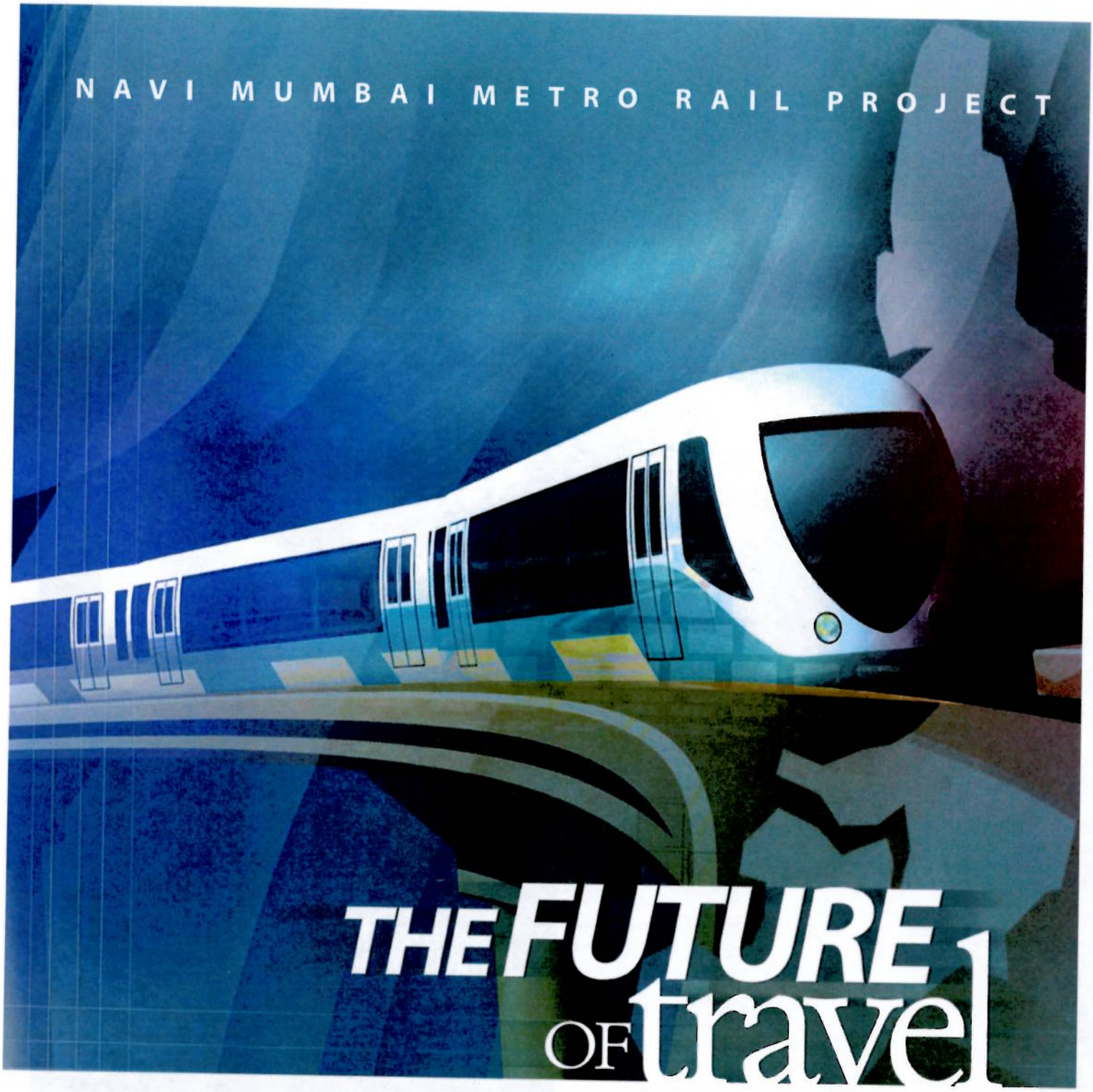
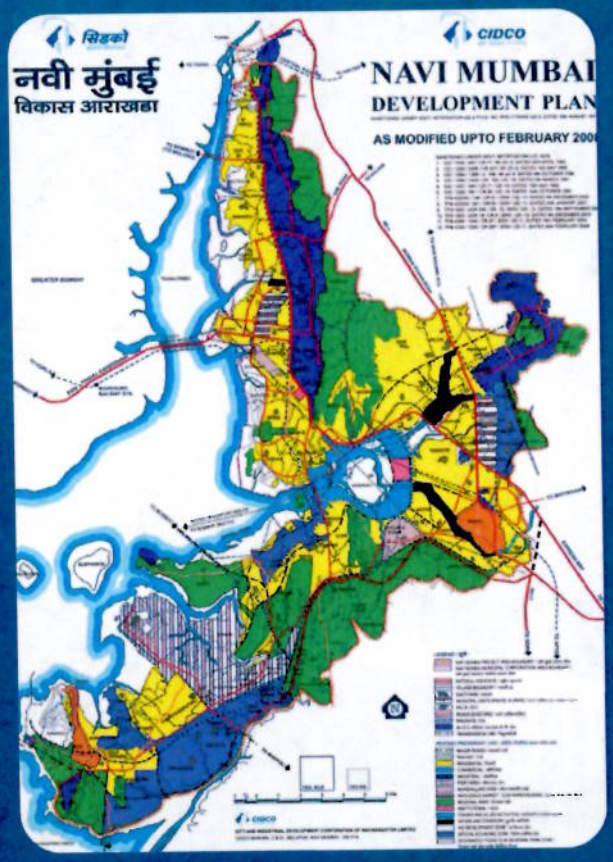


CIDCO
WE MAKE CITIES

Introduction to CIDCO and Navi Mumbai

Navi Mumbai, the city of the 21st century, is home to 2 million people today. From a mere undeveloped land of 344 sq. km., it has grown to become one of the world's largest planned cities. What was a dream 40 years ago has turned into a reality. And in all these 40 years since its inception on 17th March, 1970, CIDCO has transformed into the country's premier town planning and development agency.

The poly centric pattern of planning and development adopted by the City and Industrial Development Corporation of Maharashtra Ltd. (CIDCO) for Navi Mumbai ensured balanced and even distribution of residential areas, job centres, wholesale markets, non-polluting industry and population density. Along with these, Navi Mumbai's transportation system ensured that the city had a robust and efficient transport mechanism. With developments in road, rail, air and water transport, Navi Mumbai is fully equipped to cater to the needs of the commuters. Part of this is the suburban trains that connect the 14 nodes to each other as well as to Mumbai.



The existing Rail Transport in Navi Mumbai

The Mass Rapid Transit System in Navi Mumbai, in the form of suburban railway, was commissioned in 1992 with the Mankhurd-Vashi railway line and was extended up to Belapur in 1993, and thereafter up to Panvel in 1998. The second rail corridor i.e. Thane-Turbhe-Nerul-Vashi was commissioned in 2004. The Nerul-Uran rail corridor, the third out of the six proposed rail corridors, is under progress and work will recommence shortly.

Categories of Metro

Metros can be classified into three categories: heavy, medium and light. A Heavy Metro System has a carrying capacity of 90000 PHPDT, while a Medium Metro has a capacity of 35000 to 50000 PHPDT, and a Light Metro 10000 to 35000 PHPDT. Metros are energy efficient, pollution-free, occupy very little land space, and may be at grade, underground or elevated. Elevated metros are generally carried on single columns located on the median of the roads. A Light Metro System is equivalent to 3 lanes of bus corridors or 9 lanes of motor cars each way. The energy needed for a passenger km in the case of a Metro is only 1/5th of the energy needed for road transport.

WHY ELEVATED METRO?

- Comfortable and better quality service to commuters through modern technology
- Travel time assurance
- Pollution free
- Economical as it reduces secondary travel
- Occupies little land space as carried on single pier located on median of the roads
- The need for integration with Mumbai Metro

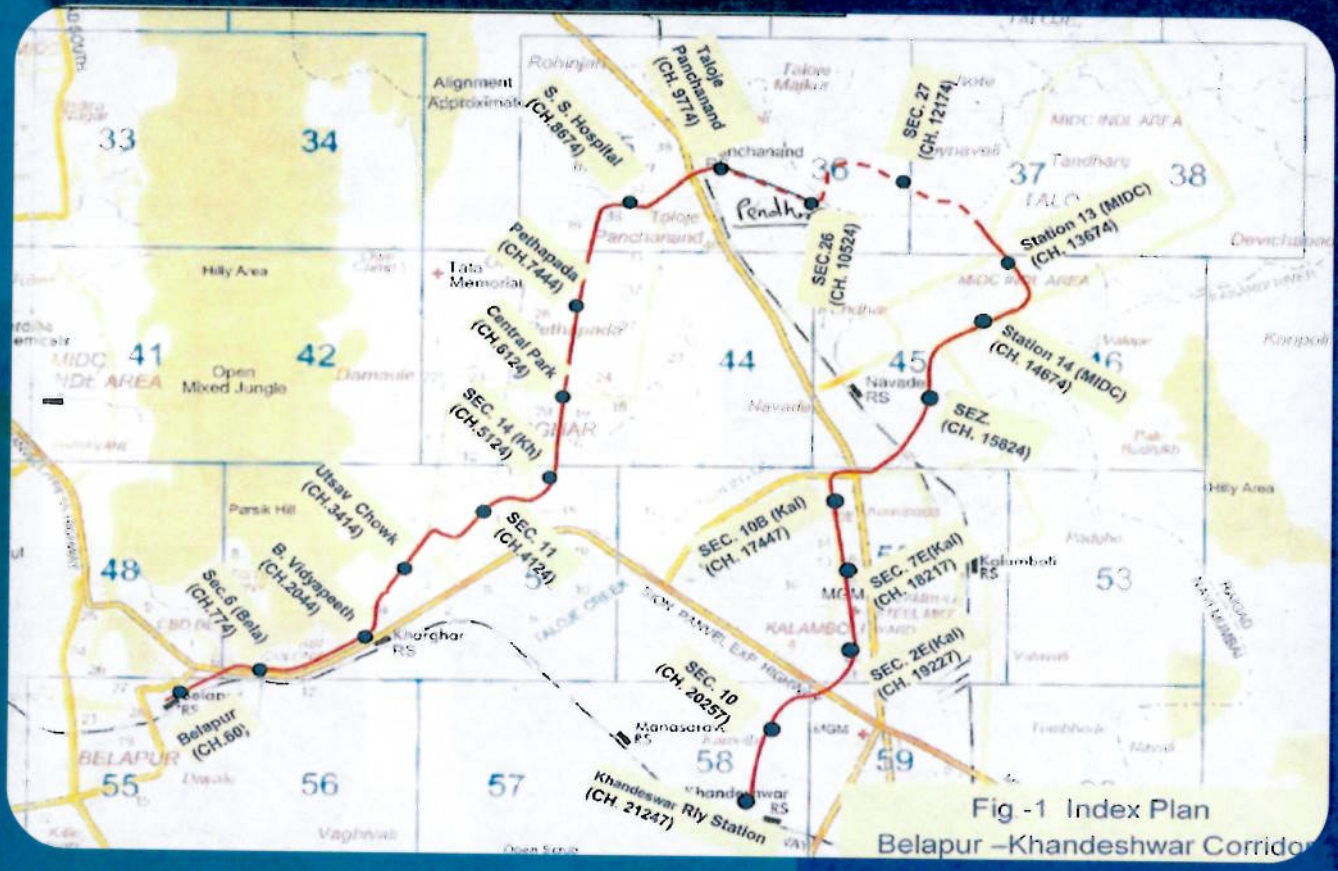


Fig -1 Index Plan
Belapur –Khandeshwar Corrido

The need for Metro Rail Transport

With the change in land use and considering Navi Mumbai's increasing population and their transportation needs, it became necessary to review the transportation system of Navi Mumbai. The needs to establish North-South and East-West connectivity between all the residential nodes, to establish connectivity between Navi Mumbai and Mumbai's transportation system, to minimize travelling time as the city is developed on nodal pattern and uniformly development of the city, is also instrumental in the decision to review the existing transportation system. Therefore, a new kind of transportation system like Metro Rail found to be the ideal option.

The Navi Mumbai Metro Rail Project

The work of preparation of master plan of the Metro Rail Project was entrusted to M/s. Delhi Metro Rail Corporation (DMRC), who identified six rail corridors of a total length of 120 km (approx.) and proposed Light Elevated Metro Rail Network.

The six rail corridors identified by DMRC are:

1. Uran-Ranjanpada-Nerul (28.3 km)
2. Belapur-Kharghar-Taloje-Kalamboli-Khandeshwar-New Airport (23.40 km)
3. Vashi-Nerul-Panvel (25 km)
4. Ranjanpada-Kharkopar-Seawoods (14 km)
5. Dighe-Turbhe-Belapur (20 km)
6. Vashi-Ghansoli-Mhape (9 km)

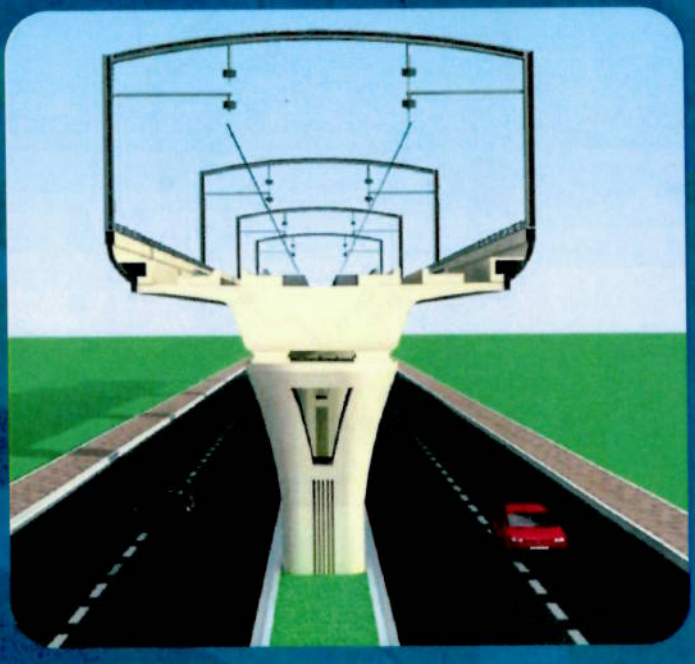
The study recommended rail based MRT Corridor of Belapur-Kharghar-Taloja-Pendhar-Kalamboli-Khandeshwar as potentially developable corridor. It is further recommended by DMRC to take up Metro Rail Project from Belapur to Pendhar in the 1st Phase, MIDC to Khandeshwar in the 2nd Phase and interlink between Pendhar and MIDC in the 3rd Phase.

CIDCO has been authorised by the Government of Maharashtra as 'MRT Administration Implementing Agency' under Tramways Act, 1886 for Belapur-Pendhar-Kalamboli-Khandeshwar Corridor.

Details of the Metro Rail Project and the routes:

Proposed route: Belapur-Kharghar-Taloje-MIDC-Kalamboli-Khandeshwar Railway Station, to be extended up to the proposed Navi Mumbai International Airport.

- **Phase-I:** Construction shall be from Belapur to Pendhar, with a total length of 11.10 km and including 11 elevated metro stations.
- **Phase-II:** From Khandeshwar to Taloje MIDC. The total length: 8.15 km with 7 Metro Rail stations.
- **Phase-III:** 2.2 km link joining two corridors between Pendhar and MIDC, forming a loop from Belapur to Khandeshwar.



Details of Belapur-Khandeshwar Corridor

Line - I: Belapur - Pendhar

• Belapur Terminal	- 0.06 km	• Central Park, Kharghar	- 1.00 km
• Sector-7, CBD	- 0.71 km	• Pethapada, Kharghar	- 1.32 km
• Science Park, Kharghar	- 1.27 km	• Sector-34, Kharghar	- 1.23 km
• Utsav Chawk, Kharghar	- 1.37 km	• Panchanand	- 1.48 km
• Sector-11, Kharghar	- 0.71 km	• Pendhar Terminal	- 0.95 km
• Sector-14, Kharghar	- 1.00 km		

Total - 11.10 Km. | Project Implementation | Length - 11.10 km | Cost - 1984 (Rs. in crores)

Line - II: Khandeshwar - Taloje

• Khandeshwar	- 0.10 km	• Kasadi	- 1.15 km
• Sector-10, Kamothe	- 0.99 km	• MIDC - Station 1	- 1.00 km
• Sector-2E, Kalamboli	- 1.01 km	• MIDC - Station 2	- 1.50 km
• Sector-7E, Kalamboli	- 1.63 km		
• Sector-13, Kalamboli	- 0.77 km		

Total - 8.15 Km. | Project Implementation | Length - 8.15 km | Cost - 1605 (Rs. in crores)

Line - III: Interconnection of Line - I & II

Two corridors shall be joined together between Pendhar and MIDC by a link. - 2.2 km

Total - 2.2 Km. | Project Implementation | Length - 2.20 km | Cost - 574 (Rs. in crores)

Total - 21.45 Km. | Project Implementation | Length - 21.45 km | Cost - 4163 (Rs. in crores)

Technical Parameters for Line - 1: From Belapur to Pendhar

- Gauge : Standard gauge width (1435 mm)
- Ultimate Capacity : 35000 PHPDT with 6 Coaches
- Ridership as on 2015 : 4000 PHPDT (Peak Hour Per Direction Traffic)
- Coaches & Frequency : 3 Coaches & 12 Minutes Frequency
- Traction System Voltage : 25 KV AC by Overhead Current Collection System
- Total carrying capacity :
  1. 3 Car Train : 764 (Seating - 136, Standing - 628)
  2. 6 Car Train : 1574 (Seating - 286, Standing - 1288)
- Maximum Train Length :
  1. 3 Car Train Set : 68 m
  2. 6 Car Train Set : 136 m
- Coach Body : Stainless Steel
- Coach Dimension : Height - 3.90 M and Width - 2.90 m
- Maximum Speed : 80 km per hour
- Schedule Speed : 32 km per Hour in a section
- Completion period : 3 years

Consultants

- 1) For project report : M/s. Delhi Metro Rail Corporation
- 2) General Consultant : M/s. Louis Berger Group Inc & Balaji Railroad system Ltd. - Consortium

City and Industrial Development Corporation of Maharashtra Ltd.
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