



Vadodara Mahanagar Seva Sadan

Water Supply Project

Main functions of the Department:

1) Water Supply Project :

- ❖ Construction of new ESR-GSR projects , WTP, Intake well, French Well and maintenance of such civil works
- ❖ Providing & Laying of new pipeline network 300 mm dia. onwards.
- ❖ Providing & Laying of new Feeder pipeline network.
- ❖ Maintain the Resources like Ajwa Sarovar, Pratappura Sarovar and RCW at Mahi River.

2) Water Supply Distribution :

- ❖ Distribution of water to entire city.
- ❖ Maintenance of pipeline network 300 mm dia. onwards.
- ❖ Maintenance of Feeder pipeline network.
- ❖ Operation and Maintenance of Valves.
- ❖ Attend and solve consumer complaints.

3) Electrical / Mechanical Dept.:

- ❖ Procurement & Installation of Pumping Machinery at New ESR-GSR, WTP and RCW as well as maintenance of existing pumps.
- ❖ Operation and Maintenance of installed Pumps.
- ❖ Works regarding construction of Bore-wells, its panels and their maintenance.
- ❖ Pumping of Water from UnderGround Sump to OverHead Tank at Pumping Station.
- ❖ Distribution of water by Operating various Valves located at various point of Distribution Zone as per schedule.
- ❖ Maintaining Chlorine dose as per instructions given.
- ❖ Maintenance work of 11 KV electrical system at Pumping Stations.
- ❖ Maintenance & Repairing of LT Electrical system & Pumping Machinery

**Present Scenario of Water Supply Scheme of Vadodara city**

Ajwa / Nimeta	145 MLD
Radial Collector Wells	250 MLD
Tube wells	25 MLD
Khanpur	37 MLD
Total	457 MLD
Water Tanks OHT – Booster	23 + 3 boosters
Under construction OHT	
(A) Under JnNURM	4
(B) Under other Budget	1
Capacity of Nimeta Water Treatment plants	3 Nos (145 MLD)
Distribution Line Lengths	1100 KMs
Per capita supply without loss, Lpcd	210 lpcd

Main Sources :**A. The Sayaji Sarovar (Ajwa Dam) :**

It is an earthen dam that was built early 20th century by the ruler of Vadodara, Maharaja Sayajirao Gaekwad III. Its main aim was to provide water to residents of Vadodara. Its construction was started in 1885 & completed in 1890.



The dam is about 5 km long. It can store water to the height of 211 feet above the mean sea level (its overflow level) . The floor of the reservoir is at around 196 feet. It is connected to the Viswamitri river which flows through the city of Baroda, so that excess water in event of floods is dispatched to this river. The reservoir has 62 gates.

The engineer of the dam was Jagannath Sadashiva Hate, also known as Shri Jagannath Sadashivji. When the reservoir is full, it is supposed to have a catchment area of something close to 195 square kilometers.

Constructed in 1892 across river Surya, a tributary of river Vishwamitri., very old earthen dam, required to strengthen to fill up to full capacity.

Sayaji Sarovar- 62 Gates



- ❖ **Pratappura Dam:**Constructed across Vishwamitri River in 1929-30 as the storage of Sayaji Sarovar (Ajwa)

Water Filtration Plants :

Sayaji Sarovar water is supplied by gravitational system, filtered by water filtration plants one of **45 MLD** and two plants of 50 MLD capacity with total capacity of 145 MLD at **Nimeta**.At Nimeta the water from the mains is diverted to the filtration plants at Nimeta and then to city under gravity. The filtered water transmission system consists of two 750mm diameter gravity

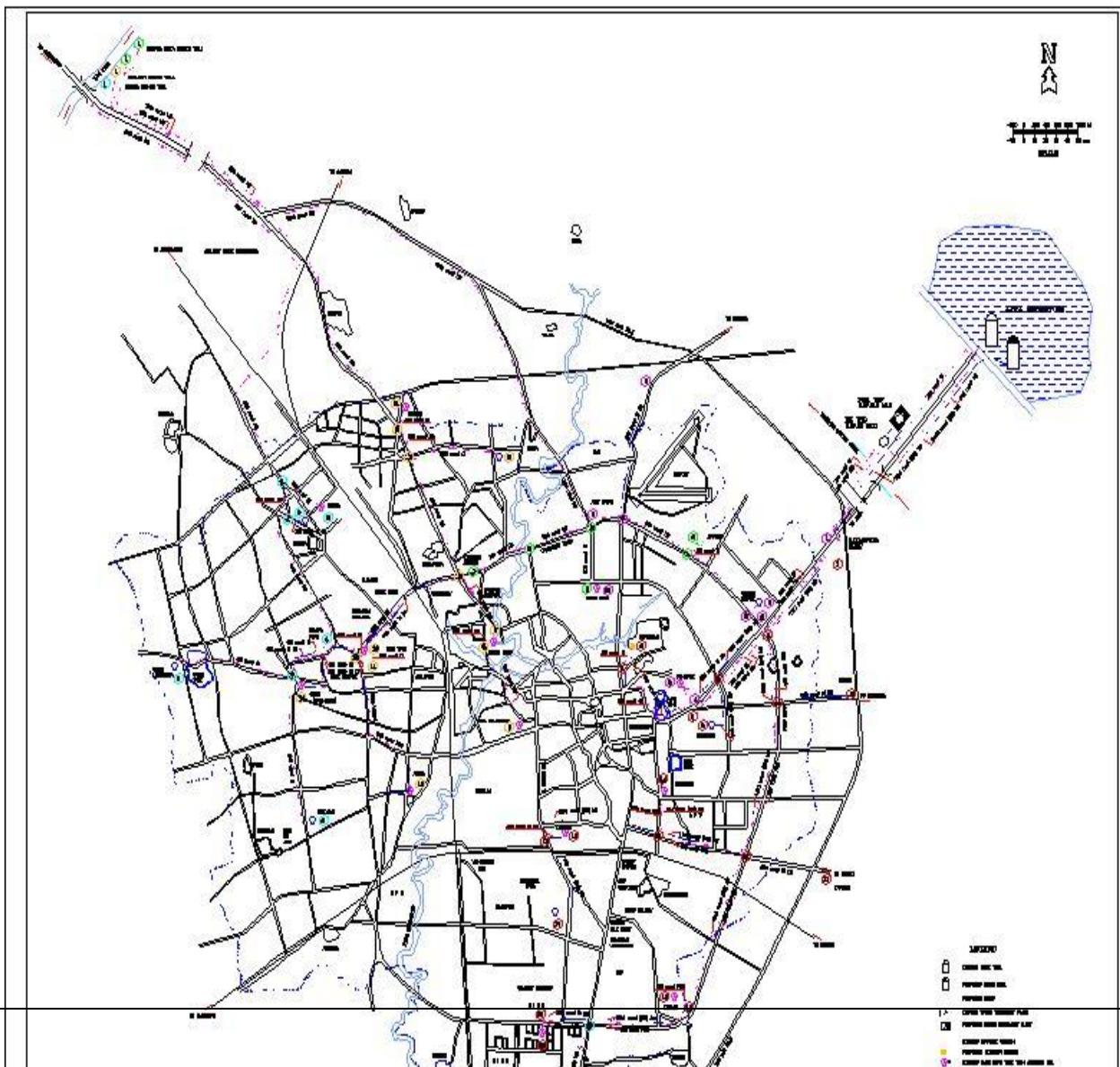
mains, one of HS and other of CI. The total length is 21 km from the reservoir to Vadodara. Under source augmentation project, new 1500 mm diameter BWSC Transmission main has been laid from the Ajwa reservoir to the City to augment the water supply from the Ajwa reservoir. At **Nimeta**, an additional **50 MLD WTP** has been constructed resulting in total treatment facility of **145 MLD**. The old 45 MLD WTP is also proposed to augment by converting slow sand filter in to Rapid Sand Filter through provision of appropriate filter media.

Nimeta Water Treatment Plant





Nimeta Water Filtration Plant



B. Radial Collector Wells (RCW) - (Fajalpur , Raika ,Dodka & Poicha)

- ❖ Transmission from the Radial Collector Wells in the bed of River Mahi .
- ❖ A 900-mm (36-inch) HS main is existing between **Fajalpur** RCW and Vadodara and feeds the reservoirs of **Eastern area**.
- ❖ A 955-mm (28 inch) HS main exists between **Poicha** RCW and Vadodara and feeds reservoirs on the **Western area**.
- ❖ A **900 mm** (36-inch) HS main exists for **Raika and Dodka RCW**, which merges along into 1354 mm HS main and which extends to Vadodara City and feeds the reservoirs along the eastern side of the City.
- ❖ The total length of these mains is about **22 to 25 km**.

Radial Collector Wells (RCW)



C. Tube Wells - Vadodara City & River Mahi

Around 46 Tube wells in Vadodara City (20 MLD) & 23 nos.

Tubewells of 25 MLD at river Mahi

- Based on the capacity of pumps and its working hours, the water supplied is about 25 MLD.
- To cover the deficiency observed, VMC had also put in operation the tube wells along the river in Mahi from which the supply is given to the mains of the collector wells.
- Tubewell source is supplementary source and utilized when main source is disturbed.

D. Khanpur WTP – Vadodara City

Water Treatment plant near Khanpur village is constructed for Design capacity of **75 MLD** under Narmada River Bed.

The whole system consists of

- (1) Intake Structure
- (2) 75 MLD capacity WTP
- (3) MS Transmission Line
 - a. **1080 mm dia.** pipeline from Canal intake structure to WTP
 - b. **1090 mm dia.** pipeline from WTP to Gotri-Gayatrinagat Tank
 - c. **914 mm dia.** pipeline from Gotri-Gayatrinagat Tank to Harinagar Tank

Recently **37 MLD** capacity plant is working.

Benefits

1. It solves low pressure & quantity problems in Western areas of the city.
2. The water distribution in whole city is to be done properly

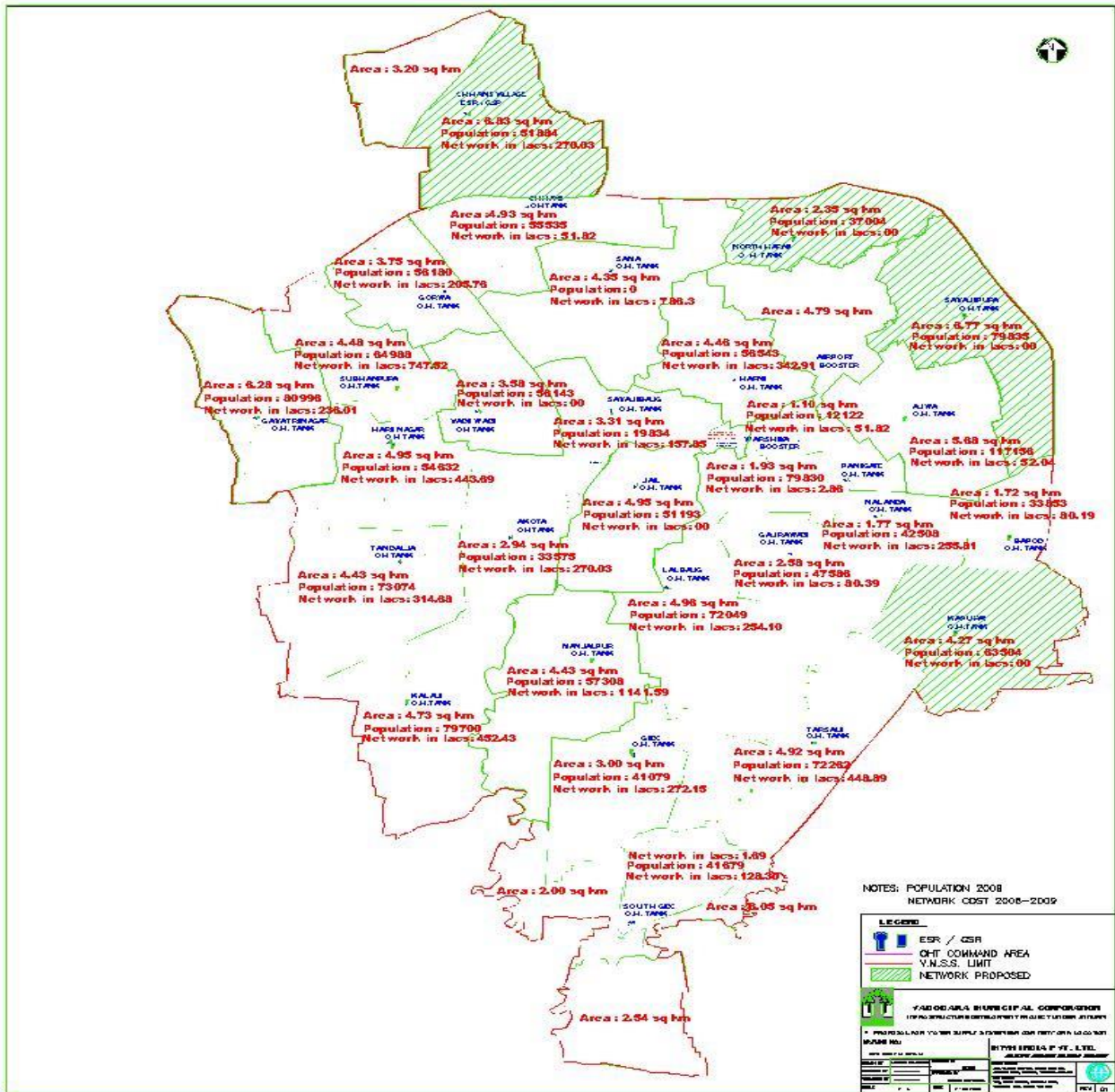


Distribution Service :

1. Elevated Service Reservoirs (ESRs) & Ground Service Reservoir (GSRs) & Boosting Stations:
 - ❖ The service reservoirs (ESR & GSR) in the city are provided for the adequate supply of water to the city.



Sr No.	<u>Water Supply system</u>	<u>Description</u>		<u>Contact Number</u>
	ESR-GSR	ESR CAPACITY	GSR CAPACITY	
1	Panigate	18 Lac Liters	136 Lac Liters	2562144
2	Gajrawadi	18 Lac Liters	72 Lac Liters	2580139
3	Nalanda	18 Lac Liters	72 Lac Liters	2514896
4	Chhani (jakatnaka)	18 Lac Liters	68 Lac Liters	2773981
5	Chhani village	8 Lac Liters	14 Lac Liters	3295570
6	Sayajibaug	2.7 Lac Liters	9 Lac Liters	2794310
7	Jail	18 Lac Liters	68 Lac Liters	2410954
8	Lalbaug	18 Lac Liters	68 Lac Liters	2427709
9	Harni (karelibaug)	18 Lac Liters	68 Lac Liters	2460205
10	Gorwa	13.5 Lac Liters	54 Lac Liters	2280570
11	Vadiwadi	4.5 Lac Liters	63 Lac Liters	2344347
12	Harinagar	18 Lac Liters	72 Lac Liters	2341435
13	Gayatrinagar	18 Lac Liters	72 Lac Liters	2371141
14	Tandalja	18 Lac Liters	72 Lac Liters	2314714
15	Akota	13.5 Lac Liters	54 Lac Liters	2344585
16	Sama	18 Lac Liters	72 Lac Liters	2795156
17	Tarsali	13.5 Lac Liters	54 Lac Liters	2641859
18	South GIDC	18 Lac Liters	72 Lac Liters	2643503
19	Manjalpur	18 Lac Liters	72 Lac Liters	2661596
20	Ajwa road	18 Lac Liters	72 Lac Liters	2520028
21	Subhanpura	18 Lac Liters	72 Lac Liters	2392597
22	Kalali	18 Lac Liters	72 Lac Liters	2960455
23	Bapod	13.5 Lac Liters	27 Lac Liters	2960149
	Booster			
24	GIDC Booster	-	9 Lac Liters	2656365
25	Warasiya Booster	-	27 Lac Liters	2574114
26	Airport Booster	-	72 Lac Liters	2484785
	Total Capacity	387.6 lacs lit	1593.5 lacs lit	



Vadodra Mahanagar Seva Sadan
Water Distribution Timings and Areas

**Zone Information****Jail Tank**

Sr. no.	Area	Morning			Afternoon			Evening			Night		
			To										
1	Dandiya Bazar	6:50	To	7:50				6:50	To	7:50			
2	Ravpura	8:00	To	9:00				6:30	To	7:30			
3	Nagarvada, Salatvada	9:10	To	10:10									
4	Kothi, Anandpura							5:30	To	6:30			

Lalbaug Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
			To										
1	Aakashvani, Pragbhumi	5:00	To	6:00									
2	Deepchambers, Shantikunj	7:45	To	8:45									
3	S.R.P, Navapura	7:00	To	8:00									
4	Sindvaimata, Makarpura	8:00	To	9:00									
5	Danteshvar, Spl. zone industrial	9:45	To	10:45									
6	manjalpur, Jaggnathampuram, Dahibanagr, vishvamitri road							5:00	To	6:00			

Sayajibaug Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
			To										
1	Pratapgunj	6:00	To	7:00									
2	Sayajigunj	7:30	To	8:30									
3	Garden	8:30	To	9:30	2:30	To	3:30						
4	Fatehgunj							4:00	To	5:00			
5	Karelibaug aarykanya road budhdev, Jalaram mandir area							6:00	To	7:00			
6	Kalyannagar, Govindnagar							7:00	To	8:00	10:00	To	11:00



1	Jetalpur road	5:30	To	6:30										
2	City chakli circle	7:30	To	8:30										
3	Harinagar,S.T, Vishnukunj,navnath	9:30	To	10:30										
4	Jalaramnagar and all area				2:30	To	3:30							
5	Gadapura,Hathibhainagar							5:30	To	6:30				

Subhanpura Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
1	Subhanpura,elora park	6:00	To	7:00										
2	Dharmapura,Rajesh Tower,Hariomnagar	8:30	To	9:30										
3	Laxmipura,Samta							6:00	To	7:00				
4	Santoshnagar,Reliance petrolpump							8:00	To	9:00				

Gorwa Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
1	Panchvati,Sahyog,Shantinagar	5:45	To	6:45										
2	Pragtinagar,Aashirvad,Bhailal road	7:00	To	8:00										
3	Gorwa old house board,Estate	8:30	To	9:30										
4	Gorwa gam,Omnagar,Alembic nagar,Chitrakut,Satyam etc							4:00	To	5:00				
5	I.T.I,Jesol,Bhagyoday,Bhagyal axmi,Jaynarayan							6:00	To	7:00				

Chhani Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
1	Sama-Mahesananagar	6:00	To	7:00	2:00	To	3:00							
2	Sama-Chankyapuri	8:00	To	9:00	2:00	To	3:00							
3	TP-13							7:00	To	8:00				



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Sama Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
		6:00	To	7:00	2:00	To	3:00						
1	Sama-Mahesananagar	6:00	To	7:00	2:00	To	3:00						
2	Sama-Chankyapuri	8:00	To	9:00	2:00	To	3:00						
3	Fatehgunj							4:00	To	5:00			

Chhanigam Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
		5:00	To	6:00									
1	Chhani gam, Pakakot, Vankarvas, Amitnagar, Ramakaka road area	5:00	To	6:00									

Sokhda road Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
		6:00	To	7:00									
1	Chhayapuri, Chhani police station road, Omkarpura area	6:00	To	7:00									

Tarsali Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	Zone-1 Sharadnagar, Shantinagar, hari nagar and whole area of housing	5:30	To	6:30									
2	Zone-2 Vijaynagar, parishram so., Chandranagar, Marutidham and Tarsali ring road, Sushen circle area	7:10	To	8:10									
3	Zone-3 Aakashvani to Makarpura road area	8:30	To	9:30									
4	Zone-4 Kamla park, Amarshraddha, Anupamnagar, Danteshavar area	10:00	To	11:00									
5	Zone-1 Desai nagar, Damodarnagar talav area and Tarsali gam area, ravi park so.							5:00	To	6:00			
6	Zone-2 Ravi park to New era sch. whole area							6:30	To	7:30			



3	Zone-3 Navajivan, Kishanvadi, Amdava dipol, Raopura	8:00	T o	9:00									
4	Zone-4 Vaghodia road, Uma so., Parul, Prabhunagar, zavernagar	4:30	T o	5:30									
5	Zone-5 fatehpura, chipvad, yakutpura, Narsinhji pol, Shamalbechar pol, Maheta pol, mangalbazar	5:30	T o	6:30									
6	Zone-6 Raopura	6:30	T o	7:30									

Aiwa road Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	Zone-1 Bapod to Navajivan	6:00	T o	7:00									
2	Zone-2 Ramdevnagar, Sardar Estate, vinay, Rameshavri, Sonalvatika	9:00	T o	10:00									
3	Zone-3 Ektanagar to Jayyogishavr Township, SMAGR A area	10:00	T o	11:00									
4	Zone-4 Kishanvadi east, vakunth-2, pooja park, Vrajdharm etc.	6:30	T o	7:30									

Harni Airport Busting Station

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	Manekpark	5:45	T o	6:45									
2	Nathiba, Hardvar kalpna, Swaminarayan	6:45	T o	7:45									
3	Radhaswami, Paragraj, Khodiyar nagar	7:45	T o	8:45									
4	Harni gam area							4:30	T o	5:30			
5	Rameshavar residency and Bonza							5:45	T o	6:45			

Varshiya Busting Station

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	R.T.O. back side area, Lal akhada	7:45	T o	8:45									
2	Whole varshiya area, Dhobi talav							4:30	T o	5:30			

**Tandalja Tank**

Sr. no.	Area	Morning			Afternoon			Evening			Night			
		Start	Time	End	Start	Time	End	Start	Time	End	Start	Time	End	
1	Mujmahuda, Sahjanand and Megh dhanusha so.	5:45	To	6:45										
2	Kailash park, Hiraparvati, Brahmakumari and sanfarma road	5:45	To	6:45										
3	Gulabvatika and Muktinagar	7:15	To	8:15										
4	Mathuranagri to Patrakar char rasta	7:20	To	8:20										
5	Anupam nagar so.	8:35	To	9:35										
6	SantkRupa so. and Patrakar so.	8:35	To	9:35										
7	Tandalja gam area	9:40	To	10:40										
8	Vasna west zone							5:30	To	6:30				
9	Vasna east zone and Sabri sch.							7:00	To	8:00				
10	Bibanagar so. and Nidhi park so.							8:30	To	9:30				

Kalali Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
		Start	Time	End	Start	Time	End	Start	Time	End	Start	Time	End	
1	Atladra gam, kalali fatak, Paduka temple, Jaganth Mahollo, Khodiyar nagar, Nil Teres and Jakatnka	6:00	To	7:00										

Akota Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
		Start	Time	End	Start	Time	End	Start	Time	End	Start	Time	End	
1	Atladra Axrchowk area	5:50	To	6:50										
2	Mujmahuda Akota gam area	6:50	To	7:50										
3	Vishvmitri vrajvihar so.	7:10	To	8:10										
4	Shrenik park char rasta area	8:35	To	9:35										
5	Akota police line	9:35	To	10:35										
6	Shrenik park char rasta to Anand nagar char rasta							4:40	To	5:40				



								5		5			
7	Old padra road wear zone area							6: 3 5	T o	7: 3 5			

Vadivadi Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	Juna station area vadivadi and Model farm	6: 00	T o	7: 00									
2	Patra chal area	7; 45	T o	8: 45									
3	Gautamnagar so. area							3: 0 0	T o	4: 0 0			
4	Samprav colony, R.C. Dutt road, Baroda peoples so. jetalpur and shilalekh so. area							3: 3 0	T o	4: 3 0			

Gajravadi Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
1	Whole vadi area, Pratapnagar, Zenith Sch's back side area, Datt nagar, Ranmukteshvar Alpna theatre side area	5: 55	T o	6: 55									
2	Babajipura, R.V. Desai road, Bakravadi, Apsara theatre's back side area, Gaytri Apt., Vijayngar	7: 00	T o	8: 00									
3	Ganpati temple near area suej pemin, Rushi park so., Umiya nagar, Ambikadham, Hanuman tekri, Ansuya namah, Ganesh namah, mahaanagara so., Jaynarayana namah, bharatvadi, Shakinagar, Dabhoi road whole area, Yamuna mil street							5: 3 0	T o	6: 3 0			

Nalanda Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night		
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1	Vaghodia road,Manav mandir so.Poonam com.,Aadhar so. 1-2,Somabhai street,Kailashnagar,Nalandra tank back side area,Triloknagar near area,Ramvatika and tapovan so.near area,PWD quarters area	5:45	To	6:45										
2	Vaghodia road, 40 km ring road to east zone area,Samrpan so.,Dharti Tena,Ukaji vadiyu,Parivara so. 2-3,Narayan sch. near area,Gaytri krupa so,Kubereshvara marga road							3:45	To	4:45				
3	40 km ring road to west area,Mahesh com,Reva park-garden ara,Nalanda so,vasundhara so. back side area,Chitrkut so. near area,Uma char rasta to Vrundavan char rasta area (South area)							5:30	To	6:30				

Bapod Tank

Sr. no.	Area	Morning			Afternoon			Evening			Night			
1	Vaikunth-2 Township,Nalanda college back side area, Prushti prabha so,Prushti dvar so,Pratham residency,Dharti Tena,Bapod kvarters,Ramdevnagar							3:45	To	4:45				

Feeder Line , Distribution network & its strengthening / modification:

- ❖ The service reservoirs (ESR & GSR) in the city are provided integration with different supply sources (Mahi river & Ajwa reservoir) through Feeder grid, which results in uninterrupted & consistent water supply.



- The **Distribution Network** is made up of mainly **DI/CI** mains with rubber or lead joints.
- The minimum size of pipeline in the system is 75 mm (3-inch) and the maximum size is 750 mm (30-inch).
- The main distribution line in Vadodara City normally consists of sizes from **750 mm to 450 mm.**
- No consumer connections are to be given from main distribution line. The sub main distribution consists from 450 mm to 250-mm size.
- Presently the consumer connections are given from **100-mm and 150-mm** size pipeline only.
 - Each OHT has two or more outlets and each outlet serves more than one zone. Normally there is minimum of two zones and maximum of six zones in the command area, however in some cases the supply zones are more than ten.

**JnNURM 24x7 Work Details**

Name of the component / package	Capacity / Description	Cost (Rs. in lakh)	Present Status
North Harni Civil works & Machinery	ESR,GSR,Pump House, Comp. Wall, Feeder , Ele/Mech. Pumping M/C, Operation & Maintenance	734.23	Work Completed
Chhani Civil works	ESR,GSR,Pump House, Comp. Wall, Feeder , Operation & Maintenance	531.11	Work Completed
Sayajipura Civil works	ESR,GSR,Pump House, Comp. Wall, Feeder , Operation & Maintenance	868.03	Work In Progress
Kapurai Civil works	ESR,GSR,Pump House, Comp. Wall, Feeder , Operation & Maintenance	901.81	Work In Progress
North Harni Network with bulk meters	DI networks, MDPE lines, Bulk Flow Meters, House Connections incl. Domestic Meters fixing.	702.15	Work In Progress
Kapurai Network with bulk meters	DI networks, MDPE lines, Bulk Flow Meters, House Connections incl Domestic Meters fixing.	1115.05	Work In Process
Sayajipura Network with bulk meters	DI networks, MDPE lines, Bulk Flow Meters, House Connections incl Domestic Meters fixing.	1398.23	Work In Progress
Chhani Network with bulk meters	DI networks, MDPE lines, Bulk Flow Meters, House Connections incl. Domestic Meters fixing.	1102.74	Work In Process
Ele/Mech pumping machinery	CI pumping main, Elect-Mech pumping Machinery & Operation and maintenance at Kapurai , Sayajipura & Chhani.	731	Work In Progress
Domestic meter supply	Domestic water meters supply at North Harni, Kapurai, Sayajipura & Chhani	1192	Work In Process
Domestic meter supply	Domestic water meters supply and Fixing at Ajwa Tank Command Area	3000	Work In Process



**Works Completed and on Hand:
(After Master Planning for Water supply)
During 2005-06 to 2013-14**

	Work Details	Work Completed Rs. In Lacs	Work On Hand Rs. In Lacs
(i)	Source upgradation related	15837	7566
(ii)	ESR-GSR Related	11952.3	11506
(iii)	Feeder Networks Upgradation	1485.11	788.81
(iv)	Network Upgradation	7707.59	2154
	TOTAL	36982 lacs	22015 lacs

WORK COMPLETED SUCCESSFULLY IN LAST 7 YEARS



Zone	Name of Work	Budget Provision	Components	Year of Comp.	Name of Contractor	Actual Experiences in lacs
North Zone						
1	Providing & laying DI line Network at Navayard & TP-13.	RCB/2005-06	300,350, 450 & 600 mm dia line	2006-07	Aakar Construction	103.7
2	Providing & laying DI line Network in Lalbaug Tank Command area	RCB/2006-07	300,350 & 600 mm dia line	2007-08	Spun Pipe & const. Pvt. Ltd.	111.41
3	Providing & laying DI line Network in Mehasana nagar and Sama command area.	RCB/2006-07	200,300 & 500 mm dia line	2007-08	Aakar Construction	104.72
4	Providing & laying DI line Network in Sangam Char Rasta, Amitnagar ,VIP road towards Bright School .	RCB/2006-07	200,300 & 500 mm dia line	2007-08	Classic Network	232
5	Providing & laying DI line Network in Sama-Chhani Network.	RCB/2006-07	200,300 & 500 mm dia line	2007-08	Aakar Construction	679.53
South Zone						
5	Providing & laying DI line Network in Tarsali Tank Command area.	RCB/2006-07	200,300 & 500 mm dia line	2007-08	Classic Network	260.48
6	Providing & laying DI line Network in Tarsali Ashish Park	SJMM SVY-2	150, 200 ,250, 300,350 ,400 & 500 mm dia line	2012-13	Aakar Construction	115.83
East Zone						
7	Providing & laying DI line Network in	RCB/2006-07	200,300 & 500 mm dia line	2007-08	Classic Network	260.48
8	Providing & laying DI line Network in tank					



	Command area.					
9	Providing & laying DI line Network in tank Command area.					
10	Providing & laying DI line Network in tank Command area.					
11	Construction of ESR,GSR,Pump House ,Transfermer room ,Compound Wall at Bapod.	Vajpai Nagar Vikas Yojna	ESR,GS R,Pump Room, Transfermer Room,HS Feeder, 150,200, 250,300, 350,400, 450 mm dia DI line	2010-11	Aakar Constructio n	607
12	Construction of ESR,GSR,Pump House ,Transfermer room ,Compound Wall at Ajwa road.	RCB/2 006-07	ESR,GS R,Pump Room, Transfermer Room,HS Feeder, DI line	2007-08	Aakar Constructio n	233
West Zone						
13	Providing & laying DI line Network in Gorwa -Vadiwadi Tank command area.	RCB/2 006-07	200,300 & 500 mm dia line	2007-08	Classic Network	260.48
14	Providing & laying DI line Network in Gayatrinagar tank Command area.	RCB/2 006-07	200,300 ,400,500 ,600 mm dia DI line	2007-08	Classic Network	204.23
15	Providing & laying DI line Network in Tandalja tank Command area.	RCB/2 006-07	200,250 ,300,400 mm dia DI line	2007-08	Classic Network	127.28
16	Providing & laying DI line Network in Harinagar - Subhanpura tank Command area.	RCB/2 006-07	250,350 ,400,450 mm dia DI line	2007-08	Spun Pipe & const. Pvt. Ltd.	107.58
17	Construction of ESR,GSR,Pump House ,Transfermer room ,Compound Wall at Harinagar.				Classic Network	

**FUTURE PLANNINGS:**

Sr. No.	Name of Project	Project Cost in Lacs.	Period of Implementation
1	Detail Project Report for Augmentation of Water Supply in Vadodara city for the development of Infrastructure services under JnNURM Program.	12885.00	2013-2015
2	Detail Project Report for Water Supply in GIDC and Vasna Area.	3867.00	2013-2015
3	Increasing Storage Capacity of GSR at Various Existing Tanks.	2000.00	2013-2015
4	Preparation of Master Plan up to 2040.	46	2013-2014
5	Source Augmentation at Ajwa-Pratappura .	DPR under preparation	2013-2016

**Efforts made to strengthen water supply system in last 5 years**

Name of the component / package	Capacity / Description	Cost (Rs. in lakh)
Source upgradation (under JnNURM Scheme)		
(a) Sayaji Sarovar (Ajwa Dam)	Strengthening work of storage capacity increased from 1879 MCFT to 2231 MCFT (Design Capacity)	986 lacs
(b) Strengthening work for Pratappura dam,	Feeder channel and miscellaneous work	1704 lacs
(c) Additional water filtration plant	50 MLD Additional water filtration plant at Nimeta	703 lacs
(d) Feeder Network	Feeder Network from source to city by laying line of 1500mm diameter BWSC line about 30 km	4103 lacs
(e) Balancing Reservoir	Balancing Reservoir of 30 ML capacity project	775 lacs
Elevated Service Reservoirs (ESRs) & Ground Service Reservoir (GSRs)		
(a) Master Plan Up-gradation	Under Master Plan Up-gradation, four (Ajwa, Subhanpura, Manjalpur, Harinagar) ESRs with GSRs, and command area network	813.66 lacs
(b) Swarnim Gujarat Project	Under Swarnim Gujarat Project, two ESRs with GSR and command network	1700 lacs



(c) Old Ground Services Reservoirs Up-gradation	Old Ground Services Reservoirs are under upgradation (Tarsali, Wadiwadi, Karelibaug, Warasia, Lalbaug)	600.38 lacs
Feeder Networks Upgradation		
(a) City zones interconnection and upgradation	City zones are interconnected and upgraded for capacity, with 750 mm dia. DI line of length of 2.8 km (IPCL circle to Kalpataru Market)	409.30 lacs
(b) Old feeder line replacements	Old feeder line replaces due to heavy leakage for a length of 3.8 km (Kalpataru Market to Akota ESR)	287 lacs
Network Upgradation as per Master Plan suggestions in various area of the city		
(a) network upgradation	Various work regarding network upgradation as per MasterPlan suggestions in various area of the city are completed	7230.54 lacs
<u>Recently Completed / On-Going Projects</u>		
Source upgradation (under JnNURM Scheme)		
(a) New source and Water Treatment Plant	Water Treatment plant near Khanpur village is constructed for Design capacity of 75 MLD under Narmada River Bed with intake wall, water filtration plant and 8 km long transmission line	6473 lacs
(b) Pumping machinery up gradation	Pumping machinery up gradation at Radial Collector wells is under process	1093 lacs
Elevated Service Reservoirs (ESRs) & Ground Service Reservoir (GSRs)		



a) 24 x 7 water supply project	Under JnNURM scheme, 24 x 7 water supply project is under construction for newly developed area of city (North Harni, Chhani, Kapurai , Sayajipura) with ESRs-GSRs and command area network with water meters	8975 lacs
b) Old Grond Services Reservoirs upgradation	Old Grond Services Reservoirs are under upgradation (Karelibaug,Jail) at a cost	447 lacs
	c) Constuction of New tank at T.P - 13, Laxmipura, GIDC	2084 lacs
Feeder Networks Upgradation		
JnNURM scheme	Under JnNURM scheme old feeder at Tarsali is taken to replace and enhance capacity for a length of about 8 km which is under progress at a cost	788.81 lacs
Network Upgradation as per Master Plan suggestions in various area of the city		
Network Upgradation	(a) Various work regarding network upgradation as per Master Plan suggestions in various area of the city are completed at a cost	2154 lacs

**Forecast Population & Demand of water**

YEAR	Population in Lac	Demand @ 180 lpcd with 15% UFW MLD	Demand @ 212 lpcd with 30% UFW MLD	Source available MLD	Gap in Demand MLD
2012	18	324	381	420	-
2022	24.6	442.8	522	495	-
2031	30	540	636	495	141
2040	36.2	651	768	495	273

Tank Cleaning Work

Vadodara Mahanagar Seva Sadan is serious about the quality of water, hence VMSS has started cleaning of all Over Head Tanks & Under Ground Sumps regularly with Hyeginic manner . In current year VMSS has cleaned major ESR/GSR without much disturbing the water supply to the citizens.



Awards Achieved by Water Supply Dept.

Water supply system of Vadodra Municipal Corporation had been awarded two times as below

❖ Water Digest Water Award for year 2009-10



For 2009-10 Water Digest Water Awards given "Best Municipal Corporation" for the outstanding contribution in the field of water in India. The Award is supported by UNESCO & Ministry of Water Resources. The award is judged by a jury from IIT, TERI, WES NET, UNESCO.

❖ JnNURM Award for Improvement in Water Supply for year 2009-10



For year 2009-10 the Award of "Improvement in Water Supply & Waste Water Sector under JnNURM" was given by Ministry of Urban Development Govt. of India

ENERGY AUDIT OF WATER SUPPLY & PUMPING STATIONS

- ❖ Vadodara Mahanagar Seva Sadan has different pumping stations and overhead tanks in different areas to supply water to citizens of Vadodara
- ❖ Recently VMSS had carried out energy auditing with renowned organization "ERDA" (ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION) for Water Distribution Station and Waste Water Pumping Station.
- ❖ ERDA Vadodara has conducted the energy audit study at water distribution station, water source of VMSS, waste water pumping station at various location of Vadodara city.
- ❖ The objective of the study was to :
 - ❖ Optimise the performance of the pump and reduce the energy cost.
 - ❖ Performance evaluation of pumps and suggestions to operate at duty point.
 - ❖ Checking condition of capacitor units.
 - ❖ Study of monthly electricity bills.
 - ❖ Performance evaluation of lighting load.

MEASUREMENT OF PARAMETERS

The following pumps parameters evaluate individually for each pump performance at various pumping stations .

Sr No.	
1.	Location
2.	Make and Type
3.	Rated Capacity, Head

Sr. No.

- 13. Discharge Pressure (kg/cm²,g)
- 14. Throttling (% open)
- 15. Frequency (Hz)



4.	Motor Rating	16.	Total head developed (m)
5.	Voltage (Volts)	17.	Flow rate (m ³ /hr)
6.	Load current (Amp.)	18.	Pump output (kiw)
7.	Power factor	19.	Input power to the motor (kw)
8.	Input Power (kw)	20.	Calculated overall pump efficiency (%)
9.	Load (%)	21.	Assumed motor efficiency (%)
10.	Flow (m ³ /hr)	22.	Calculated pumping efficiency (%)
11.	Velocity (m/s)	23.	Design pump efficiency (%)
12.	Suction Pressure (kg/cm ² , g)	24.	Remarks (Current/phase)

ENERGY AUDIT RECOMMENDATIONS AND IMPLIMENTAION :

SHORT TERM MEASURES :

- ❖ To incorporate capacitor bank in the electrical system to maintain power factor nearest to unity and get rebate from MGVCL .
- ❖ Minimise the pumping hours during pick hours of MGVCL and take the advantage of time of use charge tariff
- ❖ By analysing the contract demand as per the site condition and increase or decrease the contract demand suitable to load condition.
- ❖ Replacement of old leaky valves at various distribution stations, it minimise the pumping hours

MEDIUM TERM MEASURES :

- ❖ Performance improvement of pump by repairing or replaces rotating assembly of pump.

LONG TERM MEASURES :

- ❖ Installation of new pumps.
- ❖ Replacement of old pump by new one.



MAJOR WORKS PHOTOGRAPHS



DI PIPELINE WORK AT JAMBUVA



ESR-GSR WORK AT CHHANI UNDER 24X7 DPR(JnNURM)



ESR-GSR WORK AT BAPOD UNDER VAJPAL NAGAR VIKAS YOJANA



ESR-GSR

WORK AT KALALI UNDER VAJPAI NAGAR VIKAS YOJANA





ESR-GSR WORK AT AJWA ROAD



ESR-GSR WORK AT NORTH HARNI UNDER 24X7 DPR(JnNURM)



ESR-GSR WORK AT SAYAJIPURA UNDER 24X7 DPR(JnNURM)