

Metro 3 passes through Mithi's main water region, sets record

Tunnelling on 1.48-km stretch likely to be over by March-end

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The Mumbai Metro Line 3 has successfully finished tunnelling under the main water channel of the Mithi river making it the second Metro corridor in India to achieve this feat. Of the 1.18-km-long stretch under the riverbed, both tunnels have crossed the 270-metre-long active river channel.

The portion under the river is between Bandra Kurla Complex (BKC) and Dharavi station and is part of the 1.48-km-long tunnels being built between the two stations. S.K. Gupta, director (projects), Mumbai Metro Rail Corporation Limited (MMRCL), said the two tunnel boring machines (TBMs) had completed 87% and 65%, and were expected to finish work by the end of March.

“One TBM has around 200 metres left to tunnel, while the other has 500 metres remaining. We have completed tunnelling in the active water region of the river. The tunnels are around 8-12 metres below the surface of the water,” he said.

The active water region is a 270-metre stretch where water continuously flows. Mr. Gupta said nearly the entire 1.1-km stretch fills up during high tide, which has marshy soil and mangroves. The two tunnels are being built by earth pressure balance TBMs and a special type of gasket is being used to ensure that the tunnels are watertight.

The MMRCL is also building a third tunnel under the Mithi using the New Austrian Tunnelling Method (NATM), which is a traditional manual intensive form of tunnelling. The BKC will have three lines instead of two with one being used to reverse trains. Around 22.22% of the 153-metre-long



Breakthrough: Tunnelling work for Metro Line 3 in progress under the Mithi river. ■VIVEK BENDRE

Under the water

1.18 km: Total length under Mithi

8 to 12 metres: Tunnel depth: below water level

Features:

- Two stabling lines
- Direct access to Metro 2B
- Three lines and two island platforms

BKC station

- 40.95%:** Total civil construction
- 18 metres:** Depth
- 474 metres:** Length
- 153 metres:** Length of third line at BKC

tunnel is complete as MMRCL officials said the labour-intensive tunnelling method is much slower than the TBM.

“Typically TBMs build around 10 metres of tunnels every day on an average as opposed to around 1 to 2 metres that is completed using the NATM method,” an official said.

Unlike the tunnels built by the TBMs, those built by the NATM are arch-shaped and built using small excavators, instead of the regular ones and with controlled blasting. Mr. Gupta said tunnelling under the river was a challenging task as the soil underneath the riverbed was soft and porous. The entire underground corridor from Colaba to SEEPZ will be made operational in two phases, with BKC serving as the intermediary station.

Highest density at BKC

BKC Metro station has been planned as a crucial station and is expected to cater to the highest density along Metro Line 3. Metro officials said they will also offer a higher frequency of trains between BKC and Cuffe Parade of around four minutes, with every alternate train from Cuffe Parade terminating at BKC.

BKC is the longest station on Metro Line 3 and will have three lines instead of two. It will also have two island platforms, to provide easy interchange from trains terminating at BKC.

The station will have stabling lines to park trains and a seamless paid-to-paid interchange with Metro Line 2B, where commuters would not need to get out of stations of either Metro to change.