EU Strategy for the Adriatic and Ionian Region
EUSAIR

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European Regional Development Fund - Instrument for Pre-Accession II Fund
EUSAIR FACILITY POINT

EUSAIR Transport MasterPlan

Feasibility Study

Adriatic-Ionian Road Corridor

Contents

Introduction

In this section an overview of the project interventions and missing links concerning EUSAIR Countries involved in Adriatic-Ionian Road Corridor is represented. The purpose of the document is to analyze the potential impact that this strategic transport infrastructure projects could generate and how it is integrated in the strategic framework of different action plans. After having systematically presented the context and the characteristics of Adriatic-Ionian Corridor, the priority projects which insist on it are analyzed. The evaluation of the impact of the selected planned interventions on the area and the related cost-benefit analysis are presented here.

1 Reference context

The Adriatic-Ionian highway is a strategic investment for the Western Balkans and entire Southeast Europe. It connects Central Europe and Northern Italy with the Ionian peninsula via Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Greece.

The Adriatic-Ionian Road Corridor is part of the indicative extension of the TEN-T Core Network into the Western Balkans, encompassing the Croatian Border-Bar-the Albanian border through Montenegro (Route 1) and the Albanian North-South Road Corridor linking the Montenegro border with the Greek border through Albania (Route 2). Existing roads on the coast have been designed and built in the 1960s. In the past fifty years, traffic volume has increased significantly mainly due to the five towns becoming tourist attractions. As a result, the route suffered from heavy congestion.

According to Transport Community this Corridor is indicated as "Blue Highway".[1] This is a strategic project that stretches along the coast of the Adriatic and Ionian seas from Croatia to Greece, passing through Albania and Montenegro. The project has been identified as one of strategic importance in Albanian and Montenegrin documents, such as the Albanian Transport Sectoral Strategy and National Transport Plan, and in Montenegro's Spatial Plan and Transport Strategy. Furthermore, it is included in the Economic and Investment Plan for the Western Balkans under Flagship 3 – Connecting the Coastal Regions. The expressway along the Montenegrin coast also passes through its hinterland. It starts near the border with Croatia, around Herceg Novi, and extends further to the following sections: Herceg Novi - crossing over the Bay of Kotor - Tivat - Budva - Bar - Ulcinj - Sukobin (Albanian border), total length is approximately 110 km; estimated cost: € 1 billion.

In Albania it will start in the Muriqan / Sukobin area (border crossing point) and from Lezha will continue south towards Vora-Durres-Lushnje-Fier-Levan-Gjirokastra, ending at the Kakavija border crossing with Greece. The total length is approximately 340 km, of which 296 km are planned to be upgraded to 4 lanes, as well as new alignments.

[1] Source: "Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive and Core Network in Western Balkans", Permanent Secretariat of Transport Community, April 2022. https://www.transport-community.org/wp-content/uploads/2022/09/Five-Year-Rolling-Work-Plan-for-Development-of-Indicative-TEN-T-Extension-of-the-Comprehensive-and-Core-Network-in-Western-Balkans.pdf

The feasibility study for the Blue Highway has been completed with the support of WBIF[2] through a joint application by Albania and Montenegro.[3]

Figure 1 Map of the Adriatic-Ionian corridors. [Source: https://www.comobilion.eu/]

In the map it is possible to clearly perceive that it represents a hinterland North-South connection between Italy to the Ionian Peninsula. The route of Adriatic – Ionian Corridor runs through the Countries of Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Greece.

Following an overview of regional plans for network development, and of Transport Project Based on Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive

[2] Western Balkans Investment Framework. Source: https://www.wbif.eu/

[3] Feasibility study for Adriatic-Ionian Road Corridor (Route 1 and Route 2) Montenegro and Albania - Mott MacDonald Ltd. (UK) in Consortium with Action Group Communication (Cyprus) and Kommunalkredit Public Consulting GmbH (Austria), 2017

and Core Network in Western Balkans, active planning on the corridor, selected in the EUSAIR Master Plan interventions database, is presented.

Figure 2 Active planning on Adriatic-Ionian Corridor in EUSAIR Countries, route in Montenegro and Northern Albania

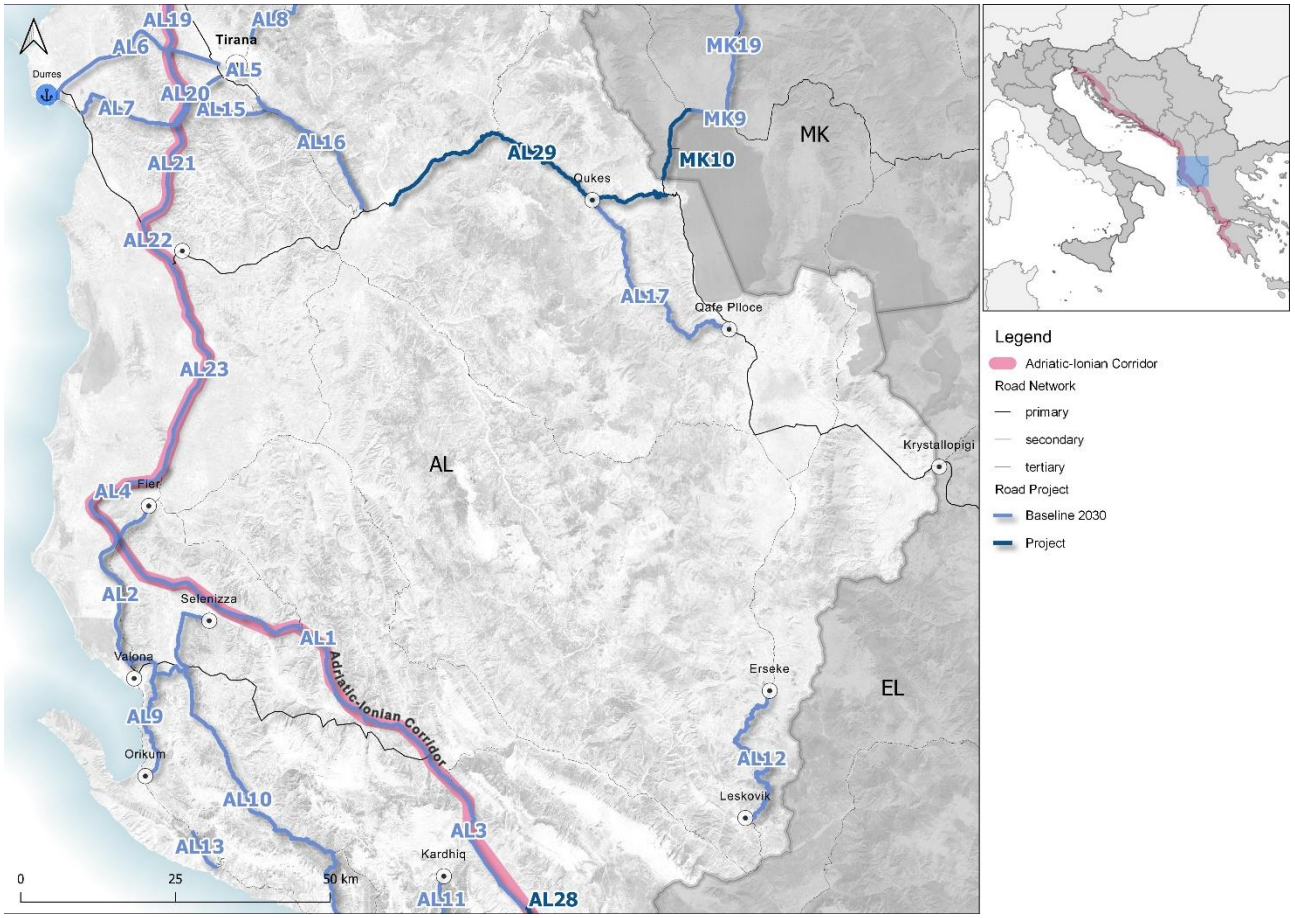

Figure 3 Active planning on Adriatic-Ionian Corridor in EUSAIR Countries, route in South Albania

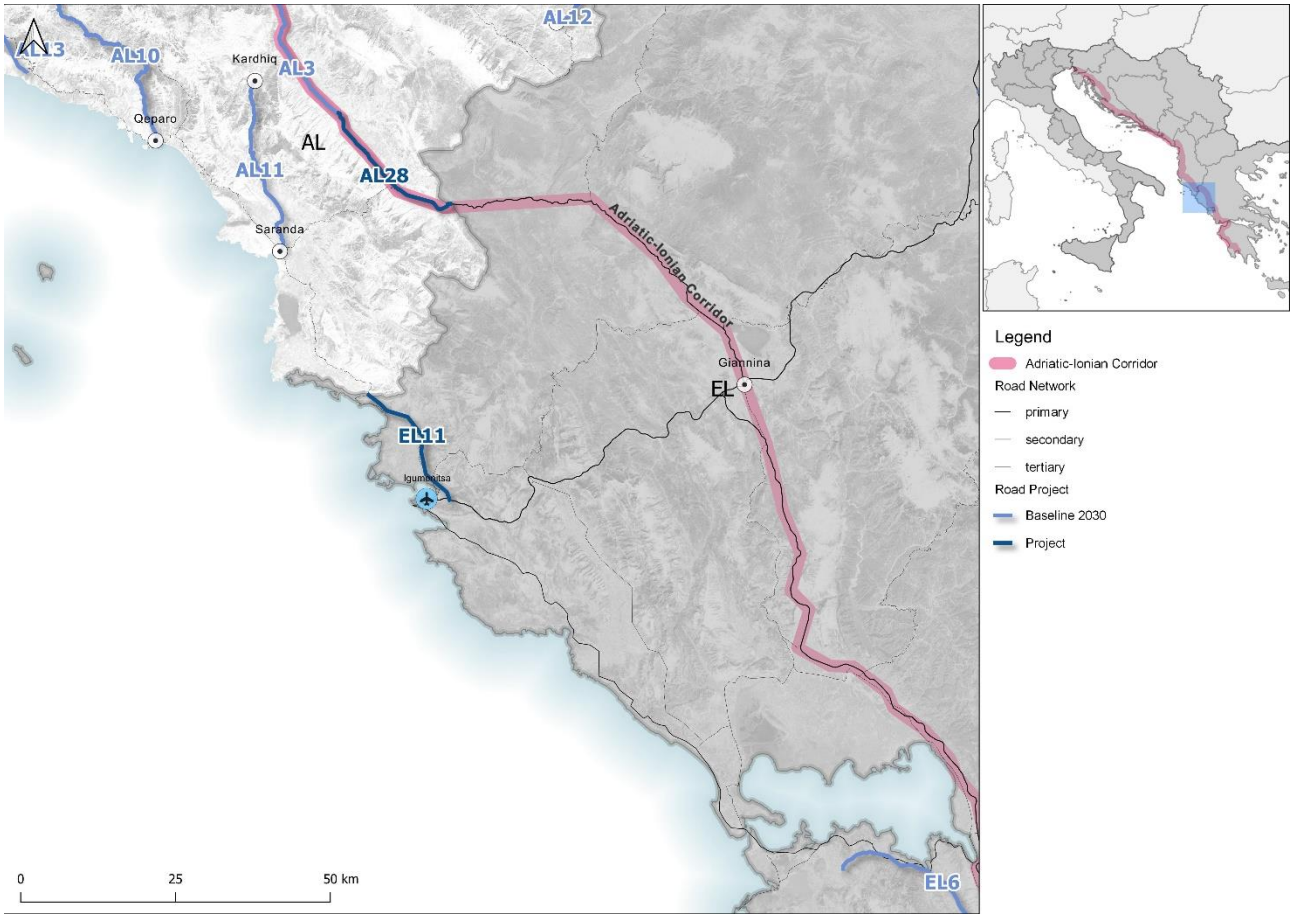

Figure 4 Active planning on Adriatic-Ionian Corridor in EUSAIR Countries, route in Albania and Greece

Table 1 List of road interventions on Adriatic-Ionian Corridor from EUSAIR Masterplan database

ID	Object	Level	Country	Project name	Mode	Node	Scenario
AL1	Upgrade	Completed	Albania	Rehabilitation and upgrading of the road between Fier and Tepelene	Road	North-South Albanian corridor-Adriatic-Ionian Corridor	Baseline 2030
AL14	New construction	Planned and financed	Albania	Construction of road Lezha bypass	Road	Adriatic-Ionian Highway/Expressway (Route 2b/Corridor VIII/ Route 2c)	Baseline 2030
AL15	New construction	Planned and financed	Albania	Construction of Tirana bypass	Road	Adriatic-Ionian Highway/Expressway (Route 2b/Corridor VIII/ Route 2c)	Baseline 2030
AL18	New construction	Planned and financed	Albania	Construction of road Milot - Thumane	Road	Route 7 - Adriatic-Ionian Corridor	Baseline 2030
AL19	Upgrade	Planned and financed	Albania	Upgrade of road Thumane - Kashar	Road	Adriatic-Ionian Corridor	Baseline 2030
AL20	New construction	Planned and financed	Albania	Construction of road Kashar - Peze Helmes	Road	Adriatic-Ionian Corridor	Baseline 2030
AL21	New construction	Planned and financed	Albania	Construction of road Peze Helmes - Luzi Vogel	Road	Adriatic-Ionian Corridor	Baseline 2030
AL22	Upgrade	Planned and financed	Albania	Upgrade of road Luzi Vogel / Lekaj – I/C Rrogozhine	Road	Adriatic-Ionian Corridor	Baseline 2030

ID	Object	Level	Country	Project name	Mode	Node	Scenario
AL23	Upgrade	Planned and financed	Albania	Upgrade of road Rrogozhine - beginning of Fier Bypass	Road	Adriatic-Ionian Corridor	Baseline 2030
AL26	Upgrade	Planned	Albania	Construction of Adriatic – Ionian Corridor (AIC) Section 1: Muriqan – Baldreni	Road	Adriatic-Ionian Corridor	Project
AL27	Upgrade	Planned	Albania	AIC Section 2: Baldreni (starting from Lezha Bypass) – Milot	Road	Adriatic-Ionian Corridor	Project
AL28	Upgrade	Planned	Albania	Construction of a 23.8 km -long highway between Gjirokaster and Kakavije on the Adriatic - Ionian Corridor	Road	Adriatic-Ionian Corridor	Project
AL3	New construction	Completed	Albania	Construction of the Tepelene and Gjirokaster bypass	Road	Adriatic-Ionian Corridor	Baseline 2030
AL4	New construction	Completed	Albania	Construction of the Fier bypass	Road	Route 2b - Adriatic-Ionian Corridor	Baseline 2030
ME1	New construction	Planned	Montenegro	Construction of Adriatic Motorway: section Border with Croatia - Bijela (Bypass Herceg Novi & Herceg Novi-Bijela)	Road	Adriatic-Ionian Corridor	Project
ME12	New construction	Planned	Montenegro	Construction of Adriatic Motorway: Bar - Albanian Border	Road	Adriatic-Ionian Corridor	Project
ME3	New construction	Planned and financed	Montenegro	Construction of Budva Bypass	Road	Adriatic-Ionian Corridor	Baseline 2030

According to EUSAIR Transport Masterplan database, on Adriatic-Ionian Corridor insist 17 interventions located in Albania and North Macedonia. Below is an overview of the interventions based on document: "Overview of Transport Project Based on Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive and Core Network in Western Balkans".

Permanent Secretariat of Transport Community divide projects into three categories:

• On-going projects – projects with funding ensured and for which construction is either ongoing or under tendering or preparation.

• Priority projects eligible for funding – mature projects for which a comprehensive evaluation is available based on a completed feasibility study, and if available, a full set of project documentation, in accordance with EU procedures for Programming and Procurement Rules.

• Priority projects for preparation – non-mature projects which require full project preparation and evaluation to determine their feasibility. These projects are not ready for implementation, but funding is required to carry out preparatory work.

As concern mature projects, the Transport Community document (see Table 2) provides the list of all the priority projects preidentified by the regional partners in their planning and considered strategically relevant with reference to the extension of the TEN-T network, including them in the proposed flagship objectives. More technical details are also provided in following table (from Table 3 to Table 8).

Table 2 List of pre-identified Flagship transport projects. [Source: Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive and Core Network in Western Balkans]

Flagship	Sector	Project	EIP 2027 milestones
Flagship 1 - Connecting East to West	Road	Nis – Prishtina "Peace Highway"	Prishtina – Medare (Kosovo section): completed Nis – Merdare (Serbia section): substantially advanced
	Railway	Railway Corridor X modernization	Nis Railway bypass: completed Belgrade Main Railway Station: completed Belgrade – Sid (HR border): substantially advanced Nis – Presevo: substantially advanced Joint Railway Border Crossing Station Tabanovce: completed
		Railway Corridor VIII modernization	Skopje – Bulgarian Border: substantially advanced
	Inland Waterways	Improving navigation conditions on Danube and Sava rivers	Demining of the Sava river: advanced Addressing bottlenecks on the Danube river: in preparation/advanced
Flagship 2 - Connecting North to South	Road	Corridor Vc Motorway	75% of the Corridor completed at motorway standards
		Belgrade – Boljare – Bar Motorway	Podgorica bypass: substantially advanced
		Sarajevo – Podgorica connection	Enhanced
	Railway	Railway Route 4 Belgrade – Podgorica – Bar	Serbian border – Port of Bar: fully rehabilitated
		Railway Corridor Vc Ploce – Samac	Upgraded/ substantially advanced
		Railway Route 10 Prishtina – Kraljevo – Stalac	Pristina – Mitrovica: construction works Serbian side: preparation of the technical documentation
Flagship – 3 Connecting the Coastal Regions	Road	The "Blue Highway"	Tirana bypass: completed Two road sections in Albania and Budva bypass in Montenegro: substantially advanced
	Railway	Railway Route 2 (Podgorica – Tirana – Durres)	Vora - Hani Hotit: construction works Tirana – Durres - completed Podgorica - Tuzi - Cross Border Albania: preparation of the technical documentation

Table 3 Annex I, Flagship project[4]

Project 1: The Blue Highway					
Regional Partner: Montenegro					
Section: HR Border - Bijela					
Project description	Technical maturity	Current stage	Action needed	Key milestones	
				2023	2027
Construction of a 17 km section of the Adriatic Ionian Motorway, including the Herceg Novi and Herceg Novi - Bijela bypass sections	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Section was marked in MNE SPP as ready for preparation of technical documentation (projects with gaps in spatial planning documentation and resolving of property-related issues ongoing or unresolved.) To be implemented in 2 lots, of which Herceg Novi bypass is priority.	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and fiscal space availability; - Set-up clear implementation strategy and timeline for Herceg Novi bypass	Clear implementation strategy and timeline for Herceg Novi bypass established	As per the agreed implementation timeline
Section: Boka Bay bridge					
Project description	Technical maturity	Current stage	Action needed	Key milestones	
				2023	2027
Construction of a bridge over Boka Kotorska Bay, viaducts and access roads	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Detailed Design dated 2004, probably in need of revision. MNE SPP 2019 marked the section "preparation of technical documentation ongoing".	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and fiscal space availability; - Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline

[4] Source: https://www.transport-community.org/wp-content/uploads/2022/09/Five-Year-Rolling-Work-Plan-for-Development-of-Indicative-TEN-T-Extension-of-the-Comprehensive-and-Core-Network-in-Western-Balkans.pdf

Table 4 Annex I, Flagship project

Project 1: The Blue Highway					
Section: Tivat bypass					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of Tivat bypass (expressway route and access roads-connectors on the existing main roads)	Preliminary Design	Preliminary design prepared in 2009 - 2011. FS for the entire AIH corridor completed in late 2020.	- Fiscal space availability assessment mid- to long term; - Determine the implementation strategy for the entire corridor based on the outcome of the revised FS and the fiscal space availability; Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline
Section: Tivat – Sozina					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a high-quality connection between Tivat and Sozina on the Adriatic - Ionian corridor, (excluding Budva bypass)	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and the fiscal space availability; - Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline
Section: Budva bypass					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 13 km long bypass around the city of Budva, including 3 interchanges and 8.6 km of access roads (connections to existing network)	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Preliminary Design with ESIA and Detailed Design to be prepared with WBIF grant. WBIF financing for works ensured. Project is currently considering postponement (including grant cancellation) due to unavailability of national co-financing.	- Fiscal space availability assessment on mid- to long term; - Set-up clear implementation strategy and timeline for the project; - Adapt on-going TAs to fit the agreed implementation strategy	Clear implementation strategy and timeline established	Financing ensured. Tender for works launched.

Table 5 Annex I, Flagship project

Project 1: The Blue Highway					
Section: Sozina – Bar					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Cosntruction of a high-quality connection between Sozina and the port of Bar on the Adriatic - Ionian corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and fiscal space availability; - Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline
Section: Bypass Bar					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a bypass around city of Bar on the Adriatic Ionian Corridor	Preliminary Design	Preliminary design prepared in 2009 - 2011. FS for the entire AIH corridor completed in late 2020.	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and fiscal space availability; - Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline
Section: Bar - Albanian border					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a high quality connection between Bar bypass and the Albanian border	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	- Fiscal space availability assessment mid- to long term; - Determine implementation strategy for the entire corridor based on the outcome of the revised FS and fiscal space availability; - Set-up clear implementation strategy and timeline for the project	Clear implementation strategy and timeline established	As per the agreed implementation timeline

Table 6 Annex I, Flagship project

Project 1: The Blue Highway					
Regional Partner: Albania					
Section: Murriqan – Lezhe/Balldren					
Project description	Technical maturity	Current stage	Action needed	Key milestones	
				2023	2027
Construction of a 41-km long highway, including 8 interchanges, 23 underpasses and 8 bridges	Feasibility Study	FS for the entire AIH corridor completed in late 2020. WBIF grant for Preliminary Design and ESIA approved in December 2020, activity started one year later. Following cancellation of the Millot – Fier concession, there have been public declarations that this section will be included in a new single concession Muriqan – Fier, said to be launched in the near future	- Close and pro-active monitoring of the on-going TA; - Project implementation strategy, with due consideration for all relevant constraints (including fiscal) and opportunities;	Preliminary Design and ESIA finalised. Decision on implementation strategy taken and further steps implemented.	Works on-going
Section: Balldren – Millot					
Project description	Technical maturity	Current stage	Action needed	Key milestones	
				2023	2023
Construction of a 17.3 km long motorway between the cities of Millot and Lezhe, including Lezhe bypass and one tunnel	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Following cancellation of the Millot – Fier concession, there have been public declarations that this section will be included in a new single concession Muriqan – Fier, said to be launched in the near future	Set-up project implementation strategy, with due consideration of all relevant constraints (including fiscal) and opportunities;	Decision on implementation strategy taken and further steps implemented.	Works on-going
Section: Millot – Thumane					
Project description	Technical maturity	Current stage	Actions needed	Key milestones	
				2023	2027
Construction of a 13.5 km-long highway between Millot and Thumane on the Adriatic Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Millot – Fier concession tender has been cancelled, allegedly soon to be relaunched.	- Launch concession procedure with due consideration for the resulting deficit and public debt impact (if any).	Concession contract awarded	Works on-going (Kashar Interchange finalised)

Table 7 Annex I, Flagship project

Project 1: The Blue Highway					
Section: Thumane – Kashar - Rrogozhine					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 66.6 km-long highway between Thumane, Kashar and Rrogozhine on the Adriatic Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Millot – Fier concession tender has been cancelled, allegedly soon to be relaunched.	- Ensure that the project's implementation strategy and timeline allow for the timely finalisation of Kashar Interchange in order to ensure full functionality of Tirana bypass; - Launch concession procedure with due consideration for the resulting deficit and public debt impact (if any).	Concession contract awarded	Works on-going (Kashar Interchange finalised)
Section: Tirana bypass (Kashar - Vaqarr – Mullet)					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 21.5 km of dual carriagway of motorway standard bypassing the capital city of Tirana on its western side	Detailed Design	Delays in DD delivery caused by Covid. Detailed Design, ESIA and Tender Documents delivered under a WBIF financed TA. Grant for investment approved in December 2020. Additional EU financing up to 40% requested, awaiting approval.	Launch tender for works supervision and project management support.	Works contract signed, works commenced	Works completed
Section: Konjat – Fier bypass					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 28 km -long highway between Konjat and the Fier bypass on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020. Millot – Fier concession tender has been cancelled, allegedly soon to be relaunched.	Launch concession procedure with due consideration for the resulting deficit and public debt impact (if any).	Concession contract awarded	Works on-going
Section: Fier bypass – Pocem					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 26.9 km -long highway between the Fier bypass and Pocem on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, with due consideration for all relevant constraints (including fiscal) and opportunities;	Decision on implementation strategy taken and further steps implemented.	As per the agreed implementation timeline

Table 8 Annex I, Flagship project

Project 1: The Blue Highway					
Section: Pocem – Memaliaj					
Project description	**Technical maturity**	**Current stage**	**Actions needed**	**Key milestones**	
				2023	**2027**
Construction of a 37.7 km -long highway between Pocem and Memaliaj on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, WITH due consideration for all relevant constraints (including fiscal) and opportunities;	Decision on project implementing strategy taken and further steps implemented.	As per the agreed implementation timeline
Section: Memaliaj – Subashi bridge					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 20 km -long highway between Memaliaj and Subashi bridge on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, with due consideration for all relevant constraints (including fiscal) and opportunities;	Decision on project implementation strategy taken and further steps implemented.	As per the agreed implementation timeline
Section: Subashi bridge – Gjirokaster bypass					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 10 km -long highway between Subashi bridge and Gjirokaster bypass on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, with due consideration for all relevant constraints (including fiscal) and opportunities;	Decision on project implementation strategy taken and further steps implemented.	As per the agreed implementation timeline
Section: Gjirokaster bypass					
Project description	**Technical maturity**	**Current stage**	**Action needed**	**Key milestones**	
				2023	**2027**
Construction of a 10 km-long highway section bypassing the town of Gjirokaster	Detailed Design	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, with due consideration for all relevant constraints (including fiscal) and opportunities;	Decision on project implementation strategy taken and further steps implemented.	As per the agreed implementation timeline
Section: Gjirokaster – Kakavije					
Project description	**Technical maturity**	**Current stage**	**Actions needed**	**Key milestones**	
				2023	**2027**
Construction of a 23.8 km -long highway between Gjirokaster and Kakavije on the Adriatic – Ionian Corridor	Feasibility Study	FS for the entire AIH corridor completed in late 2020.	Set-up project implementation strategy, withdue consideration for all relevant constraints (including fiscal) and opportunities;	Decision on project implementation strategy taken and further steps implemented.	As per the agreed implementation timeline

As concern Adriatic-Ionian Road Corridor or "Blue Highway", his modernisation is part of "Flagship 3: Connecting the Costal Regions", and milestone project identified is on expressway along Montenegrin coast and motorway in Albania from Murriqan to Gjirokaster.

Focusing now on planned project belonging to the Project Scenario, which include not financed interventions, in-depth research was carried out among the investments considered as a priority in the document: "Overview of Transport Project Based on Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive and Core Network in Western Balkans". Priority planned project that insist on Adriatic-Ionian Corridor are presented in following table, with details on location and cost.

Table 9 Priority planned road projects on Adriatic-Ionian Corridor.

ID	Corridor/Node	TEN-T Network	Country	Project name	Mode	Project cost (M €)[5]	Scenario
AL26	Route 2b	Core	Albania	Construction of Adriatic – Ionian Corridor (AIC) Section 1: Muriqan – Baldreni	Road	295	Project
AL27	Route 2b	Core	Albania	AIC Section 2: Baldreni (starting from Lezha Bypass) – Milot	Road	147	Project
AL28	Route 2c	Core	Albania	Construction of a 23.8 km -long highway between Gjirokaster and Kakavije on the Adriatic - Ionian Corridor	Road	144	Project
ME1	Route 1	Core	Montenegro	Construction of Adriatic Motorway: section Border with Croatia - Bijela (Bypass Herceg Novi & Herceg Novi-Bijela)	Road	1013 (together with ME12)	Project
ME12	Route 1	Core	Montenegro	Construction of Adriatic Motorway: Bar - Albanian Border	Road	1013 (together with ME1)	Project

Based on the project progress, mature projects are described in the Five-year Work Plan with separate project fiches shown in following figure, no in-depth analysis is dedicated instead to non-mature projects.

[5] Economic and investment plan for western Balkans presented on TEN-T project in "Five-year Rolling Work Plan for Development of the Indicative TEN-T Extension of the Comprehensive and Core Network in Western Balkans", Permanent Secretariat of Transport Community, April 2022.

Blue Highway

Regional Partner:

Albania
Montenegro

Road profile

Motorway	0 km
Express road	0 km
Conventional	347 km

Overview of road priority project on Blue Highway

Priority Project Name	Adriatic-Ionian Motorway-Expressway along Montenegrin coast		
Regional Partner	Length (km)	Estimated cost (M€)	Type of works
Montenegro	110	1013	Upgrade/reconstruction
Core Network segment	Strategic Projects		Technical status
Yes	Montenegro Spatial Plan, Transport Strategy, EIP Flagship 3		Feasibility Study (including Cost-Benefit Analysis)
Project Description	The expressway along the Montenegrin coast passes through its hinterland. It starts near the Croatian border around Herceg-Novi and extends further to the following sections: Herceg Novi - acrossthe Bay of Kotor - Tivat - Budva - Bar - Ulcinj - Sukobin (Albanian border), total length is approximately 110 km		
Expected Benefits	The main objective of this project is to improve connectivity in the region and with the EU as a key factor for growth and jobs in the Western Balkans.		

Priority Project Name	Construction of Adriatic- Ionian highway in Albania Section 1: Murriqan – Balldren Section 2: Balldren (starting from Lezha bypass) – Milot Section 3: Milot-Thumane Section 4+5: Thumane-Kashar-Rrogozhine Section 6+7: Konjat-Fier bypass Section 9A-2: Fier bypass (Levan)-Pocem Section 9B-2: Pocem-Memaliaj Section 10: Memaliaj-Subashi Bridge Section 11: Subashi Bridge-Gjirokaster bypass Section 13A: Gjirokaster-Kakavije		
Regional Partner Albania	Length (km) 287	Estimated cost (M€) 2649	Type of works Upgrade/reconstruction
Core Network segment Yes	Strategic Projects Transport Sectoral Strategy, National Transport Plan, SPP, EIP Flagship 3		Technical status Feasibility Study (including Cost-Benefit Analysis)
Project Description	Albania plans to expand new sections to full motorway standard between Muriqan/ Sukobin border crossing to SH1 at Bushat south of Shkodër, Thumane-Kashar-Rrogozhina highway (part of Milot-Fier upgrade to motorway standards) linking with Fier Bypass, and expanding south of Fier with a slight deviation at Pocem near Memaliaj. In Albania, the motorway will pass on the current stretch along the western lowland, bypass Tirana through the newly-planned Kashar-Rrogozhine motorway, continue south on the existing SH4, and turn inland at Fier towards Tepelene and Gjirokaster.		
Expected Benefits	Expected benefits of the project include: • better connections with neighbouring countries; • reduced congestion, fuel consumption, emissions and noise levels; • increased road safety levels; and • economic development, particularly in the tourism sector.		

Figure 5 Annex II – Road priority project fiches. [Source: https://www.transport-community.org/wp-content/uploads/2022/09/Five-Year-Rolling-Work-Plan-for-Development-of-Indicative-TEN-T-Extension-of-the-Comprehensive-and-Core-Network-in-Western-Balkans.pdf]

1.1 Analysis of the connection gap in the area of interest

The importance of the intervention is highlighted by the connectivity analysis carried out thanks to the use of the multimodal model developed for the transport analyzes of the master plan.

Rail Interconnectivity Indexes are particularly low in Western Balkans, due to the poor conditions of the rail infrastructure and presence of areas not linked to the rail network.

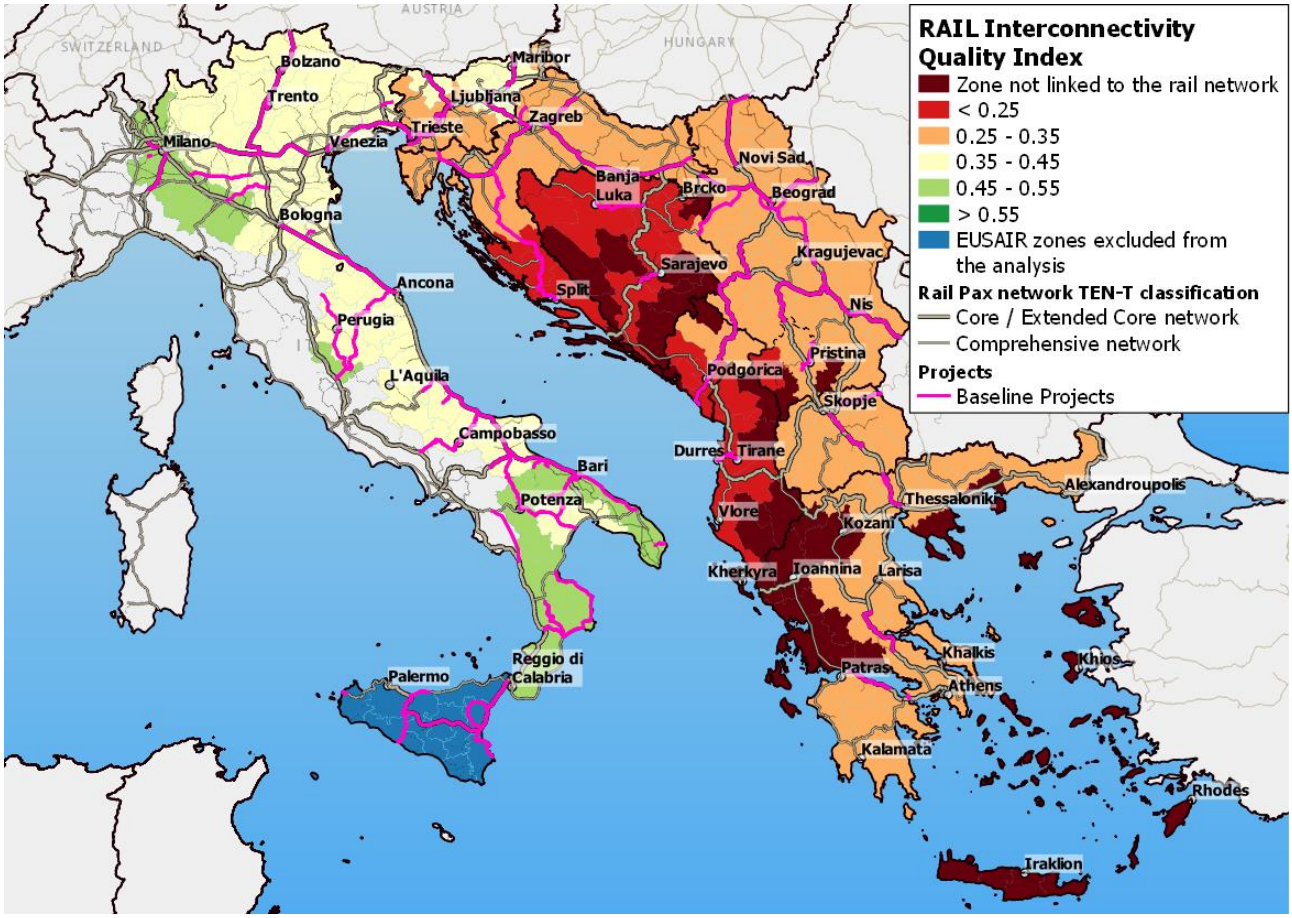

Figure 6 Rail interconnectivity quality index.

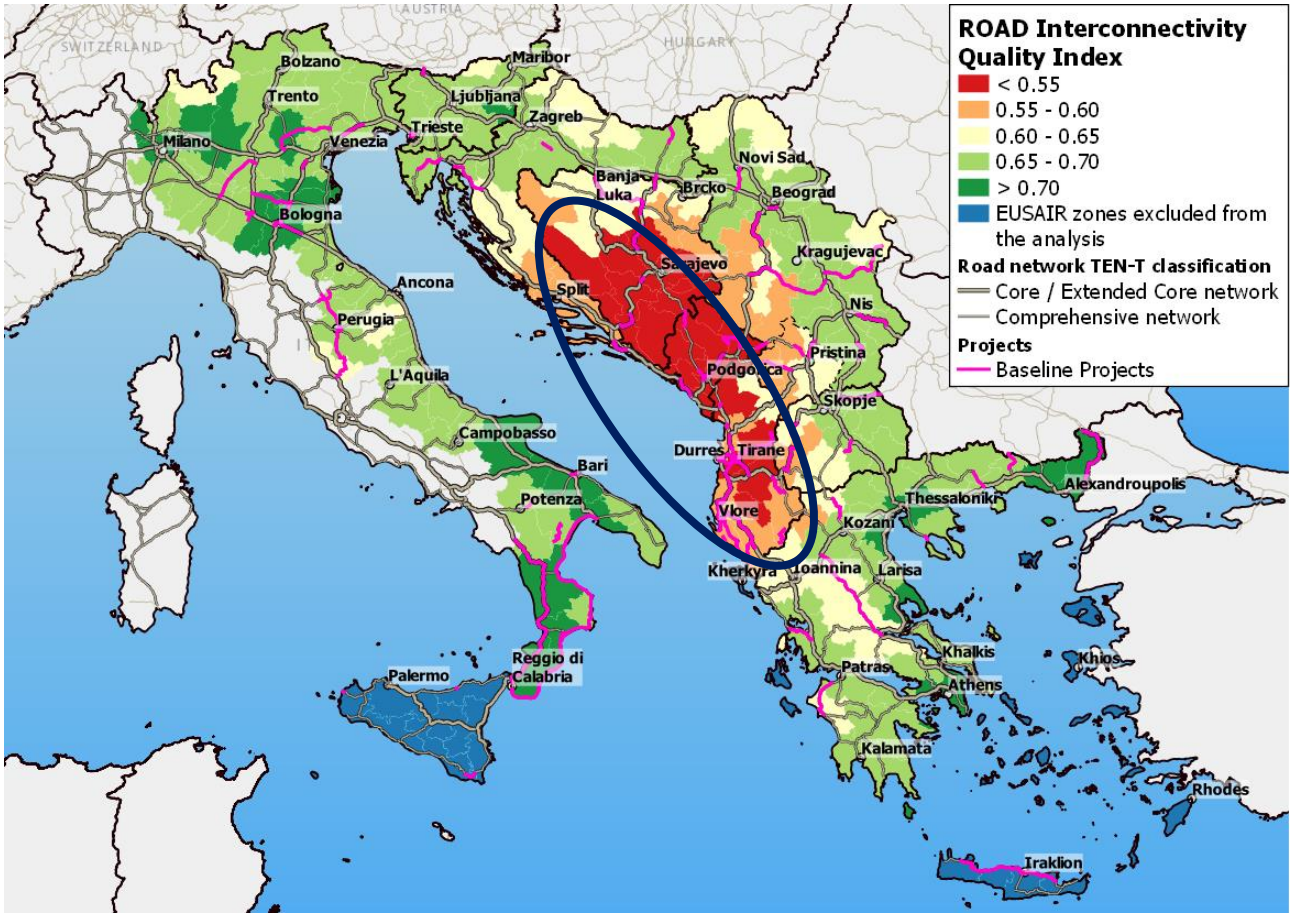

Figure 7 Road interconnectivity quality index.

Road Interconnectivity Indexes are particularly low in Western Balkans, due to the poor conditions of the road infrastructure. The intervention aims to fill the gaps especially for the highlighted countries in Figure 7: Albania, Montenegro and Bosnia and Herzegovina.

The interventions, in addition to bridge these connection gaps, will also support filling the gaps in the road service.

2. Intervention impact evaluation in the area of interest

The impact analysis of the projects selected for the corridor, projects extensively described in chapter 1, were carried out thanks to the multimodal model built for the simulations of the projects envisaged in the master plan. In particular, two scenarios were compared:

- Baseline 2040
- Baseline 2040 + project interventions

The impact analysis was based on four transport indicators described below:

- Annual Average Daily Traffic Light Vehicles expressed as:
  - Total traffic flows
  - Mileage (veic*km)

  - Time spent on the network (veic*hour)
- Annual Average Daily Traffic Heavy Vehicles expressed as:
  - Total traffic flows
  - Mileage (veic*km)
  - Time spent on the network (veic*hour)
- Daily rail passengers expressed as:
  - Total traffic flows
  - Travel frequency (pax*km)
  - Time spent on the network (pax*hour)
- Tonnes transported by rail, per day expressed as:
  - Total traffic flows
  - Mileage (tonnes*km)
  - Time spent on the network (tonnes*hour)

The indicators were analyzed taking into account two different areas of influence. both the entire area of analysis (Figure 8) and the area of direct influence of the interventions reported in Figure 9 were considered.

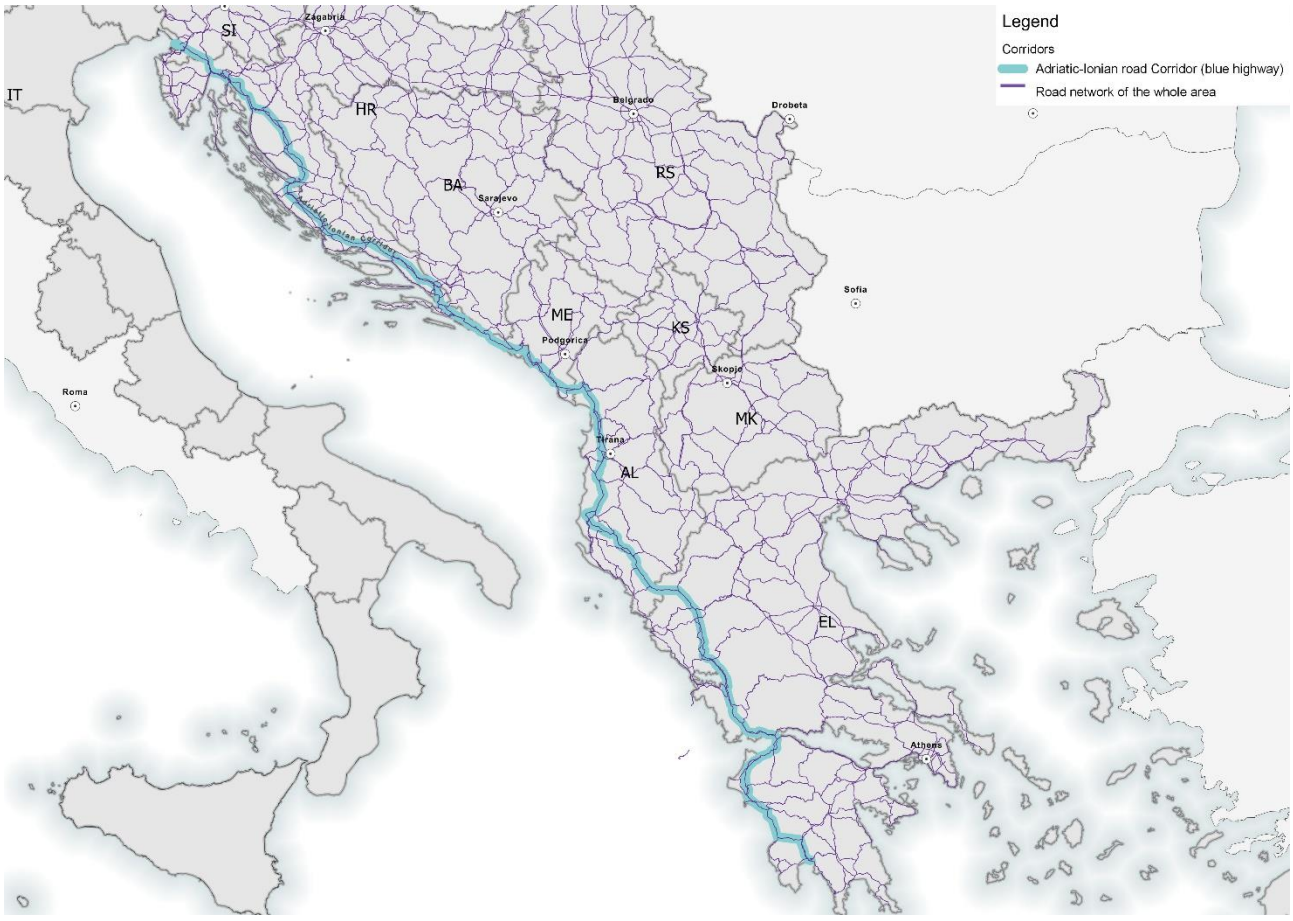

Figure 8 Overall analysis area.

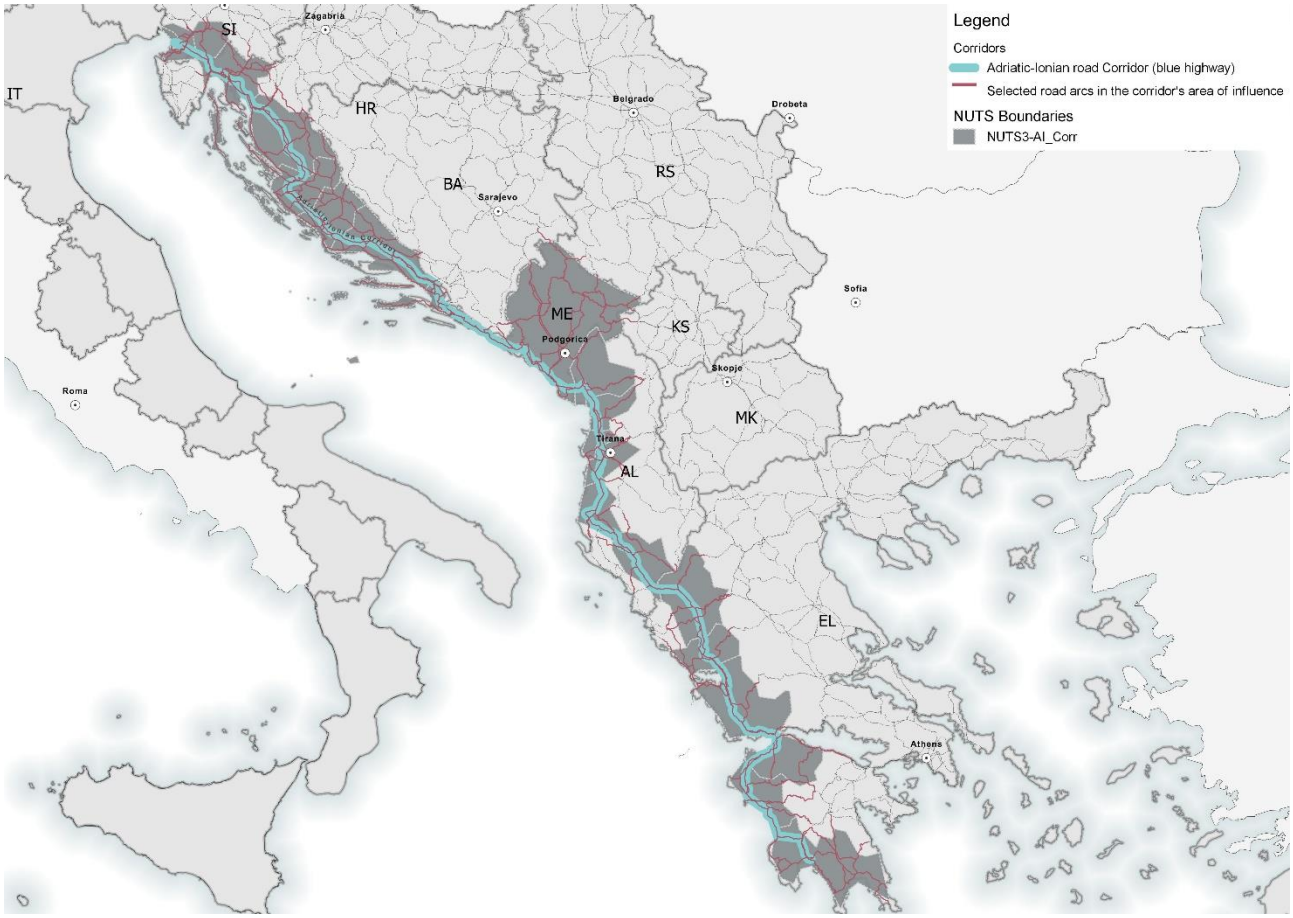

Figure 9 Area of influence of the interventions considered on the corridor.

The following tables show the values of the transport indicators analysed.

Table 10 Transport indicators of the analysis area.

		BASELINE	ADRIATIC IONIAN CORRIDOR	ADRIATIC IONIAN CORRIDOR vs BASELINE	
		Abs. value	Abs. value	Abs. value	Perc. value
Annual Average Daily Traffic Light Vehicles	Tot	19'952'799	19'917'770	-35'029	-0,176%
	Veic*km	230'903'499	230'829'794	-73'704	-0,032%
	Veic*hour	4'012'431	3'975'241	-37'190	-0,927%
Annual Average Daily Traffic Heavy Vehicles	Tot	1'756'889	1'774'419	17'530	0,998%
	Veic*km	22'051'014	22'402'208	351'194	1,593%
	Veic*hour	326'967	329'089	2'122	0,649%
Daily rail passengers	Tot	1'573'318	1'571'780	-1'538	-0,098%
	Pax*km	18'402'364	18'380'145	-22'219	-0,121%
	Pax* hour	381'208	380'713	-495	-0,130%
Tonnes transported by rail, per day	Tot	5'334'818	5'313'472	-21'346	-0,400%
	Tonn*km	76'836'862	76'534'134	-302'729	-0,394%
	Tonn* hour	1'942'145	1'933'836	-8'308	-0,428%

Table 11 Transportation indicators of the area of influence.

		BASELINE	ADRIATIC IONIAN CORRIDOR	ADRIATIC IONIAN CORRIDOR vs BASELINE	
		Abs. value	Abs. value	Abs. value	Perc. value
Annual Average Daily Traffic Light Vehicles	Tot	3'845'458	3'835'673	-9'785	-0,254%
	Veic*km	44'519'528	44'794'001	274'473	0,617%
	Veic*hour	695'598	666'641	-28'957	-4,163%
Annual Average Daily Traffic Heavy Vehicles	Tot	257'681	278'568	20'888	8,106%
	Veic*km	3'430'263	3'785'623	355'360	10,360%
	Veic*hour	48'816	51'308	2'492	5,104%
Daily rail passengers	Tot	108'400	107'809	-591	-0,545%
	Pax*km	1'912'888	1'904'184	-8'704	-0,455%
	Pax* hour	41'274	41'067	-207	-0,501%
Tonnes transported by rail, per day	Tot	628'219	621'096	-7'123	-1,134%
	Tonn*km	10'687'947	10'599'436	-88'511	-0,828%
	Tonn* hour	239'853	236'902	-2'951	-1,230%

Analyzing the results in relation to the area of direct influence of the interventions, it is evident that the impact of the interventions manifests itself more on the road network, where for light vehicles a good saving of time is evident, in the face of a slight increase in mileage. Analyzing heavy vehicles, it emerges that the

new infrastructure is functional to this type of transport as there is an increase in both distances and time spent on the network. The impact on both passenger and freight rail systems is marginal.

3. Economic analysis of the project's impact

In order to provide an analysis of the project's impact from the social point of view, it is useful to adopt the techniques available within the methodological framework of the Cost-Benefit Analysis.

3.1 Methodological framework

The analysis is based on the indications of the "Guide to Cost-Benefit Analysis of investment projects" published by European Commission – Dg Regio . Cost-Benefit Analysis (CBA) is an analytical tool for assessing the economic advantages or disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributables to it.

The CBA is especially helpful to apply the economic assessment also from a non-financial perspective and to adopt the point of view of society as a whole for evaluating the social benefits beyond the mere financial-economic items.

The CBA methodological framework, hence, provides techniques which can be applied in the present case to provide a quantification, in monetary terms, of **social benefits such as the reduction of the environmental impacts of transport as well as the time savings associated with new infrastructure layout for final users**.

The Cost Benefit Analysis relies on a relevant methodological principle which is the so called "differential approach": the analysis aims to quantify the difference between two alternative scenarios: the "Baseline Scenario" defines the situation "without the project", i.e. with evolutions of traffic and operations that can be considered reasonable in the investigated context should the project not be implemented; the "Project Scenario" entails the realisation of the project and the deriving conditions for users.

3.2 Project's effects

As illustrated in Chapter 2, the main targeted impact of the project is the **optimization of transport flows**, by means of an improvement of available road connections along the corridor. Road traffic (for both passengers and freight) in the corridor grows in the project scenario, as it becomes more competitive than the baseline scenario; this has two types of effects:

1) **A higher modal share for road as compared to rail along the corridor**, as the project generates negligible effects of rail transport**;**
2) **A reduction of travel times along the corridor for passengers and goods.**

While the first effect brings about an increase of the social and environmental impact of transport (as the road is a more impactful mode than rail), the second effect is very favorable from a social point of view.

The present analysis is aimed at **investigating whether the combined impact of the two effects determines, overall, a social convenience or inconvenience** from the realization of the project.

3.2 Variation of externalities of transport

The social and environmental impact of transport operations are defined "externalities" or "external costs" in that they represent social costs which are not usually monetized in market prices. The categories of externalities commonly used for assessment are the following:

- Climate change: impact in terms of global warming caused by CO_2 emissions of transport operations;
- WTT (Well-to-tank): impact in terms of global warming caused by CO_2 emissions of the activities leading to the availability of the energy sources for transport operations;
- Air pollution: impact in terms of emission of air pollutants (SO_2, NO_X and PM) from transport operations;
- Noise: impact in terms of acoustic pollution produced by transport operations;
- Accidents: impact in terms of accidents occurring during transport operations;
- Congestion: impact deriving from congested traffic and represented by the costs of the increased consumption of material of transport vehicles (deadweight loss - NB: depending on the application, the congestion parameter may include also costs for the time delay caused by congestion – it is not the case in the present analysis, because the estimation of transfer time-related effects is carried out separately).

The estimation of externalities of the concerned transport flows (as represented by the indicators presented in Chapter 2) are calculated by applying the unit parameters of marginal external cost of transport by road, rail to the presented transport flows measured in terms of veic*km (or vkm), pax*km (or pkm), and ton*km (or tkm).

The unit parameters are elaborated on the basis of data presented in the 2019 update of the EC's *Handbook for the estimation of external costs of transport*[6] (EU average values) and are presented in the table below, for all concerned transport modes and indicators[7].

Table 12 Applied external cost parameters

	Road (pax)	**Rail (pax)**	**Road (pax)**	**Rail (pax)**	**Road (freight)**	**Rail (freight)**	**Road (freight)**	**Rail (freight)**
	€/vkm	€/vkm	€/pkm	€/pkm	€/vkm	€/vkm	€/tonkm	€/tonkm
Climate change	0,018	-	0,012	-	0,072	-	0,018	-
WTT (Well-to-tank emissions)	0,006	1,174	0,004	0,007	0,016	1,417	0,004	0,002
Air pollution	0,009	0,011	0,006	0,000	0,064	0,043	0,015	0,000
Noise	0,000	0,224	0,000	0,001	0,005	0,203	0,000	0,000
Accidents	0,070	0,746	0,045	0,005	0,052	0,341	0,013	0,001
Congestion (only deadweight)	0,041	-	0,026	-	0,001	-	0,000	-
Tot	**0,103**	**2,156**	**0,065**	**0,013**	**0,208**	**2,003**	**0,050**	**0,003**

[6] European Commission, "Handbook for the estimation of external costs of transport", 2019.

[7] The parameters are calculated as averages of specific parameters attributed to the different vehicle technologies; and they refer to inter-urban transport.

By applying the above parameters to the transport indicators presented in Chapter 2, it is possible to derive the costs generated by transport flows in the two alternative scenarios (with and without the project) and to compare them.

The following table show such estimations for a typical year of operation (a factor of 330 – as per industry standard – is applied to move from average daily indicators to yearly figures).

Table 13 Yearly external costs generated by road passenger transport (Euro)

Euro	**Road pax transport**	
	BASELINE SCENARIO	**PROJECT SCENARIO**
Climate change	266.282.425	267.924.118
WTT (Well-to-tank emissions)	83.601.021	84.116.441
Air pollution	127.356.030	128.141.210
Noise	6.564.417	6.604.888
Accidents	1.030.223.646	1.036.575.213
Congestion (only deadweight)	602.802.666	606.519.084
Total external costs	**2.116.830.206**	**2.129.880.953**

Table 14 Yearly external costs generated by road freight transport (Euro)

Euro	**Road freight transport**	
	BASELINE SCENARIO	**PROJECT SCENARIO**
Climate change	81.804.923	90.279.539
WTT (Well-to-tank emissions)	17.995.387	19.859.627
Air pollution	71.946.515	79.399.845
Noise	5.654.768	6.240.576
Accidents	58.482.370	64.540.876
Congestion (only deadweight)	1.541.834	1.701.560
Total external costs	**237.425.796**	**262.022.023**

Table 15 Yearly external costs generated by rail passenger transport (Euro)

Euro	**Rail pax transport**	
	BASELINE SCENARIO	**PROJECT SCENARIO**
Climate change	0	0
WTT (Well-to-tank emissions)	4.632.982	4.611.900
Air pollution	44.280	44.079
Noise	337.590	336.054
Accidents	2.944.787	2.931.387
Congestion (only deadweight)	0	0
Total external costs	**7.959.639**	**7.923.420**

Table 16 Yearly external costs generated by rail freight transport (Euro)

Euro	**Rail freight transport**	
	BASELINE SCENARIO	**PROJECT SCENARIO**
Climate change	0	0
WTT (Well-to-tank emissions)	6.561.541	6.507.202
Air pollution	141.081	139.913
Noise	1.362.839	1.351.552
Accidents	2.295.274	2.276.266
Congestion (only deadweight)	0	0
Total external costs	**10.360.734**	**10.274.933**

As shown in the tables, the overall traffic externalities increase in the project scenario, mainly because the project's impact is to provide better connectivity by road along the Corridor, hence road traffic increases and, with it, is impact. Overall, **the project scenario generates a +37,5 M€ variation of external costs per year**:

- Road pax transport +13,0 M€
- Road freight transport +24,6 M€
- Rail pax transport -36 k€
- Rail freight transport -86 k€
- **Total transport** **+37,5 M€**

3.3 Time savings

The second main effect of the optimization of flows in the project scenario is the possibility to reduce the transfer times for both passengers and goods. The saved hours have been presented in Chapter 2.

In order to monetise this effect, parameters representing the unit value of time of passengers and goods have been derived and applied. Data available from the mentioned EC's 2019 Handbook have been used, which are relevant for the present analysis and regard, among EUSAIR countries, Croatia, Greece and Slovenia; to simplify the analysis, for passengers we apply an average value between the available ones, also considering the two different travel purposes presented in the handbook (business and personal trips).

Table 17 Value of time for passenger transport (€/pax*hr) (source: EC, 2019)

Average = 7,85 €/pax*hr	**Inter-urban distances**	
	Business purposes	Personal purposes
Croatia	9,6	3,7
Greece	11,4	4,1
Slovenia	13,2	5,1

In order to apply such unit value to indicator to indicators representing time for vehicles (veic*hr or vhr), we consider, prudentially, an average factor of 1,2 pax per vehicle.

For freight transport, the following values have been considered.

Table 18 Value of time for freight tranport (€/ton*hr) (source: EC, 2019)

*Average = 1,5 €/ton*hr*	Value per ton
Croatia	0,8
Greece	1,9
Slovenia	1,8

In order to apply these values to indicators expressed in terms of weight (ton*km), a factor of an average weight of goods per truck of 4.12 ton/vehicle, resulting from elaborations on the presented external cost parameters.

The application of such unit values to the transfer times resulting from the simulations in the alternative scenario determines the following results in terms of cost of time employed for transport, per mode and per category, per year. **The overall time saving per year can be valued at 86. 9 M€**.

Table 19 Value of time employed for transport, per year

Euro	BASELINE SCENARIO	PROJECT SCENARIO	Difference
Road pax transport	2.162.334.394	2.072.319.582	-90.014.812
Road freight transport	99.498.232	104.576.777	5.078.545
Rail pax transport	106.920.145	106.384.284	-535.862
Rail freight transport	118.727.453	117.266.635	-1.460.818
Total transport	2.487.480.225	2.400.547.277	**-86.932.948**

3.3 Results

The results show that the project, by providing improved road connectivity in the corridor and increased levels of traffic flows, on one hand entails more external costs of transport for 37.5 M€ per year, but on the other hand optimises transfer times and generates time savings for 86.9 M€ per year.

Therefore, despite the increase of traffic flows, the new road connectivity allows users to save time for their movements; this is especially relevant for passengers and determines **an overall convenience of the project scenario in terms of monetized socio-economic impacts for a combined 49.4 M€ per year**.

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