



Why Bengaluru's sewage treatment plants may never be enough for the city

While Bengaluru has 24 sewage treatment plants, none of them treat the wastewater according to the norms prescribed by the Central Pollution Control board.



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Sewage-riddled storm-water drains and smelly, frothy lakes are a reality in Bengaluru. So much so that even the city's residents are aware of the reasons behind both – illegal sewage dumping and badly-functioning sewage treatment plants (STP). But, at what scale?

Bengaluru produces 1,440 million litres per day (MLD) of sewage but the Bangalore Water Supply and Sewerage Board (BWSSB) has the capacity to treat only 1,057 MLD of sewage. The BWSSB has 24 sewage treatment plants spread across the core area of Bengaluru city and a few urban local bodies in its suburbs. However, 110 villages in the city's periphery, which were added to the Bruhat Bengaluru Mahanagara Palike (BBMP) limits in 2005, do not have sewage connections at all. The wastewater is directly flowing into the lakes and ultimately the Vrishabhavathi and the Dakshina Pinakini Rivers.



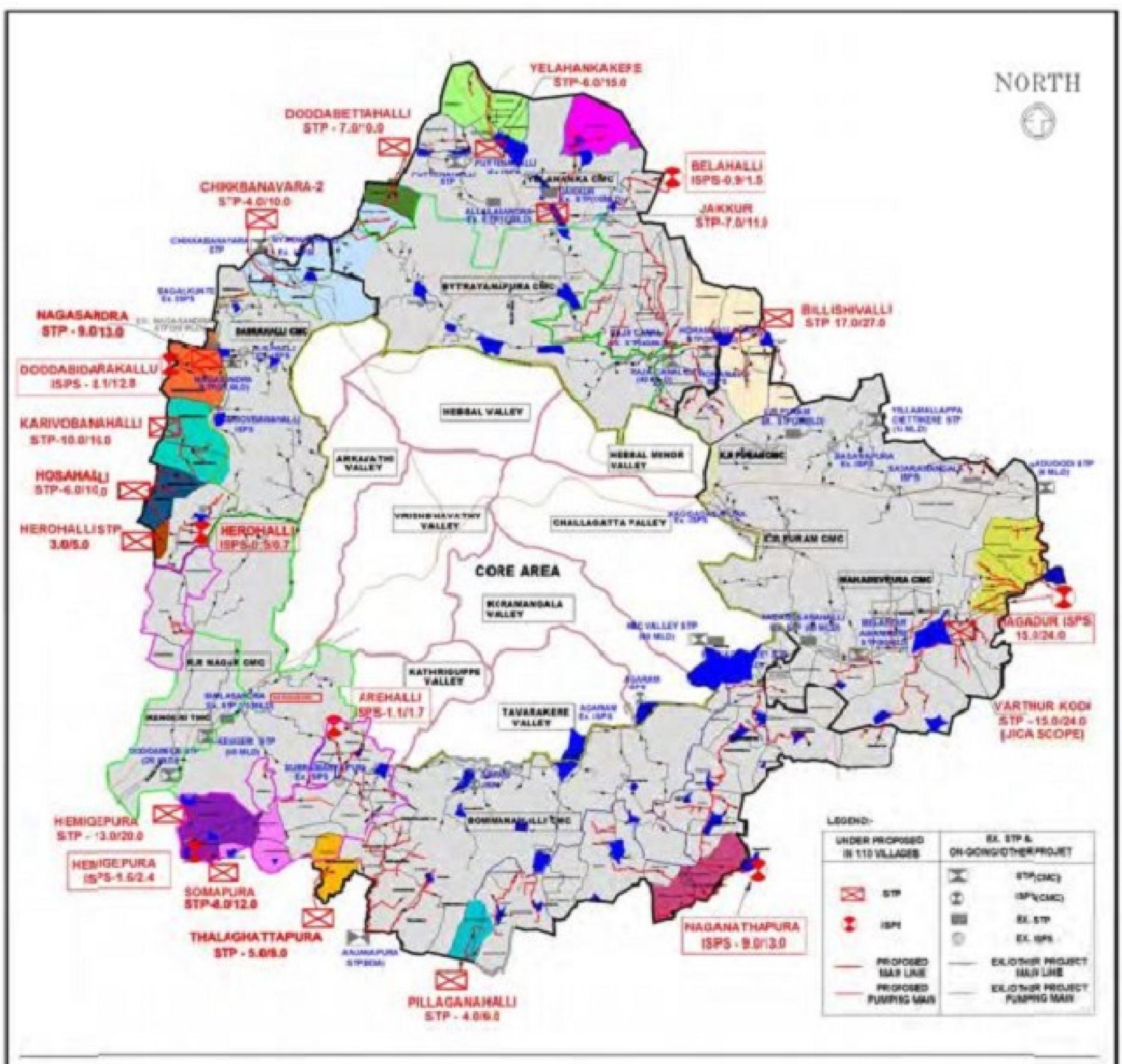
the huge amount of sewage,” said Nityanand, Assistant Executive Engineer of the Waste Water Management Department, BWSSB.

Just not enough

While the BWSSB has 24 sewage treatment plants in the city, none of them treat the wastewater according to the norms prescribed by the Central Pollution Control board.

The Koramangala Challaghatta Valley STP is the largest one in the city with a capacity to treat 248 MLD of water. However, the treated water which passes through the outlet into the storm-water drains, and ultimately into the Bellandur Lake, is frothy.

TNM visited the K-C Valley STP and found that several crucial processes mandated by the Central Pollution Control Board are not being followed. The STP has aeration tanks, sludge collection pits and the anaerobic tank. However, the most important processes – chlorination and dechlorination – which are required to ensure that the nitrates are removed to produce clear water, do not exist. The K-C Valley STP does not have chlorination and dechlorination tanks at all.



“The foaming will happen. If the chlorination process happens, then the water will kill aquatic life. The dechlorination process ensures that this does not happen. But these processes are expensive,” Nityanand added.



properly and the present inflow is being controlled so the plant functions below capacity. The SIP has a capacity to treat 180 MLD of sewage, but the current inflow of sewage, according to BWSSB figures, is only 61.73 MLD per day. Of that, only 34.3% of the sewage is being treated.

“The coarse screens and sewage pumps are old and need constant repairs. Besides, without the chlorination and dechlorination process, foamy water is flowing out to the lakes and ultimately into the Vrishabhavathi river,” a BWSSB official said.

More over, although all the 24 STPs function partially, none of them function efficiently. Each of the STPs have several dysfunctional processes, which in turn hamper the sewage treatment. The water flowing out of the outlets of these STPs are foamy and smelly.

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Map of existing, under-construction and proposed STPs. This is an interactive map. Click on the locations to get more details about the STP

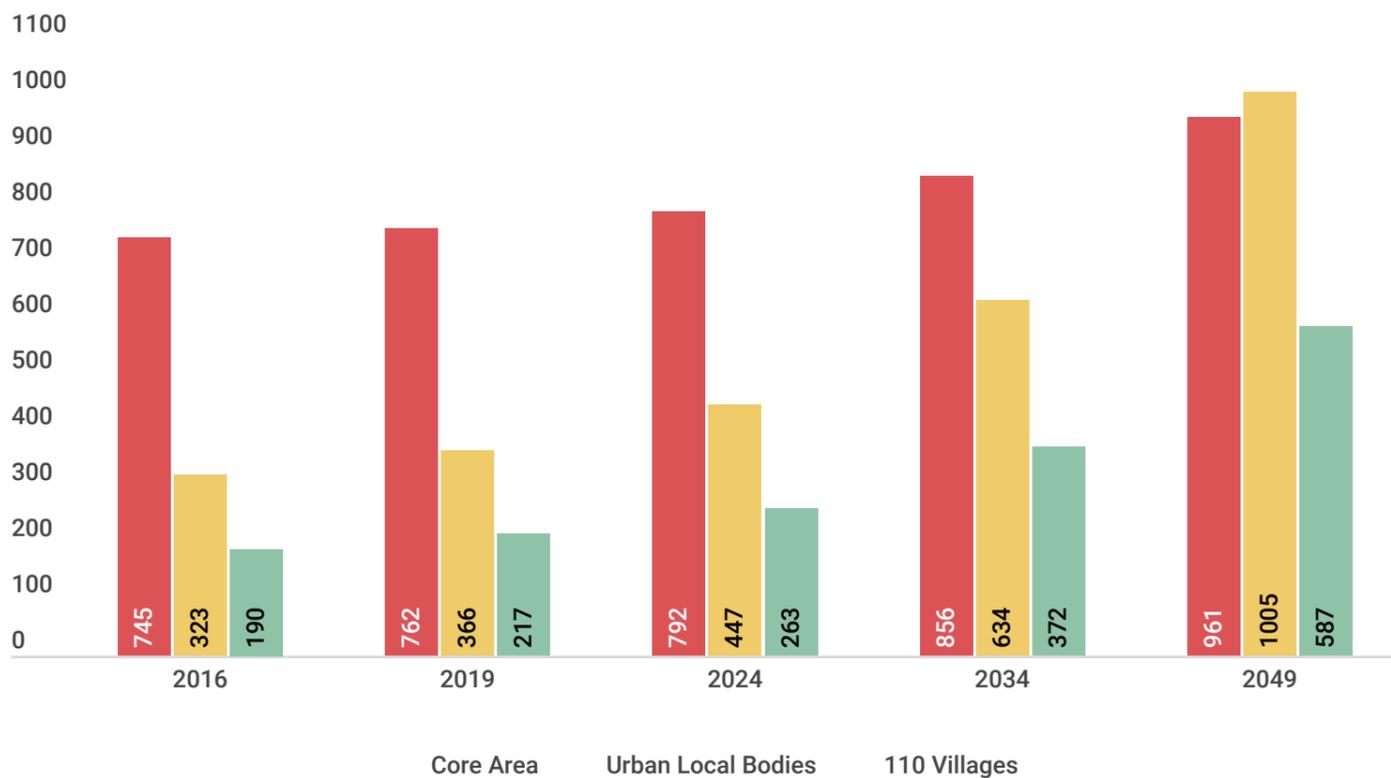
The BWSSB is now constructing nine more sewage treatment plants in the outskirts of the city's core area. 14 other areas have been identified where the construction of STPs has been proposed by the BWSSB in the 110 villages in Bengaluru's periphery. Japan International Cooperation Agency has been granted the tender to construct the 14 new STPs.

“These 14 STPs are expected to be completed by 2025. But they will likely start working by 2030. The problem is that if the city's population remains the same till 2030, then the new STPs, which will be constructed, will be enough to meet the amount of sewage flowing in. However, the growth is expected to increase and we will again fall behind,” Nityanand said.



Bengaluru

A survey conducted by the Japan International Cooperation Agency shows that only 60% of Bengaluru's sewage is being treated in the existing STPs



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BWSSB
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Near-zero impact

Scientific research conducted by Dr Priyanka Jamwal of Ashoka Trust for Research in Ecology and Environment (ATREE) shows that the large STPs in Bengaluru, which are also the oldest ones in the city, have near-zero impact on the wastewater it treats.

The problem, experts say, is that the BWSSB has failed in several aspects including – providing sewage connections to all homes within the city limits, open drains, which carry industrial effluents and garbage, massive power outages at the sewage treatment plant sites and faulty implementation of rules regarding apartments, which are mandated to have STPs.

Speaking to TNM, Dr Veena Srinivasan of ATREE says that the BWSSB's model of having large STPs to treat all of Bengaluru's sewage is a big problem.

“The first problem is that not all of Bengaluru's homes have sewage connection. In order to bypass constructing a proper sewage network, BWSSB takes all the wastewater dumped in the storm-water drains and treats that water,” Dr Veena says.

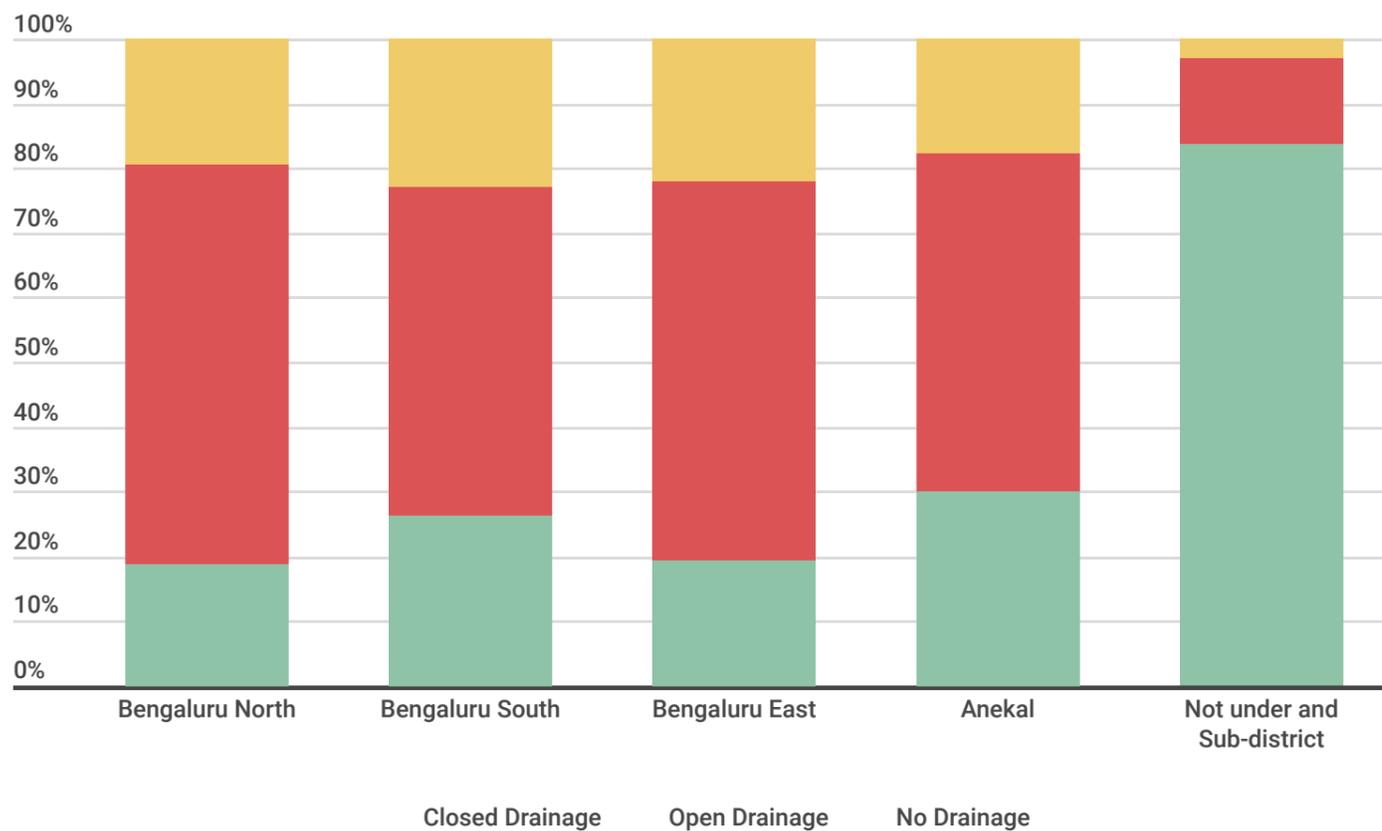
The problem with this method is that the storm-water drains do not contain domestic sewage alone. There is garbage which is illegally dumped. Several industries in the city's periphery directly discharge the effluents into the storm-water drains, which results in industrial waste mixing with domestic sewage.

“When this happens, the STPs will not be able to treat the sewage properly because the equipment is not designed to treat industrial waste and garbage. That's why there are so many STPs with faulty equipment,” Dr Veena adds.



drainage connectivity in Bengaluru

The report by JICA also found that 50% of Bengaluru economically poor communities do not have toilets, let alone sewage connections.



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Number of houses with sewage connections and type of connection
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Another major problem is that the apartment complexes, which are mandated by the Karnataka High Court to have STPs within the complex, have also run into several technical difficulties. Hence, a large chunk of the untreated sewage ends up flowing into the lakes.

“The biggest problem for us is that we don’t have experts who can tell us how to use the STP. It takes a lot of time and money to identify an expert who will come to help repair the STP. Hiring someone with the expertise to handle it is also very difficult. There is no technology currently which can ensure that the sewage is treated by the press of a button. What the BWSSB failed to do is to create a group or a team for the city, which could help the apartment dwellers deal with STP-related issues,” says Ramprasad, convenor of Friends of Lakes.

Small is big

Dr Veena says that instead of installing STPs with large capacities, the best way to ensure that all the sewage in a said area is treated is to install STPs with smaller capacities in each area.

“Once the sewage treatment is decentralised, it becomes easier to identify violators. The STPs will not be burdened with industrial waste. The open drains will have treated water. Cycling tracks can be built around it. The idea of a clean and green open drain will ensure that smelly open drains are not there anymore,” she adds.

According to Ramprasad, a convenor with Friends of Lakes, the Karnataka Pollution Control Board needs to check the water quality of the STPs at various times of the day and year in order to determine whether the water quality is adequate.

“In apartments, BWSSB must create training programmes for STP operators so that they know how to use it. Many STPs in apartments are not functioning and the sewage ends up in the lakes untreated because of this. Instead of pushing paperwork, the BWSSB must take this issue seriously and train people,” Ramprasad says.

With inputs from Soumya Chatterjee. Graphics by Debabrata Bhattacharya