

# Metro-3 heads towards 1-km tunnel

**BY APRIL-END** 800m tunneling completed so far, 51km more to go for the Colaba-Bandra-Seepz Metro line, says MMRC

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**MUMBAI:** The Mumbai Metro Rail Corporation, which is executing the 33.5-km underground Colaba-Bandra-Seepz metro rail corridor, will soon complete 1km of tunneling.

A total tunneling of 52km (without the stations) will have to be done for the project. Boring of tunnels across the alignment of the Metro line has started at four locations -- Azad Maidan, Vidyaganari (Kalina), Marol and Naya Nagar (Mahim) -- and 800m has been completed so far. "We will complete 1km by April-end," said an MMRC official.

According to MMRC, they target to bore an average of 10m a day, but the progress depends on the geological conditions of the location. The tunneling work is carried out by lowering a tunnel boring machine (TBM) in a shaft at a depth of 25m to 30m. "Currently, six TBMs are operational at four sites. Two TBMs have been lowered at two other sites and will be operational soon," said SK Gupta, director projects, MMRC.

TBMs are highly-mechanised Earth Pressure Balance device that grind earth around 20-25-m below the surface to construct twin tunnels with a circular cross-section.

Tunneling work first began at Naya Nagar in Mahim, and was followed by Azad Maidan. "There are two machines in operation at the Azad Maidan site. One has achieved 210m of tunneling, while the other has completed 5m," said an official on the site.

Boring the twin tunnels that will be 5.2-m in diameter, would be a challenging task for authorities, as unlike underground Metro projects in other Indian cities, tunnels in Mumbai have to be carved out of a mix of soil and basalt rock.

## 'NEED AN INDEPENDENT BODY FOR METRO'

Bharatiya Janata Party legislator Ashish Shelar on Thursday demanded an independent authority be made for Metro projects in the city.

"With the work on metro projects, which will ferry around 65 lakh passengers daily in the future, there is a need for a separate authority for safety of passengers and smooth running of Metros," Shelar said, while speaking in the state Assembly.

Shelar demanded the section between Juhu and Bandra on the proposed DN Nagar-Bandra-Mankhurd Metro 2B corridor be constructed underground as it passes through a narrow and densely populated area. The Mumbai chief of the BJP also demanded that the registration fee for properties be charged as per the carpet area, and the ready-reckoner rates be reduced.

**TUNNEL BORING MACHINES USE EARTH PRESSURE BALANCE TO GRIND EARTH AROUND 20-25-M BELOW THE SURFACE**

## A GLIMPSE OF THE WORK IN PROGRESS



**AZAD MAIDAN**

There will be light and smoother commute at the end of this tunnel.



**HUTATMA CHOWK**

The team is up and about. A metal ramp being created (decking) for construction work of the station.



**SAHAR**

Here's the ground reality. Workers create a shaft that will be used for tunneling work near the airport.

**33.5km**  
LENGTH

**27**  
STATIONS

Cuffe Parade, Vidhan Bhavan, Churchgate, Hutatma Chowk, CST Metro, Kalbadevi, Girgaum, Grant Road, Mumbai Central Metro, Mahalaxmi, Science Museum, Acharya Atre Chowk, Worli, Siddhivinayak, Dadar, Sitaladevi, Dharavi, BKC, Vidyaganari, Santacruz, Domestic Airport, Sahar Road, International Airport, Marol Naka, MIDC, SEEPZ and Aarey Depot

MUMBAI

SEEPZ

BANDRA

COLABA

**₹23,136 cr**  
COST

**17** tunnel boring machines (TBMs) ordered to bore two tunnels

**6** TBMs currently operational at four sites -- Azad Maidan, Vidyaganari (Kalina), Marol and Naya Nagar (Mahim)

Total tunneling to be done:

**52km** without the stations

**800m** Drilling completed so far

MMRC has a target of boring 10m of tunnels a day

All TBMs will be operational in the city by June 2018

## WHAT THE PROJECT MEANS

**Connectivity to central business districts:** Nariman Point, Cuffe Parade (WTC), Fort, Worli/ Lower Parel, Bandra Kurla Complex, SEEPZ and MIDC

**Interchange with public transport:** CST, Churchgate, Mumbai Central, Marol Naka (Metro Line 1), Mahalaxmi (Monorail) and Mumbai Central (State Transport bus depot)

**Airport connectivity:** Domestic Terminal, International Terminal (T2)

## FUNDING

The project is partially being funded by JICA (Japan International Co-operation Agency) through a loan of ₹13,235 crore.

## PEOPLE ON THE JOB

**7,600** approx skilled and unskilled

## PROJECT-AFFECTED

**1,500** families have been shifted

Six tunnel-boring machines are operational at four sites. Two TBMs have been lowered at two sites and will be operational soon.

SK GUPTA, director projects, MMRC

HT PHOTOS: ANSHUMAN POYREKAR