

Executive Summary

The proposed project is an ambitious infrastructural development project involving the building of an access road and bridge from Panjarpole in Chembur to Anik in Wadala, being developed by the Mumbai Metropolitan Region Development Authority (MMRDA). This will be a 4+4 lane road, mainly carrying traffic from north Mumbai to south Mumbai, developed without any junctions. It also envisages the diversion of 4.72 hectares of Forest Land at Mahul Creek. The construction of the proposed APLR will provide a new link between the existing urban core and port areas in Mumbai and the rapidly developing areas to the north and across the Thane creek to the East. The Anik-Panjarpole Link Road (APLR) will help to relieve congestion on the rest of the road network and will provide an alternative route for heavy truck traffic away from existing residential and commercial areas (MMRDA, 1999).

Commencing at the Truck terminus road on the northern extremity of salt pans in the Mahul creek tidal plain, the APLR traverses west to east, crossing Mahul Creek. Project engineering has taken into account that least damage is done to mangrove forests coming in way of the road.

The project is proposed on the piece of land bearing Survey No. 6, 210, 144, 117, Saltpan village, Wadala - Chembur, Mumbai. The proposed APLR commences at the Truck Terminus Road to the south of Anik Bus Depot and terminates at the Sion-Panvel Road (V N Purav Marg) at Panjarpole. The 5.4 km long APLR section is part of the Eastern Freeway, providing access from the port of Mumbai in the south to Navi Mumbai in the east and Eastern Express highway to the North-west.

Commencing at the Truck terminus road on the northern extremity of salt pans in the Mahul Creek tidal plain, the APLR traverses west to east, crossing Mahul creek and passing north of the Bombay Port Trust (BPT) Pipeline road. The alignment continues and passes adjacent to Mysore colony prior to crossing track of the Railway Marshaling Yard at 2.4 km and Mahul-Ghatkopar Road (Ramkrishna Chemburkar Marg) at 2.6 km. The alignment continues further east passing to the south of Chembur. The terrain rises to a peak elevation of 90 m, between 3.6 and 4.6 km at Gautam Nagar, where the alignment takes a sharp northward turn. This alignment then continues northward terminating on the V N Purav Marg at Panjarpole at an elevation of 20 m.

Major engineering features of the project are—

1. Embankment on plains from 0 – 1.4 km
2. Mahul creek bridge measuring a length of 0.35 km
3. Viaduct over Railway Marshaling Yard (2.4 km) and Ramkrishna Chemburkar Marg (2.6 km)
4. Deep cut Tunnel options between 3.6 – 4.6 km
5. Viaduct at Panjarpole

6. Project engineering has taken into account that the least possible damage is done to mangroves coming in way of the road.

Mangroves in Mumbai have always faced the wrath of development. Hence it is necessary to study the potential impact of any developmental activity on the ecosystem as well as the existing environment as a whole. The process is called “Environmental Impact Assessment” (EIA). As per the Environmental Impact Assessment Notification (2004) of the Ministry of Environment and Forests (MoEF), the government has made it mandatory to conduct EIA for a list of projects provided in Schedule–I of the Notification which includes Highway projects except projects relating to improvement work including widening and strengthening of roads with marginal land acquisition along the existing alignments provided it does not pass through ecologically sensitive areas such as National Parks, Sanctuaries, Tiger Reserves, Reserve Forests. Since the APLR project is a new and major road construction project and it passes across mangroves patches (notified as „Forests“ by the Govt. of Maharashtra) near Mahul creek, it comes under the purview of the said notification and so an Environmental Impact Assessment needed to be conducted for the same.

Objectives of the study:

1. To study the adverse and positive Environmental and Social Impacts of the APLR Project.
2. To identify, assess and evaluate the site specific Conservation issues for the developmental activity proposed.
3. To propose an Environmental Management Plan addressing the in-situ and ex-situ conservation measures to minimize possible impacts.
4. To evolve and develop a Mangrove Management Plan which might be helpful in the management of the mangrove forests of Mumbai.
5. To demonstrate an approach towards a Conservation-oriented Development.

The scope of the present report

1. Identification and assessment of environmental impacts due to project activities involving both, its constructional and operational phases.
2. Identifying the baseline status of various environmental parameters such as air, water, soil, noise levels, socio-economic factors, land-use pattern and the status of flora and fauna in the adjoining areas of the proposed project site.
3. Prediction of likely impacts due to implementation of the proposed project on the environment.
4. Development of an Environment Management Plan, based on the collected data, to mitigate the likely impacts of the proposed project on the environment.

5. Preparation of a Mangrove Management Plan for restoration of mangroves.

The first step towards compiling an EIA report comprises of collecting and analyzing field-data by carrying out field surveys. This was done in the months of June and July. Additionally, this analyzed data was merged with basic data provided by the MMRDA and all available secondary data. Based on this EIA, which will henceforth be referred to as EIA (rapid), it was observed that the proposed project will have impacts to varying extents upon the quality of air, water, land and socio-economic conditions in and around the project site.

It was observed that the mangrove patches over/through which the proposed project will pass has rich and varied flora as well as fauna, but the habitat has suffered due to inefficient and little protection. The biodiversity will only be affected more due to the proposed project. It will also affect various physical components like air, water, noise, edaphic factors apart from biodiversity. To mitigate these impacts, an Environmental Management Plan (EMP) has been proposed which includes details about mangrove rehabilitation problems. For example, the site- which has been selected for rehabilitation by MMRDA is devoid of any saline water source. This can be rectified by providing more appropriate sites for mangrove plantation and carrying out in situ mangrove conservation. This report also elaborates the measures which need to be taken during the proposed project's constructional and operational phase for minimizing, as far as possible, the other impacts.

Environmental Management Plan and Mangrove Management Plan provide the following, either through the preparation of documentation or through recorded implementation of the Management Plan:

1. Overview of the proposed activity and the local context
2. Impacts associated with the proposed activity
3. Institutional arrangements: Roles and Responsibilities
4. Management Actions
5. Roles and Responsibilities of other personnel
6. Performance specifications
7. Implementation Schedule
8. Cost estimates and financial resources
9. Remedial actions
10. Training and capacity building
11. Creating environmental awareness
12. Documentation and record keeping
13. Reporting procedures
14. Auditing
15. Transfer of EMP and MMP requirements to Contractor and sub-contractors
16. Management review and revision of the Management Plan depending upon the conditions

RECOMMENDATIONS:

As a result of this study the APLR missing link project seems to be a viable one and may go ahead if the following measures are seriously thought about by the MMRDA, Mumbai.

1. Since a compensatory afforestation site identified at Usatane, Ambarnath is not capable of supporting mangrove vegetation, either an alternative site be chosen and if this is not possible then *in-situ* conservation measures for the management area adjacent to the current project site need to be carried out as per the findings of the Environment Management Plan (EMP) and Mangrove Management Plan (MMP). An estimated financial outlay of the EMP and MMP has been included in the aforesaid reports. The said funds, if deposited with the forest Department they will be in position to take care of the Mangrove surrounding the project area.
2. The *in situ* conservation measures recommended are in addition to the *ex situ* Compensatory Afforestation scheduled to be carried out at Usatne.
3. The MMRDA as a project proponent may kindly ensure strict adherence to the findings of the Biodiversity reports- Part I, Environment Impact Assessment report (EIA report)- Part II, Environmental Management Plan (EMP)- Part III and Mangrove Management Plan (MMP) –Part IV.
4. As a social and environmental responsibility, the MMRDA may kindly ensure that littering within mangrove forests and release of pollutants into the fragile ecosystem in and around Mahul creek may kindly be prevented under the environmental laws in vogue. If this is not stopped or controlled, it will have a devastating effect not only on the mangroves but on the phytoplankton and the zooplankton in the Arabian Sea as well, where Mahul creek eventually empties itself.
5. The MMRDA may adopt a strategy of erecting 10 - 12 ft. high chain-linked fencing on the part of the bridge passing over the Mangrove Forest so as to dissuade commuters from disposing their garbage in the forested areas.
6. Along the periphery of the mangroves in the vicinity of the current project site at Mahul, the MMRDA should erect a chain linked fencing to prevent biotic disturbances to this highly sensitive coastal region.
7. Though the project extends to 4.72 ha. of forest land which is scheduled to be diverted, it may be kept in mind that as a social and environmental responsibility and to minimize the impacts of the developmental activities, the adverse effects which may be created over the entire surrounding ecosystem needs to be addressed as per the prescriptions in the EMP and MMP.
8. Wherever certain minor structural modifications to reduce the impact have been suggested in this report, they need to be strictly followed.

9. It will be worthwhile for the MMRDA to establish an “Environmental and Forest awareness Interpretation Centre (with emphasis on Mangroves, Disaster management and Mitigation issues)” at a suitable place near the APLR passing over the forest land or in an area the Forest Department suggests. This will be a big service by the MMRDA in the field of Environmental awareness. The details of this are proposed in the MMP which forms a part of this report.
10. Water Pollution Monitoring stations (fixed and mobile) are required to be established along the creek as per suggestions from the pollution control. The analysis may be carried out at the institutes specialised in these disciplines. The results will be mapped and monitored every three months.
11. The MMRDA who will be responsible for the execution of the project may form a joint committee of the representatives from the following departments for monitoring and evaluating various aspects highlighted in this report during the complete cycle of the project. Such a monitoring program may be carried out for five years following the completion of the project

This project could be considered as a genuinely viable one only if all the recommended mitigation measures and other safeguards along with the specified monitoring regimes are followed strictly as mentioned in this report.

Wildlife and We Protection Foundation