

Trains In Three Corridors Would Zip Over Multiple Flyovers, MRTS Line Too; To Cost 20% More

Metro phase-2 to soar over city skyline, rise up to nine storeys high at Alandur

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The metro is changing not just the city's commute, but its skyline too. Imagine a metro line at a height of 40.4 metres, as tall as a nine-storeyed building. That's the height of the phase-2 line planned at Alandur, which will run above the existing phase 1 line.

For the 118.9 km phase-2, CMRL has decided to go over rather than under. Metro lines will soar over the Kathipara flyover in Guindy, the grade separator at Koyambedu, and flyovers at Vadapalani, Thirumangalam, Porur and Poonamallee. A 21km line between Nehru Park and SIPCOT on Old Mahabalipuram Road is also expected to come up above a yet-to-be-built flyover. The height will range from 23 metres to 36 metres.

The new skyline, however, comes at a cost. "It will cost roughly 10% to 20% more than an elevated line above a road because the quantity of construction material needed will increase," said V Somasundaram, former CMRL official.

For instance, while elevated viaducts on a road are built at an average 12m height, which includes clearance for the vehicles on the road for about 5.5m, when they built above a flyover, which may be at 6 to 7m height, the height of these viaducts may be at 18 to 20m. "Usually, the line slowly starts rising at least half a kilometre away from the maximum elevation. After crossing the flyover, it will start descending gradually to a height of 11m to 12m. For every 25m, there may be a 1m elevation," explained Somasundaram. "It is still technically feasible and faster than going underground," he added.

Unlike phase-1, the elevated corridors and stations are going to be built in cantilever style, where the structure sits on a single row of pillars raised on the centre of the road while the trimmed down stations will have two arms, which will be entry points, spreading out to either side of the road.

CMRL is equipped with information on all the flyovers over or under which they may be building a line. A city corporation official said they have given technical details of flyovers at Kodambakkam, Bazullah Road in T Nagar and at Radhakrishnan Salai. "We had a series of meetings with CMRL officials on constructing above our flyovers. Permission to construct above our flyovers was given only with an assurance from them that there will be no disturbance to traffic and no damage to our structures," a state highways official said.



Phase-2 line will peak at 40.4m above the phase-1 metro line at Alandur

Height of the corridor 40.4m

PROJECT PLAN NOW | The phase-2 elevated lines will run over multiple flyovers in the city and will have supporting pillars in the middle of the road

Corridor 3 | Madhavaram to Sinsari SIPCOT (45.8km) - elevated 19.1km with 20 stations - UG 26.7km with 30 stations

Corridor 4 | Lighthouse to Poonamallee (26.1km) - elevated 16km with 18 stations - UG 10.1km with 12 stations

Corridor 5 | Madhavaram to Sholinganallur (47km) - 41.2km with 42 stations and 5.8km with 6 stations

Estimated project cost - **₹61,843 crore**

STATUS

Construction to begin this year, phase expected to be ready by 2026

Locations where elevated corridors to be built above existing flyovers | **Koyambedu, Thirumangalam, Vadapalani, Alandur, Porur, Poonamallee**

Locations where double metro elevated corridors are going to be built | **Alwarthirunagar, Valsaravakkam, Karambakkam, Alapakkam junction** - all four stations are interchange as they link corridor-4 and 5

Locations where a flyover and a metro elevated line is planned | **From Nehru Nagar to SIPCOT on Old Mahabalipuram Road which will link all IT hubs**

Elevation of the corridor could be anywhere between 23m to 40.4m

At Alandur, the height of the corridor planned is at 40.4m, above the existing metro rail corridors. It is equal to a nine-storey building

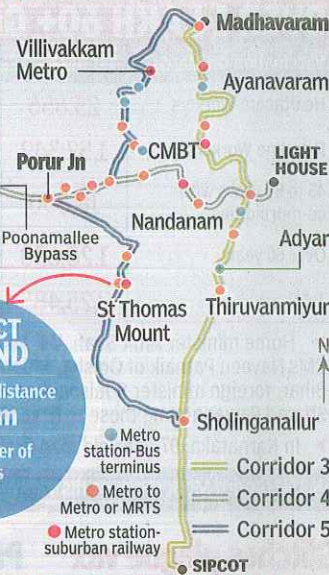
Between St Thomas Mount and Adambakkam MRTS, a metrorail line is planned above the MRTS line with a common or alternative pier (pillar) arrangement to minimise land acquisition

Elevated corridors and stations will be mostly on the centre of the road with viaducts supported by a single row of pillars on the centre median (cantilever style)

Alignment is likely to Chennai bypass and outer ring road at double height with minimum vertical clearance of 5.5m from finished road road of grade separators

ADVANTAGE OF ELEVATED LINES

- It costs less than underground corridors to construct
- Faster to construct than underground



PROJECT IN HAND

Phase-2 total distance **118.9km**
Total number of stations **128**

COST OF ELEVATED CORRIDORS COMPARED TO UNDERGROUND

	(₹ in cr per km)
Underground	More than 650
Elevated line	250-300

PHASE-1

Two corridors of phase-1 were built above Kathipara grade separator and was linked by Alandur interchange station

An elevated metro line above and a flyover below for vehicular movement was built at Vadapalani

