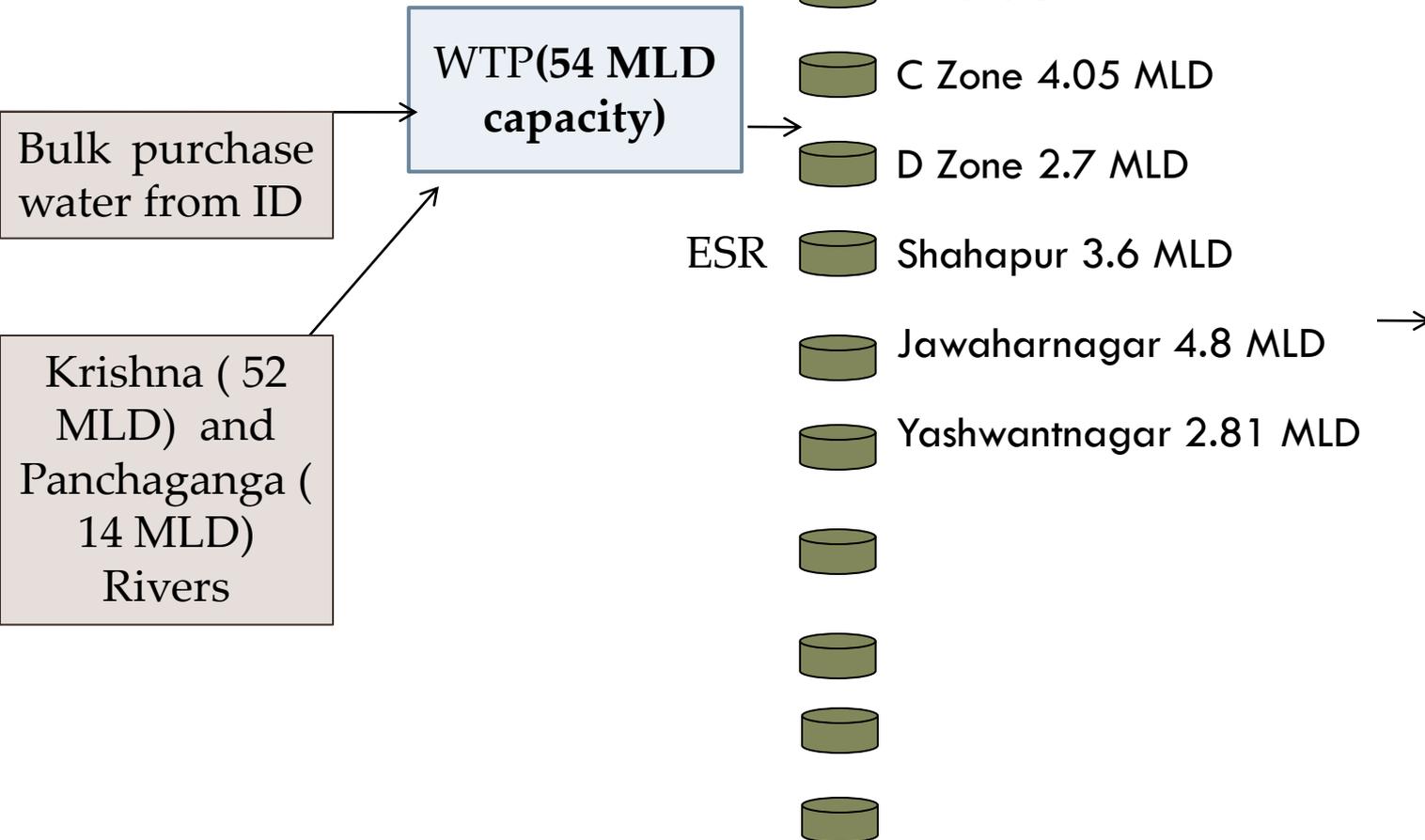
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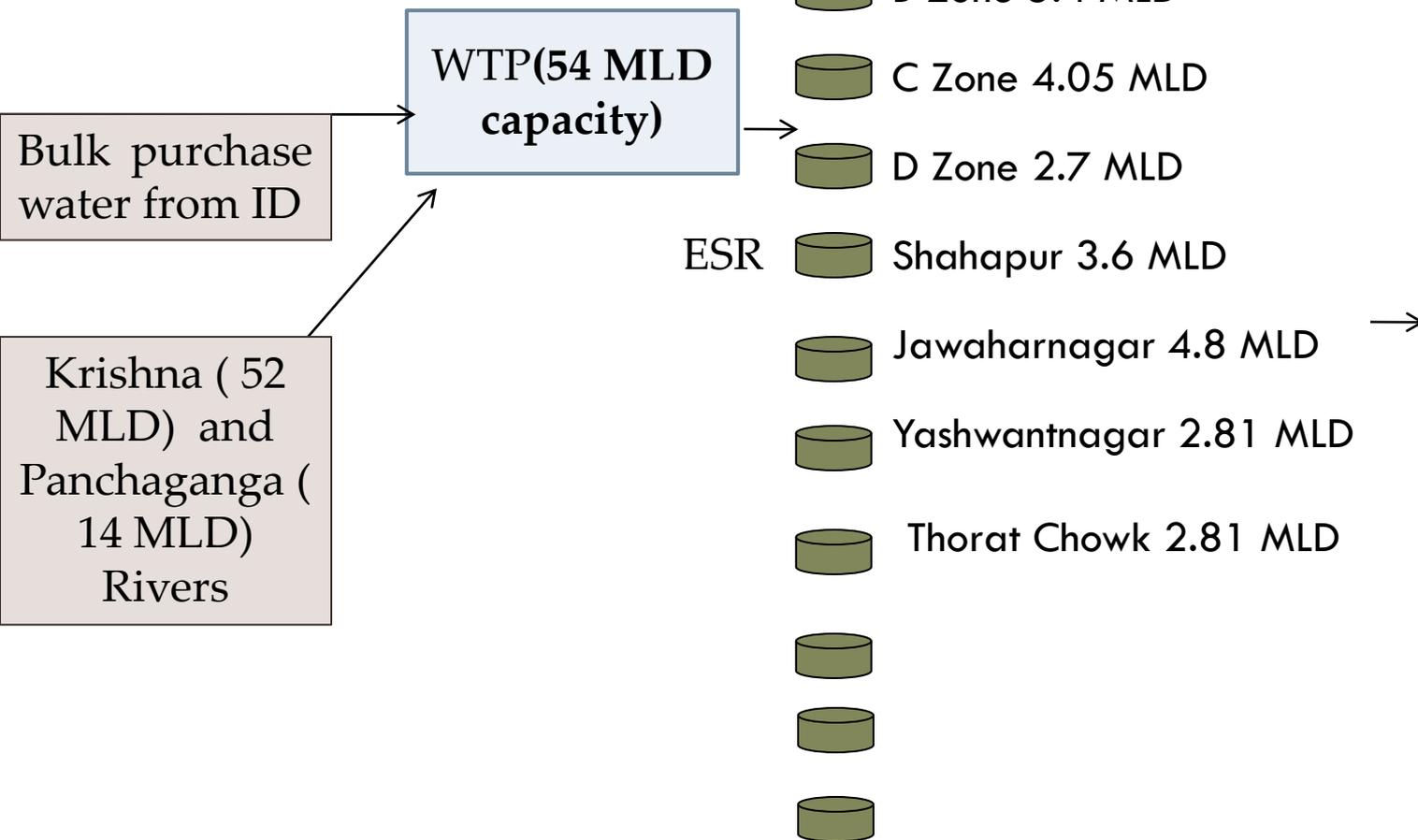
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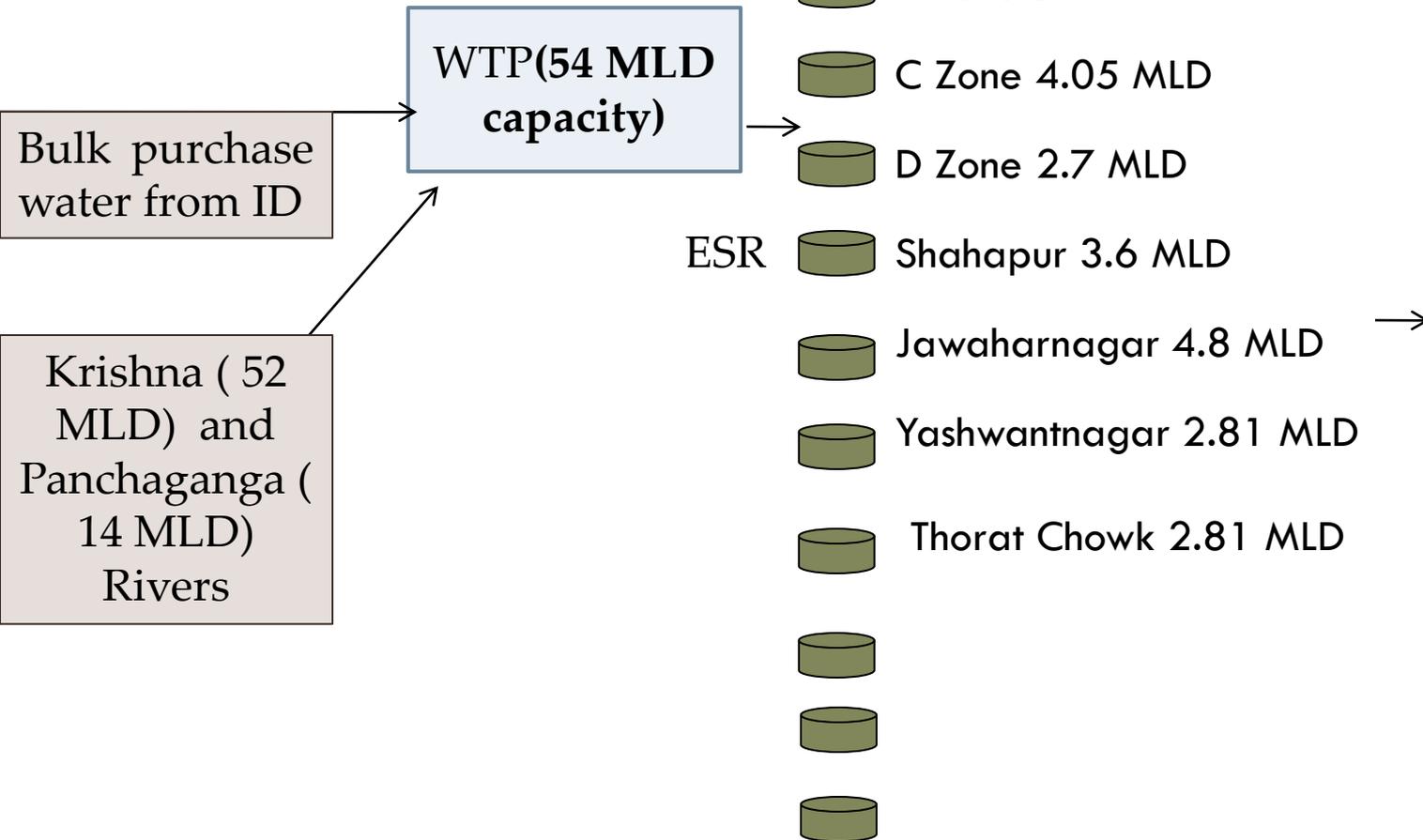
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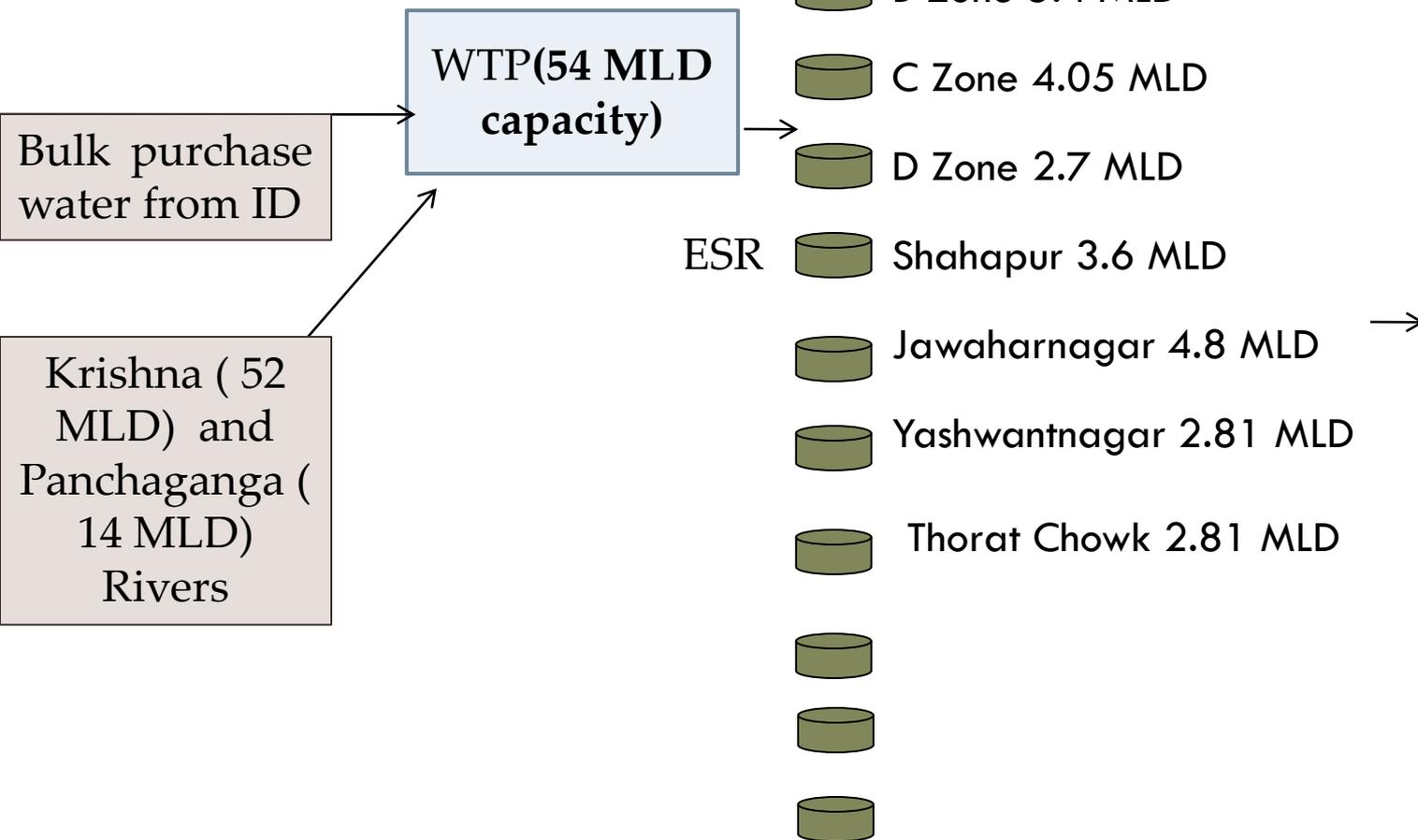
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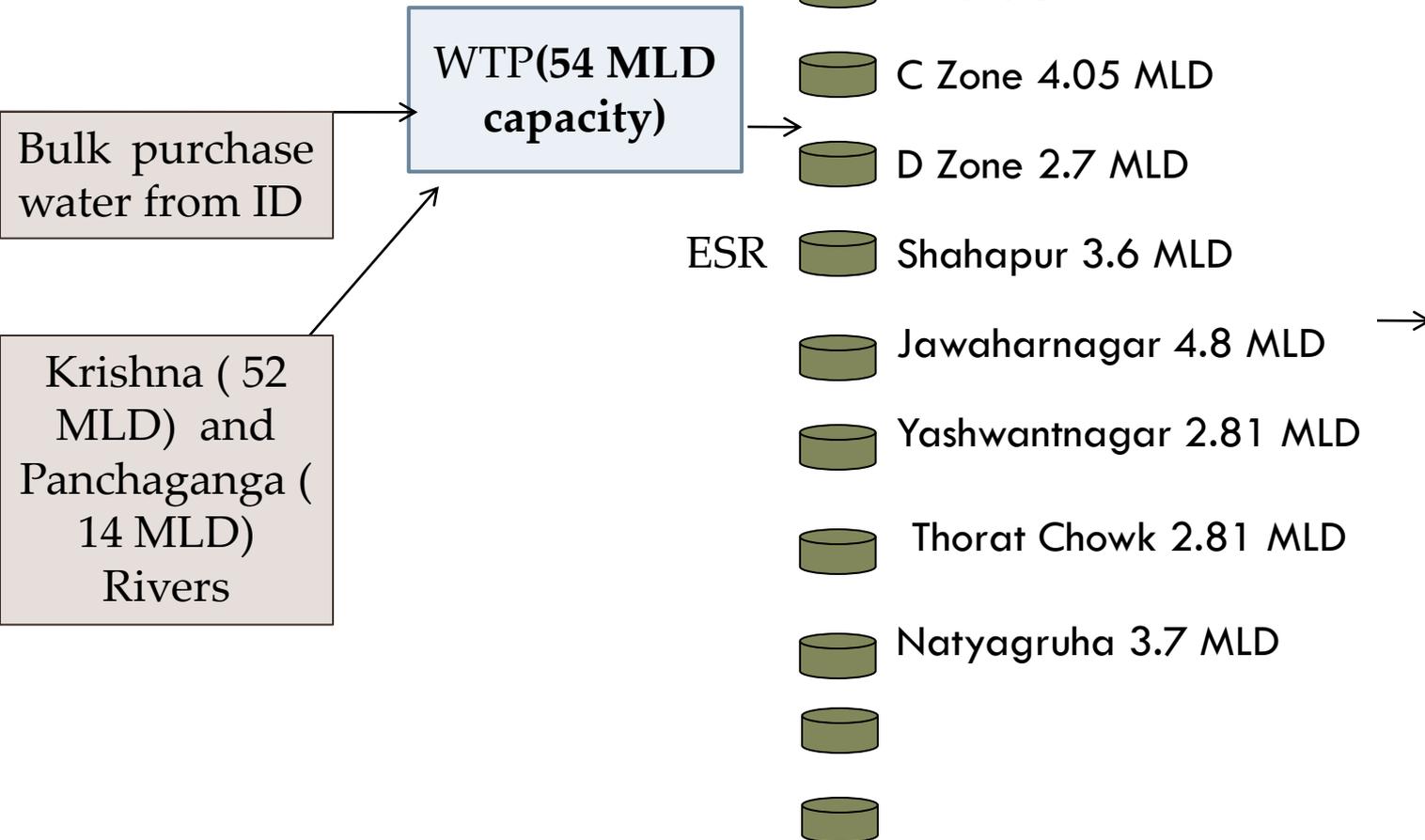
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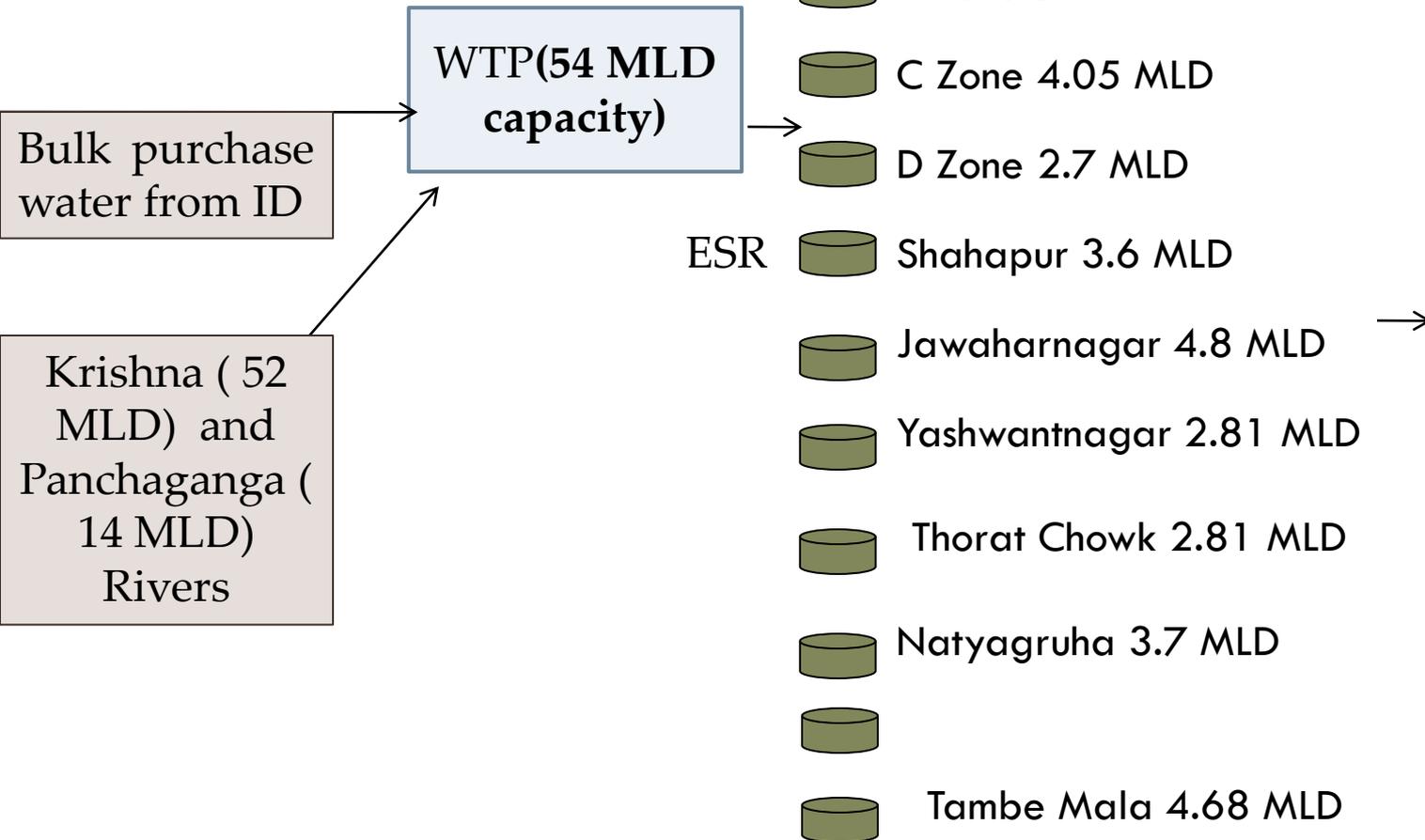
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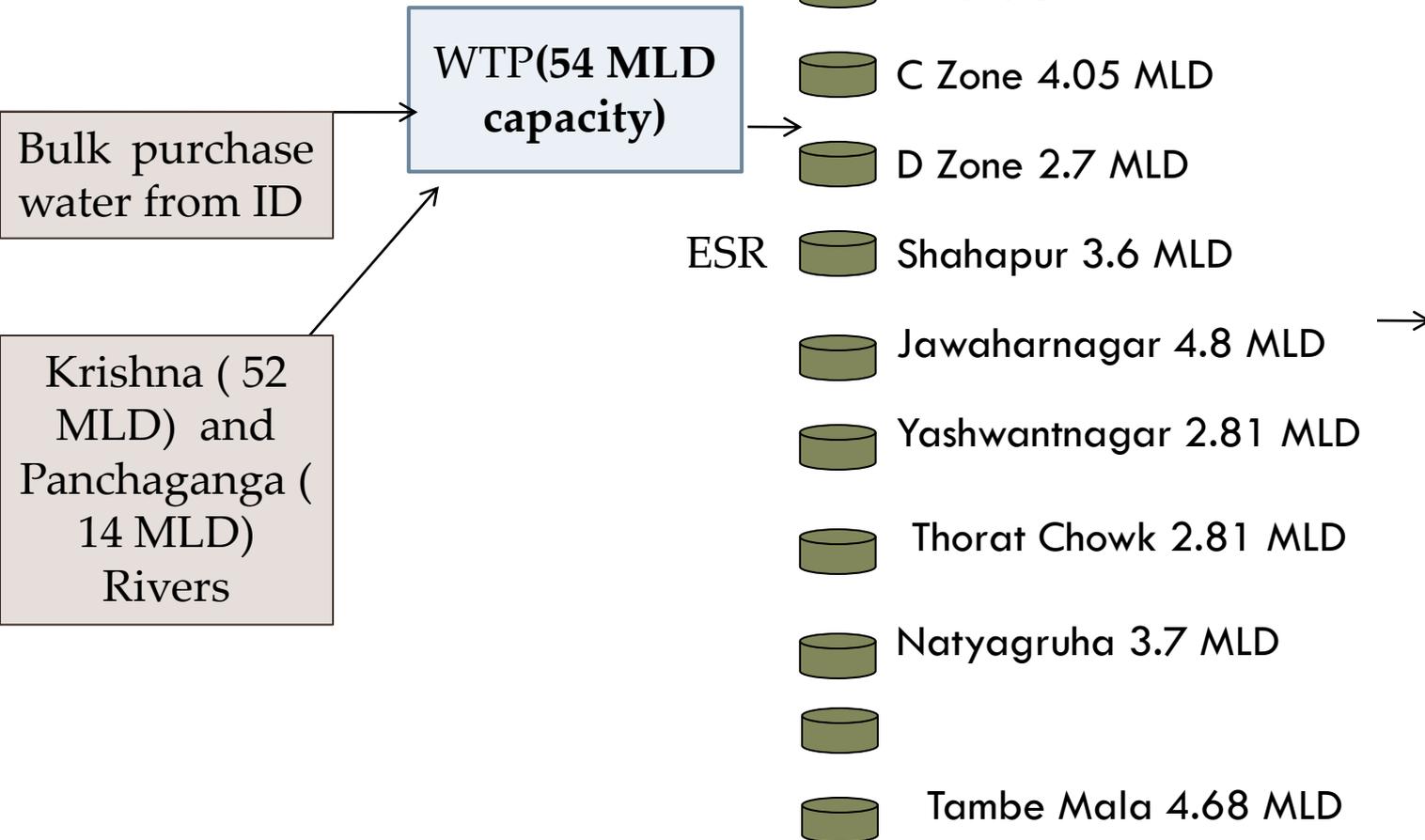
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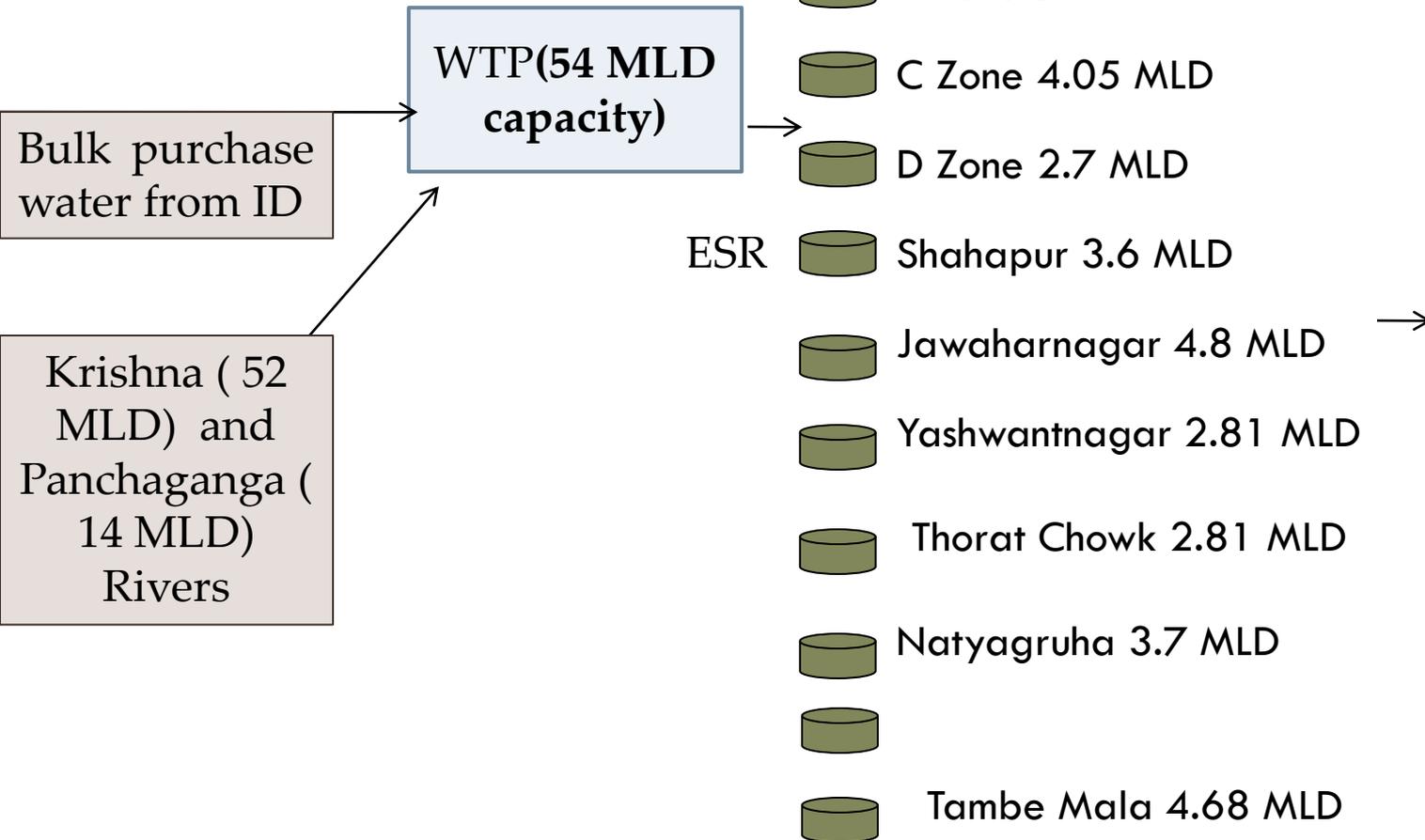
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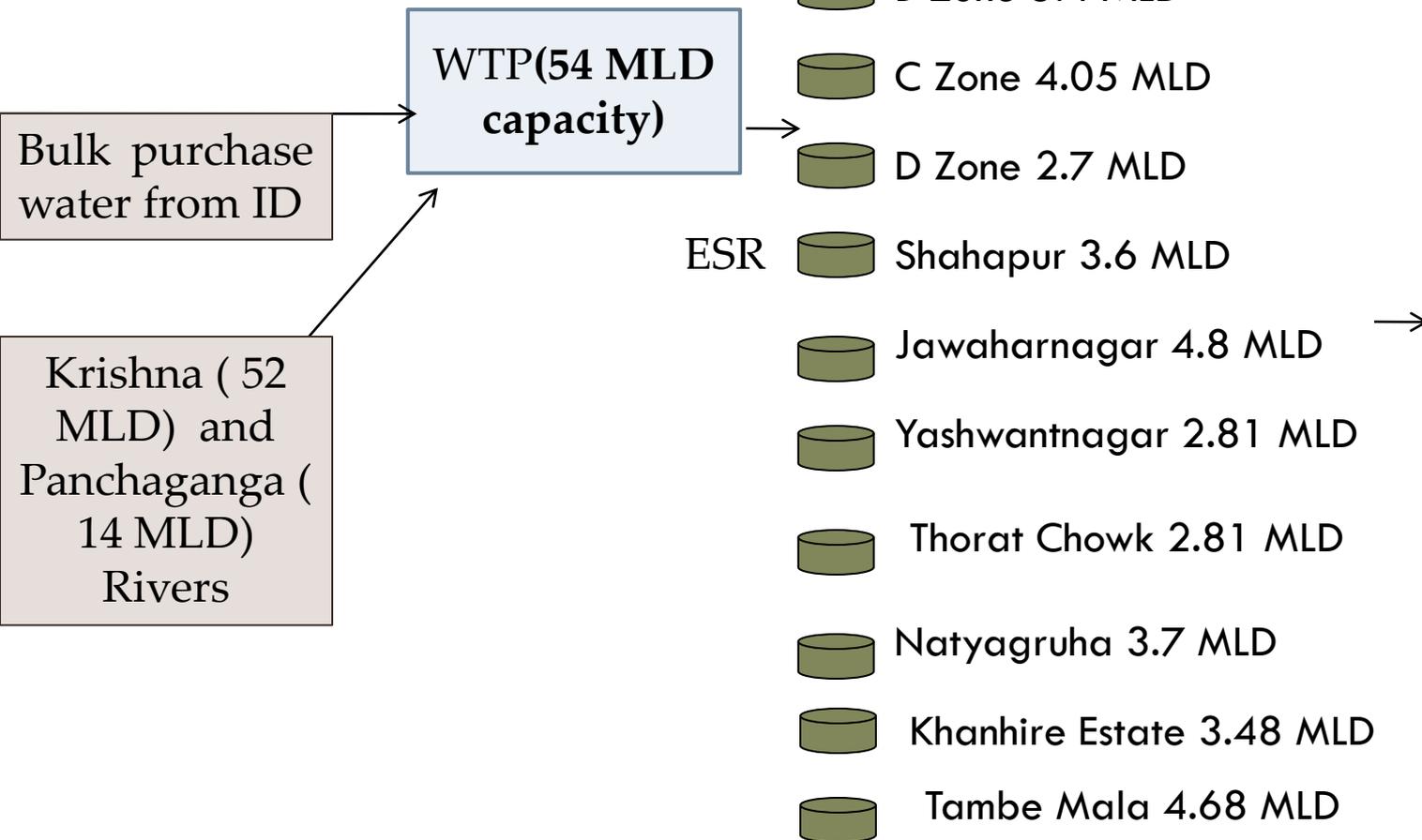


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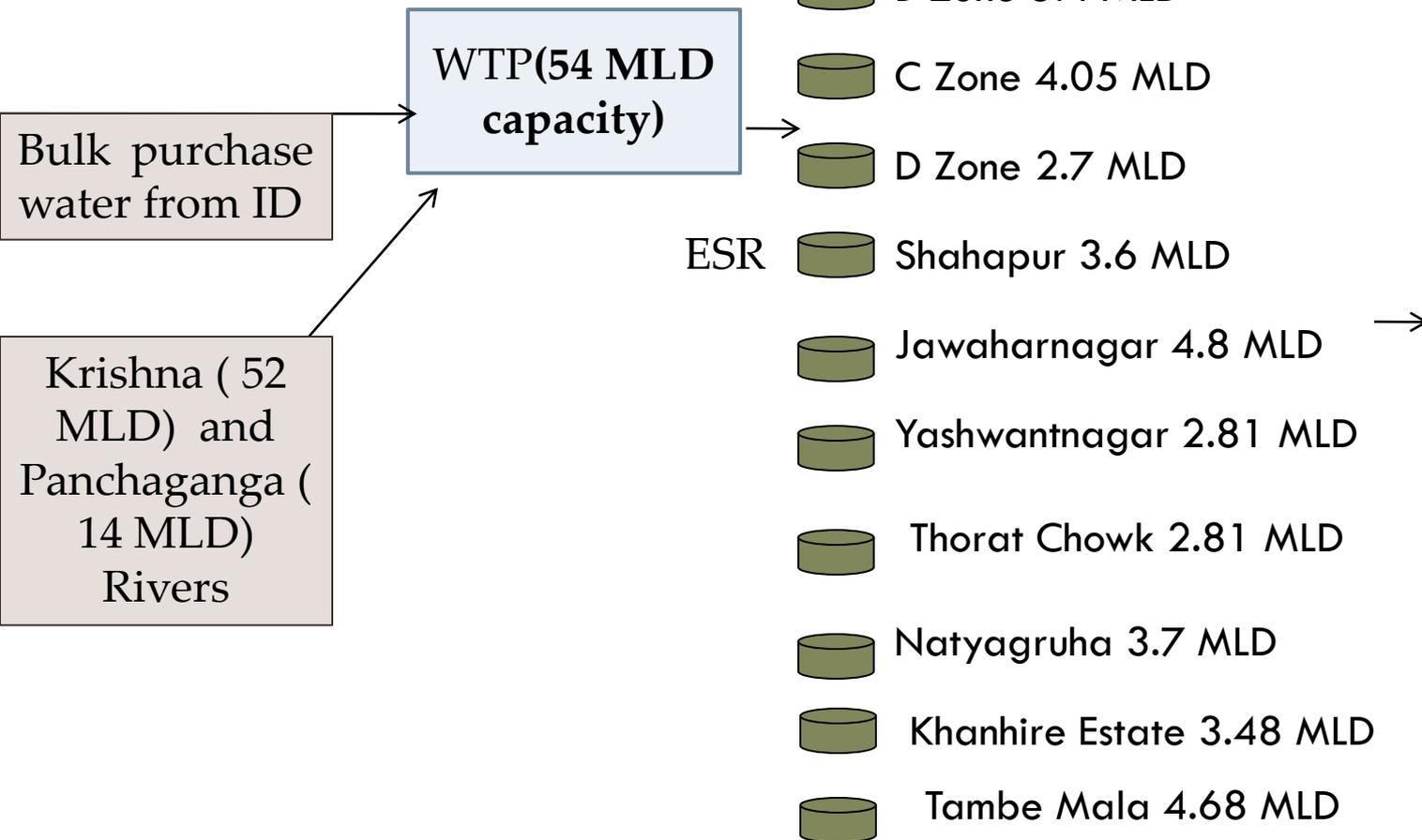


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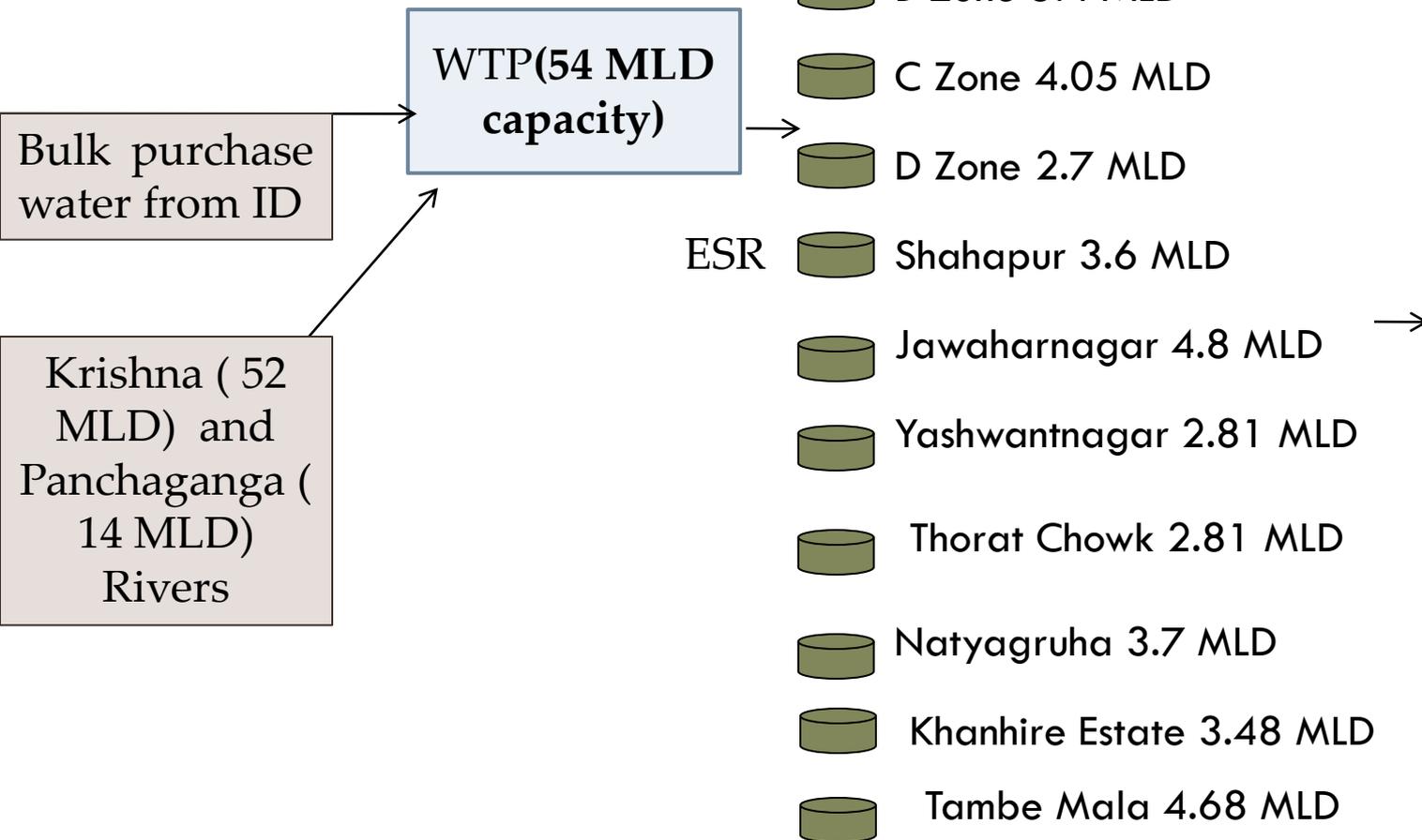
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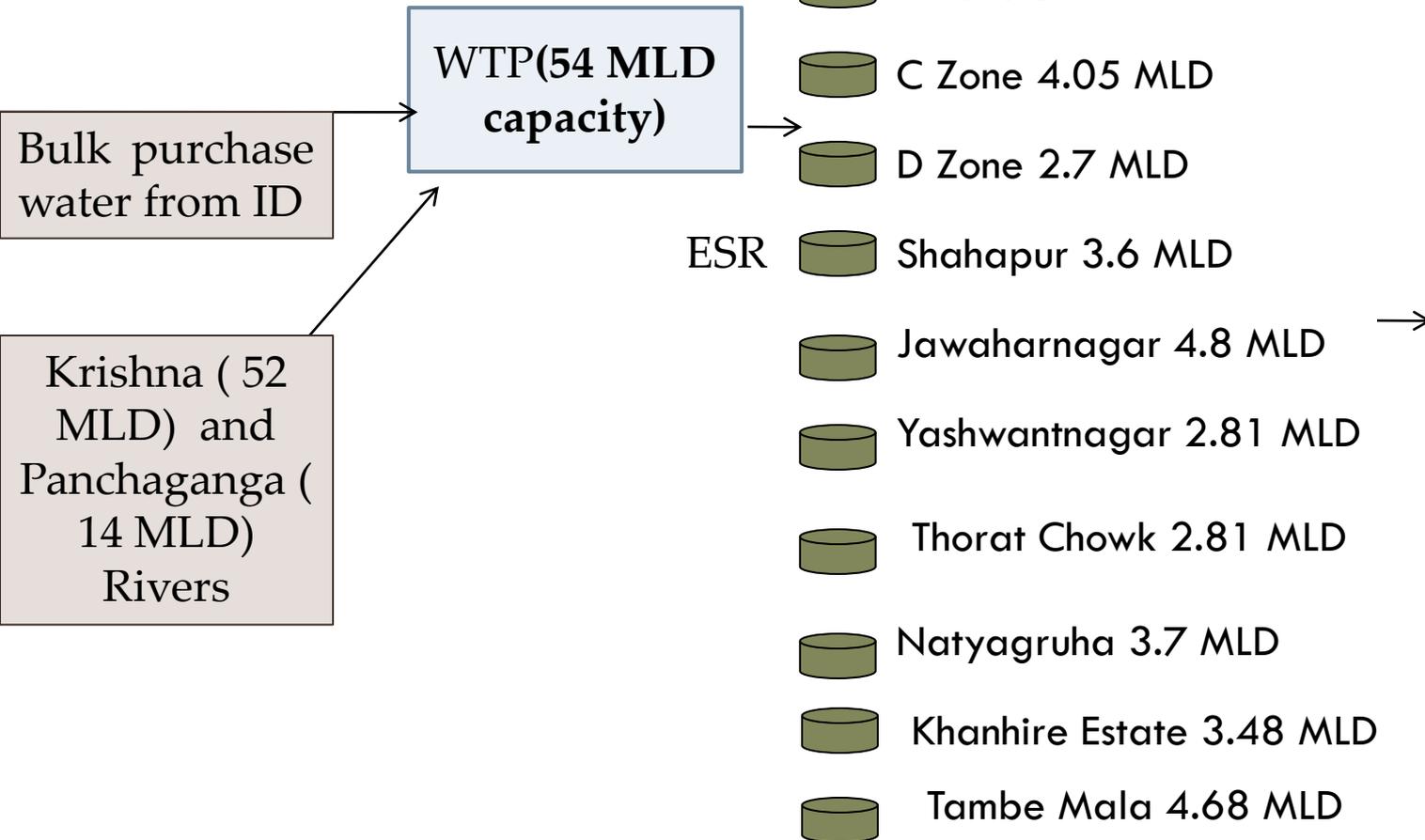
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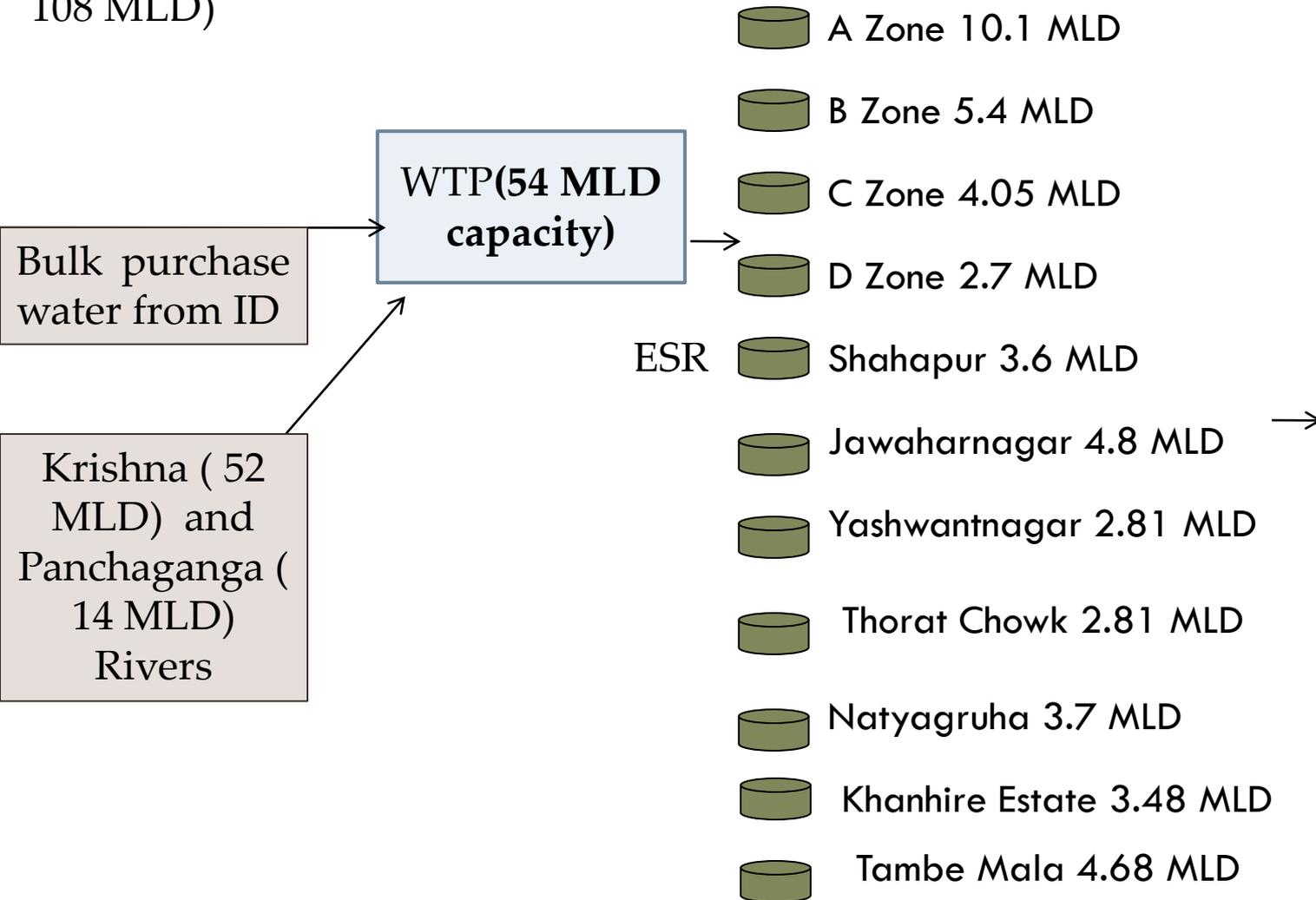
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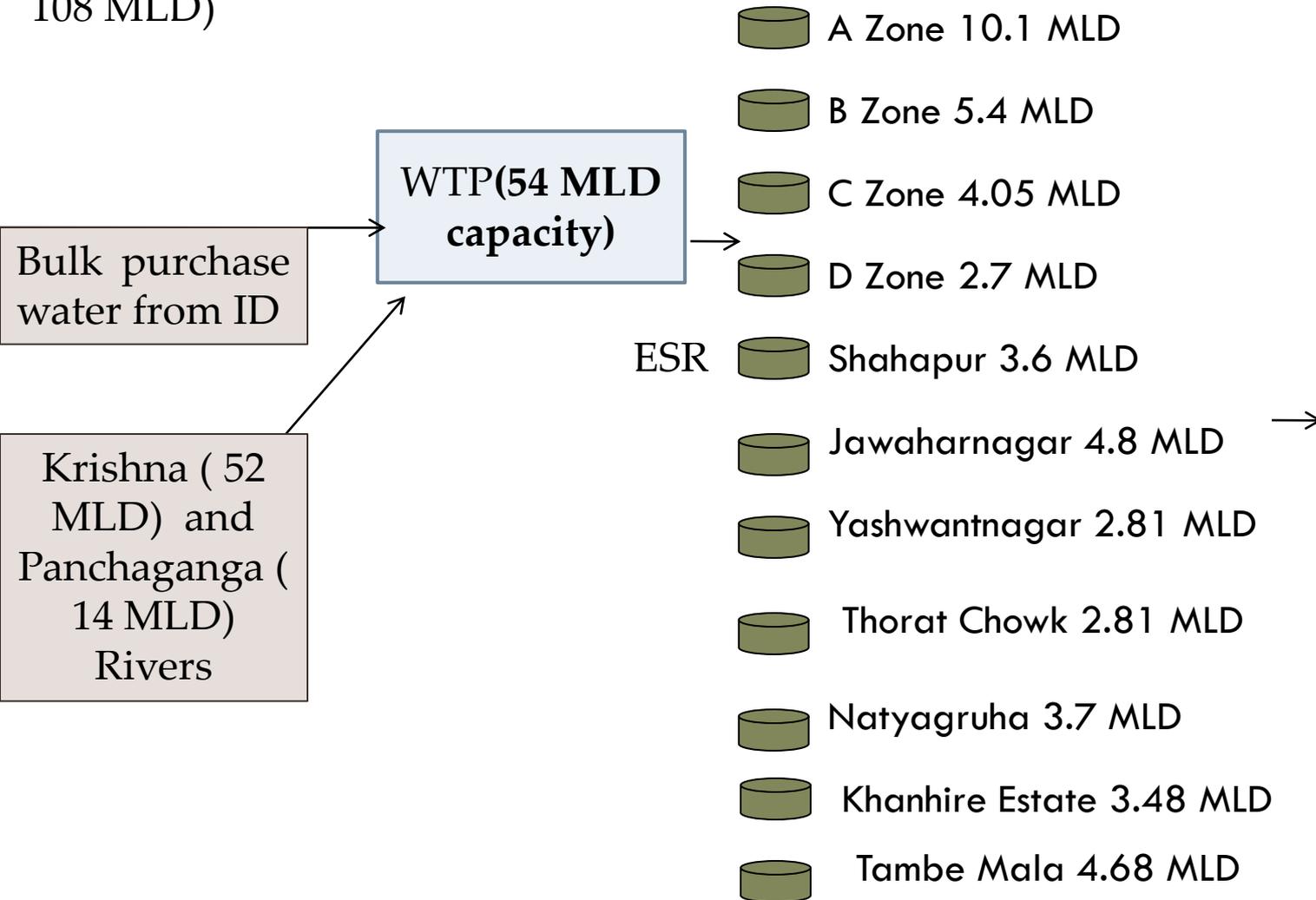
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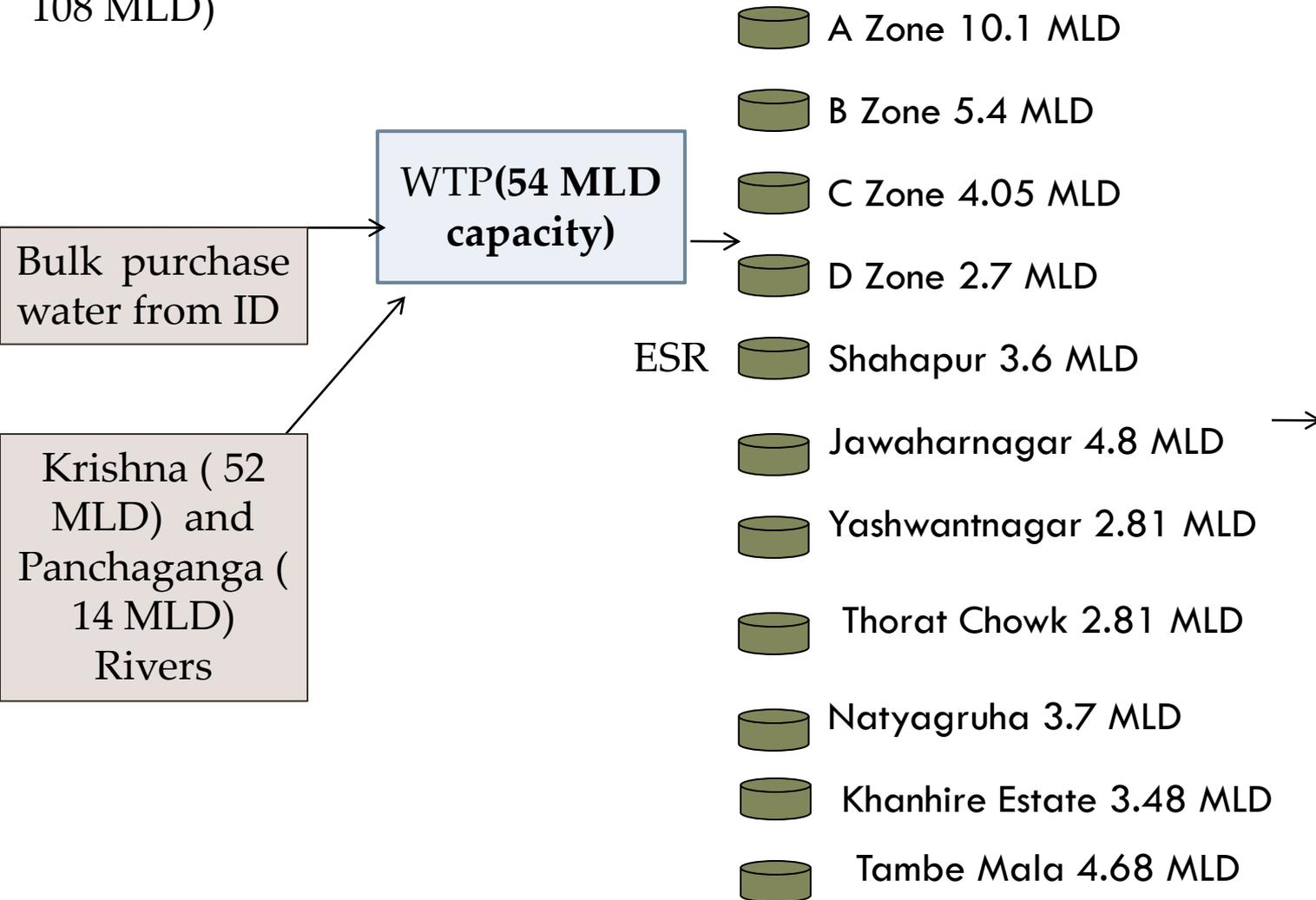
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LPCD @ this end = 171
Losses = 25.52%

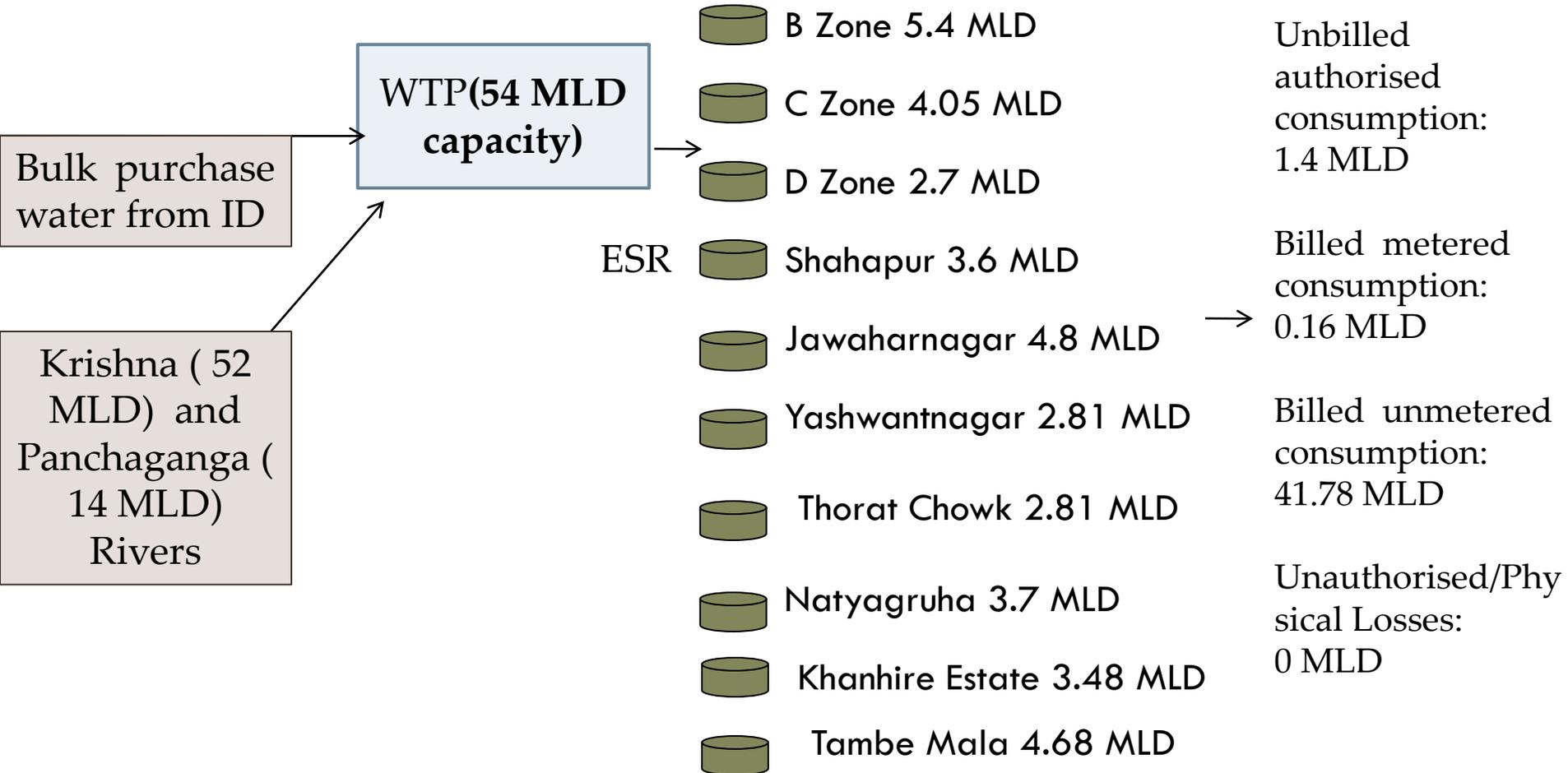
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LPCD @ this end = 170
Stage loss- 2.1%
Losses = 27.1%

III. WATER CONNECTIONS

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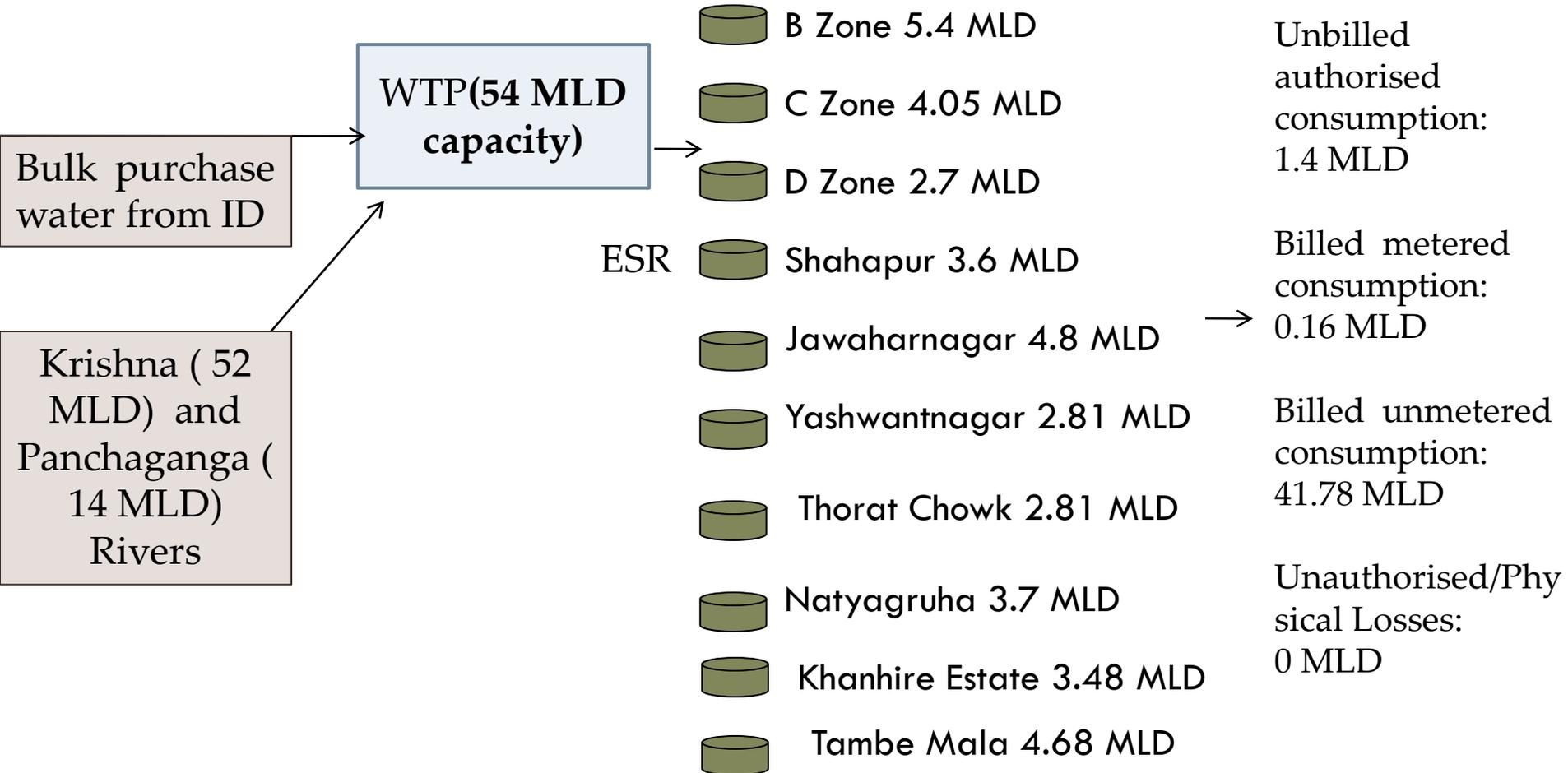
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48.13 MLD

LPCD @ this end = 170
Stage loss- 2.1%
Losses = 27.1%

III. WATER CONNECTIONS

Consumer end:
43.34MLD

LPCD @ this end = 151
Stage loss- 9.95%
Losses = 34.3%



I. WATER SOURCE & TREATMENT

Source:
66 MLD
(allocation
108 MLD)

Treated water:
49.16 MLD

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Losses = 25.52%

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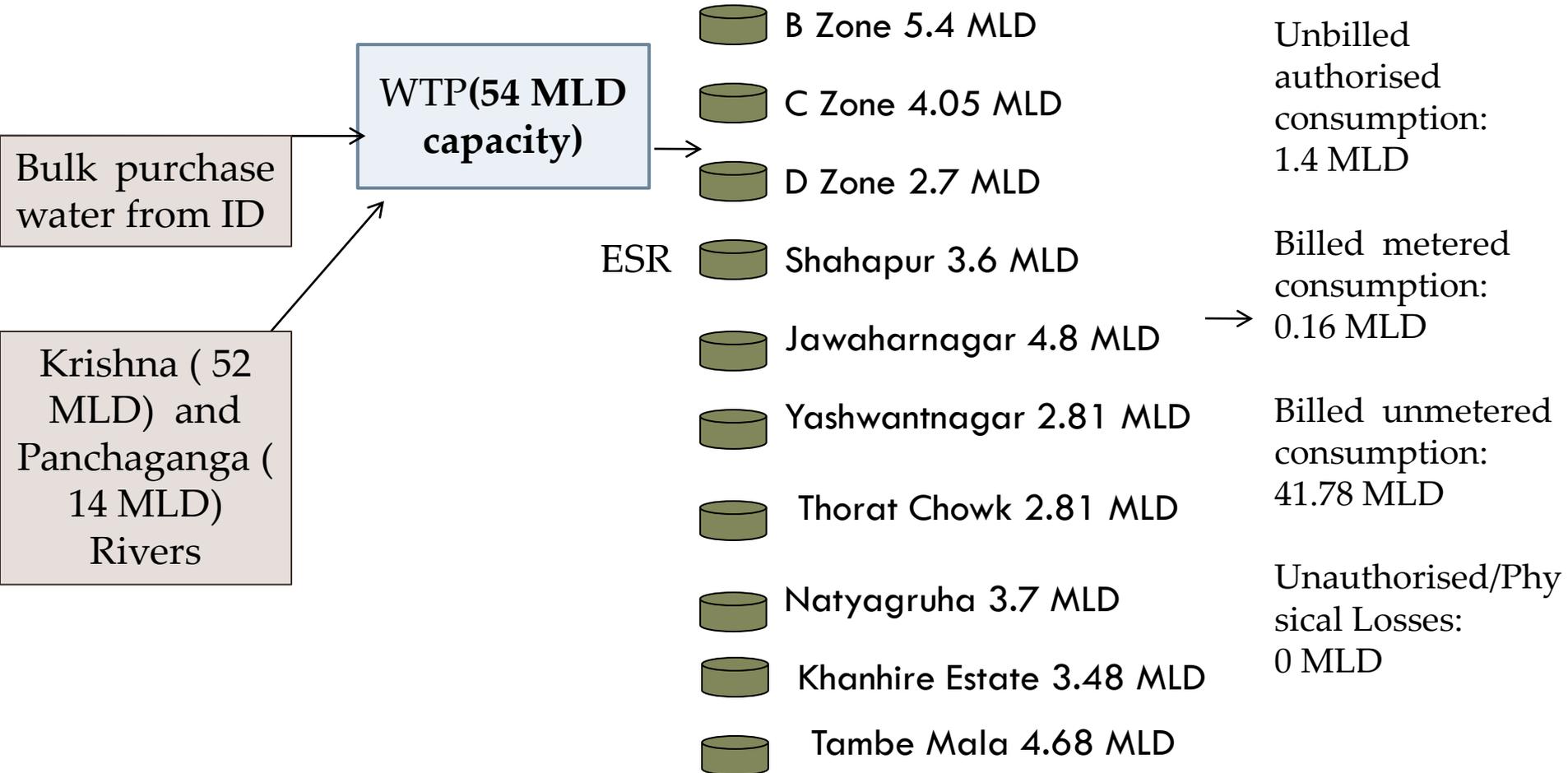
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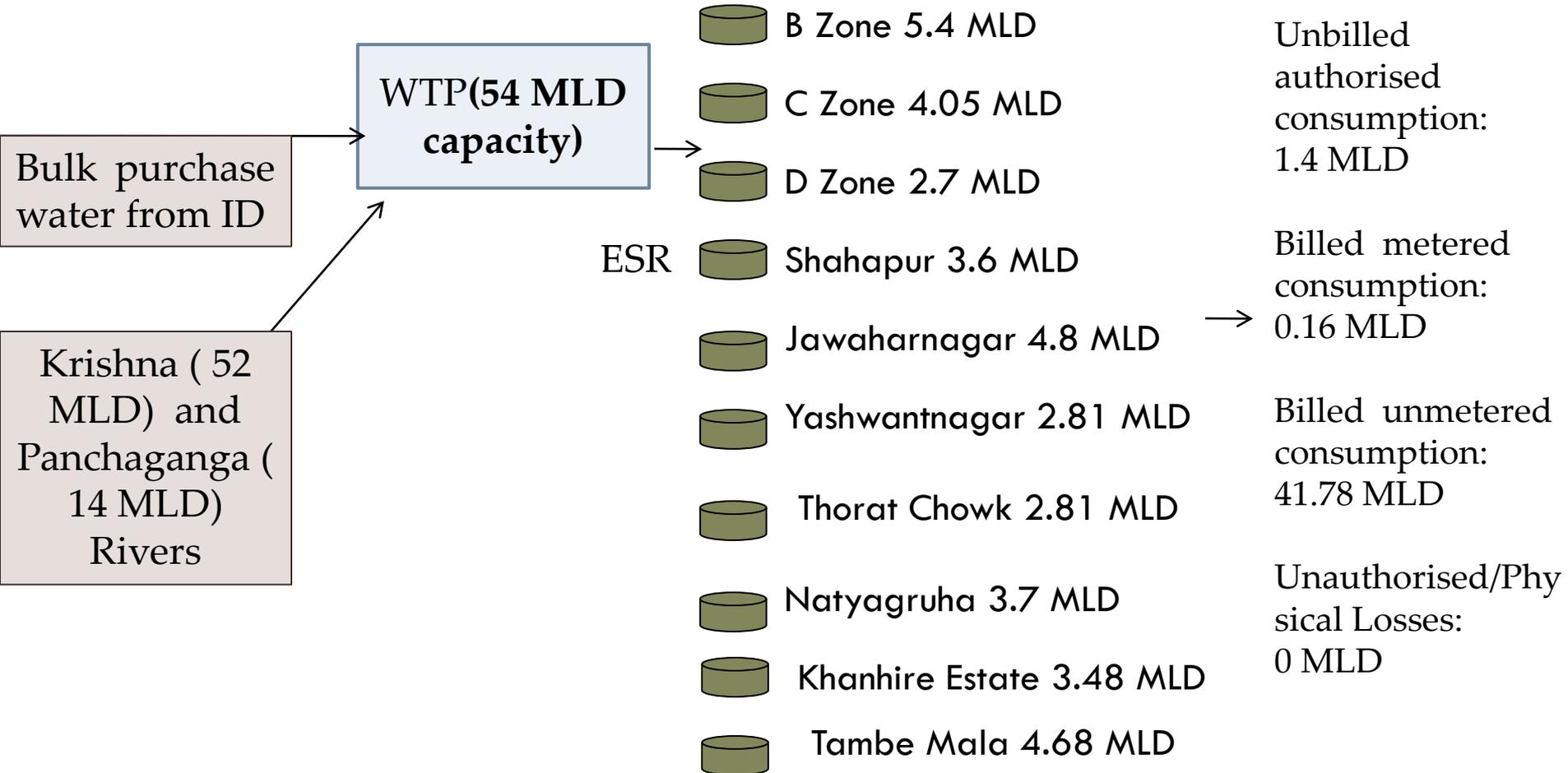
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Bulk purchase
 water from ID

Krishna (52
 MLD) and
 Panchaganga (14 MLD)
 Rivers

**WTP(54 MLD
 capacity)**



B Zone 5.4 MLD



C Zone 4.05 MLD



D Zone 2.7 MLD

ESR



Shahapur 3.6 MLD



Jawaharnagar 4.8 MLD



Yashwantnagar 2.81 MLD



Thorat Chowk 2.81 MLD



Natyagraha 3.7 MLD



Kanhire Estate 3.48 MLD



Tambe Mala 4.68 MLD

Unbilled
 authorised
 consumption:
 1.4 MLD

Billed metered
 consumption:
 0.16 MLD

Billed unmetered
 consumption:
 41.78 MLD

Unauthorised/Phy
 sical Losses:
 0 MLD

NRW= LOSSES + FREE SUPPLIES
22.66 + 1.4 MLD
= 24.06 MLD= 36.5%



LEAKAGES AND THEFTS In 18km RISING MAIN from KRISHNA RIVER

Water supply indicators for Ichalkaranji

S.No.	WATER SUPPLY	Unit	Value 2008-09	Value 2009-10	Value 2010-11
1	Coverage of water supply connections	%	48	50	53
2	Per capita available of water at consumer end	lpcd	122	141	151
3	Extent of metering of water connections	hours	0	0	0
4	Extent of Non Revenue Water	%	29	17	36
5	Continuity of water supply	%	0.93	0.93	0.93
6	Efficiency in redressal of customer complaints	%	71	66	79
7	Quality of water supplied	%	100	100	100
8	Cost recovery in water supply services	%	42	41	59
9	Efficiency in collection of water supply related charges	%	73	85	77

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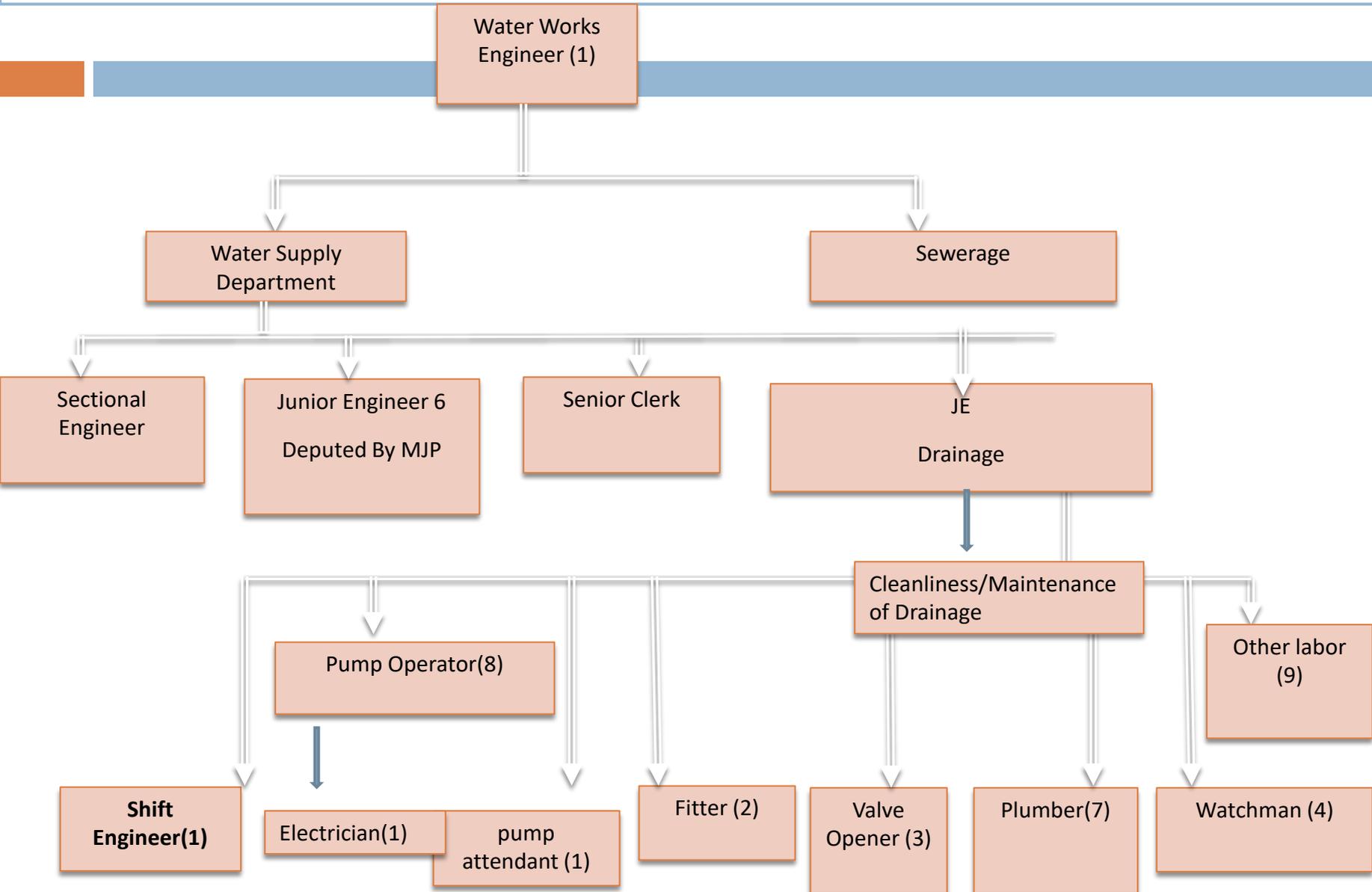
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Water Supply Dept- Organogram



WATER SUPPLY PROFILE

No of Household connections- 34,527

No of Industrial / Commercial connections- 3444 out of which
(2365 (68.68%) are metered)

No. of Stand Posts- 700

Hand pumps- 350

Bore wells – 250

No of individual connections in slums – 567

No. of stand posts in slums- 121

Table showing deposit and installation charges for Water

Size of connection	Residential	Industrial
1/2 inch	1000+75	3600+75
3/4 inch	2000+120	7500+120
1 inch	4000+150	16500+150

Table showing fines in case of illegal connections

Size of connection	Residential (Rs.)	Industrial (Rs.)
1/2 inch	2000	7000
3/4 inch	3000	15000
1 inch	7000	20000

- No metering at household level (pilot zone Tambe Mala by World Bank)

- No data maintained for illegal connections

- Assessment of illegal connections not carried out; likely to be started

Water Charges and Fees

Table showing Rate of water usage

Type of connection	Old rate per 1000 liters (in Rs.)	New Rate per 1000 liters (in Rs.)
Residential	3.45	5.20
Industrial	15.45	23.20

•New rates applicable from 1st April 2010

Table showing Water taxes for different consumers

Size of connection	RESIDENTIAL		INDUSTRIAL/ COMMERCIAL	
	Old Rates (in Rs.)	New Rates from 1st April 2010 (in Rs.)	Old Rates (in Rs.)	New Rates from 1st April 2010 (in Rs.)
1/2 inch	806/-	1200	3580	5370
3/4 inch	1555	2300	7138	10700
1 inch	3662	5500	16152	24200

Water Supply Issues

Water production & Treatment –

Water allocation is sufficient but transmission losses are high. **Villages from Majrewadi headworks to WTP need to be considered in the scheme**

Distribution system –

Distribution network is erratic. Needs re-designing after hydraulic modelling

Water supply connections –

Likely possibility of high illegal connections and updation of data records. Increase household coverage

Water supply service finance –

Cost recovery is 59%, high electricity costs ; hence needs optimization in energy expenses (50 % share)

Collection efficiency (77%) should be increased by introducing year-round and other payment options

UIDSSMT

- ❑ Availed by IMC for Water supply
- ❑ Estimated cost : Rs. 37 crores
- ❑ Major works include changing of pipelines from Panchaganga, construction of another 54 MLD WTP for augmented water supply and construction of ESRs for improved distribution system
- ❑ 75% of work completed



ESR UNDER CONSTRUCTION



NEW WTP (54 MLD) UNDER CONSTRUCTION

NEW SOURCE :WARANA ??



Due to pollution in Panchaganga and its non-perennial nature, the IMC seeks to take water from RIVER VARANA in future

KOLHAPUR DISTRICT

Scale 1cm = 6.5 km.

RANA ??



Area	: 7,685 sq. km.
Population	: 35,15,413
Density of Population	: 457 sq. km.
Climate	: Hot and dry. Cold in western region.
Rainfall	: 194 cm
Rivers	: Krishna, Varana, Kasari, Bhogawati, Dudhganga, Tulshi, Hiranyakeshi, Kumbhi, Ghatprabha, Tamraparni.
Mountains	: Sanyadri, Panhala, Dudhganga, Chikod Ranges.
Industrial Places	: Kolhapur, Shengaoon, Ichaikarangi, Hupri, Kapasi, Wamanagar, Shirol, Gadhinglaj, Ajra, Shirol, Wadgaon.
Historical Places	: Kolhapur, Wadgaon, Pavankhind, Vishalgad, Panhala.
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Year	Decade	Methods of recasting			Population adopted
		Incremental	Geometric	Arithmetical	
2008	0.7	294957	336099	293771	315528
2023	2.2	378274	594261	371258	486268
2038	3.7	466077	1050721	448745	758399



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Proj. population for 2038	758399
Reqd water for 2038@ 135 lpcd	102 MLD
Existing allocation (Krishna + Panchaganga)	108 MLD

Due to pollution in Panchaganga and its non-perennial nature, the IMC seeks to take water from RIVER VARANA in future

Area Population Density of Population Climate
Rainfall Rivers
Mountain Industrial
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Areas of improvement

Performance Indicator	Existing Level	Benchmark	2011	2012	2013	2014	Cost
Coverage of connections at household level	53%	100%	70%	86%	100%		Low
Coverage of water supply connections in slum households	7.8%	100%	30%	60%	100%		Low
Per Capita supply of water	151 lpcd	135.00					
Continuity of water supply	1.5 Hours	24.00					Medium
Extent of non revenue water	36 %	0%	30%	25%	20%		High
Extent of functional metering of water connections	0 %	100%	20%	40%	60%	100%	High
Extent of cost recovery in water supply services	59%	100%	80%	90%	100%		Low
Efficiency in collection of water charges	77%	100%	80%	85%	90%	100%	Low

FINANCE- WATER SUPPLY

Table showing Expenditure of IMC on water supply

Items (in Rs. Crores)	2006-07	2007-08	2008-09	2009-10	2010-11
Administrative expenses	0.95	1.00	1.20	1.30	1.69
Electricity Charges	4.73	4.71	4.26	4.25	4.00
O &M	2.80	1.13	1.25	1.12	1.00
Water cess to ID	0.51	1.05	1.68	1.50	1.00
Total	8.98	7.88	8.40	8.17	7.69

Table showing Income of IMC in water supply

Items (in Rs. Crores)	2006-07	2007-08	2008-09	2009-10	2010-11 (B.E.)
Water tax	2.70	2.64	2.60	3.08	4.74

•Combined Bills are produced for Water and Property Tax

•Introduction of consumer incentives to speed up collections

•Cost recovery is very less

STEPS FOR 24* 7

PIP COST

1. Reduce losses in transmission of raw water
2. Fix meters at every level of water transmission and distribution- for better Quantification of water flow
3. Increase industrial metering

Total Cost
for 24* 7 =
**29 crores
approx**

STEPS FOR 24* 7

PIP COST

IMC HAD OUTSTANDING LOAN OF RS. 252 CRORES FOR THE WATER SUPPLY AUGMENTATION PROJECT EXECUTED IN 1990 OUT OF WHICH 83 CR. STILL REMAINS

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Action	Time Frame	Approx Cost (in crores)	Remarks	
Next Energy and Water Audit	Jan 2012 to Jun 2012	5 .00	Meters already bought	<ol style="list-style-type: none"> 1. Reduce losses in transmission of raw water 2. Fix meters at every level of water transmission and distribution- for better Quantification of water flow 3. Increase industrial metering
Fix Bulk Flow Meter		0.05		
Identification and Regularization of unauthorized connections		No cost		
Increasing commercial metering	2012 to 2015	No cost		
Reducing leakages (changing pipelines for raw water transmission)	2013	16.42	Already Sanctioned under Sujal Nirmal and UIDSSMT	
Additional Storage Reservoirs and pumping machinery	2013	7	Proposal pending	
Household metering (to be completed by consumers by 1 st April 2012)	2012	1.38 crores	The proposal passed in Municipal Council GB	
Total cost (in crores)		29	Part of the cost already borne under various schemes	Total Cost for 24* 7 = 29 crores approx

Phase Wise Metering

Heads	Indian Meters	Israeli meters
Connections Unmetered	34,527	34527
Cost of a Meter	800	8,000
Total Cost of Metering (in Rs. Crores)	2.76	27.6
Total Expenditure on ULB end	1.38	13.8

- Lack of Incentive on Consumer end towards shifting to Metering
- Need to make Metering Mandatory
- ULB may supply meters to customers in order to maintain the quality of meters
- 50% consumer share
- Discounts in water tax to consumers who install meters

Phase Wise Introduction of Meters

	Indian Meter	Israeli Meters	Indian Meter	Israeli Meters	Indian Meter	Israeli Meters
Phase Wise Development	2012	2012	2013	2013	2014	2014
No.of Connections to be Metered	11509	11509	11509	11509	11509	11509
Expenditure(in Rs.crores)	0.92	9.2	0.92	9.2	0.92	9.2
To be paid by ULB(in Rs.crores)	0.46	4.6	0.46	4.6	0.46	4.6

Total cost on buying meters

1.38 crores

As decided in Municipal Council resolution September 2011, all metering cost would be borne by consumers with connections

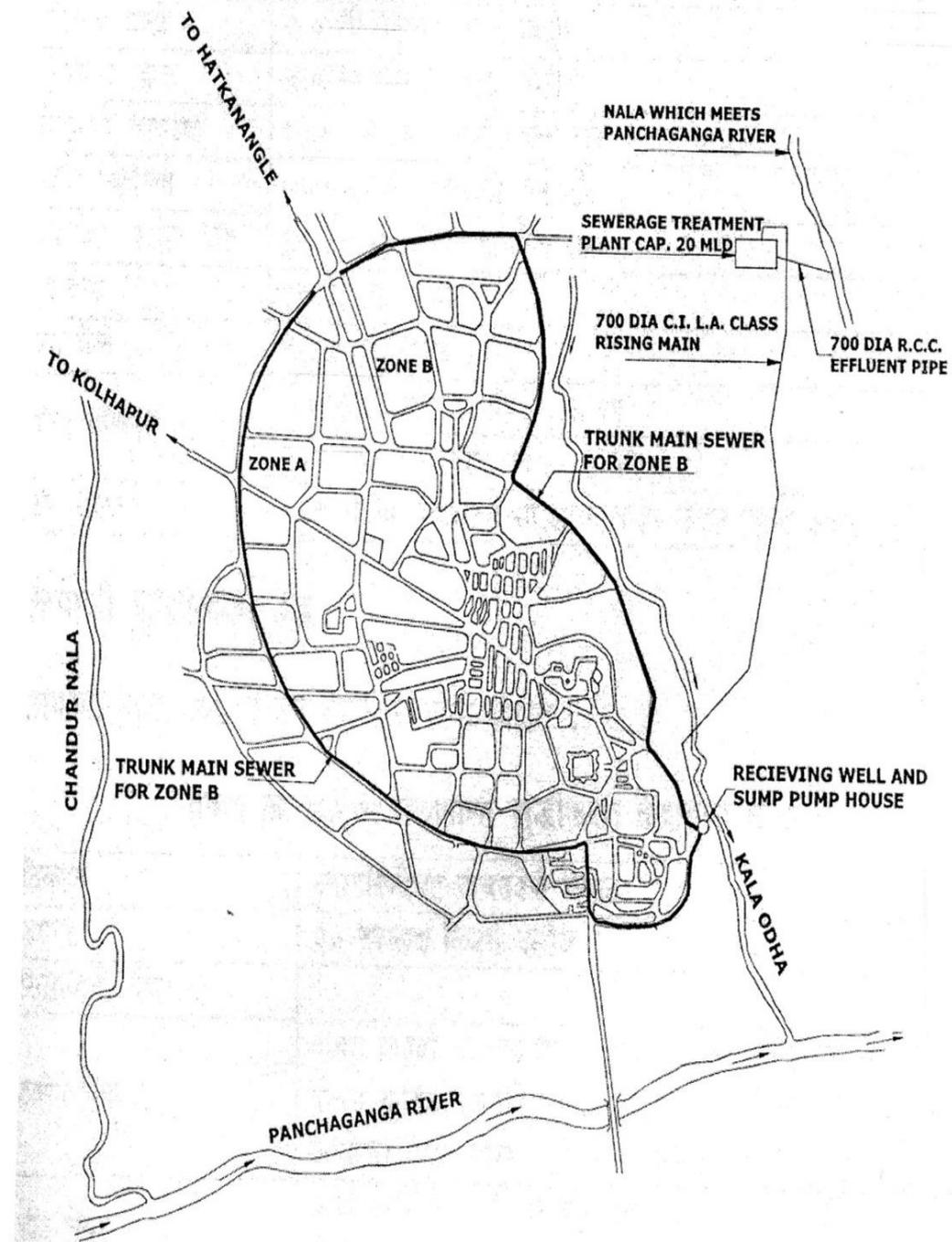


SEWERAGE SYSTEM

ICHALKARANJI

SEWERAGE

Type	HHs /Properties	Coverage
No of properties	44,992	
Properties with toilets	29730	65%
Properties with sewer connections	10,122	22.49%
Total properties with Access to toilets	40,078	89%





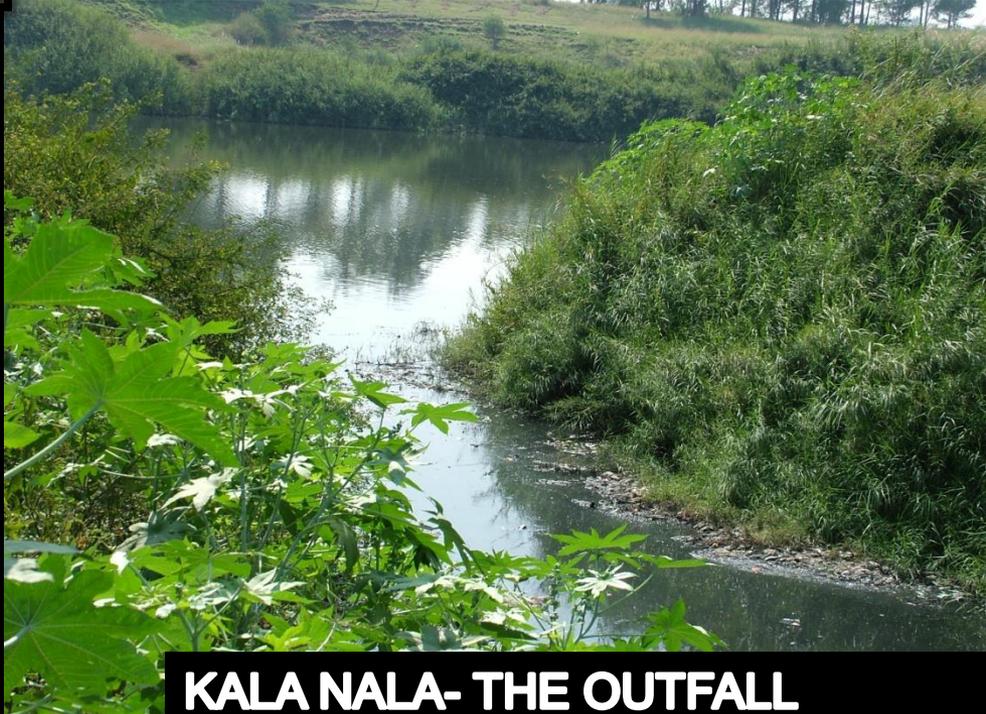
SEWERAGE RECEIVING WELLS



OPEN DRAINS IN THE CITY



UNDERGROUND SEWERAGE COMPRESSOR



KALA NALA- THE OUTFALL

Septic tanks

122

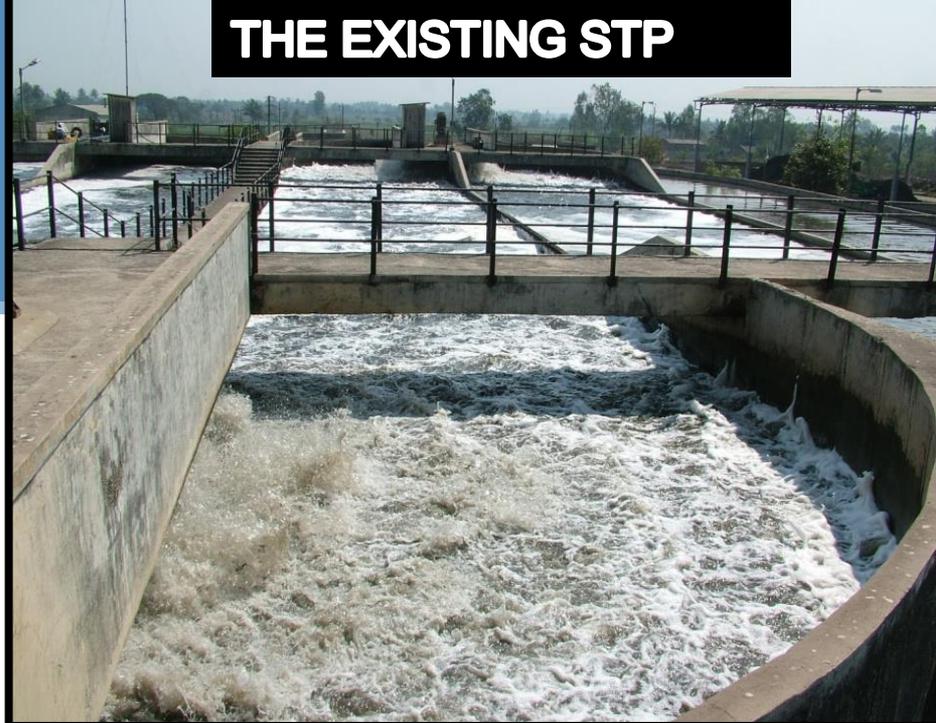
- The city has prevalence in septic tanks in most parts of the city. There are 19615 septic tanks
- To empty the tanks, IMC has 2 suction emptier trucks of 3000 liters capacity. No private operators are active in Ichalkaranji for this purpose.
- Charges for emptying the septic tanks are Rs.300 in municipal limit, outside charges are Rs. 1000
- These suction trucks are emptied in a manhole which is connected to STP



SEWERAGE NETWORK

- Length of existing sewer network – 90kms
- Total Sewerage generated - 44.4 MLD
- STP treatment capacity– 20 MLD
- Actual treatment – 15 MLD

THE EXISTING STP



REUSE OF WASTE WATER

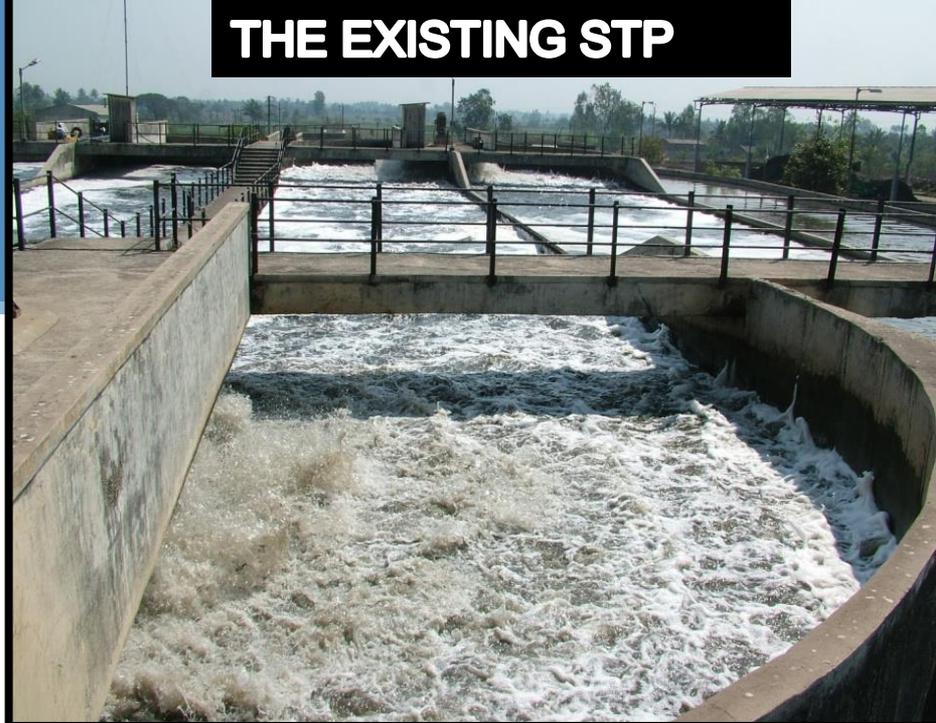


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REUSE OF WASTE WATER



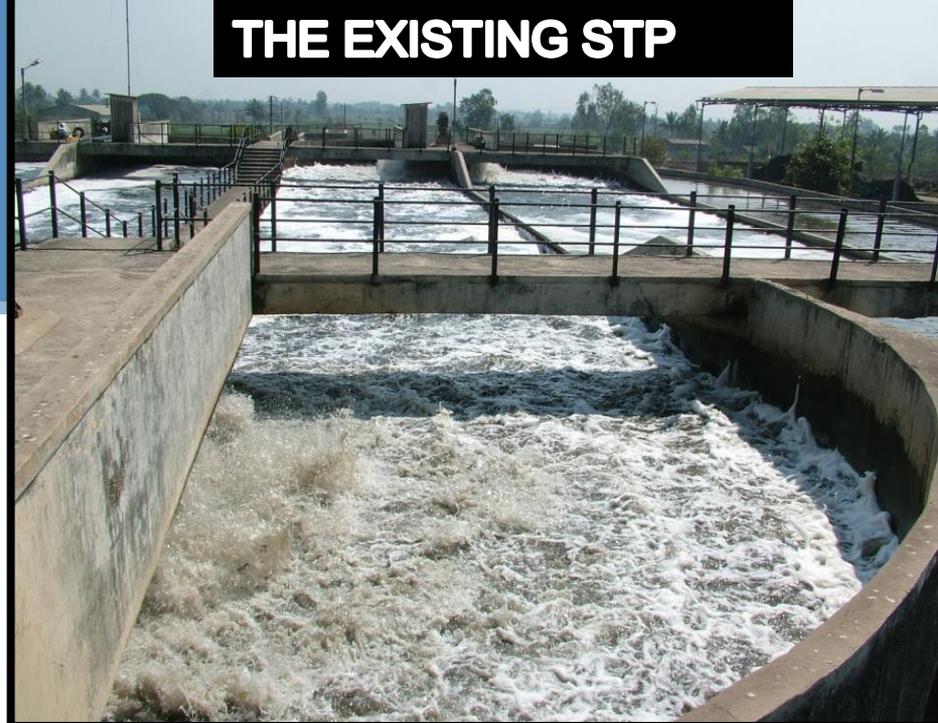
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Year	Users	Amount
2008	7	24,400
2009	6	26000
2010	8	11500
2011	9	10500

THE EXISTING STP



REUSE OF WASTE WATER



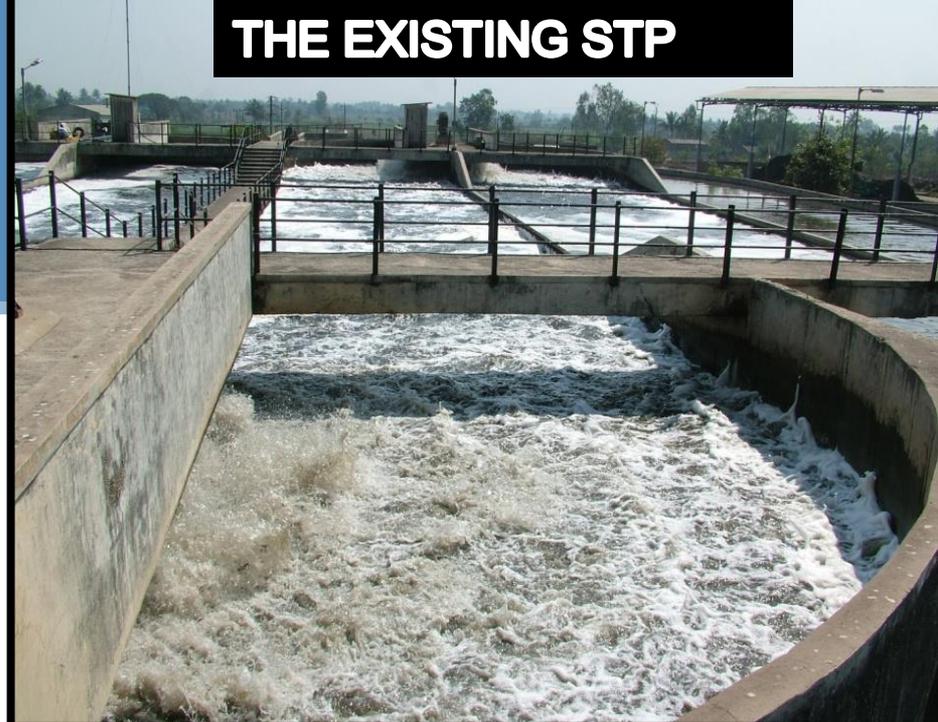
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- Actual treatment – 15 MLD

Waste water treated from STP is sold to farmers who have farms around the STP. The income generated from this is as follows

• To increase Sewerage network in the city, Ichalkaranji Underground Sewerage Scheme under UIDSSMT whose cost has gone upto 72crores at present

Year	Users	Amount
2008	7	24,400
2009	6	26000
2010	8	11,300
2011	9	10500



THE EXISTING STP



REUSE OF WASTE WATER

Sewerage indicators for Ichalkaranji

S.No.	Indicators of sewerage services		2008-09	2009-10	2010-11
1	Coverage of Toilets	%	87	88	89
2	Coverage of wastewater network services	%	20	21	22
3	Collection efficiency of wastewater networks	%	34.1	34.1	34.1
4	Adequacy of wastewater treatment capacity	%	76	76	76
5	Extent of reuse and recycling of treated wastewater	%	80	87	87
6	Quality of wastewater treatment	%	100	92	96
7	Efficiency in redressal of customer complaints	%	60	70	88

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Type of Toilet	Non-slums blocks	Seats in Non-slum	Slum blocks	Seats in slums	Total blocks	Total seats
Individual	28416		1314		29730	
Community Toilets	31	827	20	270	51	1097
Pay and Use	24	542	8	266	32	808
Mobile	17	170	10	100	27	270
Total	72	1539	38	636	110	2175

Identified OD sites in the city- 23

ODF to be achieved till 2013

Type of toilet	Non-slums	Slums	Total	Population	Non-slums	Slums	Total
HHs served by Individual toilets	28416	1314	29730	Served by Individual toilets	142080	6570	148650
HHs dependent on community toilets	10773	4452	15225	Dependent on community toilets	28945	9450	38395
HHs dependent on Pay and Use	3794	1862	5656	Dependent on Pay and Use	18970	9310	28280
HHs dependent on Mobile Toilets	1190	700	1890	Dependent on Mobile Toilets	1190	3500	4690
				Total Population dependent on Non- individual Toilets	49105	22260	71365
Total HHs dependent on Non-individual toilets	15757	7014	22771	24.81 % Population depend on some form of non-individual toilet			
			34.98	Population having ACCESS to some form of toilet	191185	28830	220015
35% HHs still depend on some form of non-individual toilet				Population having NO ACCESS to any form of toilet/Open defecation	68339	-659	67680
				23% open defecation			

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PROVISION OF TOILETS

Project/Scheme	Aim (families)	People to be served	Schemes cater to population	38675
IHSDP	1488 seats	7440	Gap	29664
ILCS	4047	20235	Toilet seats required @35 persons per seat	848
Total		27675		
FUTURE SCHEMES				
Maharashtra Sujal Nirmal Abhiyan (SC/ST)	500 seats	2500	Cost of one seat	Rs. 25000
			Total cost of toilets	Rs. 2.12 crores
Maharashtra Sujal Nirmal Abhiyan (Dalit Vasti)	100 seats	4000	<ol style="list-style-type: none"> 1. No toilets required to be constructed in slums 2. Refurbishment of non-functional toilets in slums 3. Effective and widespread IEC programmes for stopping open defecation 	
N.P and Mahila Bal Kalyan Nidhi	100 seats	4000		
Samaj Kalyan	100 seats	500		
Total				
			TOTAL COST 2.12 Crores approx	