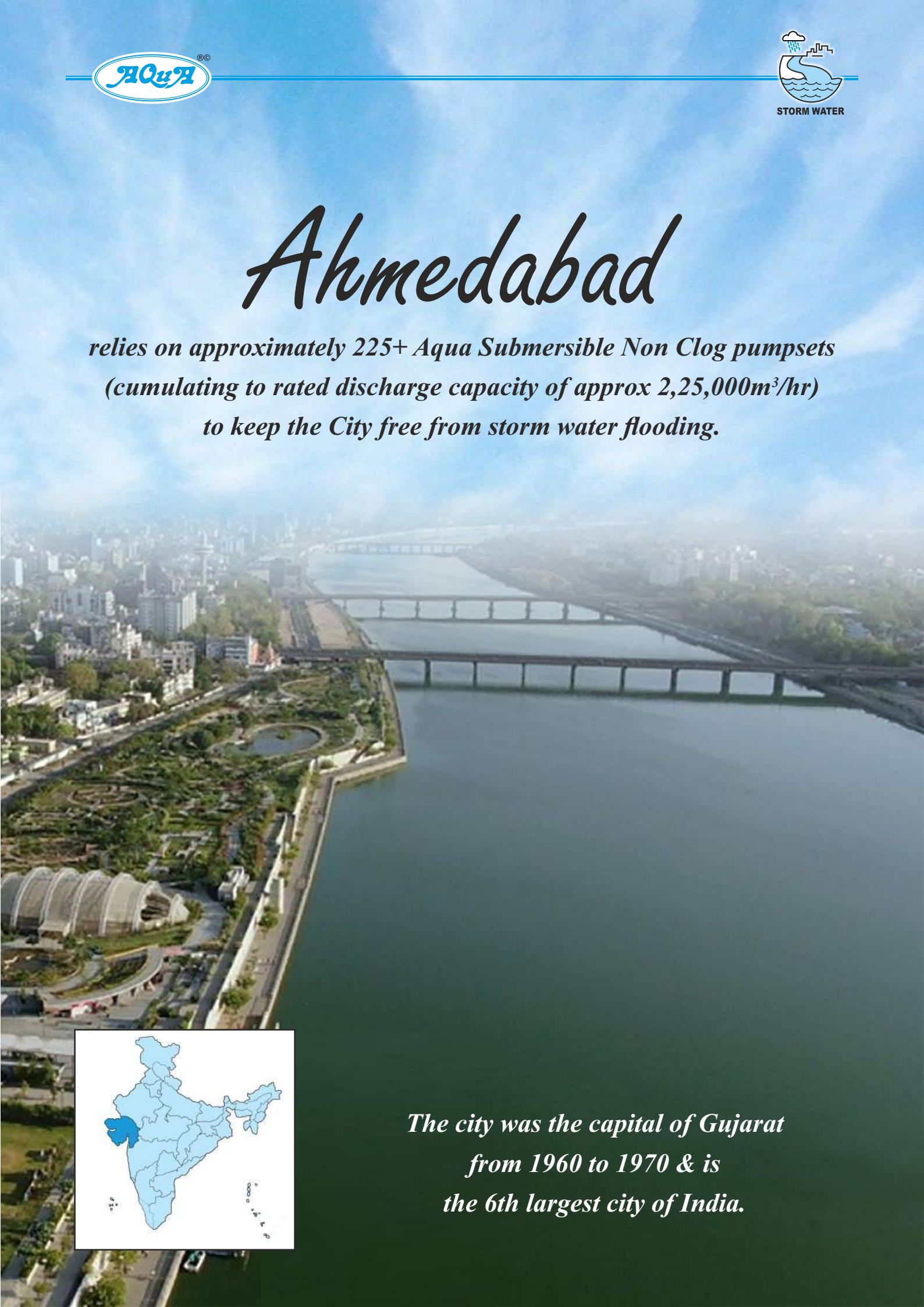
AQUA®

STORM WATER

Ahmedabad

relies on approximately 225+ Aqua Submersible Non Clog pumpsets (cumulating to rated discharge capacity of approx 2,25,000m³/hr) to keep the City free from storm water flooding.



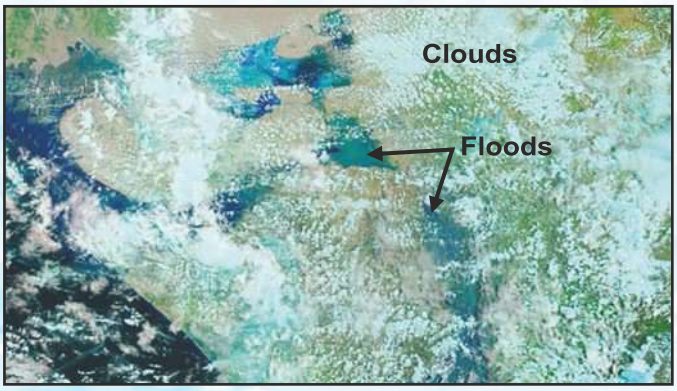
The city was the capital of Gujarat from 1960 to 1970 & is the 6th largest city of India.

SITUATION

Ahmedabad is in Central Gujarat which is located on the **Flat** Alluvial **Terrain** of multiple rivers most of which are very **near to the Gulf of Cambay**.

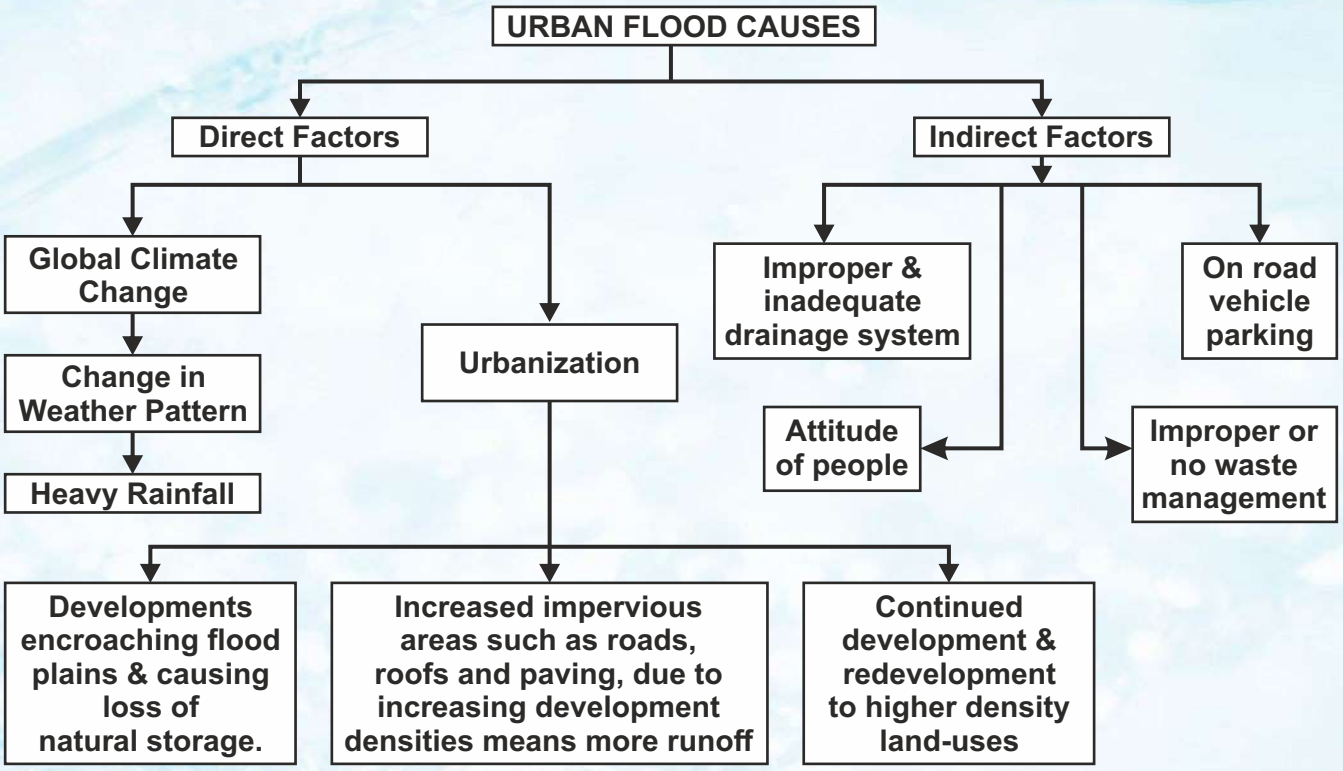
The one-day Probable Maximum Precipitation *(PMP)* is **much higher than** the Average Annual Rainfall *(AAR)*.

Being **near to the Arabian sea**, there are **frequent cyclones** & **depressions** which also bring in heavy rainfall.



Generally, at the onset of monsoon, Central Gujarat faces either an active system emerging from Arabian Sea or Bay of Bengal – but every few years **both the systems become simultaneously active** & cause huge low pressure over Ahmedabad.

The existing system of storm water disposal *(drains cumulating to just 280km v/s 1205km of Sewer lines & 1238km of roads)* was grossly inadequate hardly covering just **25%** of City's area..! This meant that the city faced flooding very frequently & demanded an increase in the quantity & quality of infrastructure.



SOLUTION

Drainage Project Department of AMC operates and maintains 9 Sewage Treatment Plants, 45 Sewage Pumping Stations and approximately 2500 km long Sewage Network throughout the city area. It is entrusted with the Setting up and maintaining new STPs, SPSs & Storm Water Drainage Pumping Stations.

In 2007, it was decided by the Ahmedabad Municipal Corporation to cover the entire citywith a Storm water drainage network & pumping stations.

Multi Media Consultants

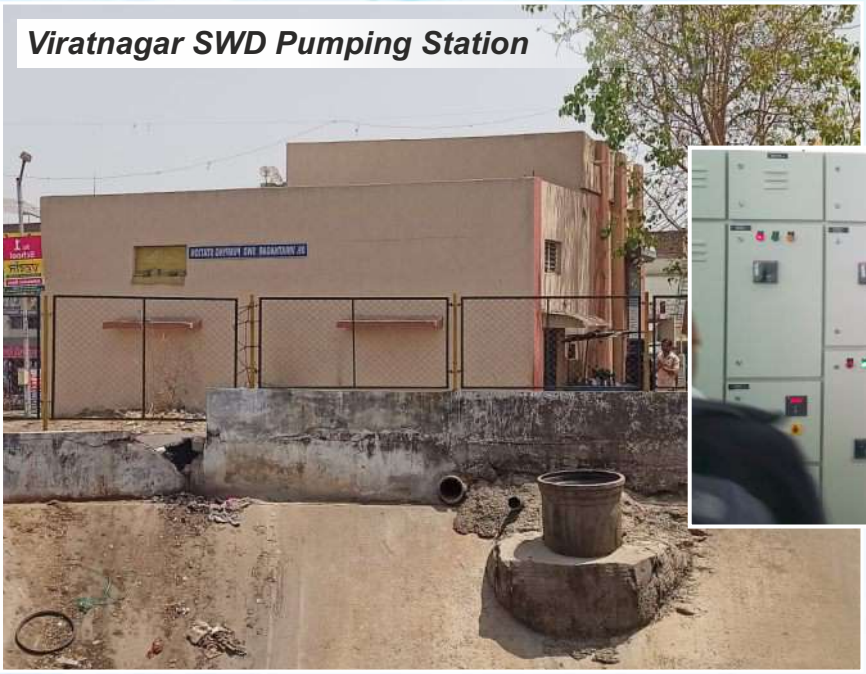
A reputed consultant *(M/s. Multimedia)* was appointed & an exercise was carried out in which problematic areas were identified along with special measures to be considered in the design of the system of such areas - a DPR was prepared.

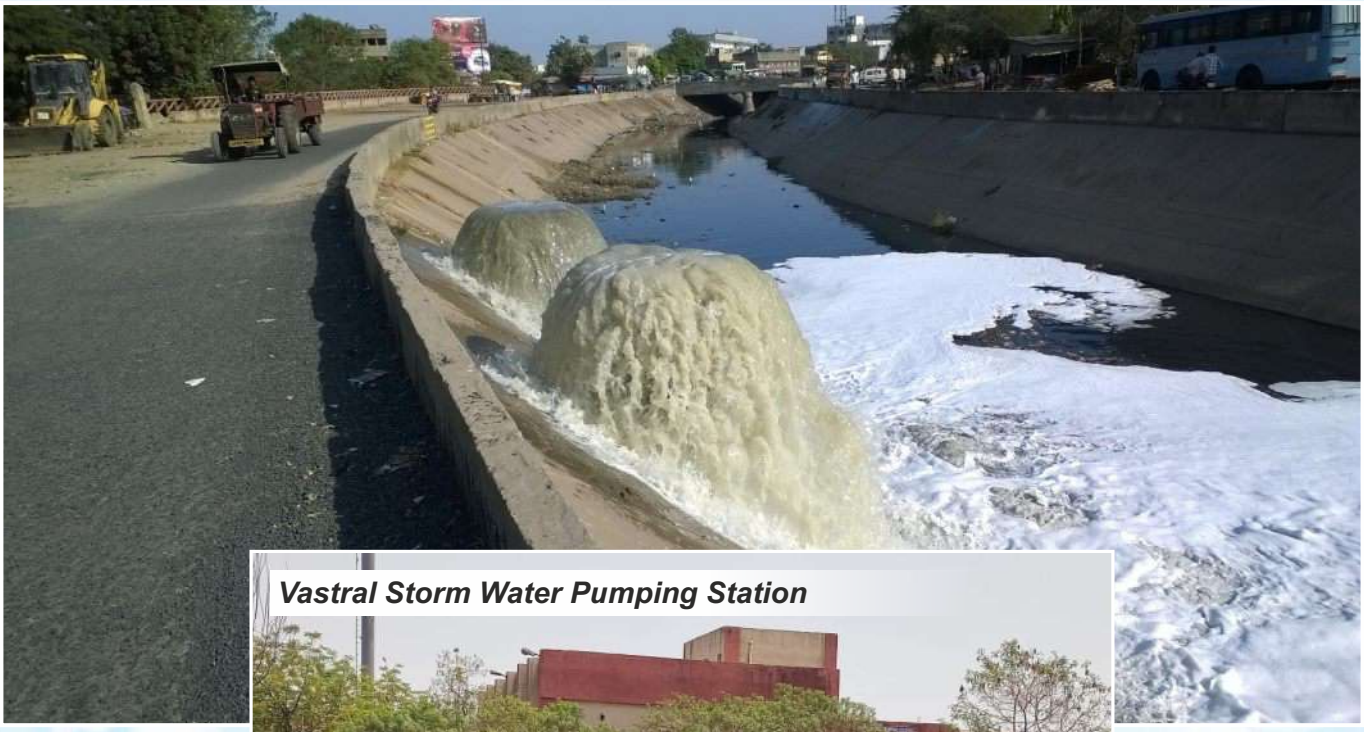
Arbudanagar Storm Water Pumping Station

Sureliya SWD Pumping Station

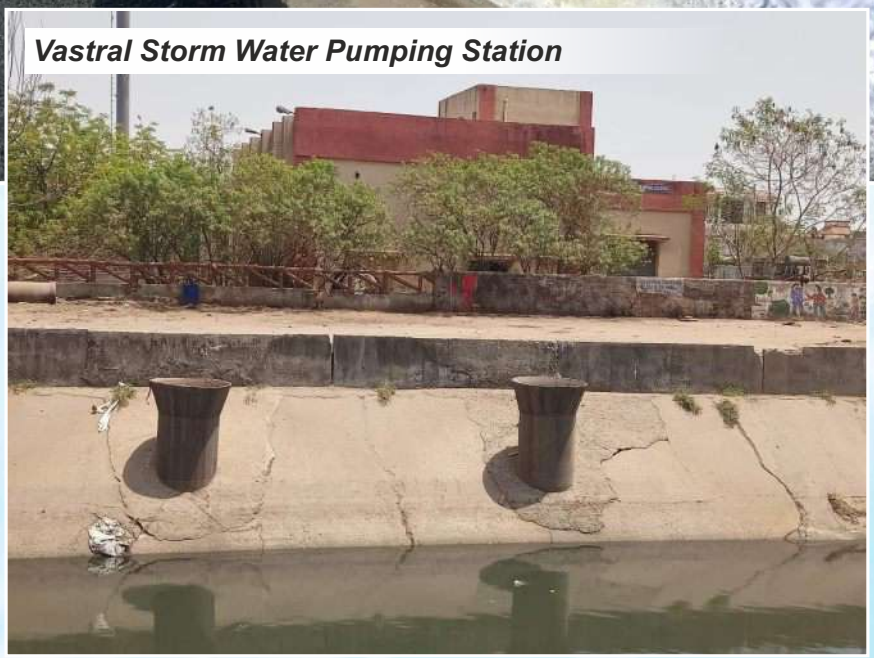
Storm Water Pumping Stations

Viratnagar SWD Pumping Station





Vastral Storm Water Pumping Station



Some SWD Projects undertaken in AMC

Sr. No.	Name of the Project	Funding
1	Jodhpur Storm Water Drainage work (Tender 1)	JnNURM
2	Jodhpur Storm Water Drainage work (Tender 2)	JnNURM
3	Laying canal pushing work between Umang Bunglow to Bagefirdosh Pumping station at Indrapuri Ward South Zone	JnNURM
4	Drainage network line between Ramol to Hathijan Ward near Mansi tenement area	JnNURM
5	Setting up Drainage Pumping station at Chiloda area T.P. 99	JnNURM
6	Setting up Drainage Pumping station at Chenpur	JnNURM
7	Setting up Drainage Pumping station at Meghaninagar area North Zone	JnNURM
8	Laying of storm water drainage line near Parimal Under pass	JnNURM
9	Setting up Drainage Pumping station at Vejalpur area	JnNURM
10	Setting up Drainage network in Vejalpur area	JnNURM
11	Setting up Storm water drainage network at Kubernagar area	JnNURM
12	Setting up Storm water drainage network at Chandlodia area	JnNURM
13	Setting up a drainage network in Hathijan area	AMC Capital Budget
14	Setting up Drainage pumping at Ranip area	AMC Capital Budget
15	Drainage Network at Behrampura Ward South Zone	AMC Capital Budget
16	Sarkhej Haidernagar Drainage network	AMC Capital Budget
17	Keshavnagar pumping rising line work	AMC Capital Budget
18	Drainage network at Behrampura ward South Zone	AMC Capital Budget
19	Sarkhej Roza Drainage network	AMC Capital Budget
20	Storm water drainage network at Kali Chandkheda area	JnNURM
21	Drainage network under the JnNurm Scheme SN-NWZ-13	JnNURM
22	Drainage network under the JnNurm Scheme SN-NWZ-18	JnNURM
23	Setting up Drainage pumping station at Motera	JnNURM
24	Drainage network under the JnNurm Scheme SN-NEZ-11	JnNURM

Some major SW PS with Aqua's pumps

AMC North, East & South Zone Storm Water Drain Pumping Stations

Sr. No.	Zone	Name of Pumping Station	Pump Cap. (m^3/hr)	Head (m)	Qty.	HP	kW
1	EZ-1	Harivilla	1800	10	1	100	75
2		Jay Chemical	1800	10	2	100	75
3		Odhav Fire Station	2400	10	3	125	93
4		Arbudanagar	1800	10	2	100	75
5		Viratnagar	2400	15	2	215	160
6		Nikol	2400	15	3	215	160
7		Vastral	3500	14	4	285	213
8		Maleksaban	300	20	3	40	30
9	NZ-1	"Odhav Ambicanagar"	2400	15	3	215	160
10		Dehgam Road	1800	10	2	100	75
11		Navyug	2400	10	3	125	93
12		Pushpkunj	1800	10	1	100	75
13		Rajivpark	1800	10	1	100	75
14		Sitaram Madhuli	2400	10	1	100	75
15		Kubernagar	2400	10	2	125	93
16	NZ-1	Trikamlal	2400	10	3	125	93
17	EZ-1	Naroda Hansapura	2400	15	3	215	160
18	SZ-1	Sureliya	2400	10	3	125	93
19		Matla Circle	2400	10	2	100	75
20		Vyayamshala	2400	10	1	100	75
21		Smrutimandir	1800	10	1	100	75
22		Ghodasar	2400	10	1	100	75
23		Bhairavnath	2400	10	3	125	93
24		Avakar Hall	600	15	3	60	45
25	SZ-2	Nirmanala *(Bhaktipath)*	1800	10	2	100	75
26	SZ-3	Devimata	2400	10	3	125	93
27		Noornagar	1800	10	2	100	75
28		Gebanshah Pir	1800	10	1	100	75
29	WZ	Vejalpur	2400	10	2	125	93

STORM WATER

Challenges to pumps

- Flood water often contains solids and large amounts of fibrous materials, like branches, leaves, weeds, trash, dirt and sediments such as sand, silt, mud and soil.
- Inflow to the station will vary significantly between dry seasons and flood events.

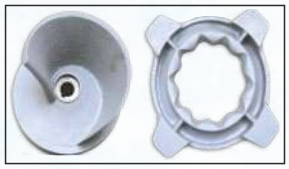
Hence, the most reliable pumps should be used together with a sound station design to ensure secure operation.

Unique Advantages of Aqua's ANS

ANS Pumps are specially designed *(as an upgrade over the 1st generation of submersible non clog pumps)* **to withstand the harsh operation conditions** *(encountered in Storm Water Pumping)* **in developing countries.**

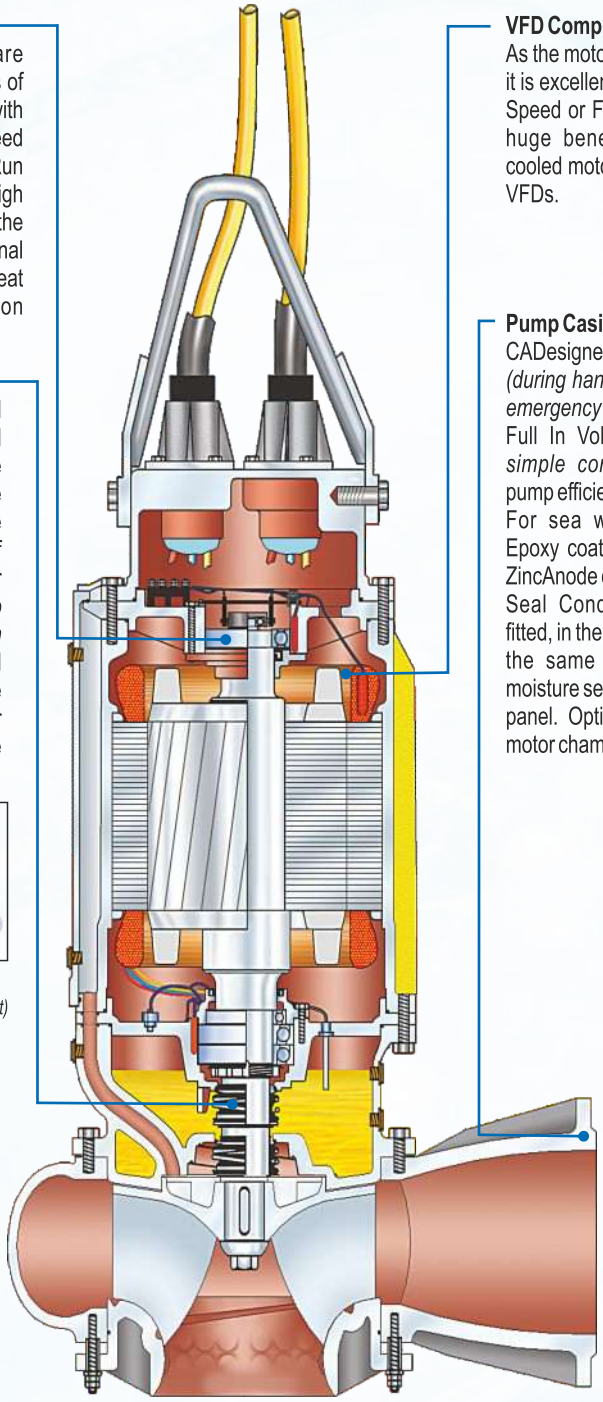
Long Bearing Life
Heavy duty ball bearings are designed for L 1 o life in excess of 1,00,000 hours. Factory filled with life long grease obviating the need of subsequent regreasing. Dry Run fail resistant due to the use of high temperature characteristics of the grease used & increased internal clearance class. Bearing overheat detectors can be supplied on request.

Reliable Shaft sealing
Two, Independent Mechanical Shaft Seals allow a longer useful life even in case of failure of one seal. Both the seals are bidirectional permitting safe Reverse rotation in case of accidental reverse rotation or intentional pipeline back-flow *(to flush out bottom sedimentation at suction side)*. The primary seal is of Silicon Carbide faces while all "O" rings are of FKM for enhanced dry run fail safe characteristics



Semi Open Impeller
(Single Channel type with Macerating Inlet)

Impellers
Advanced CADesigned impellers are optimized for raw unscreened sewage - they can handle large solids as well as fibrous wastes *(which generally plait up & clog up conventional non clog impellers)*. To obviate the leakage losses *(due to erosion of wearing rings)*, Aqua pumps don't have any soft metal wearing rings / bushes. Restoration of the pump's efficiency is simple, easy & quick ensuring energy conversation

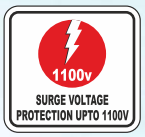


VFD Compliant heavy duty motors
As the motor itself is submerged in water, it is excellently Cooled irrespective of the Speed or Fan /Cowl condition - this is a huge benefit over TEFC/CACA Fan cooled motors especially when driven by VFDs.

Pump Casing
CADesigned Casing withstands impacts *(during handling especially with portable emergency duties)*.
Full In Volute profile *(as opposed to simple concentric design)* increases pump efficiency.
For sea water/Brackish application; Epoxy coated with or without Sacrificial ZincAnode can be provided.
Seal Condition Monitoring Standard fitted, in the event of primary seal leakage the same is detected by the inbuilt moisture sensor & displayed in the control panel. Optionally moisture detectors in motor chamber can also be provided

Fully Enclosed Double / Triple Channel impellers can be fitted on larger pumps for screened sewage, storm water, industrial waste water & effluents with lower fibrous waste content

Tolerates wide Electrical supply fluctuations.



100% pumps are subject to Factory Acceptance Test *(FAT)* **on Full Scale TestBed equipped up to 2500 kW & 25000 m3/hr.**

Robust & Reliable

Zero Maintenance

AQUA®©

STORM WATER

AHMEDABAD MUNICIPAL CORPORATION
SEWAGE TREATMENT PLANT DEPARTMENT

Jamalpur Drainage Pumping Station Compound, O/s. Jamalpur Gate,
B/h. Fire Station, Ahmedabad-380 022.
Telephone No.- 32981583-32981588, Fax No.-079 - 25350926

Date :-

AMC /

To
AQUA MACHNIERIES PVT LTD.
Plot No 3821; GIDC Phase IV,
VATWA AHMEDABAD

TOWHOMSOVER IT MAY CONCERN

This is to certify that M/S Aqua Machineries Pvt. Ltd Ahmedabad has supplied and installed following Aqua Sewage Submersible Pumps sets through various contractors at our different sites. The pumps are working satisfactory

Sr. no	Capacity M3/hrs	Head (Mtrs)	Motor rating	Qty	Name of Contractors	Name of Site
01	2400	10	125hp	3	G.K Patel & Co	NZ 1
02	1800	10	100hp	5	G.K Patel & Co	NZ 1
03	2400	10	125hp	3	Ramkey (I) Pvt ltd.	EZ 1
04	1800	10	100hp	5	Ramkey (I) Pvt ltd.	EZ 1
05	2400	10	125hp	3	Dineshchandra Agrawal & Co.	SZ 1
06	1800	10	100hp	9	Dineshchandra Agrawal & Co.	SZ 1 + SZ 2
07	1800	10	100hp	3	Gokulkrishna Construction CO. Pvt ltd.	SZ 3
08	2400	10	125hp	3	Gokulkrishna Construction Co. Pvt .Ltd.	SZ 3

Deputy City Engineer
(Drainage Proj)
Ahmadabad Municipal Corporation
Ahmadabad.

AHMEDABAD MUNICIPAL CORPORATION
SEWAGE TREATMENT PLANT DEPARTMENT

M.K.NINAMA
B.E.(ELECT)
Add Chief Engineer
Sewerage Operation E. & M.

5TH Floor, 'C' Wing
Sardar Patel Bhavan
Danapith, Ahmedabad-380001
Telephone No.- 079-25391901
Mobile No.9374514396

Date: 26/02/2018

STP/3642/17-18

To,
Aqua Machineries (p).Ltd.
Plot no. 3821, Phase IV, G.I.D.C.
Vatva,Ahmedabad-382445
Phone-079-25840145

TO WHOMSOEVER IT MAY CONCERN

This is certify that 4 nos. of AQUA make 3500 cu. mtr. / Hr. with 14 Mtr head, 212 KW non clog sewage submersible pumpsets were commissioned in our Vastral Storm Water Pumping Station in August 2014, and these pumpsets are working satisfactory.

Your's Sincerely

Thanking you,

Addl.C.E.
(S.O.E. & M.)

"For more than a decade, we are using approximately 225+ nos of Aqua make Submersible Non Clog pumps for draining storm water of Ahmedabad city. We are very satisfied with their Quality & Robustness"

M. K. Ninama
Addl.City Engineer
(S.O. E. & M.)

Aqua Machineries Private Limited

www.aquapumps.com

Registered Office & Manufacturing Plant
Survey No. 504/1-2, 442/2, Near Haridarshan Estate, Near Express Highway, Ramol, Ahmedabad-382 445. Gujarat, India.
marketing@aquapumps.com