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## Mumbai dumps 2,100mn litres of human waste in sea daily

MUMBAI: Where does [Mumbai's waste](#) go after you flush it down the toilet?

In a wooded patch close to the Bandra sea link toll booth, municipal engineers and maintenance staff monitor a constant gush of light brown water as a dull stench permeates the air.

Sub-engineer Abhijit Desai and his team at the waste water sewage treatment plant at [Bandra Reclamation](#) are among a group of silent workers at seven locations across the city, handling Mumbai's human and kitchen waste.

Managing this daily nauseating torrent is no mean task. Mumbai's coastline is now considered among the most polluted in the world. And one of the reasons for this is that the sewage receives a basic preliminary treatment before it is pumped into the sea.

The BMC's seven sewage plants located between Colaba, Malad and Bhandup work round-the-clock throughout the year.

Around 2,100 million litres a day (MLD) of waste water sewage is released into the Arabian Sea and the creeks. The waste that arrives at the plants is pumped 3km into the sea.

The BMC's Malad sewage treatment plant, which handles the waste of 35 lakh people, is perhaps the worst of the seven in the city. The facility is limited to just preliminary treatment before the effluent is discharged directly in the Malad creek, which is surrounded by a large mangrove forest.

"The Malad creek does not have the required assimilative capacity due to nominal tidal flushing. The dissolved oxygen (DO) level in the Malad creek has reached zero, raising serious environmental concerns," states an internal note of the BMC's sewerage operation department. Officials said a DO level of 4 is considered safe for aquatic life. "Anything below that is dangerous," they said. Every day, around 240 MLD is released into the Malad creek. The Malad plant handles the waste of people living in Charkop, Gorai, Shimpoli, Goregaon and Dahisar.

Last month, a global study found the sea near the Mumbai coast to be among the world's most polluted. The database (Litterbase) compiled by Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research in Germany also found high quantity of plastic debris on the city's four beaches.

Civic engineers said around 25% of the city's waste, which comes from the slums, is not connected to the 1,915km sewer network and goes straight into nullahs and creeks.

Rakesh Kumar, director and Mumbai head of National NEERI, said this is a more serious problem because waste generated from slums is dumped totally untreated.

S R Narkar, chief engineer (Mumbai sewerage disposal project), said despite basic treatment of sewage, "it gets highly diluted by the time it is released 3km into the sea. The dilution factor is very high".

Back at the [Bandra treatment plant](#), sub-engineer Desai pointed out that human feces dissolve completely by the time it reaches the plant. Inlet shafts remove floating material like plastic bags, bottles and solid waste. The waste water is then pushed into a shaft 63m below the ground. From there, large pipes (marine outfall) push the sewage 3.7km into the sea. The Bandra plant handles sewage from Vile Parle, Khar, Santa Cruz, Bandra, Dharavi and Kherwadi.

The Versova treatment plant has aerated lagoons where sewage is treated before around 120 MLD is released into the sea through a 1.5kmlong channel.

The seven existing plants were set up based on the master plan prepared in 1979. The first plant was commissioned in 1988 and the last one in Bandra commenced operations in 2003.

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The BMC will now spend Rs 10,000 crore to set up seven new plants at the same locations where the existing ones stand. The new plants will include tertiary treatment. According

to Narkar, the treated water will be recycled and reused for industrial gardening and supplied to construction sites. "These new sewage treatment facilities will be built according to [Central Pollution Control Board](#) norms," he said.