

GRUNDFOS PREFABRICATED PUMPING SYSTEM (PUST) HELPS NAVI MUMBAI MITIGATE WATER STRESS



THE SITUATION

Navi Mumbai is a planned city off the west coast of the Indian state of Maharashtra in the Konkan Division. Since it is a planned city, its facilities are state-of-the-art. Navi Mumbai has lived up to expectations of absorbing the population shock of migrants from the megacity of Mumbai, evident in the recorded population growth of more than 51% between 2001 and 2011.

The city is in the tropical climate zone and has three seasons namely, summer, monsoon, and winter. Normal temperature varies from 22°C to 36°C, while the maximum summer temperature ranges from 36°C to 41°C and the minimum winter temperature between 17°C and 20°C. Average annual rainfall is 2,000-2,500 millimetres, and humidity varies from 61% to 86%. Navi Mumbai's ideal weather conditions, and proximity to Mumbai attracts numerous industries.

Though the city is well planned, managing the sewage water generated from slum areas/unorganised settlements is a challenging task, and these sewage lines often discharge into the nearby creeks (nallas). It leads to:

1. Water bodies getting contaminated resulting in water stress.
2. A foul odour present in and around the discharge area making it unsuitable for human activities/settlement.
3. Air quality deterioration due to sewage odour that permeates across the settlement.
4. Navi Mumbai has an abundant green cover ranging from forest patches to mudflats and mangroves in the coastal region, making it an idyllic spot for birdwatching. However, the sewage discharges makes it challenging for the diverse flora and fauna to thrive.

CHALLENGES

- Sewage had to be re-routed to nearest Sewage Treatment Plant (STP), but due to difference in elevation, the process required a pumping system to transport the sewage waste
- However, land was not available to build a pumping system



SOLUTION

Grundfos' Engineers in association with our partner M/s Industrial Marketing visited the site to understand the situation, constraints, and worked on a suitable, long-term solution.

The compactness of the Grundfos PUST made it a viable answer for the challenge due to its features, and there was significant cost savings as additional land didn't have to be acquired. Grundfos' expert recommendation also reduced the manpower, time, and excavation costs for the customer.

Tank	PS.G.30.55T
Diameter	3000 mm
Height	5000 mm
Sewage Pump Model	SE1.80.100.75.A.4.51D.B
Flow	250m ³ /hr at 15.5m head

OUTCOME

After the PUST installation, the sewage is being directed into the PUST and pumped to the nearest STP which resulted in positive outcomes in terms of improvement in public health, hygiene conditions, air quality, momentary benefits in the sale of treated sewage and increase in the number of settlements near STP areas.

Overall, the socio-economic benefits of the sanitation program implemented by Navi Mumbai Municipal Corporation (NMMC) are quantifiable, significantly improving the quality of life for people in the region.

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