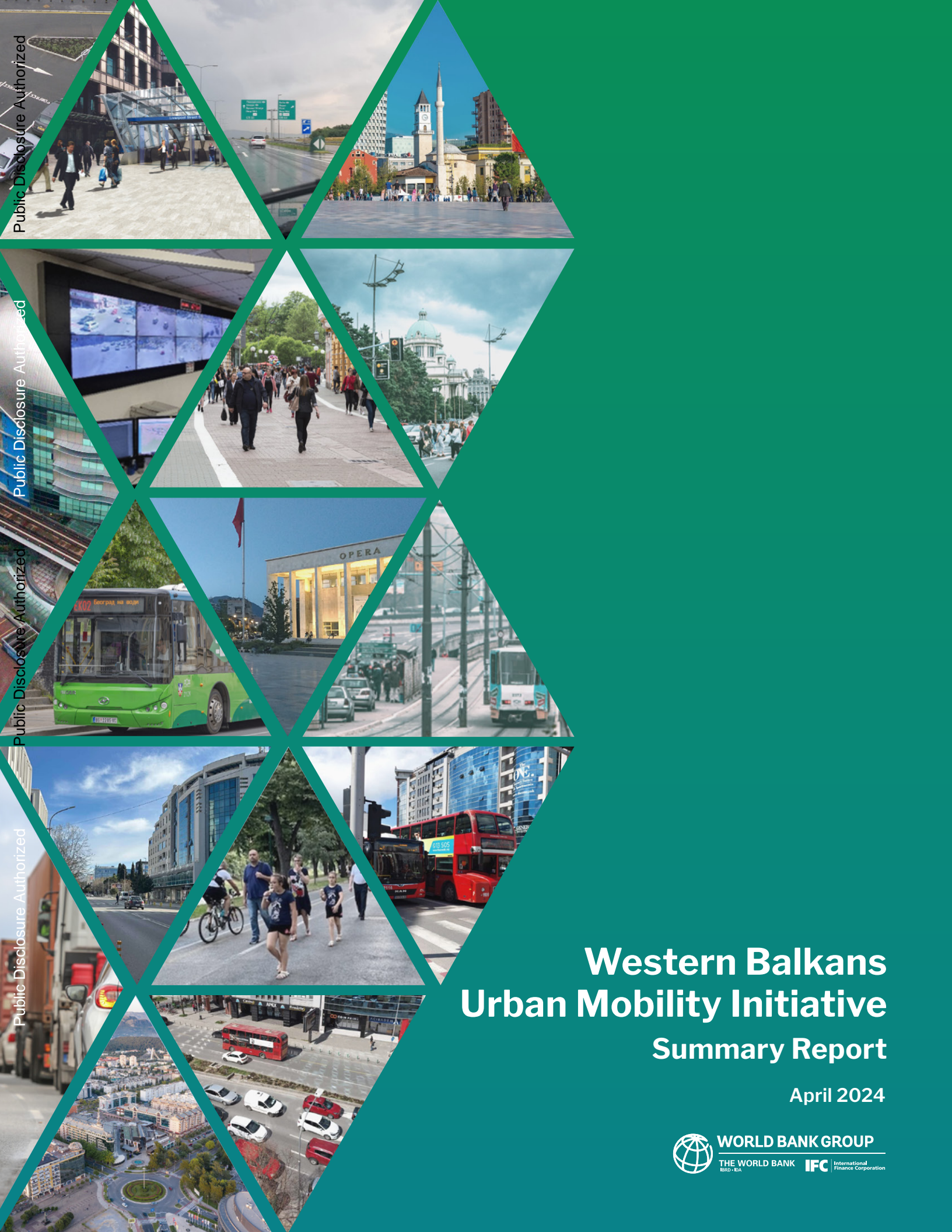


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Western Balkans Urban Mobility Initiative Summary Report

April 2024



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1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

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Contents

Acknowledgments	4
Executive Summary	7
1. Introduction	10
Study objectives	10
Strategic importance of urban mobility in the Western Balkans	12
2. Institutional arrangement and regulatory framework	14
City governance.....	14
Urban mobility organization and management.....	14
Key policy documents.....	16
3. Urban mobility finance	18
Municipal financing	18
Spending on urban transport	18
Public-private partnerships	19
Summary of urban mobility finance	19
4. Characterization of modes, infrastructure, and services	20
Mode choice	20
Motorization trend.....	21
Urban roads and safety	22
Public transport.....	23
Active mobility.....	25
Parking management.....	26
Intelligent transport systems.....	26
Urban freight logistics	27
E-mobility.....	27
Shared mobility and Mobility as a Service (MaaS)	28
Summary of urban mobility characterization	29
5. Investment priority areas	30
Investment areas informed by existing plans	30
Summary of priority investment areas	30
6. The way forward: enabling investment in urban mobility	34
Developing robust municipal financing	34
Leveraging the efficiency of private sector through public-private partnerships	34
Creating public transport concessions	36
Focusing on capacity building.....	37
Preparing implementation plans and project development.....	38
Annexes	
Annex 1: City profiles.....	40
Annex 2: Benchmarking values and year of data	50
Annex 3: Illustrations and examples of best practices	52

List of figures, images and tables

Image 1.1 Study Cities	11
Image 4.1 City networks	23
Image 4.2 Electric buses in Belgrade operating on two urban lines	25
Image 4.3 ITS in Skopje.....	26
Table 2.1 Urban mobility organization in ten cities.....	15
Table 2.2 Key policy documents summary	17
Table 3.1 Revenue sources for cities (2019 pre-pandemic vs. 2020 pandemic).....	18
Table 3.2 City expenses on transportation and urban mobility	19
Table 4.1 Shared mobility benchmarking results: bike sharing.....	28
Table 5.1 Investment areas matrix.....	30
Figure 4.1 Modal share in total trips	20
Figure 4.2 Motorization trend	21
Figure 4.3 Number of pedestrians killed per year per 100,000 inhabitants.....	23
Figure 4.4 Annual number of public transport vehicle kilometers per 100,000 inhabitants.....	24
Figure 4.5 Kilometers of road dedicated exclusively to public transport relative to population...24	
Figure 4.6 Level of existing bicycle paths	26
Figure 4.7 Charging points	28
Figure 5.1 City-specific priorities identified during study.....	32

Executive Summary

The six Western Balkans (WeBa) countries are currently undergoing significant changes in their economies, societies, and environments, as well as potential integration into the European Union (EU). This presents both opportunities and challenges for these countries. However, the urban transport systems in the region often fail to meet the required capacity and level of service, resulting in increased traffic congestion, air pollution, a lack of accessibility, and other negative social, environmental, and economic impacts. These challenges, combined with the absence of a comprehensive policy and investment framework for urban mobility, pose major obstacles to the EU accession aspirations of these countries.

The World Bank Group has conducted a study that diagnoses the urban mobility challenges in 10 selected cities in the WeBa region and provides recommendations for interventions and investments in urban mobility. These cities include Sarajevo (Bosnia and Herzegovina),¹ Banja Luka (Bosnia and Herzegovina), Belgrade (Serbia), Novi Sad (Serbia), Niš (Serbia), Pristina (Kosovo), Skopje (North Macedonia), Tirana (Albania), Durrës (Albania), and Podgorica (Montenegro). The study also includes a benchmark analysis relative to four selected EU cities—Vienna, Prague, Ljubljana, and Malmö—that have similar population sizes and transportation systems and demonstrate best practices in urban transport. This study is intended for decision-makers in the field of urban mobility and investment at local and sovereign levels, as well as international development and financial institutions, donors, and other interested parties. Its purpose is to provide guidance for decision-making on urban mobility financing in the WeBa region.

Cities in the Western Balkans region have relatively small populations, and urbanization is dominated by rural migration; however, they play a significant role in national economic development, contributing a large share of national economic output and employment. Nevertheless, these cities face developmental challenges in urban sprawl, economic shocks, and air pollution. Developing sustainable urban transport systems is crucial for spurring economic growth, reducing greenhouse gas emissions, improving air quality, and enhancing the well-being of citizens. By prioritizing efficient, inclusive, and environmentally friendly mobility options, cities can stimulate economic regeneration and improve the quality of life for all residents.

Cities have established governance and institutions for the strategic planning, development, implementation, operation, and maintenance of public transport, traffic management, and local roads. However, a lack of knowledge and capacity hinders effective planning and implementation of urban transport interventions. While many cities have urban mobility strategies or are in the process of developing them, such strategies often lack feasibility analyses and short-term investment plans. The public transport sector grapples with the imperatives of network planning and optimization, the mobilization of private sector investments and expertise, proper risk allocation between municipalities and operators, and service monitoring. To address these issues, a comprehensive approach to public transport sector governance is needed, including the establishment and strengthening of responsible institutions, and private sector participation needs to be facilitated through market competition and appropriate contracts.

¹ The canton of Sarajevo represents a metro area of Bosnia and Herzegovina's capital city Sarajevo. While the study uses the general term *city*, when it speaks about Sarajevo, typically, it refers to the metropolitan area and thus administrative area of Sarajevo canton.

Cities have independent budgets that heavily rely on tax revenues, supplemented by state transfers, which increased during the COVID-19 pandemic. When financing urban mobility, cities tend to focus on operating and maintaining existing systems and allocate limited resources for new investments and expansions. Most cities have experience borrowing from international financial institutions (IFIs), and some cities have a significant level of direct debt relative to their operational balance. To boost efficiency and increase investment in urban mobility infrastructure, operations, and maintenance, cities are encouraged to explore innovative measures to expand municipal financing and use public-private partnerships (PPPs) to leverage private sector financing and efficiency.

Once dominated by public transport modes (especially buses), urban mobility in the diagnosed cities is threatened by the rising use of private cars. The public transport fleet is aging and falls below public expectations for quality, while the level of service is lower than that seen in other EU cities. This is compounded by the lack of priority given to public transport, resulting in low operational efficiency and prolonged travel times. While the use of active modes of transport—such as walking and cycling—is generally comparable with European peers, the quality of infrastructure is subpar. A significant portion of the infrastructure remains inaccessible to individuals using strollers and wheelchairs, and women lack travel options. Tariff policies for parking are set at relatively low levels, and parking management is treated as supply issue, lacking demand management. Intelligent transport systems have been implemented in capital cities primarily and remain at basic levels for public transport dispatching or traffic light controlling. The region has a low level of e-mobility uptake,² and shared mobility³ and mobility as a service (MaaS)⁴ solutions are still incipient. The last-mile logistics and urban freight market is also small in the region, with few local and international companies present. Private sector participation is limited and mainly involved in public transport operations and parking provision.

Cities in the region are taking steps to modernize public transport, improve walking infrastructure, develop cycling lanes, and establish basic parking regulations. However, more needs to be done. City governments should focus on deploying green and accessible public transport fleets, developing high-quality public transport systems, significantly improving service provision, and expanding fleet size. Further network investments for congestion relief are needed, supported by proper parking management schemes that focus on managing demand and creating incentives for sustainable modes. Cities also need to continue their interest in e-mobility and operationalize their decarbonization strategies.

Policies and strategies are needed to create an enabling environment for investing in and maintaining robust transport infrastructure and services, which in turn support city livability and urban economic and spatial agglomeration through connectivity, mobility, and accessibility for businesses and citizens.

To address these issues, the report makes the following key recommendations:

City governments need to develop robust municipal financing to invest in and sustain the urban transport systems. As most urban mobility infrastructure and services are public goods, municipal governments should seek opportunities to secure sustainable financing, either through direct investment or operational subsidies, and make efforts to attract additional investment and raise

² E-mobility refers to the electrification of transport through the use of electric propulsion for cars, buses, trucks, and others.

³ Shared mobility refers to transportation services and resources that are shared among users, either concurrently or one after another (<https://sharedusemobilitycenter.org/what-is-shared-mobility>).

⁴ MaaS is a term used to describe digital transport service platforms that enable users to access, pay for, and get real-time information on, a range of public and private transport options (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766759/Mobilityasaservice.pdf).

additional funding for the sector. The government should consider capturing a portion of the land value increase as a source of financing for public transport improvements. This can be achieved through increased property tax assessments, business improvement districts, and PPPs for nearby developments. Central government also plays a pivotal role in catalyzing local investments through grant schemes to incentivize innovations. Well-designed central government programs, such as grants or viability gap financing, can serve as important financing sources to encourage local investment in public transport projects.

Cities can further leverage the efficiency of the private sector through PPPs. While private sector involvement in urban mobility is currently limited, PPPs in urban mobility can take different forms and be developed in areas such as parking management, ticketing and information systems, shared services and micromobility,⁵ and mass transit and urban buses. At the national level, establishing an adequate regulatory framework is key to attracting PPPs for mobility projects. The report provides examples of PPP applications in urban mobility and shares global best practices in PPPs (Chapter 6).

Implementing a modern concession-based model of public transport operation can significantly improve bus services. The most critical components of bus services are performance-based operation and timely deployment of fleets. A concession-based model enables a more structured assignment of services, allocation of risks for each party, payment based on operational indicators, and longer service periods. Under Regulation (EC) No 1370/2007, the duration of public service contracts is 10 years for bus and coach services and 15 years for rail or other track-based modes of transport⁶ but can be extended if the operator has made heavy investments during the last years of the contract. This will enhance the financial viability of urban transport projects and significantly improve the quality of the bus transport system. A concession-based model also allows the city to pay for the service provided rather than the capital cost of buses, reducing implementation risk for the transport authority and financial risks and costs for operators. Moreover, if cities can coalesce around a standardized concession in WeBa, it would have the added benefit of creating a regional market and enhancing the bankability of fleet renewal programs, giving operators and their financiers alike confidence in a secondary market for buses bought to support a concession.

Enhancing technical and management capacity is crucial for the successful delivery of urban mobility strategies and projects. This involves partnering with local universities to establish programs and curricula on urban transport, bridging the gender gap by encouraging female participation and providing hands-on experience through internships. Collaborating with development partners can also facilitate targeted capacity-building programs and knowledge-sharing within the region. A regional approach to these efforts can help ensure long-term sustainability and foster policy learning in WeBa cities.

Since most cities in the region have established Sustainable Urban Mobility Plans (SUMPs), the focus now shifts toward preparing implementation plans and project development. This involves developing short-term investment plans that align with priority policies and financial resources. Cities in the region are encouraged to prepare feasibility studies to explore alternative solutions and thus attract further investment in urban mobility. IFIs and EU funding can aid in planning, feasibility studies, and short-term investment plans that align with SUMPs and the EU Urban Mobility Framework's climate-neutral goals.

⁵ Micromobility refers to transportation over short distances provided by lightweight, usually single-person vehicles, such as bicycles and scooters (<https://www.merriam-webster.com>).

⁶ https://assets.publishing.service.gov.uk/media/5e6fb039d3bf7f269e22a1a3/EM_Reg_EC_1370.pdf.

1. Introduction

Study objectives

The six Western Balkans (WeBa) countries, composed of Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, and Serbia, have undergone major economic transformations over the past 15 years, although structural reforms began to stall in the mid-2000s.⁷ The Western Balkans are at a turning point in the development of their economies, societies, and environment, and potential future integration into the European Union (EU) presents both a major opportunity and a challenge. Urban transport systems in the region often fail to provide required capacity and level of service, leading to increased traffic congestion, air pollution, lack of fair accessibility, and other negative social, environmental, and economic externalities. These local challenges, along with the absence of a general policy and investment framework to address urban mobility, present major hurdles for the EU accession aspirations of the countries.

The Urban Mobility Initiative for the Western Balkans region was launched by the World Bank Group to conduct a high-level, comprehensive diagnostic assessment of urban mobility in the 10 selected cities in the WeBa region. The overarching aim of the assessment is to identify interventions for urban mobility-related challenges and potential opportunities where the World Bank Group may provide support. The 10 cities are Sarajevo⁸ (Bosnia and Herzegovina), Banja Luka (Bosnia and Herzegovina), Belgrade (Serbia), Novi Sad (Serbia), Niš (Serbia), Pristina (Kosovo), Skopje (North Macedonia), Tirana (Albania), Durrës (Albania), and Podgorica (Montenegro) and include the capital cities of the six countries and four intermediate cities (see Annex 1 for City profiles). The research includes benchmark analysis for the 10 cities, as well as with 4 selected EU cities—Vienna, Prague, Ljubljana, and Malmö—that have comparable population sizes and transportation sub-systems and demonstrate best practice in urban transport.

This comprehensive summary report presents the highlights of individual urban mobility assessments prepared for each of the 10 selected WeBa cities, provides a comprehensive review of urban transport provision and gaps, and identifies priority investment areas and key strategies to enable the urban transport transformation in cities across the region.

The assessment in this report is organized in the following themes: institutional arrangement, financing, characterization of modes, infrastructure and services, and priority investment areas. These themes were discussed and confirmed with the cities at the concluding workshops. Drawing from the diagnostic assessment and discussions with the cities, the report then identifies key policies that the countries and cities can explore to accelerate the transformation of urban mobility in the short term.

⁷ <https://blogs.worldbank.org/developmenttalk/three-transitions-western-balkans>.

⁸ The canton of Sarajevo represents a metro area of Bosnia and Herzegovina's capital city Sarajevo. While the study uses general term *city*, when it speaks about Sarajevo, typically, it refers to the metropolitan area and thus administrative area of Sarajevo canton.

Cities at a glance

Image 1.1 Study Cities



Cities in the region are relatively small in terms of population size, and urbanization is dominated by rural migration. Most of the cities have less than 500,000 residents, except the capital cities Belgrade (1.7 million) and Tirana (850,000). In some cases, more than 20 percent of a country's total population resides in cities, such as Skopje (69 percent), Tirana (29 percent), Belgrade (24 percent), and Podgorica (20 percent). The population density in the WeBa cities typically varies by around 300–450 people per square kilometer, far less than the average European city.⁹ Tirana and Durres have the highest population density in the region, followed by Belgrade, with the lowest urban densities observed in Banja Luka and Podgorica. The cities mainly draw rural population migration. Large population increases over the past five years have taken place in Tirana, Durres, and Pristina. The capital cities are experiencing urban sprawl, which has resulted from increasing urbanization and heightened levels of urban development on the outskirts of city boundaries and beyond. According to a World Bank report (2019), "Tirana, Belgrade, and other capitals in the Western Balkans can be defined by sprawling agglomerations where functional urban economies greatly exceed administrative boundaries."¹⁰ Annex 1 presents a snapshot of the 10 cities.

Cities underpin the region's economic development, with capital cities becoming economic agglomerations of their respective countries. Cities, in particular capital cities, account for a large share of national output and are home to a large number of firms and jobs.¹¹ More than 30 percent of nationwide active enterprises are concentrated in capital cities; for example, over 30 percent of national employment is located in both Belgrade and Skopje. Cities also contribute heavily to national GDP; for example, the Skopje metropolitan area contributes to 43 percent of national GDP¹² and Sarajevo 33 percent of federation GDP.¹³ The countries and cities have been challenged by a series of economic shocks recently. Just as the economy started to bounce back from the

⁹ According to European Commission Urban Data Platform Plus, the average European city's density is 3,000 residents per km².

¹⁰ *West Balkans and Croatia Urbanization and Territorial Review*, World Bank, 2019, p. 142.

¹¹ *West Balkans and Croatia Urbanization and Territorial Review*, World Bank, 2019, p. 142.

¹² <https://www.stat.gov.mk/>.

¹³ <https://www.oecd-ilibrary.org/>.

COVID-19-induced recession, it now grapples with the fallout from Russia's invasion of Ukraine, a resurgence in inflation, and a pressing energy transition.¹⁴

WeBa has some of the most polluted cities in Europe. Cities such as Belgrade, Banja Luka, Nis, Pristina, Sarajevo, and Skopje have considerably higher levels of PM_{2.5} than other EU cities and exceed World Health Organization thresholds.¹⁵ This is largely due to the sources of energy generation, because most countries rely on fossil fuels, except for Albania. Per capita generation of coal electricity in Serbia and Bosnia and Herzegovina is significantly higher than that of Poland, which is the EU member state with the highest annual per capita consumption of coal in electricity generation. For urban transport, a limited number of source appointment studies in the WeBa cities suggest that the transport sector contributes a significant share, second only to energy generation (for example, in Sarajevo, pending seasonality, transport could attribute up to 30 percent of PM_{2.5}). While there are no available data on greenhouse gas (GHG) emissions, global experience indicates that the transport sector directly accounts for nearly 30 percent of total CO₂ emissions, and of these, direct emissions from urban transport account for 40 percent.¹⁶

Strategic importance of urban mobility in the Western Balkans

The development of sustainable urban transport systems is critical to a city's prosperity and livability by supporting economic growth, reducing GHGs and air pollution from the transport sector, and enhancing the citizen well-being. Robust transport infrastructure and services, including high-quality and well-connected roads, transit, and non-motorized modes, support economic and spatial agglomeration by providing connectivity, mobility, and accessibility for businesses and citizens.

Economic growth: Reliable and efficient urban mobility is essential for economic growth and development. It facilitates the movement of goods and services, supports commerce, and attracts investment. As WeBa's urbanization rate passes 70 percent, the capital cities are forming economic agglomerations which will foster business productivity and grow jobs. Accessible transportation systems also improve labor market efficiency by connecting job seekers with employment opportunities.

Green environment: As noted in the previous section, WeBa cities face unparalleled challenges with air pollution and GHG emissions. Even Albania, which is predominately using renewable energy generation, has a transport sector that relies heavily on fossil fuels (exceeding 90 percent).¹⁷ By promoting sustainable modes of transportation and managing motorization in a comprehensive manner, urban transport can reduce its share of GHG emissions and pollutants, contributing to public health, an improved urban environment, and city competitiveness.

Efficient mobility: As WeBa cities undergo rapid motorization, traffic congestion and lengthening travel times to reach jobs and opportunities not only impact individuals' daily commute but also the efficiency of conducting business. Urban transport ensures efficient transportation of people and goods within a city, reducing congestion and improving the overall quality of life. Efficient transportation systems enable people to move easily and quickly from one location to another, reducing travel times and increasing productivity.

¹⁴ <https://www.brookings.edu/articles/the-western-balkans-heading-toward-another-storm/>.

¹⁵ In 2005, the highest recommended average annual emission level for PM_{2.5} was 10 µg/m³.

¹⁶ <https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-13-Urban-Transportation-wecompress.com.pdf>.

¹⁷ www.ere.gov.al.

Inclusive accessibility: Accessible transportation caters to the needs of all citizens, especially the elderly, people with disabilities, the poor, and those without access to private vehicles. A well-designed urban mobility system provides inclusive transportation options such as accessible public transport, bike lanes, and pedestrian-friendly infrastructure, thus ensuring that everyone can move around the city easily and safely.

However, this transport nexus with prosperity and livability is challenged today due to aging and outdated urban transport systems. Although the quality of transport systems in WeBa cities has started to improve in recent years, standards are significantly lower than other European cities. By prioritizing people-centered and inclusive transportation options, cities can create environments that are conducive to stimulating economic regeneration and enhancing quality of life for all.

2. Institutional arrangement and regulatory framework

City governance

City governance in the WeBa follows the European Charter of Local Self-Government.¹⁸ Local self-government denotes the right and the ability of city authorities, within the limits of the law, to regulate and manage a substantial share of public affairs under their own responsibility and in the interests of the local population. The only exception is Bosnia and Herzegovina, where most powers in the area of local self-government are vested in the cantons (that is, Sarajevo Canton).

A typical city is composed of districts or municipalities and is closely connected to external districts that form the metropolitan region. The districts or municipalities within a city's administrative boundary are assigned varying degrees of responsibilities. The major cities have strong connections with external jurisdictions outside the city boundary. Tirana has a large number of affiliated external municipalities, with 13 rural administrative units that are considered part of the metropolitan. When developing the new sustainable urban mobility plan (SUMP) for Skopje, the study area included 17 external municipalities, reflecting the commute to reach jobs in Skopje.

Urban mobility organization and management

Cities are responsible for urban mobility development. Strategic planning, development, implementation, operations, and maintenance of public transport, traffic management, and a city's local roads fall to the city's transport authorities through coordination with other key institutions, in particular the urban planning institution and districts. Generally, the national governments are responsible for the construction, rehabilitation, and maintenance of interurban roads, highways, and provincial roads. During this project, there was a general sense of a lack of capacity and resource for the lead agencies across the broad spectrum of public transport operations and management, intelligent transport systems (ITS), road safety, cycling, and e-mobility, among others, as well as a desire to learn and apply best practice contextually. As cities invest in urban transport, capacity development is key to unlocking urban transport development.

The district structure in some cities requires further coordination and capacity in the development and management of local infrastructure. In Belgrade, Pristina, and Tirana, the responsibilities of all urban transport modes and operations falls on the cities; and in Sarajevo, the responsibilities are divided into three spheres—canton, city, and municipalities—for roads of different classifications (cantonal roads and local roads, with national and regional roads under the federation) and affiliated non-motorized transport, including construction permits. This structure not only requires extensive coordination but also significant capacity building with districts/municipalities, which often have even lower capacity and less resources.

The management of public transport presents a mix of public and private operators with varying risk allocations. Most WeBa cities have both public and private operators, with the exceptions of Novi Sad (only public) and Durres, Nis, and Tirana (only private). The relationship between cities

¹⁸ *Subnational government in the Western Balkans*, SIGMA paper 66.

and private operators is regulated by service agreements or contracts. Most cities issue 10-year contracts to private operators, except for Niš (7-year contract), Pristina and Podgorica which currently operate under a temporary basis (previously 5-year contracts and 10-year contracts, respectively). Risk allocation models differ significantly from city to city. In Albanian cities, risk resides entirely with the private operators who use fare revenue to pay for fleet, labor, and operation and maintenance (O&M) expenses (for example, Tirana introduced a temporary subsidy in response to the COVID-19 pandemic to compensate for energy costs); in Skopje and Nis, financial risks lie with the city and operators are paid by the kilometer.

This organizational approach of public transport services pinpointed four key issues. (1) Regardless of whether they are called service agreements or contracts, they are not strictly performance-based contracts, and the government lacks clearly defined risk allocation rationales, monitoring approaches, and enforcement. (2) The current risk allocation is particularly problematic when both fleet and operations cost recovery fall entirely to operators. This aggravated the financial and operational performance of operators during the COVID-19 pandemic, resulting in severe cuts and fleet reduction to make ends meet, as noted by both the city of Tirana and the city’s bus association. (3) Short-term agreements for less than 10 years limit the ability of operators to access commercial financing for fleet purchases, as the useful life of a Euro 6 bus is 10 to 12 years. Under the EU Regulation (EC) No 1370/2007, the duration of contracts for bus services is up to 10 years but can be extended if the operator has made heavy investments during the last years of the contract. Additionally, the scale of many private operators in the region may be too small to achieve economies of scale and acquire commercial financing. (4) There is no agency dedicated to the planning, management, and regulation of public transport in the region. However, this study’s engagement with cities consistently confirmed that public transport faces a lack of network planning, lack of proper contract and concession, and lack of service monitoring. An organization, such as a public transport authority, would be well positioned to consolidate the various functions relating to public transport and private operators. Annex 3 presents three models of a public transport authority.

Table 2.1 Urban mobility organization in ten cities

City	Road management	Traffic management	Public transport
Banja Luka	The city’s Department of Traffic and Roads maintains the city-owned local roads and streets.	The city is responsible for the installation, operation, and maintenance of traffic control systems and traffic police for enforcement.	The system is operated by five private operators: Autoprevoz GS, Rale turs, Bocac turs, Aldemo turs, and Pavlović turs.
Belgrade	The city’s Secretariat for Traffic is responsible for roads in 10 central municipalities; the other remaining 7 peripheral municipalities are responsible for local roads.	Traffic police is responsible for enforcement and the Secretariat for Traffic for the operation of traffic control systems.	“GSP Beograd” is the municipal public transport company, holding a 63 percent share of the city’s passenger public transport market; private operators run passenger transport on about 37 percent of the lines.
Durres	The city develops and maintains city roads.	The municipal police operates the traffic control system.	Two private operators are present: IRI-Trans operates four lines and MAREN BUS two lines.
Nis	The city’s Road Management Department is responsible for maintenance of the local roads and streets.	The city’s Traffic Department manages traffic flow, and traffic police enforce traffic regulations.	There are three private operators: Niš Express, JV Lasta SC Belgrade, and Strela.

City	Road management	Traffic management	Public transport
Novi Sad	The public company “Institute for the Construction of the City” develops city roads; PUC “Put” (Road) Novi Sad performs work on road transport infrastructure and maintenance.	The city’s Department of Construction, Land, and Investments is responsible for maintenance and operation of the automatic traffic management system.	PCTC Novi Sad is the only public transport provider.
Podgorica	City roads are managed by the city; municipal roads are delegated to the municipalities.	Traffic police is responsible for enforcement and the Secretariat for Traffic for the operation of the traffic control systems.	Public transport service is provided by two private operators (BLT and Gradski saobraćaj PG) and one new, publicly owned public transit operator (Putevi).
Pristina	The Directorate of Public Services, Protection, and Rescue manages roads; maintenance is contracted to private companies.	The Directorate of Public Services, Protection, and Rescue operates and maintains traffic control systems.	Trafiku Urban is the only public municipal operator, which covers more than 30 percent of the lines. About 20 private operators cover the other 25 bus lines.
Sarajevo	The Canton MoT is responsible for cantonal roads; the city of Sarajevo for city roads; and municipalities for local roads and infrastructure.	The Sarajevo canton MoT is responsible for traffic regulations and installation and the traffic police for enforcement.	There are two operators: one is public (public utility company GRAS) and one private (Centrotrans).
Skopje	The city’s Public Company for Streets and Roads is responsible for the construction, reconstruction, rehabilitation, maintenance, and protection of city roads; 10 municipalities own and maintain the local roads.	The city is responsible for the operation of the traffic control systems.	One public utility company (JSP) operates 81 percent of the urban service and 86 percent of the suburban service. Two private operators operate the remaining services (Sloboda Prevoz and MakEkpres).
Tirana	The city is responsible for city streets and local roads that connect the city with surrounding villages.	The city’s Urban Traffic Control Center is in charge of traffic management.	11 private bus operators that form an association.

Source: Study team

Key policy documents

There are generally two levels of key policy documents pertaining to urban transport. The national government issues laws and regulations on road transport and vehicle registration and standards, develops national transport strategy, and in some countries licenses public transport operators (such as Albania). While there are national transport strategies, they often fail to consider urban transport policies or city-level plans. For example, the Montenegro National Transport Development Strategy 2019–2035, with the Action Plan 2019–2020, lays out objectives for transport sector development; however, the strategies are at the national level and a transposition from the national level to the city level is missing.

At the city level, most cities have urban development plans, SUMP, and Green Cities Action Plans (GCAP) or are in the progress of updating their SUMP (for example, Skopje), except for those noted below. The following highlights SUMP, GCAP, and other key policy documents relating to urban mobility. While SUMP and GCAP provide strategic guidance and visions for the long term, they are often not backed up by implementation plans for the short term or followed up with feasibility studies or alternative analyses. These feasibility studies and alternative analyses serve to screen the potential alternative solutions and identify preferred modes through technical diligence and consensus building.

The SUMP in the region share visions and have similarities in their strategies. Cities aim to reduce traffic congestion, lower carbon emissions, and improve transportation efficiency and inclusivity for all residents. SUMP in the region focus strongly on public transport to encourage a

shift away from private car usage. Other shared strategies include promoting active travel modes like cycling and micromobility, enhancing road safety measures, and implementing ITS and smart technologies to optimize traffic management and mobility efficiency, among others. As reflected in policy documents, cities in the region are aligning their strategies with proposed interventions. For example, Belgrade and Skopje focus on non-motorized transport safety, enhancing conditions for walking and cycling, while Podgorica and Pristina emphasize modernizing public transport and implementing e-ticketing systems. These collective efforts demonstrate the region's dedication to sustainable urban mobility solutions.

Table 2.2 Key policy documents summary

Cities	SUMP	GCAP	Other documents
Banja Luka	✗	✓	Framework Transport Policy.
Belgrade	✓	✓	Strategy for Development of Public Passenger Transport until 2033; Air Quality Plan for Belgrade.
Durres	✓	✗	A local mobility plan is in place, focusing mainly on congestion reduction. Implementation depends on the central government.
NiS	⊕	✗	Very few transport policies or strategies for the city of Nis. SUMP commenced recently.
Novi Sad	✗	✗	Strategy of Sustainable Development of the City of Novi; Strategy of Sustainable Development (Smart City) Novi Sad.
Podgorica	✓	✗	Transport Development Strategy 2019–2035 with the Action Plan 2019–2020.
Pristina	✓	✓	Urban development plan for the urban and rural part of the entire municipality.
Sarajevo	✓	✓	The master urban development plan is currently being updated.
Skopje	✓ ⊕	✓	National Transportation Strategy 2018–2030; however, this lacks city-level policies. SUMP is being updated.
Tirana	✓	✓	National Transport Strategy; National Plan for Air Quality Management.

✓ SUMP prepared ✗ No SUMP ⊕ SUMP under development

Source: Study team

Summary of institutional framework

Cities in the region are responsible for urban mobility development and have governance structures in place to plan, implement, and operate urban transport systems. Nonetheless, the lack of knowledge and capacity impede the planning and implementation of urban transport interventions. Most of the cities in the region have either an urban mobility plan in place or are developing it with shared visions to reduce congestion, lower carbon emissions, and improve transportation efficiency and inclusivity for all residents. While the plans indicate the strategic areas and city's urban development priorities, they are not backed up with feasibility analyses or short-term investment plans. The public transport sector particularly suffers from a lack of network planning and optimization, proper concession, contract management and risk allocation, and service monitoring. These factors suggest the need for a holistic approach to public transport governance, including the establishment and capacity building of responsible institutions while also enabling private sector participation and growth through standardized concessions.

3. Urban mobility finance

Municipal financing

Cities rely heavily on tax revenues. The main sources of city budget come from city tax revenues, non-tax revenues, and state transfer. With few exceptions tax revenues have been the single most important source across cities, whether pre or during the COVID-19 pandemic, based on actual data obtained from a number of cities. The share of tax revenues is the highest in Podgorica and Sarajevo, exceeding 80 percent. State transfer increased during the pandemic, with Skopje and Tirana seeing the state transfer exceed tax revenues. This brief financial analysis indicates the need for the cities to grow their revenue base.

Table 3.1 Revenue sources for cities (2019 pre-pandemic vs. 2020 pandemic)

	Banja Luka	Belgrade	Novi Sad	Podgorica	Sarajevo	Skopje	Tirana
2019	Tax revenue	57%	N/A	51%	80%	83%	53%
	Non-tax revenue	39%	N/A	40%	11%	17%	9%
	State transfer	4%	N/A	8%	8%	0.004%	38%
	Others	0%	N/A	0%	0%	0.0002%	0%
2020	Tax revenue	58%	60%	55%	62%	71%	33%
	Non-tax revenue	33%	38%	37%	8%	17%	12%
	State transfer	9%	2%	8%	30%	12%	55%
	Others	0%	0%	0%	0%	0%	1%

Source: Study team

The cities showed sound financial management to deal with municipal financing constraints. The total direct debt averages between €5 million to €19 million for each city, except for Belgrade, which saw debt rising from €40 million to €65 million. Due to growing needs and changing priorities across all sectors, most cities across the region have a shortage of funding from city budgets to fund local mobility programs, particularly where major investment in public transport services and infrastructure is required.¹⁹ As a result, there is added significance for external funding, such as state funding and support for urban mobility investment. National governments' financial support is important for critical infrastructure (city roads, public transport, non-motorized transport) and public transport operational deficits.

Spending on urban transport

Disparities in urban transport expenditures across cities. Table 3.2 shows city expenses on transportation and urban mobility with data from 2020 through 2022. Three capital cities (Skopje, Belgrade, and Pristina) spent 19 percent or more of their operating revenue on transport expenses; among intermediate cities, the share of transport spending is generally low, except for Novi Sad at 27 percent. While this study was unable to obtain the OPEX and CAPEX breakdowns for urban transport, it is generally acknowledged that most expenses fund the O&M of existing systems, and there are limited resources for new investments. This is further corroborated by the identified

¹⁹ This only considers the city's existing debt and does not account for committed debt.

priority needs for renewing an aging public transport rolling stock across cities (Chapter 5).

Table 3.2 City expenses on transportation and urban mobility

City	Expenses in transportation ²⁰ (€, thousands)	City operating revenues (€, thousands)	% of expenses in transportation versus operating revenues ²¹	Year
Banja Luka	4,575	71,489	6%	2021
Sarajevo	38,413	446,665	9%	2021
Skopje	20,934	106,454	20%	2022
Podgorica	3,453	84,629	4%	2020
Belgrade	440,431	1,146,566	38%	2021
Novi Sad	78,417	292,904	27%	2021
Nis	8,617	104,311	8%	2021
Tirana	N/A	N/A	N/A	N/A
Durres	N/A	N/A	N/A	N/A
Pristina	16,829	90,669	19%	2022

Source: Study team

Public-private partnerships

PPP arrangements are limited in urban transport in WeBa, being mainly used for bus operations and parking management. In this region, the scale and demand of urban transport within individual cities has not been attractive to PPPs; existing obstacles also limit the adoption of PPP arrangements to manage urban mobility, such as limited contractual agreements between public entities and private operators or legislative barriers to the separation of assets from operation.

Belgrade, Sarajevo, and Niš have PPP systems to manage their public transport operation; Tirana recently introduced PPP for intercity bus terminal construction and operations; and Novi Sad, Belgrade, and Pristina have an arrangement to support parking management. Other urban mobility sectors can benefit from PPPs, in particular ride hauling and shared services, urban logistics, fare collection, and mass transportation. Private bus operators would be interested in bank loans, especially to buy new buses, but in practice the bank will only grant a loan if the operator can show a contract with the authority based on a operating period of 10 or more years so that it covers almost the whole lifetime of the vehicles. One way to resolve this (as seen in the EU cases) is to obligate the operator to subrogate the fleet (and in cases, the staff) to the new operator under the administration's oversight.

Summary of urban mobility finance

Most cities have independent financial capacities, depend on local tax revenue, and have experience in borrowing from international financial institutions (IFIs). While cities showed sound overall financial management, they are financially constrained and unable to meet the growing needs for urban transport. Cities tend to focus on keeping the system running through O&M, having limited resources for new investments and expansions. Relatedly, some cities exhibit a high level of direct debts as a percentage of the operating balance and others depend more on state transfers. To improve efficiency and enlarge the investment into urban mobility infrastructure development and O&M, cities are encouraged to explore innovative measures to expand the base of municipal financing and attract PPPs to leverage private sector financing and efficiency.

²⁰ Related to CAPEX and OPEX (some cities had indicated subsidies). This item does not include depreciation of fixed assets.

²¹ Expenses in transportation (CAPEX and OPEX divided by overall city operating revenues).

4. Characterization of modes, infrastructure, and services

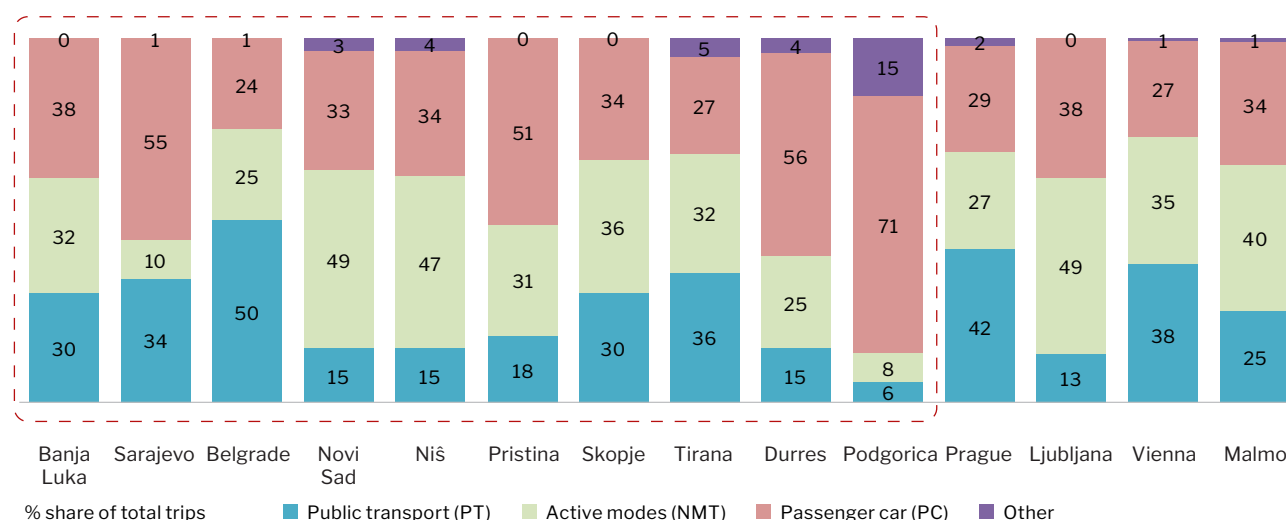
This chapter summarizes urban mobility characteristics across WeBa cities. The characterization focuses on the performance of key elements and modes of urban transport using information available at the time of the study and benchmarked against comparable EU cities. Data limitation is a constraint for this diagnostic assessment; for some cities, the available data covered different time horizons and were based on different sources. Some data are outdated (for example, from 2010), and newer data are not always available or are skewed during the pandemic (Annex 2 presents benchmark data values and data years).

Mode choice

Mode choice or mode split refers to the chosen travel mode for a given trip. An understanding of mode choice at a city level sheds light onto the factors that shape travel decisions and yields information for improving urban transportation options.

In this region, public transport is predominantly used in the largest cities, yet is threatened by the increasing use of private cars. Cities here have long had a system of public transport, and its use is a social norm. In 1885, Sarajevo was the first city in Europe and the second city in the world to operate an electric tram service. Figure 4.1 shows that in most capital cities, the public transport modal share is comparable to levels seen in Prague (42 percent) and Vienna (38 percent), including Belgrade (50 percent), Tirana (36 percent), Sarajevo (34 percent), and Skopje (30 percent). In intermediate cities such as Durres, Novi Sad, and Nis, public transport represents less than 20 percent of the total modal split. Nonetheless, this sustainable travel mode is threatened by the rising use of private cars. In 2019–2020, private motorized transport reached 71 percent in Podgorica, 56 percent in Durres, 55 percent in Sarajevo, and 51 percent in Pristina.

Figure 4.1 Modal share in total trips



Source: Study team based on publicly available sources and data (* affected by the COVID-19 pandemic measures). The number inside the box denotes the percent of mode share.

The use of active transport is largely on a par with the benchmark cities. The highest modal share was recorded in Novi Sad and Nis, with values comparable to benchmarked Ljubljana (almost 50 percent of the total number of trips). The compact city shape and grid streets lined with sidewalks and shops are conducive for walking. As for cycling, some cities are doing well and constantly improving conditions, such as Novi Sad (9 percent), Durres (6 percent), and Tirana (4 percent); however, the cycling modal share is lower than 1 percent in Belgrade, Sarajevo, and Podgorica.

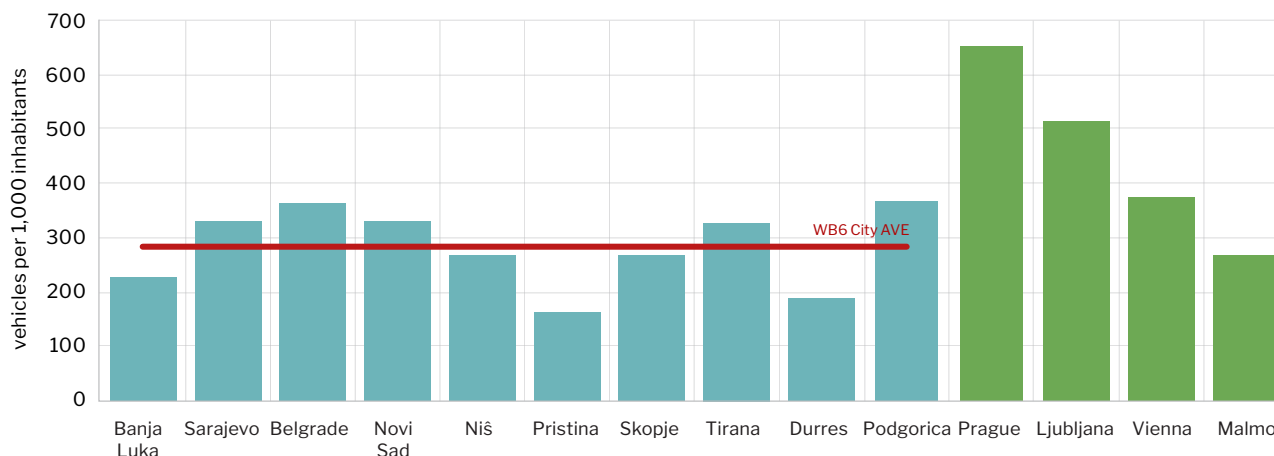
Gender imbalance in WeBa heavily affects urban mobility options and transport accessibility for women. Women’s access to passenger cars is significantly lower than that of men in WeBa, and cars are mostly registered to men. For instance, in Podgorica, roughly 73 percent of cars are registered to men. Similarly, in Kosovo, men have larger control over access to private transport and drive more frequently and longer distances. In a 2022 World Bank report,²² more men owned bicycles (63 percent) than women (50 percent), while more women than men (44 percent of women compared to 32 percent of men) cite having no other options for travel as their primary reason for using public transport. However, many women do not feel safe while traveling on public transport. In a 2019 survey in Sarajevo with a total of 272 female participants recruited through social media groups, 92 percent of respondents agreed that women do not feel safe early in the morning and late at night at stations and aboard vehicles.

A considerable portion of the infrastructure in WeBa cities remains inaccessible to strollers and wheelchairs, posing challenges for inclusivity. This includes pedestrian routes leading to bus stops and the bus stops themselves, thus hindering the provision of a fully inclusive service to city residents.

Motorization trend

Motorization trend captures the growth of private car ownership and reflects travel behavior changes, traffic congestion, and a fleet’s impact on the environment. Motorization characteristics play a major role in transportation policymaking. While the rise in household income and the availability of low-cost imported vehicles have spurred the growth of car ownership, the shift toward motorization has also been attributed to the prevalence of under-invested public transport systems, a lack of safe and high-quality walking and cycling infrastructure, and the extent of built-up area away from the city center.

Figure 4.2 Motorization trend



*KOSovo motorization rate was used due to lack of available data for Pristina

Source: Study team

²² *Paths Toward Green Mobility: Perspectives on Women and Rail Transport in Bosnia and Herzegovina and Serbia*, World Bank, 2022.

The cities' motorization rates are still low at about 300 vehicles per 1,000 inhabitants.

In the Balkan cities, motorization rates are typically between 200 to 400 vehicles per 1,000 inhabitants, significantly less than the benchmark EU cities (see Figure 4.2). In terms of trends, across all WeBa cities the motorization rate is constantly increasing and, in some cases, quite rapidly. In Pristina, the annual number of registered vehicles increased by 27 percent in 2013 and then another 18 percent in 2015; in Podgorica, the motorization rate increased by 19 percent between 2014 and 2018; and in Tirana, the number of vehicles doubled between 2011 and 2018 and the motorization rate growth was about 4 percent per year in the last five years.

However, most of the vehicle fleet comprises imported, second-hand petrol and diesel vehicles, which contribute to poor urban air quality and climate change. Across cities, the average vehicle age ranges from about 15 to 20 years, with some cities exhibiting more pronounced problems. In Skopje, more than 61 percent of registered vehicles were produced over 20 years ago. The high average age matches the level of emission class of engines, which is typically outdated, contributing to poor city air quality. In Sarajevo, 53 percent of vehicles are at or below Euro 4. There is a significant proportion of diesel engine vehicles across cities, including 70 percent of the total vehicle fleet in Tirana. The level of electric vehicles is negligible.

Motorization management and regulatory requirements on vehicle emissions—particularly for imported second-hand vehicles—should be a priority policy.²³ Sarajevo is currently studying the feasibility of a low emission zone to restrict high emission vehicles from entering the city center. This is seen as a way of mitigating the disproportional impacts of fleet pollution on the population and economy in a densely developed center, while also improving city center air quality and enhancing economic vitality. Addressing the dispersed spatial growth pattern through integrated land use and transport development also brings in benefits by reducing excessive driving distances as well as the cost inefficiency of infrastructure and public transport service into outlying areas.

Urban roads and safety

The transport networks of several cities exhibit varied radial and grid networks. In cities such as Nis, Pristina, Tirana, Novi Sad, and Skopje, a radial network is prevalent, with the road network's main arterials extending from the urban center toward the outskirts. Durres exhibits a grid-based road network characterized by intersecting streets that create an organized and interconnected layout. As Sarajevo is located in a valley, the transport infrastructure in the urbanized city area follows a longitudinal axis that stretches over 10 km (see Image 4.1). Other cities, such as Podgorica, Belgrade, and Banja Luka, display a mixed network style.

An assessment of city road investment plans reveals that most proposals relate to the development of city bypasses. This is the case for Niš Bypass, considered as a national priority and one of the main potential investments identified for this city. Similarly, Sarajevo, Podgorica, Banja Luka, Novi Sad, and Belgrade bypass projects are in the planning stage, with some sections already completed. Insufficient attention has been placed on integrated urban corridor management²⁴ and on enhancing the connectivity of urban road networks.

²³ *Transport Inputs to the Western Balkans Green Growth Narrative*, World Bank, 2023.

²⁴ Integrated urban corridor management optimizes the use of existing urban road infrastructure and public transport supply to move the most people safely, quickly, and reliably with minimum environmental effects (<https://journals.sagepub.com/doi/abs/10.3141/2278-14>).

Image 4.1 City networks

Durres (grid)



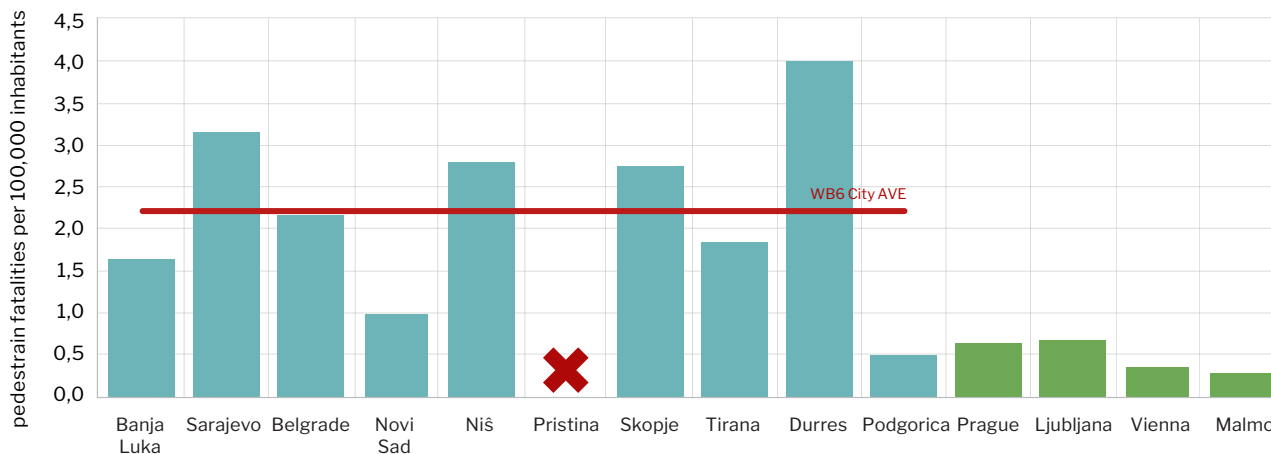
Sarajevo (linear)



Source: Google Maps

WeBa cities face road safety challenges attributable to inadequate infrastructure design, lack of enforcement, insufficient road safety education, unadjusted speed limits, and reckless driving behavior. Based on the number of accidents per 100,000 inhabitants, the analysis reveals a significantly high number of accidents across the cities. Nearly all study cities far exceed the levels seen in the benchmark EU cities, with Sarajevo, Belgrade, Nis, Skopje, and Durres showing alarming road accident rates (see Figure 4.3). Urgent policies and actions are needed to improve road safety and reduce casualties.

Figure 4.3 Number of pedestrians killed per year per 100,000 inhabitants.



"X" marks the cities for which no comparable data were available

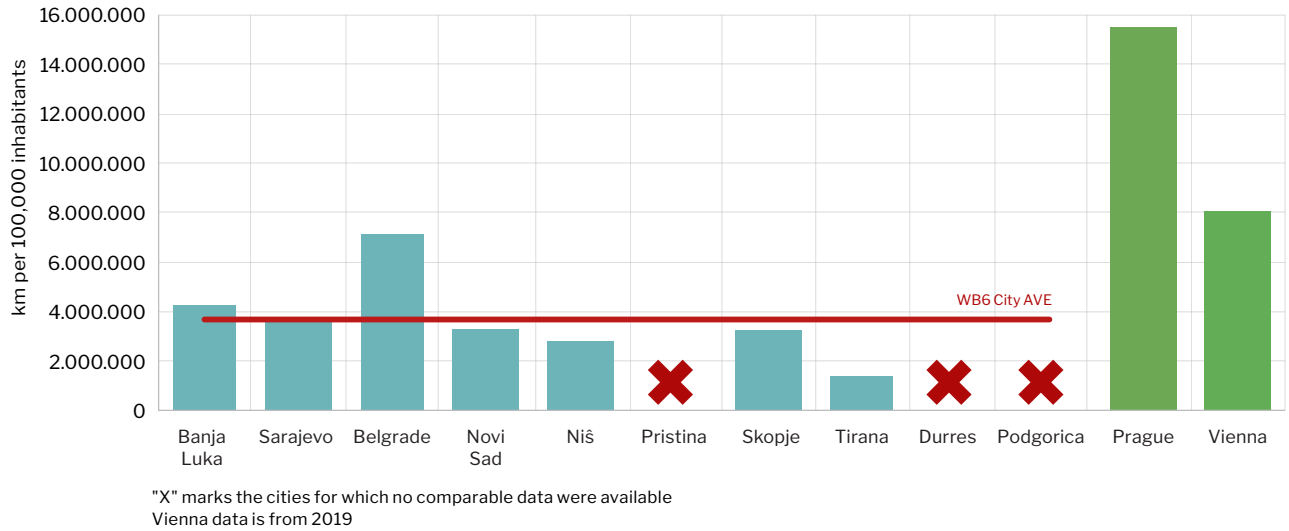
Source: Study team

Public transport

The majority of urban public transport systems in WeBa cities are based on bus services. In addition, trolleybuses, trams, and metro operate in Belgrade, while trams and trolleybuses operate in Sarajevo. Riding public transport was a norm during the era of socialism. However, urban infrastructure and services built more than 50 years ago were neglected during the breakup of socialism and the subsequent transition to the free market. Although the quality of transport systems in WeBa cities has started to improve in recent years, standards are significantly lower than in other EU cities.

The level of public transport service provision is lower than that seen in other EU cities (see Figure 4.4), as measured by the annual number of public transport vehicle kilometers per 100,000 inhabitants. Belgrade stands out in terms of surpassing the WeBa city average, with a vehicle kilometer level that is almost double the average. However, this level is still only half of the value seen in Prague.

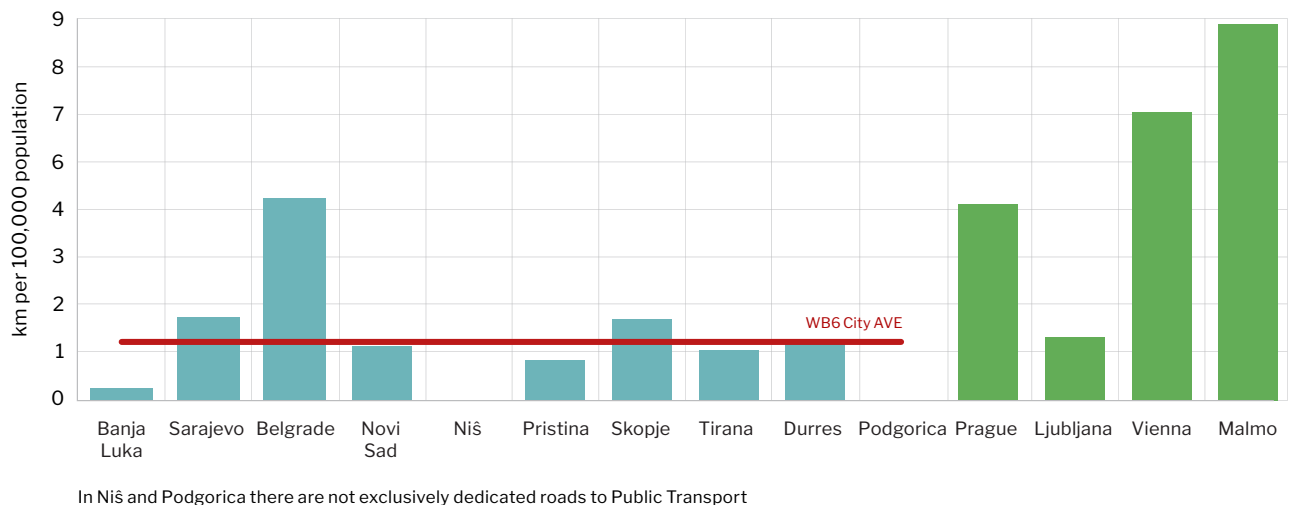
Figure 4.4 Annual number of public transport vehicle kilometers per 100,000 inhabitants



Source: Study team

There is a lack of public transport priority in terms of dedicated lanes or signal priority at junctions. The 10 cities averaged slightly more than 1.3 kilometers of public transport dedicated lanes per 100,000 inhabitants, except for Belgrade, which has a level comparable to Prague (see Figure 4.5). Currently cities struggle to manage levels of transit traffic on urban roads that provide a high level of public transport service, which further contributes to increased levels of city center congestion. While Sarajevo does have roughly 8 km of grade-separated tram tracks, intersections present conflict with other vehicular traffic. Tirana and Skopje are now investing in dedicated bus priority infrastructure.

Figure 4.5 Kilometers of road dedicated exclusively to public transport relative to population



Source: Study team

Daily tickets and monthly public transport passes are available across cities, although electronic ticketing has yet to be adopted in most cities. Tariffs are usually set by the city government, with a reduced fare for vulnerable passenger groups available in all cities. A single ride ticket varies from €0.33 per ticket in Tirana to €1.13 in Banja Luka. In addition, some cities such as Tirana, Nis, Sarajevo, Pristina, and Podgorica have monthly passes. The tickets are usually printed on paper, but more developed ticketing systems are present in the region. This includes Nis, where e-ticketing is provided, and Novi Sad, where daily and monthly tickets are deposited on smartcards. A new e-ticketing system is also currently being implemented in Tirana. System integration (both physical and operational) and the provision of tariff and user information have been adequately achieved in Belgrade.

The public transport fleet is aging, generates pollution, and falls below public expectations for quality. Across cities, older vehicle fleets are frequently being used. In Belgrade, the average bus fleet age is about 10 years; however, across other WeBa cities, older vehicle fleets are frequently being used, as in Banja Luka, Novi Sad, and Sarajevo. In terms of emission standards, in Tirana, mostly Euro 4 and Euro 5 fleet are driven; in Durres and Niš many buses only meet Euro 3 emission standards; and in Sarajevo parts of the fleet are Euro 2 and older than 20 years. City authorities across the region are now exploring the viability of introducing alternative fuel vehicles. Belgrade introduced e-buses on two urban lines, and Sarajevo is renewing its tram and trolley fleet through financing from the European Bank for Reconstruction and Development and European Investment Bank and will also soon introduce an e-bus pilot through World Bank financing. There is significant scope to increase the level of investment in cleaner fleets to enhance environmental quality in cities across the region and explore aggregated fleet procurement approaches to improve bankability and decrease the unit cost (see Annex 3, India's e-bus case).

Image 4.2 Electric buses in Belgrade operating on two urban lines



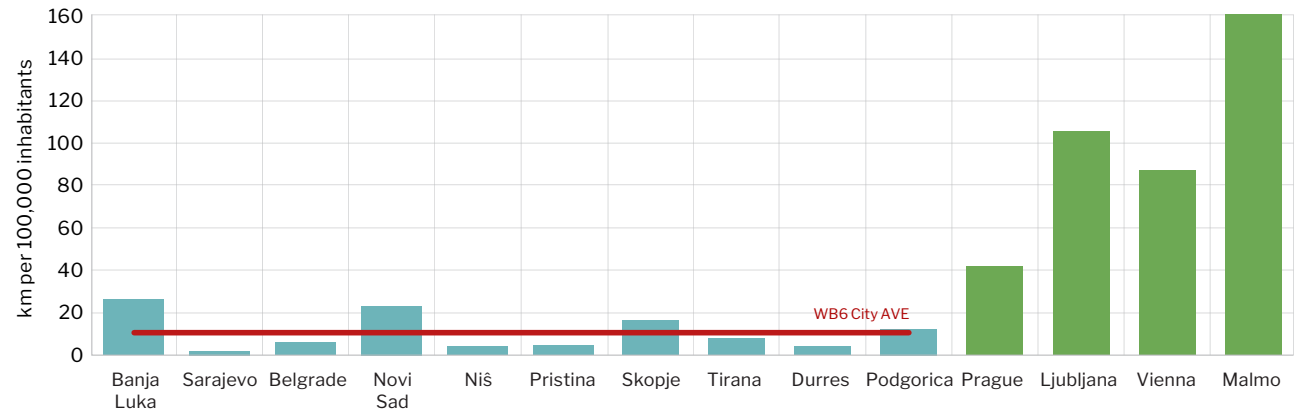
Source: www.shutterstock.com

Active mobility

The cities have yet to provide premium infrastructure and service to promote active mobility. While most cities dedicate pedestrian zones in the centers, residents perceive sidewalks and streets to be of low quality and find that public space is dedicated mostly to cars. Sidewalks in the cities are often subject to limited continuity and are encroached upon by parked cars. As most city centers are compact with mixed use areas that attract walking, policy attention and investment are needed to provide a safe and comfortable walking experience.

The level of on-street bicycle paths provided is very low compared to other EU cities. Cities have started introducing or expanding cycling infrastructure in recent years across the region. Currently Banja Luka, Novi Sad, Podgorica, and Skopje have the highest number of cycling lanes per 100,000 people, although they are still well behind the EU benchmark cities (see Figure 4.6). Besides the low level of cycle lanes, cities generally lack investment in cycle parking facilities and have minimal capacity in cycling infrastructure planning, design, and maintenance.

Figure 4.6 Level of existing bicycle paths



Source: Study team

Parking management

Cities across the region suffer from a high level of usage of private cars and a lack of parking management. Coupled with higher demand and insufficient enforcement of regulations, the lack of urban parking capacity places significant pressure on city centers. The high prevalence of illegally parked vehicles creates obstacles to the movement of traffic and reduces accessibility for pedestrians on sidewalks in many city streets.

Parking fees are often set at very low levels, which defeats the purpose of pricing controls as a means to manage demand. Most of WeBa cities, including Nis, Podgorica, Tirana, Pristina, Banja Luka, Sarajevo, Novi Sad, and Skopje, have set up controlled parking zones. However, these zones charge little and lack enforcement. There are also cities, such as Durres, where no parking zones have been established and parking is largely free. Currently, cities tend to prioritize parking supply over demand management; some cities, including Pristina and Skopje, are planning either new multi-story car parks or underground parking facilities in central areas.

Image 4.3 ITS in Skopje



Source: study team

Intelligent transport systems

Most WeBa cities lack an operational traffic management center which would enable them to control urban traffic flows more effectively.

Capital cities have deployed varying ITSs for transport operations, yet some are in need of modernization, upgrade, and scale-up. In Sarajevo, the traffic management system is used primarily for

public transport vehicles. In Podgorica, a system of “green waves” (for traffic lights) is implemented on a sequence of junctions. Skopje has a dynamic traffic control system controlling 92 intersections; however, it has yet to catch up with the expanding road network and junctions.

Intermediate cities mostly rely on fixed signals on signalized junctions (for example, Nis, Podgorica, and Pristina). Banja Luka initiated the introduction of adaptive traffic control in 2020, with a pilot project and installation on one intersection only. Cameras are used to detect traffic violations, including speeding violations (Nis, Novi Sad, Pristina, Banja Luka, Sarajevo, and Belgrade). As for public transport ITS, there is no system to collect real-time data from public transport vehicles (Tirana is currently implementing one now).

Urban freight logistics

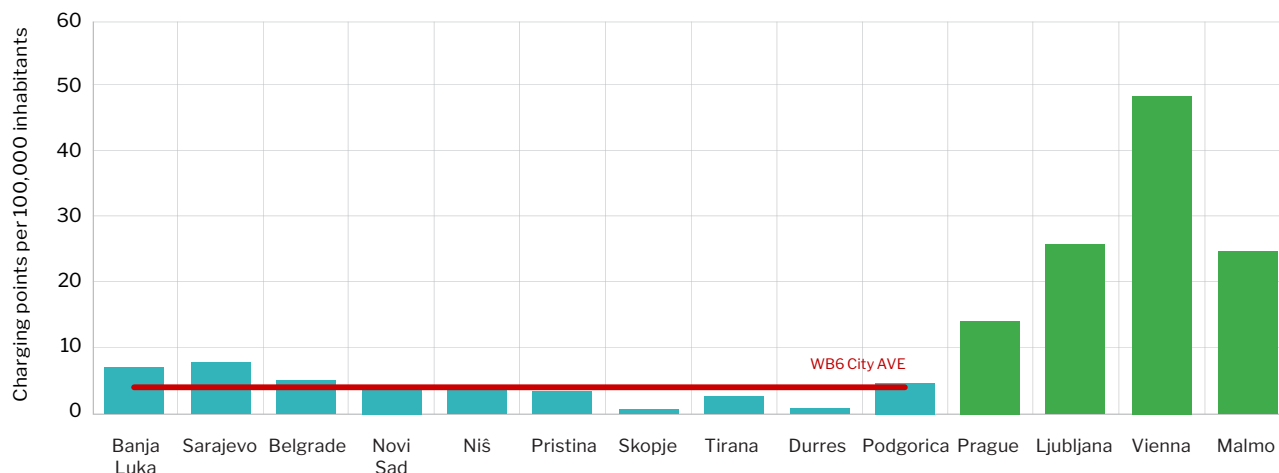
The analysis of freight and logistics, including transit transport, revealed city-specific variations with these transport sectors. Some cities in the region are well positioned to tackle freight and transit traffic (where transit traffic uses highways without interfering with local traffic), namely Nis, Durres, Pristina, Skopje, and Belgrade. However, there are also cities where transit traffic, including freight, must use city roads in urban areas. This has negative consequences for the local inhabitants, both in terms of environmental conditions and of network speed and efficiency for all road users. Some cities introduce travel restrictions for trucks during peak hours. In terms of urban freight, there are only a few last-mile logistics services available, which are primarily for local services but include some international logistics. Some of the services are starting to test electric vehicles or cargo bikes for delivery, but this is still at an early stage.

E-mobility

There is a low level of uptake for e-mobility in the WeBa countries. Electric vehicles (EVs) are largely unaffordable for local inhabitants and the lack of charging infrastructure further limits their attractiveness. In 2021, there were about 700 EV or hybrid vehicles in Albania compared to more than 500,000 diesel or gasoline vehicles. Using charging points as an indicator, the benchmarking (Figure 4.7) clearly shows a major difference in the scale of EV charging infrastructure in WeBa cities compared to other EU cities. From the policy perspective, there is a lack of strategies to articulate the approaches toward upgrading fleets to EVs from high emission vehicles (Euro 4 class or less) and bringing the private sector into charging infrastructure development. During the study consultation, the private sector expressed strong interest in investing in charging infrastructure but questioned the role of an EV charging provider, wanting to know if they would be electricity distributors charging a fixed price—as is currently the case—or service providers that can use dynamic pricing to manage peak demand.

The energy transition remains a parallel conundrum. The WeBa region is still dominated by old and inefficient power generation. The share of coal-based generation in the electricity mix demonstrates a relatively constant contribution (60 percent), except for Albania where more than 90 percent of energy comes from renewable sources. EVs should be promoted in tandem with transitioning to clean energy; otherwise, the benefits of clean fleet will be compromised if electricity is produced by coal.

Figure 4.7 Charging points



Source: Study team

Shared mobility and Mobility as a Service (MaaS)

Shared mobility is predominately represented by bike sharing in the larger cities, including Ecovolis in Tirana (6 docking stations), Nextbike in Banja Luka (5 docking stations) and Sarajevo (15 docking stations), and Rent-a-Bike in Novi Sad (16 docking stations). In Belgrade, a system of shared bikes with 47 docking stations was implemented in 2022. The municipality of Pristina has planned a shared bike system as part of its SUMP document; however, this measure has not yet been implemented. No shared bike systems are available in Nis, Podgorica, Durres, or Skopje. Unfortunately, there is no comparable information regarding the frequency of shared bike use in cities. E-scooters operate in a number of cities, including Sarajevo, and car sharing operates in Albania, Serbia, and North Macedonia.

Table 4.1 Shared mobility benchmarking results: bike sharing

Banja Luka	Sarajevo	Belgrade	Novi Sad	Nis	Pristina	Skopje	Tirana	Durres	Podgorica
Yes	Yes	Yes	Yes	No	No	No	Yes	No	No

Source: Study team

MaaS is still in its nascent stage in the region. MaaS integrates information and communications technology with mobility services, offering users a comprehensive solution to meet mobility needs, which can combine public transport, ridesharing, car sharing, bike sharing, scooters, and even on-demand services, instead of relying on a single mode of transportation. In terms of MaaS, the private sector has led innovation and integration, creating “super apps” that started as ride sourcing or other mobility service start-ups. There are two ride-hailing platforms in the region offering a range of riding options, namely CarGo (in Podgorica, Belgrade, and Sarajevo) and TaxiGo (in Kosovo, including Pristina). Separately, a Spanish-based on-demand delivery platform, Glovo, allows users to order food, groceries, and other goods using a mobile app and is present in several cities in Albania, Serbia, and North Macedonia. Moovit is a public transit app that provides real-time information on bus and train schedules and is available in almost all cities included in the study, except Banja Luka and Durres. CityBee is a car sharing platform that allows users to rent cars using a mobile app, offers a range of vehicle options including electric cars and vans, and is available

in Albania, Serbia, and North Macedonia. Despite these efforts, the MaaS solutions market is still evolving, and cities should focus on policies to enable investments in the sector.

Summary of urban mobility characterization

The motorization rates of the WeBa cities are increasing rapidly, accompanied by an influx of second-hand vehicles, thus exacerbating congestion on urban roads and diverting users from aging and under-invested public transport that is unreliable and unattractive. The cycling infrastructure is often disconnected, and sidewalks are of low quality and constantly encroached by cars. Women in particular are challenged by the lack of access to private cars and bicycles, and by the perception of an unsafe experience in public transport. If business-as-usual continues, cities will suffer from reduced business productivity in their roles as economic agglomerations, enduring worsening air pollution and extreme weather and negatively impacting residents' quality of life. Cities should prioritize efforts on developing safe, sustainable, and accessible transport options and projects that incentivize users' shift toward sustainable transport.

WeBa cities have already initiated the effort to modernize public transport fleets and develop cycle lanes and pedestrian zones; more can be done. The emerging uptake in ITS, e-mobility, shared mobility, MaaS, and urban logistics also offer opportunities for the WeBa cities to leapfrog on technology development and learn from innovations undertaken in cities in the region and around the world. In formulating a roadmap to e-mobility, priority must be given to the reform of public transport and continued promotion of active mobility. These are some of the low-hanging fruits that can provide the basis for a sustainable urban transport eco-system.

5. Investment priority areas

Most cities in the region have a limited pipeline of investment projects and tend to focus on the O&M of existing transport systems rather than scalable strategic projects.

Investment areas informed by existing plans

At commencement, the study reviewed existing plans from the cities, including SUMP, GCAPs, and urban development plans, to understand potential areas where the cities might be interested in pursuing investment in the short term (three to five years). This review observed the general areas of interest to the cities: parking management, improvement of cycling and walking infrastructure, public transport (including renewal of public transport rolling stock and mass transit), and construction of the traffic relief connections (see Table 5.1: Investment priority matrix).

Table 5.1 Investment areas matrix

	Banja Luka	Belgrade	Durres	Nis	Novi Sad	Podgorica	Pristina	Sarajevo	Skopje	Tirana
Parking management	o	o				o	o	o	o	o
Connectivity & traffic reduction schemes (roads, bridges, tunnels)		o	o	o		o				
Traffic management (smart technologies)									o	
City mass transit development		o		o	o			o		o
Rolling stock renewal			o			o		o	o	
Transit stations and hubs							o			
Rail infrastructure										
Ticketing / ITS technology for public transport	o									o
Cycling infrastructure	o	o		o	o	o	o	o	o	o
Walking infrastructure	o	o			o	o		o		o
City logistics										o
EV infrastructure		o								o

Summary of priority investment areas

On completion of the urban mobility assessment, the team returned to the cities to share the diagnostic findings of needs, gaps, and opportunities. The study held concluding workshops with 8 of the 10 selected cities through in-person and online platforms to jointly develop priorities. By exchanging diagnostics findings and contextual insights on priorities as conveyed by the

participating stakeholders at workshops, this study confirmed priority investment areas toward the end of the assessment.

These priority investment areas add further clarity to the initial matrix the study compiled. It is important to note that these priorities present the cities' strategic thinking for short- and mid-term development and will require feasibility and design work to define project scopes, alternatives, and costs. Continued engagement with the cities beyond the current phase would help to take this urban mobility assessment to the next level and yield opportunities for project development and financing. In Belgrade and Skopje, the study was able to obtain some order of magnitude estimates from stakeholders regarding selected investment priorities. For those cities where concluding workshops were not held, the identified priorities were not discussed and so are not presented in this report.

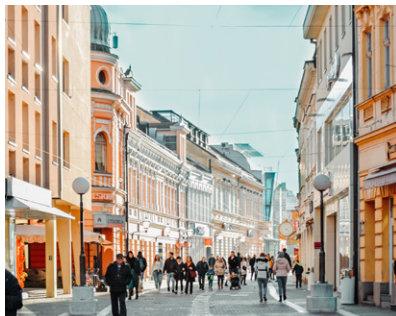
Figure 5.1 summarizes city-specific priorities. Among the previously identified thematic areas, public transport and e-mobility came out strongly as top priorities across the cities, along with institutional measures for improving public transport.

- **Public transport as a top investment area.** Cities view upgrading bus fleets to Euro 6 or even zero emission vehicles as a quick action that would directly impact service quality and attract users. During the two years of the study, Kosovo launched a €10 million fleet renewal project, and Sarajevo initiated the procurement of tram cars and trolleybuses and will soon upgrade its bus fleet to Euro 6 with an e-bus pilot. Planning for dedicated bus infrastructure is pursued in large cities, including tram extensions in Belgrade and Sarajevo and new bus rapid transit (BRT) corridors in Tirana and Skopje.
- **Growing interest in e-mobility over the course of the study.** While the early review found that Tirana and Belgrade considered e-mobility in their short-term plans, all eight cities noted interest in developing policies for e-mobility, measures for rolling out e-mobility, and provisions for charging infrastructure.
- **“Soft side” of public transport gained traction.** Through workshop discussion, cities expressed interest in bus network optimization, institutional arrangements, sector reform and business models, and engagement with the private sector through improved contract management or concessions.

Annex 3 provides three corresponding cases to illustrate an e-mobility development roadmap ([Serbia](#)), strategies to improve e-bus procurement and reduce prices ([India](#)), and public transport sector reform through the establishment of a public transport authority ([public transport authority](#)), among other best practices.

Figure 5.1 City-specific priorities identified during study

Banja Luka, Bosnia and Herzegovina



- City public transport investments including vehicle fleet renewal (low emission vehicles) and bus priority measures to improve reliability
- Public transport sector reform, including institutional, operational, management, and maintenance improvements to deliver a higher level of service
- Development of citywide Non-Motorized Transport route networks, including new infrastructure, supported by cycle parking and expanded Bike-Hire scheme
- Deployment and roll-out of e-mobility measures including completion of infrastructure gaps and policies for e-mobility including micro-mobility
- City parking improvements including city center controlled parking zone & charges and development of off-street parking facilities on outskirts of central zone

Belgrade, Serbia



- Renewal of tram fleet
- Roll-out of a package of e-mobility measures to reduce greenhouse gas pollution and improve air quality in the city
- Extend tram infrastructure - including implementation of new tram tracks and depots
- Support development of cycling and micro-mobility
- Network investment for congestion relief and reduction of traffic related emissions

Durres, Albania



- Traffic and bus ITS, ticketing and passenger information, as well as infrastructure to improve bus service reliability, including Park & Ride
- Durres rail station upgrade as a following project to Tirana - Durres rail rehabilitation including new multi-modal interchange
- Improve the resilience of the city's road network to reduce the impact from potential flooding and improve reliability of transport infrastructure
- Greater uptake of EVs through charging infrastructure implementation
- Dedicated tourism transport infrastructure and services

Niš, Serbia



- Developing high quality public transport system that will deliver a 'step-change' in level and quality of service to attract new users
- Implementation and roll-out of e-mobility measures including new EV charging infrastructure to improve city air quality
- Potential for Park & Ride (to manage travel demand more effectively and increase public transport mode share)
- Offers potential to integrate public transport improvement with urban development to connect with growing communities
- Urban regeneration and alleviating the burden of inaccessibility and transit flows

Podgorica, Montenegro



- City public transport improvements including institutional changes to improve bus service management and fleet renewal
- Improving public transport infrastructure to enhance bus reliability and regularity including stops and priority lanes
- City pedestrian infrastructure improvements including route network enhancements, new bridge connections and pedestrian priority areas
- Development of city e-mobility including evaluation of e-buses and implementation of e-bus toolkit pilot scheme
- City parking improvements including expansion of city center controlled parking zone (CPZ), underground parking and potential Park & Ride

Sarajevo, Bosnia and Herzegovina



- Public transport sector reform and growth - including institutional and operational management
- Renewal of city bus fleet - including EV and other suitable technologies
- Public transport infrastructure improvements to improve bus service reliability and connectivity - bus priority and stop enhancements
- Managing demand for city center travel - congestion reduction with lower levels of private motorized vehicles
- Introduction of parking control to improve higher modal split for public transport - including more city center enforcement

Skopje, North Macedonia



- Citywide bus fleet renewal and updated bus network plans - increased capacity and renewal of bus fleet to support new network
- Traffic ITS, bus ITS and access controls during peak period, additional junction signal control
- Bus infrastructure improvements to improve bus service reliability & connectivity - bus priority & bus stop enhancement
- Includes potential for improved bus interchanges/hubs including Park & Ride sites
- On-street parking modernization - technology to manage parking demand more effectively

Tirana, Albania



- Bus sector reform and improved business models of private bus operations
- Additional public transport capacity on key corridors into the city - including Bus Rapid Transit on main city corridors
- Wider public transport infrastructure improvements to improve bus service reliability and connectivity - including bus priority measures
- Completion of infrastructure gaps and policies relating to E-mobility to expand volume and coverage of e-vehicles and infrastructure
- Potential to integrate public transport improvement with urban development to encourage modal shift to public transport

6. The way forward: enabling investment in urban mobility

Following a comprehensive assessment of urban mobility across WeBa, the study synthesized the diagnostic findings to identify key strategic areas that can create an enabling environment for the cities to pursue their priority investments.

Developing robust municipal financing

Robust municipal financing is needed to invest in and sustain the urban transport system. The assessment found that cities rely on tax revenue to pay for transport CAPEX and OPEX. Local property tax and business-related tax constitute the primary sources of municipal own-source revenue in the Balkans. Consequently, increasing funding for the sector calls for key actions, such as prioritizing the development of a comprehensive property registry (cadastre) system; adopting uniform, frequent, and consistent property valuation approaches; and creating user-friendly interfaces to facilitate tax payments. Strengthening these systems will enable municipalities to expand their property tax base and generate sustainable revenue streams. The local government should also seek opportunities to attract additional investment in urban mobility and raise additional funding for the sector, such as implementing user-pays principles applied to urban toll roads and congestion charging as well as cross-subsidizing sustainable modes.

Land value capture associated with public transport investments is an innovative finance source that has proven successful around the world. High capacity and high-quality public transport can have a transformative impact on nearby areas, enhancing accessibility and subsequently increasing land values. City governments can leverage this opportunity by capturing a portion of the land value increase to finance public transport improvements. Different land value capture measures such as increased property tax assessments, business improvements districts, and PPPs for nearby developments can be explored. Implementing these measures is contingent on the local laws, regulations, and specific circumstances of the respective areas.

Central government also plays a pivotal role in catalyzing local investments through grant schemes to incentivize innovations. As cities in the region have less revenue generation capacities compared to their EU counterparts, intergovernmental fiscal transfers from central governments continue to play a role. Considering the myriad benefits associated with enhanced urban mobility—the effects of economic agglomeration, the GDP contributions of major cities, and the reduction in greenhouse gas emissions that transcends beyond city boundaries—there is a compelling case for central governments to support and fund urban mobility initiatives at the sub-national level. Well-designed central government programs, such as grants or viability gap financing, can serve as important financing sources, encouraging local investment in public transport projects, such as the formula grant for public transport investments in the US and the BRT program grant in Colombia.

Leveraging the efficiency of private sector through public-private partnerships

The private sector has historically played an important role in the economic development of WeBa countries. PPPs for urban mobility are already present in WeBa, mainly in public transport

operations and parking management (see other global examples in Annex 3). More can be done to expand private sector participation in infrastructure, services, and emerging transport modes, such as MaaS and urban logistics. Additionally, cities can complement their own efforts to tackle the challenges in urban mobility delivery and financing by attracting private sector funding to urban mobility development. Establishing adequate national regulatory frameworks is also key to attracting PPPs for mobility projects.

PPPs in urban mobility can take different forms and cover different areas, ranging from greenfield construction to rehabilitation and maintenance and from tram or metro lines to bike sharing systems. Below are examples of PPP applications in urban mobility.

Bus shelters and terminals. The private sector can play a role in operating, building, and renovating bus shelters and terminals. Under the PPP model in India (see Annex 3), the concessionaire builds and maintains bus shelters, enjoys the rights to collect revenue from displaying advertisements at selected locations on bus shelters, and in turn pays a set concession fee to the municipality.

PPPs in parking management.²⁵ Parking may offer business efficiency for the private sector while generating revenue for the city, in particular by concessioning on-street parking, enforcing parking restrictions, or investing in parking infrastructure. For parking management PPPs, the municipalities typically make a parcel of land available to a concessionaire to develop a multi-level parking facility together with commercial and office space. The municipality's role is then limited to specifying minimum requirements for parking space and approving tariffs, but otherwise the concessionaire has the flexibility to determine what commercial and office space to develop. In cases when the project relates to existing parking infrastructure, the private partner typically undertakes O&M and improvement of the facilities against an upfront payment and retains the parking fees.

Ticketing and information systems. Establishing proper fare collection is core for any business and becomes critical when structuring concession contracts in transportation. The private sector can take over the role of setting up and operating the fare collection system, collecting a fee or percentage of farebox revenue, while the public entity manages the funds and redistributes between the operators. Unbundling fare collection from fleet operation is desirable when there is more than one public operator in the area and when the authorities implement public service obligation contracts with operators.

Shared services and micromobility. The private sector can play an active role in the development of shared and micromobility services in cities. Such projects are relatively small in size and, based on global experience, have a wide range of business models.

Urban bus PPPs. Urban bus transactions are usually relatively smaller than those in other sectors; this makes the bankability of such projects more challenging. Various PPP models for urban bus

Selection of PPPs types:

- 1. Build-operate-transfer projects:** Private companies finance, design, build, and operate transportation infrastructure for a set period of time before transferring ownership back to the government.
- 2. Concession agreements:** Private companies are granted the right to operate and maintain transportation infrastructure for a set period of time in exchange for a fee or a share of the revenue generated.
- 3. Joint ventures:** Public and private sector entities collaborate to finance, design, build, operate, and maintain transportation infrastructure.

²⁵ <https://ppp.worldbank.org/public-private-partnership/subnational-and-municipal/municipal-parking>.

systems include bundling or unbundling ownership and operation of the fleet and infrastructure, where the private sector can finance, operate, and maintain the fleet or infrastructure or perform a combination of those functions. Concessions for BRT development are widely used in Latin America, and various PPP models to deploy electric buses are being implemented worldwide (see Annex 3 for the e-bus procurement strategy of India and Chile).

While PPPs have proven to be an efficient way to address the constraints of the public sector to finance and operate urban mobility, structuring high-quality concessions requires technical, institutional, regulatory, and fiscal capacities. The following section describes the models for urban transport concessions in more detail.

Creating public transport concessions

Most WeBa cities are heavily dependent on bus networks, and therefore improving bus transport may well be the most critical action that they can take to improve urban mobility outcomes for their citizens. While most sub-national governments have some form of private operation in place, very few have appropriate performance-based contracts with operators. The most critical components of bus services are performance-based operation of buses and timely deployment of appropriate fleet.

Depending on the legal framework, public service contracts can be of **two types**:

Licensed services	Concessions
Simple short-term contract between the operator and the granting authority to operate freely at the former's own risk. Full demand risk. This is still common in Latin America for traditional bus services, which have not been transformed into concession contracts. In the EU, interurban coach services are deregulated as a further step in this business model.	A more structured contract with <ol style="list-style-type: none">lines/services assignment;identification of risks for each part;payment mechanism based on operational indicators and key performance indicators; and <ol style="list-style-type: none">longer period of service.

Standardized bus concessions are widely used to make urban transport projects more bankable. International experience of implementing bus concessions shows that combining fleet provision and bus O&M in one contract places all the risk on operators and causes (i) delays in implementation, (ii) risks of lower-than-projected passenger demand, and (iii) a lack of governments' timely payment of subsidies to the system, all of which are barriers to bankability. Identifying and allocating risks between the government and private sector ensure that concessions are truly competitive and open (avoiding incumbent capture), which will yield broad benefits, including facilitating transitions to cleaner, greener fleets.

A concession-based model makes it possible to incrementally but substantially improve bus transport system quality by setting up the performance standards and sharing the risk of the service provision. One of the options to reduce risk associated with fleet financing is the unbundled or segregated model. The model's key feature is that the transport authority separates fleet provision contracts from operation contracts. The fleet provision contract pays a fixed payment per bus/month and is guaranteed by the transit authority upon delivery of the fleet and depots. The source of remuneration is an availability payment from the transport authority; payment quality depends on the transit authority's creditworthiness and the credibility and enforceability of the

city's financial support. For most contracts, operators operate and maintain the fleet and depots following set standards for a fixed payment per bus, plus a variable payment per kilometer and per passenger (depending on fleet availability and key performance indicators).

A concession-based model moves to a system when the city is paying for service provided rather than for the capital cost of buses. This is particularly important in the case of the e-mobility transition; studies indicate that while electric buses are already competitive with diesel buses in terms of total cost of ownership, the capital cost of electric buses are significantly higher (about 1.5–2x the cost of diesel buses). Moreover, adopting new technologies, such as electric transport, also requires significant effort and technical expertise that can be provided by experienced private partner specializing in unbundled fleet provision models (for example, leasing). The unbundled model in this case reduces the implementation risk for the transport authority and reduces financial risks and costs for the operator. This is especially important in the case of WeBa, where operators are of middle to small sized and need more financial muscle.

Moreover, if cities can coalesce around a standardized WeBa concession it would have the added benefit of creating a regional market. Due to the small scale of most operators in cities, standardized concessions through a programmatic approach would incentivize competition and consolidation at a regional level. As for fleet renewal, scalable projects are often prioritized and typically more cost efficient in terms of both financing and procurement cost. Creating a standardized WeBa concession framework would increase the bankability of fleet renewal programs, giving operators and their financiers alike confidence in a secondary market for buses bought to support a concession.

Focusing on capacity building

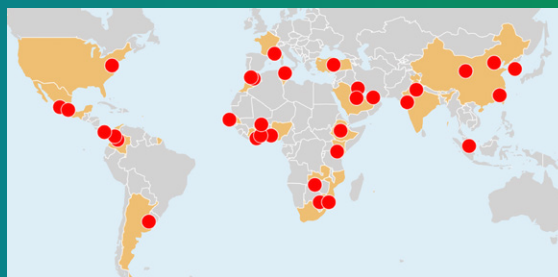
Enhancing technical and management capacity is fundamental to ensure successful delivery of urban mobility strategies and projects. This takes resources, time, and commitment. The following intends to serve as guide for the cities to start developing capacity, some of which is based on the World Bank's operation experience and collaboration with other development partners.

Developing capacity will require collaboration with local universities to establish programs and curricula on urban transport.

The curricula or program requires a stronger interface between urban planning and transport engineering, as urban transport is set in the complex urban environment. This would cover a broad range of topics, including best practice on urban mobility, regulations, planning, operations, civil engineering, and financing. Hands-on experience, usually through internships with city agencies and consulting firms, has been proven effective in deepening the learning and preparing the new

Leaders in Urban Transport Planning (LUTP) Program

LUTP provides interactive training workshops through which city transport leaders gain the skills needed to identify, prepare, and implement holistic solutions to complex urban transport issues that are the “best fit” to local circumstances. Since its introduction in 2011, nearly 2,200 practitioners across 100 countries have successfully undertaken the LUTP training program. Dots in the map below indicates the cities where LUTP organized sessions.



planners and engineers to be ready for operations. In doing this, bringing in female students and interns is a first step to help bridge the transport sector's gender gap.

Development partners can support cities through targeted capacity-building programs. Through development partner engagement and IFI-financed projects, cities can access technical assistance funds, typically deployed as part of the financing. These funds can be used to develop capacity-building programs, support implementation, and develop local knowledge. These capacity-building activities can go a long way in ensuring long-term sustainability beyond specific project implementation. For example, the Swedish Government and Japan International Cooperation Agency recently supported study tours for the Bosnia and Herzegovina cities on cycling, low emission zones, and public transport. The World Bank's "Leaders in Urban Transport Planning" program is a well-established program to provide training and develop institutional capacity in urban mobility.

Experience sharing within the region. Cities across the WeBa region can learn from one another by joining networks of city governments that support common capacity-building programs, which provide opportunities for policy learning from pilot projects and share practices and lessons.

Preparing implementation plans and project development

With SUMP's now in place, it is time to shift attention to operationalizing strategies and investments. The development of robust city urban mobility plans is only an initial step in establishing a blueprint for future urban mobility.

Develop a short-term investment plan that ties the priority policy and infrastructure interventions with reasonably foreseeable financial resources. This implementation plan (often combined with a financing plan) is separate and different from the long-term strategic plan (for example, SUMP's) in that it requires a city's decision-makers to clearly identify reasonably expected revenues and financing options, which enables the strategic identification of IFIs that are aligned with the city's timeline and priority.

Project development is a cycle to plan, program, design, build, and maintain quality transportation systems. A project's life cycle normally contains five phases with some variations: (1) feasibility study, (2) preliminary design and environmental review, (3) final design and right-of-way acquisition, (4) construction, and (5) O&M. The phases are parts of a whole and are not independent, self-contained tasks.

Short-term investment plan

The Washington D.C. metropolitan region's Transportation Improvement Program formulates an investment schedule and identifies the flow of national, state, and local funds. Its approval triggers the flow of funds for implementation.

FY 2021–2024 TRANSPORTATION IMPROVEMENT PROGRAM for the National Capital Region

Adopted on MARCH 18, 2020



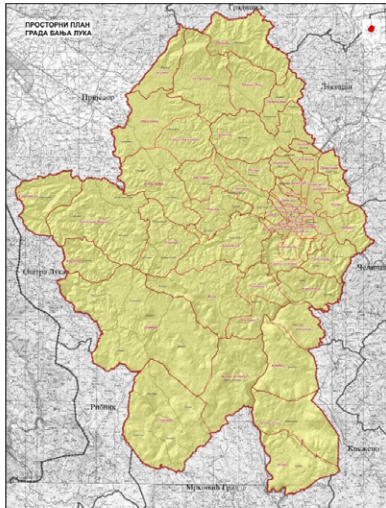
Cities are encouraged to develop feasibility studies to explore alternative solutions. This should be done through broad-based stakeholder consultation in order to derive a preferred solution and estimate investment return. Having feasibility studies would not only make it easier for the city to tap into IFIs and attract private sector financing, but also help accelerate the SUMP concept within the implementation phase. IFIs and EU funding are effective ways to support planning and feasibility studies. Most of the cities have received support from IFIs for the development of SUMP and GCAPs. Going forward, cities could seek IFI funding support for key feasibility studies and short-term investments plans that are in line with SUMP and GCAPs and with the new EU Urban Mobility Framework with significant climate-neutral goals.

Annex 1: City profiles



Banja Luka
Bosnia and Herzegovina

City profile



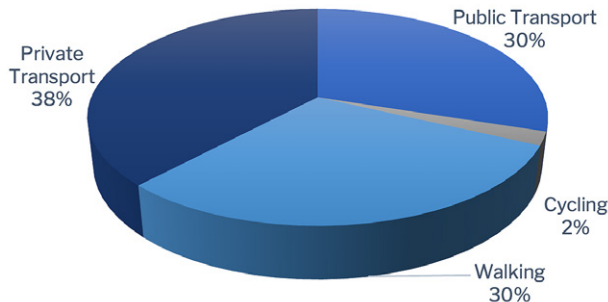
GENERAL DATA

Description	Banja Luka is the second largest city in Bosnia and Herzegovina and is the capital and administrative center of the Republic of Srpska. With its position in north-western Bosnia and Herzegovina, the city and neighboring municipalities are striving to become a major transport and economy center in the country.
City population	185,000 inhabitants (2020)
Density	149.4 inhabitants per km ² (2020)
Country GDP	US\$24.53 billion (2022)
GDP per capita	US\$7,585.4 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization rate	229 vehicles per 1,000 inhabitants (2020)
Public transport vehicle km	4,268,102 annual kilometers per 100,000 inhabitants (2020)
Cycling lanes	31 km (2021)
EV charging points	7.56 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	0.3 km per 100,000 inhabitants (2020)

TRANSPORT MODAL SHARE (in total trips, 2020)



Road management The city's Department for Traffic and Roads maintains the local roads and streets owned by the city.

Traffic management Banja Luka city for installation and O&M of traffic control systems; traffic police for enforcement.

Five private operators: Autoprevoz GS, Rale Turs, Boćac Turs, Aldemo Turs, and Pavlović Turs.

Public transport The contract is based on a public tender and includes all the specifications (network and timetable). The present contracts between the authorities and the operators are usually based on only five or seven years of operation. However, there are more recent initiatives for a contract length of 10 years. In case of non-performance, the contract sets out penalties in the form of fines. The revenue of the ticket sales is for the operators.

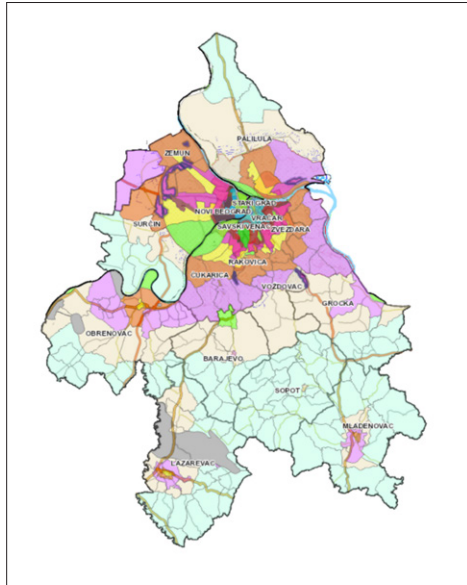
Subsidies are provided by the city to the operators based on scheduled km.

KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP	No SUMP
	Identifies different priority actions: <ul style="list-style-type: none"> Develop car parking and management policies and strategies Expand and enhance cycling infrastructure Promotional campaigns for car sharing, walking, and cycling
GCAP 2020	<ul style="list-style-type: none"> Upgrading of bus stop infrastructure and technology Implement bus network infrastructure Implement pedestrian priority infrastructure Implement bus operational reforms.

Framework Transport Policy of Bosnia and Herzegovina (2015–2030)

Framework Transport Strategy of Bosnia and Herzegovina (2016–2030)



GENERAL DATA

Description

Belgrade is the capital of **Serbia** and the biggest city of the region. It is located at the confluence of the Sava and the Danube and on the crossroads of the Eastern and Central European roads and railways. Belgrade lies on the Danube, which connects Western and Central European countries with the countries of Southeast and Eastern Europe. The city is polycentric, administratively divided into 17 city municipalities that have a certain degree of administrative independence. This is even more so in the case of the seven peripheral city municipalities.

City population 1,693,000 inhabitants (2020)

Density 3,736.0 inhabitants per km² (2020)

Country GDP US\$63.5 billion (2022)

GDP per capita US\$9,393.6 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization rate	365.8 vehicles per 1,000 inhabitants (2020)
Public transport vehicle km	7,121,826 annual kilometers per 100,000 inhabitants (2019)
Cycling lanes	103 km (2021)
EV charging points	5.49 charging points per 100,000 inhabitants (2021)

Exclusive roads for public transport 4.57 km per 100,000 inhabitants (2020)

Road management The Secretariat for Traffic of the City is responsible for roads in the 10 central municipalities; the other 7 peripheral municipalities are responsible for local roads.

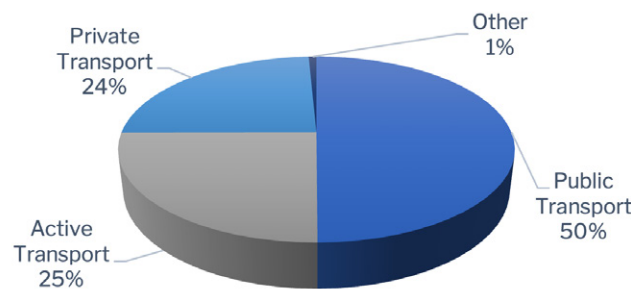
Traffic management Traffic police for enforcement; Secretariat for Traffic for the operation of the traffic control systems.

Public transport “GSP Beograd” is the municipal public transport company, holding a share of 63% of the city’s passenger public transport market; private operators run passenger transport on about 37% of the lines.

Public passenger transport is awarded through concessions. Those contracts are normally valid until absorption of the contract value, but no later than 10 years since the date of procurement. These contracts mainly take the form of gross cost contracts or some hybrid form.

Next to ticket income, most of GSP’s revenue is still generated through subsidies from the city of Belgrade.

TRANSPORT MODAL SHARE (in total trips, 2015)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP 2020

Indicates main challenges:

- Development of the bicycle network
- Improving the existing cycling Infrastructure
- Development and improvement of the structure and functioning of the whole public city passenger transport public utility (JGTP)
- MaaS concept development
- Increasing the safety and security of pedestrians and other non-motorized road users
- Reconstruction of existing intersections into roundabouts

GCAP 2019

Identifies different priority actions:

- Extension and development of the Belgrade train and tram
- Commercial transport policy – city logistics
- Bike sharing system
- Encouraging walking and/or cycling within the city through improved pedestrian facilities and cycleways
- Purchase of electric buses and buses that use renewable energy sources with infrastructure development
- Plan for a network of public chargers for EVs
- Incentives and financing of EVs for public and private commercial vehicles

Action Plan for Sustainable Energy and Climate (SECAP, 2021)



GENERAL DATA

Durres is the second most populous city of **Albania**. It is basically part of the Tirana–Durres metropolitan zone. It is the area where the national and international social and economic activities are networked and joined. Therefore, it is directly affected by national developments.

Description

With the implementation of the new territorial administrative reform of Albania in 2015, the municipality of Durres has grown in space. It is part of the Durres district and consists of six administrative units. In total, these administrative units include 3 towns and 40 villages (as well as 6 regions and 14 neighborhoods of Durres).

City population 332,000 inhabitants (2020)

Density 958.3 inhabitants per km² (2020)

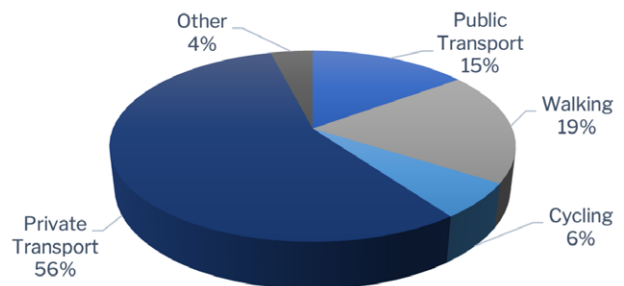
Country GDP US\$18.88 billion (2022)

GDP per capita US\$6,802.8 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization rate	190 vehicles per 1,000 inhabitants (2019)
Public transport vehicle km	1.4 annual kilometers per 100,000 inhabitants (2021)
Cycling lanes	>6 km (2019)
EV charging points	0.90 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	1.4 km per 100,000 inhabitants (2020)
Road management	The city develops and maintains city roads.
Traffic management	The municipal police operates the traffic control system.
Public transport	<p>Two private operators: IRI-Trans operates four lines and MAREN BUS two lines.</p> <p>The available public transport lines are published on the website after which the private operators compete for the given line in an open competition. Thereafter, the mayor issues a concession contract which specifies the lines and timetable and is valid for 10 years. The operators do not receive kilometer compensation, nor are they compensated for the mandatory concessionary fares.</p> <p>Due to COVID-19 and the increase in fuel prices, the local government is providing subsidies to private operators.</p>

TRANSPORT MODAL SHARE (in total trips, 2019)

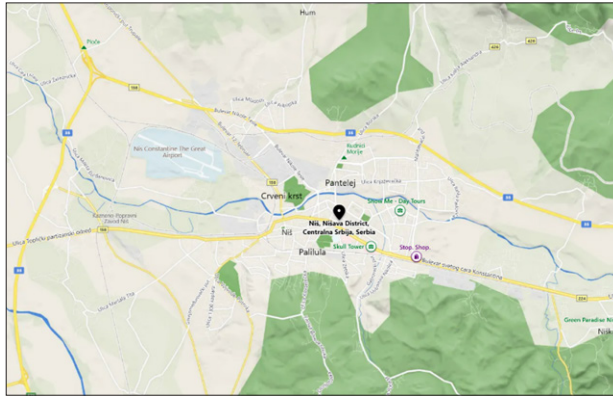


KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP 2019

Priorities:

- Development of city public transport. Bus fleet renewal program (including potential EVs)
- Development of new interchange facility at rail station, integrated with public transport services.
- City road infrastructure resilience arrangement
- Measures for congestion reduction
- Strategy for application of intelligent systems in the road transport



GENERAL DATA

Description

Niš is the city with the third largest population in the country and is located in south **Serbia** at the crossroads of the most important Balkan and Southeast European traffic routes. The city is also the regional economic, administrative, and transport center for neighboring municipalities and administrative districts.

Niš is one of six functional macroregional centers in Serbia. It consists of five city municipalities (Mediana, Niška Banja, Palilula, Pantelej, and Crveni Krst) and the administrative center of the Nišava District. The statute of the city defines which jurisdictions and activities the city delegates to the city municipalities.

URBAN MOBILITY CHARACTERISTICS

Motorization rate	269.22 vehicles per 1,000 inhabitants (2019)
Public transport vehicle km	2,777,982 annual kilometers per 100,000 inhabitants (2019)
Cycling lanes	10 km (2021)
EV charging points	3.93 charging points per 100,000 inhabitants (2021)

No roads dedicated exclusively for public transit (2021)

Road management The city's Road Management Department is responsible for maintenance of the local roads and streets.

Traffic management The city's Traffic Department manages traffic flow; traffic police enforce traffic regulations.

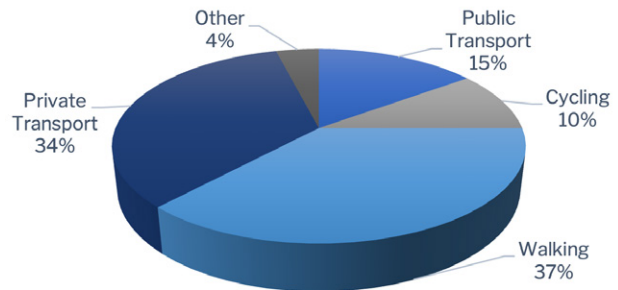
There are three private operators: Niš Express, JV Lasta SC Belgrade, and Strela.

Public transport Public utility company Directorate for Public Transport procures and contracts public transport services on the basis of concessions. It sets packages of lines and publishes calls for operators. The tender sets out the minimum price per km and the price differs per operator and set of lines. The contractual period can be flexible; however, seven years is deemed optimal. Private operators are paid monthly instalments per vehicle/km, per the value(s) set in the contract(s), and potentially reduced by penalties where operator(s) fail to follow the terms of the contract.

City budget subsidies cover 10–12 percent of the total public transport budget line (2019).

City population	255,000 inhabitants (2020)
Density	426.9 inhabitants per km ² (2020)
Country GDP	US\$63.5 billion (2022)
GDP per capita	US\$9,393.6 (2022)

TRANSPORT MODAL SHARE (in total trips, 2020)



KEY TRANSPORT INITIATIVES & PRIORITIES

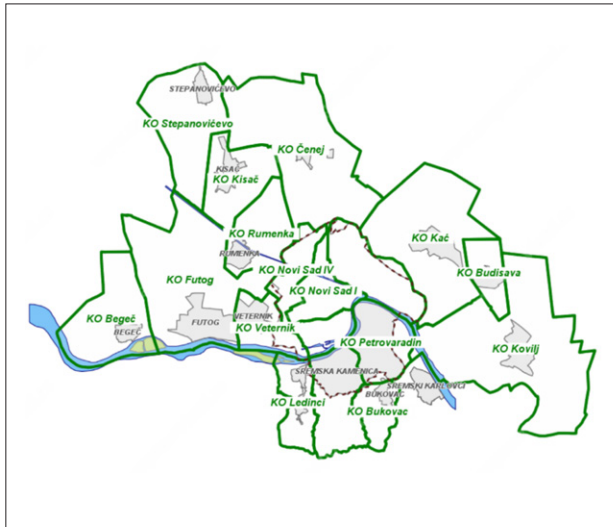
SUMP

No SUMP. The cooperation agreement is signed for the development of a SUMP in the city of Niš.

General Master Plan of Traffic in Serbia until 2027 (2009)

The plan aims to attract new investments in the region. It is a tool to verify the effects of the strategic projects in the transport sector and a support to the decision-making process in infrastructure development.

There are also plans to reallocate the bus station, create an internal arterial bypass instead of the existing railway corridor to bring cargo transport outside the city, reallocate the bus depot, and create new walking and cycling routes,



GENERAL DATA

Description

Novi Sad is the center with highest urbanization in **Serbia**. It is formed through the physical, functional, and social integration of Novi Sad, Petrovaradin, and Sremska Kamenica into one conurbation, to which other peripheral settlements gravitate. The municipality of Novi Sad covers 11 cadastral municipalities and the municipality of Petrovaradin 4 cadastral municipalities.

City population 363,000 inhabitants (2020)

Density 399.0 inhabitants per km² (2020)

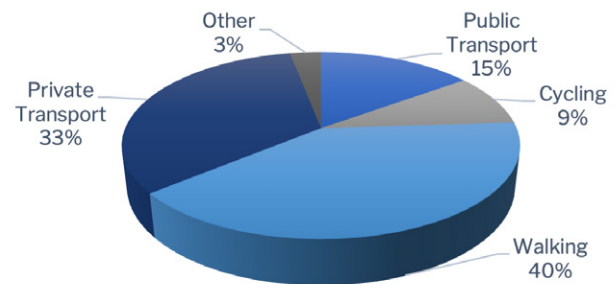
Country GDP US\$63.5 billion (2022)

GDP per capita US\$9,393.6 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization rate	332 vehicles per 1,000 inhabitants (2020)
Public transport vehicle km	3,599,258 annual kilometers per 100,000 inhabitants (2018)
Cycling lanes	>90 km (2021)
EV charging points	4.69 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	1.226 km per 100,000 inhabitants (2021)
Road management	The public company "Institute for Construction of the City" develops city roads; PUC "Put" (Road) Novi Sad implements work on road transport infrastructure and maintenance.
Traffic management	The city's Department for Construction, Land, and Investments is responsible for O&M of the automatic traffic management system.
Public transport	PCTC Novi Sad is the only public transport provider. The city area is generally well integrated and covered by the bus lines. Currently the only form of PPP is in the parking subsystem. A concession contract is awarded in 2020 with a "public garages" company for 43 years (3 years for design and construction and 40 years for operation). The city controls and finances PCTC Novi Sad. On top of this, PCTC Novi Sad retains ticket revenues.

TRANSPORT MODAL SHARE (in total trips, 2015)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP

No SUMP. Its preparation is essential for urban mobility improvement.

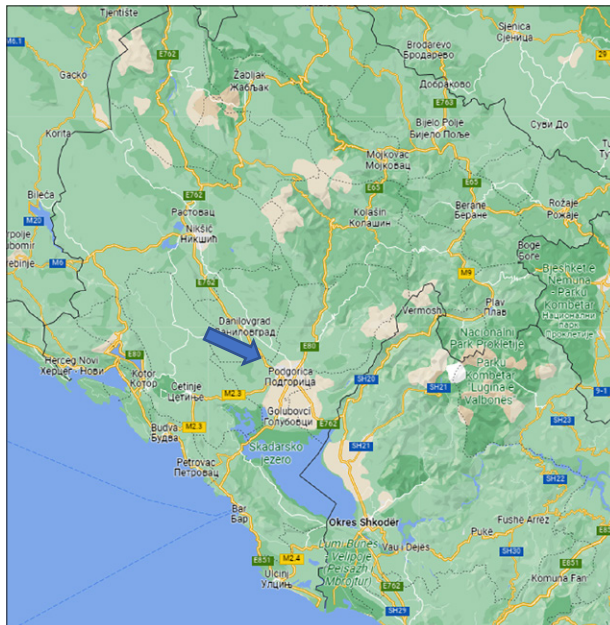
GCAP

The GCAP is under development

SMARTPLAN of Traffic Development in Novi Sad, 2019

Identifies different priority actions:

- Bus fleet renewal
- Further expansion of public transport exclusive traffic lanes
- Improvement of the bicycle infrastructure
- Improvement of the walking infrastructure in the city
- Implement a policy of low/zero emissions
- Proposes to start regulating the relationship of the city and public carrier via public service contract



GENERAL DATA

Description

Podgorica is the capital of **Montenegro**, formerly known as Titograd in the second half of the 20th century, and is situated in the northern part of the Zeta Valley on a junction of several major routes leading from the sea to the continental part of Montenegro. The local administrative unit also includes the city municipality Golubovci and contains 30 percent of the country's population.

Within the territory of the city, the municipality organizes public transport, including to the suburbs and surrounding villages within its jurisdiction.

City population 200,000 inhabitants (2018)

Density 129.0 inhabitants per km² (2011)

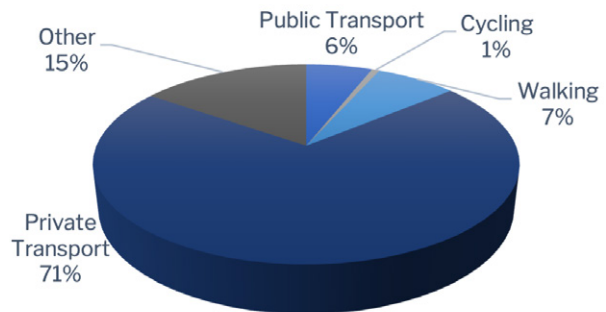
Country GDP US\$6.1 billion (2022)

GDP per capita US\$9,893.5 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization rate	370.44 vehicles per 1,000 inhabitants (2018)
Public transport vehicle km	N/A
Cycling lanes	30 km (2021)
EV charging points	5.01 charging points per 100,000 inhabitants (2021)
No roads dedicated exclusively for public transit (2021)	
Road management	City roads are managed by the city; municipal roads are delegated to the municipalities
Traffic management	Traffic police for enforcement; Secretariat for Traffic for the operation of the traffic control systems
Public transport	Public transport service is provided by two private operators (BLT and Gradski saobraćaj PG) and one new, publicly owned public transport operator (Putevi).
	Public transport is organized based on concession contracts. The contract runs for 10 years. The operator oversees public transport on a group of lines defined through a call to which operators have submitted a bid. The operators retain ticket revenues.
	Public transport in the city is financed mostly from the sale of tickets and other revenues, but the city provides annual subsidies to maintain ticket price levels.

TRANSPORT MODAL SHARE (in total trips, 2019)



KEY TRANSPORT INITIATIVES & PRIORITIES

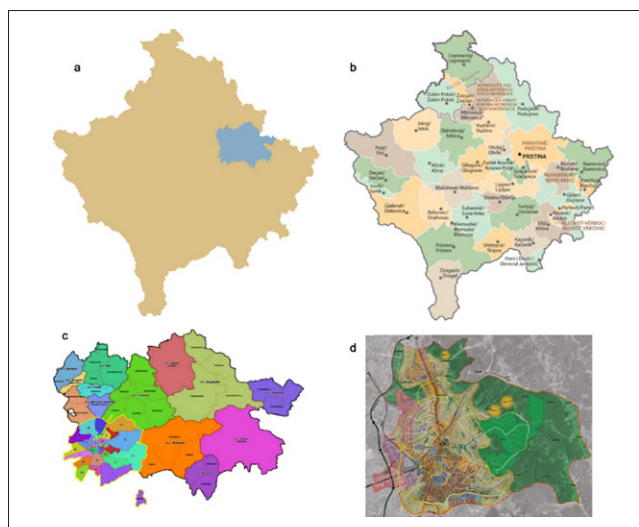
SUMP 2019

Priorities:

- Improvement of the bicycle infrastructure
- Implement a new public transport network
- Procure new low emission buses, including electric
- Introduction of a system for providing real-time passenger information
- New ticketing system and mobile application
- Measures related to private transport

Transport Development Strategy 2019–2035 with the Action Plan 2019–2020

Railway Development Strategy for the Period 2017–2027



GENERAL DATA

Pristina is the capital city of **Kosovo** and administrative center of the Pristina region/district and the Pristina municipality. Located in the north-eastern part of the Kosovo, the district of Pristina is the center of Kosovo due to its importance in finance, commerce, entertainment, arts, international trade, education, services, etc.

Description

The district of Pristina consists of 8 municipalities and 298 villages. Local self-government denotes the right and the ability of local authorities to regulate and manage a substantial share of public affairs under their own responsibility.

URBAN MOBILITY CHARACTERISTICS

Motorization Rate	193 vehicles per 1,000 inhabitants (2015)
Public transport vehicle kilometers	N/A
Cycling lanes	9.5 km (2021)
EV charging points	3.66 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	0.914 km per 100,000 inhabitants (2021)
Road management	Directorate of Public Services, Protection, and Rescue manages roads; maintenance contracted to private companies.
Traffic management	Directorate of Public Services, Protection, and Rescue operates and maintains traffic control systems.

Public transport Trafiku Urban is the only public municipal operator, which covers more than 30 percent of the lines. About 20 private operators cover the other 25 bus lines.

Trafiku Urban operates based on a concession contract; however, private operators operate on the basis of temporary licenses. Public service contracts for private operators are currently under preparation. The operators are paid per km per month according to the service level agreed on in the contract. The current situation does not create suitable conditions for a potential renewal of the old bus fleet.

The subsidies provided by the municipality to the Trafiku urban public bus operator cover vulnerable passenger groups as well as the operating losses. However, as regards the private bus operators, these costs are covered by the operators themselves.

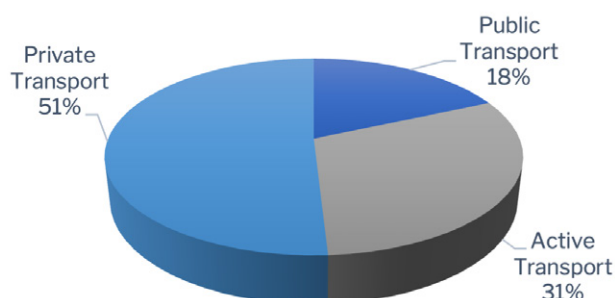
City population 219,000 inhabitants (2021)

Density 2,082.1 inhabitants per km² (2021)

Country GDP US\$9.43 billion (2022)

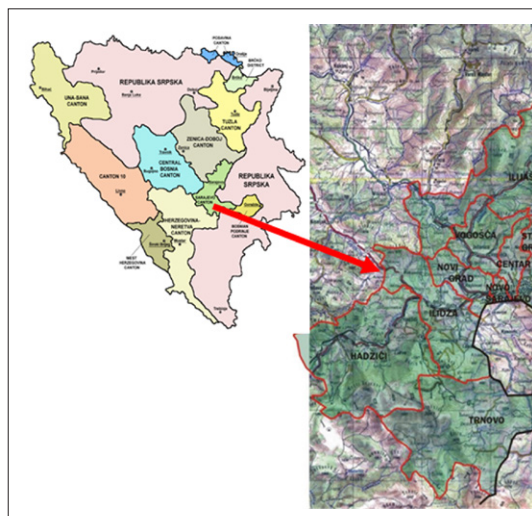
GDP per capita US\$5,351.4 (2022)

TRANSPORT MODAL SHARE (in total trips, 2017)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP (2019)	Priorities:
GCAP (2021)	<ul style="list-style-type: none"> Improvement of the bicycle and walking infrastructure
Pristina Urban Development Plan (2012 – 2022)	<ul style="list-style-type: none"> Enhancement of bus vehicles and the bus network infrastructure Implement mass transit services Development of interchange hubs Introduce integrated ticketing system
Pristina Municipal Development Plan (2012 – 2022)	<ul style="list-style-type: none"> Implement bus transport reforms Introduce measures to manage/control motorized private transport



GENERAL DATA

Description

Sarajevo is the capital of the Federation of **Bosnia and Herzegovina** and the headquarters of the Sarajevo canton. It is the largest city and the largest urban, cultural, economic, and transport center in the country. The territory of the Sarajevo canton includes the areas of 10 municipalities. Every municipality has its own administrative structure, although four of the city municipalities form a local unit self-government: city of Sarajevo. The government of the Sarajevo canton executes its competencies through 12 different ministries.

City population 550,000 inhabitants (2021)

Density 328.9 inhabitants per km² (2021)

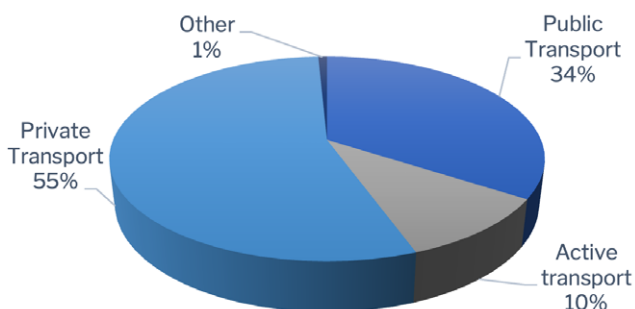
Country GDP US\$24.53 billion (2022)

GDP per capita US\$7,585.4 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization Rate	331.42 vehicles per 1,000 inhabitants (2020)
Public transport vehicle kilometers	3,658,271 annual kilometers per 100,000 inhabitants (2020)
Cycling lanes	7.1 km (2021)
EV charging points	8.33 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	1.9 km per 100,000 inhabitants (2021)
Road management	Canton MoT for cantonal roads; City of Sarajevo for city roads; and municipalities for local roads and infrastructure.
Traffic management	Sarajevo canton MoT is responsible for traffic regulations and installation; traffic police for enforcement.
Public transport	Two operators: GRAS (public utility company) and Centrotrans (private). MoT decides on public transport service level. The MoT regulates all public transport and is responsible for awarding concessions. The concession is issued for a five-year period and specifies the network. There are currently only two since other operators competing for tenders did not meet the requested criteria. Ticket sales are the operator's revenues. In the cantonal budget there are subsidies that cover transport of vulnerable passengers, as well as public operator GRAS.

TRANSPORT MODAL SHARE (in total trips, 2020)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP 2020

Outlines the vision and objectives in five clusters:

- Sustainable spatial and urban mobility planning
- Walking and cycling
- Public urban transport
- Individual personal transport
- City logistics

GCAP 2021

Identifies different priorities:

- Enhancement and expansion of cycling and electric scooter infrastructure
- Expansion of the public sector fleet and replacement with low emission vehicles
- Upgrading of bus station and stop infrastructure
- Smart and integrated traffic management solutions
- Reconstruction of tram tracks and purchase of new trams
- Construction and establishment of new tram lines

Framework Transport Policy of Bosnia and Herzegovina (2015–2030)

Framework Transport Strategy of Bosnia and Herzegovina (2016–2030)



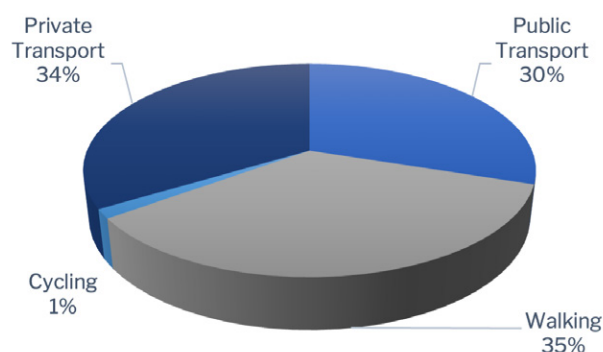
GENERAL DATA

Description	Skopje is the capital city of North Macedonia, is located in the east-west oriented Skopje Valley, and is surrounded mostly by mountains. The city of Skopje is an administrative division made up of 10 municipalities, with an additional 7 municipalities located outside the city boundaries which belong to the metropolitan area of Skopje.
City population	527,000 inhabitants (2021)
Density	289.6 inhabitants per km ² (2021)
Country GDP	US\$13.56 billion (2022)
GDP per capita	US\$6,591.5 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization Rate	269.12 vehicles per 1,000 inhabitants (2019)
Public transport vehicle kilometers	3,220,138 km per 100,000 inhabitants (2019)
Cycling lanes	107 km (2021)
EV charging points	0.72 charging points per 100,000 inhabitants (2021)
Exclusive roads for PT	1,836 km per 100,000 inhabitants (2021)
Road management	The city's Public Company for Streets and Roads for construction, reconstruction, rehabilitation, maintenance, and protection of the city roads; 10 municipalities own and maintain the local roads.
Traffic management	The city is responsible for the operation of the traffic control systems through TMCC.
Public transport	<p>One public utility company (JSP) operates 81% of the urban service and 86% of the suburban service. Two private operators operate the remaining services (Sloboda Prevoz and MakEkpres).</p> <p>The two private operators are running the bus services in the city under a contract agreement for operating public transport lines and obtaining transport permits. Private operators are paid per km per month. The contract duration is now two years and will be extended for two more years. This is not seen as a concession contract.</p> <p>Skopje's public transport system does not generate enough revenue to cover its annual operating expenditures, so the city provides annual operating subsidies totaling €10 million to the public operators (2020).</p>

TRANSPORT MODAL SHARE (in total trips, 2010)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP 2013

A new one is under development

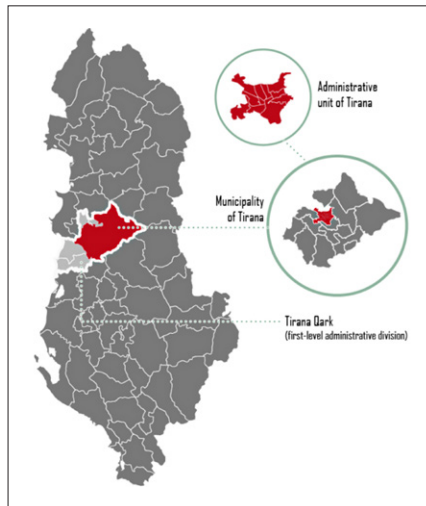
Identifies different priority actions:

- Improvement of public transport
- Traffic reduction and road safety
- Improvement of traffic management and calming
- Pedestrianization and reallocation of existing road space in favor of sustainable mobility modes
- Improvement of accessibility
- Parking control integrated policies
- Freight logistics
- Implementation of further innovative measures and policies.

GCAP 2020

Includes a number of key strategic goals:

- Improving transport planning, decision making, and data collection and monitoring
- Implementing urban traffic management arrangements
- Improving the quality of public transport and infrastructure including a BRT system
- Increasing the use of alternative transport modes
- Improving private motorized transport toward a cleaner fleet



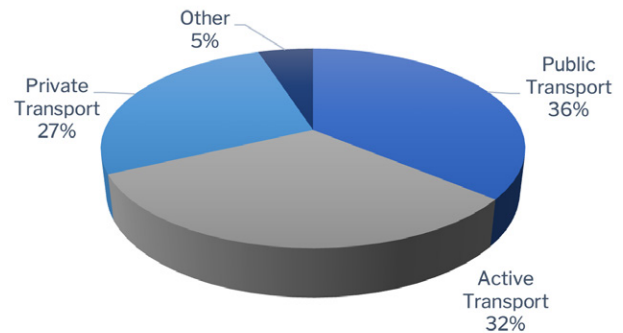
GENERAL DATA

Description	Tirana is the capital and largest city of Albania , accounting for about 29% of the total Albanian population living in the municipality. The territory of the Tirana Municipality area extends over a 25 km radius; however, most of the built-up areas are concentrated within 3 km from the city center. As of 2015, the municipality consists of 24 administrative units, of which 11 are urban administrative units and the rest are rural administrative units. Overall, 82% of the municipality residents live in the Tirana administrative unit.
City population	851,000 inhabitants (2020)
Density	766.0 inhabitants per km ² (2020)
Country GDP	US\$18.88 billion (2022)
GDP per capita	US\$6,802.8 (2022)

URBAN MOBILITY CHARACTERISTICS

Motorization Rate	330 vehicles per 1,000 inhabitants (2021)
Public transport vehicle kilometers	1,371,925 km per 100,000 inhabitants (2019)
Cycling lanes	38 km (2021)
EV charging points	2.94 charging points per 100,000 inhabitants (2021)
Exclusive roads for public transport	1.14 kilometers per 100,000 inhabitants (2021)
Road management	The city is responsible for city streets and local roads that connect the city with surrounding villages.
Traffic management	The city's Urban Traffic Control Center is in charge of traffic management.
Public transport	<p>There are 11 private bus operators, and they form an association.</p> <p>It is a competitive market as all operators are allowed to bid for tenders. However, in practice there is no competition in the tender procedure as normally only one operator shows interest in getting the contract. A non-negotiable contract is signed between the city and the operator. The concession is issued to the operator after signing the contract for a period of 10 years. The operator receives the ticket revenue.</p> <p>Subsidies are not included in the concession contract. However, the city can assign subsidies per km.</p>

TRANSPORT MODAL SHARE (in total trips, 2010)



KEY TRANSPORT INITIATIVES & PRIORITIES

SUMP 2019

Priorities:

- Promoting public transport and making it more efficient, attractive, and inclusive
- Stimulating cycling and micromobility as a proper transport mode
- “Mobility Resilient Tirana,” which combines infrastructure investments and soft policies
- Creating concrete parking policies and managing its supply, including logistic transport
- Focusing on an urban design of spaces for children to increase accessibility, attractiveness, and safety
- Implementing ITS and smart technologies

GCAP

Projects included:

- Implementation of an integrated public transportation system
- Upgraded taxi fleet with hybrid or electric models
- Provision of integrated cashless ticketing for different transport modes
- Construction of green corridors
- Deployment of EV charging infrastructure

Annex 2:

Benchmarking values and year of data

Data availability – years of data origins for benchmarking, by indicators

Indicator / City	Banja Luka	Sarajevo	Belgrade	Novi Sad	Nis	Pristina	Skopje	Tirana	Durres	Podgorica	Kosovo	Prague	Ljubljana	Vienna	Malmö
Total population	2020	2021	2020	2020	2020	2021	2006	2020	2020	2011		2021	2020	2020	2021
Monthly income	2020	2021	2020	2020	2020	2020	-	2020	2020	2019		2021	2020	2021	2021
Level of PM _{2.5} emissions	2020	2020	2017	2020	2020	2020	2020	2018	2019	2016					-
Level of PM ₁₀ emissions	2020	2020	2020	2020	2019	2020	2020	2018	2020	2016					2019
Level of local air quality monitoring activity	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021		2021	2018	2014	2019
Modal share in total trips	2015	2020	2015	2015	2020	2017	2010	2015	2020	2020					
Public transport modal share in total trips	2015	2020	2015	2015	2020	2017	2010	2015	2019	2019		2015	2011	2012	2018
Private transport modal share	2015	2020	2015	2015	2020	2017	2010	2015	2019	2019		2015	2011	2012	2018
Active transport modal share	2015	2020	2015	2015	2020	2017	2010	2015	2019	2019		2015	2011	2012	2018
Motorization rate	2018	2020	2020	2020	2019	-	2018	2021	2019	2018		2020	2018	2019	2021
Number of accidents per 100,000 inhabitants	2021	2020	2021	2021	2021	2020	2019	2021	2021	2018		2021			-
Annual number of public transport vehicle km per 100,000 inhabitants	2020	2020	2019	2018	2019	-	2019	2019	-	-			-	-	-
Kilometers of road dedicated exclusively to public transport relative to population	2021	2021	2020	2021	2021	2021	2021	2021	2021	2021					
Level of existing bicycle paths	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021		2021	2021	2021	2021
Number of pedestrians killed per year per 100,000 inhabitants	2021	2020	2020	2021	2021	-	2019	2021	2021	2017		2021	2021		
Number of pedestrians injured per year per 100,000 inhabitants	2021	2020	2021	2021	2021	-	-	2021	2021	2018		2021	2021		
Number of EV charging points per 100,000 inhabitants	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021		2021	2021	2021	2021

Data values used for benchmarking by indicator

Indicator / City	Unit	Banja Luka	Sarajevo	Belgrade	Novi Sad	Nis	Pristina	Skopje	Tirana	Durres	Podgorica	Kosovo	
Total population	[-]	185,094	419,918	1,692,768	395,206	254,723	218,782	555,459	850,530	332,102	199,715	218,782	
Change in total population in the city in last five years	[]	1.72	0.58	0.77	2.67	-2	5.53	1.31	8.97	6.23	3.9	5.53	
Population density within city metropolitan territory	[inh/km ²]	149	329	524	399	427	418	306	766	958	129	418	
Monthly income	[EUR]	550	631	632	657	551	466	-	510	388	515	466	
Level of PM2.5 emissions	[µg/m ³]	26.3	43.5	31	18	46.1	24	29.5	13.7	12.3	26	24.0	
Level of PM10 emissions	[µg/m ³]	40	49	43.5	35	58.7	37.4	47.7	25.1	19.2	39	37.4	
Level of local air quality monitoring activity	[Unit / 100,000 inh.]	2.16	1.19	1.6	0.51	0.79	0.91	1.26	0.24	0.3	1	0.914	
Modal share in total trips	Public transport	[%]	30	34.1	49.9	15	15	18.4	30	36	15	18.4	
	Non-motorized transport	[%]	32	10.3	25	48.8	47	30.7	36.4	32	25	30.7	
	PC	[%]	38	54.8	24.3	33	34	50.9	33.6	27	56	70.7	50.9
	Other	[%]	0	0.8	0.8	3.2	4	0	0	5	4	15.7	0
Motorization rate	[No. of veh. per 1,000 inh.]	229	331	365	332	269	164	269	330	190	370	164	
Number of accidents per 100,000 inhabitants	[-]	1,765.6	256.9	907.7	605.2	361.2	1601.1	263.1	76.2	34.9	1,101.8	1601.1	
Annual number of public transport veh. km per 100,000 inhabitants	[km]	4,268,102	3,658,271	7,121,826	3,302,989	2,777,982	-	3,220,138	1,371,925	-	-	-	
Kilometers of road dedicated exclusively to public transport relative to population	[km per 100,000 inh.]	0.3	1.9	4.6	1.2	0	0.9	1.8	1.1	1.4	0	0.9	
Level of existing bicycle paths	[km]	25.9	1.9	6.1	22.8	3.9	4.3	16.2	7.9	3.7	12.1	4.3	
Number of pedestrians killed per year per 100,000 inhabitants	[-]	1.62	3.1	2.13	0.98	2.74	-	2.7	1.82	3.92	0.5	-	
Number of pedestrians injured per year per 100,000 inhabitants	[-]	10.3	23.8	51.6	40.2	45.5	-	-	37.6	19.6	67.6	-	
Number of EV charging points per 100,000 inhabitants	[-]	7.6	8.3	5.5	4.3	3.9	3.7	0.7	2.9	0.9	5	3.7	

Annex 3:

Illustrations and examples of best practices

1. Public transport authority (PTA)

A PTA is a designated body responsible for overseeing and managing public transportation systems within a specific region or jurisdiction. The exact name, role, and form of a PTA can vary from one country to another. Key functions of a PTA may include: planning and developing public transportation network and infrastructure; regulation, licensing, and service contracts; tariff and ticketing systems; and others. The following illustrates three types of PTA organization:

Model 1: Highly centralized (under the national government):

Santiago de Chile (DTPM). The Directorate of Metropolitan Public Transport (DTPM) is the government entity (dependent on the Ministry of Transport & Communications) that regulates, controls, and supervises the integrated public transport system of Santiago (Transantiago), which is made up of buses, metro, and other public transport modes. The Board of Directors is wholly made up of personnel belonging to the Transport & Communications Ministry as well as other ministries. There is no representation of municipalities.

Model 2: Centralized entity covering only one administrative territory

London (TfL). The TfL is a statutory body created by the Greater London Authority (GLA) Act 1999. This Act gives the Mayor of London a general duty to develop and apply policies to promote and encourage safe, integrated, efficient, and economic transport facilities and services to, from, and within London.

TfL is controlled by a board whose members are appointed by the Mayor of London. The Commissioner of Transport for London reports to the board and leads a management team with individual functional responsibilities.

Model 3: The main public entity acting as an arranger (either national or regional administration) and participation of other public entities (municipalities)

Barcelona (ATM). The ATM is a voluntary inter-administrative consortium to which all administrations can join (municipalities & metropolitan).

The ATM has the majority of the regional government with the participation of the Barcelona City Council, the Barcelona Metropolitan Area (AMB), and the association of municipalities (non-AMB municipalities). Contracts are awarded by both the municipalities and AMB.

2. E-mobility transition roadmap (Serbia)

Developing an e-mobility transition strategic roadmap is a first step toward readying countries and cities for sustainable urban transport and prioritizing policy development and investments to enable the uptake of e-mobility, including e-buses, as illustrated in the case from Serbia (Serbia: A Pathway to Electric Mobility, 2022).

Foundation	1. Establishing a governance structure and concept for the market model
	2. Development of an adequate regulatory framework
	3. Development of an adequate planning framework
Mobility	4. Decarbonisation of the road transport vehicle fleet a) Bus fleet b) Passenger cars c) Government fleet, taxi fleets, freight transport d) Charging infrastructure network
	5. Shifting to electrified transport modes (trams and trolleybuses in urban areas, rail transport)
Cross cutting	6. Decarbonising the energy sector and ensuring power grid adequacy
	7. Social measures

3. Improving bankability of e-buses (India)

The government's earlier efforts for e-bus implementation faced obstacles such as the lack of participation and high prices. To improve the bankability of e-bus procurement, the government identified and implemented several key improvements (Improving bankability of e-bus procurement in India, 2021).

Feasibility study

1. Public transport authority to prepare feasibility study before floating the tender and the authority to provide depot and bus stations

Standardization

1. The authority to prequalify a list of eligible manufacturers and e-buses
2. Equipment and bus manufacturers need not be made mandatory to be part of bidding consortium

Guarantee

1. Reducing bank guarantee to 20% of subsidy amount, OR
2. Bidders to obtain letter of undertaking issued by state financial institutions (approved by the government)

Fleet aggregator models

1. Market player-led fleet supply: bus manufacturers, energy sector, financiers to aggregate
2. State-led fleet supply: government agency with ring-fenced funds for fleet procurement

4. Mobility as a Service (MaaS)

By integrating various modes of transport and leveraging digital technologies, MaaS can help improve mobility, reduce car use, and contribute to the shift toward sustainable and shared mobility. In many cities, the private sector has led innovation and integration, creating “super apps” that started as ride sourcing, and even expanded into one aggregated digital shop (that is, WeChat in China, Grab and Gojek in Southeast Asia, and Paytm in India). The following synthesize key takeaways from the World Bank report regarding the implementation of MaaS (Adapting MaaS for developing cities, 2021).

- **Supply and demand:** Linking users and mobility services; Needing robust infrastructure for public transit, biking, and walking; Change an ownership paradigm to an access to services paradigm.
- **Technology:** Digital payments and ticketing are key considerations in the deployment of MaaS platforms; Data adequacy, compatibility, and security are fundamental to the viability of MaaS platforms.
- **Business:** Offering a compelling value proposition for customers, mobility providers, and MaaS providers; Presenting a solid business case for MaaS to meet demand for mobility and accessibility.
- **Governance:** Regulatory framework to address information, payment, and service integration; Data being the new regulatory currency in the MaaS governance framework; Public sector to gain new skills, for example, data analytics.

5. Parking PPPs

The Ministry of Health of the Republic of Lithuania has signed a concession agreement with a private company for the design, construction, project execution, technical maintenance, management, and use of the car parking infrastructure at the Santariškės Medical Campus.

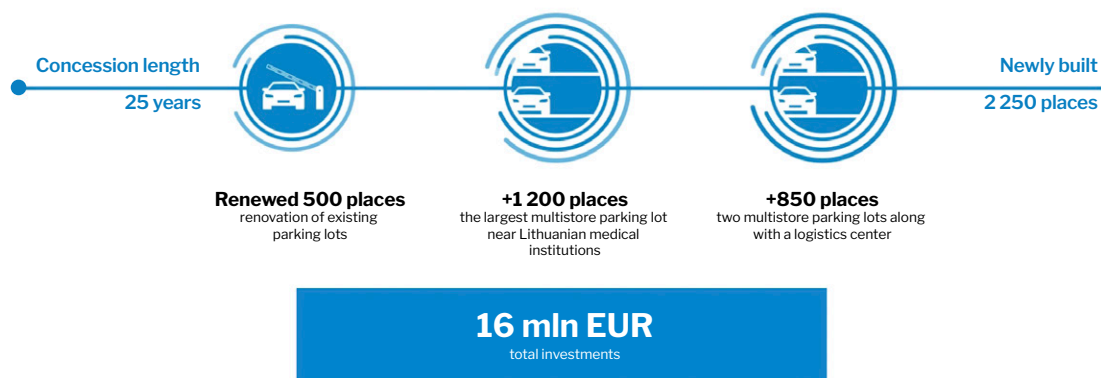
Santariskes is the largest medical campus in Lithuania, with more than 2 million visitors and patients visiting annually. However, the current parking infrastructure on the campus is both overloaded and unsatisfactory for users, as it does not give convenient access to the hospital's facilities.

Under the PPP concession contract, the private partner is required to design and build a new multi-story and ground parking infrastructure, creating a total of 2,250 new parking spaces. Additionally, the concessionaire will have to rebuild existing parking spaces and implement a parking management system. It will then operate and manage the entire campus parking infrastructure. Under the PPP concession contract, the private partner is committed to completing the creation of the new, high-quality parking infrastructure within 19 months.

Once construction is complete, the concessionaire will manage and operate the parking infrastructure for a further 23 years in order to ensure its effective functioning.

PPP project

PPP agreement between the Ministry of Health of the Republic of Lithuania and JSC Santaros parkavimo paslaugos



6. Fleet PPPs Santiago

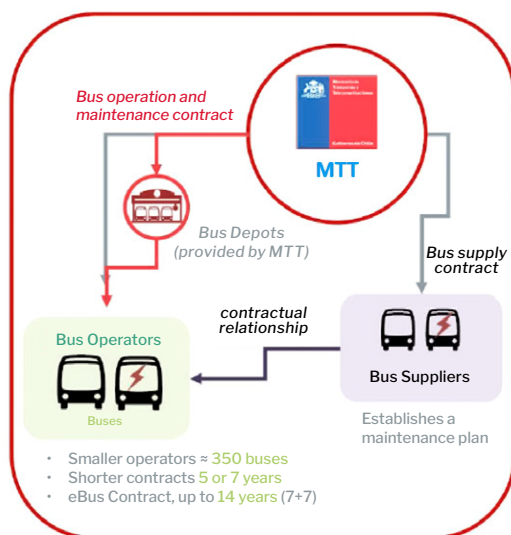
The transit authority in Santiago de Chile closed a bidding process for the fleet provision of up to 2,030 buses in 2020. Bids for bus supply contracts, encompassing both Euro 6 diesel and electric buses, were submitted with qualification results expected by the end of 2020. Two electric bus manufacturers provided offers for the bid, BYD and Foton, both from China, with the latter supplying buses through a large bus concessionaire called Kaufmann, currently the exclusive authorized dealer for Mercedes-Benz transport vehicles in Chile with a strong Latin American presence.

The business model, with separate contracts for fleet provision and operation, is very similar to the one in Bogota with a few differences:

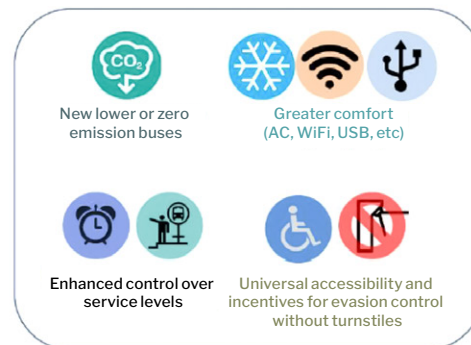
1. In Santiago the depots are provided by the transport authority, with the charging infrastructure being the responsibility of the operators, who will most likely subcontract this to electric utilities.
2. Operation contracts that will be tendered in a subsequent bidding process are for a shorter period (5–7 years) than the fleet provision contracts (10–14 years), providing flexibility to the transit authority.
3. Operators will decide the type of buses they want to operate, so a fleet provision concessionaire with a competitive bid, guaranteed by a bid bond, may not end up being selected by an operator and thus have no contract at the end.
4. The payment risk is not under the responsibility of the municipality of Santiago de Chile, but rather is covered by the RED fare management authority, Administradora de Fondos de RED, which pools farebox revenues from the transport system with subsidies from the national—not municipal—Chilean government (credit rated at CR-2) and distributes payments to all players in the city transport system.

Red Metropolitana: New System Operation

Concessionaire carries out fleet provision, operation of buses and fleet administration.



Objectives of the new system bidding



Smaller operators, fleet renewal, besides separation of ownership on strategic assets and operation, which allows shorter contracts for replacement of deficient operators

Source: DPTM

Western Balkans
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Summary Report



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