Transport Development Strategy – Montenegro 2019-2035

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ABBREVIATIONS

CEFTA	Central European Free Trade Agreement
PWA	Public Works Administration
EBRD	European Bank for Reconstruction and Development
ECAA	The European Common Aviation Area
EIB	European Investment Bank
EC	European Commission
EMSA	European Maritime Safety Agency
EQMS	Electronic Queuing Management System
ERTMS	Electronic Rail Traffic Management System
EU	European Union
IPA	Instrument for Pre-Accession Assistance
ITS	Intelligent Transport Systems
JASPERS	Joint Assistance to Support Projects in European Regions
MONSTAT	Statistical Office of Montenegro
MSDT	Ministry of Sustainable Development and Tourism
MTMA	Ministry of Transport and Maritime Affairs
MOI	Ministry of the Interior
NIK	National Investment Commission
OSS	One Stop Shop
MRV	Maintenance of Railroad Vehicles
PT	Project Task
REBIS	Regional Balkans Infrastructure Study
SEA	Strategic Environmental Assessment
SEETO	South-east Europe Transport Observatory
SPP	Single Project Pipeline
SAA	Stabilization and Association Agreement
TCT	Treaty establishing the Transport Community
TSI	Technical Specification of Interoperability
VTMIS	Vessel Traffic Management Information System
RIM	Railway Infrastructure of Montenegro

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1. Introduction

Transport development strategy – Montenegro for period 2019-2035 determines current state in the field of transport, defines infrastructural, organizational and operative development targets of the transport system, which shall be realized through timed and long-term implementation plans.

The Strategy has been made with respect to following principles: compatibility of document of this type with public policy priorities and targets, cooperation between relevant authorities, transparency, continuity, economical and rational planning of human, organizational, financial and material resources.

Transport development strategy has been structurally organized so that it includes elaboration of following basic units: introduction, analysis of present state, defining of strategic and operative objectives with accompanying performance indicators, key measures / activities for implementation of specific (operative) objectives, defining of authority of relevant institutions tasked with implementing this Strategy, Strategy implementation plan and monitoring, evaluation and reporting processes. Plan for implementation of individual measures, scheduled for the first short-term period, with a projection of financial support implementation thereof, is presented within the first Action plan for period 2019-2020, which is an integral part of this Strategy.

In that respect, the Strategy has been elaborated through following chapters:

- Chapter 1 –Transport sector development overview with an analysis of current state, review of the regional context, harmonization with the EU context (TEN-T objectives), defining of strategic objectives and review of the regional functional and developmental framework of Montenegrin transport system.
- Chapter 2 – Transport infrastructure (current state, problem analysis with a proposal of measures / activities for improvement of transport infrastructure, which have been deduced from defined specific / operative objectives from this chapter).
- Chapter 3 – Organization and operative functioning of the transport system (current state, problem analysis with a proposal of measures / activities for improvement of organizational and operative aspects of functioning of the transport system, which have been deduced from defined specific / operative objectives).
- Chapter 4 – Anticipated impact of the Strategy, Strategy implementation plan, monitoring, evaluation and reporting processes, funding sources and risks.

1.1. Overview

1.1.1 Scope

TDS lays out strategic and specific (operative) objectives for transport sector development, in order to ensure a basis for future development of this sector, in a manner which fulfils socio-economic needs of Montenegro, while being aligned with EU policy, TEN-T guidelines and standards. TDS determines current state in a variety of transport fields, defines development concepts of infrastructure and transport system, sets long-term objectives for transport infrastructure development and advancement of standards, including standards related to safety and security and environmental protection. Also, TDS helps with determining successive actions plans for implementation of said measures.

Harmonization of TDS with the key strategic national documents, both in its drafting and its future implementation, is essential for its successful implementation and ability of this document to contribute to economic and overall societal development of Montenegro.

Furthermore, TDS takes into account the Mid-Term Government Work Programme (current version for period 2018-2020) whose vision is to build a strong economy and better living standard for Montenegrin citizens. This document sees successful implementation of infrastructure projects as essential for ensuring quality life of citizens of Montenegro. Priorities in the transport sector, which have been fully reflected in TDS, are successful implementation of infrastructure projects dealing with improvement of road transport, maritime and air transport and raising the level of transport safety and security.

In addition, TDS has been drafted in accordance with the main Development Directions of Montenegro (latest version referring to period 2018-2021) which recognizes smart, sustainable and inclusive growth as a priority, while defining key measures, projects and resources for its realization. This document identifies 19 policy areas with define priorities, suggested investments and development measures.

TDS is being adopted within the framework of current Fiscal Strategy of Montenegro (2017-2020) whose main priority is strengthening of fiscal stability, creation of budget surplus, establishing a trend of decreasing public debt until year 2019, and strengthening of economic activities and competitiveness of Montenegrin economy. Taking into account the Fiscal Strategy as well as the Development Directions of Montenegro, TDS reflects the Directions of Macroeconomic and Fiscal Policy of Montenegro which aim to augment competitiveness of the country and increase potential economic growth (both mid-term and long-term) through implementation of capital projects in priority development sectors and implementation of public infrastructure projects, in the context of consolidating and establishing sustainability of public

finances and increasing stability of the financial sector. Finally, TDS shall be implemented in parallel with the Programme of Accession of Montenegro to the EU and with the National Sustainable Development Strategy until 2030.It is important to stress that TDS is complementary with objectives recognized by the National Sustainable Development Strategy for the field of transport. Said Strategy notes that a safe, modern and efficient transport system is a necessary condition for economic, social and territorial cohesion of a country. In the context of the overall development of Montenegrin transport system, one of the priorities is to improve safety and security in all modes of transport in order to preserve human life and property. Regular maintenance of existing infrastructure, investments in new transport capacities, respecting safety and security standards, strengthening of administrative capacities, control, traffic control, application of standards compliant with relevant regulations, as well as trainings and public campaigns, are activities which should be continuously implemented, in the function of realization of stated goals. Resource efficiency, enhancing competitiveness and sustainability are the postulates on which a modern and efficient transport system rests. Furthermore, technological improvements of vehicles and the use of alternative energy sources, the promotion of public transport and non-motorized forms of transport are some of the most important measures of the EU's politics of sustainable transport. In addition, the provision of multimodal transport systems in cities and activities on intermodal integration (as a core component of the urban mobility strategy based on sustainable transport principles) are activities which promote and comply with European policies for sustainable urban mobility. The achievement of the goals of resource efficiency, reduction of air pollution, raising the quality of life of citizens, and improvement of the quality of tourism capacities are priorities which are in the function of a safe, modern and efficient transportation system.

1.1.2 National context

Montenegro (capital: Podgorica) is a sovereign state located in the western part of the Balkan peninsula, having a coast on the Adriatic Sea. The country shares boarders with Croatia (West), Bosnia & Herzegovina (Northwest), Serbia (Northeast), Kosovo (East), Albania (East-Southeast) and Italy from which it is separated by the Adriatic Sea. (Southwest). Montenegro's current population is approximately 630,000 inhabitants, with an expected population growth 0.2% on average in the forthcoming years. The economy of Montenegro is mostly service-based, among which tourism stand out as one of priorities. Services account for more than 70% of Montenegro's Gross Domestic Product (GDP), with remaining 30% attributed to the industry and agriculture. The country's nominal GDP for 2015 was estimated at 3.4 billion euros, while forecasts yield an annual GDP increase of 3% up to 2025 and another 2.5% until 2035.

Montenegro is ranked as World's 110th largest exported. In year 2016, its exports were estimated at 322 million USD, while its imports were valued at 2.25 billion USD, which yielded a trade deficit of 1.93 billion USD. Montenegro's main export good is raw aluminium, bauxite, wine and sawn wood products, with implementation of harmonized system with amendments from 1992. Main imports are refined petroleum products, automobiles, medications, pork and electricity. Montenegro mainly exports its goods to Serbia, Hungary, Bosnia and Herzegovina, China and Italy, while it mainly imports from Serbia, Croatia, Germany, Italy and Bosnia and Herzegovina. Among neighbouring countries, Montenegro keeps strong economic ties with Serbia and Croatia, and to a lesser extent with Bosnia and Herzegovina. Therefore, main trade routes of Montenegro lead to Serbia, Croatia and Bosnia and Herzegovina. Main land corridors are those connecting the Port of Bar with the capital (Podgorica) and the border with Serbia, and the coastal corridor leading to Croatia and Bosnia & Herzegovina in the North and Albania in the South.

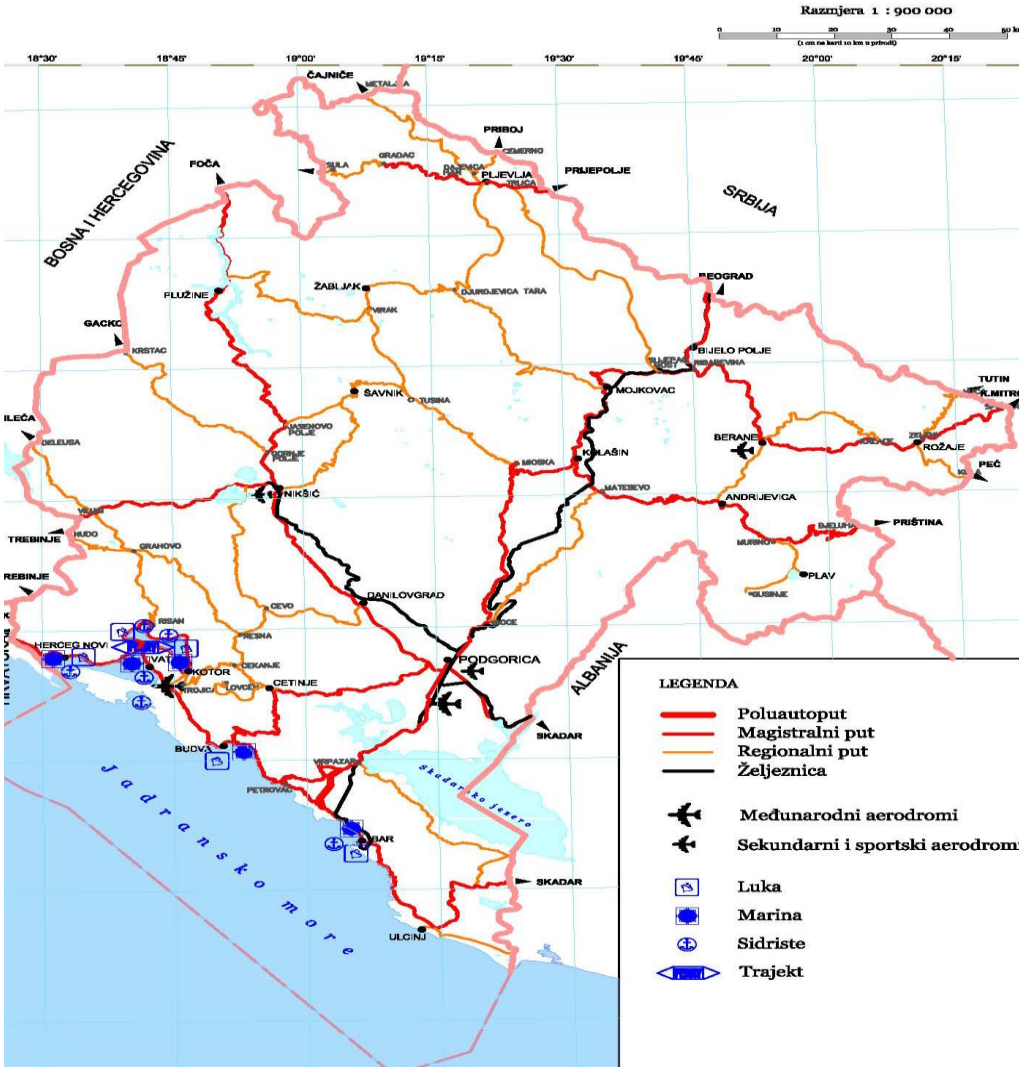


Figure 1.1: Transport map of Montenegro

Total length of Montenegro's roads is approximately 7,000 km, of which around 1,850 km consists of main and regional roads, while the remaining length consists of local roads. Currently, there are no highways in Montenegro (but are under planning) and main roads connecting major urban centres have single carriageways, with one lane per direction (and occasionally a third overtaking lane). Remaining road network includes regional and local roads of lower design standards. Montenegro's railway network consists of three (mostly) electrified, standard gauge railway corridors with a total length of 150 km. These railways connect the Port of Bar with Podgorica and Serbia (Belgrade-Bar railway), the cities of Podgorica and Nikšić (Podgorica – Nikšić railway) and Podgorica with Albania (Podgorica-Shkoder railway). The railway line to Albania offers exclusively freight service. Railways are operated by companies, which independently handle railway infrastructure, passenger transport, cargo transport and maintenance of the rolling stock.

Apart from land borders entrances with neighbouring countries, international access to and from Montenegro is possible through the Port of Bar (with ferry services from Italy) and the international airports of Podgorica (TGD) and Tivat (TIV).

The area of the Port of Bar has two operators – Port of Bar JSC whose majority of capital is state-owned, and the legal entity Port of Adria JSC. The basic activity of the Port of Adria JSC is transhipment of general cargo and containers, while the Port of Bar JSC conducts activities related to the transhipment of bulk, dangerous, liquid, Ro-Ro cargo and passenger traffic.

For a number of years, operator of the Port of Kotor has been Port of Kotor JSC whose majority of capital is ownership of the municipality of Kotor, and its main activity is passenger traffic from ships for cruise travels via cruisers ships.

When it comes to the maritime companies managing ships under Montenegrin flag, there are "Crnogorska plovidba" JSC Kotor which is 100% state-owned, and "Barska plovidba" JSC whose majority of capital is state-owned.

Functioning of an effective and efficient transportation system is a crucial prerequisite for the economic and social prosperity of Montenegro. However, accumulated problems of the past, lack of funding for adequate infrastructure maintenance, transport limitations, traffic accidents, a non-competitive railway system, and insufficient usage of sustainable means of transport, as well as related deficiencies / restrictions, all contribute to a negative impact on Montenegro's socio-economic development. Montenegro is currently planning major overhauls of its road, rail networks, possible expansions of its air transportation system, and further valorisation of its maritime system.

A steady progress in market liberalization of the transport sector has been evident, with a pronounced initiative to be includedin the EU Rail Freight Corridor, as well as in market opening on the Orient/East Med TEN-T Corridor.

1.1.3 Regional context

The Memorandum of Understanding for the Development of the Basic Regional Transport Network in South East Europe (*SEETO*[1] *Memorandum*) was signed in Luxembourg on June 11, 2004, by the governments of Montenegro, Croatia, Bosnia and Herzegovina, Macedonia, Albania, Serbia and Kosovo, as well as by the European Commission. Accordingly, Montenegro was a participant of this format and a full member, and in this way it actively participated in regional cooperation, which is the cornerstone of the European Union's policy of action towards the Western Balkan countries in the field of transport. Further positioning of the Memorandum has been made possible through the application of Protocol IV on land transport within the framework of the Stabilization and Association Agreement between the European Communities and their Member States, on the one hand, and Montenegro on the other.

The mission of the Memorandum was the cooperation on the development of the main and auxiliary infrastructure on the multimodal basic regional transport network in South East Europe and the improvement of policies in this area in order to achieve faster progress in development.

The successor to this Memorandum will be the Treaty establishing the Transport Community (in the Western Balkans region), signed by the Prime Minister of the Western Balkans six in Trieste in 2017.

The agreement on the establishment of a transport community (signatory parties from South-East Europe: Albania, Bosnia and Herzegovina, FYR Macedonia, Kosovo*, Montenegro and Serbia) shall serve the following purposes:

- Better and faster integration of transport markets;
- Better treatment of transport operators in a non-discriminatory manner in terms of their access to transport infrastructures;
- The desire of each individual South-East European (SEE) partner country to comply with its transport laws and related issues with EU law, including the future development of the Union's acquis;
- To provide significant technical support, including better addressing the challenges and needs of environmental protection and the fight against climate change;

[1] *South East Europe Transport Observatory / SEETO*
www.seetoint.org

- To enable the development of the transport sector in a sustainable manner;
- To ensure a more adequate view of the social dimension of the transport community and the establishment of a social dialogue structure among the JIE Contracting Parties;
- To support the resolve of candidate countries and potential candidates to come closer to the European Union and enforce its legal framework, especially in the field of transport.

Development of traffic infrastructure forms a basis for a more competitive market, which is significant for economic growth of the region and especially for job creation. Developed infrastructure enables better slow of goods and capital, ensures enhanced transport safety and security, as well as integration of Montenegro into regional economic processes, which shall be accompanied by further political and economic cooperation.

The most important foreign trade partners of Montenegro are the countries of the Western Balkans, primarily Serbia, but also other CEFTA countries (Albania, Bosnia and Herzegovina, Macedonia, etc.). Serbia is the main export and import partner of Montenegro, and Montenegro is among the most important export partners of Serbia. Trade in goods between Serbia and Montenegro is free, without customs fees on products originating from respective countries. To ensure a more efficient cooperation, better transport connectivity is necessary.

Improved road and rail transport would significantly enhance tourism, business and all other cooperation. Business leaders of Montenegro and the countries of the region often point out at the necessity of improving transport infrastructure, removal of certain administrative barriers as well as bottlenecks at border crossings, believing that these measures would significantly enhance economic cooperation.

It is necessary to observe the regional context of the implementation of this Strategy within the activities related to the Berlin Process and the Connectivity Agenda. Berlin Process, which was initiated in 2014 by the Summit of the Prime Minister of the countries of the Western Balkans six, was designed to support the process of accession to the European Union of the Western Balkan states, through activities on concrete projects and soft (reform) measures. At the second Summit held in Vienna in 2015, through the Linking Agenda, Montenegro has received a grant of 45 million euros for projects in the field of energy and transport. In the period up to the third summit, held in Paris in 2016, the process evolved from the Connectivity Agenda in the areas of energy and transport to regional integration in almost all major sectors. The fourth summit was held in Trieste on July 12, 2017, and was focused on as many as seven areas – from the Connectivity Agenda in Energy and Transport, through the formation of the Transport Community of the Western Balkans, regional economic integration, youth cooperation,

research, cooperation with the civilian sector, bilateral relations and common challenges of terrorism, organized crime, migration and corruption.

As a contribution to the cooperation through the Connectivity Agenda, in 2015 the Government of Montenegro adopted the Single Project Pipeline, which was forwarded to the European Commission, and it was updated in 2018 and confirmed by the decision of the Government of Montenegro. The list contains 12 projects worth EUR 3.3 billion, which correspond to the leading and enlarged TEN-T network in the region of the Western Balkans – the Main Transport Network in the territory of Montenegro (Regulation EU 1315/2013 and delegated Regulation EU 2016/758 of February 4, 2016 on amendments to Regulation EU 1315/2013).

At the Prime Ministers Summit in Trieste, Montenegro has accepted the adoption of the Multi-Annual Action Plan (VAP) for the regional economic space of the six countries of the Western Balkans by 2023. The Multi-Annual Action Plan (VAP) stems from the commitments undertaken under the Central European Free Trade Agreement (CEFTA) and the South East Europe Development Strategy by 2020 (SEE 2020) and is based on CEFTA and EU rules and principles reflected in the Stabilization Agreement and Association Agreement (SAA) of the countries of the Western Balkans. The development of the Regional Economic Area, according to VAP, envisages realization of the activities within the following four components: Trade, Investments, Mobility and Digital Integration.

The intention is that the realization of the activities listed in this document will result in the establishment of Regional Economic Area in six countries of the Western Balkans, based on the CEFTA rules and harmonized with the EU.

Connectivity Agenda was initially designed to put at disposal to the Western Balkan region around 1 billion euro of funds available through the WBIF IPA II program, which would be more accessible as a potential co-financing for key investments / projects in the connecting region for the period from 2015 to 2020. The results of a study carried out by the Vienna Institute for International Economic Studies, presented at the Vienna Summit of the Western Balkan countries' prime ministers (2015), showed that such a comprehensive package of infrastructure investments for a period of 15 years can contribute to further economic growth of 1% per year in countries region, and bring the opportunity to create 200,000 new jobs.

The package of soft (reform) measures established at the Vienna Summit (2015) envisages the following mid-term regional activities with a gradual implementation from years 2016 to 2020:

- Opening of the transport market (implementing the reform strategy on the railway);
- Establishment of a competitive, reliable and secure transport system (improvement of road safety, establishment and operation of efficient transport sector organization,

introduction of intelligent transport systems on the Main Network, establishment of an efficient system for maintenance of road infrastructure);

- Enhancing of efficiency of procedures on borders crossings (devising efficient cross-border agreements, IBM Integrated Border Management Strategy).

1.1.4 EU context (TEN-T objectives)

Trans-European Transport Network (TEN-T) was established in order to enable faster and simpler exchange of goods and people among the member countries of the European Union. The general aim of TEN-T is geographic and economic connection of various parts of Europe through the development of railways, roads, sea ports, airports, internal waterways ports, as well as systems of transport management.

Ultimate aims of TEN-T are directed at addressing existing transport gaps, eliminating bottlenecks and getting rid of technical barriers which exist in the transport network of EU member countries, to strengthen social, economic and territorial cohesion of the Union and contribute to creating a unified European transport area. The mentioned aims will be implemented through construction of new transport infrastructure, innovative digital technologies, usage of alternative fuels and application of universal standards for modernization and improvement of existing transport infrastructure and platforms. This is a continuous process which has to take into account current events.

New Core TEN-T network of roads, railway, airports and maritime transport, with a timeframe going up to 2030, is based on nine main axes: two corridors north-south, three corridors east-west and four diagonal corridors. These corridors are: **Baltic-Adriatic, North Sea-Baltics, Mediterranean, Middle-East – east Mediterranean, Scandinavian-Mediterranean, Rhine-Alpine, Atlantic, North Sea-Mediterranean, and Rhine-Danube (Figure 1.2).** Each of these must include three types of transport infrastructure, passing through three member countries and two border crossing points.

Comprehensive TEN-T network is a general side of TEN-T and it includes all existing and planned infrastructure which fulfils set requests and which should be in place no later than December 31, 2050.

In defining core transport network, countries of the Western Balkans used the guidelines and methodology implemented to establish core network on EU territory (core trans-European transport network TEN-T), as well as requested technical standards, and these principles also assume connectivity between EU capitals, main economic centres and big ports, within a timeframe going up to 2030.

Core transport network in the Western Balkan region is now encompassed in the extension of three key trans-European transport corridors to the Western Balkans region: Mediterranean, Orient (Middle East)-east Mediterranean, and Rhine-Danube corridor.

Indicative extension of Comprehensive TEN-T to the Western Balkans region and to the territory of Montenegro shall include:

- Indicative extension of Core TEN-T network:
- SEETO road route 4: motorway Bar-Boljare (border with the Republic of Serbia)/Orient (Middle East)-east Mediterranean corridor;
- SEETO road route 1: Adriatic-Ionian corridor (coastal variant, speedway along the Montenegrin coast)/Mediterranean corridor, connection to Republic of Croatia and Republic of Albania;
- SEETO rail route 4: railway line Bar-Vrbnica (border with Republic of Serbia)/Orient (Middle East)-east Mediterranean corridor;
- SEETO rail route 2: railway line Podgorica-Tirana (connection with Republic of Albania)/Mediterranean corridor, and
- Port of Bar and airport Podgorica.
- Indicative extension of Comprehensive TEN-T network:
- SEETO road route 4: motorway Bar-Boljare (border with the Republic of Serbia)
- SEETO road route 1: Adriatic-Ionian corridor (coastal variant, speedway along the Montenegrin coast)/Mediterranean corridor, connection to Republic of Croatia and Republic of Albania
- SEETO road route 2b: highway Podgorica-Šćepan Polje (border with Bosnia and Herzegovina to Sarajevo)
- SEETO road route 6: new road Kolašin-border with Republic of Kosovo (through Peć to Pristina)
- SEETO rail route 4: railway line Bar-Vrbnica (border with Republic of Serbia)
- SEETO rail route 2: railway line Podgorica-Tirana (connection with Republic of Albania), port of Bar and airport Podgorica.

Defined indicative extension of the main and comprehensive network is the best possible method of connecting Montenegro to neighbouring countries, which are also its most important trading partners. Corridors of the core network of Bar-Boljare motorway and Bar-Vrbnica railway line connect Montenegro with Serbia, the Adriatic-Ionian corridor with Croatia, while Podgorica-Tirana railway line connects Montenegro with Albania. Routes of the comprehensive network – roads Podgorica-Sćepan Polje and Kolašin-border with Kosovo, connect Montenegro with Bosnia and Herzegovina and Kosovo.

Bar-Boljare motorway corridor represents the basic connection in the north-south direction, and it also provides the appropriate connections to Serbia, Bosnia and Herzegovina and Albania through the existing road network system. The connection of Bar with the TEN-T Corridor X (which passes through Serbia), i.e. the Bar-Belgrade motorway, not only is the strategic

orientation of Montenegro for connecting with Central Europe, but also represents a direction that has special significance for the Port of Bar and the overall economic development Montenegro.

Development of the Adriatic-Ionian corridor is also of great importance, as it will pass through a number of countries in the region and of EU countries, and will connect Montenegro with Central and Western Europe, as well as enable a stronger development of seaports in several countries. This corridor should contribute to significantly greater integration of the Montenegrin territory, and to usher a connection to the regional and European road network. The Adriatic-Ionian motorway shall make tourist destinations on the coast more accessible, but also in the central region for domestic tourists, and for all those from the European and other areas.

In this way, Montenegro will be adequately included / connected to the previous distribution of the Pan-European Corridor.

Figure 1.2: TEN-T Core network corridors

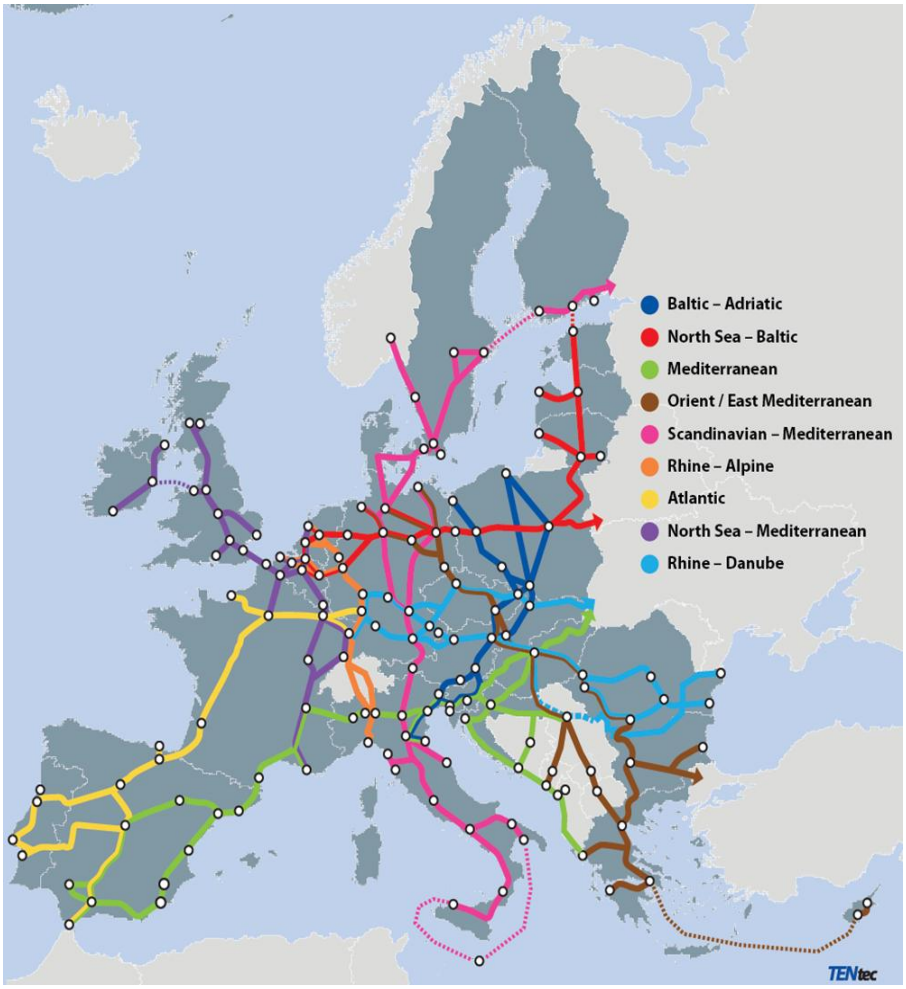


Figure 1.3: Indicative Extension to Neighbouring Countries, Comprehensive Network: Railways and airports, Core Network: Railways (passengers) and airports

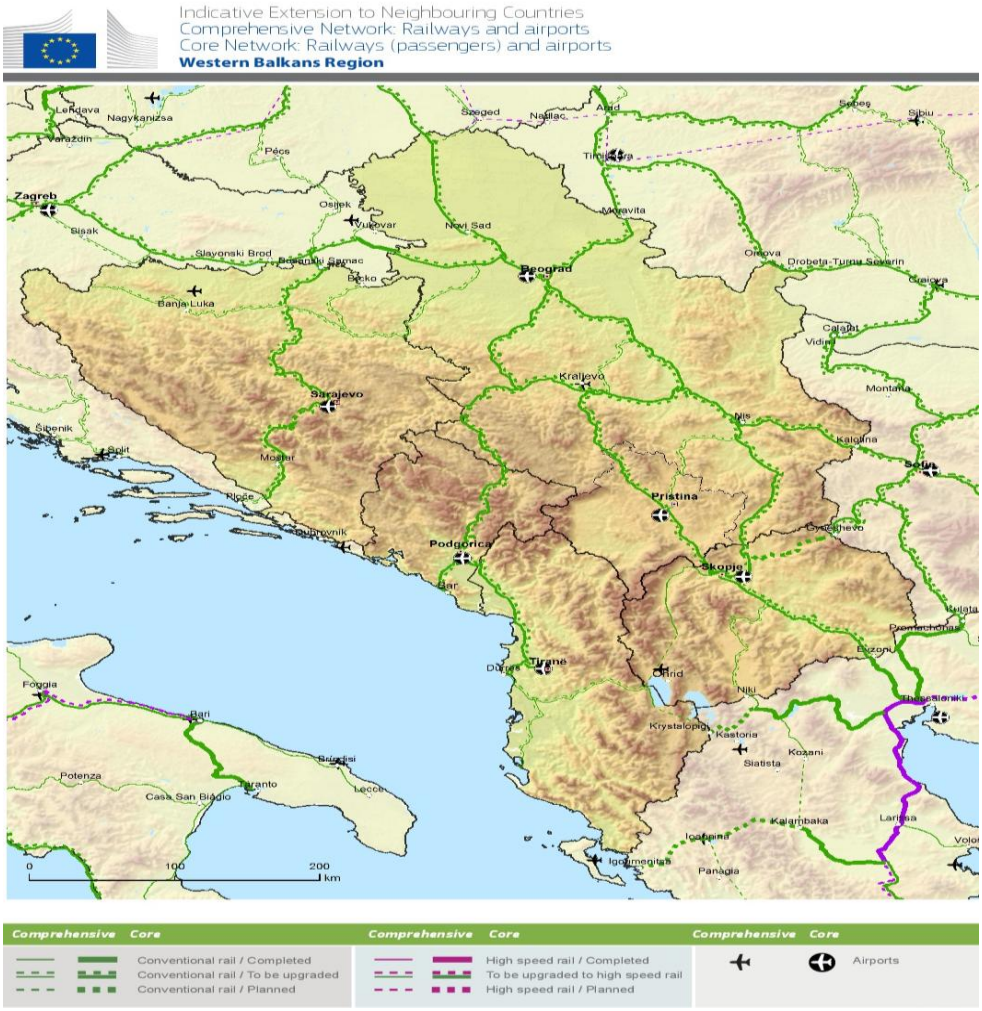


Figure 1.4: Indicative Extension to Neighbouring Countries, Comprehensive Network: Railways, ports and rail-road terminals, Core Network: Railways (freight), ports and rail-road terminals

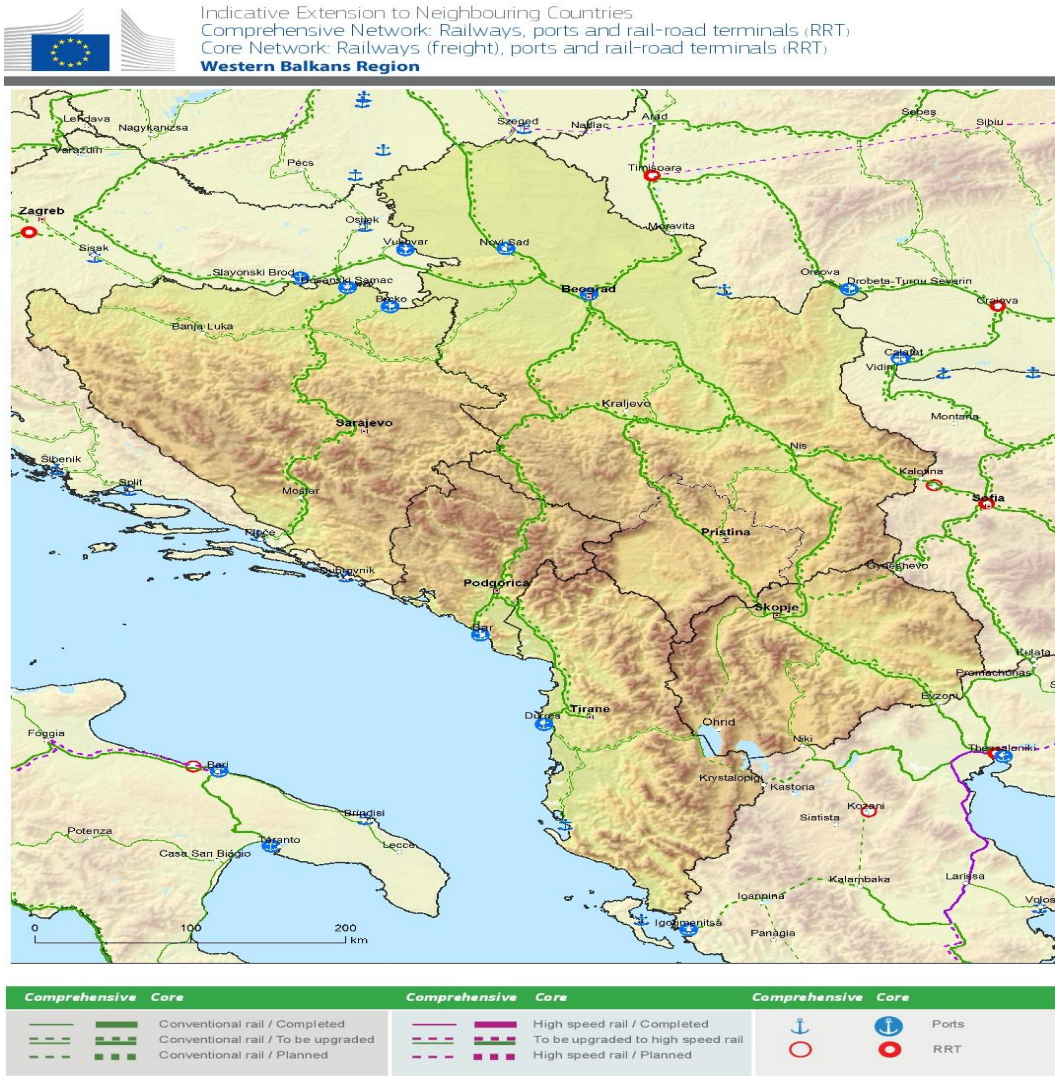
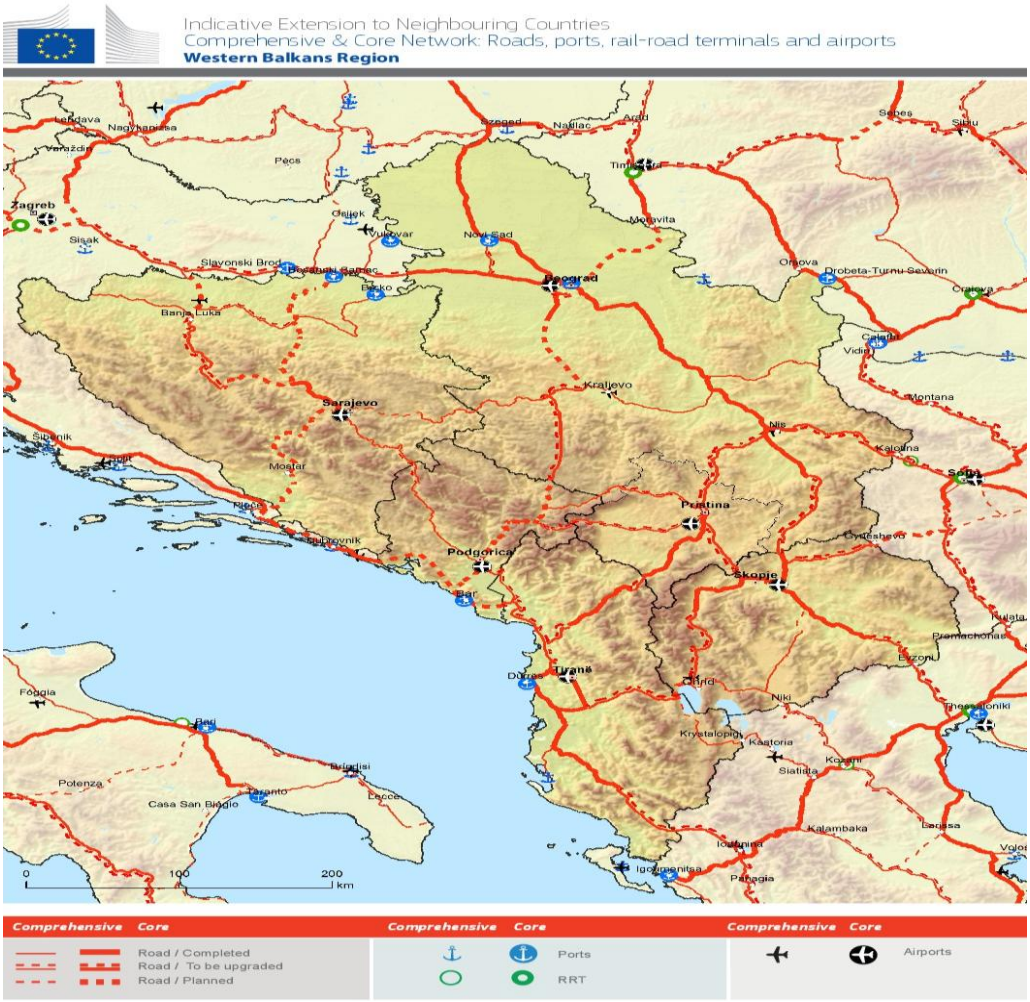


Figure 1.5: Indicative Extension to Neighbouring Countries, Comprehensive and Core Network: Inland waterways and ports

Figure 1.6: Indicative Extension to Neighbouring Countries, Comprehensive and Core Network: Roads, Ports, Passenger Rail Terminals and Airports



1.1.5 Strategic (High Level) objectives

The role of the TDS is to create the path for improving and upgrading Montenegro's transportation system and to support full harmonization with EU policies and requirements TDS sets five strategic objectives, which reflect the vision for the country's future transportation system. These are the following:

1. **Economic Welfare:** Achieve economic efficiency and financial sustainability and support for economic development.
2. **Accessibility, Performance of Operations and Quality of Services:** Provide maximum possible accessibility, offer quality transportation services and maintain an adequate performance in operations, as a whole and with respect to its individual elements within the system.

3. **Safety and Security:** Improve safety, security of people and goods in the transportation sectors.
4. **EU Integration:** Core transportation network and policies which are fully compatible and integrated to EU requirements.
5. **Environmental Sustainability:** Minimize carbon footprint, noise pollution and impact to the natural, historical and socio-economic environment. For this objective, a special Separate has been prepared: Strategic environmental impact assessment of Transport Development Strategy – Montenegro, period 2018-2035 (Annex I).

On the other hand, seven priority areas represent generic aspects of the transport sector (services as well as infrastructure) on which measures are to be applied. These areas are:

1. Organization of the transport sector
2. Transport investments
3. Level of service on networks
4. Financial sustainability
5. Management of rail and port services
6. Implementation of intelligent transportation systems (ITS)
7. Intermodality and road freight transport

Above mentioned priority areas serve for easier and more specific identification of issues / challenges in the transport sector and further development of specific objectives, with the aim of implementing strategic objectives.

For the needs of defining specific objectives related to transport infrastructure the following was considered:

- **For priority area 2 – Transport Investments**, a list of projects which were included in the Single Project Pipeline (SPP)
- **For priority area 3 – Level of service on Networks**, existing road, rail and airport infrastructure which will require reconstruction and/or improvements was identified, in order to maintain an adequate level of services, increase capacities where needed and improve transport safety.
- **For priority area 4 – Financial sustainability**, it has been determined that implementation of ambitious projects included in SSP, and the need for maintaining present road infrastructure, require adequate funding sources, as well as effective distribution and management of funds, which creates a need for appropriate measures in order to achieve effectiveness in managing funds allocated for projects and other transportation needs.

- **For priority area 5– Management of Rail and Port Services**, barriers in opening up the rail transport market have been identified, as well as the need for improvement of port services in order to attract additional demand for trade routes.
- **For priority area 6 – Implementation of Intelligent Transport Systems**, it was determined that Montenegro lacks experience and appropriate structures for coordination and management of introduction of ITS, especially in road and rail transport sectors.
- **For priority area 7–Intermodality and Road Freight Transport**, it was determined that a lack of agreement between port authorities and freight rail operators is an obstacle to intermodality. Also, certain deficiencies have been observed with regard to freight transport operations, due to long waiting periods at border crossings and overall state of road network.

Based on a thorough analysis of present state, and with a goal of achieving defined strategic and specific objectives, various measures were determined with the aim of proposing interventions related to promotion of transport infrastructure, as well as to operative and organizational aspects of functioning of transport system, given that only all-encompassing interventions are a guarantee for better efficiency and sustainability.

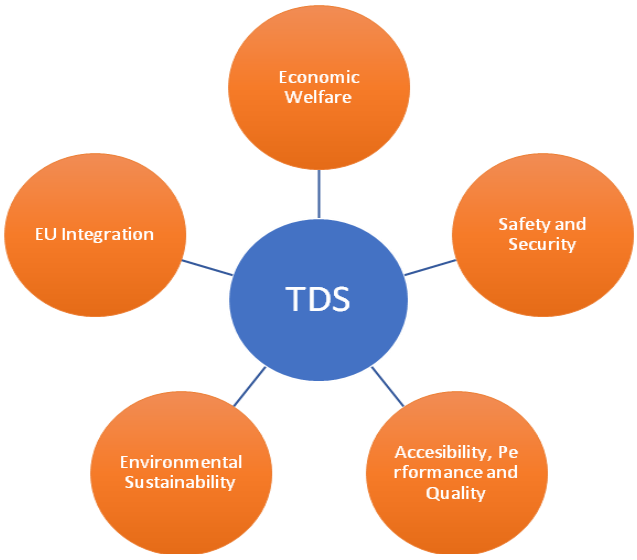


Figure 1.7: Strategic objectives of TDS

First 4 strategic objectives - **Economic Welfare**; **Accessibility, Performance of Operations and Quality of Services**; **Safety and Security**; **EU Integration** – were elaborated in-detail in this strategic document. Among further steps, which are made within set strategic objectives, and on the basis of previously conducted problem analysis and the presentation of basic findings thereof, accompanying specific / operative objectives were derived, which refer to

advancements in infrastructure, as well as organizational and operative aspects of functioning of the transport system.

Strategic goal 5 – **Environmental sustainability,** has been thoroughly elaborated within Separate on Strategic environmental impact assessment of Transport Development Strategy – Montenegro, period 2018-2035, according to which TDS describes the reach of strategic assessment and necessary steps which must be undertaken in accordance with a well-rounded legislative framework in the field of environment, as well as elaboration of all individual projects and measures contained within TDS and its Action plans.

Ministry of Transport and Maritime Affairs has made the decision to undertake the drafting of TDS Strategic Environmental Impact Assessment for the period of 2018-2035, on the basis of Article 13 of the Law on Strategic Environmental Impact Assessment.

In parallel with the process of drafting TDS, there was an ongoing process of drafting Strategic Environmental Impact Assessment – SEA, in accordance with the Law on Strategic Environmental Impact Assessment, which prescribes and obligation to conduct the process of strategic environmental impact assessment for plans and programs when there is a possibility that their implementation will have consequences on the environment. The drafting process was fully aligned with the Directive of the Council of Europe 2001/42/EZ regarding assessment of impact of certain plans and programs on the environment.

The first part of Strategic Environmental Impact Assessment provides description of the existing state of environment field which was considered: air quality and climate change, geomorphology, geologic and hydrogeological characteristics, ground and manner of using the soil, water, biodiversity and protected areas, population, cultural heritage, noise and vibrations, human health and economic activities.

After this, an identification of perspective at-risk areas was made, as well as of environmental characteristics in those areas, after which current environmental problems were analysed, as they relate to TDS. General and specific objectives of environmental protection were defined. General objectives were defined in accordance with the law and international agreements, while specific objectives were defined through TDS, and their implementation will have a significant contribution to the protection of the environment: planning sections of new speedways outside of the most sensitive areas, construction of bypasses for transit around sensitive areas, construction of third lanes in order to alleviate burden of the bottlenecks in tourist season, establishing special regime for cargo transport in certain periods, application of alternative types of transport in certain periods etc.

Further sections of Strategic Environmental Impact Assessment determine possible significant consequences for human health and the environment, including factors such as bio-diversity,

population, fauna, flora, soil, water, air, climate factors influencing climate change, material resources, cultural heritage, including architectonic and archaeological heritage, landscape, as well as mutual relationship of these factors.

Through the analysis of data in relation to these segments of the environment and identification of potential effects due to implementation of TDS, measures were defined which aim to prevent, limit, decrease or eliminate any significant identified adverse effect, to the best extent possible, and also aim to increase effects which are positive for public health and for the environment. These measures have been established by laws and other regulation, norms and standards, as measures and recommendations which aim to prevent and limit the negative and increase the positive effects. In this way, these measures assist in fulfilling environment protection aims which are defined on basis of identified effects on all segments of the environment.

The final section of the Strategic Environmental Impact Assessment provides an overview of potential important cross-border influences, as well as a monitoring process which describes the program of monitoring of the condition of the environment before, during construction and during usage of objects, so that unforeseen negative effects can be determined and so that undertaking of adequate corrective measures can secured in time. Monitoring enables for testing of actual environmental effects of the Strategy of Transport Development in comparison to forecasted effects, and helps ensure that eventual issues which arise during implementation of TDS are identified and adequately alleviated, whether such issues were foreseen or not. Monitoring is also important for the collection of inputs and data related to future plans and programmes, as well as for preparation of information needed to conduct environmental impact assessment for specific projects. Monitoring and assessment of advancement towards set objectives is a key part of feedback mechanism. Monitoring activities shall be conducted by the Ministry of Transport and Maritime Affairs.

Given that we are dealing with a strategic level of planning, it should be noted that certain solutions are yet to be designed, considered and analysed. Therefore, it will be necessary to draft environmental impact assessment which would yield best possible solutions on the basis of a clearer picture regarding planned activities on one hand, as well as greater availability of data on all segments of the environment on the other.

Obligation to create specific environmental impact assessment studies for every particular project is established in the Law on Environmental Impact Assessment (“Official Gazette of the Republic of Montenegro”, no. 80/05, “Official Gazette of Montenegro", no. 40/10, 73/10, 40/11, 27/13, 52/16). This Law aims to advance the process of conducting environmental impact assessment study for projects which have significant impact on the environment; this law also defines content of the study, participation of interested entities, organizations and the public,

process of assessment and issuing of approval, notification regarding projects which could have significant environmental impact on another country, supervision as well as other questions of significance for environmental impact assessment.

1.1.6 Data sources

All available data and information for compiling the TDS were obtained from (a) an extensive data collection effort and (b) a consultation process with local stakeholders, from the public and private sectors. Data were obtained from Montenegro's public bodies and state companies, international organizations, private (local and international) companies and consultants; these sources are presented in Table 1.1:

Table 1.1: Data sources

Sector	Sources (in alphabetical order)
Public Bodies	• Civil Aviation Authority • Ministry of Finance • Ministry of Internal Affairs • Ministry of Sustainable Development and Tourism • Ministry of Transport and Maritime Affairs • Montenegro Chamber of Economy • State Audit Institute of Montenegro • Statistical Office of Montenegro
State-owned Companies	• Airports of Montenegro (A.D. Aerodromi Crne Gore) • MonteCargo A.D. • Montenegro Railway Passenger Operator (AD Željeznički prevoz Crne Gore) • Railway Infrastructure of Montenegro (Željeznička infrastruktura Crne Gore AD)
International Organizations	• Airports Council International (ACI) • EC DG MOVE • EU Delegation in Montenegro • Eurostat • International Monetary Fund (IMF) • International Road Federation (IRF) • International Transport Forum (ITF) • Organization for Economic Cooperation and Development (OECD) • SEETO • The World Bank • World Economic Forum

Concurrently, consultations and workshops aimed at involving stakeholders in the development of the TDS were organized. These consultations included talks with representatives of state

authorities, based on well-designed questionnaires. On the other hand, workshops had an aim to actively involve other stakeholders, such as state-owned companies, municipalities and agencies.

1.2 Analysis of present situation

1.2.1 Current status

In the recent years, Montenegro's transport sector has been in a state of transformation, in order align its infrastructure and services with EU practices and services standards. Transport Development Strategy of Montenegro for the period between 2008 and 2018 describes activities which are necessary for development of transport infrastructure, adoption and implementation of EU legislation and introduction of measures in the transport sector.

In recent past, several reconstruction and rehabilitation projects have been planned and/or implemented in the road sector, of a total length of approximately 110 km and at a cost of 110 million €. These projects improved the quality of the country's state roads and enhanced their level of service and road safety. When it comes to the highway between Bar and Boljare and Adriatic-Ionian expressway coastal variant, these projects have only been in a planning stage, except for the Smokovac–Uvač–Mateševo section of the Bar-Boljare highway, which is currently under construction. Both projects are included in the country's pipeline of infrastructure projects (Single Project Pipeline – SPP) for the forthcoming years. While traffic safety conditions have improved in the last decade, level of performance is still low. The market for road passenger and freight transport has been partially liberalized, while legislative provisions for full cabotage removal subject to EU membership have been established. Currently, cabotage in road transport in Montenegro can be conducted if the operator has a permit issued by the Transport Administration. Cabotage permit for passenger or freight transport is issued on the request of the operator, on the condition that there are no adequate vehicles for a given mode of transportation.

Transitional provision of the Law on Road Transport stipulate that rules on cabotage for operators holding an EU license shall be applied after accession to the EU.

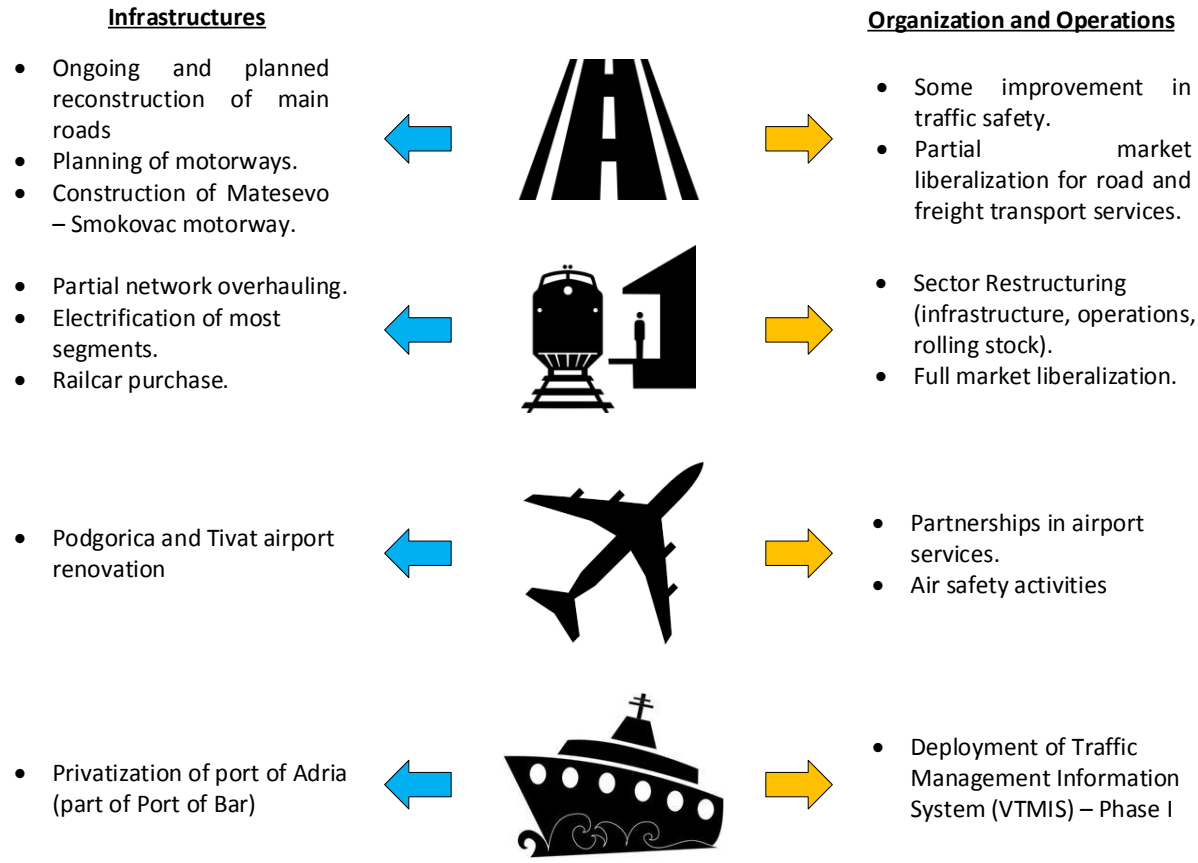


Figure 1.8: Recent (major) Developments in Montenegro's Transport Sector

The rail sector has exhibited considerable progress in the past decade. The railway line between Podgorica and Nikšić has been fully overhauled and electrified since 2012, while about 48% of the Bar – Podgorica – Bijelo Polje railway line was been repaired and/or reconstructed. In terms of organization, railway sector has been reconstructed by separating infrastructure from operations. Namely, four new joint stock companies were established for railway infrastructure management (RIM), rolling stock maintenance (MRV), rail passenger transport (Željeznički prevoz Crne Gore) and freight transport (Montecargo). Furthermore, the market was opened to the competition, albeit no new players have entered so far. Although conditions for liberalizing the railway marker, new operators have not shown a desired level of interest.

Cabotage in railway transport is not particularly regulated by current legislation. Given the organizational conditions of international passenger rail transport between neighbouring countries (whereas every operator may accept passengers at precisely designated stations, while charging of train tickets is conducted by Montenegrin staff), there are rather possibilities for making profit by operators from neighbouring countries. Public transportation agreement signed between state representatives and transport operators stipulate reimbursements for local trains, in order to satisfy public interest for transport routes which are not economically sustainable.

This new institute in passenger traffic is in effect since 2016. Further implementation of said agreement shall be in effect from 2020, in order to define additional indicators for monitoring of its realization, as well as furthering the contract period to 10 years (until 2025).

(a) New Montenegro Railcars (b) Reconstruction works (Podgorica – Nikšić)

Figure 1.9: Recent Developments in Montenegro's Rail Sector

Recent activities in the maritime sector involved successful privatization of a part of the Port of Bar (Port of Adria) with respect to cargo transhipment and containers, while privatization of the remaining part of the port (Luka Bar), which deals with transhipment of bulk, dangerous, liquid, Ro-Ro cargo and passenger traffic, was halted.

Cabotage in maritime transport is regulated by Law on Sea, which stipulates that cabotage, i.e. transport of goods and passengers between domestic ports may be conducted only by domestic boats, yachts and vessels. According to said legislation, passenger transport via a foreign yacht or vessel shall not be considered cabotage, if such transport is conducted free of charge, unless the law prescribes otherwise. In exceptional cases, the Ministry may allow to a foreign boat to conduct transport of empty containers within their exploitation between domestic ports, on the condition of proportionality, as well as transfer of passengers or goods by a foreign boat, yacht of vessel between domestic ports, if necessitated by economic interests of Montenegro.

As for the air sector, Tivat and Podgorica airport renovation has been completed by the mid 2000's.

Recent developments involved strategic agreements and partnerships for airport related services, the establishment of a statistics department and bodies on safety in air transport (mandated by EU and implemented in national legislation), the development of a national program on air transport safety, the supply of safety equipment in airports, and the improvement of emergency response and rescue services for air transport.

1.2.2 Overview of TDS 2008-2018

The current Transport Development Strategy (TDS) follows the previous 2008-2018 Strategy, which laid down a blueprint for the reconstruction and development of the transport sector of Montenegro.

The Ministry of Transport and Maritime Affairs (MTMA) established a mechanism of gradual adaptation to the needs of an open, competitive and more demanding new era of transport development, which includes obligations from accession to the EU.

Previous TDS laid out a proposal for continuous programme of obligations in terms of activities and measures which shall be conducted. The plan included a comprehensive set of activities on limited budgeting and credit capacity. This period included access to support from the EU and international financial institutions.

1.2.3 Transport Community Treaty and Planned Projects

At the end of year 2014, European Commission adopted the final proposal of a new methodological framework for Western Balkan Investment Framework (WBIF) as a main implementation mechanism of financial support of the EU to the region, for a 7-year period of 2014-2020.

In accordance with its obligations, and for the purpose of expert guidance and monitoring of affairs which are important for preparation and implementation of investment projects from the field of infrastructure, in 2015 Montenegro established the National Investment Commission (NIC), which is chaired by the Prime Minister. In its capacity as the technical secretariat of NIC, Secretariat for Development Projects established a methodology for defining, management and identifying priorities of Single Project Pipeline (SPP).

This SPP list includes the following:

- The construction of the Bar - Boljare and Adriatic-Ionian expressway coastal variant (Routes 4 and 1 respectively), whose segments exhibit different degrees of maturity. Currently, only the section of Route 4 between Smokovac and Mateševo is under construction.
- Overhaul of remaining parts the rail line between Bar and Vrbnica (border with Serbia) and the rail line between Podgorica and Tuzi (border with Albania).
- The expansion and upgrade of the Tivat and Podgorica airports.
- The reconstruction of the road Šćepan Polje-Plužine, which will improve cross-border transport with Bosnia & Herzegovina.
- The construction of the rail line between Nikšić and Trebinje (border with Bosnia & Herzegovina–Trebinje–Čapljina).

Apart from projects laid out in the SPP, reconstruction of several segments of the country's comprehensive network is planned. This includes a recent agreement for the financing of the Rožaje – Špiljani road (border crossing to Serbia with connection to Kosovo), as well as construction of Nikšić – Trebinje railway (border with Bosnia & Herzegovina).

Stated approach aims to guide Montenegro on the course of achieving full compliance with provisions of the Transport Community Treaty applicable to Transport Infrastructure. Transport Community Treaty was signed in Trieste on July 12, 2017 in English language, while the Montenegrin language version was signed in Brussels on October 9, 2017. TCT was ratified by the Parliament of Montenegro in March 2018.

Aim of said Treaty is to create a transport community in the field of road, railway, maritime and inland navigation routes, as well as transport network development between the EU and signatory countries of South-East Europe (JIE). Reforms which shall be affected by this Treaty are also bound to the field of road traffic safety. Introduction and implementation of best European practices for strengthening road traffic safety was one of three stated objectives among reforms aimed at creating a transport network and a more competitive, reliable and safe system, and accordance with Action plan for Transport Facilitation (short-term actions), developed by SEETO for the improvement of the overall transport system.

The Transport Public Sector demonstrates a maturing capacity building when it comes to reforms and infrastructure investment. Various dedicated agencies have been established, as well as methodologies and procedures for project selection, along with systemic legislation (e.g. EU-compliant Law on Strategic Environmental Impact Assessment), and a body of external and independent advisors to key ministerial departments and agencies. There is still room for improvement in relation to the fact that decision-making does not seem transparent to external observers. Therefore, TDS aims to put an emphasis on decision making procedures and open governance.

The needs of Montenegro's transport sector exceed the available national and IPA funds. Therefore, the aim should be to either bundle IFI loans with grants or for the state to seek PPP or concessionary investment solutions.

1.2.4 Legal framework

Montenegro's transport sector is expected to undergo a gradual integration process in the EU transport market based on the relevant *acquis*, including the areas of technical standards, interoperability, safety, security, traffic management, social policy, public procurement and environment, for all modes of transport. Adoption of related legislation shall apply to the extent that they concern road, rail, inland waterways, maritime transport and transport networks,

including airport infrastructure. This will be conducted according to the Treaty on establishing the transport community between the EU and South Eastern European Countries (of which Montenegro is a co-signatory).

It can be said that implementation of *acquis* within all areas of transport have been marked by moderate improvement.

In the field of rail transport, only part of the EU legislation has fully been adopted and implemented.[2] Montenegro is expected to introduce further legislation to fully satisfy the Community Treaty requirements, namely in following areas:

- Market access,
- Train driver licensing,
- Criteria for the recognition of training centres,
- Criteria for the recognition of examiners of train drivers and criteria for the organization of examinations,
- Interoperability of the rail system and sub-systems (infrastructure, energy, rolling stock, control command and signalling sub-systems), safety in the railway tunnels, telematics applications for freight and passenger services, operation and traffic management,
- Railway safety, on the use of a common European format for safety, the validity of safety certificates, the certification of entities in charge of maintenance of freight wagons,
- Inland transport of dangerous goods, and
- Working conditions and working hours.

In the field of railway regulation, drafting of the new Law on Railway Transport is underway, with its adoption planned for 2019, which marks the beginning of implementation of package IV of directives for railways. In the field of railway safety, interoperability and licensing of machine operators, newly adopted Law on Safety and Interoperability aims to complete implementation of package III of directives, and its implementation will begin in 2019. Implementation will last for 5 years, given that substantial time is required for a satisfactory incorporation of all directives, regulative acts and decisions into the legal system of Montenegro.

Montenegro has created regulatory and institutional preconditions for opening of the railroad market, partly in 2008, and finally in 2013, by adopting the Law on Railways and accompanying bylaws on licensing and certification of infrastructure managers and rail transport operators. No new operators entered the market due to a low level of freight transport. All stipulated licensing and certification procedures have been completed. New safety management concepts within transport companies have been approved. Harmonized approach directed by EU legislation is

[2] Although concerning package III at least 70% of the regulations (certification and licensing of infrastructure managers and carriers, machine permits, ECM certification, job independence, incident and accident records) have been adopted

being conducted through regional coordination, while functional and operative Network statements have been made. Newly adopted Law on Railway Transport, Safety and Interoperability, which is expected to enter into force in 2019, will primarily harmonize regulatory affairs in accordance with Recast Directive 34/2012, which aims to promote a single European railway market and provides all actors with all necessary instructions. This Directive especially stresses regulatory affairs and non-discriminatory approach to the public railway network for all providers. Safety and interoperability are fully implemented with directive from III package, although a more significant number of provisions are included in new 2016 directives (797 – interoperability, 798 – safety). Given that Europe is due to transition to a system of the single safety and authorization certificate of railway cars, issued by EU Agency for Railways, several years will be needed for WB6 countries to join it, i.e. to achieve the necessary political accord and technical readiness to free market competition with European operators. These directives may be implemented through mechanisms stipulated by TCT in the period between 2022 and 2025, when the next harmonization of the law is expected. Newly adopted Law on Railway Transport shall create a needed legal framework on the national level, which will allow for a total independence of operations of regulatory bodies (Railway Administration) starting from 2020, which is a criterion for closing of the Negotiation Chapter 14 – Transport policy.

Implementation of European regulation shall contribute to development of new subsidies model for road transport (Agreements on passenger transport obligations / PTO Agreements), as well as to valuation of railway infrastructure through issuing of routes and auxiliary services. PTO Agreements between the state and the operator are a major instrument of control of subsidy utilization, and are concluded for the benefit of passengers as well as for increase in quality of service.

With respect to road transport, Montenegro has adopted 49% of EU directives and regulations, although some are still only partially aligned. Montenegro is expected introduce further legislation to fully satisfy the Community Treaty requirements, which namely refers to the following:

- Certain aspects of vehicle tachygraphy, i.e. the requirements for the construction, testing, installation, operation and repair of tachographs and their components,
- Road worthiness with respect to roadworthiness tests for motor vehicles and their trailers and the technical roadside inspection of the roadworthiness of commercial vehicles
- Driving license, technical requirements with regard to driving licenses which include a storage medium
- Cross-border exchange of information,
- Clean vehicles and/or alternative fuels infrastructure,

- Standardization of ITS in urban areas, the framework of deployment of ITS in the field of road transport and for interfaces with other modes,
- Harmonized provision of an interoperable EU-wide e-Call
- The provision of information services for safe and secure parking places for trucks and commercial vehicles
- The provision of EU-wide real-time traffic information services,
- Interoperability of electronic road toll systems, and on type approval.

It is planned that adoption of all remaining laws and regulation in road transport field will be finished by the end of 2020. It is expected that this process will lead to full harmonization of national with EU legislation.

In road transport sector, adoption and implementation of EU legislation established common rules for conducting of road transport operations, common rules for access to the international freight road transport market, common rules for access to the international regular and tourist agency bus transport market, as well as for qualifications and training of drivers of certain road vehicles for public transport of freight and passengers. Adoption of EU legislation is important for companies operating freight and passenger transport, and for uses of such services, since defining of common standards for the entire EU territory removes a number of bureaucratic barriers and simplifies public transportation.

With respect to maritime transport, Montenegro has implemented 70% of EU directives and regulations although many are still only partially aligned. Montenegro has become a member of the European CleanSeaNet satellite detection system for sudden sea pollution and the EU LRIT Data Center for satellite monitoring of ships under the Montenegrin flag.

In 2017, the Montenegrin systems for training and certification of seafarers were recognized by the Commission through Commission Implementing Decision (EU) 2017/727 of 23 March 2017. As a result of this recognition, EU Member States may decide, with respect to ships flying their flag, to endorse seafarers' certificates issued by Montenegro and thus allow such seafarers to work on board their ships. Therefore, it is crucial for Montenegro that its systems comply with the requirements at all times in order to ensure the continuity of EU recognition.

Due to a lack of Montenegrin commercial fleet and Montenegrin maritime companies, Montenegrin seafarers are forced to enter the global market and sail on ships under the flags of EU or other countries. In order for this to be possible Montenegro has to fulfil standards of STCW Convention (The International Convention on Standards of Training, Certification and Watch keeping for Seafarers) in the field of education and training related to issuing maritime authorizations. It also needs to constantly maintain a good level of quality of issued authorizations for its seafarers. Control of these activities is conducted by a technical body of

EC / EMSA (European Maritime Safety Agency). When EC confirms fulfilment of STCW Convention standards through EMSA audit in a certain country, the body publishes the name of the country through an EC Decision and EC puts it on the White List of recognized states.

After renewing independence in 2006, Montenegro had to provide evidence of its right to be on the White List by proving it has an adequate educational and seafarer training system and proving that this is the same system which exists in EU member countries. Montenegro was given back its White List status by Decision of EC 2017/727 from March 23, 2017. The task of the maritime administration of Montenegro is to maintain this status in the coming years since being removed from the While List of EC would remove the possibility of further employment of Montenegrin seafarers on ships which sail under the flag of EU countries and would possibly bear the consequence of these seafarers losing the right to board ships under other flags. In this way, around 6500 seafarers would lose their jobs and, indirectly, the existence of maritime educational institutions would be brought into question since their staff would be unable to board ships in the future.

Further legislation should be introduced to satisfy fully the Community Treaty requirements on:

- Maritime policy, establishing a Program to support the further development of an Integrated Maritime Policy,
- Market access, the transfer of cargo and passenger ships between registers within the Community,
- Coordination of action to safeguard free access to cargos in ocean trades,
- Unfair pricing practices in maritime transport,
- Criteria to be followed in order to decide when the performance of an organization acting on behalf of a flag State can be considered an unacceptable threat to safety and the environment,
- Imposition of fines and periodic payments and the withdrawal of recognition of ship inspection and survey organizations,
- Liability of carriers of passengers by sea in the event of accidents,
- Ship-source pollution and on the introduction of penalties,
- Training of seafarers and mutual recognition of authorizations issued by member states;
- Social aspects, with respect to certain authorities of the flag state to conduct harmonization with the Maritime Labour Convention and its implementation;
- Establishment of a European Maritime Safety Agency,
- Establishment of a Committee on Safe Seas and the Prevention of Pollution from Ships,

Besides this, Montenegro is expected to become a part of the European system of maritime safety as soon as possible, namely through:

- Full membership in the Paris MoU (ship inspections) and SafeSeaNet system (data exchange system on ships and freight on EU level),
- Establishment of the National Single Window System – national data exchange for ships aiming to sail to Montenegrin ports (Directive 2010/65/EC).

In order to ensure sustainability of maritime economy and the marine ecosystem of Montenegro, it is necessary for Montenegro to become a full member of the Paris Memorandum of Understanding in the field of state port control. There are numerous reasons for this: benefits of complete adoption of standards set in Paris MoU regarding ship control, continuous maintenance of good practices and development of new standards in accordance with changes in the field of maritime economy and business (including increased amount of maritime traffic), reduction of number of closed-off ships which do not fulfil conditions foreseen in international conventions, as well as removal of substandard ships in the future, prevention of pollution of the environment, and prevention of sea and port related incidents.

This objective has been supported by the fact that Montenegro is one of only two countries which are not full members of Paris MoU. Besides this, it is important to highlight the fact that Montenegrin marine ecosystem is an integral part of Global Ocean, which means that strengthening of national legislation in accordance to international mandates, shall have positive implications on regional and global sustainability of the maritime economy.

In the field of maritime transport, it is necessary to adopt following legislation:

- Law on Rights of Passenger in Maritime and Inland Waterway Transport;
- Amendments to the Law on Maritime Transport Safety;
- Amendments to the Law on Protection against ship-source pollution.

Said legislations aims to ensure navigation safety as well as protection against ship-source pollution, both in Montenegrin waters and from vessels navigating international waters.

In the area of Inland Waterway Transport, EU legislation has not been adopted or implemented yet. Priority should be given to:

- Harmonization of the conditions for obtaining national boat masters' certificates for the carriage of goods and passengers,
- Technical requirements for inland waterway vessels,
- Access to the occupation of carrier of goods by waterway in national and international transport and on the mutual recognition of diplomas, certificates and other evidence of formal qualifications for this occupation.

It is important to note that an obligatory audit of maritime administration (IMSAS Audit) is expected to be conducted in November 2019 for Montenegro. Audit is conducted by IMO in all member countries, focusing on the essential inquiry into the further implementation of international safety standards, as well as those related to security and protection from pollution coming from vessels.

Although Law on Sea and Law on Maritime and Inland Waterway Transport contain provisions which regulate inland waterway transport, Montenegro did not implement these norms, as said legislation treated Skadar Lake, Crnojevića River and Bojana River as inland waterways, while other rivers in Montenegro were not considered navigable, but are suitable for activities such as rafting, while navigation is not conducted on lakes, other than by two boats on Piva Lake for the needs of hydro-electric plant company "Perućica".

For stated reasons, Skadar Lake is treated by Montenegrin legislation as a maritime waterway, but given that Montenegro will eventually have to implement EU *acquis* which will treat Skadar Lake and Bojana River as inland waterways, amendments to the current legal framework and establishment of a state authority in charge of inland waterway transport will be necessary.

With an aim of drafting relevant legislation, which will regulate inland waterway transport in Montenegro, in June 2015 a Study on inland waterways in Montenegro has been adopted, an undertaking financed by the EU. This study describes status of Montenegro with respect to inland waterways, development perspective on inland waterway navigation, organizational structure of the relevant government department, as well as project objectives related to future technical cooperation. When it comes to adoption and implementation of EU directives into the legislative framework of Montenegro which shall regulate inland waterway navigation, according to the findings of this Study, following directives are relevant for the subject matter:

- Directive 2006/87/EC, which stipulates technical requirements for inland waterway navigation,
- Directive 96/50/EC, on harmonization of the conditions for obtaining national boat masters' certificates for inland waterway navigation.
- Directive 2004/26/EC, which stipulates measures against gas emissions and engine pollution.

Adoption of the Law on Inland Waterway Navigation has been planned for IV quarter of 2020.

Finally, legislation on air transport and airports is fully compliant with EU directives and requirements, but there are still a few open issues under the first transitional phase of the ECAA that the country should address.

Full alignment with European regulation in the field of air transport assumes complete implementation of EU *acquis* as it relates to air transport through laws and other regulations.

A positive example of this practice is implementation of so-called One Stop Security standards in Montenegro, as a way for the EU to acknowledge security standards in non-member states.

This means that Montenegro has reached a high level of alignment with the *acquis* under the first transitional phase of the European Common Aviation Area (ECAA) Agreement and the Single European Sky. Montenegro has almost fully met the conditions required to complete Phase I of the ECAA Agreement. Only two issues remain open:

- adaptation of the Air Transport Act in order to fully implement the provisions of Regulation 1008/2008 required for Phase 1, on freedom of pricing and non-discrimination, as well as the adoption of penalties for violations of all provisions of Chapter IV of that Regulation;
- adaptation of the Labour Law to the relevant legislation laying down working time arrangements in order to fully and correctly implement several basic requirements of the Working Time Manual (Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003 concerning certain aspects of the organization of working time).

With the entry into force of the ECAA Agreement, Montenegro has yet to demonstrate that remaining open issues related to the first transitional phase can be solved imminently, in particular regarding those related to economic regulation. Legislation is aligned with the acquis on aviation safety and was further improved in 2017 with designations on safety controls of aircrafts and airports. In 2016, Montenegro adopted a rulebook laying down detailed rules for the implementation of air traffic management (ATM) network functions. The national airline company Montenegro Airlines is facing major sustainability issues, having accumulated significant financial debts. Montenegro has adopted regulations on airport capacity, schedule facilitation and slot allocation.

It is important to note that adopting and implementing EU legislation in all sectors in the process of Montenegrin accession to the European Union is not only a formal condition of accession but also a source of many benefits. Through the adoption of laws in the field of transport Montenegro is a step closer to the European Union membership - and the very accession to the EU brings about a series of political and economic benefits.

Political benefits of accession to the European Union relate to political stability and protection of national interests through EU political institutions. Member countries have the possibility of participating in the decision making process within the EU institutions and influence important decisions which affect them. On the other hand, countries without such privilege are in the position of having to accept already made decisions. Positive economic effects for member countries are reflected in more intensive and liberalized trade, efficient resource allocation in the Union, accumulation effect, lowering of credit rates and multiplication of foreign investments. Source of these economic effects is free flow of goods, workforce and capital within the Union.

Even though political stability and modern economic framework are the basic motivators for EU accession, financial aspects in the form of financial transfers from the EU budget are also important.

However, it is important to note that adopting of said legislation, viewed independently of the process of EU accession, brings about a series of benefits for Montenegro and its citizens. Adaptation and implementation of EU legislation in the field of transport leads to improvement of infrastructure, increase in transport safety and better protection of passenger rights in all transport modes. More competition in the transport sector, helped by defining a more favourable legal framework to private initiative, will lead to lower prices, increase in quality of services, and higher exports. Also, this will lead to indirect positive effects for state economy through better conditions for job creation, generating value, lowering dependent purchase costs, higher direct foreign investments, removal of business barriers and market liberalization.

2. Transport infrastructure

This chapter briefly reports on current status of Montenegro's transport infrastructure and presents high level and specific objectives and necessary measures proposed by TDS.

2.1 Current state

A detailed data collection and consultation process allowed for a detailed view on the status of Montenegro's transport infrastructure for the different transport subsectors, for which developments are either under way or planned.

2.1.1 Road transport sector

2.1.1.1 Existing road network

At the present moment, all main and regional roads, in total about 1.850 km in length, are paved with asphalt (Figure 2.1).

Main roads (labelled "M") connect the country's most important cities, economic centres and border crossings. They have single carriageways per direction (of a width of at least 3m per lane and a narrow shoulder in most cases) and a third overtaking lane on sections with steep gradients. Only a few segments around urban areas have two-lanes per direction, with or without a median. Alignment of main roads allows a maximum speed of 80 km/h.

Regional roads (labelled "R") connect regional centres, feed the main network and offer access to border crossings. Their alignment allows lower speeds compared to main roads (50 km/h). A reconsideration of category designation per road segment was undertaken in 2016, to better reflect the importance and the condition of each segment. Indeed, some road segments were upgraded to main roads while others were downgraded as regional ones. In addition, connection between the capital (Podgorica) and the coast was improved by upgrading roads to Budva, Bar and Cetinje and by completing the Sozina tunnel (between Podgorica and Bar); the tunnel alone reduced the journey between the two cities by 30 minutes.

Figure 2.1: Main and regional roads of Montenegro (in blue and yellow respectively – red depicts the Smokovac- Mateševo highway section, currently under construction)

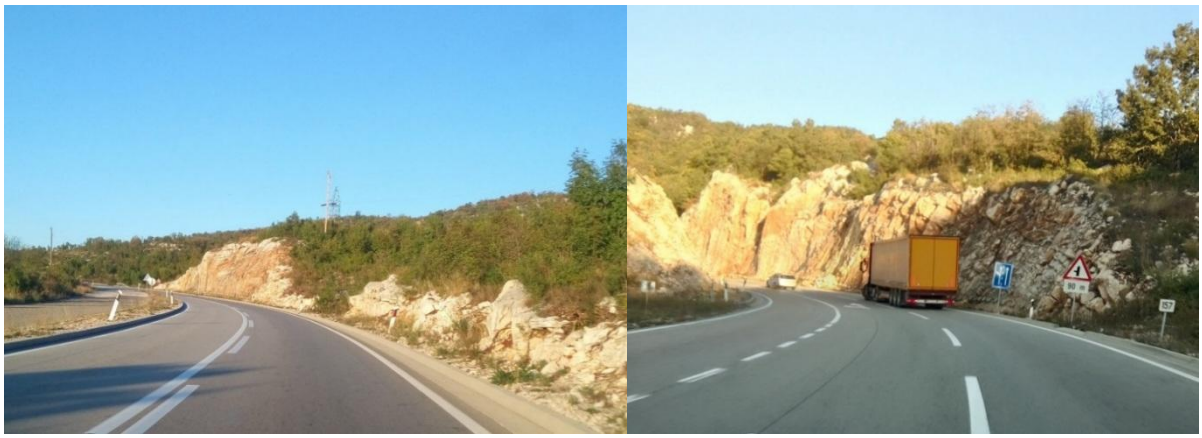


Figure 2.2: Main road in the Montenegro network (single carriageway & overtaking lane)

The pavement surface on the main and regional roads is in good condition. Local rehabilitation works are necessary, especially on the mountainous and peripheral sections of the network. In some cases, urgent improvement in road conditions in necessary. Road network calls for regular maintenance checks and local interventions.

Montenegro's main and regional roads mostly involve two-lane roads with occasional overtaking lanes. Furthermore, core network alignments in mountainous regions of the country exhibit sharp curves and relatively steep slopes. As such road capacity is unavoidably low and traffic safety considerations arise. Some main and regional segments in Montenegro exhibit low performance, as their geometry cannot handle demand.[3] These include sections around Podgorica and along Montenegro's coastline. However, structural condition of roads is mostly adequate.

Planned motorways (with improved geometric characteristics) will offer better safety and comfort on roads, allow for better connections with the region as well as with the EU, whole creating conditions for better use of economic potential and attraction of transport routes. Besides construction of the new road infrastructure, it is necessary to continue maintenance and reconstruction and/or upgrades of current road network.

2.1.1.2 Completed, ongoing and Future Road Projects

During period 2010-2014, capital investments for road network were worth in the range between 30 and 50 million euros. Total planned investment for this period amounted to 193 million euros, of was which realized 149 million euros (77%). During period 2015-2017, with beginning of construction of the Mateševo – Smokovac section (Bar – Boljare highway), state capital investments in road network rose to a total of 585 million euros (planned investments). During period 2015-2016, moneys spent amounted to 85.2% of the planned budget. Expenditures on the basis of ordinary maintenance marked a decline in recent years. Yearly planned expenditures of around 10 million euros in 2010 have fallen to under 8 million euros in 2016. This can be attributed to large-scale rehabilitation projects which have lowered the need for ordinary maintenance in the segment of state roads.

Current and planned reconstruction projects have partly been financed by state budget as well as from loans obtained from EIB and EBRD. In the case of financing via loans, state contribution was around 15%-20% of costs. For the Bar – Boljare highway project, 85% of funding was secured through a credit arrangement with EXIM Bank, from China, based on a separate agreement.

[3]This is reported by on-site inspections and the results of the transport model developed as part of the development of the strategy ("Data Collection and Transport Model Report")

Currently, there are there sixteen (16)[4] main and regional road segment reconstruction projects in progress, with a total length of 120 km and a budget of about 110 million euros; these are funded by the state budget of Montenegro, the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB). Another fourteen (14)[5] road reconstruction projects of a total length of 223 km and a budget of approximately 120 million euros are planned, for the period between 2017 and 2019. These are also partially funded by the state budget, the EBRD and the EIB.

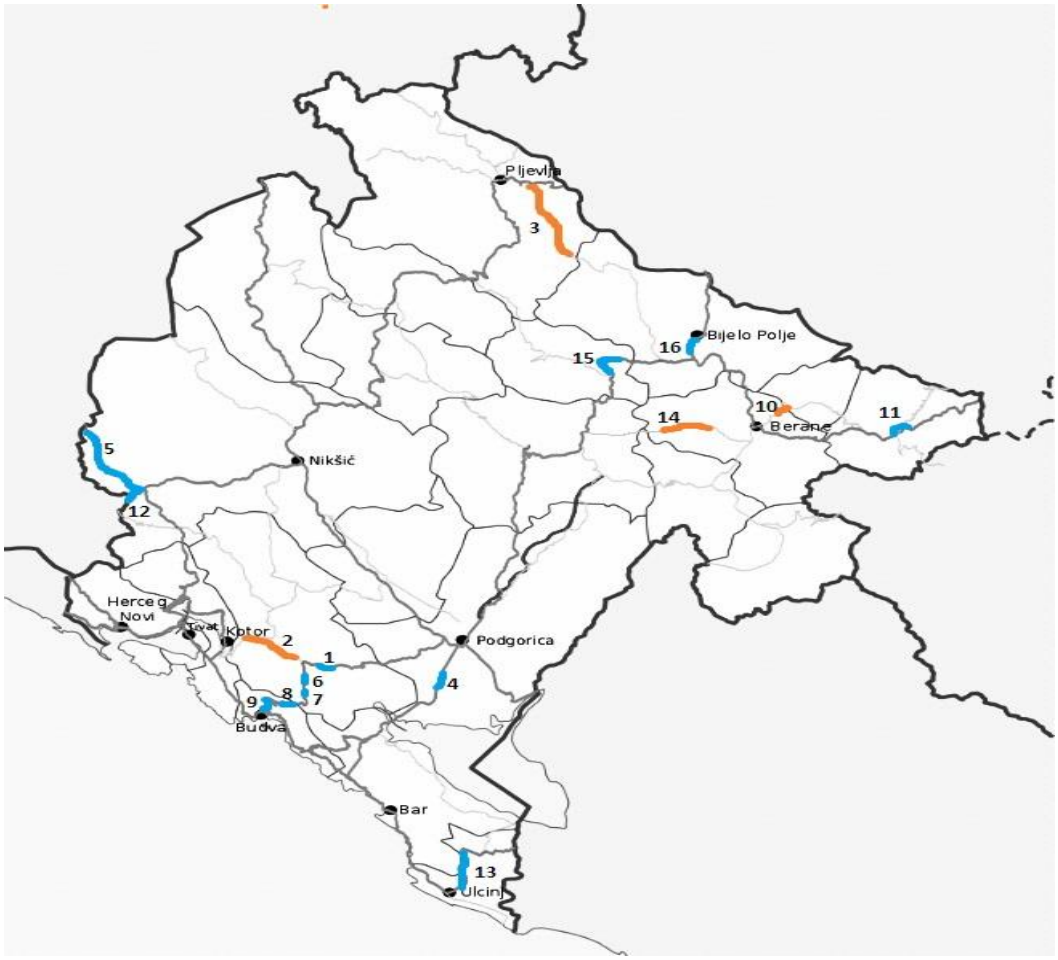


Figure 2.3: On-going road reconstruction projects (**16** in total; **blue** for main roads, **orange** for regional roads)

[4]Source: Secretariat for Infrastructure Projects, 'Information on Development Projects', July 2017.
[5]*Ibid.*

Figure 2.4: Planned road reconstruction projects for period 2017 – 2019 (**14** in total; **blue** for main roads, **orange** for regional roads)

Montenegro is planning to develop a highway network in the forthcoming years. This includes the Bar – Boljare highway and Adriatic-Ionian expressway coastal variant. The Bar-Boljare highway (Route 4) (shown in Figure 2.4) should contribute to opening of many development opportunities and of further realization of northern region's potential, better and faster connectivity with central and southern parts of the country when it comes to internal integrated character of connecting, while providing safer and more efficient transport.

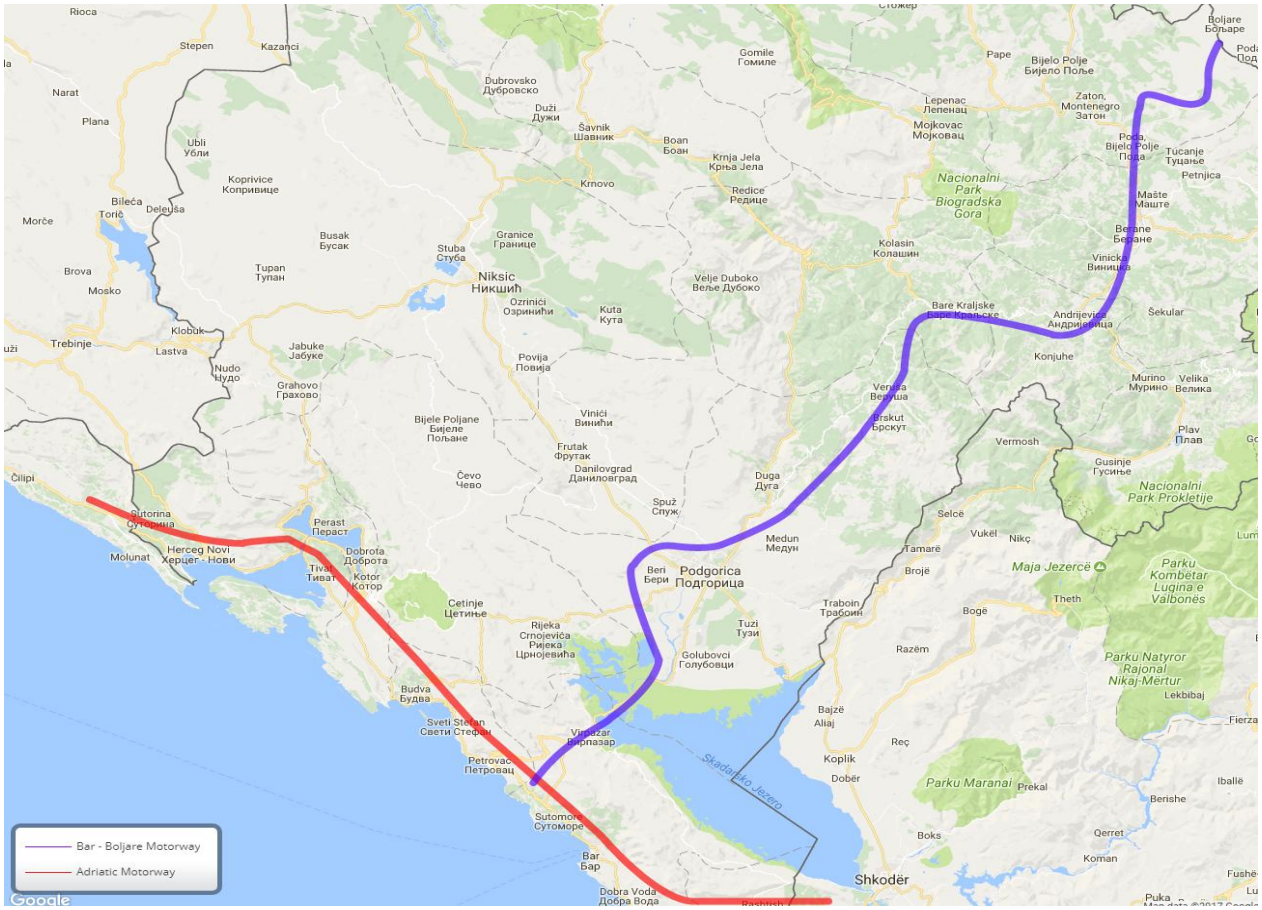


Figure 2.5: The Bar – Boljare highway and Adriatic-Ionian expressway coastal variant (in **purple** and **red**)

The Bar-Boljare highway will be constructed in four phases: i. Smokovac-Mateševo, ii: Mateševo-Andrijevica and bypass Smokovac - Tološi – Farmaci, iii: Andrijevica – Boljare, and iv: Podgorica – Đurmani. Currently, the construction of the Smokovac-Uvač-Mateševo section (41 km) is underway and preparatory activities for other sections of Bar-Boljare highway are being undertaken.

The coastal variant of the Adriatic-Ionian expressway (Route 1) goes along the Montenegrin coast, and aims to improve connectivity within the region as well as the region with the EU. This is a strategic project for the region of Southeast Europe and the Balkans. Its completion will provide a high capacity corridor of high quality that connects central Europe and northern Italy with the Ionian peninsula through Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Greece. Part of the Adriatic-Ionian corridor that passes through Montenegro, from the border with Croatia to the border with Albania, is about 108 km. It consists of the bypass system around the coastal towns of Bar and Budva, Tivat, Herceg Novi and the major construction feature, a high bridge crossing over the Boka Kotorska Bay– Verige bridge.

Estimated cost of design, supervision and construction of the expressway in its entirety is 1.013 billion euros. Because of financing constraints, segmentation and phase construction of certain sub-branches is necessary, which has been identified in earlier documents. For this complete road section along Montenegrin coast a general project and a feasibility study have been conducted in 2008/2009. Total estimated costs of the rest of the Bar – Boljare highway amount to 1.7 billion euros, which about 1 billion is needed for the expressway. Total public debt for 2018 was 3.093 billion euros or 67.19% of GDP.

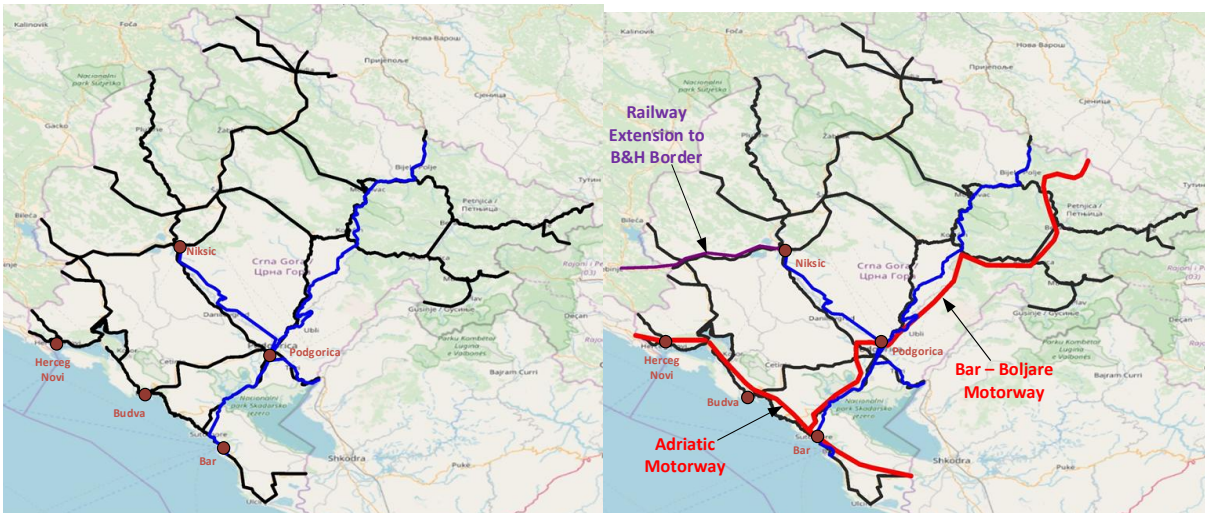
Montenegro has marked a significant economic growth in last several years, stimulated by an investment cycle which mostly refers to road infrastructure investments. A large share of such investments is financed through credit arrangements with international financial institutions (INFs), under favorable conditions. In this context, special attention has been given to maintaining fiscal stability.

2.1.1.3 Demand and level of service

A regional transportation model for Montenegro was developed for the purposes of the TDS, which estimates and represents flows and other network performance metrics on a typical day[6]. Different scenarios for road network development are investigated for that purpose:

- The “Base” scenario refers to the country’s road and rail network structure (infrastructures, operations and services) and associated demand for year 2015
- The “Do-minimum” scenarios, which refer to the country’s future road and rail network structure (infrastructures, operations and services) and associated demand for years 2025 and 2035. The “Do-minimum” networks incorporate infrastructure projects that are more likely to be implemented up until that period.

[6] Stathopoulos, A., Kepaptsoglou, K. (2017). Transport Model and Data Collection Report. Report submitted as part of the consultancy " Preparation of the Transport Development Strategy – Montenegro”, EU Delegation in Montenegro, Montenegro



(a) Base Network (b) Future (do-minimum) networks

Figure 2.6: Base and Future, "Do minimum" Networks (base road network in **black**, base rail network in **blue**, new road projects in **red,** new railway segments in **violet**)

Currently, some sections of the state road network of Montenegro ("base scenario") exhibit relatively high average daily traffic values, which are considerably augmented during summer peak seasons. This is especially the case for the coastal parts and the connection between Bar and Podgorica. Road trips are expected to grow significantly in the future and this will unavoidably have an impact on the performance of the state network, as well as planned highways. Indeed, road transport is expected to grow by at least 45% up until 2025 and another 25% up until 2035. Planned highways are expected to undertake relatively high average daily traffic volumes (of about 22,000 vehicles per day in 2025 and 27,000 in 2035 for worst network segments), which however will not severely affect their performance. Also, future road traffic will increase for some road sections of the existing main road network (for example, the main roads between Podgorica and Budva and between Podgorica and Nikšić).

Traffic flow estimate obtained from the transport model[7]stresses the need for introducing a motorway network in Montenegro which is included in the Single Project Pipeline. Proposed "Do-minimum" network structure will have an impact on the existing state road network, which should be continuously upgraded in order to cope with increasing demand in the years 2025 and 2035.

[7] Ibid.

Table 2.1 presents performance indicators for the base and “Do-minimum” scenarios:

Table 2.1: Performance indicators for the road network (typical day)

Year	Road passenger traffic			Road freight traffic		
	Trips*	Veh – km	Veh- h	Trips*	Veh - km	Veh- hr
2015	40,924	3,921,870	101,360	3,430	355,462	5,299
2025	59,752	5,020,369	75,742	4,397	399,972	4,321
2035	74,763	6,527,882	109,961	5,027	462,751	4,977

*includes trips with at least one trip end in Montenegro

Total travel distance (measured in vehicle-kilometres, veh-km) increases in the future, since total route lengths are not radically reduced (new highways run in parallel to the existing network) while traffic volumes increase. On the other hand, the introduction of highways reduces travel times and therefore total veh-hours are reduced compared to the base network, at least for 2025 and almost identical for year 2035 (given the fact that traffic will increase considerably by 2035).

The quality of traffic flow in road segments is assessed using the so-called “Level of Service” (LOS). This is used for analysing road operations by categorizing traffic flow and assigning quality levels to traffic, based on performance measures such as speed, density, etc. According to the US Highway Capacity Manual[8], LOS is distinguished in six categories (A-F) (Table 2.2).

It is noted that for planning purposes, the capacity of road sections is expected to correspond to a “C” or “D” LOS, for ensuring adequate operations. In the present case, the Level of Service is derived using average daily values (AADT), following the methodology proposed by the Florida Department of Transportation[9] (FLDOT).

Table 2.2: Level of Service (LOS) for road segments

LOS Category	Description
A	Free-flow traffic with individual users virtually unaffected by the presence of others in the traffic stream.
B	Stable traffic flow with a high degree of freedom to select speed and operating conditions but with some influence from other users
C	Restricted flow that remains stable but with significant interactions with others in the traffic stream. The general level of comfort and convenience declines noticeably at this level.

[8] *Highway Capacity Manual".* Transportation Research Board*, Washington, D.C. 2000.* ISBN 0-309-06681-6.
[9] Florida DOT (2013). 2013 QUALITY/ LEVEL OF SERVICE HANDBOOK, FL,USA

D	High-density flow in which speed and freedom to manoeuvre are severely restricted and comfort and convenience have declined even though flow remains stable.
E	Unstable flow at or near capacity levels with poor levels of comfort and convenience.
F	Forced traffic flow in which the amount of traffic approaching a point exceeds the amount that can be served. LOS F is characterized by stop-and-go waves, poor travel times, low comfort and convenience, and increased accident exposure.

In this context, part of the network near the coast and those segments between the coast and Podgorica exhibit a rather low Level of Service (LOS) for two lane highways, especially during peak traffic periods. Proposed highways will operate on average at a good level of service in most segments. Part of the main road network will benefit from highways, despite the increase in overall road traffic. However, there are potential bottlenecks during peak hours in peak seasons and actions are required for improvement of their operation. It is noted that some of these bottlenecks are identified in Montenegro's state border crossings.

LOS for the current network is mostly average and for some sections is low. The introduction of the "Do-minimum" highways will improve the LOS of the state road network despite the considerable increase in demand for road transport. Some potential bottlenecks will be anticipated in a few "Do-minimum" network segments in later years. Road freight traffic will increase which will probably affect the condition of the main road network in the future years. Reasoning behind this is that road freight carriers may prefer not to use highways due to costs or will have to use parts of the main road network for accessing the rest of the country, or other neighbouring countries.

2.1.1.4 Road maintenance

Regular maintenance of state roads is conducted on the basis of four-year contracts. All road directions on national roads must be passable and safe for traffic, with winter maintenance being a priority depending on the road category, vehicle frequency, alternative routes and the importance of connecting.

The costs of regular maintenance of regional and main roads in Montenegro annually amounted to 8.2 million EUR for the period from November 2015 to November 2019. This amount was obtained on the basis of a public procurement procedure for the selection of contractors for maintenance of regional and main roads, based on which a contract was signed with the company Crnagoraput AD Podgorica. For the period from 2019 to 2023, a tender will be announced for the selection of contractors for on-going maintenance for the next four-year period. The estimated value of this public procurement is 10 million euros annually.

Investment maintenance is determined on basis of a Plan for Regular and Investment Maintenance, Reconstruction and Construction of State Roads, which is adopted annually by the Government and compiled by the Transport Administration on the basis of data inputs, i.e. field conditions.

Local governments are the authorities in charge of maintenance of local roads (planning, management, design, execution of works, financing).

System of maintenance and protection of road infrastructure ensures the preservation of property as well as preservation of one of the preconditions for the development of safe and secure traffic on roads. The importance of safe and efficient transport infrastructure cannot be overstated which is why it is necessary to take needed steps to protect transport infrastructure from negative external influences.

In conditions of modern free-market competition, in order for transportation companies to remain efficient and competitive, they tend to use trucks which are of bigger size and capacity. Overloaded trucks cause significant adverse effects: road damage, shorter periods of vehicle exploitation, higher maintenance and rehabilitation costs, etc. Random controls and ordinary load measuring stations are no longer sufficient in fight against road damage due to conditions of increase in freight flows. This problem is successfully solved by installing WIM sensors. During load measuring with WIM sensors, trucks do not have to stop above the sensor, which is the biggest advantage of this system. Additional advantage is the possibility of networking with other elements of transport management, which would allow for creation of a valuable database.

2.1.2 Rail transport sector

2.1.2.1 Existing network

The rail network of Montenegro has a length of 250 km and consists of single-track lines of category D4 and a standard gauge (1.435 mm). For most of its length (225 km), the network is electrified. It has an allowable axle load of 22.5 t. Rail infrastructure includes 121 tunnels of a total length of 58 km, 120 bridges, 9 galleries and 440 culverts. The network consists of three railway lines converging in Podgorica (Figure 2.5). In total, Montenegro has 18.4 m of railway lines per km^2 and 0.40 km per 1000 inhabitants.[10]

The Bar – Border with Serbia (Belgrade) railway line is the backbone of the Montenegrin railway system. It is fully electrified and features the highest railway viaduct in Europe (the Mala Rijeka viaduct) and the 6.2 km long Sozina tunnel. About one-third of the Montenegrin part of line is in a tunnel or on a viaduct. The Nikšić-Podgorica line (56.6 km long) was thoroughly reconstructed

[10] http://ec.europa.eu/eurostat/statistics-explained/index.php/Enlargement_countries_-_transport_statistics

and electrified during 2006-2012 period, with passenger service reintroduced. Operating speeds on the Nikšić-Podgorica line range between 75 km/h and 100 km/h. The Podgorica-Shkoder railway, which extends to Tirana, has been used exclusively for freight transport. There are plans to reconstruct the railway and introduce passenger traffic between Montenegro and Albania.

Montenegro's rail stations do not have adequate overtaking length sections to handle 740 m long freight trains (as mandated by EU Regulation 1315/2013 for proper ERTMS operations).

Compatibility of standards with the aim of meeting obligations for railways from TEN-T network is being continuously conducted since 2018, which started by publishing of Technical Specifications of Interoperability (TSI), which have been determined by the Law on Safety, Organization and Efficiency of railway transport. In 2019, TSIs which refer to infrastructure and control command systems have been published. In the meantime, TSI regarding energy and tunnels will be published, while all other TSIs applicable to Montenegrin railways shall be published in next 5 to 7 years.

All activities on modernization of the public railway network and procurement of next generation vehicles shall be conducted in accordance with modern technical standards, respecting local geographic conditions as well as possibilities of their application in restricted conditions, such as turn radius, transmission of GSM signal through a large number of tunnels, etc. For modernization in accordance with technologies brought by Integral Transport Systems (ITS), significant funds are needed for infrastructure and for the rolling stock. Activities have been undertaken in order to design a new signal-security system in 2019 and 2020, followed by design of ERTMS technologies, starting from lower level ETCS (European Train Control System), and later for most advanced technologies, with an aim to install such systems on main route of Bar – Belgrade by the expiration date of this strategy.

Figure 2.7: The Montenegro Rail Network

Rail corridors are electrified to a large extent, with most sections either reconstructed and/or upgraded in the past years. The fact that rail corridors are of a single track reduces transporting and pass-through capacities of rail corridors. There is no active railway connection between Montenegro and Bosnia & Herzegovina, and the railway connection with Albania needs major upgrade on Albanian side in order to be able to handle passenger traffic.

2.1.2.2 Completed, ongoing and future projects

Since 2006, a total amount of EUR 123.1 million was invested in rehabilitation and modernization of Montenegro's railway infrastructure, for the overhaul and electrification of the Nikšić – Podgorica line and the overhaul of the (Belgrade)-Vrbnica-Bar line. With respect to the Vrbnica-Bar line, so far, its northern part has been rehabilitated: Vrbnica-Kolašin (53.2 km), with additionally contracted overhaul of Kolašin-Kos (10.9 km) and Kos-Trebešica (7.3 km, with

secured financing) for a maximum speed of 75-80 km / h. Remaining works include the general overhaul of the line's remaining 96 km (Trebešica-Bar), preparation of the main project for rehabilitation of existing signalling in Podgorica station and concrete bridges (a total of 91 bridges), preparation of the main reconstruction and rehabilitation project for 106 tunnels, procurement of equipment for maintenance of railway infrastructure, (14 steel bridges, 91 concrete bridge, 12 slopes and landslides in a total length of 3km), reconstruction of the track and facilities at three stations, reconstruction of the existing signalling and contact lines along the line and modernization of the security system and video surveillance. The estimated duration of the project is 15 years. There is technical documentation for most of the phases of the project for the preparation of the tender or implementation of the tender procedure.

The upgrade and modernization of the Podgorica – Tuzi railway line has been included in Montenegro's single project pipeline (SPP) for the next 15 years. However, no detailed technical studies or relevant works have been initiated so far. Any progress on that project is directly related to actions undertaken by the Albanian side. Also, the SPP considers the expansion of the Podgorica – Nikšić railway line to Trebinje in Bosnia & Herzegovina, following the over 40 years abandoned narrow-gauge line corridor between Nikšić – Bileća and Trebinje (formerly known as Dalmatian and Zelenika railway).

Upgrade and electrification costs of the Podgorica – Nikšić Railway, during period 2006-2012, came close to 65 million euros, and were financed through a credit from Česká Exportní Banka (ČEB) (50 million euros), and the European Bank for Reconstruction and Development (EBRD) (15 million euros), From 2008, close to 68 million euros was spent for upgrades to the Bar – Vrbnica railway. These expenditures were financed from loans by EBRD (14 million euros), EIB (7 million euros), and ČEB (800 thousand euros), and by funds secured from the Balkans Investment Framework (3.5 million euros) and by IPA funds (43 million euros). Additional 2.5 million euros was secured from various state funds. Regular maintenance costs have remained relatively stable in the previous years (around 6 million euros per year). On the other hand, an increase in subsidies for railway sector was observed during that period (from 2 million euros in 2010 to almost 9 million in 2016). Subsidies were used for servicing of due payments of credit funds obtained for upgrading the railway network and covering revenue deficits relative to operative costs for operators of railway infrastructure (ZICG) and of railway passenger transport (ZICG-transport).

A large number of upgrades of Montenegrin railways is underway or is in the planning stage. Priority is given to main railway corridors for passenger and freight transport, between Bar, Podgorica and Bijelo Polje (border with Serbia). Plans for upgrades of other railway corridors with Albania and Bosnia and Herzegovina are in preparation, although their realization is not expected before the time horizon of TDS (2035). Also, all such plans are greatly dependent on relevant railway projects in neighbouring countries, which are supposed to be aligned with and attached to projects conducted in Montenegro.

Figure 2.8 and Table 2.3 summarize progress of projects along the Vrbnica – Bar railway line; this included completed, on-going and remaining projects for overhauling Montenegro's major railway corridor:

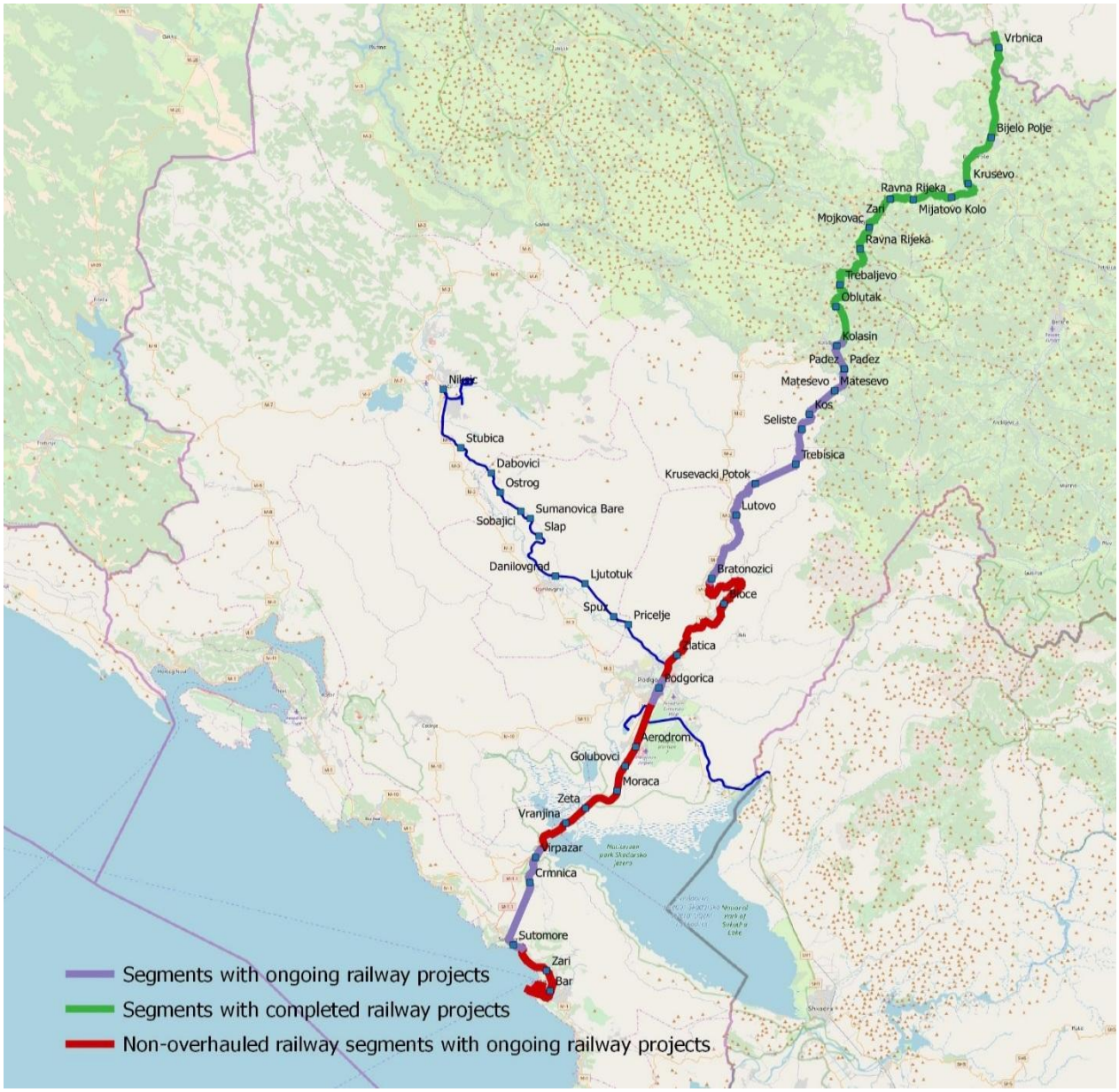


Figure 2.8: Completed and on-going/planned railway projects along the Vrbnica – Bar

Table 2.3: Progress of projects along the Vrbnica – Bar railway line

ID	Section / Project	Status
1	Vrbnica - Kolašin	Fully overhauled
2	Kolašin - Kos	Superstructure overhauled Ongoing bridge and slope rehabilitation
3	Kos - Trebešica	Ongoing superstructure reconstruction Ongoing bridge and slope reconstruction
4	Tribasic - Bratonožići	Ongoing bridge and slope rehabilitation
5	Bratonožići - Podgorica	Ongoing culvert rehab only – remaining section
6	Podgorica Station	Ongoing modernization of signalization and safety systems
7	Podgorica - Virpazar	Ongoing culvert rehab only – remaining section
8	Virpazar - Sutomore	Ongoing superstructure reconstruction

In the past decade, activities of railway overhaul have mostly been financed through loans from EU credit and financial instruments. For this purpose, more than 150 million euros have been used. Needs with regard to regular railway infrastructure maintenance have been relatively consistent during last several years. On the other hand, subsidies for operators of railway infrastructure have increased due to credit payments, while subsidies to passenger transport operators were significantly increased in 2018.

2.1.2.3 Passenger and freight transport

Following the same methodology as in the road sector, railway ridership and freight volumes were estimated for current ("base") and future ("do-minimum") conditions. Current conditions refer to the existing railway lines and operations, while the future case consider rail passenger operations between Podgorica and Tuzi (Albanian border) and Podgorica – Nikšić railway line extension to Bileća and Trebinje. Estimates for passenger ridership and freight, along with performance measures are presented in Table 2.4:

Table 2.4: Railway Usage and Performance Measures (typical day)

Year	Rail passenger traffic			Rail freight traffic	
	Trips*	Passenger - km	Passenger- hr	Freight Volumes*	Ton – km
2015	11,725	204,680	2,558	2,705	387,351
2025	16,778	297,580	3,710	3,788	542,943
2035	22,863	405,758	5,059	5,063	665,948

*includes trips with at least one trip end in Montenegro

A considerable increase in both the passenger and freight traffic is anticipated for Montenegro in the future years. This is attributed both to external (macroeconomic) factors such as economic growth of both Montenegro and neighbouring countries, as well as the improvement and upgrade of the rail infrastructure, which will allow for better services in terms of travel times, capacity and reliability of service. Indeed, an estimated 15% improvement in ridership along the Bar – Bijelo Polje corridor is attributed to a 30 min of travel time.

Rail traffic is expected to grow in the future years, as long as the network is overhauled and if there's an uptake in economic activity, and if macroeconomic conditions sustainably support economic growth of both Montenegro and its neighbouring countries.

2.1.2.4 Port Connectivity and Intermodality Infrastructures

The country's only intermodal station between rail and maritime transport is established in the Port of Bar. However, railway connecting segments between the port piers and the railway network are insufficient. Furthermore, infrastructure dedicated to intermodality between rail and road transport is missing. This implies that capacity of railway lines is not fully exploited, and road transport undertakes the majority of containerized freight flows.

Considering that the field of intermodality is largely lacking in terms of strategic documentation and project maturity in Montenegro, the first step would be to do a study on intermodality in Montenegro, focusing on analysing the current state of affairs in the country and proposing activities which would lead to the development of a fully-fledged intermodal transport system. On the basis of such a study, steps could be taken towards infrastructure development in this direction.

The concept of intermodality is a core component of modern transport systems, and the essence is to create cohesion between different modes of transport and make a unified system which shall allow for "door to door" transport.

The very development of intermodal transport enables increase in the scope of transport since it will unburden specific transport braches, improve environmental protection and decrease overall costs.

A study of this type would analyse all advantages and disadvantages of intermodal transport in contrast to unimodal transport. In essence, the study would show the significance of the intermodal system, use of various technologies and its very principles, as well as advantages and disadvantages of specific transport branches, after which it would analyse the present economic and transport situation, and on the basis of that define directions and development perspectives, and come up with certain proposals and solutions for development in this field.

2.1.3 Air transport sector

2.1.3.1 Existing infrastructure

Investments in Montenegrin airports in recent years are valued at around 37 million euros. Projected costs for airport modernization are 150 million euros (95 million euros for Podgorica Airport and 55 million for Tivat Airport), as stated in SPP.

Air transportation in Montenegro is facilitated by two international airports (Podgorica and Tivat).

Figure 2.9: Tivat and Podgorica airports

Podgorica Airport (IATA: TGD, ICAO: LYPG) serves the capital of Montenegro. This airport has a single 2500 m x 45 m runway with a North-South orientation (runway 18/36). Under ICAO classification, category of this airport is 4E ILS Cat I. However, ILS landing is possible only on runway 36 (from the south), as northern approach to runway 18 is visual only, possible under perfect visual meteorological conditions. This is due to proximity of Dinaric Alps in the north. The airport also has 14 taxiways, 6 aircraft stands for Code C aircraft, with a possibility to park Code D aircraft on stands 5 and 6, and 3 aircraft stands for general aviation aircrafts (wingspan ≤20m), 1 aircraft stand on technical apron for Code C aircraft, a 5500 m² passenger terminal, 8 check-in counters, 8 gates (two for arrivals and 6 for departures) and 2 baggage claim carousels.

Tivat Airport is located right next to the city of Tivat, 8 km (5 minutes) from the city of Kotor, and 20 km (12 minutes) north-west of Budva. Its 2500 m x 45 m single runway (14/32) ends just 88 m from the coastline of the Kotor bay. Tivat Airport exhibits incomplete compliance with international regulations with respect to its runway protection zone. It has an ICAO 4D classification and is noted for its challenging approach and landing procedures, due to hilly terrain around the airport, and prevailing strong crosswinds. The airport facilities include 2 taxiways, 7 aircraft stand (5 for Code C aircraft + 2 for Code D aircraft), 12 aircraft stand for general aviation aircrafts (wingspan ≤20m), a 4050 m² passenger terminal, 12 check-in

counters, 6 gates and 2 baggage claim carousels. Table 2.5 summarizes major operational characteristics of Montenegro's international airports:

Table 2.5: Major operational characteristics of the Podgorica and Tivat Airports

	PODGORICA		TIVAT	
	2016	**2030***	**2016**	**2030***
Hourly Passengers				
Design hour (base case)		2,030		1,475
Peak hour (base case)	1,140	2,640	1,170	1,920
Peak Aircraft Movements				
Design hour (base case)		18		12
Peak hour (base case)	8	23	9	15
Apron Stands	7(**)	15	7(**)	9

(*) Based on forecasts by Halcrow Group Ltd- Airports of Montenegro Master Plan 2011.
(**) Peak hour

The future limiting design element will be the apron stands (aircraft parking positions) and terminal capacities and not the capacities of the runways, which, for single ILS approaches, could reach and even exceed 40 two-way (take-off and landing) movements per hour.

Besides two international airports there is also an airport in Berane (Dolac) which has a takeoff-landing runway and a terminal facility (since it was once an international airport). Due to current conditions, lack of equipment and small length of the runway (< 2.000 m), the airport cannot be used for purposes other than general aviation. In the past there were suggestions regarding possible valorisation of the Berane airport, but these were not implemented.

Overall, typical capacity of airport runways with ILS in a single direction is approximately 40 airplane movements (take offs and landings) per hour. Currently both the airports of Podgorica and Tivat accommodate on average 32-38 airplane movements per day. As such, runway capacity is sufficient for current conditions and probably future conditions. On the contrary, expansion of apron stands and terminals will be required

2.1.3.2 Future projects

Future projects for Podgorica Airport include the extension of the passenger terminal, the improvement of the manoeuvring area and apron, the expansion of air cargo facilities, and the relocation of the airport's fuel farm and energy station. Podgorica Airport is not included in the urban planning document of the Podgorica Municipality. Therefore, the company "Airports of Montenegro" demanded that the Municipality produce a Local or National location study

document for the Podgorica Airport. Until such planning document enters into force, “Airports of Montenegro” are unable to undertake any of the stated development projects.

As for Tivat Airport, its capacity is already insufficient to handle demand during summer peak season and therefore an expansion is required. A concept design for modernizing Tivat Airport has been prepared, which includes the following projects:

- The existing terminal building (4,050 m^2) will be reconstructed and a new terminal building will be constructed (13,000 m^2) and will be connected to the existing terminal building.
- Part of the old terminal will be refurbished to become the new General Aviation and VIP terminal; all functions for these facilities will be located within the old terminal.

A new airside concept design for the airport will include: (1) the rehabilitation of the airport manoeuvring area pavements, including the runway, (2) the widening of the commercial aviation apron, its link taxiways to the runway, new proposed taxiway and utilities, (3) the displacement of the runway thresholds in order to comply with international safety regulations and (4) the relocation of the Tivat - Ostrvo Cvijeća road.

The two Montenegrin international airports are in a phase where expansions and upgrades are required to cope with increasing seasonal air traffic. Their terminals are inadequate and require expansion. Several projects are planned, especially for the Tivat Airport, for which demand is expected to get a further boost in the future years.

Future projects include Berane Airport where, after a comprehensive analysis, possible valorisation options could be assessed; and activities related to Nikšić Airport (Kapino polje) where a business plan for the development of Nikšić airport could be developed with elements of a feasibility study. At the same time, there is an initiative for opening of an airport in Ulcinj.

2.1.3.3 Passenger transport

Figure 2.10 presents annual passenger traffic estimates for Montenegro's airports, for years 2015, 2025 and 2035.

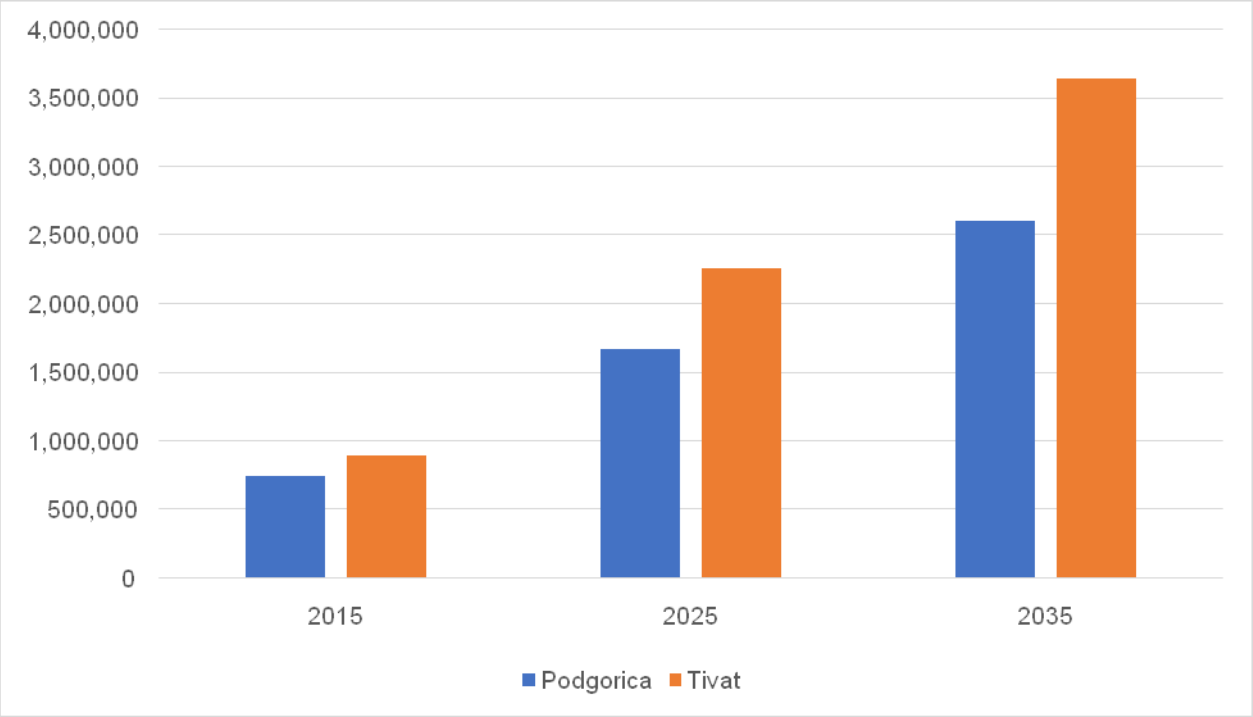


Figure 2.10: Annual Passenger traffic forecasts for Montenegro Airports (Source: Transport Model Outputs)

Air passenger traffic for the Tivat airport will exceed that of the airport of Podgorica for future years 2025 and 2035.

2.1.4 Maritime Sector, Ports and Inland Waterways

2.1.4.1 Existing Infrastructure

Port of Bar JSC possesses (a) Grain Terminal, with a 30,000 t capacity silo and a 250 m long closed transport conveyor belt, running parallel and directly along the railway lines, designed for loading/unloading of grain to/from the silo, (b) a General Cargo terminal with closed storage and cold storage areas and (c) a Ro–Ro terminal designed to accept, store and dispatch Ro–Ro cargo units (complete road trucks or units of truck-trailers and semitrailers), and (d) a Passenger Terminal with five berths for passenger ships and ferryboats, as well as terminal for liquid cargo for the reception and dispatch of oil and oil derivatives.

Port of Adria JSC, located next to Port of Bar JSC possesses a Container Terminal with an operational quay which is 330m long and depth of 12m, with a modern 40t gantry crane and open storage for 2500TEUs and 180 refrigerated containers. It also possesses two General

Cargo Piers equipped with portal cranes and closed and open storage of 7,6ha and 5,1 ha respectively, a Timber Terminal with a covered storage space of 5,86 ha, as well as a terminal for transhipment of wood and wooden products with storage space.

Port of Kotor JSC specializes in cruising tourism since 2006, enjoying the reputation of one of the busiest destinations in the Mediterranean. Located in Bay of Kotor, attractiveness of the site exhibits dynamics for developing a sustainable business trend.

When it comes to the maritime fleet, Montenegro started the revitalization of the commercial fleet in 2009. At the end of 2009 Crnogorska plovidba JSC Kotor contracted the construction of two bulk cargo ships from Shanghai Shipyard Co., Ltd China via company POLY from China. These ships are “handy” bulk carriers with the capacity of 35,000 tons, 179.90 m long, 28.40 m wide, with 5 warehouses, four cargo devices/cranes 30 tons each. Usage of the first ship Kotor started in January 2012, while the usage of the ship Dvadesetprvi Maj started in August 2012. Ships were certified by the previously selected Bureau Veritas organization.

The company Barska Plovidba JSC from Bar, working in cooperation with the Chinese company Poly Technologies Inc., has contracted the purchase of two boats of new bulk carrier "seahorse" type of 35.000 tons (eco type), which fully meets the needs of today's maritime market with its technical characteristics and capacities. Usage of ships began on September 18, 2014 with the boat Bar, and continued with the usage of ship Budva at the beginning of October 2014.

Skadar Lake covers part of the territories of two countries, Montenegro and Albania (about 2/3 belongs to Montenegro, 1/3 to Albania). It is the largest lake in the Balkans, about 44 km long and 13 km wide at the middle, with a mean water depth of 5 m, and an area of 350 to 510 km2 depending on the season. Skadar Lake Region is a National Park dominated by aquatic and wetland ecosystems.

Figure 2.11: Skadar Lake

Current conditions in communities next to the Skadar Lake Region are characterized by population migration, decline in economic activities, frequent floods in the coastal area, sinking and flow reduction of the Bojana River, lack of infrastructure for lake traffic and insufficient capacity of the local road network.

2.1.4.2 Future Infrastructure

In the Port of Bar, an extension of the coast at the passenger terminal is planned. The project involves extending the existing coastline at the passenger terminal for 432.85 m in length and a 30 m in width, and its implementation would eliminate the existing limitations associated with low water depth along the existing operational coast (the maximum water depth is currently at the berth 54 - 5.9 m) and it would enable the acceptance of medium and large passenger ships (including combined ships for both passengers and cargo), as well as cruise ships.

There is a plan to extend the operational part of the coast at the terminal for dry bulk cargo for 166 m. Through the project Second Phase of Quarry Volujica in the Port of Bar, it is planned to permanently rehabilitate the northern slope of Volujica hill in order to protect infrastructural and

supra-structural objects which are located in the base of the hill, and in order to secure a new zone of 7.8 ha for transhipment and storage of dry bulk cargo.

The adaptation, reconstruction, construction and equipping of the Port of Kotor is planned in order to carry out the activities of a commercial port open to international traffic with emphasis on tourist-passenger segment. Also, there is a plan to increase capacity of vessel reception on the berth in Port of Kotor and to secure cruise ships at anchorages by installing temporary buoys for berthing of the ships. Such a conceptual development plan of the port must be compatible with the development of the City of Kotor, because the port is incorporated into its area through its location.

Maritime companies "Crnogorska plovidba" AD and "Barska plovidba" AD plan to further revitalize the Montenegrin merchant fleet by acquiring new ships as soon as the market conditions permit, and above all through the increase in fares - cost of ship's charter. Also, in order to further develop shipping in Montenegro and the traditional connection between Montenegro and Italy, it is necessary to renew the maritime line Bar - Bari - Bar with a new Ro - Ro passenger boat which is one of the imperatives of the maritime company "Barska plovidba" AD.

When it comes to Skadar Lake, the valorisation of this area is planned through the construction of adequate infrastructure in the Port of Virpazar aimed at conducting international water transport, fulfilment of conditions for the establishment of a maritime route between the Port of Virpazar and the Port of Skadar in the Republic of Albania. Moreover, in cooperation with the other state bodies in Montenegro and state bodies in the Republic of Albania, establishment of a navigation route on river Bojana is planned, as well as the finding of an adequate model for the protection of the river Bojana estuary from the depositing of sedimentation from the sea and river sides. When it comes to Port of Virpazar, within the framework of INTERREG IPA CBC AL MNE programme – Thematic Project Transport, Ministry of Transport and Maritime Affairs is a partner in the project *Albania, Montenegro Italy – multimodal transport connectivity – ALMONIT*, in which the lead partner is Albanian Development Fund while other partners are the Region of Puglia and the Region of Molise.

2.1.5 Single Project Pipeline

While the quality of Montenegro's transport infrastructure is notably improving during the last decade, it may take some time until it reaches high EU standards in terms of quality, security, capacity and management efficiency. Improvements in transport connections are guided by the country's commitment to the Vienna Declaration of 2015 (WB6 Summit in Vienna) and the priorities set out in WB6 Connectivity Agenda with respect to transport and energy infrastructure, as well as to defining the Single Project Pipeline, technical standards, road safety

programs, border crossing procedures, railway reforms and opening / liberalization of markets. Projects included in the SPP are summarized in Table 2.6, along with their estimated cost.

Table 2.6: Single Project Pipeline

No.	Project title	Subsector	Est. cost (€)
1	Reconstruction and modernization of the railway line "Vrbnica-Bar", state border with Serbia	Rail	246.500.000,00
2	Construction of Bar-Boljare highway, section Mateševo – Andrijevica	Road	294.840.000,00
3	Adriatic-Ionian expressway coastal variant along Montenegro's coast	Road	1.013.001.000,00
3.1	Section Border with Croatia-Bijela (17km) (Bypass Herceg Novi (8km) & Herceg Novi-Bijela (9km))		193.228.000,00
3.2	Bridge over the Boka Kotorska Bay, viaducts and access roads		67.925.000,00
3.3	Bypass Tivat		56.430.000,00
3.4	Bypass Budva (14km, part of section Tivat-Sozina 47km long)		158.388.000,00
3.5	Bypass Bar		188.000.000,00
3.6	Section Tivat-Sozina		198.550.000,00
3.7	Section Bar-Border with Albania		150.480.000,00
4	Highway Bar-Boljare, bypass Podgorica, section Smokovac – Tološi - Farmaci	Road	233.122.000,00
5	Highway Bar-Boljare, section Đurmani - Farmaci	Road	440.640.000,00
6	Highway Bar-Boljare, section Andrijevica – Boljare	Road	731.160.000,00
7	Reconstruction and modernization of the railway line Podgorica - Tuzi – across the border with Albania	Rail	35.000.000,00
8	Vessel Traffic Management Information System (**VTMIS)** response to maritime pollution incidents - PHASE II	Maritime	4.200.000,00
9	Development of the Podgorica Airport	Air	94.842.387,60
10	Development of the Tivat Airport	Air	55.000.000,00
11	Reconstruction of the Šćepan Polje-Plužine highway (border crossing with Bosnia and Hercegovina)	Road	60.000.000,00
12	Construction of the railway Nikšić- border with BiH-Trebinje-Čapljina	Rail	179.597.190,00

Total estimated cost which refer to transport sector within the single project pipeline (determined according to EU methodology – implementation of Core TEN-T network until 2030) is approximately 3.3 billion €. Time horizon set by this strategic document for implementation of priority infrastructure projects is 2035.

2.2 Problem analysis

Based on collected data and consultations, problems related to infrastructure and operative functioning are identified and discussed. With regard to defined problems and development perspectives, strategic and specific objectives of TDS have been determined.

2.2.1 Main findings

2.2.1.1 Network quality and coverage

The road network exhibits a good pavement condition on most main roads. Rehabilitation may be required only in some mountainous sections of regional roads of secondary importance. Traffic flow and safety are affected by the fact that the country's state network consists of two-lane highways, with a single carriageway per direction, often in a hilly or mountainous terrain (which implies alignments with sharp curves, increased vertical slopes and limited overtaking sections). As such, allowable speeds are limited to 80 km/h in main roads, 50 km/h in regional roads, and overtaking manoeuvres are required around the network. Fortunately, in some segments of the main network (particularly in those with increased vertical slopes), there is a third lane for overtaking, which facilitates such manoeuvres. Shoulder edge barriers are of inadequate width in many segments, compromising road operations and safety in cases of incidents and vehicle malfunctions. Furthermore, weather conditions have an adverse effect in operations and conditions of mountainous sections of the main road network.

In this context, the state road network has limited capacity and yields low travel times due to its alignment, implemented cross-sections and the need for overtaking. Its capability and reliability to support local connectivity needs and transit flows are relatively low, based on modern standards. Furthermore, the road network cannot efficiently handle road freight transport (apart from local needs).

Geometric design yields low capacity and negatively affects traffic safety conditions in several segments of the Montenegro's state road network. Nevertheless, depending on traffic (demand forecast), not all state road segments may need an upgrade or replacement by proper highway standards. This is necessary only for these sections where level of service is (or will be) inadequate in the future. Traffic safety can be improved by other (soft) measures such as police surveillance (by instruments or by physical presence), without always needing intervention in road infrastructure.

Current level of service (LOS) conditions seems to be adequate for large part of main and regional roads. Level of service C and D is exhibited in sections of the coastal main road (M2.4) between Bar and Budva and around Kotor, as well as in sections of the main road (M2) Bar – Podgorica - Serbian Border. A conservative evaluation of these sections is that most of them are

still performing adequately, but are close to being defined as LOS C. However, given estimates for demand in future years (2025 and 2035), a “do-nothing” case of only retaining the existing conditions would degrade many network segments to a D and even F LOS. On the other hand, the “Do-minimum” scenarios for years 2025 and 2035 involve the introduction of two major road corridors (SEETO routes 1 and 4), whose path is parallel to main roads, exhibiting lower LOS in current conditions. Increased future demand for road transport shall be accommodated by new infrastructure and a few segments exhibit LOS “C” for year 2035 (sections between Bar, Budva and Tivat of the Adriatic-Ionian expressway coastal variant).

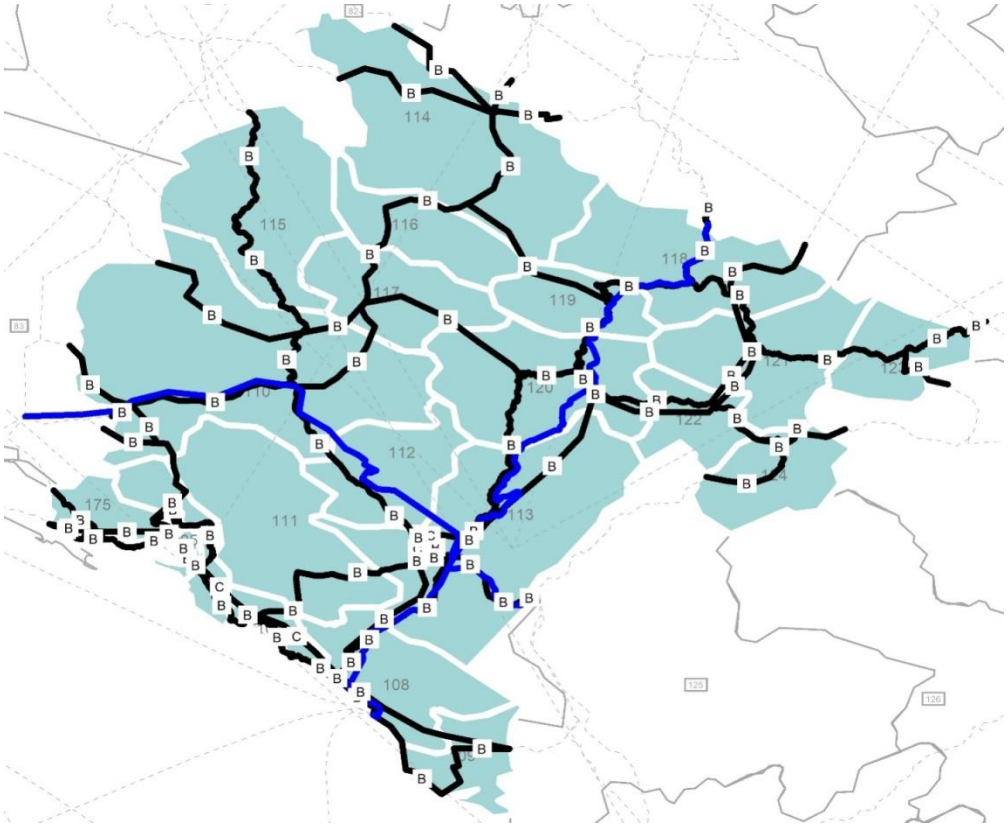


Figure 2.12: Montenegro Core and Comprehensive Road network LOS for year 2035 (Source: Transport Model Outputs)

Montenegro is not well positioned with respect to EU average on deaths attributed to road accidents, but is close to the maximum value exhibited in the EU. However, number of traffic accidents is lower compared to neighbouring countries.

Causes of traffic accidents are usually connected to following elements: driver, vehicle, road and surrounding. Since 2010, Montenegro sees a trend of less traffic accidents which result in serious injury of death.

With the aim of establishing necessary measures which Montenegro should implement to increase level of transport safety, presentation of current state (Table 2.7.) was conducted, having in mind an analysis in accordance with principles of Four E's of Road Safety (Education, Engineering, Emergency and Enforcement).

Table 2.7 Assessment of current state and measures suggested for reduction of identified gaps between current and desired state

	AREAS	Fully completed	Continuous implementation	Partially completed	Incomplete	Gap reducing measures	Competent institution
1.	**EDUCATION**						
1.1.	**Basic program of education in traffic**					Continuation and improvement of the traffic education programs in primary, secondary and higher education systems. Education of children within preschool institutions and introduction to the basic attitudes on safety in traffic	
	Education on first steps in traffic			X			Ministry of Education
	Education on basic principles of safety in traffic			X			Ministry of Education
	Education on teenage behaviour in traffic			X			Ministry of Education
	Education on cyclists behaviour			X			Ministry of Education
	Education on safe travel of employees			X			N/A
	Education of professional drivers (CPC – certificate of professional competency)		X				MTMA
1.2.	**Program for young drivers and beginners**					Further improvement of the work of driving schools and control of the implementation of established standards and regulations in this field. Introduction and implementation of a monitoring	
	Satisfactory level of driving schools quality			X			Ministry of Education
	Monitoring of young drivers and reactions to aggressive and dangerous behaviour		X				MOI and Police Administration
	Establishing system of additional education of drivers				X		Ministry of Education

						mechanism for young drivers. Introduction of additional education for young drivers-perpetrators of certain traffic violations	
1.3.	**Public campaign**					Conducting an overall public campaign to raise awareness and to form correct attitudes about safety behaviour in traffic. Promoting campaigns for respecting red light. Continuation of the on-going campaigns against fast driving and wearing protective helmets on motorcycles. Continuation of successfully implemented and belt-tightening campaigns.	
	Campaign against fast driving	X					MOI and Police Administration, NGO
	Campaign against fast driving under the influence of alcohol	X					MOI and Police Administration, NGO
	Campaign for belt usage	X					MOI and Police Administration, NGO
	Campaign for helmet usage on motorcycles	X					MOI and Police Administration, NGO
	Campaign for respecting red light		X				MOI and Police Administration, NGO
	Campaign against aggressive driving	X					MOI and Police Administration, NGO
	Campaign for public transportation safety		X				MTMA, NGO
	Campaign for respecting working hours and break		X				MTMA, NGO

	during working hours for public and freight transport workers.						
2.	**ENGINEERING**						
2.1.	**Implementation of scientific research in road safety**					Further improvement of the road management system in order to increase safety. Continuation of activities on the program of rehabilitation of critical points on the roads. Continued activities aimed at inspecting the condition of the road network. Taking action on the development of a comprehensive analysis of traffic accidents.	
	Evaluation of effect of safety on roads		X				MTMA
	Ranking safety and management of road network		X				MTMA
	Inspection of road safety		X				MTMA
	Road safety audit		X				MTMA
	Analysis of traffic accidents (map risking, star rating).			X			MTMA
2.2.	**Improvements related to regulation/guidelines for road network design**						

	Full implementation of the regulations / guidelines for the design of the road network			X		Adoption and application of design regulations in accordance with the principles of safety. Continuation of the implementation of the already adopted regulations for the design of the road network. Design in accordance with EU recommendations and directives.	MTMA
	Design in accordance with improved regulations - in accordance with EU recommendations and directives			X			MTMA
	Improvement of regulation in accordance with safety principles ("self-explaining roads", "error forgiving roadsides")			X			MTMA
2.3.	**Practical measures for protection of the most endangered users**						
	Introduction of pedestrian paths along the road network		X			Continuation of activities on the introduction of pedestrian paths along the road network. Continuation of activities on improving the network of biking trails.	MSDT
	Introduction of objects related to pedestrian passage on busy roads (passages, overpasses)		X				MSDT, MTMA, MUNICIP.
	Implementation of measures ensuring respect for speed limit				X		MOI and Police Administration
	Introduction of zones with speed limitation of 30 km/h in densely populated areas	X					MOI, MTMA
	Introduction of a cyclist routes network			X			MSDT, MUNICIP.

	Organization of school buses where needed		X				Ministry of Education
2.4.	**Practical measures regarding intersections, railway crossings and ITS**						
	Construction of roundabouts and improvement of existing intersections		X			On-going activities on the introduction and implementation of intelligent transport systems in the field of traffic safety. Continuation of the provision of non-hazardous road crossings	MTMA, MUNICIP.
	Improvement of safety on railway crossings		X				MTMA
	ITS introduction				X		MTMA
3.	**EMERGENCY**						
	Improving entire system related to efficiency and equipment		X			Continuation of comprehensive activities, both organizational and financial, with the aim of increasing efficiency and better equipment to emergency services after traffic accidents. Promotion of a public campaign, which would further explain the importance of first aid indications after traffic accidents	Health Ministry
	Reduction of accident response time		X				Health Ministry, MOI and Police Administration
	Campaign needed to improve first aid during accidents				X		Health Ministry
	Establishing emergency call system	X					MOI and Police Administration
	Establishing helicopter transport for those injured in traffic accidents		X				Health Ministry, MOI and Police Administration
	Using protection vests during traffic accidents, especially at night	X					Health Ministry

4.	**ENFORCMENT**						
4.1.	**Preventive measures related to reduction of speed limit violations**						
	Introduction of safety cameras				X	Procurement and installation of security cameras on frequent roads, as well as in those locations where traffic accidents have already been recorded in the past. Equipping police units with a mobile speed control system. Continuation of the training of police officers for the full implementation of laws and regulations	MOI and Police Administration
	Introduction of units with mobile system of speed control	X					MOI and Police Administration
	Work of police with zero tolerance policy	X					MOI and Police Administration
4.2.	**Preventive measures related to reduction of driving under the influence of alcohol**						
	Intensive control of traffic by police forces		X			Continuous enforcement of traffic control by the police. Reduction of the allowed amount of alcohol in the blood	MOI and Police Administration
	Introduction of regulation with 0,2 per mills of alcohol for drivers and 0 pro mills of alcohol for beginner drivers			X			MOI and Police Administration

						to 0.2 for drivers and 0 for beginner drivers.	
4.3.	**Belts, protection helmets, children related restrictions**						
	Intensive control and appropriate penalties when not using a belt			X		Continuous implementation of intensive controls: fines related to not using seat belts, protective helmets and children's seats	MOI and Police Administration
	Intensive control and appropriate penalties when not using protection helmets			X			MOI and Police Administration
	Obligatory use of equipment for children (seats, busters etc.)			X			MOI and Police Administration
4.4.	**Establishment of a penalty scoring system**						
	Introduction of penalty points	X				Continuation of application and tightening of misdemeanour points (penal points). Introducing a sanction for revoking the license and re-placing it with a certain number of points	MOI and Police Administration
	Revocation of license or repetition of driving tests with a certain number of points	X					MOI and Police Administration

	ADDITIONAL MEASURES					Strengthening of the entire system of technical control of vehicles, both the control of the service provider - the technical inspection station, as well as the control of the vehicle's own probity. Introduction of certain incentives for the purchase of new vehicles.	
	Improving system of technical control of vehicles			√			MOI and Police Administration, MTMA
	Reduction of average age of vehicles		√				MTMA

The field of safety in road transport was the subject of the Strategy on Improving Safety in Road Transport (2010-2019) in the previous period, which defined guidelines related to road transport safety in Montenegro with measures which need to be taken to implement given aims. The Strategy also defined development and functioning of road transport safety system in Montenegro. The current Strategy on Improving Safety in Road Transport was adopted towards the end of 2009 with a foreseen period of implementation starting in 2010 and ending in 2019. For the forthcoming period, Ministry of Internal Affairs is drafting a Programme on the Improvement of Safety in Road Transport for the period from 2020 to 2022. As a public policy document, the Programme will elaborate in detail the manner in which current issues in the field of safety in road transport are to be resolved.

On the sidelines of Ten-T days, a high-level European conference held in April 2018, a ministerial conference for the Western Balkans and Turkey was held, where support was given to the Western-Balkans Declaration on Road Safety. This Declaration aims to further strengthen road safety guidelines, considered during Bulgarian presiding over the EU, on a meeting held in Sofia, in April 2018, by transport ministers of Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo*. This Declaration stressed an ever-present high level of road fatalities a serious injury, and it recognized that such outcomes may be prevented by appropriate activities. With that in mind, a readiness to intensify national and regional actions of all relevant subject was confirmed, as well as the need for a European-level coordination aimed at implementation of effective policies and road safety measures, and adoption of a “zero vision” as a future perspective aimed at lowering the level of road fatalities and injuries.

With the aim of enhancing road safety, Declaration calls for a number of actions systemically places in 5 groups: actions aimed at strengthening road safety management; actions aimed at promoting a safer infrastructure; actions for promoting protection of road users; actions for promoting use of safer vehicles and actions for furthering cooperation and exchange of experiences.

By identifying the most important activities within measure *actions aimed at strengthening road safety management* (such as: giving an adequate level importance to this issue within a general political agenda, good coordination of all relevant subjects, securing of financial means to support such activities, further work on development of national strategies and action plans on road safety, high-quality data collection on traffic accidents and investigation of their causes as well as adoption of goals for lowering number of road fatalities and serious injury, in accordance with EU-implemented goals), a framework was established, which must be further elaborated, according to capabilities, resources and capacities of each individual country, but also within a multilateral platform.

Signing of TCT is also aimed as the field of road safety, which at the same time represents a European agenda of Montenegro's obligations, as well as of other JIE countries.

Within *Actions aimed at promoting a safer infrastructure*, a need for recognizing the following issues was recognized: identifying the most dangerous parts of the road network, implementation of road safety principle in road designing, construction and maintenance; enhancing of safety inspections through establishment of necessary procedures and regulatory framework, as well as through conducting a number of activities related to further development of both physical and soft infrastructure aimed at raising all levels of road security. Among *Actions aimed at strengthening road safety management* for WB countries, a Management plan for reforming (soft) measured 2016-2020 is being implemented (package adopted at the Vienna Summit 2016-2020).

Actions for promoting protection of road users stipulate development and promotion of a road safety culture and of adequate roadside behaviour through continuous education, as well as conducting of measures to ensure an efficient aid and response after car crashes.

Actions for promoting use of safer vehicles are aimed at an overall enhancement of vehicle safety, through ensuring that they meet all necessary EU standards, but also through promoting procurement of vehicles equipped with advanced technologies and systems for avoiding accidents.

Finally, *actions for furthering cooperation and exchange of experiences* stipulate a number of activities aimed as furthering cooperation in vehicle safety among signatory states and the EU, through exchange in know-how and experience.

Since heavy vehicle traffic will increase, some state roads will undertake heavier loads. Apart from reconstructing the road network to cope with additional traffic, monitoring of heavy vehicle traffic will be required. Instrument-assisted monitoring of heavy vehicle traffic in state roads is missing. Therefore, there is no available clear data on the actual loads imposed in Montenegro's state road network.

For railways, over 48% of Montenegro's rail infrastructure has been rehabilitated in the recent years and overhauling work on remaining segments is either ongoing or planned. Public rail network is almost fully electrified (225 km out of 250 km or 90%), which is significantly higher than the EU average, which is 52%. Maximum allowable speeds remain low and range between 50 km/h and 100 km/h. The fact is that the railway has single rail lines reduces its transporting and pass-through capacities. Geometry restrictions and signalization deficiencies reduce rail network capacity, travel times and reliability. Improvement of railway infrastructures will enhance rail efficiency and can attract additional ridership.

Montenegro is well placed with respect to the road and rail coverage with respect to the country's population, compared to other enlargement countries and the EU. Indeed, relevant figures of 13.8 km of road and 0.40 km of rail per 1000 inhabitants are respectively larger than and close to the EU average values. Road spatial density is higher than that of other enlargement countries (624 m per km2).

When it comes to the quality of the maritime transport network, connectivity of Montenegro with EU countries, it should be noted that in 2015 it was 50 years of existence of the maritime line Bar-Bari-Bar which was maintained by Ro-Ro passenger ships Sveti Stefan, Sveti Stefan II, Prekookeanske plovidbe Bar which is now Barska plovidba JSC Bar.

In December 2016 ship Sveti Stefan II was not able to extend the statuary certifications and was sent to slitting, and line Bar-Bari-Bar was temporarily closed until the summer of 2017 when it was renewed through the engagement of the ship Dubrovnik of the river Jadroline from the side of Barska plovidba JSC.

2.2.1.2 Future Infrastructure Plans

Montenegro is planning to construct two new highways (Bar-Boljare highway and Adriatic-Ionian expressway coastal variant), reconstruct the highway corridor to the border with Bosnia & Herzegovina (main road Šćepan Polje - Plužine), and continuous rehabilitation and maintenance of the state road network. Rehabilitation of country's railway network is also underway and/or planned (Bar–Podgorica–Bijelo Polje and Podgorica–Tuzi sections). A new railway line is planned to connect Montenegro and Bosnia & Herzegovina (using existing corridor between Belica and Nikšić).

Extensive modernization and expansion of the Tivat and Podgorica airports is also programmed in the forthcoming years.

Proposed infrastructure projects are both required and adequate for covering the country's transportation needs up until 2035. Only small infrastructure interventions are required on the country's main road network. Nevertheless, programming and financing of major infrastructure projects should be secured and their implementation should be successfully completed and in a timely manner.

2.2.1.3 Financing

Proposed infrastructure projects in the single project pipeline yield high expenditures, which cannot be handled by Montenegro's state budget. Indeed, transport infrastructure expenditures in Montenegro have risen to over 5% of its GDP in past couple of years. Given the size of Montenegro's GDP and public debt (which exceeds over 60% of the country's GDP), traditional financing schemes, such as loans, are neither viable nor desirable. Additional infrastructure

interventions (such as road rehabilitations in the county's comprehensive road network) and the introduction of intelligent transportation systems in the state network could yield additional funding requirements. As such, Montenegro should seek alternative funding schemes, especially in the form of concessions and public-private sector partnerships. With respect to services, railways exhibit low cost-recovery ratio and high subsidization; these are attributed to repayment needs of railway overhaul loans in the past years, as well as to deficits of revenues with respect to operating costs.

2.2.1.4 Additional Issues

Apart from infrastructure in the SPP, a few issues arise with respect to the country's future infrastructure needs. First, some main road network segments offering connectivity with neighbouring countries are sub-standard (for example, road sections connecting Montenegro with Kosovo). While LOS for these roads is estimated to be adequate for the time horizon of the Strategy, the country could benefit from upgrading these sections. Similarly, there are currently on-going and planned road construction projects along corridors to Bosnia & Herzegovina (Podgorica – Nikšić – Plužine – Šćepan Polje), and Croatia (Podgorica – Nikšić –Vilusi). Remaining elements of these corridors should be reconstructed where necessary for forming corridors of uniform quality.

Infrastructure necessary for supporting intermodality (such as port connections to the rail network and intermodal stations for rail – road combined transport) is missing. This contributes to the scarce participation of railways in the country's intermodal transport operations, which are dominated by road freight carriers.

As already mentioned, besides the two international airports, Podgorica and Tivat, there is also an airport in Berane There are arguments for valorisation of this airport, focusing on positive effect on the economy and tourism of northern region of Montenegro. This airport could have certain significance in current conditions, especially if we take into consideration difficult geographic conditions and terrain configuration in which transport is currently occurring. However, it should be taken into account that this airport will be negatively affected through significant improvements on road network in the future period which will make this area much more accessible to airport Podgorica.

Revitalization of airport Dolac requires significant investment, as a full renewal of its facilities is necessary, including the construction of fuel depot and extension of the runway. Considering that the need for a third airport in Montenegro is questionable, it is necessary to first explore the potential of this airport in order to evaluate feasibility of its implementation.

There exists a need for a few (supporting) transport infrastructure projects apart from those proposed in the SPP. Further investigation on their feasibility is required.

2.2.2 Infrastructure Objectives

On the basis of the previously established strategic objectives, analysis of issues and identified negative aspects of the current state of affairs, specific objectives related to transport infrastructure are defined.

The following table highlights the strategic objectives and the specific objectives related to transport infrastructure.

Table 2.8: Specific objectives targeting on transport infrastructures

#	Specific Objective	Expected Outcomes
Strategic Objective 1: Economic Welfare		
1.1	Complete infrastructure projects in SPP Sector: Road, rail, air, maritime transport	• Modern core highway network • Upgraded and expanded railway network • Upgraded airport infrastructures • Improved accessibility within the country and to and from neighbouring countries • Renewal of a regular maritime line Bar-Bari-Bar • Establishment of international maritime transport Montenegro – Republic of Albania, on Skadar Lake and river Bojana.
1.2.	Align railway with interoperability requirements	• Installation of appropriate signalling and safety technologies (ATS, ATP etc.).
1.3.	Reduce border clearance times Sector: Road, rail transport	• Lower access and transit times for passenger and freight movements.
1.4.	Improve connectivity in the Port of Bar	• Increased freight flows • Improved port competitiveness • Full valorisation of the capacities of the Port of Bar
Strategic 2: Accessibility, Performance of Operations and Quality of Services		
2.1.	Maintain adequate LOS of state road network Sector: Road transport	• Road network of good condition • Upgraded geometric characteristics • Increased speeds and reduced travel times • Reliability in travel times • Safe road environment • Better accessibility

#	Specific Objective	Expected Outcomes
2.2.	Complete rail network overhaul and improve rail infrastructures in accordance with TEN-T standards Sector: Rail transport	• Completion of the Vrbnica-Bar line reconstruction • Increased travel speeds • Higher corridor capacity • Safer operations • Travel convenience
2.3.	Revitalize and / or upgrade transport infrastructures Sector: Maritime transport	• Existing / abandoned transport infrastructures exploited
2.4.	Reinforce the creation of an efficient and integrated transport system through intermodality	• An efficient transport system, integrated in the region and in the EU network, which promotes economic development and the citizen's quality of life • Create favourable conditions for the intermodal and combined transport and logistics • Attract investments • Reduce rail transit times and transport costs • Establish joint border crossings • Reduce logistics costs
2.5.	Determine possibilities for revitalization and / or reconstruction of air transport	• Valorise Airport Berane
2.6.	Deployment of ITS technologies in the road, rail and maritime sectors Sector: Road, rail, maritime transport	• Upgraded services to users and travellers • Advanced monitoring and management of network operations. • Performance and safety improvement in networks
2.7.	Reduce border clearance times Sector: Road, rail transport	• Lower access and transit times for passenger and freight movements.
Strategic Objective 3: Safety and Security		
3.1.	Maintenance of an adequate LOS on state road network Sector: Road transport	• Road network of good condition • Upgraded geometric characteristics • Increased speeds and reduced travel times • Reliability in travel times • Safe road environment • Better accessibility
3.2.	Deployment of ITS technologies in the road, rail and maritime sectors	• Upgraded services to users and travellers • Advanced monitoring and management of network

#	Specific Objective	Expected Outcomes
	Sector: Road, rail, maritime transport	operations. • Performance and safety improvement in networks
3.3.	Complete infrastructure projects in SPP Sector: Road, rail, air, maritime transport	• Modern core highway network • Upgraded and expanded railway network • Upgraded airport infrastructures • Improved accessibility within the country and to and from neighbouring countries • Renewal of a regular maritime line Bar-Bari-Bar • Establishment of international maritime transport Montenegro – Republic of Albania, on Skadar Lake and river Bojana.
Strategic objective 4: EU Integration		
4.1	Deployment of ITS technologies in the road, rail and maritime sectors Sector: Road, rail, maritime transport	• Upgraded services to users and travellers • Advanced monitoring and management of network operations. • Performance and safety improvement in networks
4.2	Reinforce the creation of an efficient and integrated transport system through intermodality	• An efficient transport system, integrated in the region and in the EU network, which promotes economic development and the citizen's quality of life • Create favourable conditions for the intermodal and combined transport and logistics • Attract investments • Reduce rail transit times and transport costs • Establish joint border crossings • Reduce logistics costs
4.3.	Align rail with interoperability requirements	• Installation of appropriate signalling and safety technologies (ATS, ATP etc.).

2.3 Proposed Measures

Necessary measures are identified and proposed for tackling problems associated with specific objectives. These are the following:

2.3.1 Specific objective 1.1. Complete infrastructure projects in SPP

Problem Summary: The state road infrastructure of Montenegro is not sufficiently aligned with modern standards. Road network has limited capacities and a slow travel times due to its alignment, implemented cross-sections and the need for overtaking. Existing road network is unable to efficiently answer the transport demand. Rail network has a lower capacity due to geometry restrictions and signalization deficiencies. This has an adverse effect on travel times and reliability.

Proposed measures are:

- **Programming and monitoring Single Pipeline Projects for target years 2027 and 2035**
- **Continue and streamline actions towards completion of projects in SPP**
- **Align and coordinate project activities and programming with those of neighbouring countries**

Projects per sector and programming are summarized in Table 2.9:

Table 2.9: Projects in SPP list.

Sector	Year 2027	Year 2035	Align with neighbouring countries
Road	Highway Bar-Boljare, section Mateševo – Andrijevica Highway Bar-Boljare, section Andrijevica – Boljare Adriatic-Ionian expressway coastal variant, Bypass Tivat Adriatic-Ionian expressway coastal variant, Corridor through Bay of Kotor Adriatic-Ionian expressway coastal variant, Bypass Budva Reconstruction of the Šćepan Polje-Plužine highway (border crossing with Bosnia and Hercegovina)	Adriatic-Ionian expressway coastal variant, section Border with Croatia - Bijela (Bypass Herceg Novi & Herceg Novi-Bijela) Adriatic-Ionian expressway coastal variant, section Bar – Border with Albania. Adriatic-Ionian expressway coastal variant, Bypass Bar Highway Bar-Boljare, bypass Podgorica, section Smokovac – Tološi - Farmaci Highway Bar-Boljare, section Đurmani – Farmaci	Yes

Rail	Reconstruction and modernization of the railway line Vrbnica-Bar, state border with Serbia	Reconstruction and modernization of the railway line Podgorica - Tuzi – across the border with Albania Construction of the railway Nikšić- border with BiH – Trebinje-Čapljina	Yes
Air	Development of Podgorica Airport Development of Tivat Airport		No

Montenegro should proceed and streamline actions for carrying out all technical activities necessary for completing SPP projects, without compromising quality or time of completion. This, in any case, demands programming and continuous monitoring. Such actions refer to (a) the procurement and timely completion of necessary technical studies for SPP projects, (b) the establishment and implementation of efficient processes and legislation for acquiring right-of-way for highway and rail projects, (c) the securing of financing resources for SPP projects, (d) introduction of a dedicated mechanism for efficiently solving possible disputes along the course of developing a project.

Furthermore, programming and continuous monitoring of project progress in the timeframe of the strategy is critical for the successful implementation of projects in the SPP.

There is an apparent interconnectivity among several projects within SSP and projects realized by neighbouring countries. All activities on railway improvement in the Podgorica – Tuzi rail line must be in line and coordinated with improvements in its Albanian counterpart. Similarly, success of the Bar – Boljare highway is related to the completion of the highway between Boljare and Belgrade, in Serbia, so that a complete highway corridor is eventually formed between Belgrade and the Adriatic coast. The same considerations apply for the Adriatic-Ionian expressway coastal variant and the railway extension to Bosnia & Herzegovina. As such, the government of Montenegro should (a) coordinate plans and establish agreements with neighbouring countries, with respect to the commitment of both sides in developing and/or upgrading common corridors and (b) seek (in cooperation with its neighbours) joint processes and financing schemes for projects expanding in both sides of the borders (for example, joint concessions for highways expanding in two countries).

2.3.2. Specific objective 1.2. Align rail with interoperability requirements

Problem Summary: Montenegrin railways offer international services with Serbia through the Bar–Belgrade railway line. With respect operational interoperability, harmonization with relevant EU directives is underway. However, related technical specifications have not been incorporated in the national legislation and no dedicated ERTMS[11] strategy exists. As for technical interoperability, ERTMS Optical fibre has been installed along the Bar – Belgrade corridor's part of Montenegro. Also, in the railway station of Podgorica ECTS level 1 equipment will be installed. However, no major ERTMS project has been reported.

Measures related to this objective are:

- **Introduce European Rail Traffic Management System (ERTMS) in rail network.**
- **Expand overtaking sections length of selected rail stations up to 740 m**

The introduction of ERTMS in the rail network will improve rail operations and safety, upgrade services to passengers and allow interoperability with other EU railways. Therefore, the railway infrastructure manager should determine all necessary, prerequisite actions (studies, interventions and changes in infrastructures etc.) for installing ERTMS and proceed into purchasing and installing the system.

Expansion of some station length up to 740 m is necessary for supporting overtaking of freight trains, under ERTMS operation. Existing overtaking sections, for which expansion is feasible, should be identified and necessary studies and works should be undertaken.

2.3.3. Specific objective 1.3. Reduce border clearance time

Problem Summary: Delay times on border crossing points are long, both in road and in railway transport. During peak tourist seasons, daily average road traffic in border crossings doubles or even triples compared to typical days of the year. This is of importance as tourism is a major industry for Montenegro and border delays imply increased travel times, which do have an impact to that sector of the country's economy. As such, border crossings exhibit delays during peaks since transit times may exceed 4 hours and queues with lengths of over 1 km may be formed. Montenegro railways exhibit delays, 40% of which is attributed to border crossing operations, which results in increased travel times.

Measures related to this objective are:

- **Add control booths in road border crossings**

Introduction of additional control booths in road border crossings will allow reducing large transit times encountered, especially during summer peak periods. Surely, these should be adequately

[11] European rail traffic management system

staffed and properly equipped (with monitoring and scanning devices) to handle freight vehicles crossing the border, especially during peak summer periods.

2.3.4. Specific objective 1.4. Improve connectivity in the Port of Bar

Problem Summary: Port infrastructure and services need to be improved, to support intermodality activities and possibly attract additional passenger and freight flows.

Related infrastructural measures include:

- **Improve rail connection segments to Port of Bar**
- **Expand piers and passenger terminal**

Currently, the Port of Bar is hindered by inefficient connection with the railway network. Rail connections should be physically improved. Also, if connectivity is improved, overall (introduction of new highways, overhaul of the rail network etc.), pier and passenger terminal expansion could be investigated as part of technical studies and planned accordingly.

2.3.5. Specific objective 2.1. Maintain adequate LOS of state road network

Problem Summary: Existing transport networks and infrastructures are in a good state but their performance and condition need to be either maintained or improved/upgraded in the upcoming period. Some main and regional segments in Montenegro exhibit low LOS, as their geometry cannot handle demand. LOS on current network is mostly average, and on some roads is low.

Following measures have been proposed:

- **Reconstruct state road sections**
- **Upgrade roads to recreational areas (ski and coastal resorts).**

Already planned road reconstruction projects are necessary for maintaining a good LOS in the future. While new highways will undertake most of the future demand for road transport, traffic in segments of the main road network will increase. Therefore, these should be completed.

Some additional segments, forming corridors to between Podgorica and the border with Bosnia & Herzegovina and Kosovo, will need to be improved (reconstructed), to facilitate growing traffic between these countries and Montenegro.

These sections are presented in Table 2.10:

Table 2.10: State road sections to be reconstructed and upgraded

ID	Road Section	Completion Year	
		2025	2035
1	Berane – Kolašin	√	
2	Bijelo Polje – Ribarevina	√	
3	Danilovgrad – Nikšić	√	
4	Debeli Brijeg – Herceg Novi	√	
5	Vruja – Mijakovići	√	
6	Krstac – Ivanova Korita	√	
7	Tivat – Jaz	√	
8	Lepenac – Ribarevina	√	
9	Ribarevina – Poda – Berane	√	
10	Berane – Lokve tunnel	√	
11	Kamenovo – Petrovac – Bar	√	
12	Cetinje – Čevo	√	
13	Berane – Trpezi – Kalače	√	
14	Cetinje – Njeguši	√	
15	Stijepač bridge – Tomaševo – Pljevlja	√	
16	Mojkovac – Ribarevina	√	
17	Bijelo Polje – Ribarevina bypass	√	
18	Podgorica – Danilovgrad	√	
19	Dinoša – Cijevna Zatrijebačka	√	
20	Pljevlja – Metaljka	√	
21	Ulcinj – Sukobin	√	
22	Podvode – Petnjica	√	
23	Rožaje 2nd Phase bypass	√	
24	Podgorica – Tuzi – Božaj border crossing	√	
25	Rožaje – Špiljani	√	
26	Mojkovac – Lubnice	√	
27	Nikšić – Vilusi	√	
28	Pluzine-Nikšić		√
29	Andrijevica – Vuče – Border with Kosovo		√
30	Etc.	*	

* Plan for regular maintenance investments, reconstruction and construction of state roads (main and regional roads) is a continuing process which must be updated annually, which contributes to enhancement in quality, safety and LOS of Montenegrin state roads.

The state of Montenegro should proceed with necessary actions (technical studies, supervision) for evaluating the conditions along these corridors in detail and for proposing necessary interventions for that purpose. Furthermore, necessary interventions and reconstruction works should be programmed and secured in terms of financing and implemented in a timely fashion.

2.3.6. Specific objective 2.2. Complete rail network overhaul and improve rail infrastructure in accordance with TEN-T standards and improve rail transport

Problem Summary: Montenegro's rail lines exhibit low to average levels of service, which is attributed to reduced commercial speeds frequencies. Geometry restrictions and signalization deficiencies reduce rail network capacity, travel times and reliability. Maximum allowable speeds remain low and range between 50 km/h and 100 km/h, while single rail lines and signalization reduce rail network capacity and allowable frequencies of operations.

Measures related to this objective are:

- **Upgrade the railway lines through implementation of planned rehabilitation works of the railway network**

2.3.7. Specific objective 2.3. Revitalize and/or upgrade transport infrastructure in maritime transport

Problem Summary: Currently, the Port of Bar operates significantly below its capacity. Major barriers for port usage from regional markets are high travel times for accessing the port by road and rail and non-competitive costs, i.e. lack of adequate infrastructure.

Measures related to maritime transport are the following:

- **Increase of transhipment of general cargo and containers by securing the status of a transhipment port;**
- **Expansion of the capacity for transhipment and storage of dry bulk cargo on the northern slope of Volujica hill;**
- **Increase of transhipment of liquid and bulk cargo.**

2.3.8. Specific objective 2.4. Reinforce the creation of an efficient and integrated transport system through intermodality

Problem Summary: Currently, rail freight operations are hindered by rail conditions and services in neighbouring countries (Albania and Serbia), while no actual rail connection exists with Montenegro's remaining neighbours. Furthermore, railway's participation in intermodal activities is minimal, as competition from road freight transport in the port of Bar is strong. To achieve intermodality and exploit rail capacity and qualities, it is necessary to create intermodal stations in two locations along the country's main rail corridor (in Podgorica and Bijelo Polje).

These stations will facilitate rail transportation of containers from the port of Bar to the inland parts of the country and reduce road freight traffic (and travel times) in corridors where increased road passenger traffic is observed. As for rest areas, these are required by EU legislation and should be established in the core network and main roads leading to neighbouring countries.

Related infrastructural measures include:

- **Develop intermodal stations in Podgorica and Bijelo Polje**

2.3.9. Specific objective 2.5. Determine possibilities and needs for revitalization and/or reconstruction of transport infrastructure of air transport

Problem Summary: Possibilities for revitalisation of Dolac airport in Berane should be considered as means for better connectivity and accessibility of Montenegro's northern region, as well as for contributing to higher desirability of this area. This requires a detailed feasibility study with regard to this issue. If such study shows that revitalisation is viable and financially realistic, possibilities of engaging the private sector and of implementation of such plan should be considered, while actions necessary to revive this airport must be taken. As for the airport in Nikšić (Kapino Polje), steps towards completion of a feasibility study have been taken, along with an existing initiative for opening of an airport in Ulcinj.

Measures related to this objective are:

- **Valorisation of other airports in Montenegro (beside Podgorica and Tivat)**

2.3.10. Specific objective 2.6. Deployment of ITS technologies in the road, rail and maritime sectors

Problem Summary: Montenegro currently lacks ITS infrastructures. So far, efforts on introducing ITS have been scarce. Implementation of relevant regulation has been delayed and no dedicated body on ITS has been established. As such, there are no centralized policy or activities with respect to ITS. There are only fragmented activities such as the partial installation of the Vessel Traffic Information System (VTMIS) and preparatory actions for installing ERTMS in the rail network. When it comes to roads, while introduction of ITS is planned within existing highway projects, systems and technologies have not been defined in detail.

Related measures include:

- **Installation of ITS equipment in the core network and selected parts of the main road network**
- **Installation of axle load measuring systems**
- **Completion of Vessel Traffic Management Information System (VTMIS).**

Montenegro is expected to align with EU legislation and requirements on the introduction of ITS in its road network. Standards for planned highways should include modern ITS equipment

(variable message signs, dynamic signage, traffic monitoring and detection, automated toll collection, remote sensing of bridges and so on). Nevertheless, as Montenegro's main roads will still undertake increased traffic in the future, ITS systems for traffic monitoring and information provision should be installed in some segments. This will facilitate data collection and monitoring of infrastructure conditions and usage, improve guidance and traffic flow and support information and protection of drivers against incidents and adverse weather conditions. Within context of the Strategy, the proposed course of actions includes identification of proper locations for implementing ITS on main road network, followed by gradual implementation of such systems.

Installation of weigh-in-motion (WIM) stations is necessary for monitoring truck traffic and loads in the country's road network. WIM systems utilize piezo-electric and quartz sensors to weigh and classify vehicles on traffic lanes. Collected data may be used for statistical purposes in transport management and / or for penal measures. This system can present highly detailed information, including vehicle size and type, number of axis, total weight as well as weight per axis. Alternatively, temporary stations for measuring axle load may be installed in appropriate areas, with application of mobile scales for measuring axle load.

When it comes to maritime transport, it can be noted that implementation of VTMIS system has been partially completed. Completion of Phase II is expected, as described in the list of SPP projects. Also, radio communication systems should be established for purposes of navigation safety in Skadar Lake.

2.3.11. Specific objective 3.1. Improve road safety

Problem Summary: Although traffic safety has improved during last decade, performance in this area is still rather low. Traffic safety is still lagging compared to EU averages, as well as to neighbouring countries. Montenegro is not well positioned with respect to EU average in terms of road fatalities, and is close to maximum values measured in the EU.

Related measures are:

- **Complete planned road reconstruction projects (2018-2021).**
- **Improve signage and road furniture of main roads**

Proper signage and road furniture improvement will have a positive impact in road safety and on service to users of Montenegro's road network. Relevant actions would include a study for evaluating signage and road furniture conditions and adequacy along main roads and subsequently replacement and/or upgrade where necessary.

2.3.12. Summary of Infrastructure Measures

Table 2.11 summarizes measures and objectives addressed:

Table 2.11: Summary of infrastructure measures

Specific Objective		Measures
1.1	Complete infrastructure projects in SPP	• Program and monitor single pipeline projects for target years 2025 and 2035. • Continue and intensify actions towards project completion. • Align project activities and programming with those of neighbouring countries.
1.2	Align rail with interoperability requirements	• Introduce European Rail Traffic Management System (ERTMS) in rail network. • Expand overtaking sections length of selected rail stations up to 740 m
1.3	Reduce border clearance times	• Add control booths in road border crossings
1.4	Improve connectivity in the Port of Bar	• Improve rail connection segments to Port of Bar • Expand piers and passenger terminal
2.1	Maintain adequate LOS of state road network	• Reconstruct state road sections • Upgrade roads to recreational areas (ski and coastal resorts).
2.2	Complete rail network overhaul and improve rail infrastructures	• Upgrade the railway lines through implementation of planned rehabilitation works of the railway network
2.3	Revitalize and / or upgrade transport infrastructure in maritime transport	• Increase of transhipment of general cargo and containers by securing

Specific Objective		Measures
		the status of a transhipment port; • Expansion of the capacity for transhipment and storage of dry bulk cargo on the northern slope of Volujica hill; • Increase of transhipment of liquid and bulk cargo.
2.4	Reinforce the creation of an efficient and integrated transport system through intermodality	• Develop intermodal stations in Podgorica and Bijelo Polje
2.5	Determine possibilities and needs for revitalization and/or reconstruction of transport infrastructure of air transport	• Valorisation of other airports in Montenegro (besides Podgorica and Tivat)
2.6	Deployment of ITS technologies in the road, rail and maritime sectors	• Installation of ITS equipment in the core network and selected parts of the main road network (variable message signs, dynamic signage etc.). • Installation of axle load measuring systems. • Completion of Vessel Traffic Management Information System (VTMIS).
3.1	Improve road safety on state road network	• Complete planned road reconstruction projects (2019-20121). • Improve signage and road furniture of main roads

3. Organization and operative functioning of the transport system

This chapter consists of an in-detail report on current status of organizational and operational aspects of Montenegro's transport sector, and presents strategic and specific objectives and necessary measures as well as measures aimed at their implementation.

3.1 Current status

A detailed data collection and consultation process served as basis for a detailed analysis of organizational and operational aspects of functioning of Montenegro's transport system, which consists of many forms of transport (road, rail, maritime, inland waterway and air).

3.1.1 Organization of functioning of the Transport System

3.1.1.1 State Administration

The MTMA is the lead Institution in the transport sector which has the overall responsibility for the development, management and coordination of the different transport modes. Organizational units under the umbrella of the Ministry are: Directorate for railway transport; Directorate for road transport (under which there are three main offices**:** for public road transport of passengers and freight; for homologation of vehicles; and for inspection oversight in road transport); Directorate for state roads (under which there are three main offices: for maintenance and safety on state roads; for infrastructure investments; and for inspection oversight of state roads); Directorate for maritime transport and inland waterway navigation (under which there are four main offices: for implementation of maritime navigation safety standards; for implementation of standards for protection against sea pollution; for inspection oversight of maritime and inland waterway transport; and two local offices – Harbour Masters of Bar and Harbour Masters of Kotor; Directorate for maritime economy; Directorate for air transport; Directorate for international cooperation and EU funds; Department for second-instance administrative procedure; Department for internal auditing; Department for public relations and informational and communicational technologies; Minister's Cabinet; Office for finances and accounting; Office for public procurement and Office for general affairs and human resources.

According to its scope of authority prescribed by the Decree on Organization and Method of Operation of State Administration and by other regulation, MTMA is competent to conduct administrative affairs with regard to rail, road, air, maritime and inland waterway transport, maritime economy, as well as affairs related to international cooperation and EU funding in the area of transport. With regard to these sectors, the Ministry deals with the following operations: development policy-making, monitoring of transport, preparation and proposal of economic development measures and impact analysis on a given transport sector; keeping of records aimed at monitoring and influencing a given transport sector; drafting of legislation and international treaties; drafting of memoranda and analytic papers related to specifics of a given

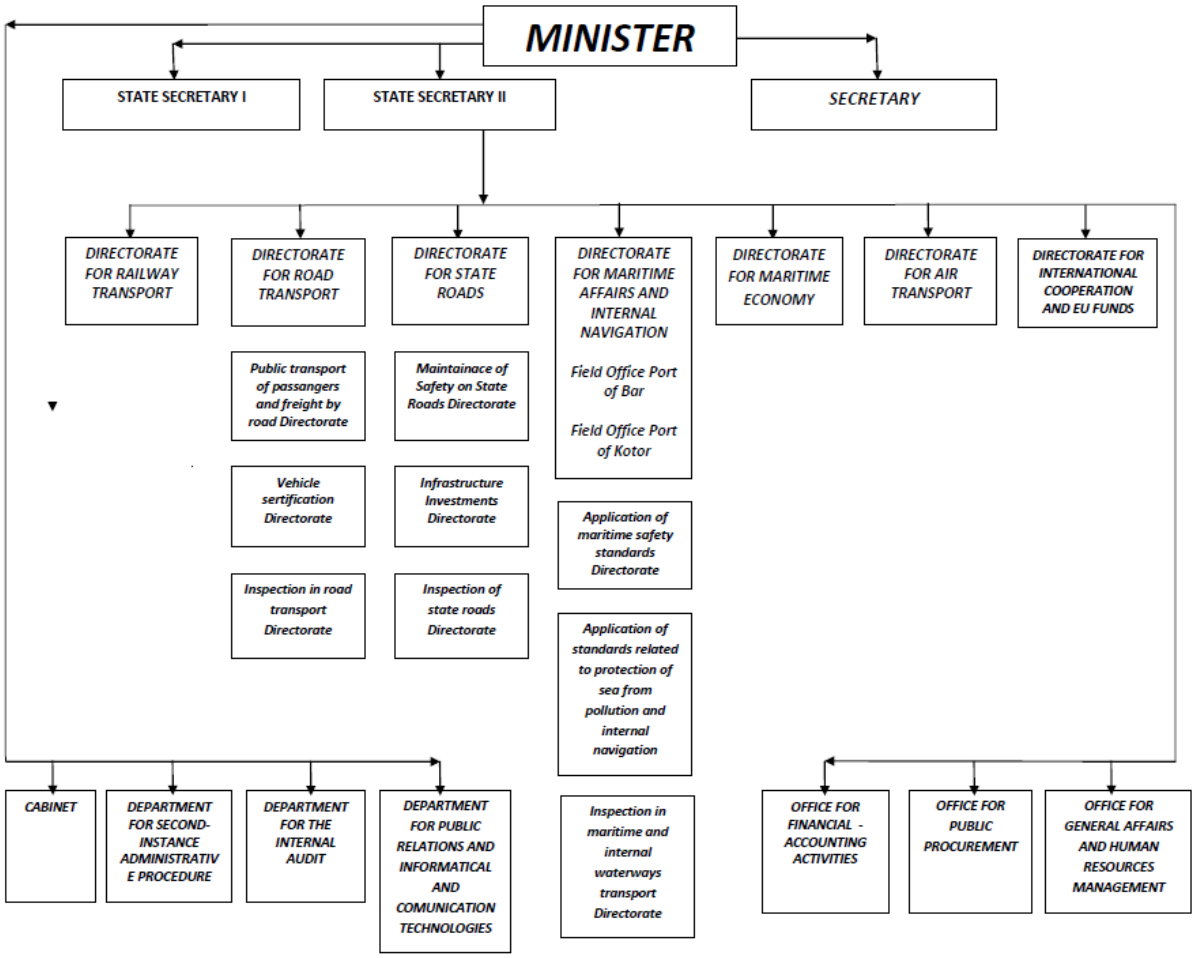
transport sector; monitoring and enforcement of legislation; issuing of opinions on compliance within a given transport sector; implementation of the Yearly Program of the Government of Montenegro and execute Government's conclusions; cooperation with other Ministries and third parties; preparation of responses to MPs Questions with regard to transportation; inspection oversight and administrative operations for a given transport sector; safety and security affairs in rail, road, maritime, inland waterway and air transport; monitoring of activities related to international transport and compliance with international cooperation obligations; determining of indicators, prevention and emergency response with regard to specific requests which require inter-departmental cooperation and action; national and international passenger and freight transport; monitoring and analysing economic conditions and position of companies from certain transport sectors; proposal of measures of current and developmental policies and impact analysis on economic position of companies in areas of state roads and road transport, rail, maritime, inland waterway and air transport, including equipment and individual parts with adopted standards related to safety, economic and environmental necessities; monitoring of current and developmental policies; monitoring and initiating of activities in the area of quality management; alignment of domestic regulation with EU *acquis*; administrative oversight; other affairs from this department's scope of work.

Organizational units of MTMA coordinate their activities horizontally, which is one of preconditions of an orderly and efficient functioning of the department, with Directorate for international cooperation and EU funds having an important role in this regard.

Besides above stated affairs which fall under the competence of Ministry's directorates, there are specific competences of particular organizational units – directorates, main offices, departments, local offices etc. – related to preparation, coordination, monitoring and implementation of projects in transport sector which are financed by international institutions and other mechanisms, as well as preparation and informing on the process of Montenegro's accession to the EU and on further international cooperation.

The structure of state administration's transport sector lacks dedicated bodies for intermodality and co-modality, intelligent transport systems and interurban public transportation.

Figure 3.1: MTMA Organizational structure



The Port Authority performs tasks related to construction, maintenance and management of the port; supervision of the operations of ports, providing of port services and other activities in ports. The functions of the state flag are performed by the Harbour Masters of Bar. The obligations of the Harbour Master Offices of Bar and Kotor are related to the implementation of administrative procedures for the registration of ships and boats and for issuance of certificates to seamen for international navigation in accordance with the International Convention on Standards of Training, Certification and Exercise of the Ship Guards (STCW Convention).

Bus and freight logistics companies operate under the Law on Carriage in Road Transport and multilateral and bilateral agreements. When it comes to monitoring of regular passenger transport, this area is regulated by the Law on Carriage in Road Transport, from the aspect of regularity of line maintenance and special conditions for vehicle used in road transport carriage. However, there is no dedicated regulatory authority for monitoring and supervising operations of the public interurban bus system. Timetables are proposed by the carrier and harmonized on the

state level by Montenegro's Chamber of Commerce, after which the carrier gains the right to register said timetable.

Limited Liability Company "Monteput" Podgorica was formed by a Decision of the Government of Montenegro from December 8, 2005 as a successor of the Directorate for Motorways Construction. Internal organizational units of Monteput are: Business unit for the management of construction of the Bar-Boljare motorway project (acting as independent unit), as well as various sectors and services.

Business unit for the management of construction of the Bar-Boljare motorway project manages the project of construction of the motorway Bar-Boljare. Basic activities of the unit are: engineering activities and technical counselling, expert construction supervision, design supervision, drafting of project documentation, preparation of tender documentation and other activities related to technical preparation, engineering, consulting and management. Monteput is organized into the following sectors: sector for managing and maintaining Sozina tunnel and access roads, sector for technical preparation, design and supervision, sector for financial and accounting business activities and sector for legal and general business activities.

3.1.1.2 Other Stakeholders

Other stakeholders which have certain competences related to functioning of Montenegro's transport system are: Ministry of Internal Affairs, which is competent for areas of traffic safety, border crossings, drivers and vehicles records, emergency response; Office for European Integration adjacent to Prime Minister's Cabinet, which oversees the EU accession process and is tasked with horizontal monitoring of expenditures from pre-accession funding and from other EU instruments; Ministry of Sustainable Development and Tourism, which is competent for this field as it relates to spatial planning, environmental protection, accessibility of Montenegro as a tourist destination, etc.

Areas dealing with complex subject-matter necessitate inter-departmental coordination and cooperation, which a challenge of sorts when it comes to areas which require such approach, and are necessary for efficient undertaking of a given set of activities, which contribute to advancement of the transport system, which is all in the function of the general economic development of Montenegro (with respect to transport, this is related to facilitating better and faster flow of freight, passengers, goods and services).

3.1.2 Operative Functioning of the Transport System and Service Providing

3.1.2.1 Railway transport

Passenger railway lines operate 24h per day at daily frequencies of 5 to 11 trains per direction – during summer frequencies are increased in the Bar – Podgorica section of the railway line. The commercial speeds of Montenegrin passenger trains range between 45 km/h – 48 km/h, which is considerably low. This is attributed to deficient infrastructure, rolling stock limitations, repair works along the line and other, non-technical reasons. Depending upon the rail segment, allowed speeds along railway lines range between 50 km/h and 100 km/h. Commercial and maximum speeds have a difference of over 30%, which is an indication of a low performance for all rail lines.

The Level of Service (LOS) for railway passenger services (in a nominal scale from A – best to F – worst) represents the quality of service offered to travellers with respect to accessibility, density of service and travel time. LOS is derived by combining the frequency of services and travel times between destinations; this is derived based on the methodology of Lüttmerding and Gather[12]. Table 3.1 presents the LOS for Montenegro railway line segments.

Table 3.1: Level of Service for Montenegro's railway passenger services.

Segment	Level of Service
Podgorica - Bar	C
Porgorica – Niksic	D
Podgorica – Bijelo Polje	D
Bar – Bijelo Polje	D

3.1.2.2 Public Transport

Regular intercity carriage is conducted in accordance with the Law on Carriage in Road Transport. The body within the Ministry of Transport and Maritime Affairs, Transport Administration, issues licenses for public transport of passengers and cargo, registers and certifies regular lines within the intercity regular road transport, and issues permits in the international regular road transport. Chamber of Commerce of Montenegro harmonizes timetables related to intercity and international regular transport.

[12]Lüttmerding, A., Gather, M. (2013). Level of service on passenger railway connections between European metropolises.Band 14, Transport and Spatial Planning Institute (Institut Verkehr und Raum) University of Applied Sciences Erfurt, Germany.

Figure 3.1: Interurban bus stations of Podgorica and Kotor

Rules related to the timetable proposals are defined by the Law on Carriage in Road Transport and bylaws related to the rules on harmonization of timetables and distances. When it comes to monitoring of regular passenger transport, this area is prescribed by the Law on Carriage in Road Transport, from the aspect of regularity of line maintenance. When it comes to the number of carried passengers, there are no clear data. Any subject is able to access the market of regular passenger transport in accordance with the rules prescribed in the Law on Carriage in Road Transport.

3.1.2.3 Road Safety

Montenegro has experienced a rapid increase in motorization in the past decade; vehicle ownership rate increased by over 40% between 2005 and 2015 while on the other hand the highway network was (until recently) not upgraded to meet increasing demand for road transport. Unavoidably, this had a negative impact on road safety, at least until 2009.

Since 2010, while registered vehicles tend to increase, fatalities degrade (Figure 3.2). However, as shown in Table 3.2, Montenegro's performance in terms of road safety is lacking compared to the EU average as well as neighbouring countries.

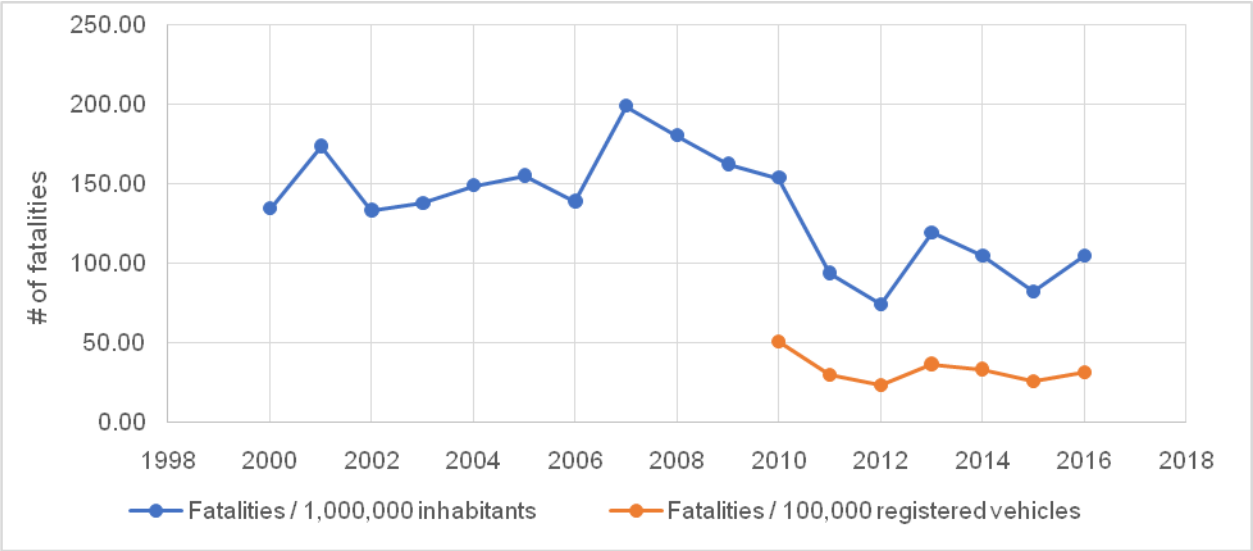


Figure 3.2: Fatalities per 1,000,000 inhabitants and per 100,000 registered vehicles

Table 3.2: Key performance indicators on traffic safety for Montenegro, the EU and neighbouring countries – year 2014 (Sources: OECD, EU)

Indicator	Montenegro	EU max	EU average	Albania	Bosnia & Herzegovina	Croatia	Serbia
Deaths per 1,000,000 inhabitants	105	106	51.4	91.2	87.3	82.4	75.2
Road accidents per 1,000,000 inhabitants	2155	N/A	2137	N/A	N/A	1631	3185
Injuries per 1,000,000 inhabitants	3069	N/A	2811	N/A	N/A	2186	4393

As can be seen from Table 3.2, Montenegro is not well positioned with respect to EU average for deaths attributed to road accidents but close to the maximum value exhibited in the EU. Furthermore, compared to neighbouring countries, the performance of Montenegro is worse. Number of injuries is still rising, despite the fact that a total number of accidents has fallen since 2013. This is likely due to the fact that new and more powerful vehicles are introduces to Montenegrin roads of lower performance, dependent on the road category.

Newly promulgated Law on Roads, as it relates to road safety, introduces provisions of the Directive 2008/96 EC on road infrastructure safety management and of the Directive 2004/54 EC on minimum safety requirements for tunnels in the Trans-European Road Network. This chapter also deals with the area of licensing of companies and individuals for traffic signalization and equipment, given that the Law on Spatial Planning and Construction of Buildings did not regulate this area. During previous decades, traffic safety has emerged as a problem on the global scale. World Health Organization presented a report on the rising number of traffic accidents, which predicts that traffic accidents will become among the leading causes of death, rising from number 20 in 1990 to third place in 2020. Road transport is very complex, and it inevitably leads to many conflict situations. In order to enhance traffic safety, measures aimed at lowering and eliminating danger situations need to be implemented. When addressing possible risk factors, road transport can be analysed through four characteristic groups related to road safety: human being, vehicle, road and surrounding. Research has shown that impact of roads on traffic accidents is comparatively low (literature mentions figures between 4% and 12%). To alter this safety factor, thorough changes are needed in terms of road planning, construction, maintenance and exploitation, but also in planning of roadside signalling and equipment. With that in mind, Law on Roads included positive practices of EU member states, which shall significantly improve the area of road transport safety.

MTMA shall continue with implementing positive practices in the area of road transport safety, as it does with implementation of road safety audit (RSA) and road safety inspections (RSI), as well as with advancements in accidents tracking systems, forming of databases aimed at increasing the number of indicators, etc.

During 2017, implementation of one of a series of regional projects began in cooperation with SEETO Office and CONNECTA. The project contains 3 currently active components which are insisted upon: introduction of audit and safety checks in the region, improvement of the system of maintenance of infrastructure in the region and implementation of ITS systems in the region of the Western Balkans. In accordance with this, a document *Preparation of road inspection and revision of plans for core/comprehensive road network in the Western Balkan (WB6) and pilot projects* was drafted. The aim of this document is to prepare short-term plans (2018-2020) for road safety inspection and audit relating to the core and comprehensive road network in the Western Balkans. In relation to this, CONNECTA has delivered on some of these plans within pilot projects for 2018 with specific aims to: prepare three-year RSI plan for core and comprehensive network and pilot RSI on the sections with numerous accidents; ensure that safety audits on roads are done in accordance with Directive 2008/96/EC in relation to all projects on core and comprehensive networks; support all regional participants in the establishing of a national system for collection of data on accidents.

Road safety is an issue demanding further efforts aimed at lowering number of accidents, given that negative outcomes are still very high compared to average conditions in the EU, which is why this document gives special attention to said problem.

3.1.2.4 Combined & Intermodal Transport

The futures of the Bar – Vrbnica rail and the port of Bar are interconnected. The present difficulties for expanding their reach to international markets stem from the fact that now, as compared to the past, access routes to the markets of Serbia and beyond are subject to competition from both sides of the country, i.e. Albania and Croatia. The ports of Durres and Rijeka and all the existing and developing opportunities for the on-carriage of goods to the final points of production and consumption, pose many challenges to the port facilities of Bar and to Montecargo as well.

Figure 3.3: The Port of Bar

Currently, there is no agreement between the Port of Adria within the port of Bar (enterprise for general cargo and container terminal) with Montecargo for intermodal operations. As such, container transportation by rail from the port of Bar is scarce and commercial opportunities are lost. Alternative intermodal services are provided by road freight carriers, whose pricing policies are currently more flexible, compared to their rail competitor.

3.1.2.5 Border Crossings

Montenegro shares its borders with an EU member state – Croatia, as well as with Albania, Bosnia and Herzegovina, Kosovo and Serbia. While Croatia is a member of the EU, it is not a party of the Schengen Agreement. There are seven border crossings on the Core and Comprehensive SEETO network. All those border crossings currently operate as "separate facilities", with the exception of the Sukobin-Murićani border crossing.

Border crossings in Montenegro are currently being managed by the Ministry of the Interior and Police Administration (Border police) and by the Customs Administration.

Montenegro has established a strategic framework based on the Integrated Border Operations Strategy 2014-2018 and the Schengen Action Plan. According to the latest EC report no. 12, border police of Montenegro has been reorganised into three regional branches and one national coordination centre, in order to simplify current processes and enhance operative efficiency. Inter-agency cooperation between the border police, customs authorities and other departments of the Ministry of the Interior is still improving, which includes mutual access to databases. In February 2017, a joint border crossings anticorruption plan was signed.

Also, an Inter-departmental commission was formed, tasked primarily tasked with improving coordination and cooperation between bodies involved in border management, with goals to avoid multiple proceedings in state border monitoring operations, to shorten time periods needed for conducting certain jobs and to better harmonize the work of all bodies having authority regarding customs, with a comprehensive goal of reducing / suppressing all forms of trans-border crime.

On the sidelines of Ten-T days, a high-level European conference held in April 2018, a ministerial conference for the Western Balkans and Turkey was held, where support was given to the Western-Balkans Declaration on Border Crossings. Further cooperation with bordering countries, when it comes to cross-border cooperation, is focused on opening joint border crossings, all in accordance with the principles of said Declaration.

The Declaration takes note of long transit times on border crossings in the fields of road and rail transport in the region, and that such waiting times cause significant economic losses to transport operators. Inefficiency of border crossings adversely affects regional competitiveness

as a whole and undermines feasibility of infrastructure projects, with the damage being assessed at around one million euros per day. The Declaration also serves as a reminder that a first cluster of priorities has already been agreed through the Connectivity Agenda for the Western Balkans, in order to make border crossings by road and by rail more efficient and to remove bottlenecks on internal borders of Western Balkan states. Readiness for intensifying national and regional activity has been confirmed, as well as for European-level cooperation aimed as conducting of border crossings related actions in road and rail transport, with the goal of lowering transit times. At the same time, readiness was stated for working in parallel and in close coordination with transport companies in order to improve border proceedings and to develop suitable infrastructure and facilities for border crossings.

The Declaration assumes certain political obligations of all signatories, which namely refers to raising the issue of joint border crossings on the high political agenda and to make certain steps in order to strengthen coordinated planning and implementation of policy related to border crossings between Western Balkans countries, as well as cooperation among governments and relevant authorities. Second obligation is to raise the issue of border crossings as a key initiative of connectivity during the upcoming Western Balkans summit, with a call to EU member states to support and to join such efforts. Finally, obligation to strengthen border crossings was assumed, focusing on 32 main border crossings in the region, placed on the TEN-T network (18 between the Western Balkans and the EU member states, and 14 between Western Balkans states).

In the domain of coordination, it has been concluded that development of efficient coordination between different departments competent for border crossing affairs is needed, within each of the Western Balkans countries, but also between these states, including EU member states. It was proposed that the Permanent Secretariat of the Transport Community (TCT) sets as one of its priorities the formation of a working group for facilitating border crossings.

When it comes to financing related to road traffics, measures were proposed for identifying bottlenecks on key border crossings, with a proposed solution to ensure a clear division between transport corridors for personal automobiles and for freight trucks. As for rail transport, it is needed to identify bottlenecks on key border crossings and to conduct measures to ensure coordination between all transport-related activities of all relevant bodies.

In essence, there are no legal obstacles for introduction of One-Stop Shop (OSS) and eQMS (Electronic Queueing Management System) systems, or any other bilateral agreement which would ensure legal basis for such operation. Some of identified obstacles which could potentially affect implementation of eQMS and OSS are: lack of information needed for risk-

assessment; law on the electronic signature needed for electronic delivery of documents; centralized trade-related information portal.

On July 3, 2018, the Government of Montenegro signed an agreement with the Council of Ministers of the Republic of Albania on opening of a joint border crossing Ckla (Montenegro) – Zogaj (Albania) for international road and lake passenger traffic. Joint border crossing will be constructed on Montenegrin territory, in the town of Ckla, on the road corridor Bar – Ostros – Široka – Shkoder. Exact location of the crossing and its technical parameters shall be determined by a joint commission. Border crossing will be open 24 hours per day for passenger transport.

Agreement between the Government of Montenegro and the Council of Ministers of the Republic of Albania on organizing rail border transport was signed in Podgorica, on August 3, 2012. Aim of this Agreement was to simplify border transport and to lower transit times by conducting a country's border crossings operations on another country's territory; by establishing rules under which officials of one country will conduct border control on moving trains on another country's territory; by defining on which home state's stations may the neighbouring install border control posts, and in which zones the border authorities of the neighbouring country may conduct border control at train stations and on moving trains, in both direction, on the home state's territory.

Based on this Agreement, the Zone includes border train stations Tuzi and Bajze, as well as the railway between these stations. Tuzi train station has been designated as the joint border station for the purpose of this Agreement.

According to the Agreement on border control in rail transport between Montenegro and Serbia, reconstruction of the Bijelo Polje station is planned, in order to make it a joint station for border control. Border control agreement between Albania and Montenegro made sufficient advancements, given that it was signed together with all relevant protocols, although its implementation is yet to come, such as in the field of border staff training. Formation of a joint border train station in Tuzi shortened transit times for trains for at least 60 minutes.

Road border crossings exhibit long queues, especially during summer peak seasons. As for rail border crossings, these have an impact to railway operations, causing significant delays. Constant activities aimed at developing current infrastructure and construction of new facilities, including separate road lanes for trucks and buses, as well as joint border crossings, along with simplified administrative procedures, are expected to have an effect on border clearance times for passengers and for freight transport.

3.1.2.6 Air Transport

According to indicators issued annually by the Airports Council International (AIC)[13], Montenegrin airports are placed well compared to the rest of the Western Balkans as they exhibit better connectivity indicators that most of their neighbouring counties. Montenegro Airlines' operating income was 245 thousand euros greater than its operating expenses for 2018, while the overall balance sheet showed results 2.5 times better than in 2017, and close to 6 times better than in 2016. Last year, Montenegro Airlines handles about 645,000 passengers in all categories. National airline operator is an important generator of tourism sector and of national economy as a whole, given that stated number of passengers makes around 27% of all traffic on Montenegrin airports, while competing with up to 50 different airlines operating on Montenegrin market. The company aims to further lower its costs, make better use of its potential, and advance its operative functioning.

3.1.3 Intelligent transport systems (ITS)

3.1.3.1 Road transport

The new Law of Roads introduced the legal basis for ITS implementation, which is a precondition for implementation of Directive 2010/40/EU on ITS into Montenegrin legislation. Equipment in and functionalities Sozina tunnel are in accordance with the relevant EU Directive on tunnels and roads. The tunnel is controlled from the local control centre at Gluhi Do. Installation of ITS equipment for traffic signalization, highway control and management has been planned, within the ongoing highway construction of section Smokovac - Matesevo (Route 4) in total length of 41 km and an estimated cost of €25 million.

[13] http://www.aci.aero/Publications/ACI-Airport-Economics-and-Statistics

Figure 3.5: ITS equipment in the Sozina Tunnel

3.1.3.2 Railway transport

Montenegro has implemented EU's Interoperability Directive in its legislation. However, a dedicated ERTMS strategy does not yet exist. TSIs have been mentioned within the interoperability Directive and are expected to be gradually implemented into national legislation. Current deployment of ERTMS optical fibre has been installed along the Bar – Podgorica – Bijelo Polje line. Also, in railway station Podgorica,ECTS level 1 equipment will be installed.

3.1.3.3 Maritime transport, ports and inland waterways

Directive 2002/59/EC on establishing EU vessel traffic monitoring and information system (VTMIS) was fully implemented into Montenegro's legislation. Institutional aspect of VTMIS system is covered by the Ministry of Transport and Maritime Affairs. Parts of the Directive 2010/65/EU on the Maritime Single Window system are envisaged to be implemented during 2016. To fully implement the Directive, investments are needed to implement the Maritime Single Window information system.

The first phase of VTMIS was implemented in Montenegro with the support of EU. Sensors were installed on three sites along Montenegrin coast. Data from sensor sites is distributed to the Control Centre, from which, maritime data is being exchanged with other systems in Montenegro

and abroad (MARES, EMSA, etc.). Costs of implementation of the first phase of VTMIS on Montenegrin coast were 1.8 million euros.

The second phase will include installation of additional CCTV sensors on existing VTMIS locations, new sensor locations in Lake Skadar and Boka Bay and the implementation of the "Single Window" information system (EU Directive 2010/65).

Estimated costs for introduction of first two actions amount to 1.6 million euros and for the third action 500,000 euros. Also, with the support of the EU, VHF telecommunication coverage of the navigation of vessels on the Skadar Lake is planned and the introduction of the so-called AIS base stations to monitor the movement of passenger boats on the lake.

Initiatives towards introducing ITS in the transport sector have been limited, except for the VTMIS which is already partially installed. Only a handful of ITS sub-systems are currently operating in at the road networks, while a TSI for railways was published.

3.1.3.4 Air transport

When it comes to air transport, ITSs include new informational, communication and sensor technologies, applied in order to constantly raise the level of traffic safety and quality of service.

Since gaining independence, Montenegro is a full member of relevant international umbrella institutions / agreements, which are important for security and safety of air transport. Said institutions issue certain documents (annexes, publications) which refer to advancements in safety and security of air traffic, and Montenegro is obliged to implement such instruments into it regulatory framework, in order to meet all global and European criteria in this field.

3.1.4 Financing Instruments

So far, financing of the transport sector in Montenegro has relied heavily on funding instruments by the European Investment bank (EIB), the European Bank for Reconstruction and Development (EBRD) and loads for private banks (about 80% of transport project expenditures in the recent years were covered by loans). The state budget supported mostly maintenance and operational needs, while its direct contribution on transport infrastructures was limited. On the other hand, the state budget repays loans obtained by state companies such as the railway infrastructure manager ZICG, the passenger rail carrier ZICG-Prevoz and Montenegro airlines.

Due to the high costs of the remaining infrastructure projects, Montenegro should seek alternative methods of financing, with greater presence of the private sector. To that end, drafting of new legislation on public-private partnership and on concessions is underway.

Considering Montenegro will implement construction of new motorways in the upcoming period, it is clear that there might be inclusion of some type of payment for their usage, which could create

new budgetary item and a profit coming from toll collection. New motorways will, in accordance with expectations, increase scope of road transport in Montenegro, and there could be significant financial re-allocation and appearance of transit transport which is very stable and helps demonstrate that this profit will be steady and can in future perspective cover a part of investments.

Toll represents monetary compensation which is paid by the user of a freeway (or a tunnel, road, etc.) in exchange for a high level of service which he receives relative to the roads of lower levels of service or to a different mode of transport. Speaking in terms of latest global trends, a general opinion is that the largest part of the toll expenses should be paid by direct users. Thus, toll collection, besides being a financing instrument, is also a way to redirect transport to certain commercial sectors as a part of state's transport policy.

In accordance with EU preference given in the White Book, toll collection is the most justified and the most efficient manner of financing construction of motorway infrastructure since it allows for payment of used services by real users and not by taxpayers. In return, aim of the operator is to give users the most quality service it can when it comes to safety and conform.

Profit from toll collection serves as a source of resources for implementation of following tasks: financing, construction, maintenance, and management of infrastructure object.

In Europe, toll collection on motorways has primarily transport-political role. Due to the overall increase in motorization and mobility of citizens, it is necessary to decrease negative effect of transport. Due to a greater need for quality road connectivity, there is a trend of faster construction of transport infrastructure which presents new challenges for constructors and for investors (environment protection, transport safety etc.) For these reasons, there are greater needs for big financial sources which cannot be secured through existing financing instruments. Due to this, technologies of toll collection are being developed in Europe with the aim of constructing and maintaining transport infrastructure in a speedier and more efficient manner.

Besides profit coming from tolls, an additional source of financing after 2030 could also come as a part of profit gained from the usage of tunnel Sozina. Namely, in 2030, the loan taken from European Investment Bank for the construction of tunnel Sozina will be fully repaired and thus no more resources will have to be reserved for its repayment. Considering that Monteput currently functions as a profitable enterprise and regularly pays its dues, it is realistic to expect that conditions will be created for redirection of said resources for the purpose of implementing transport sector projects.

3.2 Problem Analysis

3.2.1 Main Findings

3.2.1.1 Organizational Aspects

The MTMA keeps a straightforward vertical structure, with directorates devoted to individual travel modes (road infrastructures, road traffic, rail, air, maritime and inland waterway transport, maritime economy and EU funds).

From the domain of joint responsibilities of directorates under MTMA, there are specific competences of particular organizational units – directorates, main offices, departments, bureaus and certain local offices, related to preparation, coordination, monitoring and implementation of transport projects financed by international financial institutions and other financial mechanism, and to preparation of information related to the process of accession of Montenegro to the EU and for international cooperation in general.

State administration's structure related to transport department lacks dedicated bodies which deal with issues of intermodality and co-modality, ITSs and inter-city public transport.

3.2.1.2 Operational aspects of functioning of road, rail and maritime transport

Majority of internal transport of goods is being conducted by the road transport sector. Newly adopted legislation stipulates that if capacities for internal passenger and freight transport are insufficient, state authorities may call foreign operators and issue permits for internal transport. What is more important is that the law stipulates total repeal of all barriers and limitations related to cabotage in road transport, as soon as Montenegro enters the EU. A dedicated ITS for truck drivers practically does not exist; roadside VMS has only been installed in the Sozina tunnel; truck drivers may only rely on mobile internet services (Google Traffic, Bing Traffic etc.) for information on traffic, alternative routes and weather conditions.

Montenegro's rail network is stated to be open to all service providers in a transparent, non-discriminatory manner, as long as they are registered in the country's central registry of the commercial subjects, have a valid transport license and a certificate for safe transport issued by the government of Montenegro or by a country having a bilateral agreement with Montenegro. Operators need to be liable and must have a contractual agreement with Montenegro's rail infrastructure manager (RIM). Indeed, Montenegro's Law on Railway has been amended in order to adopt EU *acquis*; nevertheless, a local registration of the service provider is needed, and licenses and certificates must be issued by the country's ministry, following the country's processes and bylaws. These obligations can be viewed as indirect barriers to entering the local market.

For service planning, an annual time plan is devised following requests for train paths filed by providers, together with the schedule development and adjustment process being a result of consultation between the rail infrastructure manager and interested providers. Given that we are talking about a relatively small market, possible rise in competition should be sought through regional cooperation within TCTs, given that no operator has stated adequate interest for entering the Montenegrin rail market (including both road and freight transport).

The country's major port (Bar) has already been partially privatized (Port of Adria) and the Government of Montenegro has been seeking to valorise the remaining part (Port of Bar). Currently, the Port of Bar operates significantly below its full capacity. Major barriers for port valorisation from regional markets are (a) high travel times for accessing the port by road and rail and (b) non-competitive costs. The remaining ports are of minor commercial importance for the country's transportation system; the Port of Kotor accommodates cruise ships and the Port of Zelenika is registered as a freight port but its infrastructures can support only minor volume services.

3.2.1.3 Road Safety

Safety aspects in road transport are more thoroughly presented within sub-chapter 3.1.2.3 Road safety, which notes that Montenegro must take further steps in order to enhance safety levels. Montenegro must establish a road transport system which is safe, secure, efficient, reliable, environmentally friendly, and is integrated into European systems in terms of meeting consumer needs and expectations of better quality of life.

Security and safety aspects in rail transport must take into account compatibility of standards with the aim of meeting obligations on networks which are a part of TEN-T, reconstruction, overhaul and modernization of public rail network, procurement of next generation vehicles, modernization in accordance to ITS, strengthening of Railway Administration, especially in the field of regulatory affairs on the railway, etc. Level of service analysis for railway operations revealed LOS of C and D for all railway lines. This is attributed to both train frequencies and low commercial speeds. Among all lines, the Bar – Podgorica line exhibited the highest LOS. Figure 3.6 shows the LOS status of Montenegro's rail lines with respect to other rail lines in Europe. Interestingly, while LOS for Montenegrin rail lines is low, it is still better compared to numerous rail services in the EU. Nevertheless, LOS should be improved to recapture lost ridership of the past few years.

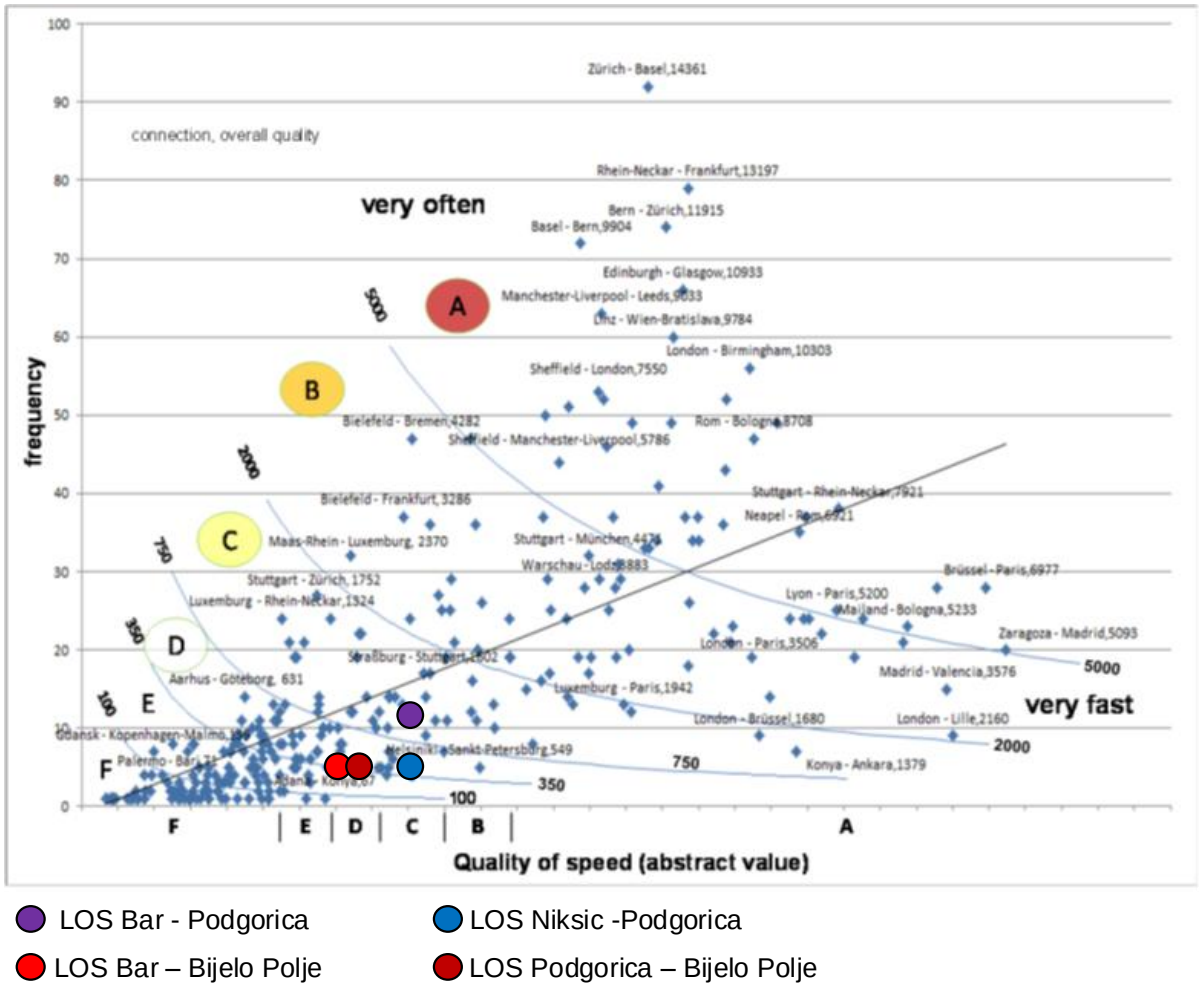


Figure 3.6: LOS status of Montenegrin rail lines compared to other European lines (Source: Lüttmerding and Gather[14] and consultant analysis).

In the maritime transport sector, in order to meet the objectives of the III Code (Implementation of IMO instruments), MTMA shall:

1. Develop a comprehensive strategy in order to ensure realization of international obligations and responsibilities of flag, port and coastal state;
2. Establish a base methodology for monitoring and evaluation whether the strategy ensures an efficient implementation of relevant obligatory international instruments;
3. Continuously conduct strategy auditing in order to reach, maintain and develop a comprehensive organizational output and capacity of flag, port and coastal state.

Aim of the Code is to improve global maritime safety and environmental protection, and to support implementation of IMO instruments.

[14] Lüttmerding, A., Gather, M. (2013). Level of service on passenger railway connections between European metropolises.Band 14, Transport and Spatial Planning Institute (Institut Verkehr und Raum) University of Applied Sciences Erfurt, Germany.

3.2.1.4 Border Crossing Operations

Road border crossings exhibit clearance delays, especially in the summer months. Current infrastructures and border procedures do not seem to be able to cope with average daily peaks, while seasonal peaks lead to long waiting queues and clearance times of up to several hours. This clearly affects transit times, which are heavily penalized by additional waiting times to clear customs and passport control in Montenegro's border crossings. For railways, as stated in Chapter 2, several deficiencies in border operations have been identified as possible causes of border delays; these are presented in detail in the railway operator's network statement for 2017[15].

3.2.1.5 Inter-modality in freight transport

While Montenegro adopted in 2014 the Law on intermodal Freight Transport, significant efforts are needed to ensure EU legal, environmental and safety obligations and standards. This becomes evident as there are no clear activities on promoting or implementing inter-modality in freight transport. Montecargo offers intermodal freight transportation services, which are limited by the operational capacity of the railway network. An obvious client of Montecargo is the Port of Adria for the transport of containers. Currently there are no transport agreements between the two companies, although efforts to that end have been made. Furthermore, the country's existing state road network cannot efficiently handle road freight transport and Montecargo should have a more significant role in the shift from road to rail and create the necessary conditions for this shift to happen.

3.2.1.6 Introduction of Intelligent Transportation Systems

So far, progress in introducing ITS has been minimal. Adoption and implementation of relevant legislation has been delayed and no dedicated body on ITS has been established. As such, there are no centralized activities of policy with respect to ITS. There are only fragmented activities such as partial installation of the Vessel Traffic Information System and preparatory actions for installing ERTMS in the rail network. When it comes to roads, ITS is planned to be implemented in new highways, but details on systems and technologies have not been defined yet.

3.2.2 Organizational and Operational Objectives

From previously determined strategic objectives, based on conducted problem analysis and presentation of its base findings, relevant specific objectives have been identified, targeting transport organization and operations, as presented in following Table 3.3:

[15]ZICG (2017). Network Statement 2017. Podgorica, Montenegro.

Table 3.3: Specific objectives targeting on transport organization and operations

#	Objective	Expected Outcomes
Strategic Objective 1: Economic Welfare		
1.1	Secure a good governance and management structure across the whole life cycle of highways.	• Operation and maintenance of core networks satisfying the mobility needs of Montenegro in a safe, sustainable and competitive manner • Optimal maintenance programming and allocation of resources.
1.2	Create coordination conditions between transport stakeholders	• Involvement of all stakeholders in decision making. • Communication between stakeholders • Holistic monitoring and view of progress and needs for the transport sector. • Efficient governance and decision-making, based on comprehensive view of needs and solution proposal. •
1.3	Update of governance structure and bodies	• Improve performance of government bodies • Establishment of bodies focusing on ITS, inter-city public transport and combined-intermodal transport • Establishment of research institute with focus on transportation.
1.4	Re-organize governance responsibilities in transport sector	• Sub-sector (mode) responsibilities in the government level aggregated to a single body. • Align responsibilities with TDS strategy
1.5.	Secure alternative funding sources for transport investments	• Participation of the private sector in transport investments.
1.6	Improve programming and allocation of funds, and achieving efficiency in road transport operations	• Efficiency in project selection • Consistency with budget capability
1.7	Better valorisation of transport subjects	• Valorisation of the Port of Bar and the

#	Objective	Expected Outcomes
		Airports of Montenegro
1.8	Achieve efficiency in operations, maintenance expenditures and budget allocation in order to promote environmentally friendly transport projects	• Sustainability in road and rail maintenance financing • Reduced subsidies for the transport sector
1.9	Reduce border clearance times	• Lower access and transit times for passenger and freight movements.
1.10	Alleviate barriers in rail services	• Open railway market • Lower fares and tariffs • Improved services
1.11	Enhance support for road freight transport in the service of intermodality	• An efficient transport system, integrated in the region and in the EU network, which promotes economic development and the citizen's quality of life • Create favourable conditions for the intermodal and combined transport and logistics • Attract investments • Reduce rail transit times and transport costs • Establish joint border crossings • Reduce logistics costs • Establishment of facilities and services to road freight operators
1.12	Improve connectivity of the Port of Bar	• Increased cargo flows • Improved competitiveness of the port • Full valorisation of the capacities of the Port of Bar
Strategic Objective 2: Accessibility, Performance of Operations and Quality of Services		
2.1	Maintain adequate LOS of state road network	• Road network of good condition • Good road network condition • Upgraded geometric characteristics • Increased speeds and reduced travel

#	Objective	Expected Outcomes
		times • Reliability in travel times • Safe road conditions and road environment • Better accessibility
2.2	Reinforce the creation of an efficient and integrated transport system through intermodality	• An efficient transport system, integrated in the region and in the EU network, which promotes economic development and the citizen's quality of life • Create favourable conditions for the intermodal and combined transport and logistics • Attract investments • Reduce rail transit times and transport costs • Establish joint border crossings • Reduce logistics costs
2.3	Overhaul of rail network and advancement of rail infrastructure in accordance with TEN-T standards and upgrade of rail services	• Adequate service frequency • Timetable reliability •
2.4	Deployment of ITS technologies in the road, rail and maritime sectors	• Upgraded services to users and travellers • Advanced monitoring and management of network operations. • Performance and safety improvement in networks
2.5	Reduce border clearance times	• Lower access and transit times for passenger and freight movements.
Strategic Objective 3: Safety and Security		
3.1	Improve traffic safety on state road network	• Reduced number of accidents in state network • Reduced number of road accident fatalities and injuries
3.2	Deployment of ITS technologies in the	• Upgraded services to users and travellers

#	Objective	Expected Outcomes
	road, rail and maritime sectors	• Advanced monitoring and management of network operations. • Performance and safety improvement in networks
3.3	Secure a good governance and management structure across the whole life cycle of highways.	• Operation and maintenance of core networks satisfying the mobility needs of Montenegro in a safe, sustainable and competitive manner • Optimal maintenance programming and allocation of resources.
Strategic Objective 4: EU Integration		
4.1	Deployment of ITS technologies in the road, rail and maritime sectors	• Upgraded services to users and travellers • Advanced monitoring and management of network operations. • Performance and safety improvement in networks
4.2	Reinforce the creation of an efficient and integrated transport system through intermodality	• An efficient transport system, integrated in the region and in the EU network, which promotes economic development and the citizen's quality of life • Create favourable conditions for the intermodal and combined transport and logistics • Attract investments • Reduce rail transit times and transport costs • Establish joint border crossings • Reduce logistics costs
4.3	Alleviate barriers in rail services	• Open railway market • Lower fares and tariffs • Improved services
4.4	Update governance structure and bodies in transport sector	• Improve performance of government bodies • Establishment of research institute with

#	Objective	Expected Outcomes
		focus on transportation.
4.5	Re-organize governance responsibilities in transport sector	• Sub-sector (mode) responsibilities in the government level aggregated to a single body. • Align responsibilities with TDS strategy
4.6.	Improve programming and allocation of funds and achieve efficiency in operations and maintenance expenditures and budget allocation	• Efficiency in project selection • Consistency with budget capability • Sustainability in road and rail maintenance financing • Reduced subsidies for the transport sector
4.7.	Enhance support for road freight transport in the service of intermodality	• Establishment of facilities and services to road freight operators

3.3 Proposed Measures

Following unit presents organizational and operational measures which are identified and proposed for tackling problems associated with specific objectives. These are as follows:

3.3.1 Specific Objective 1.1: Secure a good governance and management structure across the whole life cycle of highways.

Problem Summary: Transport investments of a considerable extent for the size of Montenegro are planned to be implemented in the future years. On the other hand, the country has no prior experience or dedicated processes and bodies for managing these investments throughout their life cycle. Therefore, good governance and management practices of new infrastructures in their whole life cycle are required.

The following measures are identified:

- **Introduction of Total Quality Management in transportation systems and services.**
- **Personnel training in transport infrastructure management**

Total quality management (TQM) practices should be introduced in the management of new and existing transport systems and services (especially those managed by the public sector). Efforts should be made on monitoring and continuous improvement of performance and services, having traveller satisfaction as the key aim. In the same context, personnel should be trained to follow such practices.

3.3.2 Specific Objective 1.2: Create coordination conditions between transport stakeholders

Problem Summary: There are shortcomings in coordination between relevant stakeholders in transport. No clear interaction exists between different bodies and a joint effort towards managing state road traffic and infrastructures is required.

The following measures are identified:

- **Expansion of e-governance**
- **Development of a monitoring and data collection system in transport sector**

E-governance will support faster and cost-efficient processes in decision making, while on the other hand allow for transparency and accountability. Therefore, governmental all activities related to the transportation sector should gradually implement e-governance processes. A monitoring and data collection system is necessary for evaluating conditions in the country's transport sector and for planning and proposing future courses of action and allocation of resources. As such, Montenegro should establish and organize a system for regularly collecting, storing and publishing transport, traffic and other data on the transport sector, in a rational and concise manner. A GIS-based transport database should be developed for that purpose. Ideally, this system should be linked to the ITS systems, which will be gradually implemented in the country's networks.

3.3.3 Specific Objective 1.3: Update governance structure and bodies in transport sector

Problem Summary: Organizational shortcomings in the field of structure and entities in the transport sector are noticeable. It is necessary to adopt and implement the rest of EU legislation and to complete the bylaw legislation. The following measures are identified:

- **Adoption and implementation of remaining EU legislation and completion of bylaws**
- **Establishing a body for regulatory activities on the railway**

Body for regulatory activities on the railway would focus on preparing regulation in the field of railway safety and railway market, on issuing required licences and certificates, on monitoring safety and on suggesting improvements, and on enabling equal access to the market for all stakeholders. Management of expenses and payments related to various types of services is also crucial and it is a field in which regulator has a significant role in terms of stopping discrimination and analysing necessary inputs and fees. Issuing train routes is a task over which regulator does supervision by publishing a Statement on the Network, the most important information sheet of the infrastructure management on usage of capacities.

Due to conflict of interest, regulatory activities cannot be put under authority of MTMA, given that it conducts supervision over work of companies which operate on the market (Directive 201/34). With the aim of solving this problem, Railway Administration was established, as a regulatory body which reports directly to the Government.

3.3.4 Specific Objective 1.4: Re-organize governance responsibilities in transport sector

Problem Summary:A smaller number of responsibilities related to the transport sector are shared by different departments. This hinders coordination and complicates effective decision making in areas such as traffic safety, vehicle and driver registration, spatial planning, EU compliance and other.

The following measures are identified:

- **Redistribution of responsibilities in transport sector management.**

Dispersion of responsibilities between ministries requires additional coordination and decision making in the higher level. Therefore, aggregation of responsibilities in a single ministry (MTMA) is proposed; this would improve governance of the transport sector, allocation of resources and budget etc. Participation of the private sector in Montenegro's transport sector is first and foremost anticipated to occur in the form of concessions, either for developing new infrastructures or for upgrading / exploiting existing ones. Facilitation of relevant processes requires a dedicated body for that purpose, manned with experts in the fields of transportation related concessions and investments. In the same context, legislation on private sector participation in the development of transport infrastructure and in the provision of transport services (such as laws on road and rail transport) should be fully aligned with EU requirements.

3.3.5 Specific Objective 1.5: Secure alternative funding sources for transport investments

Problem Summary: Proposed infrastructure projects in the single project pipeline require high expenditures, which cannot be handled by Montenegro's state budget. Indeed, transport infrastructure expenditures in Montenegro have risen to over 5% of its GDP in past couple of years. Given the size of Montenegro's GDP and public debt (which exceeds over 60% of the country's GDP), traditional financing schemes, such as loans, are neither viable nor desirable. Additional infrastructure interventions (such as road rehabilitations in the county's comprehensive road network) and the introduction of intelligent transportation systems in the state network could yield additional funding requirements.

Following measures are identified:

- **Introduction of new funding sources and market players, mainly in the form of concessions.**

Given the size of Montenegro's economy, public funding for new projects is scarce, while any new additions will have a negative impact in the country's public debt (which will exceed viability limits). On the other hand, co-financing grants from the EU cannot cope with financing requirements for projects set in the Single Project Pipeline. As such, participation of the private sector (in the form of concessions) in new projects and existing services is required for securing funds and completing transport investments. Among the three most common concession types, i.e. toll concessions, availability payment concessions and shadow toll concessions, the Government may opt for the second method, since it may be difficult to guarantee high volumes of traffic that would secure repayment given the small size of the country and of the amount of traffic. If this concession type is selected, the public sponsor makes periodic payments to the concessionaire on the condition that the facility meets defined performance specifications. By keeping toll profits, the public sponsor assumes the risk of forecasted volume of traffic.

3.3.6 Specific Objective 1.6: Improve programming and allocation of funds and achieve efficiency in road transport operations

Problem Summary: A lack of transportation asset management systems by sector hampers alignment and coordination between processes of management and investment in transport infrastructure and services, having in mind user expectations, conditions of the transport system, its performances and availability of resources.

The following measures are identified:

- **Development of asset management systems.**

In order to solve this problem, introduction of resource management systems in transport sector is in order, for different sorts of investments and for different modes of transport.

Table 3.4: Attributes of Asset Management Systems[16]

Attribute	Description
Policy-driven	Resource allocation decisions are based on a well-defined set of general and specific policy objectives.
Performance-based	Policy objectives are translated into system performance measures that are used for both day-to-day (operative) and strategic management.
Analysis of Options and Tradeoffs	Decisions on how to allocate funds within and across different types of investments (e.g., preventive maintenance versus rehabilitation, pavements versus bridges) are based on an analysis of how different allocations will impact achievement of relevant policy objectives.
Decisions Based on	The merits of different options with respect to an agency's

[16]NCHRP Report 551, *Performance Measures and Targets for Transportation Asset Management, Vol. I, Research Report*, 2006, p. ii.

Information on Quality	policy goals are evaluated using credible and current data.
Monitoring Provides Clear Accountability and Feedback	Performance results are monitored and reported for both impacts and effectiveness.

3.3.7 Specific Objective 1.7: Better valorisation of transport subjects in air transport sector

Problem Summary: Montenegro Airlines and Airports of Montenegro are state companies whose restructuring and possible private sector involvement would allow for new funds and further upgrade of provided service. Restructuring of Montenegro Airlines is necessary because of its continuing financial losses and accumulating high debt. As such, concessions and private sector participation options need to be investigated

The following measures are identified:

- **Reorganization or privatization of Montenegro Airlines air carrier**
- **Development of concession schemes for Airports of Montenegro (Podgorica and Tivat)**

3.3.8 Specific Objective 1.8: Achieve efficiency in operations, maintenance expenditures and budget allocation in order to promote environment friendly projects in transport sector

Problem Summary: At this moment, transportation projects in Montenegro are mostly financed by international institutions (EIB and EBRD). Given the size of Montenegro's economy and its debt to GDP, improvement of project programming and fund allocation and efficiency on operations and maintenance are major aims in the context of financial sustainability.

Following measures are identified:

- **Promotion of alternative fuels and electro-mobility.**
- **Promotion of road transport fleet replacement / renewal.**
- **Establishment of the Virpazar inland navigation line.**

Electro-mobility and alternative fuel are becoming increasingly important in the EU's transport sector, in an effort to disengage from fossil fuel dependency and adverse environmental impacts. Montenegro should promote initiatives, studies and private

sector involvement in the introduction of electro-mobility in the country, in the future years. In the same line, replacement and upgrade of the country's vehicle fleet should be targeted to meet EU conditions.

Finally, given that the Port of Bar currently offers only limited passenger ferry connections (with Italy), incentives for establishing new maritime lines to other ports in the Adriatic and the Ionian seas should be undertaken. Such incentives include attractive port dues for ferries, establishment of passenger transport services between ferries and surface modes (road and rail) and attractive deals with the tourism industry. Finally, the establishment of the Virpazar inland navigation line should be investigated and possibly promoted, as a transport alternative for the tourist industry of Montenegro.

3.3.9 Specific Objective 1.9: Reduce border clearance times

Problem Summary: Delay times on border crossing points in the region are long, both in road and in railway transport, which causes significant economic losses to passengers. Inefficiency of border transits has an adverse effect on overall regional competitiveness and undermines feasibility of infrastructure projects. The process of Western Balkans Connectivity Agenda, and the Agreement on the establishment of a transport community, create conditions for efficient alleviation of non-physical barriers and open a platform for strengthening cross-border cooperation among neighbouring countries.

Following measures are identified:

- **Establish border processes in cooperation with neighbouring countries.**

3.3.10 Specific Objective 1.10: Alleviate barriers in rail transport

Problem Summary: There are still organizational and operational barriers to entering the rail market in Montenegro. These should be alleviated by (a) faster and more efficient implementing of EU legislation and (b) advancements in licensing and capacity allocation processes in the rail sector. Diversification of port services and better efficiency of port operations will allow new players to enter the port business and implement new operational and business plans.

Following measures are identified:

- **Adoption and implementation of the remaining EU legislation**
- **Facilitation of the introduction of new market players in rail services**

3.3.11 Specific Objective 1.11: Reinforce the creation of an efficient and integrated transport system through intermodality

Problem Summary: Intermodality is hindered by a limited strategic and regulatory framework, modest infrastructure and logistics, and the lack of agreements between the port authorities and rail freight carriers.

Following measures are identified:

- **Promote and support intermodal agreements**
- **Develop a study on intermodality in Montenegro**

From an organization perspective, intermodality can be achieved only if agreements between participating parties (port managers, railway carriers, road freight carriers, intermodal stations) are established, along with adequate infrastructure which serves more efficient and integrated transport system, and with logistics which allows for predictability and reliability of freight transport. The government of Montenegro should support and promote such agreements on intermodality, which would contribute to better valorisation of transport potential of Montenegro.

3.3.12 Specific Objective 1.12: Enhance support for road freight transport

Problem Summary: Infrastructure necessary for road freight transport for supporting intermodality is lacking, as is an ITS strategy, and there is a need for promotion of cross-border cooperation procedures.

Following measures are identified:

- **Introduce ITS services targeting to road freight transport.**

Cabotage in road freight transport is marked by a unified approach in EU countries, but is limited by regulatory solutions when applied outside of EU borders. Same principle applies to Montenegro in its relation to other countries. There are several operative aspects which should be further considered in this field – exceptional cases. ITSs aimed at road freight transport must be introduced in accordance with the ITS strategy.

Likewise, customs operations and processes must be promoted in order to reduce transit times for road freight transport and for entry to and exit from Montenegro.

3.3.13 Specific Objective 1.13: Improve connectivity of the Port of Bar

Problem Summary: Currently, the port of Bar is hindered by inefficient connection with the railway network. Rail connections should be physically improved since now the capacity is not used to the fullest amount.

Following measures are identified:

- **Better valorisation of certain port services**
- **Valorisation of the Port of Bar as the new cruising destination.**

Diversification of port services and rising levels of port operations efficiency, along with introduction of new cruising line, will allow new players to enter this field of business and implement new operational and business plans.

3.3.14 Specific Objective 2.1: Maintain adequate LOS of state road network

Problem Summary: Existing transport networks and infrastructures are in a good state. However, their performance and condition need to be either maintained or improved/upgraded in the future period.

Following measures are identified:

- **Plan and operate efficient and passenger friendly interurban public transport services**

Transport network and infrastructure must be continuously maintained and developed with the aim of raising LOS, as allowed by road geometry, in order to ensure efficient providing of interurban public transportation services.

3.3.15 Specific Objective 2.2: Deployment of ITS technologies in the road, rail and maritime sectors

Problem Summary: Deployment of ITS systems and technologies in Montenegro's core network is required in the context of standards applied to the EU transport network. Montenegro lacks experience and appropriate organizational and institutional structures for coordinating and managing the implementation of ITS, especially in the road and rail sectors.

Following measures are identified:

- **Preparation of studies for ITS development and implementation.**
- **Seek financing instruments for ITS deployment.**

First and foremost, Montenegro should take actions for fully implementing the EU legislation on ITS. In forthcoming years, Montenegro should create a focused strategy on implementing, managing, funding and monitoring ITS in the country, through a dedicated study, and its further elaboration through additional studies for development and implementation of ITS to all modes of transport. Finally, as financing sources will be required for that purpose, the possibility of concessions and the development of partnerships should be investigated.

3.3.16 Specific Objective 3.1: Improve traffic safety on state road network

Problem Summary: Within the time horizon of the strategy, it is necessary to improve transport safety conditions, alongside advancement in transport network and accompanying infrastructure.

Following measures are identified:

- **Plan Road Safety Inspection and Road Safety Audit Activities**
- **Improve road safety surveillance and systematic traffic enforcement of the Law on Roads**

Montenegro should update its existing strategic plan for improving road safety, which will set the policy, targets and measures for that purpose. In the same context, road safety inspections and audits should be intensified to identify black spots and other, potentially dangerous sections in the country's road network. Traffic surveillance and law enforcement should be enhanced to enhance driver compliance with traffic law and reduce traffic violations; these should be done by policing and technical means (speed monitoring equipment, traffic cameras etc.). What is needed is a stricter framework on road safety combining effective enforcement of traffic rules with education and awareness-raising (e.g. on the need to wear a seatbelt, on the risks of speeding or being distracted at the wheel, etc.).

3.3.17 Summary of Organizational and Operational Measures

Table 3.5 summarizes measures aimed at improving organizational and operative aspects of functioning of the transport system, which correlate with following specific objectives:

Table 3.5: Summary of organizational and operational measures

Specific objectives		Organizational and operational measures
1	Secure a good governance and management structure across the whole life cycle of highways.	• Introduction of Total Quality Management in transportation systems and services. • Personnel training in transport infrastructure management
2	Create conditions for coordination between transport stakeholders	• Expansion of e-governance • Development of a monitoring and data collection system in transport sector
3	Update governance structure and bodies in transport sector	• Adoption and implementation of remaining EU legislation and completion of bylaws • Establishment of a body for regulatory activities on the railway
4	Re-organize governance responsibilities in transport sector	• Redistribution of responsibilities in transport sector management
5	Secure alternative funding sources for transport investments	• Introduction of new funding sources and market players, mainly in the form of concessions
6	Improve programming and allocation of funds and achieve efficiency in road transport operations	• Development of asset management system
7	Better valorisation of transport subjects in air transport sector	• Better valorisation of certain port services • Valorisation of the Port of Bar as the new cruising destination
8	Achieve efficiency in operations, maintenance expenditures and budget allocation in order to promote environment friendly projects in transport sector	• Promotion of alternative fuels and electro-mobility • Promotion of road transport fleet replacement / renewal • Establishment of the Virpazar inland navigation line

9	Reduce border clearance times	• Establish border processes in cooperation with neighbouring countries
10	Alleviate barriers in rail transport	• Adoption and implementation of the remaining EU legislation • Facilitation of the introduction of new market players in rail services
11	Reinforce the creation of an efficient and integrated transport system through intermodality	• Promote and support intermodal agreements • Develop a study on intermodality in Montenegro
12	Enhance support for road freight transport	• Introduce ITS services targeting to road freight transport
13	Improve connectivity of the Port of Bar	• Better valorisation of certain port services • Valorisation of the Port of Bar as the new cruising destination
14	Maintain adequate LOS of state road network	• Plan and operate efficient and passenger friendly interurban public transport services
15	Deployment of ITS technologies in the road, rail and maritime sectors	• Preparation of studies for ITS development and implementation • Seek financing instruments for ITS deployment
16	Improve traffic safety on state road network	• Plan Road Safety Inspection and Road Safety Audit Activities • Improve road safety surveillance and systematic traffic enforcement of the Law on Roads

4. The Strategy

This chapter offers a comprehensive overview of the TDS impact with respect to strategic objectives and set the implementation plan of the strategy for periods 2019-2027 and 2028-2035.

4.1 Impact of the Strategy

Comprehensive approach of the Strategy has, as its starting baseline, the perspective development of Montenegrin transport towards realization of previously recognized strategic objectives: Economic Welfare, Accessibility, Performance of Operations and Quality of Services; Safety and Security, EU Integration and Environmental Sustainability. It is noted that among these high-level objectives, Environmental Sustainability is discussed in detail in the TDS Strategic Environmental Assessment.

Positive impact of TDS is anticipated in the form of results of realization of strategic and specific objectives, and implementation of relevant measures, which relate to development of infrastructure and advancement of organizational and operative aspects of transport system performance. Implementation plan for particular measures scheduled for the first short-term period with financial support projection of said implementation is presented in detail in the current Action plan 2019-2020.

Economic welfare, as the first strategic goal, greatly depends on development of the transport system as a whole. Completion of all infrastructure projects from SPP shall be realized through planning and monitoring of SPP implementation, directing activities towards implementation of projects included in SPP, as well as through coordinated project activities of neighbouring countries. New investments in the transport sector, together with restoration and upgrades to existing infrastructure, shall contribute to further economic development of Montenegro, by improving access, shortening travel times, as well as better comfort in transport, while lowering transport costs. Improved access and connectivity contributes to a general uptake in economic activity, which leads to job creation. Better transport connectivity shall lead to better valorisation of tourism potential of Montenegro and to economic gains on that basis. Ensuring good management structure during motorway life-cycle will be implemented by introducing systems of Total Quality Management in transportation systems and services, as well as by additional education of transport infrastructure management staff. This will insure quality management of transport infrastructure, which will allow for efficient traffic while lowering infrastructure maintenance costs, as well as user costs. Harmonization of railways with interoperability standards shall be implemented by introduction of the European Rail Transport Management System (ERTMS) to Montenegrin rail network. Higher volumes of rail transport should lead to lower transport costs for users, especially in freight transport, which shall have a positive effect on economic activity in Montenegro. Lowering of border transit times will be achieved by

introduction of additional control cabins on road border crossings, as well as by faster border procedures in cooperation with neighbouring countries. In that way, travel times and costs will decrease. Insuring alternative investment financing sources in transport sector can be achieved by introducing new sources of financing, by opening of opportunities for new players on the market, primarily through some form of private financing or strategic partnership. Such activity will allow for realization of planned investments in a way which will have a less negative effect on state budget and overall public debt. Improvements in programming and funding allocation and achieving efficiency in road transport operations shall be upgraded by development of the funding management system. This will allow for appropriate identifying and allocation of costs, which insures largest potential benefits. Elimination of barriers in rail transport will be implemented by adopting and applying the remaining EU regulation, as well as by facilitating the introduction of new operators on the rail services market. After that, it is expected that there will be an increase in the supply side of rail transport, which inevitably leads to a reduction in cost of rail transport, as well as an increase in its scope of realization. Improvements in connectivity with the Port of Bar will be achieved by improving railway connections with the Port of Bar, expanding the gates and passenger terminal in the Port of Bar, better valorisation of certain port services, and by valorising the Port of Bar as a new cruising destination. The implementation of these measures should increase the capacity of the Port of Bar and the volume of realized transhipment and transport, with direct impact on increase in revenues of the Port of Bar, through the reduction of individual transport costs, which has positive effects for overall economic activity. Increasing support for road freight transport in the service of intermodality is ensured by introducing of ITS services in road freight transport. In this way, the total transport costs in freight traffic are reduced, which positively affects economic activity. Creating conditions for more efficient coordination between relevant entities in transport will be realized through the expansion of e-governance, as well as through the development of systems for monitoring and data collection in transport sector. This will contribute to better governance and management in the transport sector, to higher levels of transparency and accountability, and to more efficient allocation of budget funds and resources. Innovation of the structure and of management bodies in the transport sector is achieved through the adoption and application of the remaining EU legislation, the completion of by-laws, as well as through the establishment of a regulatory body for railways. This will result in the removal of certain legal and organizational deficiencies in the governance bodies in the transport sector. This will lead to more efficient work of these bodies, which will certainly lead to the achievement of certain economic benefits. Reorganization of the responsibilities in transport sector management can be realized through the redistribution of responsibilities in transport sector management. These activities should enable better coordination and more efficient decision-making. Better valorisation of entities in the air transport sector will be achieved through the reorganization or privatization of

Montenegro Airlines and the preparation of a concession plan for the Airports of Montenegro (Podgorica and Tivat). On the one hand, this will allow for better and more efficient functioning of these companies, with better quality of services, and on the other hand, for increase of budget revenues of Montenegro, which can be adequately used for the realization of other important activities. Creating efficiency in operations, maintenance costs and budget allocation in order to promote more environmentally-friendly projects in the form of transport is achieved by promoting alternative types of fuel and electro-mobility, promoting the replacement / renewal of rolling stock in road traffic and the establishment of inland waterways. In this way, besides the undoubted and significant effects on the environment, there will be savings in transport costs.

Accessibility, Performance of Operations and Quality of Services is achieved by measures targeting on enhancing road, rail, maritime and air capacity, operations and services. Infrastructural measures (such as reconstruction of state road sections, improvement of road infrastructure to destinations for recreation and recreation, improvement of the railway line through realization of planned overhauls of the railway network, as well as reconstruction of maritime and air traffic infrastructure) mostly aim at increasing the capacity and level-of-service of the road and rail networks, which implies higher speeds and lower travel times. Strengthening the creation of an efficient integrated transport system through intermodality should be achieved by creating a study of intermodality, setting up intermodal stations (Podgorica and Bijelo Polje), as well as by promoting and supporting intermodal agreements. In this way, the development of intermodality is promoted and it improves the performance of operations and the quality of services. The application of ITS technologies in the road, rail and maritime transport sector is achieved by installing ITS equipment in the Core Network and selected sections of the state road network, as well as by setting up a system for measuring axle load of vehicles, by completing activities on realization of the system for management and supervision of maritime traffic (VTMIS), the preparation of studies for the development and implementation of ITS and the search for funding instruments for the application of ITS. After these activities, a significant increase in the quality of services on the existing and future transport network should be expected. Improving the procedures at border crossings reduces the retention time and raises the level and quality of transport services.

The safety and security of traffic on the state road network is significantly enhanced by the construction of new, modern traffic infrastructure, as well as by improvement of existing infrastructure. Implementation of all infrastructure projects covered by the SPP, completion of planned road reconstruction projects, improvement of signage and road equipment on the main roads as well as the application of technology ITS, an increase in the level of traffic safety should be expected, which will result in a reduction in the number of traffic accidents (incidents

and accidents). By planning the inspection and safety activities, improving traffic safety oversight and systematic implementation of the Law on Roads, as well as introducing general quality management into transport systems and services, the efficiency of maintaining the infrastructure and functioning of the transport system as a whole, but also create preconditions for transport safety and security in Montenegro.

EU Integration, as a strategic goal, is achieved through the implementation of the proposed measures, which are in line with the *acquis*, regulations / directives and EU requirements. Within this Strategy, the adoption and application of EU legislation is proposed, where appropriate. Areas such as: application of ITS technology, strengthening of intermodality, harmonization of railways with interoperability requirements, and elimination of barriers to rail transport – all represent fields of the transport sector which form the basis of EU policy and practice. A better organization of traffic management and the improvement of asset management practices should enable the functioning of the transport sector in Montenegro in accordance with the principles and standards of the EU.

The previously analyzed link between strategic objectives, specific objectives and relevant measures is shown below in the **Logical Framework Matrix**, which includes the following categories: strategic goal, problem analysis, specific objective, indicators, sources of verification and measures. Indicators are derived from established specific objectives and serve as a measure of the success of the implementation of the spatial and strategic goals.

Table 4.1: Log frame matrix, Strategic Objective-Economic Welfare

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
1	Economic welfare	The traffic infrastructure of Montenegro is not sufficiently harmonized with modern standards. The road network has limited capacity and long travel times due to the elements of the route, the cross-sections and the need for overtaking. The existing road network cannot effectively respond to the requirements for the carriage of passengers and cargo. The rail network has reduced capacity due to constraints imposed by geometric elements of the railway line and shortcomings in terms of signalling. This affects travel times and reliability.	Infrastructure projects in SPP implemented	Constructed km motorways Reconstructed km railways Increased average railways speed Reconstructed km motorways Constructed km railways Improved and modernized airports in Podgorica and Tivat in accordance with SPP	Reports of relevant bodies.	Programing and monitoring Single projects pipeline for target years 2025 and 2035 Continuing and guidance of actions for projects completion Aligned and coordinated project activities with neighbouring countries
2	Economic welfare	Transport investments of a considerable extent for the size of Montenegro are planned to be implemented in the future years. Nevertheless, the country has no prior experience or dedicated processes and bodies for managing these investments throughout their life cycle	Secure good governance and management structure across the whole life cycle of motorways and railways	Level of investment in road and railway infrastructure maintenance Number of permanent employees engaged in management units(PMUs) and in implementation units(PIUs)	Report of the Ministry of Transport and Maritime Affairs	Introduction of Quality Management System in transportation systems and services Employees training in transport infrastructure management
	Economic welfare	Montenegrin railways offer international services with Serbia through the Bar – Belgrade railway line. With respect to EU operational interoperability, the relevant regulation has been adopted. Technical	Align rail with interoperability requirements	Numbers of freight trains Scope of rail freight transport	National statistical data, Information of the Directorate for Railway Transport.	Introduce ERTMS in rail network

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
3		specifications have started to incorporate in the national legislation while there is no dedicated ERTMS strategy. As for technical interoperability, ERTMS Optical fibre has been installed along the Bar – Belgrade corridor's part of Montenegro. Also, in the railway station of Podgorica ECTS level 1 equipment will be installed. However, no major ERTMS project has been reported.				Extend overtaking sections length of selected rail stations up to 740 m

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
4	Economic welfare	Delay times on border crossing points is long, both in road and in railway transport. During peak tourist seasons, daily average road traffic in border crossings doubles or even triples compared to typical days of the year. This is of importance as tourism is a major industry for Montenegro and border delays imply increased travel times, which do have an impact to that sector of the country's economy. As such, border crossings exhibit delays during peaks since transit times may exceed 4h and queues with lengths of over 1 km may be formed. Montenegro railways exhibit delays, 40% of which is attributed to border crossing operations. There are several operational sources of delay, which are related to the customs and security procedures as well as the railway administrator at the other side of the border.	Reduce border clearance times	Number of cabins for road border crossings Average delay (retention) time for road border crossings	Report of cross border services.	Add cabins for road border crossings Establish border crossings procedures in cooperation with neighbouring countries

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
5	Economic welfare	Proposed infrastructure projects in SPP yield high expenditures, which cannot be handled by Montenegro's state budget. Indeed, transport infrastructure expenditures in Montenegro have risen to over 5% of its GDP in past couple of years. Given the size of Montenegro's GDP and public debt (which exceeds over 60% of the country's GDP), traditional financing schemes, such as loans, are neither viable nor desirable. Additional infrastructure interventions (such as road rehabilitations in the county's comprehensive road network) and the introduction of intelligent transportation systems in the state network could yield additional funding requirements.	Secure alternative funding sources for transport investments	Concluding of concession contracts Concluding of PPP contracts	Report of the Ministry of Transport and Maritime Affairs	Introduction of new funding sources and market players through some form of concessions arrangement
6	Economic welfare	A lack of transportation asset management systems by sector hampers alignment and coordination between processes of management and investment in transport infrastructure and services, having in mind user expectations, conditions of the transport system, its performances and availability of resources.	Improve programming and allocation of funds and achieve efficiency in operations in road transport	Applied level of methodology for programming and allocation of funds Asset management system developed	National statistical data, Information of the Directorate for Road Transport; Data of the Ministry of Finance	Development of asset management systems

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
7	Economic welfare	There are still organizational and operational barriers to entering the rail market in Montenegro. These barriers are conditioned by the fact that remaining EU legislation is yet to be implemented and that licensing and capacity allocation processes in the rail sector are inadequate.	Derogation of barriers in rail transport	Transposition level of EU Acquis in national framework (Railway Packages) Number of new operators for railway services market Prices and tariffs in railway transport	Report of the Directorate of Railway Transport, Railway Transport of Montenegro JSC and Montecargo.	Adoption and implementation of remaining EU legislation Facilitation for introduction of new stakeholders in providing rail services
8	Economic welfare	Currently, the port of Bar is hindered by inefficient connection with the railway network. Railway connecting segments between the port piers and the railway network are insufficient and their capacity is not used to the fullest amount. Rail connections should be physically improved. On the other hand, improvements in the overall connectivity (construction of new motorways, rail network overhaul, expansion of port piers and passenger terminal etc.) can be viewed in the framework of technical studies and accordingly plan for further advancements and development.	Improved connectivity in Port of Bar	Increased capacity of Port of Bar Operational income of Port of Bar	National statistical data, Information of the Directorate for Maritime Transport; Reports on business activities of the Port of Bar.	Improve access railway connection to Port of Bar Expand piers and passenger terminal Better valorisation of port services Valorisation of the Port of Bar as a new cruising destination (Port of Adria contribution)

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
9	Economic welfare	Infrastructure necessary for road freight transport for supporting intermodality is lacking, as is an ITS strategy, and there is a need for promotion of cross-border cooperation procedures. There are several operative aspects which should be further considered in this field – exceptional cases. ITSs aimed at road freight transport must be introduced in accordance with the ITS strategy. Likewise, customs operations and processes must be promoted in order to reduce transit times for road freight transport and for entry to and exit from Montenegro.	Enhance support for road freight transport for the purpose of intermodality	Participation of road freight transport for supporting intermodality terminals (where it is impossible to achieve intermodality by other modes of transport)	Questionnaire of users and providers of logistics services.	Introduce ITS services targeting to road freight transport
10	Economic welfare	There are shortcomings in coordination between relevant stakeholders in transport. No clear interaction exists between different bodies and a joint effort towards managing state road traffic and infrastructures is required. A monitoring and data collection system is necessary for evaluating conditions in the country's transport sector and for planning and proposing future courses of action and allocation of resources.	Create coordination conditions between transport stakeholders	Establishment of the Transport Community and Contract application	Report of the Ministry of Transport and Maritime Affairs	Broadening of e-governance Development of a monitoring and data collection system in transport sector

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
11	Economic welfare	Organizational shortcomings in the field of structure and entities in the transport sector are noticeable. Formation of an independent regulatory body which reports directly to the Government is indicated. It is necessary to adopt and implement the rest of EU legislation and to complete the bylaw legislation.	Update governance structure and bodies in transport sector	Transposition level of EU Acquis in national framework (Fulfilling closing benchmarks for chapters 14 and 21)	Report of the Ministry of Transport and Maritime Affairs.	Adoption and implementation of remaining EU legislation and completion of bylaws Establishment of a body for regulatory activities on the railway
12	Economic welfare	Shortcomings related to separating authorities in the field of transport sector management are noticeable. Many responsibilities related to the transport sector are shared by different ministries. This hinders coordination and complicates effective decision making in areas such as traffic safety, vehicle and driver registration, spatial planning, EU compliance and other.	Re-organize governance responsibilities in transport sector	Numbers of independent bodies in transport sector	Report of the Ministry of Transport and Maritime Affairs.	Redistribution of responsibilities in transport sector
13	Economic welfare	Montenegro Airlines and Airports of Montenegro are state-owned companies whose restructuring and possible private sector involvement would allow for new funds and further upgrade of provided service. Restructuring of Montenegro airlines is necessary, because of its continuing financial losses and accumulating high debt. As such, concessions and private sector participation options need to be investigated.	Better valorisation of transport entities in field of civil aviation	Scope of passenger and freight civil aviation transport Development of Concession scheme for Airports of Montenegro.	Report of the Ministry of Transport and Maritime Affairs, Report of the Directorate for Air Transport.	Reorganization or privatization of Montenegro Airlines Preparation of Concession Plan for Airports of Montenegro (Podgorica and Tivat)

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
14	Economic welfare	At this moment, transportation projects in Montenegro are mostly financed by international institutions (EIB and EBRD). Given the size of Montenegro's economy and its debt to GDP, improvement of project programming and fund allocation and efficiency on operations and maintenance are major aims in the context of financial sustainability. Electro-mobility and alternative fuel are becoming increasingly important in the EU's transport sector, in an effort to disengage from fossil fuel dependency and adverse environmental impacts. Finally, given that the Port of Bar currently offers only limited passenger ferry connections (with Italy), incentives for establishing new maritime lines to other ports in the Adriatic and the Ionian seas should be undertaken. Finally, the establishment of the Virpazar inland navigation line should be investigated and possibly promoted, as a transport alternative for the tourist industry of Montenegro.	Achieved efficiency in operations, expenditures and budget allocation in order to promote more environmental friendly projects in transport sector	Participation of transportation means with alternative fuel sources	National statistical data, Information of the Directorate for Road Transport. Ministry of Finance data.	Promotion of alternative fuel sources and electric mobility Promotion of replacement/renewal of vehicles fleet in road transport Establishing Inlaid Water Ways

Table 4.2: Log frame matrix, Strategic Objective-Accessibility, Performance of Operations and Quality of Services

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
1	Accessibility, Performance of Operations and Quality of Services	Existing transport networks and infrastructures are in a good state but their performance and condition need to be either maintained or improved/upgraded in the upcoming period. Some roads in Montenegro exhibit low LOS, as their geometry cannot handle demand. LOS on current network is mostly average, and on some roads is low. While new highways will undertake most of the future demand for road transport, traffic in segments of the main road network will increase. Therefore, these should be completed. Some additional segments, forming corridors to between Podgorica and the border with Bosnia & Herzegovina and Kosovo, will need to be improved (reconstructed), to facilitate growing traffic between these countries and Montenegro.	Maintain adequate level of services (LoS) on the state road network	Reconstructed km of state roads Average travel times decreased on roads (value of time) Number of travels by public transportation Average speed on roads	Information of the Directorate for State Roads and the Directorate for Road Transport.	Reconstruction of state road sections Upgrade roads infrastructure to rest and recreational areas (ski and coastal resorts) Plan and provide efficient services in interurban public transport more adjusted to passenger needs
2	Accessibility, Performance of Operations and Quality of Services	The country's rail lines exhibit low to average levels of service, which is attributed to reduce commercial speeds and reduced frequencies. Geometry restrictions and signalization deficiencies reduce rail network capacity, travel times and reliability. Maximum allowable speeds remain low and range between 50 km/h and 100 km/h while single rail lines and signalization reduce rail network capacity and allowable frequencies of	Complete rehabilitation of railway network and upgrade railway infrastructure according to TENT standards and improve railway transport	Level of investment in railway infrastructure Level of investment in railway transportation Average travel times on railways	Report of the Railway Infrastructure of Montenegro regarding the state of rehabilitation.	Improvement of railway through network overhaul and enhanced railway transportation

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
		operations.				
3	Accessibility, Performance of Operations and Quality of Services	The Port of Bar operates significantly below its capacity. Major barriers for port usage from regional markets are high travel times for accessing the port by road and rail and lack of adequate infrastructure.	Revitalization and/or reconstruction of maritime transport infrastructure	Volume of trans-shipment of general cargo and containers in Port of Adria Volume of trans-shipment of bulk cargo in Port of Bar Volume of trans-shipment of liquid cargo in Port of Bar	National statistical data, Directorate for Maritime Transport;	Increase of trans-shipment of general cargo and containers by securing the status of a trans-shipment hub Expansion of the capacity for trans-shipment and storage of dry bulk cargo on the northern slope of Volujica hill Increase of transhipment of liquid and bulk cargo

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
4	Accessibility, Performance of Operations and Quality of Services	Airport Dolac has a takeoff-landing runway and a terminal facility, but due to current conditions, lack of equipment and small length of the runway, the airport cannot be used for other purposes besides general aviation. Currently it is in a state of decay. Revitalization of airport Dolac requires significant investment since a full renewal of its facilities is necessary. Considering size of the country and future transport infrastructure, the need for a third airport in Montenegro is questionable.	Determine possibilities and needs for revitalization and/or reconstruction of civil aviation transport infrastructure	; Volume of investment in other airports and accompanying infrastructure (besides Podgorica and Tivat)	Report of the Ministry of Transport and Maritime Affairs, Directorate for Air Transport;	Valorise other airports in Montenegro (besides Podgorica and Tivat).
5	Accessibility, Performance of Operations and Quality of Services	Infrastructure necessary for supporting intermodality, such as port connections to the rail network and intermodal stations for rail – road combined transport), are missing. This contributes to the scarce participation of railways in the country's intermodal transport operations, which are dominated by road freight carriers. For intermodality, a barrier is a lack of agreements between port authorities and cargo operators.	Strengthen creation of an integrated system of transport through intermodality	; Volume of intermodal transport Number of concluded intermodal agreements Volume of investments in the field of intermodal operations and activities	Report of the Ministry of Transport and Maritime Transport	Develop Intermodality Study in Montenegro Develop intermodal stations in Podgorica and Bijelo Polje Promote and support intermodal agreements

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
6	Accessibility, Performance of Operations and Quality of Services	Montenegro currently lacks ITS infrastructures. So far, efforts on introducing ITS have been scarce. Implementation of relevant legislation has been delayed, and there is dedicated body for ITS. As such, there are no centralized policy or activities with respect to ITS. There are only fragmented activities such as partial installation of the Vessel Traffic Information System (VTMIS) and preparatory actions for installing ERTMS in the rail network. As for the roads, ITS is planned to be implemented in new motorways, but details on systems and technologies have not been defined in detail.	Deployment of ITS technologies in the road, rail and maritime sectors	Coverage level of ITS systems in road network Coverage level of ITS systems in rail network Coverage level of ITS systems in maritime network (VTMIS)	Report of the Directorate for State Roads, Directorate for Rail Transport and Directorate for Maritime Transport	Installation of ITS equipment in the Core road network (obligatory) and particular sections of the state roads network Installation of weigh-in-motion stations Completion of Vessel Traffic Management Information System (VTMIS). Preparation of studies for ITS development and implementation Acquiring financing instruments for ITS deployment

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
7	Accessibility, Performance of Operations and Quality of Services	Delay times on border crossing points is long, both in road and in railway transport. During peak tourist seasons, daily average road traffic in border crossings doubles or even triples compared to typical days of the year. Border delays cause increased travel times and have a negative impact on tourism, which is one of major industries in Montenegro; in that sense, border delays also reflects on other sectors which are in the function of economic development. As such, border crossings exhibit delays during peaks since transit times may exceed 4h and queues with lengths of over 1 km may be formed. Montenegro railways exhibit delays, 40% of which is attributed to border crossing operations, which has an effect on lower travel times.	Reduce border crossing clearance times	Average delay time for road transport at border crossings	Report of border crossing authorities	Establish border crossings procedures in cooperation with neighbouring countries

Table 4.3: Log frame matrix, High Level Objective -Safety and security

No.	High Level Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
1	Safety and security	Transport safety conditions have improved in the last decade, but performance is still low. Road safety levels are lagging compared to EU averages, as well as to neighbouring countries. Montenegro is not well positioned relative to the EU when it comes to roadside fatalities, and is close to maximum values measured in the EU.	Improve road transport safety at the state road network	Total number of traffic accidents Number of traffic accidents per 100.000 inhabitants	Reports of the Ministry of Internal Affairs, Police Administration and other authorities.	Planed Road Safety Inspection and other activities in order to check road network safety Improve road safety surveillance and systematic application on Law on roads
2	Safety and security	Existing transport networks and infrastructures are in a good state but their performance and condition need to be either maintained or improved/upgraded in the upcoming period. Some main and regional roads in Montenegro exhibits low level of service, given that road geometry cannot meet the demand. LOS on current network is mostly average, and on some roads is low. While new highways will undertake most of the future demand for road transport, traffic in segments of the main road network will increase. Therefore, these should be completed. Some additional segments, forming corridors to between Podgorica and the border with Bosnia & Herzegovina and Kosovo, will need to be improved, to facilitate growing traffic between these countries and Montenegro.	Maintain adequate level of services (LoS) on the state road network	Number of fatalities in traffic accidents on roads Number of injured in traffic accidents on roads	Reports of the Ministry of Internal Affairs, Police Administration and other authorities.	Complete planned road reconstruction projects (2017-2019) Improve signal and road equipment of main roads

No.	High Level Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
3	Safety and security	Montenegro currently lacks ITS infrastructures. So far, efforts on introducing ITS have been scarce. Implementation of relevant regulation has been delayed and no dedicated body on ITS has been established. As such, there are no centralized policy or activities with respect to ITS. There are only fragmented activities such as the partial installation of the Vessel Traffic Information System (VTMIS) and preparatory actions for installing ERTMS in the rail network. When it comes to roads, while introduction of ITS is planned within existing highway projects, systems and technologies have not been defined in detail.	Deployment of ITS technologies in the road, rail and maritime sectors	Coverage level of ITS systems in road network Coverage level of ITS systems in rail network Coverage level of ITS systems in maritime network (VTMIS)	Report of the Directorate for State Roads, Rail and Maritime Affairs	Installation of ITS equipment in the Core road network and particular sections of the state roads network Installation of weigh-in-motion stations Completion of Vessel Traffic Management Information System (VTMIS). Preparation of studies for ITS development and implementation
4	Safety and security	The state road infrastructure of Montenegro is not sufficiently aligned with modern standards. Road network has limited capacities and a slow travel times due to its alignment, implemented cross-sections and the need for overtaking. Existing road network is unable to efficiently answer the transport demand. Rail network has a lower capacity due to geometry restrictions and signalization deficiencies. This has an adverse effect on travel times and reliability.	Infrastructure projects in SPP implemented	Constructed km motorways Reconstructed km railways Increased average railways speed Reconstructed km motorways Constructed km railways Improved and modernized airports in Podgorica and Tivat in accordance with SPP.	Reports of relevant bodies.	Programing and monitoring Single projects pipeline for target years 2025 and 2035 Continuing and guidance of actions for projects completion Aligned and coordinated project activities with neighbouring countries

No.	High Level Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
5	Safety and security	Transport investments of a considerable extent for the size of Montenegro are planned to be implemented in the future years. On the other hand, the country has no prior experience or dedicated processes and bodies for managing these investments throughout their life cycle. Therefore, good governance and management practices of new infrastructures in their whole life cycle are required. Total quality management (TQM) practices should be introduced in the management of new and existing transport systems and services (especially those managed by the public sector). Efforts should be made on monitoring and continuous improvement of performance and services, having traveller satisfaction as the key aim. In the same context, personnel should be trained to follow such practices.	Secure good governance and management structure across the whole life cycle of motorways	Level of investment in road and railway infrastructure maintenance Number of permanent employees engaged in the PMU and PIUs	Report of the Ministry of Transport and Maritime Affairs	Introduction of Quality Management System in transportation systems and services Employees training in transport infrastructure management

Table 4.4: Log frame matrix, Strategic Objective -EU Integration

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
1	EU Integration	Montenegro currently lacks ITS infrastructures. So far, efforts on introducing ITS have been scarce. Implementation of relevant regulation has been delayed and no dedicated body on ITS has been established. As such, there are no centralized policy or activities with respect to ITS. There are only fragmented activities such as the partial installation of the Vessel Traffic Information System (VTMIS) and preparatory actions for installing ERTMS in the rail network. When it comes to roads, while introduction of ITS is planned within existing highway projects, systems and technologies have not been defined in detail.	Deployment of ITS technologies in the road, rail and maritime sectors	Coverage level of ITS systems in road network Coverage level of ITS systems in rail network Coverage level of ITS systems in maritime network (VTMIS)	Report of the Directorate for State Roads, Rail and Maritime Affairs	Installation of ITS equipment in the road, rail and maritime sectors
2	EU Integration	Infrastructure necessary for supporting intermodality, such as port connections to the rail network and intermodal stations for rail – road combined transport, is missing. This contributes to the scarce participation of railways in the country's intermodal transport operations, which are dominated by road freight carriers. For intermodality, a barrier is a lack of agreements between port authorities and cargo operators.	Strengthen creation of an integrated system of transport through intermodality	Volume of intermodal transport	Report of the Ministry of Transport and Maritime Transport	Develop Intermodal Study in Montenegro
3	EU Integration	Montenegrin railways offer international services with Serbia through the Bar – Belgrade railway line. With respect to EU operational interoperability, the relevant regulation has been adopted. Technical specifications have started to incorporate in the national legislation while there is no dedicated ERTMS strategy. As for technical interoperability, ERTMS Optical fibre has been installed along the Bar – Belgrade corridor's part of Montenegro. Also, in the railway station of Podgorica ECTS level 1 equipment will be installed. However, no major ERTMS project has been reported.	Align rail with interoperability requirements	Transposition level of EU Acquis in national framework in the field of railway interoperability (railway packages)	MTMA, Directorate for Railway Transport, Railway Administration	Introduce ERTMS in rail network
4	EU Integration	There are still organizational and operational barriers to entering the rail market in Montenegro. These barriers are conditioned by the fact that remaining EU legislation is yet to be implemented and that licensing and capacity allocation processes in the rail sector are inadequate.	Derogation of barriers in rail transport	Transposition level of EU Acquis in national framework (Railway Packages)	Report of the Directorate of Railway Transport, Railway Transport of Montenegro JSC and Montecargo.	Adoption and implementation of remaining EU legislation

No.	Strategic Objective	Problem Analysis	Specific Objective	Indicators	Verification Source	Measure
5	EU Integration	Organizational shortcomings in the field of structure and entities in the transport sector are noticeable. Formation of an independent regulatory body which reports directly to the Government is indicated. It is necessary to adopt and implement the rest of EU legislation and to complete the bylaw legislation.	Update governance structure and bodies in transport sector	Transposition level of EU Acquis in national framework (Fulfilling closing benchmarks for chapters 14 and 21)	Report of the Ministry of Transport and Maritime Affairs	Adoption and implementation of remaining EU legislation and completion of bylaws
6	EU Integration	Shortcomings related to separating authorities in the field of transport sector management are noticeable. Many responsibilities related to the transport sector are shared by different ministries. This hinders coordination and complicates effective decision making in areas such as traffic safety, vehicle and driver registration, spatial planning, EU compliance and other.	Redistribution of responsibilities in transport sector management	Numbers of independent bodies in transport sector	Report of the Ministry of Transport and Maritime Transport.	Redistribution of responsibilities in transport sector
7	EU Integration	A lack of transportation asset management systems by sector hampers alignment and coordination between processes of management and investment in transport infrastructure and services, having in mind user expectations, conditions of the transport system, its performances and availability of resources.	Improve programming and allocation of funds and achieve efficiency in operations and maintenance expenditures and budget allocation	Applied level of methodology for programming and allocation of funds Asset management system developed	National statistical data, Information of the Directorate for Road Transport; Data of the Ministry of Finance	Development of asset management systems
8	EU Integration	Infrastructure necessary for road freight transport for supporting intermodality is lacking, as is an ITS strategy, and there is a need for promotion of cross-border cooperation procedures. There are several operative aspects which should be further considered in this field – exceptional cases. ITSs aimed at road freight transport must be introduced in accordance with the ITS strategy. Likewise, customs operations and processes must be promoted in order to reduce transit times for road freight transport and for entry to and exit from Montenegro.	Enhance support for road freight transport for the purpose of intermodality	Participation of road freight transport for supporting intermodality terminals (where it is impossible to achieve intermodality by other modes of transport)	Questionnaire of users and providers of logistics services.	Introduce ITS services targeting to road freight transport

4.2 Implementation Plan, Monitoring and Evaluation of TDS

The TDS implementation plan includes a schedule of actions, along with a financial plan and overview of potential risks to its implementation. The plan is divided into two periods (plan for 2019-2027 and plan for 2028-2035), while action plans for the purpose of implementation of this document shall be adopted in successively every two years.

Monitoring and evaluation of TDS will be conducted by the Ministry of Transport and Maritime Affairs on basis of successive action plans for the time horizon of this Strategy. Results of this process shall be presented through yearly reports (which is an obligation towards the Government of Montenegro, although it can be delivered to other stakeholders) which will evaluate degree of implementation of TDS. Establishing an efficient system of monitoring will contribute to the evaluation process and to reporting on implementation of foreseen activities.

In order to ensure coordination of activities during monitoring and reporting process according to Action Plans, it is necessary to establish a Coordinating Body by the Ministry of Transport and Maritime Affairs. Members will be representatives of all bodies involved in implementation of the Strategy and of action plans, while the Ministry of Transport and Maritime Affairs will play a coordinating role. Activities this body will conduct are (but are not limited to): coordination of activities on collection, processing and analysis of data; regular reporting on degree of implementation of planned measured / activities from action plans, based on determined performance and results indicators; preparation of quarterly reports on implementation of Action Plans to the relevant ministry, and preparation of a yearly report to the Government of Montenegro. Membership in the Coordinating Body should reflect the need for including representatives of various institutions, which will have at least one meeting for every quarter within a calendar year. Given the obligation for monitoring and evaluation process which is stipulated by national legislation, and bearing in mind the significance of this document for further cooperation as well as for further communication with the EU in the field of transport (TDS 2019-2035, indirect criterion for closing of negotiation chapter 21 – Trans-European Networks), financing of the Coordinating Body will be secured through the budget of the relevant ministry.

As indicated, the Coordination Body will report on the implementation of the Strategy on a quarterly basis to the relevant ministry. Ministry of Transport and Maritime Affairs, on basis of such quarterly reports, reports annually on the implementation of the Strategy. In this context, relevant ministry shall deliver a proposal of the strategic document to the General Secretariat of the Government of Montenegro and to the Finance Ministry, for the purpose of obtaining a positive opinion. In accordance with the methodology laid out in the Decree on methods and procedures of creation, harmonization and monitoring of implementation of strategic documents (Official Gazette of Montenegro, no. 54/18), relevant state authority shall present yearly reports on implementation of the strategic document, and a final report after expiration of its time horizon.

In addition, this Strategy will be subject to an external mid-term evaluation, in order to ensure additional independent evaluation of implementation, which could also serve to help monitoring and evaluation processes, with a direct impact on advancing implementation process of the Strategy. Financing for these activities is to be secured through the budget of relevant ministry, while alternative sources of funding should also be taken into account.

By conducting a public hearing, transparency principle was affirmed, which assumes that preparation of a strategic document must include consultations with state authorities, organizations, civic associations and individuals, as well as a public hearing on the draft text of the document. Public discussion on the Draft of Transport Development Strategy 2018-2035 was held in the period of November 29 to December 20, 2017.

Table 4.5: Plan of infrastructure measures and corresponding costs 2019-2024

Measure	Infrastructure Projects	Cost (€)
• **Program single pipeline projects for target years 2027 and 2035.** • **Continue and intensify actions towards completion of SPP project.** • **Align and coordinate project activities and programming with those of neighbouring countries**	**SPP Projects:** ▪ Highway Bar-Boljare, section Mateševo – Andrijevica ▪ Highway Bar-Boljare, section Andrijevica – Boljare ▪ Adriatic-Ionian expressway coastal variant, Bypass Tivat ▪ Adriatic-Ionian expressway coastal variant, Bay of Kotor corridor ▪ Adriatic-Ionian expressway coastal variant, Bypass Budva ▪ Reconstruction of the Šćepan Polje - Plužine highway (border crossing with Bosnia and Hercegovina)	249.8M 731.2M 56.5M 68M 158.4M 198.5M
	SPP Projects: ▪ Reconstruction and modernization of the railway line “Vrbnica-Bar", state border with Serbia	178.0M
	SPP Projects: ▪ Development of Podgorica Airport ▪ Development of Tivat Airport	94.8M 55.0M
• **Complete planned road reconstruction projects (2019-2021)**	▪ Main and regional roads	195,7M
• **Upgrade roads to recreational areas (ski and coastal resorts).**	▪ To be defined in a later stage	15.0M
• **Improve signage and road furniture of main roads**	▪ All state roads	0.5M
• **Extend overtaking sections length of selected rail stations up to 740 m** • **Introduce ERTMS in rail network.** • **Improve rail connection segments to port of Bar**	▪ Reconstruction and modernization of the railway line “Vrbnica-Bar", state border with Serbia	Included in reconstruction costs
• **Add control booths in road border crossings**	▪ Proposed border crossings of Bozaj, Sukobin (Albania), Debeli Brijeg (Croatia), Sitnica (Bosnia & Herzegovina), Rance, Dracenovac, Dobrakovo (Serbia)	5M
• **Completion of Vessel Traffic Management Information System (VTMIS) (phase II)**		3,9M
	Total Estimated Costs	**2.12B €**

Table 4.6: Plan of infrastructure measures 2028-2035

Measure	Infrastructure Projects	Cost (€)
• **Program single pipeline projects for target years 2027 and 2035.** • **Continue and intensify actions towards project completion.** • **Align project activities and programming with those of neighbouring countries**	**SPP Projects:** ▪ Adriatic-Ionian expressway coastal variant, section Border with Croatia - Bijela (Bypass Herceg Novi & Herceg Novi-Bijela) ▪ Adriatic-Ionian expressway coastal variant, section Tivat - Sozina ▪ Adriatic-Ionian expressway coastal variant, section Bar – Border with Albania. ▪ Adriatic-Ionian expressway coastal variant, Bypass Bar ▪ Highway Bar-Boljare, bypass Podgorica, section Smokovac – Tološi - Farmaci ▪ Highway Bar-Boljare, section Đurmani – Farmaci ▪ Reconstruction of the Šćepan Polje - Plužine highway (border crossing with Bosnia and Hercegovina) (after first phase, funds for 2028-2035 will be determined)	193M 150M 188M 233M 460.7M
	SPP Projects: ▪ Reconstruction and modernization of the railway line "Vrbnica-Bar", state border with Serbia ▪ Reconstruction and modernization of the railway line Podgorica - Tuzi – across the border with Albania ▪ Construction of the railway Nikšić- border with BiH – Trebinje - Čapljina	63.5M 35M 180M
• **Complete planned road reconstruction projects (2028-2035)**	▪ Main and regional roads (after first phase, funds for 2028-2035 will be determined)	N/A
• **Valorise other airports in Montenegro (besides Podgorica and Tivat)**	▪ Berane Airport	20M
• **Expand piers and passenger terminal**	▪ Port of Bar (after first phase, funds for 2028-2035 will be determined)	N/A
• **Installation of ITS equipment in the road network (variable message signs, dynamic signage etc).**	▪ Core Network ▪ Main Road Network	Included in highway costs 50M
• **Installation of weigh-in-motion stations**	▪ Core Network ▪ Main Road Network	Included in highway costs / 4M
• **Develop intermodal stations in Podgorica and Bijelo Polje**	▪ Podgorica ▪ Bijelo Polje	6M €
	Total Estimated Costs	**1.59B**

Organizational and operational measures, along with associated budgetary needs for each action plan are presented in Tables 4.7 and 4.8:

Table 4.7 Plan of organizational and operational measures and corresponding costs 2019-2024

Organizational and operational measures	Costs (€)
Expansion of E-governance	5M
Adoption and Implementation of EU regulation and completion of bylaws	1.2M
Establishment of a body for regulatory activities on the railway	0.42M
Reorganization or privatization of Montenegro Airlines company	20M
Development of concession scheme for Airports of Montenegro (Podgorica and Tivat)	1M
Planning of Road Safety Inspection and Road Safety Audit Activities	0.5M
Plan and operate efficient and passenger friendly interurban public transport operations and services	0.5M
Improve road safety surveillance and traffic law enforcement	5M
Establish border processes in cooperation with neighbouring countries. (Funds will be defined in relation to needs of a particular agreement signed)	N/A
Introduction of new funding sources and market players, mainly in the form of concessions.	N/A
Establishment of an inland waterway in Virpazar (Skadar Lake)	0.1M
Facilitation of the introduction of new market players in rail services	N/A
Better valorisation of certain port services.	0.8M
Valorisation of the Port of Bar as a new cruising destination (Funds will be defined in relation to introduction of new cruising destinations)	2.4M
Preparation of studies for ITS development and implementation.	0.8M
Seek financing sources for ITS.	0.725M
Promote and support intermodal agreements	N/A
Develop a study on intermodality in Montenegro	1M
Total Estimated Costs	**39.4M**

Table 4.8: Plan of organizational and operational measures and corresponding costs 2028-2035

Organizational and operational measures	Costs (€)
Reorganization of responsibilities in transport sector governance	N/A
Introduction of Total Quality Management in transportation systems and services.	0.5M
Personnel training in transport infrastructure management	0.2M
Development of asset management systems.	1.2M
Introduce ITS services targeting to road freight transport.	1M
Promotion of alternative fuels and electro-mobility.	0.5M
Development of a monitoring and data collection system in transport sector	2M
Promotion of road transport fleet replacement / upgrade.	5M
Total Estimated Costs	**10.4M**

4.3 Review of TDS funding sources

Montenegro's strategic development goal is a sustainable and inclusive economic growth, which will contribute to reducing the country's development gap in relation to the EU average and increasing the quality of life of all its citizens. In order to achieve the aforementioned strategic goal, the Government of Montenegro, in the medium term, must connect two groups of economic policy measures: (1) strengthening macroeconomic stability of the country, fiscal and financial; (2) the implementation of structural reforms, i.e. the removal of key obstacles for improving competitiveness and increasing potential economic growth in the medium and long term.

For period 2019-2021, average projected growth rate of Montenegro's GDP is 2.5% and this growth of the Montenegrin economy will be stimulated by investment activity and engagement of domestic potentials in the construction and transport sector, as well as multiplicative effects on other related sectors. Strategic commitment should be to rationalize current spending in order to create conditions for increased investments needed for financing capital projects, especially in order to achieve a more balanced regional development. This points to the necessity of reviewing and defining alternative sources of funding for financing infrastructure projects (private-public partnerships, concessions, etc.) in addition to traditional ones, such as the state budget, available EU funds, government bonds and loans, bearing in mind that the amounts committed for the capital budget are defined in state budget (e.g. for 2019 the capital budget is defined in the amount of 320,925,000 million euros).

The principle of financial sustainability implies that fiscal limitations defined by the annual and medium-term budgetary framework are respected when planning and implementing strategic documents. When choosing the direction of public policy, multiple opportunities must be considered, with the choice falling to an option which guarantees greater social and economic value, with due respect for the spending limit, in accordance with the law governing the budget and fiscal responsibility.[17]

Considering the fact that, when defining the Core Traffic Network, Western Balkans countries were guided by the guidelines and methodology implemented to establish core network on EU territory (Core Trans-European Transport Network TEN-T), with a time horizon by 2030, dynamic for the implementation SPP has been established, which has a dominant influence on the coverage of funds when it comes to the implementation of this strategic document. Within the SPP, project prioritizing was carried out by focusing mainly on key corridors that will connect Montenegro with the region, as well as with the EU, as previously listed on the list which consist

[17]Fiscal sustainability principle - Decree on methods and procedures of creation, harmonisation and monitoring of implementation of strategic documents (Official Gazette of Montenegro, no. 54/18)

of 12 projects, 10 of which are on the Indicative extension of the Core TEN-T network for Western Balkans (which at this stage is a prerequisite for co-financing of projects by EU instruments). The following Table 4.9 presents a part of the SPP with the strategic relevance expressed in percentages (which served to rank SPP projects by priority), as well as the evaluation of the maturity of the projects (according to Western Balkans Investment Framework Methodology – WBIF), is one of the elements that will determine sources of SRS funding.

With the presented dynamic plans of infrastructure measures, organizational and operational measures with the financial framework for the period 2019-2027 and 2028-2035, it can be clearly concluded that significant funds are necessary for their realization, and therefore it is necessary to continuously work on improving the maturity of the projects, their phase prioritization and their implementation, taking into account the fiscal and borrowing capacities of the country, for the long-term period for which this Strategy is adopted. It is evident that, with an appropriate level fiscal discipline, along with efforts to increase budgetary allocation for capital projects and with reduced public spending, it will be necessary to combine the sources of financing (hybrid models – state budget, loans, co-financing from EU instruments, IPA, private funding, donations) in order to achieve a gradual implementation of SPP projects.

Taking into account the processes of updating the SPP list (first updated 2017, with a planned update in 2019), as well as improving the maturity of the projects, which is financed with the 100% WBIF grant for this type of technical assistance for the needs of the SPP projects, and through the preparation of successive action plans for the total period of implementation of this Strategy, an opportunity has opened for better assessment of funding sources for the projects which will be ready for commencement of works.

The justification indicators used as the basis for making economic decisions (in terms of whether the investment is realized or not), which are most commonly applied in transport studies, are the net present value, the internal rate of return and the ratio of costs and benefits (determined for both scenarios " do-nothing" and "do everything").

Table 4.9: Single Project Pipeline with overview of alternative financing

A	Project Name	Strategic relevance	Maturity according to the Methodology[18]	Total Estimated Costs (mil €)	Alternative financing sources
	Transport Sector				
1	**Route 4:** Reconstruction and modernization of the railway line "Vrbnica-Bar", state border with Serbia 1) rehabilitation of the track (upper machine), culverts, watercourse regulation, reconstruction of steel bridges 2) Remediation of slopes 3) rehabilitation of landslides, tunnels, concrete bridges and electro-works	96.00%	**1a** for 31,99% of total investment ; **1b** for 3,46% of total investment.; **2a** for 64,00% of total investment.;	246.50	STATE BUDGET, LOANS, IPA, EU/WBIF
2	**Route 4:** Motorway Bar-Boljare, section Mateševo - Andrijevica	94.00%	2b	294.84	STATE BUDGET, EU/WBIF, LOANS, PRIVATE SOURCES/PPP
3	**Route 1:**Adriatic-Ionian expressway coastal variant 1. Bypass Herceg Novi 2. Bridge over Bay of Kotor, viaducts and access roads 3. Bypass Tivat 4.Bypass Budva 5.Bypass Bar 6.Open road Tivat - Sozina 7.Bar – Border with Albania	94.00%	**1.)** - 2c **2.)** - 1b **3.)** - 2a **4.)** - 2c **5.)** - 2a **6.)** - 2c **7.)** - 2c	1,013.00	STATE BUDGET, EU/WBIF, LOANS, PRIVATE SOURCES/PPP, CONCESSIONS
4	**Route 4:** Motorway Bar-Boljare, Bypass around Podgorica, section Smokovac – Tološi - Farmaci	92.00%	**2b**	233.12	STATE BUDGET, EU/WBIF, LOANS, PRIVATNO SOURCES/PPP

[18] ***Project maturity according to WBIF Methodology***

Group 1 – Ready for the tender procedure and for realisation of the investment

Group 1a – projects with completed technical documents, ready for preparation or for the tender procedure

Group 1b – projects for which technical documents are under preparation and which are ready for the tender procedure after technical documents have been completed, or projects which are missing certain permits or consents

Group 2 – Ready for preparation of technical documents

Group 2a – Projects with completed planning documents and with resolved proprietary issues

Group 2b– Projects with completed planning documents, with resolution of proprietary issues being underway or with proprietary issues not resolved

Group 2c– Projects with deficiencies in spatial planning documents, with resolution of proprietary issues being underway or with proprietary issues not resolved

A	Project Name	Strategic relevance	Maturity according to the Methodology[18]	Total Estimated Costs (mil €)	Alternative financing sources
5	**Route 4**: Motorway Bar-Boljare, section Đurmani - Farmaci	92.00%	**2b**	440.64	STATE BUDGET, EU/WBIF, LOANS, PRIVATNO SOURCES/PPP
6	**Route 4**: Motorway Bar-Boljare, section Andrijevica – Boljare	92.00%	**2b**	731.16	STATE BUDGET, EU/WBIF, LOANS, PRIVATNO SOURCES/PPP
7	**Route 2**: Reconstruction and modernization of railway Podgorica - Tuzi – over the border with Albania to Tirana	88.00%	**2a**	35.00	STATE BUDGET, EU/WBIF, LOANS, IPA
8	Reconstruction of main road Šćepan Polje-Plužine (border crossing with Bosnia and Herzegovina)	88.00%	**1b**	60.00	STATE BUDGET, EU/WBIF, LOANS, IPA
9	Development of the Podgorica Airport	84.00%	**2c**	94.84	CONCESSION
10	Traffic Management Information System (**VTMIS)** i response to maritime pollution incidents – PHASE II	84.00%	**1b**	4.20	STATE BUDGET, IPA
11	Main project for the railway Nikšić- border with Bosnia and Herzegovina -Trebinje-Čapljina	80.00%	**2b**	179.60	STATE BUDGET, EU/WBIF, LOANS, IPA
12	Development of the Tivat Airport	76.00%	**2b**	55.00	CONCESSION
TOTAL:				3,387.90	

EU co-financing:

- SEETO Route 4: Reconstruction and modernization of railway Bar-Vrbnica- border with Serbia, from WBIF 2015, co-financing secured from a 20 million euro grant (20 million euros secured through an EIB loan);

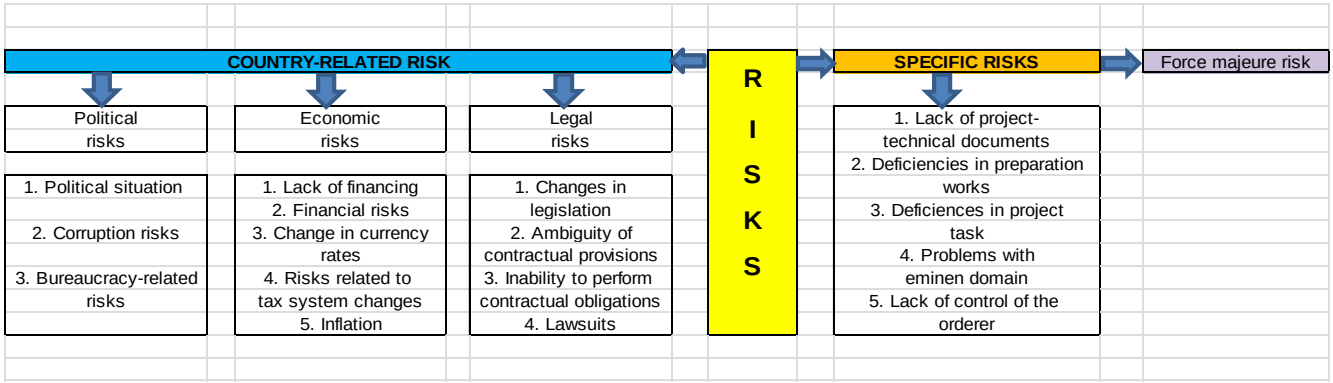
- SEETO Route 4: Reconstruction and modernization of railway Bar-Vrbnica- border with Serbia, from WBIF 2018, co-financing secured from a 16 million euro grant (14 million euros secured through a KFW loan)
- SEETO Route 1: Adriatic-Ionian expressway coastal variant – priority section of Budva bypass (around 15 km), from WBIF 2017, co-financing secured from a 40 million euro grant (14 million euros secured through a KFW loan);
- SEETO Route 4: Motorway Bar-Boljare, section Mateševo - Andrijevica, from WBIF 2019, requested co-financing in the form of a 54 million euro grant.

4.4 Risks

One should keep in mind that the analysis, preparation and realization of capital infrastructure projects takes place in the present, while the results of these projects are expected in the future. The realization of future activities and events is accompanied by uncertainty and the possibility that something unforeseen and undesirable may happen. With that in mind, risk management is has to be an integral part of the overall project management process that includes a set of methods which enable losses and achieve harmony between a reduction in the likelihood of losses and the costs required by such reduction.

When implementing capital infrastructure projects, there is greater possibility for unforeseen circumstances, given the type of construction, size of the investment, number of entities involved in the realization of projects, uncertainty in generating projected revenues, etc. In other words, capital infrastructure projects are much more demanding and complex in relation to standard construction projects, as there is more uncertainty and more participants, they last longer and their potential effects on the economy, society and the environment are bigger, far-reaching and attract more public attention compared to effects of standard projects.

Generally speaking, two risk groups can be identified, which are related to infrastructure projects: country-related risk (which is related to the political, economic and legal environment in the country) and specific risks.



When it comes to a country's risk assessments, the highest value bear the risks related to lack of financing for project implementation, financial risk, political risk and corruption. Risks related to the lack of financial means and financial risks are closely related, and are manifested through the risk of default and transfer risk (inability to repay obligations in the contract currency). As a protective instrument, risk assessment and analysis is used, as well as appropriate insurance. This analysis should assess whether the borrower country will be able to generate an inflow of funds to meet its obligations (economic aspect of the country) and whether the debtor country

will be ready to fulfil the obligations assumed by the contract (political aspect of the country's risk).

There are several international sources of funding for infrastructure and investment projects, the most important of which are: international (foreign) direct investment, international commercial bank loans, export credits, loans from international development banks, funds from bilateral aid programs, financial instruments of the capital market and investment companies, etc. A part of international financing can also be achieved through specific business arrangements.

However, when we take into account terms of particular arrangements, not every form of international financing is suitable for a given project, which means that, depending on project evaluation, one should choose a source of financing most suitable to particular needs, or a source which is realistically available in given circumstances. In any case, the financing of capital facilities of the infrastructure is based on the combination of state investment and borrowing, and in a ratio which has to be determined according to the specific needs of the project.

Political risk is related to the political situation of a country, to the risk of corruption, risk of bureaucracy and other similar factors.

Specific risks of realization of capital infrastructure projects can occur as: shortcomings in project-technical documentation, problems with eminent domain, shortcomings in prep-works, shortcomings in the project task, lack of quality control by the contracting authority at the design stage, problems arising from contractual conditions, risks related to force majeure and so on.

SUMMARY

Balanced approach and investments in the maintenance and development of transport infrastructure and services in road, rail, air or water transport is a priority for Montenegro's transport sector. In addition to actualizing the need to better connect the countries of the Western Balkans in the period of their accession to the European Union, thus stimulating economic growth and development, primarily through intra-structural integration and stimulation of investments, the goal is also to harmonize regulatory policies in these areas, and to achieve a high level of security infrastructure, technical standards, safety and security standards and environmental protection standards, as well as opening up of the market, as it is regulated in the Trans-European Transport Network (EU network).

Transport Development Strategy of Montenegro 2019-2035 has been created according to methodology of developing policies, and of creation and implementation of strategic documents. With that in mind, the Strategy is structurally organized in a way which respects methodological standards, and is presented in four chapters. TDS 2019-2035 is aligned with obligations related to the EU framework, as well as those related to the national framework, respecting at the same time methodological guidelines from the Decree on the Manner and Procedure of Drafting, Harmonizing and Monitoring Implementation of Strategic Documents (Official Gazette of Montenegro 54/2018 from 31.7.2018.) and related Methodology. TDS 2019-2035 was prepared in the period of April 2017 to June 2019. During this process, TDS 2019-2035 was exchanged with the European Commission four times, resulting in a positive opinion of this institution.

The first chapter provides an overview of the development of the transport sector with an overview of the current situation, and a review of the regional context and alignment with the EU context (TEN-T goals). After that, five strategic goals have been identified which reflect the vision of future development of the transport system: 1. Economic Welfare: Achieve economic efficiency and financial sustainability and support for economic development; 2. Accessibility, Performance of Operations and Quality of Services: Provide maximum possible accessibility, offer quality transportation services and maintain an adequate performance in operations, as a whole and with respect to its individual elements within the system; 3. Safety and Security: Improve safety, security of people and goods in the transportation sectors; 4. EU Integration: Core transportation network and policies which are fully compatible and integrated to EU requirements; 5. Environmental Sustainability: Minimize carbon footprint, noise pollution and impact to the natural, historical and socio-economic environment. In the next chapters of the Strategy, the first four strategic objectives were analysed and developed in detail, while the fifth strategic objective - Environmental Sustainability, was elaborated through a separate document: Strategic environmental impact assessment of Transport Development Strategy – Montenegro,

period 2018-2035 and is therefore not considered under this Strategy. In order to define strategic objectives and their key elements, seven priority areas were recognized representing general aspects of development of transport sectors both in terms of infrastructure and services. Priority areas have been used for easier and more concrete identification of problems/challenges in the transport sector and to further develop specific goals, in order to more effectively realize the defined strategic goals. It should be noted that TDS of Montenegro 2019-2035 is thematically divided into two main units: 1. Transport Infrastructure, elaborated in second chapter and 2. Organization and operative functioning of the transport system, elaborated in third chapter. Moreover, for each strategic objective operational objectives were defined which belong to one or to both thematic units. At the end of the first chapter, a review of regulatory framework for the functioning and development of the transport system of Montenegro was given.

The second chapter deals with measures aimed at raising the level of existing and planned transport infrastructure. The first part of this chapter analyses the existing state of infrastructure in the sectors of road, rail, air and maritime transport. The previously established Single Project Pipeline (SPP) list was presented, which was prepared on the basis of the official Methodology for defining, managing and prioritizing WBIF infrastructure projects. Subsequently, a comprehensive analysis of the problems of existing transport infrastructure was presented, main findings of the analysis were given, on the basis of which the specific objectives related to the infrastructure were defined, which correspond to related strategic objectives. In the third part of this chapter, appropriate infrastructure measures have been identified, being deemed necessary to implement in order to achieve specific goals.

The third chapter focused on measures aimed at improving organizational and operational functioning of the Montenegrin transport system. The first part of this chapter analysed the existing situation in the field of organizational and operational functioning of the transport system, after which the analysis of the problem was presented, with the presentation of basic findings. Based on this, specific goals related to the improvement of said aspects were defined, which are in the purpose of achieving the strategic goals. At the end of this chapter, a proposal is given for appropriate organizational and operational measures which need to be implemented for the realization of specific and strategic goals.

The final and fourth chapter contains a detailed overview of the impact of TDS and defines the Strategy Implementation Plan. After impact of the strategy was determined, the relationship between strategic objectives, specific objectives and relevant measures is presented in the Logical Framework matrix. Indicators have been developed in accordance with the relevant measures used to implement specific objectives, all with the aim of achieving strategic goals.

Finally, TDS Implementation Plan was determined, which includes dynamic plans for action, together with a financial framework and a review of potential risks in the implementation of infrastructure projects. Plans for infrastructure measures and organizational and operational measures are divided into two periods (2019-2027 and 2028-2035). For both periods, measures have been identified, with estimated costs for their implementation. TDS also defines its monitoring and evaluation process, which will be implemented by the Ministry of Transport and Maritime Affairs, based on successive two-year action plans. First Action Plan is related to 2019-2020 and elaborates in detail defined strategic objectives from which operational objectives of transport development are developed, with a base year being 2018. For each operational objective, measures/activities were defined which are to be implemented in 2019-2020. For defined measures/activities within the Action Plan result indicators are defined for the period of 2019-2020, institution/institutions in charge of implementation of set measures, date of beginning and planned date of finalization of measure/activity, resources planned for implementation of measure/activity, as well as financing sources.

ACTION PLAN TDS 2019-2020

Transport Development Strategy 2019-2035

Action plan 2019-2020

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Transport Development Strategy (TDS) stipulated adoption of the Action Plan for operational implementation of TDS. In principle, the Action Plan should help all bodies, organizations, institutions, individuals and all other stakeholders to realize the defined goals of the Strategy.

The Action Plan for the period 2019-2020 elaborated in detail strategic (high level) objectives set by TDS, from which specific (operational) transport development objectives have been developed, for which performance indicators target values should be determined, whereby 2018 has been determined as the base year.

For all of determined specific objectives, concrete measures are defined, which are due to be realized during 2019-2020 period. According to such measures, Action plan defines results indicators for 2019-2020, relevant institutions responsible for implementation, commencement and completion dates, as well as sources of funding.

Action plan 2019-2020 has been aligned with EU accession policy in the field of development of Trans-European transport and energy networks (TEN-T and TEN-E), based on three foundations:

- Legal basis for TEN-T, articles 170-172 of Treaty on the Functioning of the European Union,

- Regulation (EU) No 1315/2013 on development of the trans-European transport network in the field of transport and energy

- Regulation (EU) No 1316/2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010

Regulatory framework for TEN-T development has been strengthened by the Treaty Establishing the Transport Community (TCT) and rules applying to transport infrastructure of the Comprehensive and Core network of South-East Europe:

Regulation (EU) No 1315/2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU

Commission Delegated Regulation (EU) 2016/758 No 1315/2013 of the European Parliament and of the Council as regards adapting Annex III.

Strategic / High Level objective I:

Economic Welfare: Achieve economic efficiency and financial sustainability and support for economic development

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 1		***Infrastructure projects in SPP implemented***					
Performance indicator a) Constructed km motorways		2018 baseline: 0 km	2027 Target value: 80-100 km		2035 Target value: 278 km		
Performance indicator b) Reconstructed km railways		2018 baseline.: 120 km	2027 Target value: 167 km		2035 Target value: completion of overhaul expected in 2027		
Performance indicator c) Increased average railway speeds		2018 baseline.: 50-80 km/h	2027 Target value: 70-100 km/h		2035 Target value: 80-120 km/h		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Programming and monitoring Single project pipeline for target years 2025 and 2035	1. Constructed 41 km of motorways 2. Reconstructed 7 km of railway 3. Average railway speeds increased from 60 to 75 km/h		2019	2020	1. budget/loans 2019 240 mill EUR 2. 2. 3 mill EUR	1. budget/loans 2020 90.2 mill EUR 2. 3 mill EUR	

Continuing and guidance of actions for projects completion	*Degree of project maturity relative to level of completion of project documents*[19] 1. Motorway Bar Boljare 2b (partial) 2. Adriatic-Ionian expressway 2b (partial) i 1a (partial) 3. Railway Bar-Vrbnica 1a (partial) 4. VTMIS II 1a	Government of Montenegro, Ministry of Transport and Maritime Affairs, Ministry of Finance, Monteput, Railway Administration, RIM, Maritime and Port Affairs Administration	2019	2020	1. Motorway Bar-Boljare Mateševo-Andrijevica 3.1 mill EUR; Podgorica bypass 2.39 mil EUR; motorway feasibility study 1.3 mill EUR 2. Adriatic-Ionian expressway Budva bypass: conceptual design (30 km), main project and tender documents (13 km) 4 mill EUR; feasibility study AIE through MNE and ALB 3.5 mill EUR 3. Railway Bar-Vrbnica 10 mill EUR 4. VTMIS II 3.9 mill EUR for period 2019-2024	State Budget, concessions, PPP, donations, loans, EU funds
Aligned and coordinated project activities with neighbouring countries	Number of signed agreements with neighbouring countries		2019	2020	To be determined according to propositions	

[19] ***Group 1 – Ready for the tender procedure and for realisation of the investment***
Group 1a – projects with completed technical documents, ready for preparation or for the tender procedure
Group 1b – projects for which technical documents are under preparation and which are ready for the tender procedure after technical documents have been completed, or projects which are missing certain permits or consents

Group 2 – Ready for preparation of technical documents
Group 2a – Projects with completed planning documents and with resolved proprietary issues
Group 2b– Projects with completed planning documents, with resolution of proprietary issues being underway or with proprietary issues not resolved
Group 2c– Projects with deficiencies in spatial planning documents, with resolution of proprietary issues being underway or with proprietary issues not resolved

Strategic / High Level objective I	**Economic Welfare**		
Operative / specific objective 2	***Secure good governance and management structure across the whole life cycle of motorways and railways***		
Performance indicator a) Level of investment in road and railway infrastructure maintenance	2018 baseline: a) road 8-10 mill EUR yearly rail 6-7 mill EUR yearly	2027 target value: a) road 15 mill EUR yearly rail 10 mill EUR yearly	2035 target value: Estimate will be given in future action plans, after 2020
Performance indicator b) Number of permanent employees engaged in management units (PMUs) and in implementation units (PIUs)	2018 baseline: b) state roads PIU - 4 DICEUF - 5 Motorway project unit of Monteput - 40 ZICG – 5	2027 baseline: b) state roads PIU - 6 DICEUF - 7 Motorway project unit of Monteput - 40 ZICG – 10	

Measure	Results indicator for period 2019-2020	Relevant institutions	Commencement date	Anticipated date of completion of Action plan	Funds planned for implementation of activities in 2019	Funds planned for implementation of activities in 2020	Source of funding
Introduction of Quality Management System in transportation systems and services	1. Level of investments in road infrastructure maintenance 8-10 mill EUR yearly 2. Level of investments in rail infrastructure maintenance 6-7 mill EUR yearly	Ministry of Transport and Maritime Affairs, Transport Administration, Monteput, RIM, Railway Administration	2019	2020	1. 8-10 mill EUR yearly 2. 6-7 mill EUR yearly	1. 8-10 mill EUR yearly 2. 6-7 mill EUR yearly	State Budget
Employees training in transport infrastructure management	Number of permanent employees engaged in management units (PMUs) and in implementation units (PIUs), trained for work on project implementation 58 (+3)		2019	2020	0,003 mill EUR	0,003 mill EUR	State Budget

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 3		***Align rail with interoperability requirements***					
Performance indicator a) Number of freight trains		2018 baseline: 1300	2027 Target value: +10%	2035 Target value: +20%			
Performance indicator b) Scope of rail freight transport		2018 baseline: 950 000 net tons	2027 Target value: +10%				
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Introduce ERTMS in rail network	1. Maturity degree of projects for implementation of suitable signalling and safety technologies 1a (partial) 2. Level of established legislative framework in this field III interoperability and safety package transposed	Ministry of Transport and Maritime Affairs, Railway Administration, RIM, Montecargo	2019	2020	1. To be determined according to project dynamics	1. To be determined according to project dynamics	State Budget, loans, EU funds
Expand overtaking sections length of selected rail stations up to 740 m	Not applicable		2019	2020		Not applicable	Not applicable

Strategic / High Level objective I	**Economic Welfare**		
Operative / specific objective 4	***Reduce border clearance times***		
Performance indicator a) Number of cabins for road border crossings	2018 baseline: no. of border crossings 38	2027 target value: projection will be given during reporting periods	2027 target value: projection will be given during reporting periods
Performance indicator b) Average delay (retention) time for road border crossings	2018 baseline.: 10-30 min	2027 target value: projection will be given during reporting periods	2027 target value: projection will be given during reporting periods

Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Add cabins for road border crossings	1. Increased number of cabins for road border crossings not applicable	Ministry of Transport and Maritime Affairs, Ministry of the Internal Affairs, Police Administration	2019	2020	Not applicable		State budget, donations, loans, EU funds
Establish border crossings procedures in cooperation with neighbouring countries	1. Reduced delay times on road border crossings increase not expected		2019	2020	Funding will be defined according to needs of signed agreements		

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 5		***Secure alternative funding sources for transport investments***					
Performance indicator a) Execution of concession agreements		2018 Baseline: 1	2027 Target value: 2		2035 Target value: 4		
Performance indicator b) Execution of PPP agreements		2018 Baseline: 0	2027 Target value: 2		2035 Target value: 4		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Introduction of new funding sources and market players through some form of concession agreement or PPP	1. 1 concession agreement executed 2. 1 PPP agreement executed	Ministry of Transport and Maritime Affairs, Ministry of Finance	2019	2020	To be determined according to agreements	To be determined according to agreements	State Budget, concessions, PPP, donations, loans, EU funds

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 6		***Improve programming and allocation of funds and achieve efficiency in operations in road transport***					
Performance indicator a) Applied level of methodology for programming and allocation of funds (levels: low, medium, high, advanced)		2018 baseline.: medium	2027 target value: high		2035 target value: advanced		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Development of asset management systems	Number of new asset management systems: Improved Road Database	Ministry of Transport and Maritime Affairs, Transport Administration	2019	2020	1.2 mill EUR		State Budget, IPA 2014

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 7		***Achieve efficiency in operations, maintenance expenditures and budget allocation in order to promote environmentally friendly transport projects***					
Performance indicator a) Participation of alternative fuel vehicles		2018 baseline: participation of 0%	2027 target value: +10%		2035 target value: +20%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Promotion of alternative fuel sources and electro-mobility	Created study on introduction of alternative fuel sources in passenger public transport	Ministry of Transport and Maritime Affairs, Ministry of Sustainable Development and Tourism, Ministry of the Internal Affairs, Police Administration, Ministry of the Economy, transport enterprises	2019	2020	0.35 mill EUR		State Budget, donations, loans, IFI, IPA
Promotion of replacement / renewal of vehicles fleet in road transport	Percentage of increase in renewed vehicles fleet in road transport (public transport) 5%		2019	2020	Additional funds for this activity are not needed		Not applicable
Establish inland waterways	Drafting of Law on Inland Waterways (partial)		2019	2020	0.1 mill EUR (I phase)		State Budget, IPA 2017

<table>
<tr><td colspan="2">Strategic / High Level objective I</td><td colspan="7">Economic Welfare</td></tr>
<tr><td colspan="2">Operative / specific objective 8</td><td colspan="7">Derogation of barriers in rail transport</td></tr>
<tr><td colspan="2">Performance indicator
a) Transposition level of EU acquis in national framework (Railway Packages)</td><td>2018 baseline:
II package transposed</td><td colspan="2">2027 target value:
III and IV package transposed</td><td colspan="3">2035 target value:
to be determined in the future period</td></tr>
<tr><td colspan="2">Performance indicator
b) Number of new operators on railway service market</td><td>2018 baseline:
2</td><td colspan="2">2027 target value:
4</td><td colspan="3">2035 target value:
6</td></tr>
<tr><td>Measure</td><td>Results indicator for period 2019-2020</td><td>Relevant institutions</td><td>Commencement date</td><td>Anticipated date of completion of Action plan</td><td>Funds planned for implementation of activities in 2019</td><td>Funds planned for implementation of activities in 2020</td><td>Source of funding</td></tr>
<tr><td>Adoption and implementation of remaining EU legislation</td><td>Level of alignment of national legislation with EU legislation

III package transposed</td><td rowspan="2">Ministry of Transport and Maritime Affairs, Railway Administration, railway enterprises</td><td>2019</td><td>2020</td><td colspan="2">0,08 mil EUR</td><td>State Budget</td></tr>
<tr><td>Facilitation for introduction of new stakeholders in providing rail services</td><td>1. Number of new railway operators +1

2. Increased share of rail transport in total transport +5%</td><td>2019</td><td>2020</td><td colspan="2">Additional funds for financing this activity are not needed</td><td>Not applicable</td></tr>
</table>

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 9		***Improved connectivity in Port of Bar***					
Performance indicator a) Increased capacity of Port of Bar		2018 baseline: 2,7 mill tons	2027 target value: +10%		2035 target value: +20%		
Performance indicator b) Operational income of Port of Bar		2018 baseline: 10 mill EUR	2027 target value: +10%		2035 target value: +20%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Improve access railway connections to Port of Bar	Number of new operators for connection to Port of Bar +1	Ministry of Transport and Maritime Affairs, RIM, Port of Bar, Port of Adria	2019	2020	Additional funds for financing this activity are not needed		Not applicable
Expand piers and passenger terminal	Increased degree of processed cargo +3%		2019	2020	0.065 mill EUR		State Budget
Better valorisation of port services	Increase in operational income of Port of Bar +3%		2019	2020	Additional funds for financing this activity are not needed		Not applicable
Valorisation of the Port of Bar as a new cruising destination (Port of Adria contribution)	Number of new sailings +4		2019	2020	Additional funds for financing this activity are not needed		Not applicable

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 10		***Enhance support for road freight transport for the purpose of intermodality***					
Performance indicator a) Participation of road freight transport for supporting intermodality terminals (where it is impossible to achieve intermodality by other modes of transport)		2018 baseline: 50%	2027 target value: -20%		2035 target value: -10%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Introduce ITS services targeting to road freight transport	A finished ITS development and implementation study for Montenegro	Ministry of Transport and Maritime Affairs, Ministry of the Interior, Police Administration, Border services	2019	2020	0.2 mill EUR for period 2021-2027		State Budget, IPA not applicable for 2019-2020

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 11		***Create coordination conditions between transport stakeholders***					
Performance indicator a) Establishment of the Transport Community and Contract application		2018 baseline.: not applicable	2027 target value: first transition period for MNE finished under the Contract on Establishing the Transport Community		2035 target value: second transition period for MNE finished under the Contract on Establishing the Transport Community		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Broadening of e-governance	Improved road database	Ministry of Transport and Maritime Affairs, Transport Administration	2019	2020	1.2 mill EUR		State Budget, IPA 2014
Development of a monitoring and data collection system in transport sector	Establishment of the permanent Secretariat of the Transport Community		2019	2020	0.038 mill EUR	~0.07 mill EUR	State Budget

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 12		***Update governance structure and bodies in transport sector***					
Performance indicator a) Transposition level of EU Acquis in national framework (Fulfilling closing benchmarks for Ch.14 & 21)		2018 baseline: 7	2027 target value: 0		2035 target value: 0		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Adoption and implementation of remaining EU legislation and completion of bylaws	Fulfilment of conditions for closing negotiation chapters 14 and 21 - 4 (7 in total)	Ministry of Transport and Maritime Affairs, Ministry of Foreign Affairs, Office for European Integration	2019	2020	0.03 mill EUR	0.03 mill EUR	State Budget and funds available to institutions included in the monitoring process of TDS 2018-2035
Establishment of a body for regulatory activities on the railway	Establishment of Railway Administration +2 new employees		2019	2020	0.03 mill EUR		State Budget

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 13		***Re-organize governance responsibilities in transport sector***					
Performance indicator a) Number of independent bodies in transport sector		2018 baseline: 2	2027 target value: 5		2035 target value: 6		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Redistribution of responsibilities in transport sector	Number of newly established independent bodies in transport sector +2	Ministry of Transport and Maritime Affairs	2019	2020	Railway Administration budget for 2019 0.03 mill EUR for the second half of the year Maritime Safety and Port Management Administration budget for 2019 1.7 mill EUR	Railway Administration budget for 2020 (to be determined by the 2020 State Budget) Maritime Safety and Port Management Administration budget for 2020 (to be determined by the 2020 State Budget)	State Budget

Strategic / High Level objective I		**Economic Welfare**					
Operative / specific objective 14		***Better valorisation of transport entities in field of civil aviation***					
Performance indicator a) Scope of civil aviation (passenger and freight)		2018 baseline: 1.9 mill EUR (passenger transport)	2027 target value: +40%		2035 target value: +70%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Reorganization or privatization of Montenegro Airlines	Increase in scope of civil aviation +2.7% (total)	Ministry of Transport and Maritime Affairs, Montenegro Airlines, Airports of Montenegro	2019	2020	To be determined by Government's Decision on Montenegro Airlines operations		State Budget, Montenegro Airlines
Preparation of Concession Plan for Airports of Montenegro (Podgorica and Tivat)	Signed Concession Agreement for airports Podgorica and Tivat		2019	2020	To be determined after signing of the Concession Agreement		Not applicable

Strategic/High Level Objective II: Accessibility, Performance of Operation and Quality of Services: Provide maximum possible accessibility, offer quality transportation services and maintain an adequate performance in operations, as a whole and with respect to its individual elements within the system

Strategic / High Level objective II		**Accessibility, Performance of Operation and Quality of Services**					
Operative / specific objective 1		***Maintain adequate level of service (LoS) on the state road network***					
Performance indicator a) Reconstructed km of state roads		2018 baseline: 58,6 km + 0 km (motorways)	2027 target value: 200 km (main roads) + 80-100 km (motorways)		2035 target value: 400 km (main roads) + 278 km (motorways)		
Performance indicator b) Average travel times decreased on roads (section Podgorica – border with Serbia)		2018 baseline.: 240 min	2027 target value: 180 min		2035 target value: 150 min		
Performance indicator c) Number of travels by public transportation		2018 baseline: 1.8 mill (data for 2017, data for 2018 available in Feb 2018)	2027 target value: +5%		2035 target value: +10%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Reconstruction of state road network (section Podgorica – border with Serbia)	Reconstructed km of state roads 128 (main roads) 41 (motorways)		2019	2020	105.5 mill EUR (reconstructed 31 km, constructed 2.2 km of roads)	90.2 mill EUR (reconstructed 164,3 km, constructed 7 km of roads)	State Budget, donations, loans, IFI, IPA

Upgrade roads infrastructure to rest and recreational areas (ski and coastal resorts	Maintenance and reconstruction of roads / roads and access roads reconstructed ~30 km	Ministry of Transport and Maritime Affairs, Public passenger transport enterprises	2019	2020	1. state budget / loan 2 mill EUR	State Budget, donations, loans, IFI, IPA
Plan and provide efficient services in interurban public transport more adjusted to passenger needs	Number of travels by public transportation +1-2%		2019	2020	Not applicable	Not applicable

Strategic / High Level objective II		**Accessibility, Performance of Operation and Quality of Services**					
Operative / specific objective 2		***Complete rehabilitation of railway network and upgrade railway infrastructure according to TENT standards and improve railway transport***					
Performance indicator a) Level of investment in rail infrastructure		2018 baseline: 10 mill EUR	2027 target value: +10%		2035 target value: +20%		
Performance indicator b) Level of investment in rail transport		2018 baseline.: 10 mill EUR	2027 target value: +10%		2035 target value: +20%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Improvement of railway through network overhaul and enhanced railway transportation	1. Level of investment in railway infrastructure 10.5 mill EUR yearly 2. Level of investment in railway transportation 10.5 mill EUR yearly	Ministry of Transport and Maritime Affairs, RIM, Railway Transport Service of Montenegro, Montecargo	2019	2020	1. 10.5 mill EUR 2. 10.5 mill EUR	1. 10.5 mill EUR 2. 10.5 mill EUR	State Budget, donations, loans, IFI, IPA

Strategic / High Level objective II		**Accessibility, Performance of Operation and Quality of Services**					
Operative / specific objective 3		***Revitalization and / or reconstruction of maritime transport infrastructure***					
Performance indicator a) Volume of trans-shipment of general cargo and containers in Port of Adria		2018 baseline: 0.58 tons	2027 target value: +30-40%		2035 target value: +50-70%		
Performance indicator b) Volume of trans-shipment of bulk cargo and containers in Port of Bar		2018 baseline: 1 mill tons	2027 target value: to be determined more precisely in future action plans		2035 target value: to be determined more precisely in future action plans		
Performance indicator c) Volume of trans-shipment of liquid cargo in Port of Adria		2018 baseline: 0,8 mill tons	2027 target value: +5% yearly based on the Business plan		2035 target value: Business plan until 2030 completed, value for 2035 to be determined in the following business plan		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Increase of trans-shipment of general cargo and containers by securing the status of trans-shipment hub	Volume of trans-shipment of general cargo and containers in Port of Adria: +13% in 2019 +25% in 2020	Ministry of Transport and Maritime Affairs, Port of Bar	2019	2020	Port of Adria is privately-owned company		not applicable
Expansion of the capacity for trans-shipment and storage of dry bulk cargo on the northern slope of Volujica hill	Volume of trans-shipment of dry bulk cargo in Port of Bar: +30% after completion of project		2019	2020	Total project cost of 5.1 mill EUR for period 2018-2021		loan

Increase of trans-shipment of liquid and dry bulk cargo	Volume of trans-shipment of liquid cargo in Port of Bar: +5% u 2019 +5% u 2020		2019	2020	4.5 mill EUR in period until 2030	loan

Strategic / High Level objective II		**Accessibility, Performance of Operation and Quality of Services**					
Operative / specific objective 4		***Determine possibilities and needs for revitalization and / or reconstruction of civil aviation transport infrastructure***					
Performance indicator a) Volume of investment in other airports and accompanying infrastructure (besides Podgorica and Tivat)		2018 Baseline: 0	2027 target: no information currently available		2027 target: no information currently available		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Valorise other airports in Montenegro (besides Podgorica and Tivat)	Completed Study or an / or Business Plan for Berane Airport	Ministry of Transport and Maritime Affairs, Agency for Civil Aviation	2019	2020	Not applicable		Not applicable for 2019-2020

Strategic / High Level objective II	**Accessibility, Performance of Operation and Quality of Services**		
Operative / specific objective 5	***Strengthen creation of an integrated system of transport through intermodality***		
Performance indicator a) Volume of intermodal transport	2018 baseline: 1%	2027 target value: +10%	2035 target value: +20%
Performance indicator b) Number of concluded intermodal agreements	2018 baseline: 0	2027 target value: +2	2035 target value: +4

Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Develop Intermodality Study	Intermodality Study completed not applicable	Ministry of Transport and Maritime Affairs	2019	2020	not applicable	not applicable	not applicable
Develop intermodal stations in Podgorica and Bijelo Polje	Development level of intermodal stations not applicable		2019	2020	not applicable	not applicable	not applicable
Promote and support intermodal agreements	Number of concluded intermodal agreements not applicable		2019	2020	not applicable	not applicable	not applicable

Strategic / High Level objective II	**Accessibility, Performance of Operation and Quality of Services**		
Operative / specific objective 6	***Deployment of ITS technologies in the road, rail and maritime sectors***		
Performance indicator a) Coverage level of ITS systems in road network	2018 baseline: 2,5%	2027 target value: 40%	2035 target value: 80%
Performance indicator b) Coverage level of ITS systems in rail network	2018 baseline: 0%	2027 target value: 30%	2035 target value: 80%
Performance indicator c) Coverage level of ITS systems in maritime network (VTMIS)	2018 baseline: 50%	2027 target value: 70%	2035 target value: 80%

Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Installation of ITS equipment in the Core road network (obligatory) and particular sections of the state roads network	ITS coverage level of Montenegrin road network 2,5%		2019	2020	Not applicable	Included in motorway costs, ITS equipment worth around 25 mill EUR	State Budget, donations, loans, EU funds

Installation of weigh-in-motion stations	Completed Plan for installation of weigh-in-motion system	Ministry of Transport and Maritime Affairs, Railway Administration, Maritime Safety and Port Management, Transport Administration, Monteput	2019	2020	Not applicable	Not applicable
Completion of Vessel Traffic Management Information System (VTMIS)	Commencement of implementation activities for VTMIS II Preparation of technical specifications and tender documents		2019	2020	3.9 mill EUR for period 2019-2024	State Budget, IPA 2017
Preparation of studies for ITS development and implementation	Completed ITS development and implementation study for Montenegro		2019	2020	0.2 mill EUR for period 2021-2027	State Budget, IPA not applicable for 2019-2020
Acquiring financing instruments for ITS deployment	Two new financial instruments for ITS deployment secured Connecta, IPA 2019		2019	2020	0.2 mill EUR for period 2021-2027 (IPA 2019) 0.525 mill EUR (Connecta budget for Western Balkans region)	State Budget, IPA 2019, Connecta

Strategic / High Level objective II		**Accessibility, Performance of Operation and Quality of Services**					
Operative / specific objective 7		***Reduce border crossing clearance time***					
Performance indicator a) Average delay time for road transport at border crossings		2018 baseline: 10-30 min	2027 target value: projection will be given during reporting periods		2035 target value: projection will be given during reporting periods		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Establish border crossing procedures in cooperation with neighbouring countries	Number of signed agreements which affect border crossing procedures +2	Ministry of the Internal Affairs, Police Administration, Ministry of Transport and Maritime Affairs, Transport Administration	2019	2020	Funds to be defined according to needs of signed agreements		State Budget, loans, EU funds

Strategic/High Level Objective III: Safety and Security: Improve safety, security of people and goods in the transportation sectors

Strategic / High Level objective III		**Safety and Security**					
Operative / specific objective 1		***Maintain adequate level of service (LoS) on the state road network***					
Performance indicator a) Total number of traffic accidents		2018 baseline: 5 394	2027 target value: projection will be given during reporting periods		2035 target value: projection will be given during reporting periods		
Performance indicator b) Number of traffic accidents resulting in fatalities (total for Montenegro)		2018 baseline: 48	2027 target value: projection will be given during reporting periods		2035 target value: projection will be given during reporting periods		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Plan road safety inspections and other activities in order to check road network safety	Adopted Plan on inspections and activities on traffic safety monitoring	Ministry of Transport and Maritime Affairs, Ministry of the Internal Affairs, Police Administration	2019	2020	Funding will be defined after adoption of Law on Roads		State Budget, donations
Improve road safety surveillance and systematic application of Law on Roads	Number of conducted safety-related inspections 7525 for 2018 +2-3 for 2019		2019	2020	0.03 mill EUR for period 2018-2023 IPA 2019 0.01 mill EUR for equipment		State Budget, EU funds

Strategic / High Level objective III	**Safety and Security**		
Operative / specific objective 2	***Improve road transport safety at the state road network***		
Performance indicator a) Total number of traffic accidents	2018 baseline: 5 394	2027 target value: projection will be given during reporting periods	2035 target value: projection will be given during reporting periods
Performance indicator b) Number of traffic accidents resulting in fatalities (MNE total)	2018 baseline: 48	2027 target value: projection will be given during reporting periods	2035 target value: projection will be given during reporting periods

Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Complete planned reconstruction projects (2017-2019)	1. Decreased number of traffic accidents -20% (SEETO 2014 baseline year) 2. Decreased number of traffic accidents resulting in fatalities -20%	Ministry of Transport and Maritime Affairs, Ministry of the Internal Affairs, Police Administration, Transport Administration	2019	2020	105.5 mill EUR (reconstructed 31 km, constructed 2.2 km of roads)	90.2 mill EUR (reconstructed 164.3 km, constructed 7 km of roads)	State Budget, donations, loans, EU funds
Improve signal and road equipment of main roads	Continuous monitoring of roadside signal equipment repairs on main road based on a multi-year Regular Maintenance Contract (realized, partly realized, not realized)		2019	2020	Included in regular maintenance costs (regular maintenance costs amount to 8-10 mill EUR yearly)	Included in regular maintenance costs (regular maintenance costs amount to 8-10 mill EUR yearly)	State Budget

Strategic / High Level objective III		**Safety and Security**					
Operative / specific objective 3		***Deployment of ITS technologies in the road, rail and maritime sectors***					
Performance indicator a) Coverage level of ITS systems in road network		2018 baseline: 2,5%	2027 target value: 40%		2035 target value: 80%		
Performance indicator b) Coverage level of ITS systems in rail network		2018 baseline: 0%	2027 target value: 30%		2035 target value: 80%		
Performance indicator c) Coverage level of ITS systems in maritime network (VTMIS)		2018 baseline: 50%	2027 target value: 70%		2035 target value: 80%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Installation of ITS equipment in the Core road network (obligatory) and particular sections of the state roads network	ITS coverage level of Montenegrin road network 2,5%		2019	2020	Not applicable	State Budget, donations, loans, EU funds	State Budget, donations, loans, EU funds

Installation of weigh-in-motion stations	Completed Plan for installation of weigh-in-motion system	Ministry of Transport and Maritime Affairs	2019	2020	Not applicable	Not applicable
Completion of Vessel Traffic Management Information System (VTMIS)	Commencement of implementation activities for VTMIS II Preparation of technical specifications and tender documents		2019	2020	3.9 mill EUR for period 2019-2024	State Budget, IPA 2017
Preparation of studies for ITS development and implementation	Completed ITS development and implementation study for Montenegro		2019	2020	0.2 mill EUR for period 2021-2027	State Budget, IPA not applicable for 2019-2020

Strategic / High Level objective III		**Safety and Security**					
Operative / specific objective 4		***Infrastructure projects in SPP implemented***					
Performance indicator a) Constructed km motorways		2018 baseline: 0 km	2027 Target value: 80-100 km		2035 Target value: 278 km		
Performance indicator b) Reconstructed km railways		2018 baseline.: 0 km	2027 Target value: 100 km		2035 Target value: 124 km		
Performance indicator c) Increased average railway speeds		2018 baseline.: 50-80 km/h	2027 Target value: 70-100 km/h		2035 Target value: 80-120 km/h		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Programming and monitoring Single project pipeline for target years 2025 and 2035	EU and national safety and security standards included in project documents	Government of Montenegro, Ministry of Transport and Maritime Affairs, Ministry of Finance, Monteput	2019	2020	1. budget/loans 2019 200 mill EUR 2. 3 mill EUR	1. budget/loans 2020 90.2 mill EUR 2. 3 mill EUR	State Budget, concessions, PPP, donations, loans, EU funds
Continuing and guidance of actions for projects completion	Integrated RSA through project documents		2019	2020	1. Motorway Bar-Boljare Mateševo-Andrijevica 3.1 mill EUR; Podgorica bypass 2.39 mil EUR; 2. Adriatic-Ionian expressway Budva bypass: conceptual design (30 km), main project and tender documents (13 km) 4 mill EUR		
Aligned and coordinated project activities with neighbouring countries	Number of signed agreements with neighbouring countries		2019	2020	To be determined according to agreement propositions		

Strategic / High Level objective III	**Safety and Security**		
Operative / specific objective 5	***Secure good governance and management structure across the whole life cycle of motorways and railways***		
Performance indicator a) Level of investment in road and railway infrastructure maintenance	2018 baseline: a) road 8-10 mill EUR yearly rail 6-7 mill EUR yearly	2027 target value: a) road 15 mill EUR yearly rail 10 mil EUR yearly	2035 target value: Estimate will be given through future Action plans after 2020
Performance indicator b) Number of permanent employees engaged in management units (PMUs) and in implementation units (PIUs)	2018 baseline: b) state roads PIU - 4 DICEUF - 5 Motorway project unit of Monteput - 40 ZICG – 5	2027 target value: b) State Roads PIU - 6 DICEUF - 7 Motorway project unit of Monteput - 40 ZICG – 10	

Measure	Results indicator for period 2019-2020	Relevant institutions	Commencement date	Anticipated date of completion of Action plan	Funds planned for implementation of activities in 2019	Funds planned for implementation of activities in 2020	Source of funding
Introduction of Quality Management System in transportation systems and services	Implementation of TCT Agreement as it relates to Regulation (EU) 1316/2013 concerning motorways and rail (SEETO package of soft (reform) measures (realized, partly realized, not realized)	Ministry of Transport and Maritime Affairs, Transport Administration, Monteput, RIM, Railway Administration	2019	2020	0.038 mill EUR	~ 0.07 mill EUR	State Budget
Employees training in transport infrastructure management	1. SEETO guidelines on road safety inspection staff training (realized, partly realized, not realized) 2. Number of certified road safety inspectors not applicable		2019	2020	1. Additional funds for this activity are not needed, as it is financed through SEETO Secretariat (EC technical assistance) 2. Not applicable, to be determined after adoption of Law on Roads		State Budget

Strategic / High Level Objective IV: EU Integration: Core transportation network and policies which are fully compatible and integrated to EU requirements

Strategic / High Level objective IV		**EU Integration**					
Operative/Specific Objective 1		***Deployment of ITS technologies in the road, rail and maritime sectors***					
Performance indicator a) Coverage level of ITS systems in road network		2018 baseline: 2,5%	2027 target value: 40%		2035 target value: 80%		
Performance indicator b) Coverage level of ITS systems in rail network		2018 baseline: 0%	2027 target value: 30%		2035 target value: 80%		
Performance indicator c) Coverage level of ITS systems in maritime network (VTMIS)		2018 baseline: 50%	2027 target value: 70%		2035 target value: 80%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
ITS equipment coverage in road, rail and maritime transport sectors	Adopted Law on Roads and transposed ITS Directive (2010/40/EU) Adopted Law on safety and interoperability Package III transposed (related to ERTMS) Adopted amendment to the Law on Maritime Navigation Safety	Ministry of Transport and Maritime Affairs, Transport Administration, Monteput, Railway Administration, Maritime Safety and Port Management Administration	2019	2020	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	State budget, EU funds

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 2		***Strengthen creation of an integrated system of transport through intermodality***					
Performance indicator a) Volume of intermodal transport		2018 baseline: 1%	2027 target value: +10%		2035 target value: +20%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Develop Intermodality Study	Intermodality Study completed not applicable	Ministry of Transport and Maritime Affairs	2019	2020	not applicable	not applicable	not applicable

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 3		***Align rail with interoperability requirements***					
Performance indicator a) Level of alignment with EU regulation on rail interoperability (railway package)		2018 baseline: II package transposed	2027 target value: III and IV package transposed		2035 target value: to be determined in future period		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Introduce ERTMS in rail network	Directive 797/2016 on interoperability and ERTMS transposed	Ministry of Transport and Maritime Affairs, RIM, Montecargo	2019	2020	Additional funds for this activity are not needed (for legislative framework)	Additional funds for this activity are not needed (for legislative framework)	Not applicable

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 4		***Derogation of barriers in rail transport***					
Performance indicator a) Transposition level of EU acquis in national framework (Railway Packages)		2018 baseline: II package transposed	2027 target value: III and IV package transposed		2035 target value: not applicable		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Adoption and implementation of remaining EU legislation	Adopted Law on Railways Transposed Directive 34/2012, which aims to promote a single European railway market Adopted Law on safety and interoperability in rail transport	Ministry of Transport and Maritime Affairs, Railway Administration, railway enterprises	2019	2020	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	State Budget

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 5		***Update governance structure and bodies in transport sector***					
Performance indicator a) Transposition level of EU Acquis in national framework (Fulfilling closing benchmarks for chapters 14 and 21)		2018 baseline: 7	2027 target value: 0		2035 target value: 0		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Adoption and implementation of remaining EU legislation and completion of bylaws	1. Transport Development Strategy adopted 2. Implementation of TCT	Ministry of Transport and Maritime Affairs, Ministry of Foreign Affairs, Office for European Integration	2019	2020	1. 0.006 mill EUR for TDS (monitoring process) 2. 0.0108 mill EUR for TCT		State Budget

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 6		***Re-organize governance responsibilities in transport sector***					
Performance indicator a) Number of independent bodies in transport sector		2018 baseline: 2	2027 target value: 5		3035 target value: 26		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Aggregation of responsibilities in a single ministry	1. Transport Development Strategy adopted 2. Established permanent Secretariat according to TCT	Ministry of Transport and Maritime Affairs	2019	2020	1. 0.006 mill EUR for TDS (monitoring process) 2. 0.0108 mill EUR for TCT		State Budget

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 7		***Improve programming and allocation of funds and achieve efficiency in operations in road transport***					
Performance indicator a) Applied level of methodology for programming and allocation of funds (levels: low, medium, high, advanced)		2018 baseline.: medium	2027 target value: high		2035 target value: advanced		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Development of asset management systems	1. Established long-term (4-5 years) road maintenance programme (expense estimate 1-1.5% for asset management system) 2. Established 5-year rail maintenance programme with rail infrastructure management contracts (expense estimate 1-1.5% for asset management system)	Ministry of Transport and Maritime Affairs, Transport Administration, RIM	2019	2020	1. 0.48 mill EUR – 0.63 mill EUR (for period 2019-2022) 2. 0.4 mill EUR (for period 2013-2022)		State Budget

Strategic / High Level objective IV		**EU Integration**					
Operative / specific objective 8		***Enhance support for road freight transport for the purpose of intermodality***					
Performance indicator a) Participation of road freight transport for supporting intermodality terminals (where it is impossible to achieve intermodality by other modes of transport)		2018 baseline: 50%	2027 target value: +10%		2035 target value: +20%		
Measure	**Results indicator for period 2019-2020**	**Relevant institutions**	**Commencement date**	**Anticipated date of completion of Action plan**	**Funds planned for implementation of activities in 2019**	**Funds planned for implementation of activities in 2020**	**Source of funding**
Introduce ITS services targeting to road freight transport	Adopted Law on Roads; ITS Directive (2010/40/EU) transposed Adopted Amendments to the Law on working hours and breaks of mobile workers and recording devices in road transport; transposed EU regulation on smart tachygraphy	Ministry of Transport and Maritime Affairs, Ministry of the Internal Affairs, Police Administration, Border services	2019	2020	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	Will have an effect on business conditions, on citizens and on state budget, which means that preparation process will include a detailed RIA	State Budget, loans, EU funds