



# Mumbai Urban Transport Project – A multi dimensional approach to improve urban transport<sup>☆</sup>

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## ABSTRACT

This paper attempts to bring out the lessons learned from implementation of the Mumbai Urban Transport Project (MUTP), a World Bank financed project. While some of the problems and many solutions may be case specific, the lessons learnt would be of use for other similar interventions especially in similar urban settings. Even complex engineering challenges are generally easy to be surmounted, when compared with the bigger challenges like resettling the project affected peoples, managing several stake holders and institutions, bringing them together and they agreeing to do things differently.

MUTP was implemented under very difficult urban environment in the city of Mumbai (India) and involved resettlement of about 100,000 people. It also required coordination among several government agencies that were responsible for different components of the project. This project was partly financed by the World Bank and the loan has closed on June 15, 2011. The main focus of the paper is to bring out the challenges faced and the lessons learnt.

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## 1. Introduction

Urban development is a big challenge for countries like India and holds key to its growth story. The Service sector, focused around major urban centers, has been a major contributor to India's impressive economic growth in recent years. India has eight cities with more than 5 million population, and 3 with more than 10 million (Mumbai, Delhi and Kolkata). The projections are that urban population may grow to 473 million by year 2021 and 820 million by year 2051 from the 285 million figures in year 2001 (National Urban Transport Policy GOI). Urban development is thus vital for India's economic growth to continue and it needs to take effective measures to manage its rapid urbanization. Urban transport is a critical element for the development of the cities so that residents enjoy mobility and could work and live efficiently.

A decade back, when Mumbai Urban Transport Project (MUTP) was approved by the World Bank for financing, the share of urban GDP over national total had already grown from 50% in early 1990s to 60% in year 2000. The flip side was that 70 million urban residents representing about 23% of the urban population were living below the national poverty line. Mumbai at that time was contributing more than one third of India's tax revenue.

<sup>☆</sup> The views expressed in this paper are those of the author and does not necessarily reflect the views of The World Bank.

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## 2. Mumbai city

Mumbai Metropolitan Region (MMR) covers an area of 4355 sq km and has 20 urban local bodies. Mumbai Metropolitan Region Development Authority (MMRDA) is the main planning agency in Mumbai. The city is spread over 18 km long peninsula running generally North to South. Mumbai, enveloped by the sea, has developed in the same North–South direction and so has the linear urban transport network, with long average trip lengths. Two suburban rail services and three arterial roads are the backbone of the transport system.

## 3. Urban transport challenges in Mumbai

Infrastructure bottlenecks are one of the constraints to faster poverty reduction in India. Though the rapid urbanization was happening as a result of economic development, lack of efficient public transport was becoming a constraint on urban economic development. This, in turn, was resulting in rapid increase in private vehicles, congestion on roads, and in excessive travel time, increase in road accidents and pollution.

Mumbai was no different and had all the problems mentioned above. Public transport, even as today, was playing a major role. Interestingly, Mumbai had a unique distinction of having very high model split in favor of public transport in spite of all difficulties. In Mumbai, about 50% trips were by walk and of the remaining, about

80% by bus and suburban train services, an exceptionally good and desirable situation for a city. However, suburban trains were carrying much more passengers than the capacity, East–West connectivity were fewer and less developed, streets in most parts of the city were narrow and their capacity was seriously reduced by lack of appropriate traffic management and parking systems.

Mumbai Metropolitan Region Development Authority (MMRDA) the nodal agency for city development planning initiated a study to assess future travel demand and investment requirements. The study analyzed different possible options and suggested a strategy of strengthening public transport and putting in place demand management systems.

**4. Choices to be made**

As the city had developed linearly and the average trip lengths were long, suburban train system was the backbone of the transport system. So the highest priority was to increase the capacity and quality of service of this system. Other priority was to improve East–West connectivity, improve the traffic management, road based public transport system and pedestrian facility. However, with these infrastructure improvement requirements, the equally important issue to be addressed was sustainability of the development and institutional capacity building.

*4.1. Capacity and quality of suburban rail services*

Suburban train services in Mumbai are provided by two zonal railways, Central Railways (CR) and Western Railways (WR) under overall control of Indian Railways (Fig. 3). City Authorities of Mumbai had no major role in the suburban train services. CR and WR each operate one trunk route independent to the other one with only one interchange station.

Presently the Mumbai Suburban Railway system carries more than 7 million passengers per day. When the Mumbai Urban Transport Project was envisaged, 9 car trains used to carry more than 4500 passengers with more than 14 persons per square meter, possibly one of the highest density in the world, where the doors of the train cars could not be closed and people often hanging out the trains. In addition, there were squatter’s settlements in close proximity of the railway tracks resulting in trespassing and accidents. The system had very high deaths per day because of people falling down from the trains as well as trespassers being hit by the trains. Also, the stations did not have good passenger dispersal system to handle the traffic volume grown over the years. The fare structure was one of the lowest in the world and in spite of very high system usages, it required cross subsidy by India Railways’



Fig. 1. Overcrowded train.



Fig. 2. New train procured under the project.

other businesses, particularly freight. The photograph below gives an idea of the overcrowding that some time occurs on the suburban railway system (Fig. 1).

To address these problems, there was a need to increase the number of trains, length of the trains, and other related systems for improving efficiency, relocate squatters to other places and build more railway tracks.

*4.2. East–West connectivity*

The city, because of being surrounded by the sea, had developed in North–South direction and the rail system as well roads had developed in the same fashion. However, the East–West

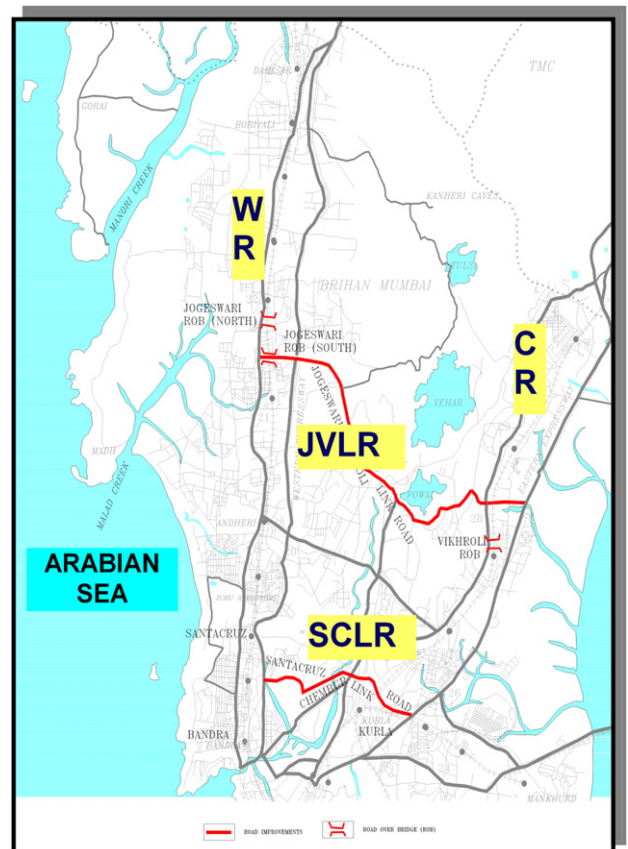


Fig. 3. Mumbai with major project components.

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