

## Environmental and Social Data Sheet

### Overview

Project Name:	PUNE METRO NORTH AND SOUTH EXTENSION
Project Number:	2024-0228
Country:	India
Project Description:	Extensions of Metro Corridor 1 (PCMC to Swargate), of Pune Metro Rail Project (2016-0327) towards the North (PCMC-Nigdi) and the South (Swargate - Katraj). The extensions will be 10.5km long with 9 stations.
E&S Risk categorisation	High as per paragraph 4.18 of E&S Policy
Project included in Carbon Footprint Exercise <sup>1</sup> :	no

### Environmental and Social Assessment

Pursuant to paragraph 4.18 of the Bank's E&S Policy, the Project is classified as High risk due to its potential significant impacts, warranting a full Environmental and Social Impact Assessment (ESIA).

The Project concerns two extensions at both ends of the North/South Corridor 1-PCMC to Swargate, one of the two existing interconnected metro corridors of Pune Metro Phase-I. The extensions of Corridor-1 are included in the city's Comprehensive Mobility Plan (2018, updated in 2024) which is consistent with India's National Urban Transport Policy (2014). The Detailed Project Reports (DPRs) for the two extensions have been prepared in alignment with the city's mobility plan.

Though considered a single project by the Bank, the extensions have been treated as separate projects by the Promoter, thus they have distinct documentation, and they have been independently approved from the Government of India (GoI) and the state Government of Maharashtra (GoM).

The north extension (PCMC-Nigdi, 4.5km with 4 stations) is elevated, while the south extension (Swargate – Katraj, 5.9km with 5 stations) is underground. The existing depot of Corridor-1 in Range Hill will be utilized for both extensions. Minor enhancements within the depot's footprint -such as in stabilizing lines- are included in the project's scope to support the expanded operations, therefore a new depot is not required.

The project remains in its early stages. Some civil works for the north extension -specifically viaduct and stations construction- have been awarded but only viaduct construction has commenced, albeit at a slow pace, and no physical resettlement activities have taken place to date.

<sup>1</sup> Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO<sub>2</sub>e/year absolute (gross) or 20,000 tonnes CO<sub>2</sub>e/year relative (net) – both increases and savings.



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The Promoter is Maharashtra Metro Rail Corporation Limited ('Maha Metro'), a joint venture of the GoI and the GoM and well known to the Bank from previous financed projects (Pune Metro Phase-I and Nagpur Metro Phase-II).

## Environmental Assessment

**Compliance with environmental legislation:** As per the provisions of the Indian EIA Notification Act 2006, any new project or the expansion or modernization of any existing industry or project listed in Schedule I of the EIA Notification Act shall submit an application for clearance to the Ministry of Environment, Forests and Climate Change (MOEFCC), GoI. Since metro projects are not included in Schedule I of the EIA Notification Act, the Project does not require an environmental clearance certificate from the MOEFCC nor a related EIA procedure. Despite the lack of legal obligation under the Indian law to conduct EIA process for this project, the requirement for a full Environmental and Social Impact Assessment (ESIA) was established based on the project's assessment against the criteria set out in Annex 1a of EIB Environmental and Social Standard 1, in line with project's classification under the EIB's environmental and social policy. The ESIA reports, one for each extension, were prepared between mid-2024 to mid-2025, in line with national and EIB requirements. They were disclosed locally in July 2025, for the North extension, and in October 2025, for the South extension. Each ESIA includes an Environmental and Social Management Plan (ESMP), and the Promoter undertakes to implement the ESMPs, among others by including them in the respective tender documents for the work contracts.

**Environmental impacts and mitigation:** Overall, the Project should have positive environmental impacts once in full operation, including reduction in local air/noise emissions, in road traffic generated vibration and in greenhouse gas emissions, because of the expected modal shift from road modes.

According to the ESAs, the expected permanent negative environmental impacts of the Project include: (i) felling/transplantation of 433 trees along the metro alignment; (ii) use of finite, scarce, sometimes carbon intensive, materials, such as cement; and (iii) noise and vibration during project operation, and visual intrusion for properties adjacent to the elevated section. Mitigation measures are included in the ESMPs; the main ones are: (i) compensatory afforestation and its maintenance, in line with national and state legislation; (ii) various energy saving measures such as regenerative braking and use of renewable energy sources during operation; (iii) noise and vibration reduction measures embedded in system's design and operation (e.g. noise barriers, ballasted tracks with elastic fastenings and absorbing pads, regular maintenance of wheels and rails) and continuous monitoring during operation to ensure that vibration and noise levels remain within permissible limits, (iv) aesthetic structures of viaduct and stations to trade-off for visual intrusion.

Other negative impacts are temporary and localised (likely to occur during the construction phase), notably: construction related noise, vibration, air pollution, dust and debris/muck; risk for soil and water contamination (ground and surface water) and improper solid waste or wastewater management. Mitigants, concerning temporary impacts, are also documented in the ESMPs; main ones include: (ii) air pollution management and monitoring measures, from simple dust suppression to monitoring/managing emissions from mobile sources, (iii) noise and vibration control measures (e.g. quieter auger piling along with sound barriers and daytime-only operations, temporary noise screens to shield sensitive areas, controlled blasting, use of low-vibration equipment, resilient mounting systems, etc.) and continuous monitoring to ensure that vibration and noise levels remain within permissible limits (iv) waste management plans (for muck, solid, water and hazardous waste) and continuous monitoring of soil and water resources.

According to the ESAs, no known protected Archaeological or Cultural heritage Monuments or sites are within the project area. The Rajiv Gandhi Zoological Park (Katraj Zoo) and Katraj Lake, both protected and environmentally sensitive areas, are located adjacent to the southern end



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of the South extension alignment near the proposed Katraj station. While no direct impacts are expected due to the underground alignment, the ESIA assessed potential indirect effects -such as noise, vibration, and air emissions- that could disturb sensitive captive fauna. However, preliminary modelling and reference data included in the ESIA indicate that vibration levels from modern TBMs at this depth are below thresholds and unlikely to cause disturbance, and residual impacts after mitigation are expected to be minimal.

**Climate change physical risks:** The project's Climate Risk Vulnerability Assessment (CRVA), identified physical climate risks related to extreme heat, intense monsoon rainfall, and high winds. The CRVA, in line with the Maharashtra State Action Plan on Climate Change (MSAPCC), substantiates that project's resilience to physical climate risks have been addressed through a range of measures embedded in project's design, construction standards, and operational practices. For instance, flood risks are mitigated through drainage upgrades, waterproofing, and pumping systems; heat and temperature risks are addressed with heat-resistant rails, thermal joints, and ventilation systems; and wind-related risks are managed through reinforced overhead structures and vegetation control. These measures support the project's resilience to physical climate risks and ensure that potential climate-related impacts are effectively mitigated. Therefore, the project is considered to have low residual climate risk.

**Alignment with Paris Agreement:** Given the project's potential to reduce GHG emissions of the transport sector, through modal shift from road modes towards electrified public transport, as well as its adaptation to the main physical climate risks, the project is considered Paris aligned.

## Social Assessment

The Project is expected to generate important social benefits during operations by enhancing mobility and accessibility in Pune metropolitan area, and by reducing travel time and improving comfort and overall service quality for users. Also, during construction and operation the project will contribute to local employment generation for both skilled and unskilled labour.

Based on the ESIAAs prepared, the main adverse social impacts are related to land acquisition and associated involuntary resettlement. Accordingly, as per the Bank's social standards, a Resettlement Policy Framework (RPF) and Resettlement Action Plans (RAPs), one for each extension, have been prepared, in consultation with project affected people, and approved in September and October 2025. Project affected people will be entitled to different types of compensations and allowances as well as additional assistance livelihood restoration support based on their eligibility and in line with legal requirements of GoI, GoM and the social standards of the Bank. To avoid any disproportionate negative livelihood impacts on vulnerable groups, identified vulnerable households are expected to receive additional financial and in-kind assistance.

Land requirements for this project are the bare minimum, resulting from value engineering approach. Based on the RAPs, 1.18ha of land needs to be acquired permanently, with the vast majority (72.5%) being governmental land. Accordingly, a total of 105 Project Affected Households (PAHs) will be impacted by the project, experiencing losses involving land, residential and/or commercial structures, temporary livelihood or some combination of these. Temporary land requirements are 4.12ha, out of which 0.3ha is privately owned while the rest of 3.8ha is government land. The temporary land will be leased from private owners with an appropriate and mutually agreed compensation/rent. The RAPs confirmed that no impacts are expected from temporary land acquisition, as the land is not under any agricultural use and there are not any tenants or squatters. In addition to these, 31 common property structures (CPS) may be affected, in their vast majority being bus stops or sheds. The unavoidable loss of such assets will be compensated through replacement elsewhere or a suitable financial mechanism.

The RAPs are to be implemented as approved and agreed with the Bank, and timed to ensure that land is ready before the handover of site to works contractors. In case of any misalignment



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between project resettlement activities and the approved RAPs, the Promoter undertakes to immediately implement appropriate remedial actions, and submit to the Bank an updated RAP, to the satisfaction of the Bank. Moreover, the Promoter undertakes to work closely with any third-party entity involved in resettlement activities, even indirectly (e.g. the municipal corporations allocating alternative commercial locations for the project affected vendors), to make sure that all actions are well-coordinated and meet the social standards required by the Bank.

Other potential social risks are: weak application of relevant labour standards, related to employee working conditions during construction, and/or relevant occupational and community health and safety standards during construction. Compliance with these aspects is managed through the developed ESMPs that include mitigation measures and requirements for contractors to comply with labour standards, as well as highest safety and security standards for both workers and the community.

***Impact on Gender equality:*** Women in Pune, as in many Indian urban contexts, face significant mobility barriers due to safety concerns, inadequate infrastructure, and social norms. Their travel patterns -often short, multi-purpose, and involving dependents- make them particularly vulnerable to overcrowding and unreliable public transport. The project incorporates planning and design features to improve access, inclusivity, safety, and security for women and girls (e.g. safe station design, female security staff, baby-care rooms, affordable last-mile connectivity etc.). It is also expected to enhance and safeguard women's employment, as the Promoter is a gender-inclusive agency with clear policies and a grievance mechanism for workplace sexual harassment. Additionally, the RAPs include targeted support for women during resettlement and rehabilitation, alongside other vulnerable user groups. The Promoter undertakes to establish a Gender Action Plan with quantitative employment targets and broader measures to promote gender equality throughout the project lifecycle. Overall, the project is expected to significantly improve mobility and employment opportunities for women in Pune, helping to address their disproportionate disadvantage in accessing safe, affordable, and secure economic and social opportunities.

## **Public Consultation and Stakeholder Engagement**

A Stakeholder Engagement Plan (SEP) has been prepared, acceptable to the Bank, identifying and prioritising key stakeholder groups and their engagement methods throughout project's life cycle (preparation, implementation, and operation).

During drafting of the ESAs and the RAPs of the extensions (between Q3-2024 and Q2-2025) there have been several rounds of consultations with various stakeholders, with a focus on local community members and especially PAPs, through focus group meetings in project adjacent areas. As part of the stakeholder engagement so far, various requests have been raised by the public, most notably: reduction of construction related disturbances such as noise and vibration, seamless traffic control and access management to adjacent properties and optimum resettlement aspects; all of which are being adequately addressed by the Promoter in the ESAs.

The final public consultation of the North extension ESA took place between July-September 2025, while for the South extension is currently on-going and is expected to be completed prior to the Bank's approval of the project. The Bank's lending will be subject to reporting on this public consultation results. Furthermore, the Promoter undertakes to update ESAs/ESMPs and RAPs if needed to accommodate public consultation results or project modifications, to the satisfaction of the Bank.

The Promoter has in place a Grievances Redressal Mechanism (GRM) to provide a formal avenue for displaced persons and other affected groups or stakeholders to engage with the Promoter on issues of concern. Various channels of communication are established to allow people to contact the Promoter and construction companies.

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## Other Environmental and Social Aspects

The Promoter will be responsible for overseeing and ensuring implementation of the ESMPs and RAPs, through the Project Implementation Unit, headed by the Project Director. The Promoter has sufficient qualified environmental and social staff within the organisation many of whom have gained experience from implementation of other metro projects, notably Pune Metro-Phase I. The Promoter will be assisted by a General Consultant, who will also provide qualified environmental and social specialists to assist with the implementation and monitoring of the environmental and social safeguards.

Following the Bank's request, an independent monitoring and evaluation consultant with international experience will be commissioned, to periodically monitor and report on the delivery of the ESMPs and RAPs, as well as perform an end of term audit of the resettlement activities.

The Promoter undertakes to timely conclude the tender processes for the required consultancy services regarding monitoring/evaluation of environmental and social plans, based on terms of reference and budget acceptable to the Bank.

## Conclusions and Recommendations

The Project will improve urban transport operations in Pune metropolitan area and is expected to reduce the emission of pollutants by the transport sector and indirectly contribute to road safety improvement.

The two extensions under this project were subject to ESIA and any adverse environmental and social impacts, as identified and assessed in the ESIA, will be mitigated or compensated as foreseen in the ESMPs and the RAPs, as agreed with the Bank. According to project's CRVA, adaptation measures integrated into the project's design, construction and operations standards effectively reduce climate-related risks, resulting in low residual climate risk.

The EIB will condition its loan disbursements on:

- Before first disbursement, the Promoter will provide ESIA's public consultation results to the Bank,
- Before first disbursement, the Promoter will conclude the tender process of the independent monitoring and evaluation consultant, based on terms of reference and budget acceptable to the Bank,
- Before any disbursement, the Promoter will ensure that (i) the project implementation team includes all the required environmental and social/resettlement experts for the implementation and monitoring of the environmental and social safeguards, and (ii) the required independent monitoring and evaluation consultant is on-board.

In addition, the Bank will seek commitments from the Promoter to: (i) ensure that the ESMPs and relevant Bank's environmental and social safeguards are included in the tender documents of the main work contracts; (ii) implement the project in accordance with the agreed ESMPs and RPF/RAPs; (iii) report regularly on the status of ESMPs and RAPs implementation; (iv) ensure that no construction activities commence without an approved Construction Environmental and Social Management Plan (C-ESMP), prepared by the Contractor(s) and formally approved by the Promoter, (v) prepare and submit to the Bank, for its review and satisfaction, the final Muck Management and Disposal Plan well in advance of the commencement of muck excavation activities (vi) ensure that project affected people, including informal, are compensated in accordance to the approved compensation mechanism described in the RPF/RAPs; (vii) in case of any misalignment, between project resettlement activities and the approved RAPs, to immediately implement appropriate remedial actions, to the satisfaction of the Bank; (viii) ensure that the ESIA/ESMPs and RAPs are updated if needed in case of



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public consultation results or project modifications, to the satisfaction of the Bank; (ix) present end of term evaluation of the RAPs implementation prepared by a third party (the independent monitoring and evaluation consultant); (x) provide evidence that the GRM, for both community members and workers, remains fully operational throughout the duration of project-related activities (xi) prepare and implement a Gender Action Plan with a quantitative target for gender employment, alongside a broader set of measures to promote gender equality throughout the project lifecycle; (xii) take all reasonable steps to ensure timely and seamless coordination with any third-party entity that may have direct or indirect interfacing responsibilities in relation to the involuntary resettlement under this project.

Subject to the aforementioned conditions being met, the Project is expected to be acceptable for EIB financing in Environmental, Climate and Social terms.