

'What is loss to environment? Metro will stop 10,000 metric tonnes of emissions'

The city is witnessing a flurry of activity for the construction of Metro lines, among them the fully underground Metro 3 connecting Colaba-Bandra-SEEPZ. Mumbai Metro Rail Corporation Managing Director **ASHWINI BHIDE** talks about the challenges of building a 33.5-km line in a congested city, and how this will change Mumbai

KAVITHA IYER: What is the progress until now and what are the first things Mumbaikars will actually see while construction continues underground?

We have already issued the work orders for civil work, the agreements were signed in September and the work has already commenced. The entire civil work is divided into seven packages, and each package has certain length of twin tunnels and stations. Maximum, we have five stations in one package and almost 6.8 kilometres of twin tunnelling. Each package is worth Rs 2,221 crore and that kind of activity will go on for the next 3-4 years.

First we need to have the tunnel boring machine launching shafts ready in the next 5-6 months so that once we receive the machines the tunnelling would start. So, right now that activity is going on. There are 27 stations, out of which 26 stations are underground. These station activities also need to be started. The second activity is utility investigation for which we have provided the data and the contractor is double checking it as to what kind of utilities are there and the plan to shift or support these utilities which is more or less over. The third activity is piling, which is the temporary supports before the excavation begins for the tunnel boring machine launching shafts or stations, which is done with secant piling. This is going on right now in some places. We have to dig some 25,000-odd piles all over the alignment and today we have completed 1,300 odd piles. One hundred and fifty machines and equipment are in place, including 25 pile rigs, and more will come soon, and about 2,500 labourers. Right now, you would be seeing barricades across the city, these are station locations and tunnel boring machines (TBM) launch site locations. At 2-3 places we have completed the piling for TBM launch shafts and the excavation has almost started. Behind the scene also there are plenty of activities like we need to place order for the TBM. We will need 17 TBMs which will start coming to Mumbai from July-end onwards. We hope to start actual tunnelling from October.

SHAJI VIKRAMAN: How different will the Mumbai Metro be from Delhi or Kolkata Metro?

This is the first fully underground Metro corridor in India and probably the only one. There are certain underground portions in Delhi, Chennai and Bangalore. Kolkata was the first one but with a different technol-

ogy, as TBMs were not there at that point of time. 33.5 kilometres is a very long underground corridor, that itself distinguishes it from the others. Secondly, the Metro will be catering to the congested parts of the city and the ridership we expect makes it different from other Metros. There are limitations to our suburban railway network which has increased over time. The first limitation is that it is only north-south longitudinal and that latitudinal spread is not there. Secondly it is already saturated. The third problem is that the distance between two stations is at least 2-5 km which requires another mode of travel.

From that perspective, if you look at this Metro then it is going to provide an amazing connectivity as it will connect six CBDs, including Fort, Cuffe Parade and BKC. Secondly, other institutions, almost 30-odd educational institutions, major religious and cultural institutions and hospitals will be connected. This project has the capacity to take off 4 lakh vehicle trips per day off the road when it gets commissioned and on maturity it will increase to 6.5 lakh vehicle trips. The technology used will make it a safe, reliable, secure and efficient transport apart from being environment-friendly. Today people may get offended that we have taken open spaces and playgrounds, but once the work is completed the lands are going to come back to the city. It is a game-changer and we think it can be another lifeline for the city.

MOHAMED THAYER: For an average Mumbaikar, development is happening, but there is that fear of whether we are doing it at the cost of the environment.

One needs to first see it in perspective. What is the loss to environment? One garden getting affected is the loss, or the number of vehicles on the roads? Rail-based public transport projects are considered projects with environmental benefits. This project would bring about stopping 10,000 metric tonnes of carbon, sulphur emissions - that is a huge, huge benefit to the environment. Suppose I have to get the same benefit by planting trees, I would probably have to plant some 5-6 lakh trees in the city. What is more detrimental to the environment? Envision Mumbai ten years hence. What is going to happen, if you don't do something about it, because despite having a suburban train that carries 65 lakh passengers per day, still we have to use road?

SANDEEP ASHAR: Will there be more congestion in the city once the TBMs will come in July-end?

There won't be, as whatever land we need has already been barricaded and the TBMs will work within the barricaded area. Quality and less disturbance to the city has been our motto. That is why the barricades have a particular colour, a lot of messaging is done, the activity behind those



Mumbai Metro Rail Corporation Managing Director Ashwini Bhide at the Express Tower in Mumbai. Santosh Parab



barricades is not even seen outside and we have made an attempt that the muck or the internal disturbance within that barricade is not visible outside.

SANDEEP ASHAR: Could you provide details of the rehabilitation plan for the project-affected people? Apart from slums, you have legal buildings and utilities in the way.

Generally, Mumbai's underground utility isn't fully mapped. Some of them are really old and only the new utility lines are mapped. MMRC carried out a full utility survey and utility document was shared with the contractors. Apart from that contractors were asked to do their due diligence. There are around 25-27 utilities and as many utility agencies. So we have already shared these plans with those utility agencies and they know what is to be done. The utility shifting activity is going on right now. This will be a continuous activity and there is a scientific way of doing it. At some places, like Worli, the Science Museum station, there is a huge utility, now in consultation with BMC, under their guidance, we are fully covering it. And they've already given their plans and we are in loop with them and they are guiding us.

On rehabilitation or buildings, the main chunk of legal buildings is in Girgaum-Kalbadevi and we have improved plans with our consultants, reducing the number of buildings from 26 to just 16. The number of PAPs also came down from 890 to 650. Out of 650 residential are only 350, remaining are commercial. We have already prepared a plan. We needed certain concessions from the state government. We

requested the government that all the 16 plots should be considered as single cluster and allow us to use the FSI conveniently so that we can generate some space there that would house the commercial structures as well as residential structures. The government has agreed. We will accommodate all these PAPs in one building itself and work on that building will begin along with the metro construction itself.

BENITA CHACKO: The Central government has recently given a directive that you have to procure 75% of your

rakes locally, from within the country, to promote the Make in India campaign. What does this mean for Metro 3?

It was our initiative which the central government has now circulated as a policy. We had planned for it earlier, and this issue came up at the time of our rolling stock pre-qualification (PQ) process. JICA funding also entails certain standard bidding documents which they have prepared for global competitive bidding, that doesn't allow this kind of a thing, like Make in India, because that is global competitive bidding. So we had

to basically go back to JICA and impress upon them that this is required. First of all, to follow the spirit of this government's Make in India theme, but also for the project. When you get rolling stock from outside, it is not a one-time activity. You need to replace parts, you need spare parts and after some time you need to replace the whole boggy. Due to the competitive bidding, the rolling stock can be procured at low prices but the spares are always expensive. That is why we were insisting on setting up things in India so that our maintenance cost goes down, and maintenance becomes easier. JICA had certain issues, so we had to push JICA through Niti Aayog, Department of Economic Affairs, and the Ministry of Urban Development also helped. And now JICA has agreed in our case, so the same thing has become a policy for all Metros.

SANDEEP ASHAR: So your plans of using the construction debris for building Shivaji memorial and sending it to port trust using a jetty at BKC is not being done?

They were not our plans. It is one of the options. The contractor of Shivaji memorial has to get the material from somewhere and they can definitely take this muck from our contractors. Now if that happens, to enable that situation, we have already ensured that the jetty is available. But here timing is very important. Suppose today our muck has begun being generated, we can't keep it and store it for some other project.