ANNEX

of the Commission Implementing Decision on Financing the multiannual Operational Programme on transport in favour of the Republic of North Macedonia for 2024-2027

MULTIANNUAL OPERATIONAL PROGRAMME
This document constitutes the multiannual operational programme in terms of Article 110(2) of the Financial Regulation, and multiannual action plan in terms of Article 9 of IPA III Regulation and Article 23 of NDICI- Global Europe Regulation

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<td>AA</td>
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<td>Federation Internationale des Ingenieurs-Conseils</td>
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<td>Gross Domestic Product</td>
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<td>Greenhouse Gas</td>
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<td>Global System for Mobile Communication</td>
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<td>Intermediate Bodies</td>
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<td>Intermediate Body for Financial Management</td>
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<td>Indirect Management with Beneficiary Country</td>
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<td>Instrument for Pre-Accession Assistance</td>
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<td>Intelligent Transport System</td>
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<td>Managing Authority</td>
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<td>MCA</td>
<td>Multi Criteria Analysis</td>
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<tr>
<td>MoEPP</td>
<td>Ministry of Environment and Spatial Planning</td>
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<td>MOI</td>
<td>Ministry of Interior/ Ministry of Internal Affairs</td>
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<td>MoTC</td>
<td>Ministry of Transport and Communications</td>
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<td>National Authorising Officer</td>
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<td>NBSAP</td>
<td>National Biodiversity Strategy and Action Plan</td>
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<td>NDICI</td>
<td>Neighbourhood, Development and International Cooperation Instrument</td>
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<td>NOBO</td>
<td>Notified Body</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OP</td>
<td>Operational Programme</td>
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<td>Operational Programme for Regional Development</td>
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<td>PAF</td>
<td>Performance Assessment Framework</td>
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<td>Public Enterprise for State Roads</td>
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<td>Particular Matter</td>
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<td>PRAG</td>
<td>Practical Guide to contract procedures for EU external actions</td>
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<td>RAM</td>
<td>Road Asset Management System</td>
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<td>Railway Regulatory Agency</td>
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<td>Stabilisation and Association Agreement</td>
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<td>SDG</td>
<td>Sustainable Development Goals</td>
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<td>Secretariat for European Affairs</td>
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<td>SEETO</td>
<td>South East Europe Transport Observatory</td>
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<td>SMC</td>
<td>Sectoral Monitoring Committee</td>
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<td>SOPT</td>
<td>Sector Operational Programme for Transport</td>
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<td>SPP</td>
<td>Single Project Pipeline</td>
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<td>STI</td>
<td>State Transport Inspectorate</td>
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<td>SUMP</td>
<td>Skopje’s Urban Mobility Plan</td>
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<td>SWGs</td>
<td>Sector Working Groups</td>
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<td>SWGT</td>
<td>Sector Working Group for Transport</td>
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<td>SWOT</td>
<td>Strengths, Weaknesses, Opportunities and Threats</td>
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<td>TAIEX</td>
<td>Technical Assistance and Information Exchange</td>
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<td>TCT</td>
<td>Transport Community Treaty</td>
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<td>TEN-T</td>
<td>Trans-European Transport Network</td>
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<td>Terms of Reference</td>
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<td>UNESCO</td>
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<td>UNSCR</td>
<td>United Nations Security Council Resolutions</td>
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<td>World Bank</td>
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<td>ZRSM</td>
<td>Railways of Republic of North Macedonia Transport JSC-Skopje (ZRSM Transport JSC – Skopje)</td>
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<td>ZRSMI</td>
<td>Public Enterprise for Railway Infrastructure Railways of Republic of North Macedonia-Skopje</td>
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</table>
1. Programme Synopsis

1.1. Programme Summary Table

<table>
<thead>
<tr>
<th>Title</th>
<th>Multiannual Operational Programme on transport in favour of the Republic of North Macedonia for 2024-2027</th>
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<td>OPSYS</td>
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<td>IPA III beneficiaries</td>
<td>Republic of North Macedonia</td>
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<td>Programming document</td>
<td>IPA III Programming Framework</td>
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**PRIORITY AREAS AND SECTOR(S) INFORMATION**

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<th>Window and thematic priority</th>
<th>Window 3: Green Agenda and Sustainable Connectivity</th>
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<tr>
<td>Thematic Priority</td>
<td>Transport, digital economy and society, and energy (100%)</td>
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</tbody>
</table>

**Sustainable Development Goals (SDGs)**

Main SDG: SDG 9: Industry, Innovation, and Infrastructure
Other significant SDGs and where appropriate, targets:
SDG 11: Sustainable Cities and Communities - Target 11.2: Provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons.
SDG 13: Climate Action - Target 13.2: Integrate climate change measures into national policies, strategies, and planning.
SDG 3: Good Health and Well-being - Target 3.6: By 2030, halve the number of global deaths and injuries from road traffic accidents

**DAC code(s)**

210: Transport and storage (100%):
21010: Transport policy and administrative management (5,3%)
21020: Road transport (63,5%)
21030: Rail transport (31,2%)

**Main Delivery Channel**

Central government – 12001

**Targets**

☒ Climate
☐ Gender
☐ Biodiversity

**Markers (from DAC form)**

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<th>Principal objective</th>
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<td>Participation development/good governance</td>
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<td>Aid to environment</td>
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<tr>
<td>Gender equality and women’s and girl’s empowerment</td>
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<td>Reproductive, maternal, newborn and child health</td>
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<td>Disaster Risk Reduction</td>
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<td>☐</td>
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<tr>
<td>Inclusion of persons with Disabilities</td>
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<td>Nutrition</td>
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<td><strong>RIO Convention markers</strong></td>
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## Amounts concerned

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<td>Total estimated cost for 2024 – 2027: EUR 93 301 000</td>
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<tr>
<td>Total amount of EU budget contribution for 2024-2027: EUR 50 000 000</td>
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</tbody>
</table>

The contribution from the general budget of the European Union is split per year as follows:
- For 2024 – EUR: 6 900 000
- For 2025 – EUR: 7 712 459
- For 2026 – EUR: 11 774 821
- For 2027 – EUR: 23 612 720

The contribution from the general budget of the European Union for the subsequent years is subject to the availability of appropriations for the respective financial years following the adoption of the relevant annual budget, or as provided for in the provisional twelfths system.

## MANAGEMENT AND IMPLEMENTATION

<table>
<thead>
<tr>
<th>Implementation modalities (management mode and delivery methods)</th>
<th>Indirect management with North Macedonia</th>
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<tbody>
<tr>
<td>Relevant priorities and flagships from Economic and Investment Plan for the Western Balkans [only for the Western Balkans]</td>
<td>Priorities: Transport Flagships:</td>
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<td></td>
<td>• I Connect East-West,</td>
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<tr>
<td></td>
<td>• II Connect North-South</td>
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<tr>
<td>Final Date for conclusion of Financing Agreement</td>
<td>By 31 December 2025 at the latest</td>
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<tr>
<td>Decommitment deadline for each budgetary commitment</td>
<td>Budgetary commitment 2024: by 31/12/2029</td>
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<td>Budgetary commitment 2025: by 31/12/2030</td>
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<td>Budgetary commitment 2026: by 31/12/ 2031</td>
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<td>Budgetary commitment 2027: by 31/12/ 2032</td>
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<tr>
<td>Indicative eligibility period(^1)</td>
<td>31/12/2033</td>
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</tbody>
</table>

\(^1\) The eligibility period is the period in which all operational activities of the Programme are completed. Contracts and addenda signed, expenditure incurred, payments made by national authorities as well as any other costs related to the activities of the Programme, shall be eligible for EU financing only if they have been incurred during the eligibility period.
12 years following the conclusion of the Financing Agreement

1.2. Summary of the Programme

The Multiannual Operational Programme (OP) on transport for North Macedonia represents a comprehensive strategy dedicated to improving the country’s transport sector while concurrently addressing significant objectives of environment, disaster risk reduction (DRR), climate mitigation and adaptation. This programme seeks to harmonise North Macedonia’s transport policies and initiatives with the European Union’s (EU) robust standards for a cohesive, sustainable transport network, aligning further with Chapter 14 transport policy and Chapter 21 TEN-T network, as one of the main outcomes. The OP is within the broader ambit of the National Transport Strategy (NTS) 2018-2030. This strategic integration reinforces North Macedonia’s commitment to develop a globally coordinated transport sector seamlessly integrated into the Trans-European Transport Network (TEN-T), significantly bolstering the nation’s economic, social, and environmental trajectory.

To align North Macedonia’s broader development goals with a robust network of EU and international initiatives, the OP demonstrates a solid commitment to various key frameworks and plans. These include the IPA III Programming Framework, the 2023 Commission Report on North Macedonia, the Economic Reform Programme (ERP) 2023-2025, and the Economic Investment Plan (EIP) for the Western Balkans. Additionally, by aligning with the Green Agenda for the Western Balkans and the Five-Year Rolling Work Plan for the Development of the TEN-T in the Western Balkans, the OP ensures that North Macedonia’s transport sector evolves in line with EU-wide standards. The OP upholds the principles of sustainable development and embraces the United Nations’ Sustainable Development Goals (SDGs). It envisions fostering innovative and sustainable infrastructure, addressing climate change, enhancing community resilience, and promoting public health and well-being.

The OP on transport is centred on three main areas of support:

- **Rail Transport Infrastructure:** This pillar aims to strengthen the capacity, safety, efficiency, and sustainability of the North Macedonia railway transport infrastructure. The focus is primarily on Corridor X, including reconstructing and rehabilitating railway bridges on specific corridor sections and advancing rail safety, policy implementation, and alignment with EU regulation requirements, such as 4th railway package. These endeavours are guided by EU standards, demonstrating North Macedonia’s commitment to align with EU requirements and contribute to environmental protection, climate resilience, and disaster risk reduction.

- **Road Transport Infrastructure:** This pillar is designed to uplift state road infrastructure, focusing specifically on sections A1, A2 and A4 on the TEN-T corridors X, Xd, and VIII. Three primary objectives underpin this commitment: enhancing these sections’ resilience and safety standards, preparing comprehensive technical documentation and enhancing the capacity of national authorities related to the road sector, embedding best practices in road safety, maintenance, and asset management, while ensuring policy implementation and alignment with

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3 SWD (2023) 693 of 8.11.2023
5 COM (2020) 641 final of 6.10.2020
6 SWD (2020) 223 final of 6.10.2020
7 Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension - Transport Community (transport-community.org)
EU regulations. Ultimately, the aim is to implement infrastructure improvements per EU standards, thereby ensuring long-term benefits, efficient transportation while concurrently contributing to environmental objectives and enhancing climate resilience. Specific measures will be undertaken aimed at adapting road infrastructure to climate risks that may occur in local characteristics, such as those related of drought or heavy rainfall in particular.

- **Other Support**: The third pillar seeks to enhance the management of EU financial assistance in the transport sector and lay the groundwork for EU accession under Chapter 22. This involves improvement of management, implementation, and control of the EU financial assistance, including through the development of human capital. The objective is to ensure that the OP and the OP authorities effectively manage IPA III funds in line with EU requirements and best practices.

The OP posits a comprehensive, forward-looking plan to evolve a modern, sustainable, and fully integrated transport infrastructure in North Macedonia. The successful execution of this programme is poised to catalyse regional economic development and social cohesion, thereby contributing directly to the country's overarching goal of EU accession. By meticulously aligning with the principles and objectives of NTS 2018-2030, the OP ensures that its transformative agenda is fully integrated within the broader national strategic framework, making for a holistic and synergistic development effort.

### 2. Sector(s) analysis

#### 2.1. National Sectoral Policies and Context

North Macedonia is actively pursuing integration of its transport markets with the EU by ratifying the Treaty establishing the Transport Community between the Western Balkan countries and the EU, signed in October 2017. This Treaty aims to gradually integrate the transport market by aligning it with the EU acquis in transport, environment, public finance, and other relevant cross-cutting sectors.

NTS 2018-2030 aligns closely with significant EU policies, advocating for a harmonised transport sector that is globally compatible, integrated into the TEN-T, and underpins the country's economic, social, and environmental development. NTS also commits to reducing greenhouse gas emissions in line with the Paris Agreement and the European Green Deal. The NTS acknowledges the impact of transport on climate change and aims to minimize emissions by adopting "green transport" principles. It primarily focuses on the sector's potential to mitigate climate effects.

NTS encourages the Government to implement the EU acquis as a crucial step towards EU integration and full membership. NTS and the national ERP are strategic documents that complement each other, underscoring the impact of transport infrastructure on economic development and climate change mitigation.

Covering all modes of transport except air transport, NTS envisages the development of a comprehensive road, rail, lake/port, and urban transport system by 2030. This system is intended to be fully integrated into the European TEN-T networks and guided by a sustainable transport policy. The strategy prioritises environmentally friendly, low-carbon transport systems, modal shifts, green mobility, logistics, transport safety, and the application of Intelligent Transport Systems (ITS) and digital technology.

The National Intelligent Transport Strategy (NITS), a component of the broader NTS, is designed to upgrade transport systems and infrastructure to meet European and international standards. The strategy is guided by four fundamental principles—safety, efficiency, sustainability, and interoperability—and caters to national needs and promotes progress across all objectives. This Strategy, which aims to span a decade, is yet to be adopted by the Government.

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The Government recognises the importance of transport in the current phase of national development and its active integration into EU transport systems. In response, North Macedonia has committed to accelerating the construction of new transport infrastructure, implementing technological advances, and aligning its transport sector with EU regulations. This commitment includes enhancing the quality and effectiveness of public transport services.

To accomplish its strategic goals, North Macedonia must address substantial challenges, such as bolstering administrative and operational capacity across all modes of transportation, implementing rail reform, collecting data on road accidents, and adopting a strategic framework and Action Plan for ITS. Additionally, the country must continue investing in modernising its railway and road infrastructure to meet EU requirements.

While North Macedonia faces challenges in the development of transport infrastructure, it must strike a balance between progress and maintaining environmental sustainability. Additionally, the country should adopt adaptive measures aimed at ensuring the sustainability of the transport system against the risks and natural phenomena associated with the ongoing climate change. Given the recognized threat coming from in particular transport sector to the country’s rich natural heritage, particularly its significant biodiversity, measures are being actively implemented to mitigate these impacts.

To this end, the National Strategy for Nature Protection 2017-2027⁹, the Strategy and Action Plan for the Protection of Biodiversity 2018-2023¹⁰ and the Long-term Strategy on Climate Action and Action Plan¹¹ have been put in place in order to address and integrate national approaches to the protection of the natural environment across economy, including the transport sector. They encompass clear national targets, actions and performance indicators for environment and climate protection.

North Macedonia has consistently showcased its commitment to addressing environmental and climate challenges at both national and international tiers. Central to its efforts is its robust engagement in crucial global climate initiatives. This includes its participation in the UN Framework Convention on Climate Change (UNFCCC), ratification of the Kyoto Protocol, association with the Doha Amendment and the Copenhagen Accord, and notable achievements within the Paris Agreement framework, specifically the Intended Nationally Determined Contribution (NDC) and the enhanced Nationally Determined Contribution (NDC) in 2021.

On an international level, North Macedonia has ratified key international conventions and agreements focused on protection of the environment, such as the Convention on biological diversity, the Convention on the conservation of European wildlife and natural habitats, the Ramsar Convention, the World Heritage Convention (UNESCO), etc. These ratified conventions showcase North Macedonia's commitment to integrating environmental concerns into its transport development, ensuring a sustainable approach that aligns with global standards and goals.

Looking ahead, the 2021-2027 period focuses on key priorities aligned with NTS and the country’s IPA III Strategic Response, such as the development of rail and road connections to meet EU technical standards, fostering multimodal and sustainable transport systems, enhancing road and rail safety, promoting modal shifts, minimising environmental impact, advancing sector planning and development, and elevating transport sector integration into the EU transport area. The aim is to create high-quality, safe connections to neighbouring EU countries and the broader Western Balkans region while ensuring environmental sustainability and efficiency.

### 2.2. Legal Framework

Several key legislative pieces constitute the legal framework governing railway infrastructure in North Macedonia:

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⁹ Source: [https://www.moep.gov.mk](https://www.moep.gov.mk)


¹¹ [https://klimatskipromeni.mk/](https://klimatskipromeni.mk/)
• **Law on Railway System:** “Official Gazette of the Republic of Macedonia” Nos 48/10, 23/11, 80/12, 155/12, 91/13, 163/13, 42/14, 130/14, 152/15, 31/16, 178/16, 64/18 and “Official Gazette of the Republic of North Macedonia” No 302/20. This law regulates the development of railway traffic and railway infrastructure, the organisation of the railway system, the manner and conditions for the execution of railway transport and the types of transport, the management, organisation, and protection of the railway infrastructure and access to the railway infrastructure, track access charges for the use of the railway infrastructure, the allocation of infrastructure capacities, the network statement, the establishment of an independent and autonomous regulatory body, the allocation and types of concessions, the financing of railway infrastructure and services of public interest in railway passenger transport.

• **Law on Safety in the Railway System:** “Official Gazette of the Republic of Macedonia” Nos. 48/10, 23/11, 53/11, 158/11, 137/13, 163/13, 42/14, 166/14, 147/15, 193/15, 31/16, 52/16, 63/16, 71/16, 35/18, 64/18 and “Official Gazette of the Republic of North Macedonia” Nos. 22/20, 178/21. This law regulates the manner and conditions for ensuring safety in the railway system, which covers the system's safety requirements, including the safety management of the infrastructure and railway operator and the cooperation between the railway operator and the infrastructure manager.

• **Law on Interoperability in the Railway System:** “Official Gazette of the Republic of Macedonia” Nos. 17/11, 163/13, 147/15, 31/16 and “Official Gazette of the Republic of North Macedonia” No. 285/20. This law prescribes the conditions for achieving interoperability of the railway system in North Macedonia, which relate to the design, construction, reconstruction, overhaul, commissioning, operation, and maintenance of parts of the railway system, as well as professional qualifications, health and safety conditions of the personnel involved in the process and maintenance of the railway system.

• **Law on Contracts for Carriage by Rail:** “Official Gazette of the Republic of Macedonia” Nos. 55/07 and 148/11. This law regulates the rights and obligations arising from contracts for the carriage of passengers and goods in domestic and international rail traffic unless otherwise stipulated by an international agreement and passenger rights.


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12 Detailed descriptions of these directives and regulations can be found on the official website of the European Union.

13 The implementation of these regulations and directives varies. For instance, Regulation 1370/2007's implementation began in 2007 with budgetary provisions for passenger transport loss compensation. The Regulation (EC) No 1371/2007 will take effect after North Macedonia's accession to the EU. The Law on Interoperability in the existing railway system is aligned with the Directive 2008/57/EC.
North Macedonia remains committed to further align its legislation with the EU *acquis*, including adopting technical specifications for interoperability (TSIs) and establishing an independent investigation body.

The management of the regional and national roads is regulated, among other things, by the following national legislation:

- **The Law on Road Transport** (“Official Gazette of the Republic of Macedonia” No. 68/04, 59/05, 127/06 114/09, 83/10, 140/10, 17/11, 53/11, 6/12, 23/13, 120/13, 163/13, 187/13, 42/14, 112/14, 166/14, 44/15, 97/15, 124/15, 129/15, 193/15, 37/16, 71/16, 64/18, 140/18, 163/18 and “Official Gazette of the Republic of North Macedonia” No.275/19, 67/22) regulates the conditions and how passengers and goods are transported in domestic and international road transport. It prescribes the terms for professional competency and financial stability, some of the conditions for access to the profession of the transport operator, as well as the terms and procedures for acquiring a licence for transporting passengers and goods by road. Several bylaws arising from the Law on Road Transport have been adopted.

- **The Law on Public Roads** (“Official Gazette of the Republic of Macedonia” No. 84/08, 52/09, 114/09, 124/10, 23/11, 53/11, 44/12, 168/12, 163/13, 187/13, 39/14, 42/14, 166/14, 44/15, 116/15, 150/15, 31/16 71/16, 163/16 and “Official Gazette of the Republic of North Macedonia” No. 174/21) regulates the conditions and the manner of construction, reconstruction, maintenance, protection, use, management, and funding of public roads, as well as the supervision of the enforcement of this Law. Among the most important issues regulating road categories; are competencies of road authorities; sources of funding and allocation of funds among the entities responsible for the road network; adoption of medium-term and annual programmes for construction, reconstruction, and maintenance of roads; competencies for granting concessions.

- **The Law on Road Transport Safety** (“Official Gazette of the Republic of Macedonia” No. 54/07, 86/08, 98/08, 64/09, 161/09, 36/11, 51/11, 27/14, 169/15, 226/15, 55/16,11/18, 83/18 and “Official Gazette of the Republic of North Macedonia” No. 98/19, 302/20, 122/21) determines the conditions which have to be met by the vehicles engaged in road transport, as well as the devices and equipment which have to be provided in the vehicles, dimensions, overall mass and axle weight of vehicles; the conditions for obtaining a driving permit and the form and application form for the driving permit, verification and technical control of the vehicles, registration of the vehicle and the application form for the traffic permit etc.


- Rules amending the rules for technical elements for the construction and reconstruction of public roads and road facilities (Official Gazette No. 84/08, 52/09, 114/09, 124/10, 23/11, 53 /11, 146/11, 9/17).

- Rulebook on the method of identification of public roads with an appropriate reference system and stationing (Official Gazette No. 32/09).

- Rulebook on measures for the maintenance of public roads, the method and deadlines for their execution, as well as the type and method of execution of activities for regular, winter, periodic and interventional maintenance of public roads (Official Gazette No.152/08).

- Rules amending the rules for the technical elements for the construction and reconstruction of public roads and road facilities (Official Gazette No. 31/10).
• Rulebook on the form and content of the identification forms of the state road inspectors and the authorized road inspectors of the municipalities, i.e., of the City of Skopje, as well as the manner of their issuance and revocation (Official Gazette No. 129/2008, 126/19).
• Rulebook on the method of protection of public roads (Official Gazette No.122/2010)
• Rules amending the rules for the method of protection of public roads (Official Gazette No. 113/2011).
• Rulebook on the form and content of the invitation for education and the way of conducting the education (Official Gazette No. 95/11).
• Rulebook on the method of distribution of funds to the municipalities, i.e., the City of Skopje, from the fee for the use of public roads for motor vehicles that the owners of the motor vehicles pay when registering the vehicles (Official Gazette No.129/08).
• Rulebook on the criteria for determining the streets in populated areas that are considered part of a state road, as well as their maintenance (Official Gazette No.144/08).
• Rulebook on the manner, procedure and conditions under which the State Roads Agency (PESR) gives consent for the construction of a state road to another investor (Official Gazette No. 99/2011).
• Rulebook on the form and content of the request and the necessary documentation for obtaining the license for the removal of damaged vehicles and defective vehicles from the municipal and local roads for the territory of the respective municipality or the city of Skopje (Official Gazette No. 125/14).
• Rulebook on the form and content of the mandatory payment order (Official Gazette No. 7/16).
• Rulebook on the form and content of the delinquent payment order (Official Gazette No. 18/16).
• Decision on granting a concession for construction, reconstruction, maintenance, toll collection and use of part of the state roads in the Republic of Macedonia (Package 1) (Official Gazette No.134/09).
• Decision on granting a concession for construction, reconstruction, maintenance, toll collection and use of part of the state roads in the Republic of Macedonia (Package 2) (Official Gazette No.134/09).
• Decision on the amount and method of collection of the fee for road use (Toll) (Official Gazette No.118/19).
• Decision on the amount and method of payment of the fee for the use of public roads for motor vehicles and connected vehicles (Road Tax), (Official Gazette No.118/09).
• Decision on the amount of the fee for processing inscriptions and billboards in the protective belt of a state road, connecting an access road to a state road, installing installations in the trunk of a road and the road belt of a state road, construction and use of commercial facilities on which access to a public road outside the settlement is allowed, for excessive use of a state road, for emergency transportation and for damage to a state road and to the facilities on the road (Official Gazette No. 139/2008);
• Decision on the categorization of state roads (Official Gazette No. 133/2011, 20/12, 41/12, 107/13, 17/14, 190/14, 168/18, 69/19, 194/19, 208/19, 79/20, 225/21, 262/21, 56/22, 95/22, 288/22).
• Correction of the decision on the categorization of state roads (Official Gazette No.150/2011).
• Decision on amending the decision on the categorization of state roads (Official Gazette No. 133/11, 20/2012, 41/12, 107/13, 17/14, 190/14, 168/18, 69/19, 194/19, 208/19, 79/20, 225/21, 262/21, 56/22 and 95/22).
• Decree on establishing criteria for the categorization of public roads and their markings (Official Gazette No.13/2010).

Indirectly, several key laws make up the legal framework governing environmental protection in North Macedonia:

• Law on Nature Protection (“Official Gazette of the Republic of Macedonia” No. 67/04, 14/06, 84/07, 35/10, 47/11, 148/11, 59/12, 13/13, 163/13, 41/14, 146/15, 39/16, 63/16,
This law emphasizes the safeguarding of biological and landscape diversity, both within and outside designated protected areas. It aligns with key EU directives, including those on the conservation of natural habitats, wild birds, and the regulation of trade in wild fauna and flora.

- Law on Environment (“Official Gazette of the Republic of Macedonia” No. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 192/15, 39/16, 99/18 and “Official Gazette of the Republic of North Macedonia” No. 171/22). Central to transportation, this law sets out procedures for environmental impact assessment (EIA) and strategic environmental assessment (SEA). These assessments are crucial to ensuring transport construction projects do not harmfully fragment habitats.

2.3. Institutional setting, leadership, and capacity

The transport sector in North Macedonia encompasses a range of institutions working collaboratively to implement reforms. The Ministry of Transport and Communications (MoTC) spearheads the coordination of these institutions, formulating and executing national transport policies, strategies, and programmes in compliance with EU transport regulations, standards, and policies. The MoTC has actively participated in the Working Groups established within the Transport Community Treaty as part of its commitment to active collaboration and alignment with international standards. MoTC is accountable for administering an efficient and dependable transport system, while various transport authorities supervise road, rail, and other modes of transport. NTS 2018-2030 establishes a framework for decision-makers to ensure the sustainable development of the transport sector. The MoTC serves as the central and primary state authority in the transport sector, including road safety at the national level. It is also responsible for technical regulations and standards related to road design and construction and signalling. Tasked with developing and implementing transport policies, national strategies, and action plans, the MoTC oversees inspection and enforcement activities. The ministry carries out its responsibilities and duties as stipulated by the Law on Organisation of State Administration Bodies.

The Ministry of Interior (MoI) establishes and maintains a central registry of recorded accidents. The Traffic Police, under the jurisdiction of the MoI, handle law enforcement and traffic safety on the roads. MOI is also responsible for disaster risk reduction and emergency management. It is tasked with developing and implementing disaster risk reduction policies and plans, as well as coordinating the response to disasters. The MoI also plays a role in climate change adaptation efforts, particularly in the areas of early warning systems and disaster preparedness.

The Ministry of Environment and Spatial Planning (MoEPP) spearheads environmental protection, sustainable development, and climate change mitigation and adaptation, focusing on biodiversity, geo-heritage monitoring, and conservation. The Administration of Environment, housed within the MoEPP, maintains registers of protected areas and species, ensuring compliance with the Law on Nature Protection. Established in 2008, its primary goal is an integrated environmental system for North Macedonia. Additionally, the State Inspectorate of Environment and Nature oversees the application of measures to protect air, water, land, and biodiversity.

Transport authorities include:

- The Public Enterprise for State Roads (PESR)\textsuperscript{14} operates as an independent legal entity and is accountable for its liabilities with its total assets. As the owner of national and regional road

\textsuperscript{14} Founded on 03.01.2013 by Decision on founding No. 41-10147/1 of 28.12.2012 passed by the Government of the Republic of Macedonia, published in the Official Gazette of the Republic of Macedonia 6r.1 of 02.01.2013. The company is registered in the Central Register of North Macedonia with EMBS 6839673 and is a legal successor of the Agency for State Roads Skopje.
infrastructure, PESR is responsible for planning, constructing, reconstructing, maintaining, operating, and protecting state roads while monitoring and analysing their conditions.

- The Public Enterprise for Maintenance and Protection of National and Regional Roads manages and maintains the national road network. Its responsibilities include regular and winter maintenance of state roads, construction and installation of vertical and horizontal signalling, road protection, automatic and manual traffic counting, cadastre for roads and bridges, and providing information services regarding road conditions.

- The State Transport Inspectorate (STI) is the competent authority for inspecting passenger and freight transportation activities in domestic and international road transport. Operating independently from the Ministry of Transport and Communications, the STI's scope of activities encompasses inspection supervision in safe roads, infrastructure, road transport, and traffic arrangements on public roads, cable and ski-lifts. Additionally, it carries out immediate inspections to ensure compliance with laws and other regulations, taking administrative and other measures within its statutory powers.

- The National Road Safety Council functions as an advisory body to the National Assembly, focusing on promoting traffic preventive measures, monitoring and analysing developments in road traffic safety, and encouraging diverse, multi-sectoral, and multidisciplinary approaches to address issues related to road traffic safety. Nevertheless, institutional reform is underway, and a new Lead Road Safety Agency is being set up.

- The Railway Transport in North Macedonia is administered by two state-owned public enterprises, established in 2007 after separating a single company into two distinct entities. These are the Public Enterprise for Railway Infrastructure Railways of Republic of North Macedonia -Skopje (ZRSMI) and Railways of Republic of North Macedonia Transport JSC-Skopje. (ZRSM Transport JSC – Skopje)

Access to the railway infrastructure is overseen by ZRSMI and regulated by the Law on the Railway System. The ZRSMI approves access to the railway infrastructure by entering into an access agreement that complies with the Law on Railway Systems and ensures non-discriminatory practices. The rail market in North Macedonia is not yet fully liberalised. The national railway company, already licenced and certified, has exclusive access to the network and service facilities for domestic operations.

In line with the Law on Safety in the Rail System, the National Safety Authority (NSA) has been established. It is operational as the Directorate for Safety in the Rail System. This Directorate is an autonomous entity within the Ministry of Transport and Communications, responsible for ensuring safety across the railway network. It issues certificates and authorisations to all stakeholders involved in the railway sector. It should be noted, however, that an investigation body, as required by law, is yet to be established.

The Railway Regulatory Agency (RRA) has been established as a separate entity under the governance of the Parliament of North Macedonia, and it is functional.

NTS, ancillary reports, and the IPA Annual Report on Implementation of Financial Assistance for 2022 all highlight the administrative and human resource provisions of institutions within North Macedonia's transport sector as areas that need improvement. The primary challenges associated with NTS framework are fortifying administrative and operational prowess across all modes of transport and inspection bodies and increasing enforcement capacity to reduce fatalities along the road and rail infrastructure.

Chapters 14, 21, and 22 of the Stabilisation and Association Agreement (SAA) Subcommittee and the European Commission Reports emphasise the need to strengthen institutional capacity to implement NTS effectively. A diagnostic analysis conducted in 2019 under the auspices of the World Bank's Public

Expenditure and Financial Accountability (PEFA) programme emphasised the need for improved inter-institutional coordination, improved transport planning and monitoring, a more robust regulatory framework, and increased sector institutional capacity.

Addressing these challenges necessitates the creation of new job opportunities, the provision of relevant training, and the proper staffing of various units. Establishing a staff retention policy is critical for retaining experienced personnel and ensuring the effective execution of long-term transportation projects, programmes, and strategies.

The MoTC must also improve its administrative capacities to handle the obligations arising before and after the assessment mission envisaged in the treaty's protocol. Rapid intervention is required to build administrative capabilities and ensure NTS 2018-2030 is monitored and implemented effectively.

Furthermore, the EU accession negotiation process necessitates a more significant human resource complement, requiring an expansion of sector institutions’ administrative capacity.

These capacities must be continuously assessed and improved to enhance sector institutions’ administrative and human resource capacities. By doing so, North Macedonia's transport sector institutions can efficiently manage and regulate the transport sector, ensuring the successful implementation of transport reforms and alignment with EU standards.

### 2.4. Sector(s) and Donor Coordination

In North Macedonia, sector coordination is achieved by establishing Sector Working Groups (SWGs) as part of the IPA II requirements. These groups facilitate a comprehensive consultation process that aligns national priorities with the national strategies, budgets, and IPA objectives and funds. SWGs involve key stakeholders, such as relevant national authorities, donors, and civil society organisations, ensuring a coordinated approach to sector development.

SWGs hold decision-making meetings at least twice a year and technical meetings at least once a month. These gatherings serve as platforms for stakeholders to engage in discussions about sector development, evaluate the effectiveness of current policies, and assess the contributions of various donors to national sector priorities.

In the transport sector, the Sector Working Group for Transport (SWGT) serves as an inter-ministerial cooperation forum with a mandate for implementing tasks related to the formulation and implementation of national sector policies, including those relevant to EU integration and the coordination of donor assistance for the sector, particularly the European Union's IPA II programme.

The National Investment Committee (NIC) was established in 2015 to optimise the use of external funding sources through a targeted, systematised approach and a unified methodology. The National IPA Coordinator (NIPAC) and the Minister of Finance co-chair the NIC, and its primary duty is to support the strategic selection and prioritisation of infrastructure projects using a formally established methodology and the Single Project Pipeline. NIC meetings are held at least twice a year, with additional meetings organised as needed.

Development partners participate in the programming process by providing data on expected aid, procedures, regulations, and priority fields of intervention. They are informed about national priorities and the IPA programming process through SWGs. International Financial Institutions (IFIs) play a crucial role in financing and supporting development projects in the transport sector in North Macedonia. Specific IFIs involved in the transport sector include the World Bank, the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB) and the Export-Import (EXIM) Bank. These IFIs provide loans for various projects that address different aspects of the sector, such as modernising the road and railway network infrastructure and constructing motorways.

Other public bodies and civil society organisations (CSOs) participate in the IPA assistance programming process through SWG consultation mechanisms. In 2021, various donors, International Financial Institutions (IFIs), embassies, and CSOs attended these meetings. This coordination and
integration of civil society into the process ensure transparency, broad participation of relevant partners and stakeholders, and effective collaboration for achieving NTS 2018-2030 objectives.

2.5. Mid-Term Budgetary Perspectives

According to the Revised Fiscal Strategy of North Macedonia for 2023-2025 (with prospects until 2027), the transport medium-term expenditure framework for North Macedonia (2022-2026) is designed to promote sustainable and inclusive growth. The framework focuses on implementing capital infrastructure projects in road and rail infrastructure, emphasising interconnectivity with neighbouring countries.

Significant investments are planned for road infrastructure to develop and construct key sections of Corridor VIII and Corridor X, along with other major highways. This includes upgrading the Tetovo-Gostivar section to motorway standards, the construction of motorway section Trebenishta-Struga-Kjafasan to improve regional connectivity, as well as the construction of motorway sections Gostivar-Bukojchani, and the Prilep-Bitola, which will be implemented within the contract signed with the consortium Bechtel & Enka by the Law on establishing public interest and nominating a strategic partner. An urban and essential project for a state road connecting Tetovo with Prizren will be developed to enhance links with Kosovo.

Investments in road infrastructure will also be directed toward credit-funded projects, such as the construction of the eastern and western parts of Corridor VIII, the Skopje-Blace highway section (border with Kosovo), the improvement of road infrastructure between the city of Shtip and the city of Radovish road section, the National Road Programme, improvement of road section on Corridor Xd (financed within IPA) and the Project for Facilitation of Trade and Transport in the Western Balkans.

For railway infrastructure, funding is planned for constructing and rehabilitating the eastern part of the railway line - Corridor VIII towards Bulgaria. With EUR 280 million grant funds secured for the second and third phases, this project will strengthen regional ties and improve trade. The EIB and the EBRD have also confirmed that financing the Kichevo-border with Albania railway line project will commence, further enhancing connectivity with neighbouring countries.

The budget for these projects adheres to the "golden rule" of public finances, implying that the country is borrowing only for projects that will add value to the economy, accelerate growth, and enhance the living standards of its citizens. This budget is designed to mitigate the challenges of the global economic context, including the energy crisis and the effects of the COVID-19 pandemic, by cushioning the impact on living standards and companies' liquidity.

The budget deficit in 2023 is projected to be 4.6% of the projected GDP, which is 0.7 percentage points lower compared to the 2022 projection. The total revenues of the 2023 budget are projected to be higher by 14.8% concerning 2022, while expenditures are projected to be higher by 12.6% in relation to 2022.

The budget also includes measures to enhance the efficiency and effectiveness of the public revenue collection system, reduce tax evasion, and strengthen institutional coordination. It is expected to generate positive multiplier effects on medium-term economic growth and accelerate the real economic convergence towards the economy of the EU.

The framework also includes investments in road safety measures, traffic management, and modernising signalling systems at railway level crossings. These initiatives will improve infrastructure and ensure the transport network's safety and efficiency.

By focusing on these key transport infrastructure projects and collaborating with international financial institutions, bilateral creditors, and private sector capital, North Macedonia aims to boost its economic

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

16 https://finance.gov.mk/2022/11/05/123-7/?lang=en
growth, create new job opportunities, and strengthen its position as a regional transport hub. This comprehensive approach to developing the transport sector will ultimately contribute to the nation's goal of achieving accelerated, inclusive, and sustainable economic growth.

For the current fiscal year (2023), the transport sector has been allocated a total budget of approximately EUR 292.6 million, representing 5.54% of the national budget, according to data from the State Budget of North Macedonia 2023. This is the primary budget expenditure\textsuperscript{17}. Including loans and donations\textsuperscript{18}, the total budget expenditure for the transport sector reaches approximately EUR 327 million.

In the fiscal year 2023, the sector funding is expected to be divided as follows:

- Road infrastructure support: EUR 253.9 million\textsuperscript{19}
- Railway infrastructure: EUR 38.7 million

2.6. Performance assessment framework

The Performance Assessment Framework (PAF) plays a critical role in overseeing the execution of IPA Programmes and gauging sector results, encompassing both overarching (impact) and specialised (outcomes) objectives. By employing SMART indicators, the PAF promotes transparent decision-making, monitors progress, and enhances national capabilities in strategic planning and sector-based programming and supervision.

Essential aspects of the PAF comprise:

- Strategic Documents: Utilising an extensive data set and SMART indicators to evaluate success, these documents enable national monitoring systems under IPA II to scrutinise policy objectives through PAFs.
- Sector-Based PAFs: By facilitating policy dialogue, steering sector reforms, and tracking a country's progress nationally and about the EU average and regional counterparts, these PAFs provide an analytical perspective on progress.
- Participatory Process: Involving pertinent stakeholders such as civil society organisations and international donors, this collaborative approach ensures a comprehensive understanding of the PAF and its objectives.
- PAF Web-Based Application: Developed with the SEA and EU Delegation, this application [https://pafnorthmacedonia.mk/PAF/] permits consistent electronic data input, processing, and analysis.
- Data Collection and Verification: Appropriate sectors are assigned responsibilities for collecting and validating data for each indicator. Government decisions dictate responsibilities and deadlines for operating the PAF web-based application.
- PAF in IPA Programme Monitoring: Sector-level progress in Programmes/Actions is monitored by employing PAF. Indicators agreed upon with the European Commission/EU Delegation establish a system for gauging progress in alignment with evidence-based decision-making in policy formulation.
- Transposition of PAF Core Indicators: Incorporated into the country’s IPA III Strategic Response, IPA III Action Documents, and Operational programmes, these indicators (including macro indicators within the IPA III framework) clearly define targets.

\textsuperscript{17}https://finance.gov.mk/wp-content/uploads/2022/12/%D0%91%D0%A3%D0%8F%D0%95%D0%A2-2023-%D0%A1%D0%BB-%D0%92%D0%B5%D1%81%D0%BD%D0%B8%D0%BA.pdf - State Budget of North Macedonia 2023, Budget expenditures by function, page 160, item 704.

\textsuperscript{18}European Union (through the Instrument for Pre-accession Assistance – IPA III), international financial institutions (e.g., the World Bank and the EBRD), and bilateral donors.

\textsuperscript{19}Road infrastructure investments: ~EUR 243.9 million; Trade and transport facilitation project: ~EUR 2 million; Local roads project: ~EUR 8 million.
Joint Monitoring Arrangements: Impact and outcome indicators, with established baselines and targets, are monitored jointly, ensuring logical sequencing of ideas and coherence. This includes PAF data usage by SWGs and PAF indicators reported in the IPA annual implementation reports.

The comprehensive PAF approach effectively supervises national sector/sub-sector strategies and sector results, fostering transparent decision-making and collaboration between authorities, donors, and civil society.

The MoTC oversees NTS's implementation, which is central to coordinating with national transport stakeholders. Their function includes gathering, processing, and disseminating relevant information and statistics, providing a holistic view of NTS implementation, and ensuring impacts.

The SWGT collaborates in this process. As an inter-ministerial cooperation forum, the SWGT ensures transparency and broad participation in the execution of NTS, identifies potential issues and risks, and proposes rectifying measures.

In further assisting the monitoring process, the Department for European Union's Unit for Negotiations and Integration within, the MoTC, acts as a liaison and coordinator. It collaborates with SWGT, providing technical, administrative, communication, and coordination services. Essential tasks include collecting and analysing data, monitoring progress, and preparing annual reports.

Additionally, a key element in the monitoring mechanism of NTS is the forthcoming monitoring and reporting IT tool, being developed under the IPA II project, titled "Development of Implementation Plan Under NTS 2028-2030 with System, Tool, and Capacity for its Monitoring." This tool will enable precise monitoring and data collection relating to NTS 2018-2030 performance indicators and reporting procedures.

The State Statistical Office provides statistical information to assess the progress of NTS implementation against the defined monitoring indicators. Progress Reports\(^2\), prepared by the Unit for Negotiations and Integration, will be evaluated by SWGT and presented to the Government to capture progress against policy performance indicators. Monitoring reports prepared with this data comprehensively assess the strategy's implementation, documenting obstacles encountered, changes introduced, and progress against objectives.

### 2.7. Socio-Economic Analysis (including SWOT analysis)

#### Geographical and Geological Overview

North Macedonia, as a small, open economy in the Western Balkans region, is a landlocked country in south-eastern Europe on the Balkan Peninsula. It borders Kosovo to the northwest, Serbia to the north, Bulgaria to the east, Greece to the south, and Albania to the west. Home to around 1.8 million people, the country's economy is largely driven by a robust services sector, encompassing tourism and IT services, with a relatively minor industrial sector.

North Macedonia has complex geological structure and tectonic structure and varied relief. Its diverse geographical landscape, rich in mountains and valleys, underlines the country's complex geological structure. Particularly, North Macedonia's terrain comprises around 40 mountains, with heights ranging from 50m to 2,753m (Korab peak). This unique topography contributes to geological concerns such as landslides, especially given the country's vulnerability to earthquakes. These natural characteristics present challenges, especially for transport infrastructure development.

The country's geology, stretching back to the Precambrian era, divides North Macedonia into four zones with three major fault lines. Its volcanic relief, consisting of conic peaks and volcanic tuff, is rich in polymetal ores.

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\(^2\) 2 NTS progress reports have been prepared so far covering: 2018-2019 and December 2019-December 2021.
Climate and Environment

The Ohrid-Prespa Transboundary Biosphere Reserve is an ecological marvel, hosting diverse habitats and wildlife, including the endangered Balkan Lynx. Water resources are unevenly distributed, with the western region receiving much higher precipitation than the central areas. Key water sources include Ohrid and Prespa Lakes. North Macedonia’s wildlife is diverse, with over 22,500 recorded species. Insects dominate, but the country also hosts a plethora of birds, fish, mammals, reptiles, amphibians, and over 4,200 plant species.

According to the Ministry of Environment and Spatial Planning (MoEPP), nature of North Macedonia, in terms of geological values, is under direct and indirect threats mostly from: landslides; exploitation of mineral resources; erosion; landfills; immersion or of hazards arising directly or indirectly from climate change such as increased erosion, destruction of fossil glacial and periglacial forms, changes in the karst process, etc. North Macedonia has clearly identified major threats to individual environmental components such as: overloading of significant geological sites; abandoned mines or tailings dams.

In this context there is also several threats to:

- geodiversity (geology) that may affect transport system such as: landslides which can occur as a result of earthquakes, intense and long-lasting precipitation, or as a result of human activity, as well as erosion.
- geomorphology (such as landfill, hazard arising mechanical, chemical and biological pollution, geohazards caused by man).
- hydrology (such as floods as result of intensive rainfall increased the level of ground water)
- landscape diversity, such as fragmentation of forest landscapes is the result of the construction and operation of line infrastructure (especially highways), often associated with improper forest management (deforestation, erosion) and forest fires.
- biodiversity such as: the loss of natural habitats (their conversion) is most pronounced in aquatic habitats (marshes and swamps).

The country is vulnerable to climate change, especially to extreme weather events. North Macedonia regularly fulfils its reporting obligations under the UNFCCC, Kyoto Protocol and Paris Agreement. It has been praised as one of only 16 countries that are on track to honour their commitments under the Paris Agreement. Within the national plans on climate change, vulnerability and adaptation assessments have been prepared for the sectors of agriculture, forestry, water, health, biodiversity, crisis management, tourism and cultural heritage protection. These assessments serve as strategic documents for adaptation to climate change. However, legislation to specifically address climate change or an overall strategic document setting climate change priorities are lacking. Coordination among the different ministries takes place in the National Climate Change Committee. Mitigation measures have been implemented in the energy sector, ranging from the introduction of energy audits to subsidies for energy efficiency measures in households. Because of the dominant use of domestic lignite for electricity production, the country has a potential for greenhouse gas (GHG) emissions reductions. Even though above-mentioned action has been taken and bearing in mind that Government plans on regular basis a budget directly or indirectly contributed to climate change mitigation measures, the policy framework and the human and technical capacities devoted to combating climate still need brought attention in order to tackle the challenges posed by climate change.

Transport and Pollution

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22 Source: UNECE North Macedonia Environmental Performance Reviews 3rd Review-Highlights
23 According to Second Biennial Update Report on Climate Change as an example in 2017, 1.98 % of the State budget was devoted for climate change related expenditures
Transport is one of the main sources of air pollution in North Macedonia, along with industry, energy production, and domestic heating. This sector accounts for about 40% of the total emissions of nitrogen oxides (NOx), 20% of the total emissions of particulate matter (PM), and 10% of the total emissions of sulphur dioxide (SO2) in North Macedonia.24

The main transport modes contributing to air pollution are road vehicles, especially diesel cars and trucks, which emit high levels of NOx and PM12. Other transport modes, such as railways, aviation, and shipping, have lower impacts on air quality in North Macedonia.

Demographic and Economic Indicators

North Macedonia is grappling with demographic challenges affecting its socio-economic development, including an ageing population and a significant emigration rate. With over half a million citizens living abroad and near-zero population growth, these challenges are compounded by an unemployment rate of 14.4%25 as of 2022.

In recent years, North Macedonia has achieved economic growth and macroeconomic stability, overcoming challenges such as high unemployment rates and low labour force participation, thanks to fiscal consolidation and structural reforms. However, the nation still grapples with substantial infrastructure development challenges, particularly in the transport sector, which hinders economic activity and regional integration.

According to the World Bank (WB)26, North Macedonia's GDP experienced steady growth before the COVID-19 pandemic, with a 7.4% increase in 2021 after a contraction of 3.2% in 2020. The services sector, which contributes over 60% of total output, is the most significant component of the country's GDP. The International Monetary Fund (IMF)27 forecasts that the country's GDP will grow by 3.6% in 2024, driven primarily by a rebound in domestic demand and an uptick in exports.

Transport Infrastructure Development

In the realm of transport infrastructure, the country has made strides in expanding its road and railway networks and enhancing connectivity with neighbouring countries. However, the country must still confront issues such as insufficient road and railway maintenance, traffic congestion, and limited public transport options.

Transport is a crucial sector for the socio-economic development of North Macedonia, as it plays a key role in facilitating trade, investment, and tourism. According to the World Bank, the transport sector's share of North Macedonia's GDP was 7.3% in 2020. This includes all transport-related activities, including the construction and maintenance of transport infrastructure, transportation services, and related activities, such as logistics and storage.

The Operational Programme for Regional Development (OPRD) 2007-2013 aimed to support sustainable development by improving transport infrastructure along the Pan-European Transport Network (Corridors VIII and X) with a financial allocation of EUR 109 million. It had four priority axes, including:

- Corridor X Motorway Completion,
- Upgrading and modernising the transport infrastructure,
- Improvement of environmental infrastructure,


https://makstat.stat.gov.mk/PXWeb/pxweb/en/MakStat/MakStat__PazarNaTrud__StapkiDrugiIndikatori/088_PazTrud_Mk_StapNev_nl.px/table/viewLayout2/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f76ec5ef


https://www.imf.org/external/datamapper/profile/MKD
• Technical assistance.

The 2014-2020 Sector Operational Programme on Transport pursued similar objectives, focusing on improving transport infrastructure and strategic reforms in the transport sector. It targeted the South East Europe Transport Observatory (SEETO) Comprehensive Road and Rail Network in North Macedonia. It had three priority actions: Rail Transport Infrastructure, Road Transport Infrastructure, Reforms, and Horizontal Sector Assistance.

While building on past initiatives, the new 2024-2027 Operational Programme on Transport is designed to further align North Macedonia’s transport infrastructure with the EU acquis, pertaining to Chapter 14 and Chapter 21. This alignment is a key outcome of the programme and reflects North Macedonia’s commitment to adhering to the common rights and obligations binding on all EU countries. This programme also contributes to developing zero-emission mobility and more sustainable transport modalities to enhance the transport sector’s competitiveness, sustainability, and regional integration. It emphasises environmental protection, energy security, and reducing external costs, such as environmental impact and congestion. By addressing infrastructure disparities and connectivity gaps, the programme fosters regional cohesion. It also tackles efficiency issues, particularly infrastructure and interoperability bottlenecks, thus improving the user experience. Special attention is given to the accessibility and transport needs of vulnerable groups, ensuring an inclusive transport environment. The programme is committed to developing a resource-efficient network, balancing infrastructure enhancement and environmental protection.

Aligned with NTS vision for 2030, North Macedonia aspires to establish a modern, integrated transport network that supports sustainable economic growth and ensures mobility for all citizens. This vision encompasses a well-maintained, safe, reliable, affordable, and accessible transport system that is resilient to emergencies and environmentally conscious. Practically, this indicates the development of infrastructure that can withstand extreme weather events and natural disasters, the promotion of public transport to reduce emissions, and the implementation of measures to minimize the environmental impact of transport infrastructure, such as noise reduction and biodiversity protection. These aspirations should translate into activities related to the planning and preparation of transport infrastructure projects. Specifically, through the development of analyses such as vulnerability assessments, it is possible to determine which climate hazards the project may be susceptible to, as well as to screen hazards for likelihood of occurrence or severity level, and in this context to precisely define the risk and select adaptive measures.

The transport system will comprise integrated road, rail, air, lake/port, and urban transport, governed by sustainable transport policies and leveraging ITS technologies. Adhering to international standards, EU guidelines, and directives, the transport networks will be integrated into the European TEN-T network.

**Railway Infrastructure**

On May 16, 2023, in Budva, Montenegro, a high-level understanding was signed between the EU and North Macedonia concerning the indicative maps of the trans-European transport network within North Macedonia. This agreement provisionally designates certain railway sections as part of what is proposed to be the Extended Core Network, pending the adoption of the TEN-T regulation, which is most likely to occur in Q1 2024.

North Macedonia’s railway network is expansive and diverse, comprising 699 km of open line, 226 km of station and yard tracks, and 102 km of industrial tracks.

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28 Based on practical, relatively simple and publicly available tools such as JASPERS guidelines: “The Basics of Climate Change Adaptation, Vulnerability and Risk Assessment”
This network includes three main corridors: Corridor X, X-d, and VIII. The railway network density has been consistent at 36 km per 1000 square kilometres throughout 2015-2021, indicating a continued availability of rail transport infrastructure relative to the country's land area.

312.66 km of the open line network length is electrified. North Macedonia's railway is electrified with a 25 kV, 50 Hz AC overhead line system. This electrification is an essential step towards sustainable and efficient transportation, as it reduces reliance on fossil fuels and contributes to environmental protection.

![Railway network of North Macedonia, including border crossing points.](image)

Figure 1: Railway network of North Macedonia, including border crossing points.

Most of the network is single-track, with only 103 kilometres of double track. This configuration is typical in regions with a relatively low rail traffic volume. However, those single tracks can cause delays when trains travelling in opposite directions collide. Passing loops are frequently installed at intervals along the line to mitigate this issue.

North Macedonia's railways are built to standard gauge (1435 mm). This is the most common track gauge in the world, facilitating international rail transport and compatibility with rail systems in neighbouring countries.

Railway signalling systems, including mechanical, electrical, and electronic systems, manage train movement and safety. Mechanical systems use physical signals like levers, electrical systems use electric signals to track circuits, and electronic systems use digital technology for real-time network information.

Train movement within the track's sections or 'blocks' is managed via automatic, semi-automatic, or manual block systems. Automatic systems are fully automated, with signals changing to 'stop' when a train enters a block. Semi-automatic systems are mostly automatic with provisions for manual operation, while manual methods are labour-intensive with manually controlled signals.

These systems collectively ensure that the railway network's safety and efficiency are regularly maintained to prevent failures.

The railway network of North Macedonia consists of stations and facilities crucial to its operation. There are 128 varied-sized stations and stops throughout the network where passengers board and alight, with key ones being in Skopje, Bitola, Kumanovo, and Gevgelija.

The network also includes essential facilities such as depots for storing and maintaining trains, maintenance facilities for substantial repairs, and freight terminals for goods handling and transfer.

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29 Main indicators of transport, PxWeb (stat.gov.mk)
These stations and facilities ensure the efficient operation and maintenance of trains and effective transportation across the country.

**Corridor X**, a 215 km single electrified track, spans from the Serbian to the Greek border. It is divided into three primary sections: Tabanovce – Skopje (49 km), Skopje – Veles (51 km), and Veles – Gevgelija (115 km). The electrification includes a single-phase system of 25 kV/50 Hz, from Tabanovce to Gevgelija, passing through Skopje and Veles. The maximum permissible train speed ranges from 65 to 100 km/h due to design parameters, although it may be limited to specific parts due to infrastructural constraints. Significant improvement projects are underway to address these issues, focusing on infrastructure, signalling, and telecommunication systems.

**Figure 2** Indicative Extension Core/Extended Core/Comprehensive Network Rail Freight, Ports and Terminals

**Figure 3** Indicative Extension Core/Extended Core/Comprehensive Network Rail Passengers and Airports

**Disclaimer**: The maps herein represent an updated network and are for indicative purposes only. As the relevant delegated acts have not been officially adopted by the European Commission, these maps are not recognized in an official capacity. All references to or use of these maps should acknowledge that their official status is pending the adoption of the aforementioned delegated acts.

Within the Single Project Pipeline’s (SPP’s) list of immature projects, there’s a proposal to implement the European Train Control System (ETCS) level 1 across the entire Corridor X railway. This implementation will commence immediately upon completing the construction work on the Corridor VIII railway, following JASPERS’s completion note and recommendations. Regarding the performance of the Global System for Mobile Communication (GSMR), considering its expected obsolescence by 2030, a new system operating on 5G technology is planned for installation on Corridor X and the eastern part of Corridor VIII.

The network includes 49 railway bridges and culverts along Corridor X, totalling 992 m in length. Most of these bridges, constructed six decades ago, are corrosion-resistant steel structures. Consequently, these bridges need new anti-corrosion protection, underscoring the importance of continuous maintenance and improvements on this critical transportation corridor. Despite regular maintenance, the condition of the bridges is concerning, posing tremendous safety risks mitigated with speed restrictions on certain parts.

**Branch X-d of Corridor X** runs from Veles via Prilep and Bitola to the Greek border (146 km). A section of this track, from Bitola to the Greek border, was recently reconstructed in 2019. An essential network component is this Corridor, which receives service from diesel-powered trains up to Bitola.
The East-West railway line, **Corridor VIII**, totals 339 km, with 152 km already built. It runs through Bulgaria, North Macedonia, and Albania, connecting the Bulgarian Port of Varna on the Black Sea with Albania’s Port of Durres on the Adriatic Sea. Despite being under construction, Corridor VIII is already an integral part of North Macedonia's transport network, serving 62% of the country’s population. The missing links in the east and west of Corridor VIII pose obstacles to international trade in the region. The completion of its connections with the Albanian and Bulgarian railway networks is anticipated after 2030.

All corridors are incorporated into the TCT Comprehensive/Core Network to the Western Balkans. This Core Network, which includes the Skopje – Kosovo border crossing, totals approximately 335 km and primarily encompasses the railway lines of Corridor X and the eastern part of the rail Corridor VIII. The western part of the rail Corridor VIII is proposed to become part of the Extended Core Network with a length of approx.—70 km, subject to the adoption of the TEN-T Regulation.

The network also connects with neighbouring countries via four border stations: Tabanovce with Serbia, Bogorodica and Zhabeni with Greece, and Volkovo near the border with Kosovo. The border crossing stations along Corridors X and X-d include one with Serbia (Tabanovce), two with Greece (Gevgelija and Kremenica), and one with Kosovo.

An analysis of North Macedonia's railway network indicates that while there has been progress in meeting international standards, substantial challenges must be addressed to foster regional integration. The TCT Comprehensive/Core Rail Network, spanning 530 km for the Comprehensive Network and 268 km for the Core Network, underscores the importance of rail infrastructure improvement to connect North Macedonia with its neighbours and facilitate the seamless movement of people and goods throughout the region.

A socio-economic analysis of rail transport infrastructure illuminates the need for improvements to align with international standards. While rehabilitation is underway on parts of the railway line along Corridor X, other features of Corridor X and other lines still necessitate modernisation and rehabilitation.

From 2016 on, North Macedonia’s rail sector has displayed a dynamic trajectory. OECD statistics\(^{30}\) show that while rail infrastructure capital experienced a slight dip from 2016 to 2019, it rebounded in 2021. This fluctuation indicates periods of limited investments and highlights the renewed focus on rail infrastructure development in 2021.

Investments in rail infrastructure experienced substantial growth in 2016 and 2017 (OECD statistics), attributable to specific projects and Government initiatives. However, these investments dipped in 2018 and 2019, only to rally again in 2020 and 2021.

Rail freight transport has increased in terms of nett/km. Still, as a percentage of total freight transport, it has remained stable at around 3% since 2016, hinting at a burgeoning demand for rail freight services and indicating that the rail sector still plays a crucial role in goods transport despite the challenges. Conversely, rail passenger transport has seen a downward trend since 2016. This dip could be due to factors such as limited-service quality, inadequate connectivity, competition from road transport, or evolving consumer preferences.

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Table 1: Rail Transport Demand, by Year

The rail network in North Macedonia ranks 90th out of 108 countries in the World Economic Forum and Competitiveness Rankings for Quality of Railway Infrastructure. The country's transport infrastructure quality scores higher on average than other Western Balkan countries, with air transport receiving the highest score and railways the lowest.

From 2015 to 2021, the number of total railway accidents in North Macedonia has decreased, from 115 incidents in 2015 to 65 in 2021, with a few fluctuations. Notably, the most dramatic reduction occurred in accidents involving people caused by rolling stock in motion, excluding suicides. This category dropped from 78 incidents in 2015 to consistently lower figures in subsequent years. On the other hand, derailments have remained relatively steady over the years, indicating that this remains a persistent issue. Collisions were relatively rare, with only three incidents recorded over the seven years. Level-crossing accidents showed no clear trend but occurred relatively infrequently. The "Other" category, encompassing unspecified types of accidents, showed significant fluctuation, with the highest incidents in 2018. The data indicate an overall improvement in railway safety, though vigilance and safety measures should remain a priority.

<table>
<thead>
<tr>
<th>Year</th>
<th>Railway accidents - total</th>
<th>Collisions</th>
<th>Derailments</th>
<th>Level crossings accidents</th>
<th>Accidents to persons caused by rolling stock in motion, with exception of suicides</th>
<th>Fire in rolling stock</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>115</td>
<td>1</td>
<td>23</td>
<td>6</td>
<td>78</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>2016</td>
<td>88</td>
<td>1</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>2017</td>
<td>45</td>
<td>-</td>
<td>23</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>17</td>
</tr>
<tr>
<td>2018</td>
<td>97</td>
<td>1</td>
<td>17</td>
<td>3</td>
<td>14</td>
<td>-</td>
<td>62</td>
</tr>
<tr>
<td>2019</td>
<td>81</td>
<td>-</td>
<td>19</td>
<td>7</td>
<td>13</td>
<td>-</td>
<td>42</td>
</tr>
</tbody>
</table>

31 Rail passenger transport according to the type of transport, by years. PxWeb (stat.gov.mk)
32 Rail transport of goods according to type of transport, by years. PxWeb (stat.gov.mk)
34 Freight transport demand, 1990-2021. PxWeb (stat.gov.mk)
35 https://www.theglobaleconomy.com/rankings/railroad_quality/
36 Railway accidents by type, by years. PxWeb (stat.gov.mk)
28

Year | Railway accidents - total | Collisions | Derailments | Level crossings accidents | Accidents to persons caused by rolling stock in motion, with exception of suicides | Fire in rolling stock | Other |
---|---|---|---|---|---|---|---|
2020 | 61 | - | 18 | 5 | 10 | - | 28 |
2021 | 65 | 1 | 15 | 8 | 9 | - | 32 |

**Table 2: Railway Accidents by Type, by Year**

Between 2015 and 2021, the data shows a variable trend in the number of people killed and seriously injured in railway accidents in North Macedonia. The data indicates a general downward trend in total victims, with the highest number recorded in 2015 (187 victims) and the lowest in 2020 (83 victims). This implies that railway safety might have improved over the years. In terms of fatalities, the highest number was in 2015 (44 deaths), and it has decreased since then, with the lowest number of fatalities occurring in 2020 (18 deaths). The count of seriously injured victims also shows a downward trend over these years. The number of minor injuries has also decreased with slight year-to-year fluctuations. While railway accidents have generally declined, the data underscores the need for continued safety measures, especially concerning rolling stock in motion and level-crossing accidents.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total victims</th>
<th>Seriously injured</th>
<th>Slightly injured</th>
<th>Killed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>187</td>
<td>15</td>
<td>128</td>
<td>44</td>
</tr>
<tr>
<td>2016</td>
<td>141</td>
<td>11</td>
<td>97</td>
<td>33</td>
</tr>
<tr>
<td>2017</td>
<td>85</td>
<td>7</td>
<td>53</td>
<td>25</td>
</tr>
<tr>
<td>2018</td>
<td>130</td>
<td>9</td>
<td>92</td>
<td>29</td>
</tr>
<tr>
<td>2019</td>
<td>110</td>
<td>10</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>2020</td>
<td>83</td>
<td>7</td>
<td>58</td>
<td>18</td>
</tr>
<tr>
<td>2021</td>
<td>92</td>
<td>8</td>
<td>62</td>
<td>22</td>
</tr>
</tbody>
</table>

**Table 3: Railway Victims, by Year**

Regarding safety, the 132 road crossings on two levels and 291 road-level crossings within the railway network are provided with adequate security measures. However, specific level crossings require an update.

The current state of the railway vehicle fleet, characterised by ageing and unsustainable vehicles, is alarming and requires immediate attention. The fleet’s advanced age suggests that many vehicles may be operating past their prime, potentially causing increased breakdowns, accidents, and inefficient performance. This impacts the railway service’s reliability and increases maintenance costs and safety concerns.

The recent amendments to the Law on the railway system in North Macedonia have highlighted several critical needs for the development and maintenance of the railway infrastructure in line with EU standards, particularly the EU 4th Railway Package. This commitment aims to attract investments and ensure seamless integration into the European rail network.

Central to this commitment is the requirement to formulate a complete set of documentations related to the National program for the development of the rail infrastructure for a period of five years, including a multiannual maintenance plan and the necessary budget for rail maintenance. This is crucial as the

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37 *Killed and injured person by type and by category of persons in railway accidents, by years.* PxWeb (stat.gov.mk)
38 Submitted to the Assembly of the Republic of North Macedonia for approval
National Program will determine the activities, implementation dynamics, and financial resources required for the construction, reconstruction, overhaul, and maintenance of the railway infrastructure. In addition to infrastructure development, the emphasis is also on enhancing the competencies of the national railway authorities. By leveraging EU expertise, there's an endeavour to elevate management capabilities, align North Macedonia's railway regulations with EU stipulations, and institute a consistent culture of safety across all operations.

Further, the amended Law on Interoperability\textsuperscript{39} necessitates the comprehensive adoption of the Technical Specifications for Interoperability (TSIs) into the country's legal framework. Lastly, with the impending opening of the railway market and the entry of a second operator, there is a need to review and, if necessary, harmonize the existing legislation on track access charges with new EU regulations.

Liberalisation of train operations has not yet been realised, and improvements should be made in rail transportation conditions and services. More than ten years have passed since the former railway enterprise was divided into two independent entities. Yet, market liberalisation in railway transport and the entry of new operators still need to be realised, despite certain amendments to the respective laws in the procedure.

Enhancing the interconnection of transport modalities – encompassing road, rail, and airway systems – holds substantial potential for strengthening territorial unity and cooperation. This can be achieved by integrating national road and rail infrastructure with EU Corridors and the Comprehensive network across the region. Although Skopje and Ohrid airports offer diverse passenger transport options, it is worth noting that a direct railway connection between them is currently lacking.

Intermodal transport, predominantly employed for international freight transit from the Port of Thessaloniki via the railway line along Corridor X, still needs to be fully developed. This gap, coupled with limited infrastructure and an overarching emphasis on transit, underscores the importance of fostering intermodal transport growth. Such development is key to fuelling socio-economic expansion and promoting sustainable freight transportation.

Prioritising improvements to intermodal infrastructure and allocating resources for railway maintenance could significantly boost the country's Logistics Performance Index (LPI), recorded at 3.10 in 2022\textsuperscript{40}. The government acknowledges the need for green mobility and logistics, taking initiatives like Skopje's Sustainable Urban Mobility Plan (SUMP) and encouraging a shift from private to public transport, including shared transit. These efforts underline the commitment to a more environmentally efficient and inclusive transport system. Notably, adding a railway connection between Skopje and Ohrid airports would significantly contribute to this cause, enhancing the passenger experience and the broader effectiveness of the region's transport network. Moreover, the government plans to promote intermodal and multimodal transport and improve sustainable urban transport planning in major cities. Encouraging a shift from road to rail freight transport, expanding non-motorised modes, and developing intermodal transport are strategies aimed at reducing CO2 emissions and providing inclusive transportation for vulnerable populations.


\textsuperscript{40} Logistics performance index: Overall (1=low to 5=high) - North Macedonia | Data (worldbank.org)
While North Macedonia has made strides in enhancing its rail infrastructure, various reports highlight the remaining challenges in infrastructure investment, regulatory harmonisation, and capacity building. For a more interconnected and efficient rail network, the country must prioritise securing funds for infrastructure upgrades, including modernising tracks, signalling systems, and rolling stock.

Regulatory harmonisation is integral to facilitating cross-border rail services and promoting regional integration. North Macedonia should persist in adopting EU standards and practices to align with EU regulations and technical standards.

NTS 2018-2030 highlights specific targets for North Macedonia's rail network, including the total length of constructed/reconstructed railway lines within the TCT Comprehensive/Core Network, the implementation status of the Transport Community Treaty, improvements in the Logistics Performance Index (LPI) for infrastructure, and advancements in the area of trans-European networks (chapter 21).

Additional targets encompass reducing CO2 emissions from transport fuel combustion, increasing the volume of goods transported by railway, constructing multimodal/intermodal nodes with terminals and platforms, reducing rail accidents, and decreasing the number of fatalities per million inhabitants on the National and Regional Road Network.

In the context of the railway infrastructure, North Macedonia's CO2 emissions data, as detailed by the Makstat Database, holds significant relevance.

The data illustrates a continual increase in greenhouse gas (GHG) emissions from the transport sector in CO2 equivalent (kt) from 2008 to 2025 under the basic scenario. Emissions rose from 1,390 kt in 2008 to a projected 2,427 kt in 2025. This represents a significant growth in emissions over the period, indicating the rising impact of transport on the environment. The consistent upward trend underscores the need for substantial efforts to mitigate GHG emissions in this sector.

This data underscores the importance of efficient and sustainable transport infrastructure, including both railways and roads. Railways, being a more environmentally friendly mode of transport when compared to roads or air travel, can significantly reduce a country's overall emissions. Nevertheless, given the dominance of road transport, it is essential to also address the environmental impacts of the road sector.

In order to reduce bottlenecks and the occurrence of traffic congestion, which contributes to an increase in greenhouse gas emissions, it is essential to take the necessary measures to improve the road infrastructure. Nonetheless, complementary to the system approach, measures such as promoting cleaner vehicles, implementing stricter emission standards, and enhancing public transport should help mitigate the negative effects of road transport. By investing in and promoting both rail and sustainable road transport, North Macedonia has the potential to curb its escalating emissions trend. Moreover, aligning with the European Union's environmental standards is necessary for North Macedonia's EU integration process. Hence, improvements in both railway and road infrastructure benefit the transport sector and are critical to the country's sustainability and integration goals.

While North Macedonia has made progress in developing its rail infrastructure, addressing challenges in infrastructure investment, regulatory harmonisation, and capacity building will be crucial for the country's rail network to reach its full potential and meet the targets outlined in NTS 2018-2030.

**SWOT Analysis – Rail Transport**

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
</table>

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42 Projections of all GHG emissions for the sectors in CO2 - equivalent [kt] (basic scenario), by years. PxWeb (stat.gov.mk)
1. Availability of Single Project Pipeline based on MCA methodology.
2. Strategic Corridor Connections: The country benefits from the strategic alignment of Corridors X, X-d, and VIII, which serve as crucial conduits for the international transit of goods and passengers.
3. Infrastructure Enhancement Efforts: Rehabilitation initiatives, such as the recent reconstruction of the section from Bitola to the Greek border, are underway to upgrade the existing rail infrastructure.
4. Resurging Investments: The years following 2019 have seen a resurgence in capital investment in the rail sector, underscoring a renewed commitment to rail development.
5. Progress in EU Regulatory Alignment: Significant strides have been made towards harmonising North Macedonia's railway legislation with EU standards and requirements, including adapting EU technical specifications and formulating new railway-specific laws.
6. Commitment to Infrastructure Rehabilitation: A focus on the partial rehabilitation of Corridor X has contributed to an overall enhancement in the rail network's infrastructure quality.
7. Alignment with the National Transport Strategy: The government's commitment to improving rail infrastructure aligns with the strategic objectives of NTS, reinforcing the potential for successful interventions.
8. Technological Upgrades: Projects to advance signalling and telecommunication systems are in motion, indicating an ongoing commitment to modernising the country's rail system; active use of RIAMS technology, being the only country in the WB6 to use it.

**OPPORTUNITIES**

1. Corridor VIII Completion: The anticipated completion of Corridor VIII is expected to enhance regional connectivity and bolster international trade.
2. Infrastructure Upgrades: The government's refocused attention on rail infrastructure investment in 2021 opens avenues for

**THREATS**

1. Outdated Infrastructure: The rail network features ageing structures like bridges and culverts along Corridor X, which require modern anti-corrosion measures for longevity and specific improvements related to maintaining safety and stability.
2. Restricted Train Velocity: Maximum permissible speeds on Corridor X are limited to 65-100 km/h due to design parameters. On specific parts of the network, there is a speed restriction due to infrastructural constraints.
3. Ageing Fleet: The railway vehicle fleet is ageing and unsustainable, necessitating modernisation.
4. Limited Electrification: With only 312.66 km of the total open track line network length electrified, opportunities for environmentally friendly and efficient rail operations are constrained.
5. Safety Concerns at Crossings: Road crossings are provided with adequate security measures; however, specific level crossings require an update.
6. Absence of Airport-Rail Connection: The lack of a railway link between Skopje and Ohrid airports and the main passenger station restricts the intermodal connectivity.
7. Insufficient Multimodal Integration: The rail network's lack of comprehensive integration with other transport modes restricts efficient movement of goods and passengers.
8. Corridor VIII Connectivity Gaps: Unlinked sections in the east and west of Corridor VIII obstruct international trade flows in the region.
10. Limited capacity for planning, implementing, maintaining and evaluating rail infrastructure along with potential political, bureaucratic, or technical hurdles, may inhibit new railway law implementation and EU regulation harmonisation.

**Table:**

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Corridor VIII Completion: The anticipated completion of Corridor VIII is expected to enhance regional connectivity and bolster international trade.</td>
<td>1. Liberalisation Hurdles: Despite the division of the former public railways enterprise over a decade ago, market liberalisation remains incomplete, potentially stunting the growth and competitiveness of the rail sector.</td>
</tr>
<tr>
<td>2. Infrastructure Upgrades: The government's refocused attention on rail infrastructure investment in 2021 opens avenues for</td>
<td>2. Regulatory Delays: The implementation of new railway laws and harmonisation with EU</td>
</tr>
</tbody>
</table>
infrastructure enhancements, including the modernisation of tracks, signalling systems, and rolling stock.

3. Feasibility Studies: Conducting comprehensive feasibility studies for modernising railway lines and signalling systems and promoting multimodal integration can substantially improve the overall efficiency, effectiveness and safety of the rail network.

4. TCT Network Integration: The inclusion of Corridor X and the western part of Corridor VIII in the TCT Comprehensive/Core Network presents opportunities for increased regional integration.

5. Regulatory Alignment: Synchronising the transport legislation of North Macedonia with the EU acquis and standardising national technical norms with EU directives and TSIs could streamline cross-border rail services and promote regional integration.

6. Regional Cooperation: Strengthening regional ties with neighbouring countries and persisting in the adoption of EU standards will ease cross-border rail services, spurring economic growth and integration.


8. Enhancing Safety Measures: The installation of advanced signalling equipment, fortification of level crossing security, and strict adherence to safety norms can significantly improve railway safety.

9. Intermodal Transport Expansion: The potential for intermodal transport development, particularly concerning international freight transit from the Port of Thessaloniki via the railway line along Corridor X, is vast.

10. Funding Opportunities: Prioritising funds from international donors, the EU and IFIs could support infrastructure upgrades and the construction of intermodal transport hubs.

11. New Rail Links: Developing new rail connections to Varna (Bulgaria) in the east and Durrës (Albania) in the west could further enhance regional integration and stimulate economic growth.

regulations may encounter delays due to political, bureaucratic, or technical obstacles.

3. Railway infrastructure is not of sufficient quality to handle the liberalisation of the rail transport market and respond to the needs of the market and the timely arrival of goods and passengers.

4. Resistance to Change: There may be resistance to liberalisation and competition within the rail transport sector, posing additional challenges.

5. Safety Risks: The existence of 132 two-level road crossings and 291 level road crossings with outdated security measures present substantial safety risks.

6. Slow Infrastructure Progress: Despite ongoing rehabilitation and modernisation efforts, progress has been sluggish, with only 32% of the TEN-T network indicator achieved.

7. Incomplete Corridors: Unfinished sections of Corridor VIII and insufficient regional cooperation obstruct international trade and restrict potential regional connectivity.

8. Development Delays: The projected completion of Corridor VIII is not due until after 2030 by all concerned countries, which could limit the anticipated benefits of increased connectivity and trade.

9. Funding Challenges: Economic constraints and competing priorities may complicate the securing of funds necessary for infrastructure upgrades, modernisation, and multimodal integration.

10. Economic Changes: Shifts in the global and regional economies could impact the availability of funding and the prioritisation of railway infrastructure projects.

11. Regional Competition: Neighbouring countries may enhance their own rail networks and attract international trade and investment, diminishing the potential benefits of the railway network of North Macedonia.


13. Competition from Other Modes: Other transport modes, such as road or air transport, could pose a significant threat to the competitiveness of the rail sector, especially given the current high competition from road transport and the limited quality of rail passenger services.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Encouraging Rail Use: Promoting the use of rail over road transport for both passengers and freight could alleviate congestion, minimise environmental impact, and foster the development of a sustainable transport system.</td>
<td>14. Potential delays in preparing necessary documentation and adopting TSIs, and challenges in harmonizing existing legislation with new EU regulations.</td>
</tr>
<tr>
<td>13. Increase in budget allocation for regular maintenance related to the respective amendments of national laws.</td>
<td>15. Potential impacts of climate change on the transport infrastructure (e.g., extreme weather events causing damage to infrastructure), and the challenges associated with transitioning to greener transportation options.</td>
</tr>
<tr>
<td>15. Infrastructure Standards: Efforts to comply with international safety and infrastructure standards could enhance regional integration and economic growth.</td>
<td></td>
</tr>
<tr>
<td>16. Market liberalization with the entry of a second operator and the opportunity to align national legislation and standards with EU regulations and standards.</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td></td>
</tr>
<tr>
<td>18. With the pending liberalisation of the railway market in 2023 market strategies should be developed to attract a greater amount of transport of goods and passengers via railway.</td>
<td></td>
</tr>
<tr>
<td>19. Potential for promoting green transportation options, enhancing climate resilience of the transport infrastructure, and contributing to global efforts to reduce CO2 emissions.</td>
<td></td>
</tr>
</tbody>
</table>

**Road Transport**

The road infrastructure in North Macedonia consists of local roads (approximately 14410 km), state road networks (906 km), and motorways (228 km). Since 2016, the national state roads have aligned with the TEN-T Corridors and the Comprehensive/Core European Road network, covering 850 km and 513 km, respectively. The TEN-T Core Network Corridors run along a north-south axis via Corridors VIII and X/X-d, facilitating movement within the country and connecting to regional neighbours and Europe. The favourable geographical location of the country has contributed to the development of international traffic on axes that run North-South (Corridor X, including branch X-d) and East-West (Corridor VIII) as part of the Comprehensive Network, which is part of the TEN-T.
On May 16, 2023, in Budva, Montenegro, a high-level understanding was signed between the EU and North Macedonia concerning the indicative maps of the trans-European transport network within North Macedonia. This agreement provisionally designates certain road sections as part of what is proposed to be the Extended Core Network, pending the adoption of the TEN-T regulation, which is most likely to occur in Q1 2024.

The Comprehensive Road network has 850 km lengths, and the Core Road network consists of 513 km of roads passing through the territory of North Macedonia.

The road infrastructure along the EU Corridor X passing from Serbia to Greece is already constructed as a motorway, except the existing road section Katlanovo – Veles on Corridor X going on the right carriageway, which is not built according to motorway standards. Corridor VIII connects the Adriatic with the Black Sea, and the road infrastructure along Corridor VIII is only 37% constructed according to motorway standards. Corridor X-d is a sub-section of Corridor X beginning in Veles via Bitola ends.
at the border crossing with Greece. This road is 117 km long, and the whole section is a highway with one traffic line for each direction.

<table>
<thead>
<tr>
<th>Comprehensive Network</th>
<th>km</th>
<th>Core Network</th>
<th>km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor VIII</td>
<td>298</td>
<td>Corridor VIII</td>
<td>298</td>
</tr>
<tr>
<td>Corridor X</td>
<td>195</td>
<td>Corridor X</td>
<td>195</td>
</tr>
<tr>
<td>Corridor Xd</td>
<td>117</td>
<td>Route 6a (Kosovo border – Skopje)</td>
<td>20</td>
</tr>
<tr>
<td>Route 6a (Kosovo border – Skopje)</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 8 (Podmolje – Bitola)</td>
<td>78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 10 (Miladinovci – Shtip – Novo Selo)</td>
<td>142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Comprehensive Network</td>
<td>850</td>
<td>Total Core network</td>
<td>513</td>
</tr>
</tbody>
</table>

*Table 4: Comprehensive/Core Road Network passing North Macedonia*

There are **14 road border crossings** with the neighbour countries:
- 3 with Greece,
- 3 with Bulgaria,
- 2 with Serbia,
- 2 with Kosovo,
- 4 with Albania.

The public road network in North Macedonia comprises 14,182 km of roads. The abovementioned road network is divided into the following categories/types:

<table>
<thead>
<tr>
<th>Category/Type</th>
<th>Km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorways</td>
<td>242</td>
</tr>
<tr>
<td>National roads</td>
<td>911</td>
</tr>
<tr>
<td>Regional</td>
<td>3771</td>
</tr>
<tr>
<td>Local/municipal roads</td>
<td>9258</td>
</tr>
<tr>
<td>Total public roads</td>
<td>14182</td>
</tr>
</tbody>
</table>

*Table 5: Length of categories of roads*

The most significant road network, including motorways, and national and regional roads with a total length of 4924 km, is managed by the PESR.

Each of the 80 municipalities in North Macedonia is responsible for managing local/municipal roads. These roads encompass a combination of rural routes that connect villages and towns, as well as streets within urban areas and villages. On average, most municipalities oversee approximately 100 kilometres of local roads.

The country is intersected by two main Trans-European Network Corridors:
- Corridor VIII (east-west)
- Corridor X (north-south)

Regional roads provide access to the main transport corridors and the national road network. The local roads are greatly important for the local economic development, attracting new investments, small businesses and agricultural activities throughout the country. According to the current legislation, the PESR is responsible for managing, constructing, reconstructing, maintaining, and protecting the state road assets in North Macedonia.
The operation and maintenance (OEM) of state/national roads are predominantly financed for the most part, with funds from the motorway toll revenues. This includes:

- Receipts from road tax imposed as an annual levy per vehicle registered in North Macedonia.
- Percentage of excise duty tax from fuel sales.
- Other types of revenues, such as income from issuing circulation permits for oversized and overload vehicles.

PESR is responsible for managing, planning, and implementing activities related to the road network, including development and maintenance, annually. The toll collection system and traffic management activities are carried out on behalf of PESR. The enterprise also handles the planning and execution of construction, extension, and major rehabilitation projects.

Activities supporting road management include:

- Inventory of the network,
- Carrying out periodic technical condition measurements,
- Carrying out traffic volume measurements,
- Carrying out random road safety inspections.

PESR utilises various systems for planning activities on the road network, including:

- Road Asset Management System, which incorporates a GIS module for road asset inventory,
- Other RAMS modules, such as BMS or PMS, are in the implementation phase,
- Traffic model operated using VISSUM software (owned by MoTC),
- Road accident data (owned by the Ministry of Internal Affairs).

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Maintenance activities, such as routine, periodic and winter, are carried out using the following resources:

- The Public Enterprise for Maintenance and Protection of National and Regional Roads,
- Service providers (private companies) contracted by PESR. This applies specifically to lower-category roads.

**Technical Condition of the Roads**

The technical condition of roads in North Macedonia varies across the country. Some roads are in good condition, while others need repair and rehabilitation. According to the World Road Statistics 2020 report by the International Road Federation (IRF) 2018, approximately 45% of North Macedonia's entire road network was in good condition, while 28% was in fair condition, and 27% was in poor condition.

The current measurement data co-located by PESR within the RAMS indicate the following:

- Significant damage to the road infrastructure of motorways, especially on the sections of the most heavily trafficked A1, A2 and A4 motorways.
- Typical types of damage occurring on these sections are transverse cracks, spalling, potholes, ruts, and unsatisfactory roughness parameters.
- In addition, the locally damaged and obstructed drainage system should be pointed out.

An important element of the technical condition is the ageing road safety infrastructure, such as road safety barriers, which do not meet modern requirements and EU standards. In recent years, PESR has implemented guardrails according to the EN1317 standard during the reconstruction and construction of new road sections.  

**Average daily traffic**

According to available data, the Annual Average Daily Traffic (AADT) on major roads in North Macedonia ranges from around 4,000 to over 40,000 vehicles per day, depending on the specific road segment. For example, the AADT on the Skopje-Tetovo highway, a significant road in the country, is estimated to be around 25,000 vehicles per day.

Similarly, available data shows that the AADT on motorways in North Macedonia ranges from approximately 12,000 to over 40,000 vehicles per day, depending on the specific section of the motorway. For example, the AADT on the A1 motorway, which connects Skopje and the northern border with Serbia, is estimated to be around 23,000 vehicles daily. It is important to note that these figures may vary depending on the specific year and period of measurement and any recent changes or developments in the transport network.

The available data indicate that the AADT on major roads and motorways in North Macedonia has gradually increased as the country's economy and population continue to grow. For example, between 2015 and 2018, the AADT on the A1 motorway increased from around 16,000 vehicles per day to about 23,000 vehicles per day. Similarly, between 2015 and 2018, the AADT on the A2 motorway increased from about 8,000 to around 12,000 vehicles per day. However, it is essential to note that these figures vary depending on the specific year and period of measurement and any recent changes or developments in the transport network.

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44 EN 1317 is a European standard that specifies requirements and testing methods for road restraint systems, also known as road safety barriers or crash barriers. The standard is titled "Road restraint systems - Part 1: Terminology and general criteria for test methods" and is part of a series of standards under the EN 1317 series.
may vary depending on the specific year and period of measurement and any recent changes or developments in the transport network.\(^{45}\)

Regarding traffic volumes for individual road categories, the highest volume of traffic, including heavy vehicles with a permissible gross weight of more than 3.5 tons (HGV) is observed on motorway sections primarily located in Corridor X and the connection of Corridors X and VIII in the Skopje metropolitan area.

Specifically, the AADT for motorway sections is as follows:

- A1 Miladinovci – Petrovac 2019 to 2022 average is 8716 HGV per day: Average: 1210 heavy vehicles/day for the period 2019 to 2022.
- A2 Miladinovci – Hipodrom 2019 to 2022 average is 14 580 HGV per day: Average: 2057 heavy vehicles/day for the period 2019 to 2022.
- A4 Petrovac – Hipodrom 2019 to 2022 average is 16715 HGV per day: Average: 1473 heavy vehicles/day for the period 2019 to 2022.

**Safety**

According to the available data from the World Health Organization (WHO), in 2019, North Macedonia had a road traffic fatality rate of 60. per 1 mln population, and this rate is higher than the European average of 44 per 1 mln. The same data shows that in 2019, North Macedonia had 168 road traffic deaths. Of these, 106 were drivers, 23 were passengers, 20 were pedestrians, and 19 were motorcyclists.

Regarding age groups, the highest number of road traffic deaths in North Macedonia in 2019 occurred in the age group 25-64 years, with 90 deaths. The age group with the second highest road traffic deaths was 15-24 years, with 32 deaths. Furthermore, the WHO data reveals that most road traffic fatalities in North Macedonia are males. In 2019, 131 males died in road traffic accidents, compared to 37 females.

Overall, road safety remains a significant challenge in North Macedonia, and the Government and relevant stakeholders are continuing to implement measures to improve road safety and reduce the number of accidents and fatalities on the country's roads.

According to the data from the SSO of North Macedonia, the number of road traffic accidents, injuries, and fatalities in the country in the years 2019, 2020, and 2021 were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of accidents</th>
<th>Number of injured</th>
<th>Number of fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>6,346</td>
<td>9,033</td>
<td>235</td>
</tr>
<tr>
<td>2020</td>
<td>5,175</td>
<td>6,922</td>
<td>184</td>
</tr>
<tr>
<td>2021</td>
<td>5,261</td>
<td>6,939</td>
<td>160</td>
</tr>
</tbody>
</table>

*Table 6: number of road traffic accidents, injuries, and fatalities in the country in the years 2019, 2020, and 2021*

Comparative analysis of the road safety situation within the region based on the provided data:

<table>
<thead>
<tr>
<th>Regional Partner</th>
<th>Fatalities per million 2019</th>
<th>Fatalities per million 2020</th>
<th>Fatalities per million 2021</th>
<th>Fatalities per million 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>80</td>
<td>63</td>
<td>69</td>
<td>59</td>
</tr>
</tbody>
</table>

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\(^{45}\) Sources: European Bank for Reconstruction and Development (EBRD) "Western Balkans Investment Framework - Transport Infrastructure Projects” report from June 2018 and the "North Macedonia: Country Diagnostic” report from April 2020., Ministry of Transport and Communications of North Macedonia, such as the "Master Plan for Transport in North Macedonia 2018-2030” report from December 2018, "Assessment of the Environmental and Social Impacts for the Construction of Two Sections of the A1 Motorway and Two Sections of the A2 Motorway in North Macedonia," which was published by the EBRD in 2018.
<table>
<thead>
<tr>
<th>Regional Partner</th>
<th>Fatalities per million 2019</th>
<th>Fatalities per million 2020</th>
<th>Fatalities per million 2021</th>
<th>Fatalities per million 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosnia and Herzegovina</td>
<td>74</td>
<td>69</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>Kosovo</td>
<td>60</td>
<td>43</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Montenegro</td>
<td>76</td>
<td>77</td>
<td>88</td>
<td>118</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>63</td>
<td>60</td>
<td>56</td>
<td>65</td>
</tr>
<tr>
<td>Serbia</td>
<td>77</td>
<td>71</td>
<td>75</td>
<td>81</td>
</tr>
<tr>
<td>Western Balkans</td>
<td>73</td>
<td>66</td>
<td>70</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 7: Number of fatalities per million inhabitants for the period 2019-2022

The percentage changes in the table are based on the rate per million inhabitants.

<table>
<thead>
<tr>
<th>Regional Partner</th>
<th>Year 2019</th>
<th>Year 2020</th>
<th>Year 2021</th>
<th>Year 2022</th>
<th>% change 2021/2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>227</td>
<td>181</td>
<td>197</td>
<td>164</td>
<td>-17%</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>261</td>
<td>244</td>
<td>263</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kosovo</td>
<td>113</td>
<td>81</td>
<td>111</td>
<td>106</td>
<td>-5%</td>
</tr>
<tr>
<td>Montenegro</td>
<td>47</td>
<td>48</td>
<td>55</td>
<td>73</td>
<td>33%</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>132</td>
<td>125</td>
<td>116</td>
<td>120</td>
<td>3%</td>
</tr>
<tr>
<td>Serbia</td>
<td>534</td>
<td>492</td>
<td>521</td>
<td>553</td>
<td>6%</td>
</tr>
<tr>
<td>Western Balkans</td>
<td>1314</td>
<td>1171</td>
<td>1255</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Number of fatalities for 2019-2022 and change in percentage for 2021/2022

It should be noted that an annual programme of road construction and development, including motorway construction, is currently being carried out by PESR.

During the investment process, the needs and requirements of environmental protection, including social security, are taken into account to minimise the impact of the investment on environmental changes. To this end, several technical solutions are used, such as water treatment ponds, animal passes, fences, etc.

Based on the data, the following observations can be made regarding fatalities per million inhabitants; North Macedonia has been consistently below the regional average since 2019.

According to Eurostat data, the road transport network density in North Macedonia was lower than the EU average in 2019. The average traffic level in main road corridors does not present high congestion, except near the borders with Bulgaria and Greece. The motorisation rate in North Macedonia increased by 36% from 2010 to 2020, but this was the second-lowest increase among Western Balkan countries.

From 2016 to 2021, there were 22,659 accidents in North Macedonia, resulting in 826 deaths and 35,619 serious injuries (Makstat Database). Despite a decrease in fatalities since 2016, the rate of deaths per million population remains higher than the EU-27 average. The EU aims to halve the number of mortal victims registered in 2021 by 2030.

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46 Source: Transport Community Treaty
47 State Statistical Office of North Macedonia: MAKSTAT Database.  
Passenger transport in North Macedonia primarily relies on cars (Makstat Database), with a low percentage of passengers using rail transport compared to the EU. Conversely, the rate of bus passengers is more than twice as high as in the EU. Regarding freight transport, nearly 97% is done by road, despite a more balanced split between road and rail transport 30 years ago (Makstat Database).

North Macedonia is developing a comprehensive ITS strategy to align with technological advancements and promote sustainable and efficient mobility. Investments in the road sector have improved network conditions, but capacity issues are expected by 2030 in some sections.

The air pollution from transport is mainly concentrated in urban areas, where traffic congestion and low vehicle standards worsen the situation. Skopje, the capital city of North Macedonia, is one of the most polluted cities in Europe, with annual average levels of PM2.5 exceeding the WHO guideline by four times. Therefore, North Macedonia, in order to prevent excessive emissions of pollutants, must also properly manage the assets of the road infrastructure to prevent the occurrence of traffic congestion phenomena. It must also provide robust condition to reduce the vulnerability of road infrastructure to natural hazards resulting from global climate change.

In order to adapt the roads of North Macedonia to exposure for climate change related hazards the following measures are being considered:

• For increasing temperatures and heat waves, it is considered using more heat-resistant materials, such as modified asphalt or concrete, that can withstand higher temperatures and prevent cracking or rutting. Also planting trees and vegetation or installing solar panels along the roads, which can reduce the urban heat island effect and provide renewable energy as well.

• For changing precipitation patterns and droughts, road infrastructure needs to be adapted by improving the drainage and irrigation systems, such as installing permeable pavements, rain gardens, or bioswales, that can capture and store rainwater and reduce runoff and flooding.

• For more frequent and severe floods, landslides, and storms, should be adapted by increasing the elevation and reinforcement of bridges, culverts, and embankments, that can prevent or reduce the damage from water inundation and erosion. Roads can also be protected by installing barriers, such as dikes, levees, or gabions, that can divert or absorb the impact of water or debris flows.

North Macedonia must allocate sufficient resources for regular maintenance and rehabilitation, also, in rural areas where road condition is often subpar. The road vehicle fleet is old and unsustainable, requiring progressive fleet renewal. Border passing times for commercial vehicles at international border crossings need infrastructure and customs facilities improvements.

North Macedonia is working to harmonise its transport legislation with the EU law, reflecting its dedication to infrastructure improvement and alignment with European standards. The country has made progress in synchronising road transport legislation with EU laws by implementing the Road Transport Law. To comply with EU regulations, North Macedonia should implement passenger rights legislation in all modes of transport, to fully align the ITS Directive, and introduce relevant national laws. Adopting digital solutions and technological advancements in mobility and transport can enhance efficiency, improve road safety and contribute to the reduction of greenhouse gas (GHG) emissions.

Simultaneously, North Macedonia is grappling with specific challenges in enhancing road safety, implementing road policies, and aligning with the EU regulation requirements of the Transport Community Treaty (TCT). The state road infrastructure necessitates a comprehensive strategic plan for its development and maintenance over the coming decade, as stipulated by the Law on Public Roads. Additionally, technical assistance is required to align the national legislation with the Directive 2004/54/EC, which includes classifying tunnels according to the ADR convention. There is also a need for technical assistance in implementing EU legislative on tariffs, crisis measures, and hired vehicles. These challenges highlight a broader need for capacity building, expert support, and guidance for the relevant authorities in North Macedonia. Addressing these challenges will not only enhance road safety and infrastructure but also ensure alignment with the EU regulation requirements of the TCT, ultimately contributing to a more efficient, safer and sustainable road transport system in North Macedonia.
North Macedonia should continue participating in regional initiatives to improve traffic management, road safety, and environmental sustainability. Improving accessibility and quality of the national transport infrastructure network and transport services is a priority, as is ensuring the socio-economic and financial feasibility of transport development projects and initiatives.

The country is committed to upgrading infrastructure, as demonstrated by NTS 2018-2030 and the Second National Strategy 2015-2020. Following NTS 2018-2030, North Macedonia prioritises upgrading infrastructure, harmonising transport legislation with EU law, and reducing road accident victims. Measures include enhancing road surfaces, funding safety initiatives, and implementing ITS.

North Macedonia has made progress in road infrastructure and safety, as indicated by reports and action plans from the Transport Community. However, further efforts are needed in areas such as road maintenance and rehabilitation, road safety initiatives, and the full implementation of ITS.

**SWOT Analysis – Road Transport**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Availability of Single Project Pipeline based on MCA methodology,</td>
<td>1. Lower road transport network density than the EU average,</td>
</tr>
<tr>
<td>2. Alignment of national trunk roads with TEN-T Corridors and the</td>
<td>2. Higher rate of deaths per 1 million population from road accidents</td>
</tr>
<tr>
<td>Comprehensive/Core European Road network,</td>
<td>compared to the EU-27 average,</td>
</tr>
<tr>
<td>3. A well-established organisational and business model for the</td>
<td>3. Inadequacies of infrastructure projects designed for vulnerable road</td>
</tr>
<tr>
<td>management of road infrastructure based on the revenues from road</td>
<td>users including people with disabilities, pedestrians, cyclists (Vulnerable Road user’s),</td>
</tr>
<tr>
<td>tax, toll collection, fuel excise tax (30%) and other incomes</td>
<td>4. the observed increasing tendency in the number of deaths and injured</td>
</tr>
<tr>
<td>earmarked for road construction, reconstruction, rehabilitation,</td>
<td>persons in traffic accidents,</td>
</tr>
<tr>
<td>maintenance and protection of state roads, managed by a state-owned</td>
<td>5. Inadequate maintenance and rehabilitation of roads, particularly in</td>
</tr>
<tr>
<td>enterprise - PESR,</td>
<td>rural areas,</td>
</tr>
<tr>
<td>4. Road Asset Management System is implemented and used, including a</td>
<td>6. The alignment with sector related EU directives and the enactment of</td>
</tr>
<tr>
<td>geo-spatial inventory module and systems for the planning of road</td>
<td>EU legislation on road tunnel safety, infrastructure safety, tolling,</td>
</tr>
<tr>
<td>pavement rehabilitation measures (PMS) and implementation of (BMS)48</td>
<td>tariffs, crisis measures, and hired vehicles have not yet been fully</td>
</tr>
<tr>
<td>in an advance stage,</td>
<td>reflected in national regulations.</td>
</tr>
<tr>
<td>5. Commitment to upgrading infrastructure network through evidence-based</td>
<td>7. Old and unsustainable road vehicle fleet,</td>
</tr>
<tr>
<td>and data driven Road Asset Management System,</td>
<td>8. Limitations in availability of standard technical specifications for</td>
</tr>
<tr>
<td>6. Planning of activities based on 1-year and 5-year programmes for</td>
<td>construction work execution and acceptance within road authorities</td>
</tr>
<tr>
<td>road construction, reconstruction, rehabilitation, maintenance, and</td>
<td>may lead to quality inconsistencies, and risk of project delays or</td>
</tr>
<tr>
<td>protection of state roads,</td>
<td>cost overruns.</td>
</tr>
<tr>
<td>7. Existence of a legal mandate for the development and maintenance of</td>
<td>9. Underdeveloped infrastructure on roads to support the development of</td>
</tr>
<tr>
<td>state road infrastructure</td>
<td>low-carbon mobility, including charging infrastructure for electric</td>
</tr>
<tr>
<td>8. Progress in motorway construction of Road Corridor VIII, and upgrading</td>
<td>10. Insufficient capacity and capabilities in government and local authority</td>
</tr>
</tbody>
</table>

48 [https://webgis.roads.org.mk/webgis/#/map](https://webgis.roads.org.mk/webgis/#/map)
sections on Road Corridor X to motorway standards,
9. Adoption of comprehensive ITS strategy for sustainable and efficient mobility,
10. Progress in alignment of EU directives for Road transport sector into a national legislation,
11. Functional Entity (State Transport Inspectorate) for the Control of road construction works traffic,
12. Established National Road Safety Council,
13. Current regime: overloaded heavy vehicles, control of the toll payment of road users, the road transport of goods and passengers,
14. Established Single project pipeline for Road infrastructure,
15. Efforts to improve Road transport efficiency,
16. Established electronic toll collection system on Road Corridor X and Motorway Miladinovci – Shtip and under implementation on Road Corridor VIII,
17. Implementation of instalment of certain number of weighs in motion units, in progress.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Construction of new and modernisation of existing road sections on the Core and comprehensive network, providing quality and safe TEN-T connections with neighbouring EU Member States and the wider region in the Western Balkans, the implementation of a harmonised model for road infrastructure safety management in accordance with the spirit of Directive 96/2008, including the setting up of road safety risk assessment procedures, safety audits and inspections, could contribute to a fall in the number and seriousness of road accidents, Support multimodality and sustainable transport systems through stronger integration of various transport modes and promoting modal shift for road users, Advancement of sector planning and development through preparation of sector administrations administering the road transport sector likewise road safety auditors or ITS experts, Part of the equipment to carry out regular inspections and tests of the quality and wear of road infrastructure components and materials is outdated, The existence of bottlenecks which cause congestion and increase travel time and hamper transport and logistical operations, Lack of supporting infrastructure to facilitate other travel needs such as parking and rest areas, etc., Deficiencies in environmental protection infrastructure such as fauna, flora, soil, air (oil separators, proper drainage systems, fences, etc.), Insufficient measures to ensure that the road infrastructure is resistant to natural phenomena associated with climate change, e.g., subsidence as a result of heavy rainfall, indicating a lack of climate vulnerability and risk assessment followed by adaptation measures, Insufficient terrain investigations during the project preparation stage (geotechnical, etc.) Lack of qualified supervising engineers, especially in area of Quality control and Quality Assurance, not sufficient data on floods and erosion areas, and maintenance issue.</td>
<td></td>
</tr>
<tr>
<td>1. Level of road safety remains a concern, Increasing motorization rate and demand for road transportation may exacerbate capacity issues and place additional strain on the road network, Lack of timely and effective implementation of proposed projects may hinder progress in infrastructure improvement and alignment with European standards, The compromised quality of constructed infrastructure, a sub-optimal maintenance model and a compromised approach to selecting and prioritising treatments can lead to a too rapid loss of service levels and deterioration of the road infrastructure, Emerging overloaded transport causing premature deterioration of road surfaces, Insufficient resources allocated for regular maintenance and rehabilitation of roads,</td>
<td></td>
</tr>
</tbody>
</table>
and project documentation and capacity building,
5. Implementation of measures for improvement of road safety on Corridors X, Xd, and VIII,
6. Participation in regional initiatives to enhance traffic management, road safety, and environmental sustainability,
7. Adoption of digital solutions and technological advancements in mobility and transport to increase efficiency and contribute to road safety.

7. Challenges in implementing passenger rights legislation in all modes of transport, fully transposing the ITS Directive, and introducing relevant national laws,
8. Economic constraints and competing priorities that may impact the allocation of funds for infrastructure upgrades, maintenance, and modernisation,
9. Possible lack of interoperability between ITS systems at the interface between inter-urban roads and those operating or being implemented in the cities/municipalities,
10. Low utilisation of the potential of deployed ITS.

Summary of SWOT analysis for the transport sector

Strengths

- Strategic location as a gateway between Europe and Asia.
- A relatively well-developed road network connecting major cities and neighbouring countries.
- The main road networks are in acceptable condition, with existing high-speed segments.
- Developed an education system related to transport and civil engineering qualifications.
- Low labour costs, which can make transport services more affordable.
- Increasing trend of foreign direct investment in the country, which may create opportunities for transport sector development.
- Establish a national single strategic project pipeline based on the Multi Criteria Analysis (MCA) methodology for its selection.
- Established national outcomes and Key Performance Indicators (KPIs).

Weaknesses

- Inadequate maintenance of transport infrastructure, particularly roads and railways, can result in safety hazards and inefficiencies.
- Unsatisfied level of road safety.
- Poor condition of the railway infrastructure negatively influences the speed and comfort of travel and the attractiveness of goods transport.
- Insufficient regulatory framework and institutional capacity to ensure compliance with EU transport standards and regulations.
- Limited connectivity between different transportation modes can lead to logistical challenges.
- Cross-border delays.
- Little quality and array of services in road transport operations.
- High levels of air pollution and greenhouse gas emissions from the transport sector can negatively impact public health and the environment.

Opportunities

- Increasing demand for transport services due to economic growth and expanding trade networks.
- Potential to improve transport infrastructure through EU-funded projects and other international partnerships.
- Growing demand for sustainable transport solutions, such as electric vehicles and public transport systems, can create new business opportunities.
- Potential to integrate the transport sector with other sectors, such as tourism and logistics, to promote economic development.
• Coordinated IFI policy for transport project alignment.
• Access to the EU pre-accession instrument for developing transport infrastructure and capacity building.

Threats
• Competition from neighbouring countries with more advanced transport infrastructure and services.
• Dependence on fossil fuels for transport may become increasingly costly and environmentally unsustainable in the long run.
• Political instability and economic uncertainty can affect foreign investment and economic growth in the country.
• Rapidly changing technological developments in the transport sector may require significant investments in new equipment and infrastructure.
• Transport infrastructure may be increasingly vulnerable to climate change over time.
• Logistics and freight companies prefer alternative transit routes.
• Strict rules and procedures for the implementation of EU-funded programmes.

3. Overall Objective and Specific Objectives of the Operational Programme

The Overall Objective (Impact)
To enhance regional economic development and social cohesion through a modern, sustainable and well-integrated transport infrastructure in North Macedonia.

The Specific Objective (Outcome) in the Area of Support 1 - Rail Transport is
To strengthen railway infrastructure capacity, safety, efficiency, sustainability and climate resilience by EU technical standards.

The Specific Objective (Outcome) in the Area of Support 2 - Road Transport is
To improve safety, efficiency, climate resilience, and sustainable connectivity of road transport infrastructure on sections of TEN-T Corridors X, Xd, and VIII.

The Specific Objective (Outcome) in the Area of Support 3 - Other Support is
To increase the readiness of North Macedonia for EU accession negotiations under Chapter 22.

3.1. Coherence with the IPA III Programming Framework and with the specific policy instruments of the enlargement process

The OP on transport aligns with Chapter 14 and Chapter 21 of the EU acquis, and the IPA III Programming Framework, specifically targeting Thematic Priority 2 on transport, digital economy, and energy within the Green Agenda and Sustainable Connectivity Window 3. The OP focuses on upgrading and constructing transport infrastructure to meet EU standards, which aligns with the requirement of IPA III to pair investments with regulatory reforms for sustainable returns.

The OP effectively addresses the key challenges and recommendations outlined in the EC 2023 Report on North Macedonia, specifically those detailed in Chapter 14: Transport Policy and Chapter 21: Trans-European Networks. The program targets urgent needs such as administrative and operational capacity building, sectoral reforms, market liberalization, and development of the TEN-T network and the Transport Community Treaty action plans. It is directly aligned with the Report's specific recommendations to strengthen the capacity of inspection bodies, develop enforcement capacity, implement connectivity reform measures, open up the rail transport market, harmonize the legal framework with the Trans-European Network Regulation, and mobilize sufficient resources to implement the Transport Community Treaty. By focusing on these critical areas of concern, the OP serves as a proactive and targeted response to the identified needs, ultimately aiming to promote significant improvements in North Macedonia's transport sector.
Furthermore, the OP aligns with the conclusions and recommendations of the Stabilisation and Association Sub-Committee on Transport, Environment, Energy, and Regional Development. It reflects the committee’s emphasis on enhancing operational and administrative capacity across transport modes, improving road safety, and promoting education and awareness.

The OP also supports the ERP 2023-2025 objectives, contributing to human capital growth, the green transition, and increased competitiveness of national companies. It aligns with the Economic Investment Plan (EIP) goals for the Western Balkans, stimulating economic growth and supporting EU integration.

In line with the Green Agenda for the Western Balkans, the OP promotes sustainable and efficient transport infrastructure, facilitating the transition towards a greener, low-carbon transport system in North Macedonia. It also contributes to the Five-Year Rolling Work Plan for the Indicative TEN-T Extension in the Western Balkans, enhancing connectivity within the region and with the EU.

The OP aligns with the Action Plans of the Transport Community Permanent Secretariat, supporting connectivity, safety, and efficiency in the Western Balkans' transport systems. It contributes to the expansion of the TEN-T network to the Western Balkans and aligns with the TEN-T Regulation, Core, and Comprehensive Network.

Furthermore, the OP aligns with the Sustainable and Smart Mobility Strategy, promoting safety, efficiency, sustainability, and readiness for investment and implementation. This EU strategy aims to create a sustainable, intelligent, resilient transport system. The OP’s emphasis on safety, efficiency, sustainability, and readiness for investment and implementation aligns with the objectives of this strategy, contributing to the development of a smart and sustainable mobility system in North Macedonia.

Additionally, the OP incorporates a comprehensive approach to environmental objectives, disaster risk reduction, climate mitigation, and adaptation. It includes measures to reduce greenhouse gas emissions, enhance climate resilience of roads and rail, and implement biodiversity-positive measures. Specifically, the OP aims to reduce the environmental impact of transport systems, contributing to Sustainable Development Goal 13 (SDG on Climate Action). It also includes a condition on biodiversity-positive measures, although further information and elaboration on this aspect will be provided in the implementation phase.

The OP significantly contributes to the United Nations' SDGs, with a central focus on SDG 9: Industry, Innovation, and Infrastructure. Enhancing regional economic development and social cohesion through a modern, sustainable, well-integrated transport infrastructure, the OP fosters resilient infrastructure, promotes inclusive and sustainable industrialisation, and facilitates innovation. Additionally, the OP contributes to SDG 11 (Sustainable Cities and Communities) by providing safe, efficient, and sustainable transport systems. It also supports SDG 3 (Good Health and Well-being) by focusing on improving safety and efficiency and SDG 13 (Climate Action) by aiming to reduce the environmental impact of transport systems.

A complementary aspect of the OP is the strengthening of the capacity and capabilities of responsible management, including, among other things, the transfer of knowledge and experience and good practises of European Union Member States in areas such as adaptation of transport infrastructure to climate change, disaster risk reduction measures, management of transport infrastructure safety, etc.

4. Operational Features of the Programme

4.1. Interaction of the programme with IPA III annual action plans or measures and

49 SWD(2020) 331 final
interventions from other donors/International Financial Institutions

The OP is strategically designed to leverage and enhance the progress made by various ongoing and planned initiatives. It builds upon their achievements and addresses complementary aspects to ensure a cohesive approach. This alignment with initiatives such as the IPA annual and multiannual action programmes, the Western Balkans Investment Framework (WBIF), and projects financed by EU Member States, other donors, or IFIs maximises synergies and ensures efficient utilisation of resources. By capitalising on these existing initiatives, the OP aims to achieve greater effectiveness and optimise the outcomes of its actions. Currently, the IPA II Sector Operational Programme for Transport 2014-2020 from the previous financial perspective is under implementation.

WBIF Projects\(^5\) relevant for the sector:

- **Investment: Orient/East-Med Corridor: Construction of Rail Corridor VIII in North Macedonia, Kumanovo - Kriva Palanka Sections**
  Status: Implementation
  Completion (est): 30 Dec 2025

- **Investment: Orient/East-Med Corridor: North Macedonia – Kosovo Road Interconnection, Blace – Skopje (Stenkovec Interchange) Motorway Section**
  Status: Implementation
  Completion (est): 31 Dec 2025

- **Investment: Orient/East-Med Corridor: North Macedonia – Serbia Rail Interconnection, Tabanovce Joint Border Station**
  Status: Tender Preparation
  Completion (est/tentive): 30 Sep 2024

- **Investment: Orient/East-Med Corridor (Rail CX): Modernisation of Tabanovce - Gevgelija Railway Line**
  Status: Preparation
  Completion (est): n/a

- **Investment: Comprehensive Network: Modernisation of Skopje - Kichevo Railway Line on Corridor VIII**
  Status: Preparation
  Completion (est): n/a

- **Investment: Orient/East-Med Corridor: North Macedonia – Bulgaria CVIII Road Interconnection, Kriva Palanka – Deve Bair Section**
  Status: Implementation
  Completion (est): 31 May 2023

- **Investment: Orient/East-Med Corridor: North Macedonia – Albania CVIII Road Interconnection, Bukojchani – Kichevo Subsection**
  Status: Preparation
  Completion (est): 31 Dec 2026

- **Investment: Orient/East-Med Corridor: North Macedonia – Bulgaria CVIII Rail Interconnection, Kriva Palanka – Border with Bulgaria Section**
  Status: Preparation
  Completion (est): 14 Dec 2025

- **Regional (Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, Serbia)**
  Update of the Regional Transport Study (REBIS)
  Investment: Regional Transport Study (REBIS)

\(^5\) [https://wbif.eu/wbif-projects](https://wbif.eu/wbif-projects)
Status: Completed

- Regional Connectivity Networks Gap Analysis
  Investment: Regional Connectivity Networks Gap Analysis
  Status: Completed
- Submitted for GAF approval:
  Support for deployment of the ITS on highway A1 (Corridor 10)
  Construction of the Express Road A2 Kriva Palanka-Stracin

**World Bank Projects** relevant for the sector:

- Local Roads Connectivity Project (2019-2025)
- Modernisation of the road network infrastructure in North Macedonia (2014-2023)
- Western Balkan Trade and Transport Facilitation Project (2019-2025)

**EBRD Projects** relevant for the sector:

- Modernisation of the road network infrastructure in North Macedonia (2014-2023)
- Construction of motorways linking the capital of Skopje with the border of Kosovo

This OP considers experiences gained through the past projects and programmes and lessons learnt from their successes and challenges. It also benefits from WBIF projects focusing on cross-border connectivity, enhancing regional economic development and integration. Alignment with WB and EBRD projects ensures adherence to EU standards and best practices, promoting economic growth and sustainability. The OP avoids overlaps with existing or planned projects to optimise benefits and reinforce outcomes. By aligning with the strategic objectives of the IPA III 2021-2027, it promotes a coordinated approach to transport infrastructure development. It integrates efforts across various sectors, including energy, environment, healthcare, and employment.

A robust coordination mechanism through SWG Transport ensures seamless interplay between initiatives, facilitating dialogue and information exchange among responsible institutions. The OP also recognises the importance of combining grants with loans for significant infrastructure investments, collaborating with bilateral/multilateral institutions and IFIs like the WB and EBRD. This collaborative financing model integrates investments with ongoing programmes and reforms.

Overall, the OP leverages past experiences, aligns with strategic objectives, and promotes coordination and collaboration to optimise resources and achieve sustainable transport infrastructure development in North Macedonia.

**4.2. Description of the Programme**

**4.2.1. Intervention Logic**

The **Overall Objective/(Impact)** of the Operational Programme on transport is to enhance regional economic development and social cohesion through a modern, sustainable and well-integrated transport infrastructure in North Macedonia.
Area of Support 1: Rail Transport
The **Specific Objective (Outcome) 1** is:

*To strengthen railway infrastructure capacity, safety, efficiency, sustainability and climate resilience by EU technical standards.*

The **Outputs** to be delivered contributing to the corresponding Specific Objective (Outcome) 1 are:

1. Railway network improved on specific sections of Corridor X, incorporating climate resilience measures.
2. Strengthened capacities within national railway authorities in effective implementation of rail policies and alignment with EU regulations.

Area of Support 2: Road Transport
The **Specific Objective (Outcome) 2** is:

*To improve safety, efficiency, climate resilience, and sustainable connectivity of road transport infrastructure on sections of TEN-T Corridors X, Xd, and VIII.*

The **Outputs** to be delivered contributing to the corresponding Specific Objective (Outcome) 2 are:

1. Road network improved in “triangle” area connecting TEN-T corridor X and VIII.
2. Selected road infrastructure projects of national and European strategic importance are mature and ready for investment by EU standards.
3. Improved road safety, maintenance, and road asset management policies in line with the EU regulations.

Area of Support 3: Other support
The **Specific Objective (Outcome) 3** is:

*To increase the readiness of North Macedonia for EU accession negotiations under Chapter 22.*

The **Outputs** to be delivered contributing to the corresponding Specific Objective (Outcome) 3 is:
3.1. Improved management, implementation and control of the EU financial assistance, including through development of human capital, in accordance with EU requirements and best practices.

4.2.2. Detailed Description of Each Area of Support

**Area of Support 1 – Rail Transport**

**Rationale:** From a strategic perspective, focusing on rail transport infrastructure presents an excellent opportunity to enhance North Macedonia’s socio-economic potential, environmental sustainability, and climate resilience. The proposed activities within this support area are carefully designed to address existing challenges and untapped opportunities within the country’s railway network while also contributing to environmental objectives, climate mitigation, and adaptation. The objective is strengthening railway infrastructure capacity, safety, efficiency, sustainability and climate resilience to meet EU technical standards (Outcome 1).

The recent government-approved amendments to the Law on the railway system, currently under Assembly consideration, are a crucial step forward. They mandate a five-year National Program outlining the activities, dynamics, and financial resources needed for the maintenance and development of new and existing railway infrastructure. The Public Enterprise for Railway Infrastructure of North Macedonia as railway infrastructure Manager (IM) needs to develop a maintenance plan, concluding a contract with the Government for fund distribution, including credits, loans, and other resources. Additionally, the amended Law on Interoperability in the Railway System requires the Minister of Transport and Communications to adopt interoperability technical specifications, proposed by the Directorate for Safety in the Railway System. With the upcoming market opening and entry of a second operator, reviewing and harmonizing existing track access charges legislation with new EU regulations is essential for a smooth transition and effective operation aligned with international standards.

Building on the findings of the SWOT analysis, it became evident that the rehabilitation of bridges on Railway Corridor X is an urgent matter that requires attention. This initiative tackles critical weaknesses, such as outdated infrastructure and safety concerns related to ageing steel bridges prone to corrosion and bridges in unstable locations vulnerable to undermining and climate-induced hazards. Upgrading anti-corrosion protection and reconstructing critical bridges will modernise the infrastructure, alleviate speed restrictions, enhance safety and improve climate resilience. This strategic investment ensures compliance with international standards and mitigates potential threats, including traffic interruptions and hazards posed by deteriorated bridges and contributes to climate adaptation objectives. The project takes advantage of the country’s strengths, such as extensive network coverage, strategic corridor connections, and the government’s commitment to infrastructure rehabilitation and environmental sustainability. Additionally, it capitalises on opportunities for infrastructure upgrades, regulatory alignment, improved safety measures and enhanced climate resilience.

These initiatives will enhance connectivity, stimulate economic growth, foster regional integration and contribute to environmental sustainability and climate resilience. By prioritising environmentally friendly rail operations, they align with North Macedonia’s sustainability goals and contribute to the global effort of reducing CO2 emissions, enhancing climate resilience, and promoting biodiversity as identified in the SWOT analysis.

**Applicable EU Legislation**
- Trans-European Transport Network (TEN-T), as established by Regulation (EU) 1315/2013
- Regulation 2016/758 amending Regulation (EU) No 1315/2013

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51 Due to the large number of various regulations, the list above provides selected examples of the most significant Acquis only.
• Regulation (EU) No 1300/2014 of 18 November 2014 on the technical specifications for interoperability relating to the accessibility of the Union’s rail system for persons with disabilities and persons with reduced mobility (TSI)
• Regulation 1371/2007 for the rights of passengers in rail transport
• Regulation (EU) 2021/782 on the rail passengers rights and obligations
• Regulation (EU) 2019/771 on the interoperability of the European rail system
• Directive (EU) 2016/797 on the interoperability of the rail system within the European Union (Recast of Directive 2008/57/EC)
• Regulation (EU) 2016/2338 amending Regulation (EU) 1370/2007, which deals with the award of public service contracts for domestic passenger transport services by rail (‘PSO Regulation’)
• Directive 2016/2370/EU amending Directive 2012/34/EU, which deals with the opening of the market of domestic passenger transport services by rail and the governance of the railway infrastructure (‘Governance Directive’)
• Regulation (EU) 2016/2337 repealing Regulation (EEC) 1192/69 on the normalisation of the accounts of railway undertakings
• Regulation (EU) 2016/2376 on the establishment of a European Rail Traffic Management System (ERTMS)

Outcomes (Specific Objectives)
Strengthened railway transport infrastructure capacity, safety, efficiency, sustainability and climate resilience by EU technical standards.

Typologies of Outputs
To achieve the stated outcome within this area of support, two outputs will be accomplished:

**Output 1.1:** Railway network improved on specific sections of Corridor X, incorporating climate resilience measures.

**Output 1.2:** Strengthened capacities within national railway authorities in effective implementation of rail policies and alignment with EU regulations.

Impact, Outcome, and Output Indicators

<table>
<thead>
<tr>
<th>Type of indicator</th>
<th>Indicator</th>
<th>Baseline</th>
<th>Target</th>
<th>Source of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GHG emissions from transport; (Kt kiloton of CO2 equivalent emissions)</td>
<td>1.714 (2015)</td>
<td>≤1,400 (2030)53</td>
<td>Biennial Update Report (BUR) Ministry of Environment and Physical Planning</td>
</tr>
</tbody>
</table>

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52 Perception of the quality of trade and transport-related infrastructure, e.g. Ports, railroads, roads, information technology
53 According to the monitoring indicators defined in the NTS 2018-2030, the target for 2030 is an 18.6% reduction relative to the value in the 'Do Nothing' scenario.
<table>
<thead>
<tr>
<th>Outcome 1</th>
<th>Rail accidents per year</th>
<th>97 (2018)</th>
<th>≤ 23 (2030)</th>
<th>Makstat&lt;sup&gt;54&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail transport of goods by net tonne-k</td>
<td>349,912 (2019)</td>
<td>≥ 624,870 (2030)</td>
<td>Eurostat&lt;sup&gt;55&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output 1.1</th>
<th>Number of bridges reconstructed/upgraded</th>
<th>0 (2023)</th>
<th>≥ 15 (2030)</th>
<th>ZRSMI Reports</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Output 1.2</th>
<th>Degree of preparedness in rail transport (Chapter 14), measured by advancements made within a specific reporting period</th>
<th>Moderately prepared (2022)</th>
<th>Fully prepared (2030)</th>
<th>Commission Reports</th>
</tr>
</thead>
</table>

**Type of Activities**

**Output 1.1.** Railway network improved on specific sections of Corridor X, incorporating climate resilience measures.

[1] Reconstruction/ rehabilitation of the railway bridges on Railway Corridor X – major project

**Description of Eligible Activities, including Major Projects**

Activities focus on the reconstruction and upgrading of railway bridges in Corridor X, followed by testing and design preparation of the related structures. It involves consultancy services for design and supervision, focusing on comprehensive project documentation for critical bridges. This includes reviewing existing technical data, monitoring bridge conditions, conducting load tests, and exploring potential design improvements.

Key responsibilities encompass updating traffic studies, conducting feasibility analysis, and assessing environmental impacts. The project also involves bridge condition analysis, reconstruction design for damaged bridge parts, anti-corrosion protection for steel bridges and strengthening climate resilience. The aim is to reconstruct/upgrade the most critical bridges or fully construct the most critical bridges.

The project will operate under the terms of FIDIC<sup>56</sup> contracts, aiming to minimise potential delays. The land acquisition may be necessary based on the chosen scenario from the feasibility study.

A technical audit will be integral to the project, ensuring correct design, construction, and completion. This impartial review will prevent project delays, cost overruns, and non-compliance with EU regulations, thus ensuring all technical, environmental and quality standards are met.

**Eligible Activities**

- Review the existing documentation for bridge structures, and check the current system of bridge monitoring,
- Testing bridges under trial load,


<sup>55</sup>Source: https://ec.europa.eu/eurostat/data/database?node_code=ttr00006 (Select// Tables by themes /Transport/Railway transport /Goods transport by rail. Select/ Million tons kilometres)

<sup>56</sup>FIDIC stands for "Fédération Internationale des Ingénieurs-Conseils" or “International Federation of Consulting Engineers”. It’s an international organisation that develops standard contracts and guidelines for the consulting engineering and construction industry.
• Preparation of comprehensive project documentation at the level of detailed design for railway bridges,
• Revision of the detailed design and potential improvements during the construction phase,
• Preparation of the tender dossier according to PRAG,
• Support with technical expertise during the tender evaluation process,
• Reconstruction, rehabilitation, or full construction of the most critical bridges,
• Designer consultancy services,
• Supervise the construction works to ensure compliance with the technical specifications and quality standards.

Delivery Methods
• Service contract for technical audit, project preparation including detail design, design review and supervision for the reconstruction/rehabilitation of the railway bridges on Railway Corridor X, including support in preparing the works tender dossier and tendering process.
• Works contract for the reconstruction, rehabilitation, or full construction of the most critical bridges

Selection criteria
• Selected in the Single Project Pipeline
• Compliance with EU and national policies
• Maturity of the project
• Impact of the project
• Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions.

End Recipients and Target Groups
The end recipient of the assistance is the Public Enterprise for Infrastructure Railways of Republic of North Macedonia – Skopje (ZRSMI).

Target groups of the assistance include:
• Railway Users include passengers and businesses that rely on the railway to transport goods. The railway network’s improved quality, efficiency, safety and climate resilience will benefit them,
• Railway Operators and Maintenance Staff: The people who operate and maintain the railway will benefit from upgraded and modernised infrastructure that aligns with EU technical standards,
• Local Communities: Communities around the railway line will potentially benefit from the improved transport infrastructure, which could influence local economic development, connectivity and climate resilience.

Conditions
• All project documents, including the Feasibility Study, Cost-Benefit Analysis and Detail Design, are developed in accordance with EU standards. This encompasses all aspects of the project, from initial assessments, climate risk assessment, environmental and social impact evaluations, to detailed technical specifications and tender documentation.
• For projects with an estimated budget of more than EUR 15 million, Major Applications are prepared in line with the respective IPA Financing Agreement, as required by the Ministry of Transport and Communications and the Ministry of the Environment and Spatial Planning.
• Climate risk assessment is incorporated into the integrated into the project preparatory phase, scope of work for contractors and utilised to identify potential climate risks and integrate climate adaptation measures into the technical design specifications.
• The project integrates biodiversity interests, by conducting comprehensive environmental and biodiversity assessments, consulting with environmental specialists during the planning and
design phases, and implementing measures to restore and protect natural habitats affected during the reconstruction/rehabilitation.

- Tender dossiers stipulate environmental practices such as using recycled materials, the contractors must reduce waste, and minimisation of carbon emissions to reduce the project’s carbon footprint.
- The “green procurement” elements should be considered for advancing EU Green Deal-related policies.

**Output 1.2:** Strengthened capacities within national railway authorities in effective implementation of rail policies and alignment with EU regulations.

[2] Harmonisation with EU Railway Legislation has enhancement of rail safety measures and management capacities within National Railway Authorities

**Description of Eligible Activities**

The Activity is aimed to upgrade national railway transport legislation and to strengthen national institutional capacities, inter alia, through the approximation of regulations of North Macedonia to the relevant Union acquis to meet the commitments undertaken by North Macedonia under the EU-North Macedonia Stabilisation and Association Agreement.

Activity will focus on enhancement of rail safety, policy implementation, and alignment with EU regulations (in particular EU 4th Railway Package). This involves a comprehensive approach that includes the preparation of a full set of documentations for the development and maintenance of the rail infrastructure, alignment of technical specifications for interoperability (TSIs) into national legislation, and a review of track access charges by the infrastructure manager. Specifically, it requires the development of a five-year National Program and multi-annual maintenance plan with the necessary budget allocation, a Multi-Annual Contract between the Infrastructure Manager and the Ministry of Transport and Communications, and the adoption of interoperability technical specifications proposed by the Directorate for Safety in the Railway System. Furthermore, with the impending opening of the railway market and the entry of a second operator, there will be a need to review and, if necessary, harmonize the existing legislation on track access charges with new EU regulations. Collectively, these activities aim to strengthen the capacity of the railway infrastructure in North Macedonia by ensuring safety, efficiency, and alignment with EU regulations and standards, which is crucial for stimulating economic growth, fostering regional integration, enhancing environmental sustainability and climate resilience, and ultimately contributing to the global effort of reducing CO2 emissions and promoting biodiversity.

Moreover, it is necessary to ensure the strengthening of the capacities of employees of the management of rail institutions, to provide them with expert advice, training programs, including first-hand transfer of experience from their counterparts from EU member states including climate change risk assessments and relevant adaptation measures.

**Eligible Activities**

- Technical assistance and institutional capacity building: this includes providing expert support, guidance, and training programs for relevant authorities, study visits and peer learning, enabling them to effectively implement and enforce rail safety regulations.
- Alignment with EU regulatory requirements, policy and legislative support: assistance in the development, adoption and implementation of national legislation and regulations.
- Provision of technical equipment, where justified.

**Delivery Methods**

- Grant contract (Twinning)
- Service and supply contracts.

**Selection Criteria**
Activities and support align with the EU acquis and are reflected in the TCT requirements and other relevant policy instruments, which is essential for enhancing rail safety, policy implementation, and alignment with EU regulation requirements.

Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions.

**End Recipients and Target Groups**

The end recipient of the assistance are relevant units of MoTC together with Public Enterprise for Railway Infrastructure of the Republic of North Macedonia – Skopje (ZRSMI).

The target groups will include all stakeholders involved in or affected by the transport sector of North Macedonia.

**Conditions**

- The program’s activities and support are contingent on North Macedonia’s continued commitment to EU integration and the implementation of the required reforms and legislation.
- Institutions and organizations receiving support must demonstrate a commitment to ensuring the long-term sustainability of the reforms undertaken.
- Co-financing from the national budget available particularly for procurement of equipment

**Area of Support 2 – Road Transport Infrastructure**

**Rationale:** The proposed interventions and projects in the road transport infrastructure of the OP are the result of a comprehensive analysis of social, economic, and SWOT factors unique to the region. These interventions are designed to tackle identified needs and challenges, improve road network infrastructure, enhance road safety, and promote sustainable mobility in North Macedonia.

The SWOT analysis provides valuable insights into the strengths, weaknesses, opportunities, and threats of the road transport sector in North Macedonia. Based on this analysis, the following specific interventions have been proposed:

1. **Rehabilitation of State Road A1, A2, and A4:**
   - These roads have been selected for rehabilitation due to their strategic importance and high traffic volumes, particularly in the Skopje Metropolitan area.
   - The rehabilitation will focus on improving these corridors’ safety, efficiency, and connectivity, addressing the deteriorating condition of the road surfaces and infrastructure.
   - By upgrading these roads, the interventions aim to enhance regional connectivity, facilitate economic growth, and improve travel conditions for motorists.

2. **Construction of State Road A3, Section Bitola – Border Crossing Medzitlija, from KM.0+000.00 to KM. 22+620.00 – New Route at the Level of Expressway (as reserve project):**
   - This new expressway will improve the road’s capacity, reduce travel times, and enhance safety along this vital transportation route.
   - The new expressway will improve connectivity between North Macedonia and Greece, promoting trade and tourism.

3. **Comprehensive Technical Documentation, assistance in obtaining necessary permits and tender dossier preparations.** The intervention focuses on preparing and developing comprehensive technical documentation and obtaining the required licenses for road infrastructure projects.
   - Preparatory studies, technical documentation and tender documentation for Expressway A2 and the construction/upgrading of the Katlanovo-Veles right carriageway on Corridor X, Stracin-Romanovce and Design for Rehabilitation of state road A1, section Gevgelija – Greece border (Bogorodica) (right carriageway)
   - The aim is to ensure compliance with EU standards and regulations, align North Macedonia’s road infrastructure with international best practices, and achieve readiness for implementation.
4. Strengthening the capacities of national authorities in managing construction, road safety, maintenance and road assets, as well as building awareness of the adaptation of road infrastructure to climate change. Together with implementation of EU standards and policies: This includes preparing a ten-year strategic road asset management plan for state road development and maintenance and obtaining the necessary technical assistance for transposing EU standards into national regulations. These actions are crucial for aligning North Macedonia’s road infrastructure with international best practices and EU regulations, ultimately ensuring a safer, more efficient road network.

In the background of each intervention is carefulness for environmental protection:

- The interventions prioritise environmental protection and sustainability throughout the planning and implementation process.
- The interventions aim to improve safety and efficiency by rehabilitating and upgrading roads, indirectly reducing vehicle emissions and promoting fuel efficiency.
- Proposed interventions shall consider the needs of people with reduced mobility, such as older people, child stroller users and people with disabilities such as vision, deafness and wheelchair users.
- Using comprehensive project documentation and adherence to EU standards ensures that environmental and energy efficiency considerations (also green-procurement elements) will be integrated into the road infrastructure development, minimising the ecological impact of transportation activities.

By implementing these interventions, proposed within this area of support aims, the country can achieve the following:

- Enhancement road safety, reducing accident rates and improving the overall safety performance of the road network.
- Improved efficiency and connectivity, facilitating smoother traffic flow and reducing congestion on key corridors.
- Strengthened regional economic development by enhancing transportation links, promoting trade, and attracting investments.
- Aligning with EU standards and regulations ensures compatibility and harmonisation with European road networks.

Applicable EU Legislation

- Regulation 1315/2013 on guidelines for the development of the TEN-T network
- Regulation 2016/758 amending Regulation (EU) No 1315/2013
- Directive 2010/40/EU on the framework for the deployment of intelligent transport systems in the field of road transport and for interfaces with other modes of transportation – This directive sets out requirements for the deployment of intelligent transport systems, including those related to road transport, to improve the efficiency, safety, and environmental performance of transport.

Outcomes (Specific Objectives)
Improved safety, efficiency, climate resilience, and sustainable connectivity of road transport infrastructure on sections of TEN-T corridors X, Xd, and VIII.

**Typologies of Outputs**

**Output 2.1**: Road network improved in “triangle” area connecting TEN T corridor X and VIII.

**Output 2.2**: Selected roads transport infrastructure projects of national strategic importance mature and ready for investment by the EU standards.

**Output 2.3**: Improved road safety, maintenance, and road asset management policies in line with the EU regulations.

**Impact, Outcome, and Output Indicators**

<table>
<thead>
<tr>
<th>Type of indicators</th>
<th>Indicator</th>
<th>Baseline</th>
<th>Target</th>
<th>Source of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GHG emissions from transport; (Kt kiloton of CO2 equivalent emissions)</td>
<td>1,714 (2015)</td>
<td>≤1,400 (2030)</td>
<td>Biennial Update Report (BUR) Ministry of Environment and Physical Planning</td>
</tr>
<tr>
<td>Outcome 2</td>
<td>Road fatalities(^{57}) (number of road fatalities over population, 1,000,000)(^{58})</td>
<td>74.69 (2018)</td>
<td>≤38 (2030)</td>
<td>Makstat(^{59})</td>
</tr>
<tr>
<td>Output 2.1</td>
<td>Length of state road carriageways rehabilitated (in km)</td>
<td>0 (2023)</td>
<td>47.6 km (2028)</td>
<td>Project implementation reports</td>
</tr>
<tr>
<td></td>
<td>Length of state road A3 section Bitola-border crossing point with Greece upgraded (in km) (Reserve list)</td>
<td>0 (2023)</td>
<td>22.6 (2029)</td>
<td></td>
</tr>
</tbody>
</table>

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\(^{57}\) EC indicator calculated as ratio N of fatalities happened during the year and divided to the absolute number of population (millions) at the end of respected year = N fatalities/ millions of habitants

\(^{58}\) According to the monitoring indicators defined in the NTS 2018-2030, the target for 2030 is a 50% reduction relative to the baseline value.

\(^{59}\) Source of numerator:


Source of the denominator:

<table>
<thead>
<tr>
<th>Output 2.2</th>
<th>Number of project documentation packages completed(^6) (Including road safety and green procurement elements)</th>
<th>0 (2023)</th>
<th>3 (2028)</th>
<th>Project implementation reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output 2.3</td>
<td>Degree of preparedness in road transport (Chapter 14), measured by advancements made within a specific reporting period</td>
<td>Moderately prepared (2022)</td>
<td>Fully prepared (2030)</td>
<td>Commission Reports</td>
</tr>
</tbody>
</table>

**Type of Activities**

**Output 2.1:** Road network enhanced through rehabilitation of “triangle” area connecting TEN T corridor X and VIII.

\(^1\)Rehabilitation of Corridor X - VIII connection motorways A1, A2, and A4 in the area of “Skopje Triangle” (Miladinovci–Petrovec, Miladinovci – Hipodrom, Hipodrom – Petrovec) – major project.

**Description of Eligible Activities, including Major Projects**

The main objective of the project is to improve the condition of the motorways A1, section Miladinovci – Petrovec, A2, section Miladinovci – Hipodrom, A4, section Hipodrom–Petrovec, and to provide a safe, reliable, and comfortable transport system for the users. The project also aims to enhance the connectivity between Corridors 8 and 10, as well as to improve the transport performance index of North Macedonia.

46.6 km of motorways are planned for rehabilitation, focusing on roadways, junctions, and drainage systems. This initiative aims to improve road conditions, enhance safety, reduce travel time, and smoother traffic flow. Throughout the project implementation, great emphasis will be placed on minimising the environmental impact and ensuring the well-being of surrounding communities. To achieve this, the project will adopt environmentally friendly practices, including using recycled materials, waste reduction measures, and minimising carbon emissions during construction activities.

![Figure 2 Project location](image)

Due to the broad and comprehensive scope of the project, the implementation will be split into:

**Rehabilitation of Corridor X - VIII connection, motorway A1, section Miladinovci – Petrovec** - The rehabilitation of motorway A1, section Miladinovci – Petrovec, is a crucial infrastructure project to improve road safety, traffic flow, and connectivity in North Macedonia. The project will cover the right and left carriageways of the motorway and the Petrovec interchange, with a total length of 7.5 km for the right carriageway and 7.7 km for the left carriageway. The project also includes rehabilitating all

\(^6\) This indicator measures the progress in the development of project documentation for the targeted road segments.
ramps at the Petrovec interchange, with a total length of 3.6 km. The primary (detailed) design for the rehabilitation of the section was prepared in 2020.

The total length of covered carriageways and ramps: **18.8 km**

![Figure 6 Lot 1 location](image)

**Rehabilitation of Corridor X - VIII connection, motorway A2, section Miladinovci – Hipodrom** - The project aims to rehabilitate the main alignment of Motorway A2, Section Miladinovci - Hipodrom, which is approximately 25 km long. The length of the primary alignment is 10.4 km, while the length of the ramps of the Hipodrom interchange is about 8.6 km. The rehabilitation will include upgrading the existing carriageway to meet modern safety standards, repairing or replacing damaged structures and improving drainage systems. The project will also involve the installation of new safety barriers, crash cushions, road markings, and signage. The basic (detailed) design for the rehabilitation of the section was prepared in 2020.

The total length of roadways to be rehabilitated: **19 km.**

![Figure 7 Lot 2 location](image)

**Rehabilitation of Corridor X - VIII connection, motorway A4, section Hipodrom – Petrovec** - The Rehabilitation of Motorway A4, section Hipodrom – Petrovec, involves the rehabilitation of the central alignment of the motorway in a length of 8.8 km. The project includes the review of existing design, execution of rehabilitation works based on current conditions, and supervision of the works. The project aims to enhance road safety, increase traffic flow, and improve travel time along the corridor. The primary (detailed) design for the rehabilitation of the section was prepared in 2020.

Toral length of the motorway to be rehabilitated: **8.8 km.**
Eligible Activities

- Review of the existing design and assessment of its feasibility,
- Preparation of tender dossier and conducting tender evaluation process according to PRAG
- Support with technical expertise for preparation of specifications and updating of Bill of Quantities (BoQ)
- Performing rehabilitation works, including road resurfacing, repair of road structures and bridges, installation of new road markings and traffic signs, guardrails, and crash cushions.
- Performing environmental mitigation measures, such as soil erosion control,
- Supervision of the construction works to ensure compliance with the technical specifications and quality standards.

Delivery Methods

- **Service contract(s)** for design review, together with technical support for the preparation of specifications and updating of BoQ and supervision of construction works for all 3 lots (sub-activities)

- **Works contract(s)** in three lots:
  - Rehabilitation works on the main alignment and interchanges of motorway A1, section Miladinovci – Petrovec,
  - Rehabilitation works on the main alignment and interchanges of motorway A2, section Miladinovci – Hipodrom,
  - Rehabilitation works on the main alignment and interchanges of motorway A4, section Hipodrom - Petrovec

Selection Criteria

- Included in the Single Project Pipeline
- Compliance with EU and national policies
- Maturity of the project
- Impact of the project
- Relevance to the objectives of the National Transport Strategy and the purposes for the TEN-T network, priorities and goals of the IPA III Programming Framework
- Priority of the project for the improvement of traffic flow on the most strategic road system in North Macedonia,
- Cost and time saving of the project due to gradual deterioration of the road assets (failure to carry out rehabilitation works promptly may result in accelerated deterioration of the functional parameters of the motorway)
- Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions.

End Recipients and Target Groups

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61 Due to the urgent nature of the project, related to the progressive deterioration of the covered road sections, the priority is to start the rehabilitation works as soon as possible. Accordingly, the Beneficiary has decided that the appointment of a consultant to carry out the work related to the gap assessment and verification of the detailed design and preparation of the TOR for the rehabilitation works will be implemented and financed outside the OP. Given the abovementioned issues of steadily deteriorating technical and safety conditions, the goal is to ensure readiness to launch the rehabilitation and supervision services tender immediately after signing the IPA financing agreement.
The end recipient of the assistance is Public Enterprise for State Roads. Rehabilitating the motorways and interchanges will increase the quality and durability of the road infrastructure, which will result in lower maintenance costs for PESR in the long run. A well-maintained road with a longer lifespan will also reduce the need for frequent and costly repairs, thus reducing the overall asset costs for PESR. Additionally, the increased safety and improved traffic flow resulting from the rehabilitation may lead to reduced emergency services and medical care costs and lower costs associated with traffic accidents and delays. Overall, the reduction of asset costs for PESR can be seen as a positive long-term benefit of the project.

Target groups of the assistance include:

- Road users: The primary beneficiaries of the project are the road users who use the A1, A2 and A4 motorways, particularly the rehabilitation works that will improve the condition of the carriageway, making it smoother and safer to drive on.
- Local communities: The project will benefit the local communities living along the motorways by improving their access to transportation and reducing travel time, making it easier for them to access markets, services, and employment opportunities.
- Freight and logistics companies: Rehabilitating the selected motorways will also benefit freight and logistics companies by providing them with a more reliable and efficient transportation route, reducing operating costs and improving their competitiveness.

Conditions

- PESR shall initiate the procedure for updating the SPP.
- PESR shall ensure that all project documents related to the rehabilitation works are elaborated in line with EU requirements.
- The project documents must also respect the special requirements deriving from national legislation and relevant standards requested by the legislation, including by-laws.
- For a project with an estimated budget of over EUR 15 million, PESR must ensure that Major Applications are prepared in the template prescribed with the respective IPA Financing Agreement, as MoTC and EUD require.
- PESR and Public Enterprise for maintenance and protection of national and regional roads should ensure the project result will remain sustainable over the long term, both financially and environmentally, through appropriate maintenance standards (routine and periodic) should be applied.
- The Ministry of Finance/MoTC/PESR should ensure a stable multiannual domestic financial contribution.
- Project Implementation Unit to be established.
- The works will be carried out under a temporary traffic regime approved by the Ministry of Interior Affairs and MoTC. Heavy traffic on the motorway may require temporary road closures or diversions, leading to disruptions in traffic flow and increased travel times. That’s why an appropriate traffic management plan should be elaborated, duly consulted, and deployed.
- A road safety audit will be performed.

[2] Construction of Corridor X-d, section Bitola – border crossing Medzitlija, from km.0+000.00 to km.22+620.00 expressway – reserve major project

Description of Eligible Activities, including Major Projects

This project activity’s objective is constructing new expressway A3, section Bitola – Medzitlija (border crossing with Greece). The project will include the construction of a new route with a length of 22.62 km, from km.0+000.00 to km. 22+620.00. The basic and infrastructural designs for construction were already prepared in 2022.
The total length of a new road to be constructed: **22.62 km.**

**Eligible Activities**

- Review of the detailed design together with road safety audit and obtaining necessary permits, technical support for preparation of specifications and updating of BoQ.
- Performing land expropriation for the new route according to the Land Acquisition Plan
- Preparation of tender dossier and conducting the tender procedure in line with PRAG
- Construction of the new route to the parameters of an expressway based on FIDIC Conditions of Contracts
- Supervision over the construction process

**Delivery Methods**

- Service contract for preparatory studies, design and performing a gap analysis of detail design, obtaining necessary permits, and technical support for preparing specifications and updating BoQ and conducting supervision services.
- Works contract for the construction of the expressway

**Selection Criteria**

- Selected in the Single Project Pipeline
- Compliance with EU and national policies
- Maturity of the project
- Impact of the project
- This road section is located on Corridor X, Branch Xd
- Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions

**End Recipients and Target Groups**

The end recipient of the assistance is Public Enterprise for State Roads (PESR).

Target groups of the assistance include:

- International and local communities, especially citizens and businesses of Bitola and the surrounding areas. The project will benefit the local communities living along the A3 expressway by improving their access to transportation and reducing travel time, making it easier for them to access markets, services, and employment opportunities.
• Freight and logistics companies: Construction of the A3 expressway will also benefit freight and logistics companies by providing them with a more reliable and efficient transportation route, reducing operating costs and improving their competitiveness.

Conditions

• PESR must ensure that all project documents, such as the Feasibility Study, Cost-Benefit Analysis, Environmental Impact Assessment, Road Safety Audits and Detail Design, are elaborated in line with EU requirements.
• The project documents must also respect the special requirements deriving from national legislation and relevant standards requested by the legislation, including by-laws.
• The National Authorities should also fully secure the necessary funds for land acquisitions and expropriations.
• PESR will also need to ensure that site acquisition (land expropriation) activities are ongoing and completed before the commencement of the project or have a plan of expropriation activities for achieving it before the issuance of the Taking-Over Certificate as required by the Construction Law. They must undertake all necessary actions to make the site available for project implementation and grant the Works Contractor access to the area immediately after the contract is signed.
• For a project with an estimated budget of over EUR 15 million, PESR must ensure that Major Applications are prepared in the template prescribed with the respective IPA Financing Agreement, as MoTC and DEU require.
• PESR shall include a climate risk assessment into the contractor’s scope of duties. The Study should be utilised to identify potential climate risks and integrate climate adaptation measures into the technical design requirements.
• PESR shall ensure that the project will integrate biodiversity interests, enhance biodiversity, and reinforce Natura 2000 and habitat connectivity.
• PESR should define in the TORs requirements for the works contractors’ environmentally friendly practices such as sustainable resource utilisation, materials optimisation and use of recyclables, thus reducing the quantities of waste generated at the site as well as reducing carbon footprint by applying CO2 emissions reduction and sustainable energy consumption practices.
• PESR will consider the needs of people with reduced mobility, such as the elderly, child stroller users and people with disabilities such as vision, deafness, and wheelchair users. Respected dialogue with local associations of people with disabilities and local communities will be conducted during preparatory works.
• Road safety impact assessment and road safety audit will be performed.
Output 2.2: Selected roads transport infrastructure projects of national strategic importance mature and ready for investment by the EU standards.

[1] Design for Rehabilitation of state road A1, section Gevgelija - Greece border (Bogorodica) (right carriageway)

Description of Eligible Activities, including Major Projects

The project aims to prepare the design documentation for rehabilitating the right carriageway of the state road A1, section Gevgelija - Greece border (Bogorodica), an approximate length of 4.5 km. The project includes rehabilitating the existing motorway section due to damages during the operation period. In addition to the rehabilitation, the project also consists of a road safety audit and traffic management plan.

Eligible Activities

- Conducting surveys and geotechnical investigations,
- Conducting environmental and social impact assessments to identify any potential risks or impacts of the project.
- Conduction road safety audit
- Developing the primary design documentation, including technical drawings, specifications, and cost estimates
- Performing Traffic Management Design,
- Consulting with stakeholders, including local communities, businesses, and government agencies, to gather input and ensure that their needs and concerns are considered in the design process.
- Elaboration of the tender dossier for the procurement of works based on PRAG.

Delivery Methods

- Service contract(s)

Selection Criteria

- Selected in the Single Project Pipeline
- Level of compliance with EU and national policies
- Maturity of the project
- Impact of the project
- Priority for the network condition and safety
Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions.

End Recipients and Target Groups

The end recipient of the assistance is PESR, which will be responsible for using the main design documentation to carry out the future construction.

Conditions

- The Detailed Design for structures and civil engineering works should be prepared according to the requirements of the relevant national legislation and to the EU legislation, including all necessary technical reports, drawings, and documents.
- The required tender documentation should be prepared according to the EU procurement procedures (according to the latest PRAG procurement procedures).
- PESR will consider the needs of people with reduced mobility, such as older people, child stroller users and people with disabilities such as vision, deafness, and wheelchair users. Respected dialogue with local associations of people with disabilities and local communities will be conducted during preparatory works.
- Road safety impact assessment and road safety audit will be performed.

[2] Feasibility studies and development of comprehensive technical documentation for the construction of Corridor VIII Section Stracin-Romanove and Construction/Upgrading of Corridor X Section Katlanovo-Veles Right Carriageway of Motorway A1

Description of Eligible Activities, including Major Projects

Preparation of the comprehensive technical documentation for section Expressway A2 Section Stracin-Romanove, with an approximate length of 33 km along Corridor VIII. Activities will include Prefeasibility study, Traffic Study, Feasibility Study with Cost-Benefit Analysis, Environmental and Social Impact Assessment in the first stage, and the second stage Detailed Design for the expressway, Road Safety Audit, Tender documentation, and an updated Elaboration of Land Acquisition Plan. This section is part of Corridor VIII, about 33km.

Moreover, preparation documentation for the construction of section of A1 motorway Katlanovo-Veles with an approximate length 23 km of the right carriageway of this motorway located on Corridor X. Section is in the central part of North Macedonia along the Vardar valley. The project documentation will include

62 The Project is divided in two phases. As per Phase 1 covers preparation of Feasibility Study is considered as priority. Whereas Phase 2 consists of development remaining comprehensive technical documentation is considered as a reserve project.
a Traffic Study, Feasibility Study with Cost-Benefit Analysis, Environmental and Social Impact Assessment in the first stage, and in the second stage Detailed Design to full motorway standards, Road Safety Audit, Tender documentation, Elaboration of Land Acquisition for new right carriageway (single carriageway with two driving lanes and one stopping lane). This section is part of the Corridor X in the central part of the country (along Vardar valley). The existing right carriageway of the section Katlanovo – Veles may serve in future as an alternative road.

**Eligible Activities**

- Conducting surveys and geotechnical investigations,
- Pre-feasibility study, Traffic surveys, Feasibility Study with Cost-Benefit Analysis in particular
- Conducting environmental and social impact assessments to identify any potential risks or impacts of the project,
- Conduction road safety audit,
- Developing the main design documentation, including technical drawings, specifications, and cost estimates (second stage)
- Elaborating/updating of Land Acquisition Plan,
- Performing Traffic Management Plan,
- Obtaining necessary permits,
- Consulting with stakeholders, including local communities, businesses, and government agencies, to gather input and ensure that their needs and concerns are taken into account in the design process.
- Elaborating tender dossiers for procuring works based on PRAG and FIDIC standards.

**Delivery Methods**

- Service contract(s) for preparation of Pre-Feasibility Study, Traffic Surveys, Feasibility Study with Cost-Benefit Analysis and EIA, Climate Change Analysis, Detailed Design (Main and Infrastructure Designs), EIA, Road Safety Audit and Land Acquisition Elaborates for both abovementioned sections.

**Selection Criteria**

- Selected in the Single Project Pipeline
- Level of compliance with EU and national policies
- Maturity of the project
- Impact of the project
- Priority for the network safety and contribution to international and regional traffic level of service
- Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions

**End Recipients and Target Groups**

- The end recipient of the assistance is PESR, which will be responsible for using the feasibility study and technical design documentation to carry out the future construction.

**Conditions**

- The Detailed Design for structures and civil engineering works should be prepared according to the requirements of the relevant national legislation and the EU legislation, including all necessary technical reports, drawings, and documents.
- The required tender documentation should be prepared according to the EU procurement procedures (according to the latest PRAG procurement procedures) and the FIDIC rules.
• PESR shall include a climate risk assessment into the contractors’ scope of duties. The Study should be utilised to identify potential climate risks and integrate climate adaptation measures into the technical design requirements.
• PESR shall ensure that the project integrates biodiversity interests, enhances biodiversity, and reinforces Natura 2000 and habitat connectivity.
• PESR should define in the TORs requirements for the works contractors’ environmentally friendly practices, such as using recycled materials, reducing the number of waste and minimising carbon emissions shall be applied to reduce the carbon footprint of the Project.
• Green procurement measures should be applied to the Tender Dossier for construction works.
• PESR will consider the needs of people with reduced mobility, such as the elderly, child stroller users and people with disabilities such as vision, deafness, and wheelchair users. Respected dialogue with local associations of people with disabilities and local communities will be conducted during preparatory works.
• Road safety impact assessment and road safety audit will be performed.

Output 2.3: 2.3. Improved road safety, maintenance, and road asset management policies in line with the EU regulations.

[1] Capacity building for road safety, maintenance and asset management and climate change adaptation together with, implementation of road policy and alignment with the EU regulations.

Description of Eligible Activities

Firstly, it includes the preparation of a Strategy for the development and maintenance of state roads (Strategic Asset Management Plan). This strategy, which is outlined in Article 13 of the Law on Public Roads and adopted by the Assembly of Republic of North Macedonia, will delineate the goals and basic tasks for the development and maintenance of state roads over a ten-year plan. Secondly, the activity involves obtaining technical assistance for the preparation of a draft text of a relevant law that will be aligned with the particular the Directive 2004/54/EC on minimum safety requirements for tunnels in the trans-European road network, including the classification of tunnels according to the ADR convention (ADR 2023 Vol.1 - 1.9.5). Lastly, it encompasses obtaining technical assistance for the Regulation on Tariffs and crisis measures and the Directive on Hired vehicles, thereby facilitating the implementation of EU legislative in these areas. Together, these steps will not only enhance road safety and infrastructure but will also ensure alignment with the EU regulation requirements of the TCT, thereby contributing to a more efficient and safer road transport system in North Macedonia.

The activity aims to fortify the capacity of North Macedonia's road sector authorities through a comprehensive approach that covers regulatory alignment with EU standards, skill and knowledge enhancement, and improvements in road asset management, climate resilience, and road safety management. Core activities include the creation of a ten-year Strategic Asset Management Plan for state roads, as outlined in Article 13 of the Law on Public Roads, enhancement of maintenance standards and securing technical expertise to draft laws that align with EU Directives, such as the Directive on tunnel safety and the directive on road infrastructure safety management. The project also aims to develop regulations on tariffs/tolls and crisis measures. In terms of human capital, targeted training and mentorship programs will be implemented to elevate the staff's skills and knowledge to EU best practices. Should a Road Safety Leading Agency be finalized, resources will be allocated for its effective establishment or enhancement. Overall, the project is designed to improve road safety, facilitate North Macedonia's integration into EU road sector frameworks—especially in alignment with the TCT action plans—and create a more resilient, efficient, and knowledgeable road management community. An immanent part of the activity will also be the development of standard technical specifications for the execution, quality assessment and acceptance of construction work, inter alia for preliminary works, laying/bedding of roads, bridge structures and tunnels, road furniture, environmental protection facilities, etc.

Eligible Activities
• Technical assistance and institutional capacity building: this includes providing expert support, guidance, and training programs, study visits and peer learning for the relevant authorities, enabling them to effectively implement and enforce road asset management with focus on maintenance, road safety management and adaptation of road infrastructure to risks related to climate change.
• Alignment with EU regulations, good practices, policy and legislative support: assistance in the development, adoption, and implementation of national regulations, including the preparation of a ten-year strategic plan for state road development and maintenance (Strategic Asset Management Plan).
• Developing standard technical specifications for execution and acceptance of construction works
• Provision of technical equipment, where justified.

**Delivery Methods**

• Grant contract(s) (Twinning) and/or service contract(s)
• Service and supply contracts

**Selection Criteria**

• There is corresponding legislation in the acquis.
• Activities and support align with the EU acquis and are reflected in the TCT requirements and other relevant policy instruments, which is essential for enhancing road safety and road asset management, policy implementation, and alignment with EU regulations and practices.
• Key critical success factors: long term financial sustainability, solid Transport management and control system’s control architecture, reasonable completion estimate, and enabling conditions

**End Recipients and Target Groups**

• The end recipient of the assistance are MoTC and PESR,
• The target groups will include all stakeholders involved in or affected by the transport sector of North Macedonia including Public Enterprise for Maintenance and Protection of National and Regional Roads.

**Conditions**

• The program’s activities and support are contingent on North Macedonia’s continued commitment to EU integration and the implementation of the required reforms and legislation.
• Institutions and organizations receiving support must demonstrate a commitment to ensuring the long-term sustainability of the reforms undertaken.
• Co-financing from the national budget available particularly for procurement of equipment

**Area of Support 3 – Other Support**

**Rationale:** Managing IPA III funds in North Macedonia’s transport sector is a complex task that requires coordination among multiple authorities and structures. NTS, supplementary reports, and the IPA Annual Report on Implementation of Financial Assistance for 2022 emphasise the need for significant improvements in administrative capabilities and human resources within these entities.

The IPA Department within the MoTC is the designated Managing Authority (MA) for transport-related programmes. The Intermediate Bodies for Policy Management (IBPMs) and the Intermediate Body for Financial Management (IBFM) assist in project preparation, tendering, contracting, and financial decisions, while ensuring compliance with the IPA III Decree and established guidelines. However, the authorities that will implement the OP in Indirect Management by Beneficiary Country (IMBC) have different level of experience, which may impede effective project management and implementation. To address this, tailored technical assistance is necessary, focusing on the specific needs of the MA and IBs and drawing from previous operational programmes and other technical assistance facilities.
As highlighted by the relevant Stabilisation and Association Agreement (SAA) Subcommittee and the Commission Reports, institutional capacity-building assistance is essential. This viewpoint is consistent with the World Bank's Public Expenditure and Financial Accountability (PEFA) programme's 2019 diagnostic analysis. To overcome these challenges, generating new employment opportunities, providing targeted training, and implementing a robust retention policy are necessary. This is crucial for retaining experienced employees and ensuring the successful execution of long-term projects, programmes, and strategies in the transport sector. To address insufficient visibility and communication, strategic efforts must increase stakeholder engagement and support. This will be accomplished through visibility and communication initiatives to ensure the programme’s benefits are widely understood.

Transparency and accountability are essential to the management of EU financial assistance. Consequently, effective operation of the existing OP’s monitoring and reporting mechanisms is essential, necessitating vigilant tracking of progress, performance evaluation, and identifying areas for improvement by the MA and IBPMs. In addition, standard procedures for monitoring IPA programmes, forming Sectoral Monitoring Committees (SMCs) and providing technical assistance, will be supporting these efforts.

Therefore, this area of support shall provide overall technical support to the IPA structure in the implementation of the OP, thus increasing capacity and capabilities for planning and managing EU and other donors’ funds supporting the environment and climate sector and establishing the ground for the future management of the European Structural and Investments Funds.

**Applicable EU Legislation**

- The recommendations of the Commission Report Chapter 22: *Regional Policy and Coordination of Structural Instruments* focus on upgrading institutional, administrative and technical capacity to manage EU funds (such as ESF upon participation). This includes enhancing capacities within state bodies to ensure they are ready to manage the funds effectively, which are planned to be addressed by the type of activities foreseen under this area of support.
- Supporting Public Administrations in EU Member States to Deliver Reforms and Prepare for the Future (Commission Staff Working Document SWD (2021/101).
- EU Public Administration toolbox.

**Outcomes (Specific objective):**

Increased readiness of North Macedonia for EU accession negotiations under Chapter 22.

**Typologies of Outputs**

**Output 3.1:** Improved management, implementation and control of the EU financial assistance, including through development of human capital, in accordance with EU requirements and best practices.

**Impact, Outcome, and Output Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline</th>
<th>Target</th>
<th>Source of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td>Logistic Performance Index (LPI) – Infrastructure (Perception of the quality of trade and transport related infrastructure, e.g., Ports, railroads, roads, information technology)</td>
<td>2.47 (2018)</td>
<td>≥3.2 (2030)</td>
</tr>
<tr>
<td>Outcome 3</td>
<td>% of EU funds absorbed under the OP</td>
<td>0 (2023)</td>
<td>≥90% (2033)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Output 3.1</td>
<td>Number of completed OP projects.</td>
<td>0 (2023)</td>
<td>≥12 (2033)</td>
</tr>
<tr>
<td></td>
<td>Staff turnover rate&lt;sup&gt;63&lt;/sup&gt;</td>
<td>0 (2023)</td>
<td>≤ 10% (2028)</td>
</tr>
</tbody>
</table>

### Type of activities

**Output 3.1:** Improved management, implementation and control of the EU financial assistance, including through development of human capital, in accordance with EU requirements and best practices.

Effective management of IPA III funds in the transport sector requires well-coordinated cooperation between various authorities and strict adherence to established policies and procedures. The proposed interventions aim to address the obstacles faced by OP structure and authorities to ensure the successful implementation of the programme. By providing customised technical assistance, enhancing visibility and communication, and ensuring proper management and oversight of major projects, the authorities can effectively manage EU financial assistance for the transport sector in North Macedonia.

This support area is intended to provide comprehensive technical assistance to the MA and IBs. The objective is facilitating their roles in initiating, implementing, monitoring, controlling, and promoting OP operations by EU-level legislation and best practices.

In addition to contributing to implementing a pipeline of projects aligned with the OP 2024-27 objectives, technical assistance services under this support area will support fund absorption through advisory and capacity-building measures. The continuous development and consolidation of the OP’s management, communication and visibility, monitoring and evaluation, audits and verifications, is a key objective of this technical assistance.

Eligible activities include the provision of expert support throughout all phases of programme implementation including capacity-building activities, technical support for MA and IBs/end recipients to improve their project preparation, procurement and contract management skills; quality assurance vis-à-vis ex-post control; assistance in improving the control environment; and OP evaluation, which entails the recruitment of an independent evaluator(s).

Establishing a robust retention policy is essential for successfully implementing long-term projects, programmes, and strategies in the transport sector. Retaining experienced staff significantly contributes to maintaining continuity and consistency in project execution. In this regard, a portion of EU funds may be used to support employee retention initiatives if eligible and by specific EU funding rules. This

<sup>63</sup> Staff Turnover Rate (%) = (Number of staff who left the organisation during the period (year) / Average number of staff during the period(year)) x 100. "Number of staff who left the organisation during the period" can be calculated by looking at the number of departures (whether voluntary or involuntary) over a specific period, such as a financial year. The "average number of staff during the period" is typically calculated by adding the number of staff at the start of the period to the number of staff at the end, and then dividing by two.
will make their roles more rewarding, fostering professional growth and satisfaction and increasing staff retention. This will be achieved by implementing salary support scheme that aims to retain experienced staff, which significantly contributes to maintaining continuity and consistency in project execution.

**Delivery Methods**

- This output will be delivered through technical assistance, grants, and supply contracts.

**Selection Criteria**

- Relevance of the operations and their added value for the smooth implementation of the OP.

**End Recipients and Target Groups**

- NIPAC office, Management structure, AA, MA and IBs, directly involved in managing IPA III funds in the transport sector.

**Conditions**

- A retention plan for the IPA structures will be adopted before launching the salary support scheme and its implementation monitored. DG NEAR/EU Delegation will assess if all the requirements are met to provide reasonable assurance of the effectiveness of the support scheme. Specific conditions may be set to be met prior to its entry into force.
- Adoption of the legal base for the retention policy measures.
- Staff concerned will be directly recruited (or seconded) to IPA III OP structure (MA, IBPMs (including PERS and ZRSMI) and IBMF, to execute tasks related to the management and implementation of IPA III 2024-2027 OP and it will be supported with duly documented decisions of competent institutions.
- Period of employment and/or secondment will not exceed the final date of eligibility of IPA III 2024-2027 OP laid down in its Financial Agreement signed.

**4.2.3. Indicative List of major projects per each area of support**

A Major Project comprises a series of works, activities, or services. It is intended to accomplish a definite and indivisible task of a precise economic or technical nature, which has identified goals, and which has a total cost exceeding EUR 15 million as specified in Article 16(6) of the Financial Framework Partnership Agreement (FFPA) and the respective financing agreement between the Commission and North Macedonia.

The indicative list of major projects is as follows:

**Rail Transport**

<table>
<thead>
<tr>
<th>Project title:</th>
<th>Reconstruction and upgrading of railway bridges on Corridor X – priority project</th>
</tr>
</thead>
</table>
| Area of support | No 1/Railway  
Activity No 1.1.1. |
| Lead Project Beneficiary: | Ministry of Transport and Communications (MoTC) as the MA and Public Enterprise for Railway Infrastructure Railways of Republic of North Macedonia - Skopje (ZRSMI) as IBPM and end recipient |
| Institution that is the author of the project proposal | Public Enterprise for Railway Infrastructure Railways of Republic of North Macedonia - Skopje (ZRSMI) |
| Location/Map | Corridor 10 marked in red below. |
Activity 1.1.1 aims to reconstruct and rehabilitate railway bridges along Corridor X. This includes testing and designing the related structures.

The main objective of this project is to update the infrastructure, with a specific focus on older bridges that need improvements to meet international standards for safety, durability, stability, and compliance. The process entails thorough testing, preparation of designs, and reconstruction and upgrading of the relevant structures.

The project aims to achieve several results, such as enhancing the safety and efficiency of the railway system, increasing transportation speeds, and ensuring greater compliance to international safety, quality, and environmental standards. The success of this project is expected to enhance the strategic Corridor X connections of the country, thereby promoting economic growth, regional connectivity and environmental sustainability.

The railway line of Corridor X has a total of 49 bridges and culverts spanning a distance of 992 meters. Most of the bridges were constructed with steel structures six decades ago, making them susceptible to corrosion. All the steel bridges along Corridor X require new anti-corrosion protection. Based on the available data, it appears that the anti-corrosion protection was applied using alkyd-based coatings approximately 25 to 40 years ago. Still, the specific coating type and manufacturer cannot be determined with certainty.

The 49 railway bridges and culverts can be categorised into three groups based on their lengths and spans:

Group 1 includes bridges that have significant length and spans, which may require new conceptual solutions and detailed design projects for new design solutions.

Group 2 includes bridges with short lengths and small spans that can be designed directly for detailed design or for rehabilitation purposes.

Group 3 includes culverts that can be used as typical buildings without requiring any special design considerations.
Due to safety concerns, the maximum speed allowed on these bridges is 30 kilometres per hour, which increases travel time and, consequently, transportation costs.

This activity involves the provision of design and supervision engineering services for the major project. Their responsibilities include, but are not limited to, the preparation of comprehensive project documentation at the level of detailed design for the most critical railway bridges. This includes revisions to the detailed design and potential construction-phase enhancements. Existing technical documentation for bridge structures will be reviewed by the Consultant, along with the monitoring system. In addition, they will conduct tests on all bridges on Corridor X under trial load, including those tested within the past three decades and deemed to meet the D4 category - 8 tonnes per linear metre, prioritising the most important ones for the development of project documentation.

Other responsibilities include updating traffic studies and forecasts, conducting a feasibility study with cost-benefit analysis, conducting environmental and social impact assessments, developing a project analysis on bridge condition, and preparing a detailed design for the rehabilitation of damaged bridge components based on the results of the project analysis. In addition, the main design for the implementation of anticorrosion protections on all steel bridges will be developed, along with the production of all required documentation for the Detailed Design and tender documentation for the appropriate works. This body of work focuses on the rehabilitation or reconstruction of the most critical bridges. In accordance with the terms and conditions of FIDIC contracts, the selected Consultant will also serve as Engineer, with the goal of minimizing potential delays during the construction phase. Land acquisition may be required depending on the scenario selected from the Feasibility Study (FS).

A technical audit will be incorporated into the project plan to guarantee the correct design, construction, and completion. This will provide an objective review of the technical aspects of the project, from design and construction to completion and handover. The technical audit will play a crucial role in preventing project delays, cost overruns, and noncompliance with EU regulations and guidelines, thereby ensuring that the project meets all technical and quality requirements.

<table>
<thead>
<tr>
<th>Project Value and funding sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total:</strong> EUR 28.750.000,00</td>
</tr>
<tr>
<td>Technical audit, project preparation including detail design, design review and supervision – EUR 4.750.000</td>
</tr>
<tr>
<td>Reconstruction/upgrade works – EUR 24.000.000,00</td>
</tr>
<tr>
<td><strong>Funding sources:</strong></td>
</tr>
<tr>
<td>EU IPA III contribution: EUR 14.615.500</td>
</tr>
<tr>
<td>National/State budget co-financing: EUR 14.135.000</td>
</tr>
</tbody>
</table>

The cost estimate assumes that between 10 and 15 bridges will require reconstruction or upgrading, with the possibility that some bridges will need to be constructed from the ground up.
<table>
<thead>
<tr>
<th>Implementation period</th>
<th>2025-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft ToR for service contract for the railway projects for 21 July 2021; data from maintenance sector.</td>
<td></td>
</tr>
<tr>
<td>Regarding documentation specifically required by the EU: It is not necessary to provide a pre-feasibility study or traffic forecasts for variants or a feasibility study for the railway bridges as they are already operational and situated on Corridor X. The maintenance sector within ZRSMI is the source of information for this project.</td>
<td></td>
</tr>
<tr>
<td>The development of the cost-benefit analysis report and environmental impact assessment study will be carried out under the future designer's mandate. The development of these crucial elements will fall under the scope of the service contract for design, tender dossier preparation, and construction supervision of this major project. All work will be carried out in accordance with national legislation.</td>
<td></td>
</tr>
<tr>
<td>The ERTMS/ECTS system is currently not in place, but it will be installed upon the completion of the construction of the eastern part of railway corridor VIII.</td>
<td></td>
</tr>
<tr>
<td>As for technical documentation and permits in line with regulations on railways and construction: Conceptual, preliminary, and general designs are complete, dating back to 1968–2008, as the bridges are operational. ZRSMI was in charge of these tasks.</td>
<td></td>
</tr>
<tr>
<td>Prior to 1968, ZRSMI completed a land acquisition plan. However, additional land might be required if new bridges are to be constructed.</td>
<td></td>
</tr>
<tr>
<td>Prior to 2008, ZRSMI completed a Review of the General Design: Report of Revision. An environmental impact assessment study was also completed as Corridor X is fully operational.</td>
<td></td>
</tr>
<tr>
<td>Several documents and permits are still to be completed, including the Detailed Design, Traffic Management Design, Technical Control of the Detailed Design, Construction Permit, Environmental Permit, Land Acquisition/Expropriation Permit, Tender Dossiers for Construction Works, and Tender Dossier for Supervision. ZRSMI, the future designer/engineer for this major project under the Service Contract for Design, Tender Dossier Preparation, and Construction Supervision, and a future revision body/Notified Body (NOBO) will collaborate to complete these tasks between 2025 and 2027. It's worth noting that some responsibilities, such as obtaining construction and environmental permits, will depend on the accepted contract amount and could be delegated either to the designer or the engineer.</td>
<td></td>
</tr>
<tr>
<td>Maturity level</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

**Area of Support 2 - Road Transport**

73
<table>
<thead>
<tr>
<th>Project title:</th>
<th>Rehabilitation of Rehabilitation of Corridor X - VIII connection motorways A1, A2, A4 in the area of &quot;Skopje Triangle&quot; (Miladinović–Petrovec, Miladinovci – Hipodrom, Hipodrom – Petrovec) – priority project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of support</td>
<td>No 2/Roads</td>
</tr>
<tr>
<td>Lead Project Beneficiary:</td>
<td>Lead: Ministry of Transport and Communications. And Public Enterprise for State Roads (PESR).</td>
</tr>
<tr>
<td>Institution that is the author of the project proposal</td>
<td>Public Enterprise for State Roads (PESR)</td>
</tr>
<tr>
<td>Location/Map</td>
<td><img src="image" alt="Location Map" /></td>
</tr>
</tbody>
</table>
| Brief description of its aim and intended results | The main objective of the project is to improve the condition of the motorways A1, section Miladinović – Petrovec, A2, section Miladinovci – Hipodrom, A4, section Hipodrom–Petrovec, and to provide a safe, reliable, and comfortable transport system for the users. The project also aims to enhance the connectivity between corridors 8 and 10, as well as to improve the transport performance index of North Macedonia.  

**46.6 km of motorways rehabilitated, include:** roadways, junctions, and drainage and by that improved road conditions, increased safety, reduced travel time, and smoother traffic flow. The project also is expected to be implemented in a way that minimizes the impact on the environment and the surrounding communities by using “Green procurement” standards aimed at reducing of carbon footprint by incorporating environmentally friendly practices such as using recycled materials, reducing waste, and minimising carbon emissions during construction works.  

The main objective is to improve the condition and to provide a safe, reliable transport system for the users and to enhance connectivity between corridors 8 and 10 within the area of “Skopje Triangle”, as well as to improve the transport performance index of North Macedonia by performing the following:  

**Rehabilitation of A1 Miladinović-Petrovec**  
This is a road section of the Pan European Road Corridor X, placed in the central region of the country, and it is a section that connects North Macedonia with Greece and Serbia. |
The rehabilitation covers the right and left carriageways and the Petrovec interchange. The total length for repair of the right carriageway is 7.5 km, while the length of the left is 7.7 km. The total length of all ramps at the interchange Petrovec foreseen for rehabilitation is 3.6 km. The basic (detailed) design for the rehabilitation of the section was prepared in 2020 by PROSTOR DOO Kumanovo and revised by the Faculty of Civil Engineering - Skopje.

The project includes rehabilitation of the existing motorway section on both carriageways. This part of the Corridor has to be rehabilitated due to the damages caused during the operation period.

The total length of covered carriageways and ramps: **18.8 km**

**Major concerns to be addressed:**

- **Deterioration of the road pavement:** The current condition of the road surface is deteriorated due to age and volume of heavy traffic, leading to roughness, cracks, potholes, and other forms of damages.

  **Technical condition visual:**

  IRI: $^{64}$

  **Section: Petrovec – Miladinovci:** Average IRI = 1.79
  **Section: Miladinovci – Petrovec:** Average IRI = 2.39

- **Safety concerns:** Deteriorated technical condition of the road surface poses safety risks to motorists, particularly during inclement weather or high traffic volume periods and high volume of heavy traffic (HGV).

  Number of accidents: 2018: 22
  Number of killed: 2018: 4
  Number of heavily injured: 2018: 7
  Number of slightly injured: 2018: 33
  Number of persons not injured: 2018: 14

- **Traffic congestion:** The capacity of the motorway is currently limited due to the road surface condition, which leads to increased travel time and delays for commuters and cargo transport, congestion and delays are common, particular at the Petrovec interchange.

  **AADT: (2018-2022):**

  2019: 11 254 vehicles/day;

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$^{64}$ IRI stands for International Roughness Index. It is a measurement used to assess the roughness or unevenness of a road surface. The IRI is calculated based on the vertical deviations of a vehicle travelling along the road, typically using specialised equipment such as a profilometer. IRI provides a numerical value that quantifies the roughness of the road surface. It is commonly used as a standard measure for evaluating road conditions and determining the need for maintenance or rehabilitation. Higher IRI values indicate a rougher road surface, affecting vehicle comfort, safety, and fuel consumption. IRI is measured in meters per kilometre (m/km) or inches per mile (in/mi). It is a useful tool for road management agencies and engineers to prioritise maintenance and plan road improvement strategies to ensure smoother and safer driving conditions.
### Rehabilitation of A2 Miladinovci-Hopodrom

This activity aims to rehabilitate the motorway A2, section Miladinovci - Hopodrom, including the rehabilitation of the Hipodrom interchange. The Hipodrom interchange serves several road connections, including Kumanovo - Bypass, Veles - Bypass, Bypass - Kumanovo, Bypass - Veles, Bypass - Skopje, Veles - Skopje, Kumanovo - Veles, Skopje - Veles, and Veles - Kumanovo. The length of the main alignment is 10.4 km, while the length of the ramps of the Hipodrom interchange is about 8.6 km.

Total length of roadways to be rehabilitated: **19 km**

### Major concerns to be addressed:

- **Deterioration of the road pavement**: The current condition of the road surface is deteriorated due to age and volume of heavy traffic, leading to roughness, cracks, potholes, and other forms of damage.

  Technical condition visual:
  - PCI average for left carriageway: 15,00
  - PCI average for right carriageway: 12,00
  - According to ASTM D6433
  - IRI: IRI\(_{100}\) right carriageway: 2.35 m/km
  - IRI\(_{100}\) left carriageway: 1.95 m/km

- **Safety concerns**: Deteriorated technical condition of the road surface poses safety risks to motorists, particularly during inclement weather or high traffic volume periods and high volume of heavy traffic (HGV).

  Number of accidents: 2018: 21
  - Number of killed: 2018: 4
  - Number of heavily injured: 2018: 7
  - Number of slightly injured: 2018: 33
  - Number of persons not injured: 2018: 8

- **Traffic congestion**: The capacity of the motorway is currently limited due to the road surface condition, which leads to increased travel time and delays for commuters and cargo transport, congestion and delays are common, particularly at the Hipodrom interchange.

**AADT: (2018-2022)**

2019: 15836 vehicles/day;
2020: 11751 vehicles/day;
2021: 15241 vehicles/day;
2022: 15493 vehicles/day

- **Inadequate drainage**: The existing drainage system is insufficient, causing water accumulation on the road surface, which further damages the pavement and reduces safety.

**Rehabilitation of A4 Hipodrom Petrovec**

This involves the rehabilitation of the main alignment of the motorway in a length of 8.8 km. The project includes the review of existing design, execution of rehabilitation works based on current conditions, and supervision of the works.

The total length of the motorway to be rehabilitated: **8.8 km.**

**Major problems to be addressed through this project:**

- **Deterioration of the road pavement**: The current condition of the road surface is deteriorated due to age and volume of heavy traffic, leading to roughness, cracks, potholes, and other forms of damage.

**Technical condition**

Section: Petrovec - Hipodrom: Average IRI = 2.07 m/km
Section: Hipodrom – Petrovec: Average IRI = 2.12 m/km

- **Safety concerns**: Deteriorated technical condition of the road surface poses safety risks to motorists, particularly during inclement weather or high traffic volume periods.

Number of accidents: 2018: 35
Number of killed: 2018: 8
Number of heavily injured: 2018: 12
Number of slightly injured: 2018: 47
Number of persons not injured: 2018: 20

- **Traffic congestion**: The capacity of the motorway is currently limited due to the road surface condition, which leads to increased travel time and delays for commuters and cargo transport.

**AADT: (2018-2022)**

2019: 18658 vehicles/day;
2020: 13349 vehicles/day;
2021: 16445 vehicles/day;
2022: 18406 vehicles/day

- **Inadequate drainage**: The existing drainage system is insufficient, causing water accumulation on the road surface, which further damages the pavement and reduces safety.

The basic design for rehabilitation of three sections was prepared in 2020 by PROSTOR DOO Kumanovo. Revised by the Faculty of Civil Engineering - Skopje.
The project includes rehabilitation of the existing motorway section on both carriageways. This part of the Corridor has to be rehabilitated due to the damages caused during the operation period.

**Scope of activities to be perform within this project:**

- Review/gap-analysis of the existing design and assessment of its feasibility, preparing detail design include road safety audit and traffic management plan, obtaining all necessary permits,
- Preparation of tender dossier and conducting tender evaluation process according with PRAG and public procurement legislation of North Macedonia.
- Support with technical expertise during the tender evaluation process
- Performing rehabilitation works of the right and left carriageways,
- Performing rehabilitation works of all ramps at the Petrovc and Hipodrom interchanges,
- Upgrade and repair of existing drainage systems along the motorway.
- Improvement of road markings and signage, installation of new safety guardrails ad crash cushions,
- Performing environmental mitigation measures, such as soil erosion control,

Supervision of the construction works to ensure compliance with the technical specifications and quality standards.

The rehabilitation of selected sections would lead to increased road safety, reduced time travel, increased level of comfort for the road users and lower emission of CO₂ due to the more constant speed of the drivers.

**The estimated duration of the project is expected to be 24 months.**

Performing the rehabilitation works on each of sections will require close coordination and planning of the temporary traffic organisation/scheme, due to the high demand to minimize inconvenience and maintain the desired level of traffic flow. It should be mentioned that the road works will be carried out also in road junctions, so it is possible that the intersections will be temporarily closed to traffic, and it will be necessary to establish detours through alternative roads.

<table>
<thead>
<tr>
<th>Project Value and funding sources</th>
<th>Total EUR 52.300.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction works</td>
<td>EUR 50 300 000</td>
</tr>
<tr>
<td>Preparatory and Supervision</td>
<td>EUR 2 000 000</td>
</tr>
</tbody>
</table>

**Funding sources:**

- EU contribution EUR 26 150 000
- National co-financing EUR 26 150 000

**Implementation period** 2025 - 2029

**Stage of preparation**

Based on the information provided, it seems that the project is well prepared.

The fact that the basic design (which includes a detailed design, in accordance with legislation of North Macedonia) for the rehabilitation of the section was prepared suggests that the project has received some level
of expert input. Additionally, the design documentation has been already revised by the Faculty of Civil Engineering – Skopje, which further indicates that the project has undergone a thorough review process.

This indicates that there may be additional work required to ensure that all EU required standards have been properly addressed.

To ensure that all relevant EU standards are incorporated to the design, a dedicated Gap Analysis should be considered. This would help to identify any potential issues or gaps in the project design and address them before the procurement phase.

Nevertheless, without more detailed information about the project, such as the budget, timeline, and potential challenges, it is difficult to make a more comprehensive assessment of the state of preparation.

<table>
<thead>
<tr>
<th>Maturity level</th>
<th>HIGH</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Project title:</th>
<th>Construction of state road A3, section Bitola – border crossing Medzitlija, from km.0+000,00 to km. 22+620,00 – new route at the level of expressway – reserve project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of support</td>
<td>No 2/Roads</td>
</tr>
<tr>
<td>Lead Project Beneficiary</td>
<td>Lead: Ministry of Transport and Communications and Public Enterprise for State Roads (PESR)</td>
</tr>
<tr>
<td>Institution that is the author of the project proposal</td>
<td>Public Enterprise for State Roads (PESR)</td>
</tr>
</tbody>
</table>

This project aims to upgrade and improve the state road A3, section Bitola - border crossing with Greece in Medzitlija, to the parameters of an expressway, including the construction of a new route with a length of 22.62 km, from km.0+000,00 to km. 22+620,00. The specific objective is to construct a new 22.62 km route at the level of an express road, resulting in increased road safety, reduced travel time, increased comfort for road users, and lower CO2 emissions. The Public Enterprise for State Roads will carry out the project in coordination with the Ministry of Transport and Communications and Public Enterprise for Maintenance and Protection of National and Regional Roads. The project will involve design review and detail design, land acquisition and expropriation, preparation of tender dossier, conducting the tender procedure in line with PRAG, performing construction works of the new route based on FIDIC standards, and supervision over the construction process. The intended
result of this project is a safer and more efficient road network that meets the needs of the road users and contributes to the economic development of the region.

Specific objectives:

- **Improving road safety:** The project aims to improve the safety of the road users by rehabilitating the carriageway, which will reduce the risk of accidents and fatalities.
- **Enhancing connectivity:** The project aims to improve the connectivity within the Skopje metropolitan region, other regions within North Macedonia, and better links with Greece.
- **Increasing economic development:** The project can contribute to the economic development of the region by improving the efficiency of transport, reducing transport costs, and facilitating the movement of goods and services.
- **Improving environmental sustainability and climate resistance:** The project can contribute to improving the environmental sustainability of the region by reducing emissions and air pollution from vehicles, as well as reducing the amount of time and fuel wasted in traffic.

Major concerns to be addressed:

- the current road A3 has a low capacity, which often results in traffic congestion and delays. The new expressway will have a higher capacity, allowing for smoother and faster traffic flow, which will reduce travel time for road users.
  - Number of accidents: 2018: 3
  - Number of killed: 2018: 0
  - Number of heavily injured: 2018: 0
  - Number of slightly injured: 2018: 5

- AADT: (2018-2022)
  - 2019: 4191 vehicles/day;
  - 2020: 2316 vehicles/day;
  - 2021: 2297 vehicles/day;
  - 2022: 3422 vehicles/day

- border crossing at Medzitlija is one of critical point of transit between North Macedonia and Greece, and it experiences a high volume of traffic in both directions. The existing road infrastructure is not capable of handling the current and projected traffic volume, leading to frequent congestion and delays. The new expressway will alleviate this problem by providing a more efficient and safer road network that can handle the growing traffic demand.

- the existing road infrastructure is associated with high accident rates, mainly due to poor road conditions and inadequate safety features. The new expressway will be designed and constructed based on modern safety standards, with improved road geometry,
safety barriers, and signage, which will enhance road safety and reduce accident rates.

<table>
<thead>
<tr>
<th>Project Value and funding sources</th>
<th>Total: EUR 83 050 000 + funds for land acquisition/expropriations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preparatory activities (like Design Gap Analysis) EUR 650 000</td>
</tr>
<tr>
<td></td>
<td>Construction works EUR 80 000 000</td>
</tr>
<tr>
<td></td>
<td>Supervision EUR 2 400 000</td>
</tr>
<tr>
<td>Funding sources:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EU contribution EUR 13 141 000</td>
</tr>
<tr>
<td></td>
<td>National co-financing EUR 2 319 000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation period</th>
<th>2025-2029</th>
</tr>
</thead>
</table>

Based on the information provided, it seems that the project is moderately prepared.

The fact that the basic design according to regulations of North Macedonia was prepared suggests that the project has received some level of expert input.

This indicates that there may be additional work in terms of design and other studies like climate and environmental, road safety required to ensure that all EU required standards have been properly addressed.

To ensure that all relevant EU standards are incorporated to the design, a dedicated Gap Analysis should be considered. This would help to identify any potential issues or gaps in the project design and address them before the procurement phase.

Nevertheless, without more detailed information about the project, such as the budget, timeline, and potential challenges, it is difficult to make a more comprehensive assessment of the state of preparation.

**Stage of preparation**

**Maturity level** MODERATE

### 4.3. Mainstreaming

#### 4.3.1. Environmental Protection, Climate Change and Biodiversity

Reflecting North Macedonia's commitment to the Enhanced Nationally Determined Contributions (NDC) and the broader objectives of the Paris Agreement, the OP encapsulates a strong emphasis on climate resilience and adaptation. It strategically integrates these considerations into its planning and operations, understanding the transport sector's key role in addressing climate change.

The OP on transport of North Macedonia incorporates environmental, energy efficiency, and climate change considerations into its strategic planning, recognising the importance of the transport sector in achieving these objectives.

The OP includes Environmental Impact Assessment studies (EIAs) to evaluate the potential environmental consequences of the projects. These assessments identify possible environmental effects and focus on local biodiversity, climate impacts, and environmental protection strategies. Importantly, they also delineate mitigating measures for potential adverse impacts, playing a pivotal role in climate change adaptation. Within this framework, the OP integrates biodiversity interests by conducting comprehensive environmental and biodiversity assessments, consulting with environmental specialists.
during the planning and design phases and implementing measures to restore and protect natural habitats affected during construction.

Within the ambit of the OP, a portion of the activities are directed towards improving railway infrastructure. Recognised for its lesser environmental impact than other modes of transport, developing railways is a crucial strategy in reducing greenhouse gas emissions, thereby providing a more climate-friendly solution within the transport sector.

The alignment of the OP with the NDC's goals signifies its commitment to integrating climate change mitigation, environmental protection, and biodiversity conservation into the blueprint and implementation of transport projects. Recognising the importance of sustainable and low-carbon practices in the transport sector, the OP champions these principles for rail and road transport projects.

The OP prioritises environmental sustainability throughout the project lifecycle, from design through implementation. To reduce the carbon footprint of the projects, sustainable practices such as using recycled materials, waste reduction, and minimisation of carbon emissions are integrated into the construction phase. Climate risks are identified and addressed during the project preparation phase, ensuring the technical design requirements incorporate climate adaptation measures. Detailed descriptions of the climate risk assessment process and how it is integrated into the planning cycle are included in project documentation.

In the realm of disaster risk reduction (DRR) for infrastructure, the OP incorporates both “structural” and “non-structural” measures. These measures, either direct or indirect, aim to safeguard transportation networks from natural and human-made disasters.:

- “Structural measures”, such as slope disaster prevention and mitigation for road slope, buffer zones, against landslides or floods, road bridge retrofit, bridge scouring, drainage system, using high temperature resilient materials, regular maintenance etc.
- “Non-structural measures,” such as climate risk assessment to understand the vulnerabilities of the rail and road network to natural and human-made disaster, regular inspections, awareness rising and capacity building and training for relevant authorities.

The OP is also aligned with the National Biodiversity Strategy and Action Plan (NBSAP) of North Macedonia, as required by the Convention on Biological Diversity (CBD). This alignment highlights OP's dedication to biodiversity conservation. The OP projects are intended to integrate biodiversity interests and enhance biodiversity by Natura 2000 and habitat connectivity objectives. Specific biodiversity positive measures, such as habitat restoration and protection of endangered species, are detailed in project documentation.

In addition, the OP encourages the implementation of "Green Procurement” practices that support EU Green Deal policies. This strategy enables procuring goods and services with reduced environmental impacts throughout their life cycle, contributing to the transport sector's sustainability goals. By embedding environmental protection, energy efficiency, and climate change adaptation into its strategic planning and operations, the OP aims to fulfil North Macedonia's NDC targets. This approach enhances sustainable transportation practices, contributes to long-term environmental resilience, and reinforces the nation's social well-being. Through such efforts, the OP acknowledges climate change adaptation not as an ancillary goal but as a significant objective integral to the success of its transport projects.

4.3.2. Gender Equality and Empowerment of Women and Girls

As per OECD Gender DAC codes identified in section 1.1, this programme is labelled G0. The OP has been thoroughly assessed for its capacity to advance gender equality. The direct impact of the projects

65 https://www.cbd.int/countries/targets/?country=mk
66 EU Handbook for Green Procurement can be used:
centred on transport infrastructure does not discriminate based on gender. Integrated safety measures ensure all users have access to well-lit and secure environments. Moreover, the projects provide universal access to transport and equal employment opportunities. Diverse perspectives are encouraged through SWG's consultation processes, and user feedback ensures inclusivity. Although data is not disaggregated by gender, the projects aim to achieve gender-equal results. The G0 label indicates that projects respect and consider gender-related aspects of service delivery, even if they do not explicitly target gender equality.

### 4.3.3. Human Rights

The OP is based on human rights principles, including equality, non-discrimination, participation, transparency, and accountability. The projects, which range from railway bridge reconstruction to motorway rehabilitation, prioritise safety and ensure universal accessibility, thereby upholding the right to freedom of movement and protection. Moreover, they provide equal employment opportunities. Aligning projects with national priorities, Sector Working Groups facilitate transparent decision-making and stakeholder collaboration. Even though these projects do not directly address particular human rights concerns, they inherently uphold human rights principles throughout their lifespan.

### 4.3.4. Disability

As per OECD Disability DAC codes identified in section 1.1, this programme is labelled as D0. Even though disability inclusion is not the main objective of the OP, the projects include measures to ensure accessibility and safety for all users, including those with disabilities. To ensure the safety and accessibility of road and railway infrastructure projects, it is essential to conduct a safety audit and incorporate necessary measures for people with disabilities, including those with audio or visual impairments, individuals using wheelchairs, elderly individuals and parents with child strollers. This entails including these considerations in design and feasibility studies. To achieve this, it is essential to engage in interactions and consultations with relevant associations and organisations through SWG that represent and advocate for the rights and needs of people with disabilities.

While disability inclusion may not be the program’s primary objective, its projects should still prioritise accessibility and safety for all users, including individuals with disabilities. This involves incorporating accessibility features into all construction and renovation initiatives. To achieve the goal of inclusiveness, accessibility for persons with disabilities should be integrated into the design of road and railway infrastructure projects. By incorporating mechanisms within the program to address accessibility concerns, the commitment to inclusiveness is further reinforced.

### 4.3.5. Democracy

The OP will be carried out in line with democratic principles including through transparent decision-making procedures and extensive stakeholder participation. SWGs ensure inclusive consultations and collaborative decision-making by democratic principles.

### 4.3.6. Conflict sensitivity, peace and resilience

By conducting conflict-sensitive assessments and designing initiatives to promote peace and societal resilience, the OP acknowledges the significance of these factors. This requires understanding local dynamics and ensuring that projects do not exacerbate existing tensions but contribute to community peace and stability.

### 4.3.7. Disaster Risk Reduction

The significant projects the OP covers will incorporate resilient construction materials, innovative designs, and robust emergency planning and response measures. Moreover, comprehensive feasibility studies and Environmental and Social Impact Assessments are integral to the OP, systematically evaluating potential disaster risks. These insights then shape robust emergency planning, response measures, and the integration of specific mitigation strategies into the project planning and design. Consequently, while Disaster Risk Reduction (DRR) is not the primary objective of the OP activities, it
is recognised as a significant objective, being an essential consideration in transport sector project planning and implementation.

4.3.8. Other Considerations

The OP is conscious of the environmental impact of its initiatives, and it complies with environmental regulations and strives to minimise adverse effects through environmentally friendly design and construction. It also aims to contribute to the local economy by increasing connectivity and providing employment opportunities.

4.4. Risks and Assumptions

<table>
<thead>
<tr>
<th>Category</th>
<th>Risks</th>
<th>Likelihood (High/Medium/Low)</th>
<th>Impact (High/Medium/Low)</th>
<th>Mitigating measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Environment</td>
<td>Instability in the political sphere or shifts in government policy could disrupt the OP</td>
<td>M</td>
<td>H</td>
<td>Engagement with government bodies on a regular basis, advocacy for policy stability, and contingency planning</td>
</tr>
<tr>
<td>People and Organisation</td>
<td>Insufficiency of qualified personnel or high employee turnover</td>
<td>H</td>
<td>H</td>
<td>Regular training, skill development programmes, offering competitive compensation, and fostering a positive organisational culture</td>
</tr>
<tr>
<td>Planning, Processes and Systems</td>
<td>Delays or cost overruns in construction activities</td>
<td>H</td>
<td>H</td>
<td>Effective project management, regular monitoring and evaluation, contingency planning, and risk management strategies</td>
</tr>
<tr>
<td>Planning, Processes and Systems</td>
<td>Inadequate project planning that results in an unsuccessful project execution</td>
<td>L</td>
<td>H</td>
<td>Comprehensive project planning and documentation, application of best practises for project management, and continuous monitoring and evaluation</td>
</tr>
<tr>
<td>People and the Organisation</td>
<td>Inadequate technical capability of international and/or local consultants to carry out the project could result in substandard work, delays, and cost overrun</td>
<td>H</td>
<td>H</td>
<td>Consultants are subjected to a rigorous screening procedure to ensure they possess the required credentials and experience. Regular monitoring of progress and provision for capacity-building</td>
</tr>
<tr>
<td>Planning, Processes, and System</td>
<td>Lack of information and delays in acquiring the data required for</td>
<td>H</td>
<td>H</td>
<td>Establish a reliable data collection and management system. Clear channels of communication must be maintained with all stakeholders to ensure timely data delivery</td>
</tr>
</tbody>
</table>
People and the Organisation:

| People and the Organisation: | Insufficient cooperation between local and national stakeholders could result in disjointed efforts, inefficiency, and potential conflict | M | H | Facilitate regular meetings with stakeholders and define their roles and responsibilities clearly. Create an atmosphere of cooperation and mutual respect. If necessary, implement conflict resolution mechanisms. |

External Assumptions

- Sufficient financial resources are accessible from various sources, including international donors, the European Union, International Financial Institutions, and public-private partnerships.
- North Macedonia can fulfil its co-financing and debt service obligations.
- North Macedonia continues to align its regulatory and legislative framework with EU standards in the transport sector.
- Effective collaboration is maintained between all parties involved in developing transport infrastructure.
- Availability of competent, experienced consultants and construction contractors
- Projects are completed on time, and ongoing maintenance and sustainability are ensured to enhance transport efficiency and connectivity.
- The OP authorities (MA and IBs) participate actively in capacity-building initiatives and implement the acquired skills in their operations.
- Capacity-building initiatives have a lasting impact.
- Assured technical assistance for preparatory works.
- Project Implementation Units are established in PESR and ZRSMI.
- EU institutions’ tools, such as Twinning and TAIEX, are utilised to fill gaps in staff competencies.
- Extensive interinstitutional collaboration is ensured in daily project preparation and implementation.

5. Overview of the consultation process for the preparation of the Operational Programme

The OP was developed using a highly consultative and inclusive methodology. The objective was to adhere to the partnership principle by involving partner institutions and organisations at various stages. Complementing this concentrated effort, the OP was integrated into a broader context of consultations for the country’s IPA III Strategic Response, which included approximately forty meetings of Sector Working Groups. These meetings shaped a unified vision for utilising EU financial aid under IPA III across all windows. Consequently, the development of the OP not only benefited from this broader participatory process and contributed significantly to its alignment with the country’s strategic priorities and the Strategic Response’s overall objectives.

This process was marked by regular communication, consultations, and feedback, which fostered partnership, transparency, and confidence among all stakeholders. The overarching objective was to promote a shared comprehension of the OP, enabling each participant to comprehend their role within
the broader scope of planned initiatives. This process was directed by the Department of the Ministry of Transport and Communications (MoTC) for IPA, which served as OP's Managing Authority.

A series of bilateral meetings with potential institutional beneficiaries of the programme, including the Public Enterprise for State Roads and the Public Enterprise for Railway Infrastructure of Republic of North Macedonia - Skopje, were held to initiate this process. During these sessions, project ideas were discussed and refined, sector-specific needs and constraints were addressed, and alignment with North Macedonia's overarching strategic framework was ensured.

Based on the insights gained from these meetings, an indicative project pipeline outlining potential support areas, activities, and interventions was developed. This document was distributed and communicated to all process participants, promoting a unified vision.

To enhance the OP further, a SWOT workshop was initiated. This event allowed institutional beneficiaries to share their insights and validate data gathered through sector analysis. In addition, it facilitated the identification of potential interventions and developmental needs that the OP could address. Encouraging all participants to contribute fostered a shared understanding of the transportation industry's most significant challenges and opportunities. The workshop's findings were then incorporated into a comprehensive SWOT analysis, a crucial component of the OP.

The initial draft of this OP was presented to the Transport SWG. This expert-level body is charged with formulating and implementing national sector policies related to EU integration. The multi-level management approach of SWG, composed of government institutions, civil society, local authorities, economic and social partners, representatives of EUD, IFIs, and donors, reflects the partnership principle. It brings together stakeholders from North Macedonia's national administration bodies, social partners, civil society, and the international community.

The SWG, which consists of over 40 representatives, had equal opportunity to contribute to the OP, comment on the working materials, and propose amendments and improvements. The MA carefully considered and incorporated all comments into the final document. This resulted in a OP accurately reflecting the diverse stakeholders' shared vision and expertise. Upon completion of the OP, another SWG meeting will be convened to ensure continued stakeholder input. This commitment to ongoing consultation will ensure that the OP remains an effective tool for shaping the future of the transport sector in North Macedonia.

6. Implementation arrangements

   6.1. Financing Agreement

In order to implement this programme, it is envisaged to conclude a financing agreement between the Commission and North Macedonia.

   6.2. Methods of Implementation

The Commission will ensure that the EU-appropriate rules and procedures for providing financing to third parties are respected, including review procedures, where appropriate, and compliance of the programme with EU restrictive measures67.

Indirect Management with an IPA III beneficiary

This programme will be implemented under indirect management by North Macedonia.

The managing authority responsible for the execution of the programme is Ministry of Transport and Communications. The managing authority shall be responsible for legality and regularity of expenditure, sound financial management, programming, implementation, monitoring, evaluation, information, visibility, and reporting of IPA III activities.

67 www.sanctionsmap.eu
The managing authority shall rely on sectoral expertise and technical competence of the following intermediate bodies for policy management: Public Enterprise for State Roads and the Public Enterprise for Railway Infrastructure Railways of Republic of North Macedonia -Skopje. They shall ensure sound financial management of the programme.

Budget implementation tasks such as calls for tenders, calls for proposals, contracting, contract management, payments, and revenue operations, shall be entrusted to the following intermediate body for financial management: Central Financing and Contracting Department. It shall ensure legality and regularity of expenditure.

NIPAC and NIPAC office as well as the Management structure from the Ministry of Finance are part of the IPA structure, having their responsibilities as deriving from Framework Financial Partnership Agreement.

6.3. Scope of Geographical Eligibility for Procurement and Grants

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply, subject to the following provisions.

The Commission’s authorising officer responsible may extend the geographical eligibility on the basis of urgency or of unavailability of services in the markets of the countries or territories concerned, or in other duly substantiated cases where application of the eligibility rules would make the realisation of this programme impossible or exceedingly difficult (Article 28(10) NDICI-Global Europe Regulation).

7. Financial Tables by Areas of Support and by Year (including co-financing rates if applicable)
<table>
<thead>
<tr>
<th>Area of Support</th>
<th>Year 2024</th>
<th>Year 2025</th>
<th>Year 2026</th>
<th>Year 2027</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EU contrib</td>
<td>North Macedon ia co-financing</td>
<td>Total expenditure</td>
<td>EU contrib</td>
<td>North Macedon ia co-financing</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>1</td>
<td>2 368 750</td>
<td>1 068 750</td>
<td>3 437 500</td>
<td>593 750</td>
<td>1 187 500</td>
</tr>
<tr>
<td>2</td>
<td>2 404 470</td>
<td>1 241 666</td>
<td>3 646 136</td>
<td>6 328 334</td>
<td>12 581 668</td>
</tr>
<tr>
<td>3(^{69})</td>
<td>2 126 780</td>
<td>276 000</td>
<td>2 402 780</td>
<td>790 375</td>
<td>890 375</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6 900 000</td>
<td>2 586 416</td>
<td>9 486 416</td>
<td>7 712 459</td>
<td>14 659 543</td>
</tr>
</tbody>
</table>

\(^{68}\) The Union contribution shall not exceed 85% of the total eligible costs of the programme

\(^{69}\) Evaluation, Audit and Strategic Communication and Public Diplomacy are covered by the budget of Area of Support 3 – Other Support, as indicated in Section 4.2.2
8. Performance Measurement

8.1. Monitoring and Reporting

Monitoring on implementation of the Operational Programme will aim at collecting and analysing data to inform on progress towards achievement of planned results, to feed decision-making processes and to report on the use of resources.

The day-to-day technical and financial monitoring of the implementation of this Operational Programme will be a continuous process, and part of the implementing partner’s responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the programme and elaborate regular progress reports (not less than annual) and final reports.

Every report shall provide an accurate account of implementation of the Operational Programme, difficulties encountered, as well as the degree of achievement of its Outputs and contribution to the achievement of its Outcomes, and if possible, the time of reporting, contribution to the achievement of its Impacts, as measured by corresponding indicators.

The Commission may undertake additional monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

Roles and Responsibilities for Data Collection, Analysis and Monitoring:

The Managing Authority for the OP shall in particular: design adequate monitoring and reporting procedures, considering the internal reporting division of roles and responsibilities.

The overall progress will be monitored through participation of various stakeholders, such as European Commission/ EU Delegation, NIPAC/NIPAC Office, NAO/Management structure, MA, IBs, Final Beneficiaries, AA, and other institutions and civil society organisations.

Designated authorities within the transport sector, guided by government decisions, are tasked with the responsibility of collecting and verifying data for each indicator. The Ministry of Transport and Communication (MoTC) collaborates with ZRSMI and PESR to assess the collected data, focusing on specific indicators such as infrastructure, logistics performance, transport emissions, safety, and efficiency. The MoTC's Unit for Negotiations and Integration prepares progress reports on NTS based on these assessments.

The Unit for Negotiations and Integration prepares progress reports that are assessed by the Sector Working Group on Transport (SWGT) and then presented to the Government. The reports capture progress against policy performance indicators within the transport sector.

The Sectoral Monitoring Committee, as foreseen in Article 53 of the Financial Framework Partnership Agreement, plays a key role in monitoring and reporting of the implementation of the Operational Programme. On the basis of the reports provided by the Managing Authority prior to the meetings, it shall in particular:

- review the effectiveness, efficiency, quality, coordination and compliance of the implementation of the programmes.
- review the progress towards meeting the objectives, achieving the planned outputs and results, and assessing the impact and sustainability of IPA III assistance, while ensuring coherence with the policy dialogue, the related central and regional sector strategies and multi-country or regional activities in North Macedonia.
- review annual implementation reports, including financial execution of the programmes.
- examine relevant findings and conclusions as well as proposals for remedial follow-up actions stemming from the on-the-spot checks, monitoring, evaluations and audits if available.
- discuss any relevant aspects of the functioning of the management and control systems.
- discuss any problematic issues and actions.
• if necessary, consider or make proposals to amend programmes and take any other corrective action to ensure the achievement of the objectives and enhance the efficiency, effectiveness, impact and sustainability of IPA III assistance.
• review information, publicity, transparency, communication and visibility measures taken.

8.2. Evaluation

Having regard to the importance of the programme, a mid-term and a final evaluation will be carried out for the areas of support falling under this Operational Programme contracted by North Macedonia and should be included in the Area of support “Other support” as indicated in Section 4.2.2.

The evaluations will be carried out by experts or bodies, internal or external, functionally independent from the management and control system.

The mid-term evaluation may be carried out for problem solving and learning purposes, in particular with respect to assessing the effectiveness of implemented programme strategies, and the progress in infrastructure development and logistics performance.

Final evaluation may be carried out for accountability and learning purposes at various levels (including for policy revision), taking into account in particular the long-term impact of the programme, its contribution to policy effectiveness, and the efficiency of resource allocation.

The evaluation reports shall be shared with all relevant parties. North Macedonia and the Commission shall analyse the conclusions and recommendations of the evaluations jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the support.

NIPAC Office in consultation with the Commission is responsible for drawing up an evaluation plan presenting the evaluation activities to be carry out in different phases of implementation. The Ministry of Transport and Communications, as Managing Authority, is responsible for planning, organising and implementation of the OP evaluation, in coordination with NIPAC Office.

8.3. Audit and Verifications

Technical audits for major projects are mandatory during the implementation.

Financial provisions related to audit and verifications, including technical audits if applicable, carried out by North Macedonia should be included in the Area of support “Other support” as indicated in Section 4.2.2.

Without prejudice to the obligations applicable to contracts concluded for the implementation of this programme, the Commission may, on the basis of a risk assessment, contract independent audit or verification assignments for one or several contracts or agreements.

9. Strategic Communication and Public Diplomacy

All entities implementing EU-funded external actions have the contractual obligation to inform the relevant audiences of the Union’s support for their work by displaying the EU emblem and a short funding statement as appropriate on all communication materials related to the actions concerned. To that end they must comply with the instructions given in the 2022 guidance document Communicating and raising EU visibility: Guidance for external actions (or any successor document).

In particular, the recipients of EU funding shall acknowledge the origin of the EU funding and ensure its proper visibility by:

• providing a statement highlighting the support received from the EU in a visible manner on all documents and communication material relating to the implementation of the funds, including on an official website and social media accounts, where these exist; and
• promoting the actions and their results by providing coherent, effective, and proportionate targeted information to multiple audiences, including the media.
Visibility and communication measures shall be implemented, as relevant, by the national administrations entrusted entities, contractors, and grant beneficiaries. Appropriate contractual obligations shall be included, respectively, in financing agreements, delegation agreements, and procurement and grant contracts.

Visibility and communication measures specific to this programme shall be complementary to the broader communication activities implemented directly by the European Commission services and/or the EU Delegations and Offices. The European Commission and the EU Delegations and Offices should be fully informed of the planning and implementation of the specific visibility and communication activities, notably with respect to the communication narrative and master messages.

The Ministry of Transport and Communications, as Managing Authority, is responsible for preparation and implementation of the OP Transport Strategic Communication Plan in coordination with NIPAC Office and EU Delegation (EUD).

10. Sustainability

The end recipients are obliged to ensure the sustainable use of the outputs in line with the Operational Programme, the contract or equivalent. The end recipients are obliged to allocate budget for ensuring the functioning and maintenance of the outputs and cover the costs of their operation and maintenance. The end recipients should recover the outputs to their initial condition in case of their damage or replace the outputs with those of minimum equal quality and functionality in case of their destruction.

The breach of the conditions for sustainability may lead to refund of the EU contribution in case the end recipients fail to take the necessary corrective measures for removing the deficiencies occurred.

The sustainability of the Operational Programme (OP) is deeply ingrained in its design and implementation, ensuring that the achieved benefits will continue to be realised beyond the OP's implementation period.

OP emphasises rigorous asset management, whether tangible or intangible assets are acquired through the programme. These assets, whether infrastructure investments or intellectual properties, remain under the stewardship of the end recipient for use strictly in accordance with the objectives of the OP. A sufficient budget allocation safeguards the operation and maintenance of these assets, ensuring their continued functionality and relevance.

All parties involved are committed to upholding high standards of care, be it routine or periodic, as a pillar of sustainability. This strategy ensures the environmental and financial sustainability of the project's outcomes over the long term. In addition, infrastructure improvements, whether on the railways or the roads, improve quality and durability, resulting in long-term cost savings. Not only does a well-maintained, efficient transportation network reduce the frequency and cost of repairs, but it also contributes to increased safety, which could result in fewer accidents and their associated costs.

Regular audits confirm that the assets are being utilised for their intended purpose, thereby ensuring both transparency and accountability. In the event of any damage, mechanisms will be in place to restore tangible assets to their original condition or make any necessary adjustments to intangible outputs, thereby ensuring that these assets will continue to generate value.

The recipient is responsible for ensuring adequate visibility of the European Commission's contribution, fostering a sense of ownership among recipients, and promoting a culture of shared responsibility. In conjunction with the strategic allocation of resources in the medium-term budget framework for the maintenance and operation of the assets, this further ensures OP's sustainability.