

POINT BLANK

Drains designed for disaster

As rain-triggered floods loom large over the city's low-lying areas yet again, the storm water drains remain clogged and encroached upon

When drains turned fatal...

Storm water drains could turn deadly if not desilted on time and maintained well. The six deaths reported last year due to floods triggered by the city's faulty drain network should have sent the message.

- May 20, 2017:** Rajkumar (24), a JCB operator had a fatal fall into a SWD in Kurubarahalli.
- September 9, 2017:** Eighteen-year-old Varun washed away in a drain near Seshadripuram.
- October 13, 2017:** A priest from Kurubarahalli, Vasudev Bhat washed away in a SWD.
- October 13, 2017:** Nigamma (57) and daughter Pushpa (22) ran out as water gushed into their house from the overflowing SWD near Laggere. Pushpa's body later found near Kumbalgodu.
- October 15, 2017:** Narasamma (17) washed away in SWD near her house in CV Raman Nagar.

Devastating floods had trapped the city's low-lying areas in a twister of rain-induced woes last year, and the years before. As lakhs struggled to endure the dangerous fall to absolute chaos, the storm water drains (SWDs) lay there encroached, silt-filled and in dire need of a drastic redesign. This year could be worse.

The warning bells had rung early this time. Yet, the drains remain clogged with floundering de-silting work. The bulldozers that razed encroachments with much fanfare two years ago are long gone, as vested interests in cozy league



with babus celebrate their emphatic victory. Moving at snail's pace, the drain remodeling could take years.

Election work alibi But the residents know they cannot wait. Storm water from the overflowing drains had

rushed into their homes trapping entire neighbourhoods last year. Desperately seeking solutions, they turn to the Bru-

hath Bengaluru Manahagara Palike (BBMP). The Palike's standard retort: Election work and pre-monsoon showers delayed preparations.

For scores of suffering Bengalureans, this is a cruel joke. They ask in collective angst: Is it rocket science to clear SWDs of all debris, silt and encroachments well in time so that the flood waters drain out quickly to the lakes? Why wait till the last months to get the drains in ship shape?

The Palike admits that works related to drain remodeling, building walls, maintenance, fencing and de-silting are still pending. After a series of accidents involving the drains, BBMP had identified 366 vulnerable SWDs that need immediate attention. "We've completed more than 70% of the work on these SWDs identified by the team of engineers last year," says Bettogowda, Chief Engineer, SWDs.

Delayed upgrade

Work on upgrading the city's SWD network was scheduled to be completed in March. This was deferred to May, but now it appears the work will go beyond July. Implication: No guaranteed respite from flood woes this year too. The Rs 1,100 crore released by the state government to repair and redesign 408 SWDs has not been fully utilized.

But Bettogowda insists the ongoing repairs will be completed soon. He says, "Work is complete in 339 SWDs using state government funds. It is ongoing in another 33 SWDs, which we will complete soon." Of the 842 km of SWDs in the city, the Palike has built permanent walls at 177 km. Last year, it began work on another 212 kms, but could only complete the work for 120 kms.

If unregulated inflow of raw sewage into the SWDs continues, there is a reason: Encroachments, big and small, have been permitted to continue. The mandated three-metre buffer on either side of the drain is nowhere to be seen. Hundreds of houses have been built right on the Rajakaluve's periphery in Halasuru, Domlur, Lakshmiपुरa and other stretches.

Record rains in 2016 that flooded scores of low-lying areas had forced BBMP to take a count of SWD encroachments. But the initial euphoria over the demolitions has totally died down, indicating the hand of vested interests with high political influence.

Halted demolitions

The statistics speak for themselves. Out of the 1,953 encroachments identified, the Palike says 822 were cleared up to August 5, 2016. Another 403 were removed from August 6, 2016 to February 18, 2017. But the remaining 728 encroachments have remained untouched since then.

Now, how does the Palike explain this inaction of over an year? An official attributes this to the delay in the survey work. The BBMP, he says, has

to depend on the state revenue department's surveyors. Currently, such a process is now on under the Joint Director, Land Revenue.

Inevitably, these structures block the seamless flow of storm water into the drains. At many stretches, the drains are covered with concrete slabs, ruling out any attempt at de-silting. A cross road built right on a drain in New Thippasandra is just one instance. Covered drains also block the entry of storm water and sunlight that could aid in chemical cleaning. In Yemalur near Bellandur lake, tell-tale signs of sewage directly flowing into the SWD are everywhere.

UNREGULATED INFLOW OF RAW SEWAGE INTO THE SWDs CONTINUES. ENCROACHMENTS, BIG AND SMALL, HAVE BEEN PERMITTED TO CONTINUE. WELL CONNECTED VESTED INTERESTS ARE AT PLAY



The demolition drive against SWD encroachments has died down. Of the 1,953 encroachments identified, only 1,225 were removed till February 2017. None of the remaining 728 have been cleared since then.

Covering the drains with concrete slabs blocks the smooth flow of flood waters. It also makes de-silting tough, besides blocking entry of direct sunlight that aids the remediation process by the algae present in the water. This drain in New Thippasandra has been completely covered.



The critical drain de-silting work and other related maintenance works should have been completed much ahead of the monsoon. Civic agencies blame it on shortage of staff, who were diverted to election duty.



There is no end in sight for the much-delayed storm water drain remodeling project. Experts have questioned the design that narrows down the drains. The narrowed drains only aid the builders and the land-mafia, they say. Besides, concretising the drain floor prevents ground water recharge.



Remodelling flaws

In 2006, SWD remodeling was touted as the panacea for all the drainage woes of Bengaluru. That much delayed project has covered only 296 kms in eight years. Another 92 kms of drain remain untouched.

But the motive behind the project itself has been questioned now. "Remodelling is a project designed to help the land mafia," notes Dr T V Ramachandra from the Indian Institute of Science. "After remodeling, the SWDs have been narrowed down from 60m to 18m to help the big builders," he elaborates.

His study on the flooding in Koramangala had established this clearly. "The Rajakaluve (storm water drain) connecting Bellandur Lake from city market side is narrowed to 28.5 metres against the original width of 60 metres. This also violates the National Green Tribunal (NGT) guidelines (of maintaining SWD physical integrity and buffer)," the report had noted.

The deduction was brutally frank: "This is mainly to help the encroachers of storm water drains while bypassing NGT's guidelines of SWD buffer regions."

The study also questioned the concretisation of the drains. "This would affect the hydrological functional ability of storm water drains—ground water recharge, remediation and flood mitigation. Concretization and narrowing the drains has only enhanced the flooding in the city," the report observed.

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