

Mumbai Metro Line 1 : Temporary Traffic Management & Station Area Planning



Background and Issues:

Mumbai Metro Line is a 12km-elevated Metro Rail between Versova and Ghatkopar in northern Mumbai. This was a large and complex project in terms of temporary traffic management, since the alignment ran along very busy and crowded arterial roads throughout its 12km length. Twelve elevated stations were proposed, at approximately 1km intervals. Construction of the viaducts was expected to be using the precast segmental method, whilst station construction will require major temporary works areas.



The construction area involved the following:

- ▶ 12km of construction works for foundations, utilities, substructure and elevated viaduct along very busy and important strategic roads.
- ▶ 12 major works areas for station construction.
- ▶ High-level flyover across Western Expressway.
- ▶ Crossings over the Western and Central Railways.
- ▶ Construction through / across an estimated 10-12 signaled intersections.
- ▶ Construction through / across an estimated 15-20 major but unsignalled intersections.
- ▶ Construction through or adjacent to numerous minor road intersections, access roads, major building accesses, and other frontage development accesses.

MVA carried out the pre-construction traffic study for the MRTS corridor, and specifically addressed:

- ▶ Traffic Management Temporary traffic management (TTM) requirements during construction, and traffic management layouts for the completed project.
- ▶ Station Access Study (SAS) Station access arrangements for all the station locations for the completed project.

The scope of work included:

- ▶ Capacity study of the road network along the corridor and the impact zone
- ▶ Identify and assess viable construction sequences based on the physical & other constraints and the TTM for each section.
- ▶ Develop a SAS at each station location to optimize ridership and commuter's comfort.
- ▶ Prepared street level traffic layout / management plans for the completed system, incorporating columns, station accesses, etc into the existing streetscape.
- ▶ Reviewed and formulated temporary traffic management (TTM) strategies and plans for all stages of construction, sufficient to clearly demonstrate that vehicular traffic and pedestrian movements could be adequately maintained and provided for during construction of the project.
- ▶ Undertook traffic impact analysis for the proposed or required temporary traffic management schemes and / or traffic diversions.
- ▶ Executed station access plan and report at each location in order to maximum ridership and passenger comfort. The reports encompassed the following detailed analysis:
 - Pedestrian counts at critical / busy locations
 - The major intersection crossings to access the station entry/exit.
 - The major complexes and structures near the study and a suitable station access for the same.
 - The most optimum and realistic station entry and exit to assure maximum traffic from the nearby locality.



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