

A scenic landscape photograph showing a paved road winding through a valley. In the background, there are large, rugged mountains covered in snow under a cloudy sky. The foreground shows a rocky embankment on the left and a forested hillside on the right.

Georgia Transport Sector Assessment, Strategy, and Road Map

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Georgia Transport
Sector Assessment, Strategy,
and Road Map

Asian Development Bank

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Currency Equivalents

(as of 27 December 2013)

Currency Unit	–	lari (GEL)
GEL1.00	=	\$0.577
\$1.00	=	GEL1.732

In this publication, “\$” refers to US dollars.

Abbreviations

ADB	–	Asian Development Bank
BP	–	British Petroleum
EWB	–	East–West Highway
GDP	–	gross domestic product
JICA	–	Japan International Cooperation Agency
km	–	kilometer
LTA	–	Land Transport Agency
MCC	–	Millennium Challenge Corporation
MESD	–	Ministry of Economy and Sustainable Development
MRDI	–	Ministry of Regional Development and Infrastructure
MTA	–	Maritime Transport Agency
teu	–	twenty-foot equivalent unit
TRACECA	–	Transport Corridor Europe–Caucasus–Asia
US	–	United States

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Executive Summary

This sector assessment, strategy, and road map was prepared to guide the dialogue between the Asian Development Bank (ADB) and the Government of Georgia on transport sector development and the country partnership strategy, 2014–2017. Urban transport is not covered in this assessment, since it forms part of the urban sector development.

It reveals that Georgia, since 2005, has revised regulations and legislation on many aspects of transport-related infrastructure and services to facilitate rapid development of its transport sector. Increased economic activity, following these reforms, has led to more intensive use of the sector, particularly for international links, and the sector's contribution to gross domestic product has been growing about 10% annually. All modes of international transport (i.e., road, rail, air, water, and pipelines) indicate growth in demand, ranging from 5%–15% a year. However, improvements in overall national mobility are not as visible

as in international sections of the network. In fact, rural bus services, passenger rail, and secondary and local roads do not meet the demand or expectations of the economy. Lack of transport options is considered a contributor to the high national unemployment rate, which stood at 15.2% in 2011. Workforce limitations are also hampering sector improvements, as less than 30% of key staff members in the Ministry of Economy and Sustainable Development and the Ministry of Regional Development and Infrastructure have the required practical experience and specialized education in transport.

Annual capital investment in all modes of transport reached \$362 million in 2011, including \$131 million of foreign direct investment. Much of this has gone into improving Georgia's international roads, following attempts to make Georgia's transport system an integral part of the Transport Corridor Europe–Caucasus–Asia and the

Central Asia Regional Economic Cooperation corridors and a regional logistics hub.

In its national plans, the government has three aims related to transport: (i) make Georgia a regional and logistics hub, and business platform; (ii) upgrade multimodal infrastructure; and (iii) develop professional and higher education centers. However, the capacity of the major seaports on the west coast will remain constrained until the rail and road capacities in the east–west corridor are increased.

Accordingly, improvement of the East–West Highway (EWH), which requires removing some of the bottlenecks and introducing advanced traffic management systems, remains the priority for public investment.

Placing EWH improvement at the top of the investment list is justified because it is the fastest and shortest surface transport link between the east and west of the country, and is important for the cohesiveness and security of the country. It is also the only alternative to the railway, which runs parallel in close proximity, in the case of an emergency. Further, inclusion of the north–south international road improvements in the investment pipeline is rational because imminent resumption of trade with the Russian Federation will require more road capacity. The government is also proposing spending more to improve secondary roads, because more than 70% of them are in poor condition, reducing freight and passenger transport services in some rural areas, and resulting in high unemployment and poverty. Lastly, improving maintenance efficiency through new forms of procurement such as performance-based contract work, and developing the transport-related workforce with more knowledge and advanced skills, addresses the need to increase sector productivity. Although this strategy addresses some critical deficiencies of the sector, its ability to be

implemented is dependent on financing, modal integration and public transport, and the creation of a cohesive national transport policy.

ADB has strongly supported Georgia’s sector priorities. It provided a \$500 million multitranches financing facility for improving about 200 kilometers (km) of secondary roads and for building the Roads Department’s capacity to manage road assets and to improve safety. The first and third tranches amount to about \$260 million, which are currently being used for project 1, constructing a new 30 km two-lane road and upgrading 2 km of a two-lane road to a four-lane road by passing Kobuleti, a Black Sea resort. This road is scheduled to be operational in 2016.

The European Bank for Reconstruction and Development, European Union, Japan International Cooperation Agency, Millennium Challenge Corporation, and World Bank have also assisted road network development, especially the EWH. ADB works closely with these development partners through frequent meetings and information exchanges. More coordination should occur, however, on general issues such as on joint needs assessments, which can be extended to avoid duplication, especially of capacity development initiatives.

ADB’s forward strategy for the sector will be to continue supporting Georgia’s efforts to develop an efficient, sustainable transport system in line with its vision of making the nation an international gateway and to promote inclusive growth. To this end, ADB plans to finance improvements to international and secondary roads that can bring benefits to the population and businesses of Georgia. It will coordinate with other development partners to speed up project delivery and maximize impact. Further, to ensure inclusive growth, ADB plans to assist in linking the international roads to local

regional centers through selected secondary road improvements.

Given the urgent need for better direction for the sector, particularly the need for finding sustainable, multimodal solutions, ADB plans to provide technical assistance for developing a national transport policy

and the transport planning capacity of associated government institutions. ADB also intends to provide technical assistance for modernizing technical standards and specifications in the roads subsector, and for addressing critical gaps in implementing these modernized standards.

Chapter 1

Introduction

This assessment, strategy, and road map was prepared to guide the Asian Development Bank (ADB) in allocating and programming its assistance¹ to increase the efficiency of Georgia's transport system in line with the country's priorities, Strategy 2020 (ADB 2008b), and the Sustainable Transport Initiative (ADB 2010b). It addresses key international² and domestic passenger and freight transport issues under three broad categories—institutions, infrastructure, and services. It further serves to guide ADB's continuing dialogue with the government on transport sector development.

The assessment used four approaches to gather information and involve sector

stakeholders in the preparation and validation of the strategy and road map. First, it undertook a detailed review of the literature and an analysis of secondary data to determine trends and Georgia's comparative transport advantages. Second, it consulted government agencies, particularly the Ministry of Economy and Sustainable Development (MESD) and the Ministry of Regional Development and Infrastructure (MRDI), and private owners and operators of transport infrastructure and services to verify the feasibility of the strategy (Appendix 1). Third, it invited educators and multilateral and bilateral lenders to take part in discussions. Finally, it held consultative workshops in June and September 2012 to reach a consensus with stakeholders; the initial focus was on the assessment findings and later on the strategy and road map.

1 The country partnership strategy for Georgia, 2014–2017, is under development.

2 In this report, travel between the countries of the Caucasus is termed international travel. Travel within the country, including between provinces (which are commonly known in Georgia as regions), is termed domestic or national travel.

Chapter 2

Sector Assessment: Current Status and Strategic Issues

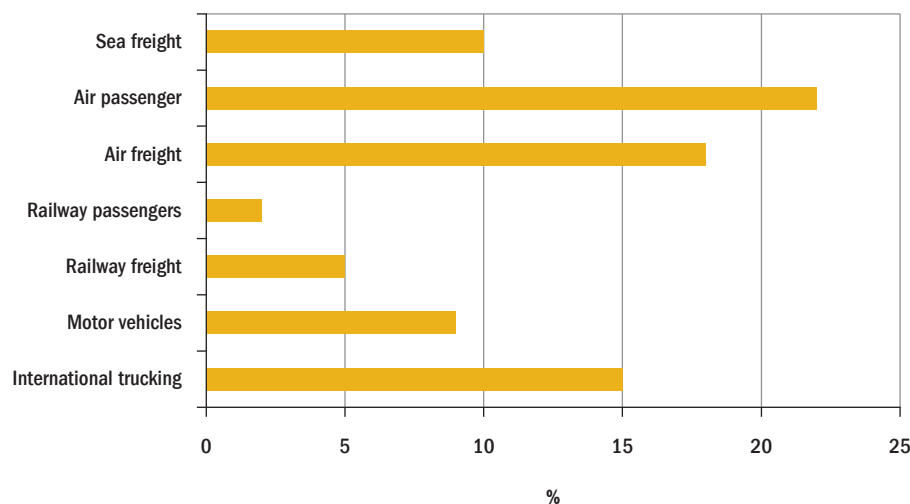
A. Sector Performance

Georgia's transport system comprises five modes—road, rail, sea, air, and pipelines. All provinces, cities, towns, and neighboring countries are connected either directly or indirectly by at least one of these modes. To improve these connections and to tap into the benefits of providing an efficient conduit for international travel and trade between Central Asia and Europe, successive governments in Georgia since 2005 have revised rules and regulations on the supply of transport infrastructure and services. They have restructured institutions and delegated to line agencies the authority for modernizing the transport system. This has helped draw private capital into aviation (airports and airlines), maritime services (ports and shipping), road transport (all freight and intercity passenger), and pipelines (oil and gas from Azerbaijan and

Kazakhstan). The railway is now a state-owned enterprise with the authority to raise capital in the open market, leaving the road network as the only physical asset owned and operated in a traditional, public-sector manner.

Transport system use has risen, mainly due to the increased supply that followed reforms. Total freight movement up to 2011 was growing at about 3.5% a year, while rail and bus passenger traffic was increasing at about 1.5% a year. Railways currently carry about 40% of total freight. Since 2008, freight handled by ports has increased by about 10% a year, while traffic at the airports has grown by 15%. Cross-border truck movements grew at nearly 15% a year, rising from 182,400 in 2007 to 291,000 in 2011.³ Figure 1 provides a snapshot

³ Consultants' calculations based on data provided by the Transport Policy Department, MESD.

Figure 1 System-Wide Traffic Growth in Georgia, Year-to-Year Percentage to 2011

Source: Consultant's calculations, based on Ministry of Economy and Sustainable Development data.

of average year-on-year traffic growth over the past few years to 2011.⁴

Empirical evidence shows that the quality and availability of international and intercity transport services have improved substantially. Annual public investment in transport reached \$362 million—8.6% of total expenditure—in 2011. Most of it went to improving the international roads, which is the highest functional class of roads. The sector also attracted \$131 million of foreign direct investment that year.⁵ The sector's contribution to gross domestic product (GDP) also increased considerably, from \$285 million in 1996 to \$2.1 billion in 2011, constituting almost 14% of

the GDP.⁶ This growth rate is likely to increase if traffic on the trans-Russia and Middle East routes to and from Central Asia, as well as part of the trade and travel among the Middle East, the Russian Federation, and northern Europe, flows through Georgia.

As a whole, however, the sector has several deficiencies. Rural bus services, passenger rail, and secondary and local roads do not meet the demand of the economy. Passenger transport is almost entirely road-based, as the rail share of passenger movement is 1%. Distribution of traffic among the modes is inefficient, because multimodal and intermodal connections are poor and service information is unavailable. More than half of the secondary and local roads (collectors and distributors) are in poor condition (World Bank 2011). Consequently,

4 The international trucking growth rate is from 2007 to 2011, while growth in road traffic and sea freight is from 2008. The rates for rail and air transport are from 2009, while growth for the motor vehicle fleet is from 2000 to 2011.

5 National Statistics Office of Georgia. Foreign Direct Investments, 2009. [http://www.geostat.ge/cms/site_images/_files/english/bop/FDI%202009%20\(Eng\).pdf](http://www.geostat.ge/cms/site_images/_files/english/bop/FDI%202009%20(Eng).pdf)

6 The GDP was \$14.7 billion in 2011, and per capita income was \$3,215. It grew by 3.0% in 2012 and is likely to grow by 2.0%–2.5% in 2013. Georgia's southern neighbors—Armenia, Azerbaijan, and Turkey—are all expected to achieve comparable annual growth of 3.0% or more in the 3 years to 2015.

economic and social development has been geographically skewed, and people and businesses in rural areas still lack access to reliable, affordable transport. Two-thirds of rural households engage in agricultural production for subsistence, which provides 41% of their income, instead of trade outside of the community, partly due to lack of transport (JICA 2012 and USAID 2011a).

Lack of transport options is considered a contributor, in part, to the high national unemployment rate, which stood at 15.2% in 2011 (National Statistics Office of Georgia 2013). Although about 47% of the value addition in the sector is around the capital city, Tbilisi, the city actually has the highest unemployment rate in the country, at 29.2% in 2011 (USAID 2011b). In fact, all of Georgia's cities have unemployment rates five times those of depressed and isolated rural areas due to outward migration of younger people (footnote 5). A Gini coefficient of 42 in 2011, compared with 37.1 in 1996, reflects rising income inequality.

Transport and logistics are 2 of 10 areas that the government identified for improvement in its 2011–2015 plan to boost economic growth (Government of Georgia 2011b). Its goal was to make these improvements by investing in high-quality transport infrastructure and trade facilitation (European Commission 2010). It recognized that making the transport system an integral part of the Transport Corridor Europe–Caucasus–Asia (TRACECA)⁷ and the

Central Asia Regional Economic Cooperation corridors (ADB 2012) is vital for sustaining investments in other thrust areas; thus, it signed 22 bilateral agreements on freight and passenger travel. The new administration, while retaining the 2011 plan, hopes to also focus on improving international roads extending from the north to the south, as well as secondary roads connecting regional centers to international roads.

Initiatives such as performance-based road maintenance and traffic and safety management will be implemented with more vigor.

B. Strategic Issues

1. Sector Governance

MESD has jurisdiction over road transport, maritime transport, railways, and aviation infrastructure and services, with its Transport Policy Department serving as the coordinating body. The Roads Department of MRDI builds and operates roads classified as international and secondary. Local authorities are responsible for the other roads in the network, which are classified as local roads. The Land Transport Agency (LTA), Maritime Transport Agency (MTA), and Georgian Civil Aviation Agency are the technical regulators. Georgian Railway is state-owned. Private companies operate all the country's ports and two major airports, while the state-owned United Airports of Georgia operates the newest international airport in Kutaisi, and all regional airports. The Georgia Civil Aviation Agency oversees safety in this sector, and develops regulations and procedures. Pipeline regulation rests with the Georgian Oil and Gas Corporation, another joint stock company of the government. Table 1 summarizes the sector organizational structure.

⁷ Georgia is located along an important international and regional corridor, TRACECA, and is well placed to absorb growing transport demands. The TRACECA corridor through Georgia is the shortest route between Europe and Azerbaijan, Armenia, and the Central Asian Republics through its Black Sea ports. TRACECA is envisaged as an alternative to both the northern corridor running through the Russian Federation and Belarus and the southern corridor running through Iran and Turkey. Due to its intermodal nature, TRACECA would only be competitive when connected and operated efficiently to reduce travel time and costs.

Table 1 Transport Sector Governance Framework

	Roads	Services		Maritime Transport	Aviation	Human Resources Development
		Road	Rail			
Policy	Not assigned					Ministry of Education
Strategic planning	Ministry of Regional Development and Infrastructure	Ministry of Economy and Sustainable Development				
Regulator^a	Roads Department	Commercial: Land Transport Agency Motor traffic: Ministry of Internal Affairs ^b	Georgian Railway	Maritime Transport Agency	Georgian Civil Aviation Agency	
Infrastructure supply and management	Construction and maintenance by private sector	Bus terminals: Municipalities and the private sector Freight logistics centers: Private sector	Construction and maintenance by private sector	Ports: Poti—Maersk Georgia Batumi—Batumi Industrial Holdings Supsa—British Petroleum Kulevi—State Oil Company of Azerbaijan Republic	Airports: Kutaisi International and regional airports—United Airports of Georgia Tbilisi International and Batumi International—TAV Airport Holdings	Batumi State Maritime Academy Georgian Aviation University Technical University Free University of Tbilisi
Services	Not applicable	Freight: Private sector Intercity and international passenger: Private sector	Georgian Railway	Shipping: Private sector Freight forwarding: Private sector	Airlines: Private sector	

^a The scope of regulation provided by these agencies is mainly technical. Economic regulation is limited and undefined.

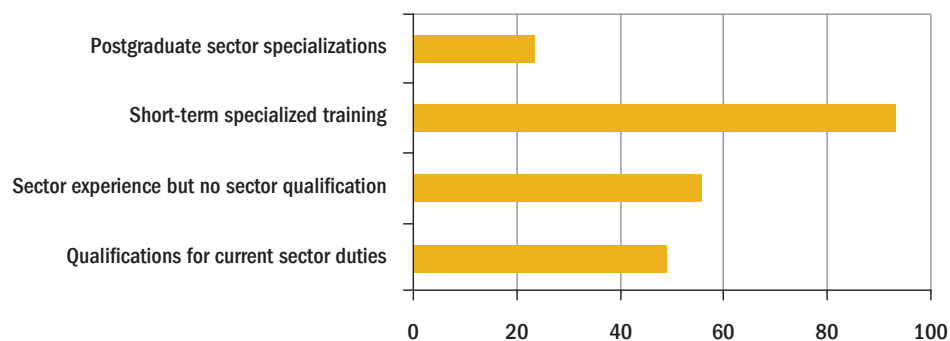
^b The Patrol Police Department of the Ministry of Internal Affairs handles motor vehicle administration.

Source: Compiled by consultant.

Sector-wide formal employment is about 56,000 people (National Statistics Office of Georgia 2012). Of this, Georgian Railway employs 12,430 people, and the Roads Department 190. The Transport Policy Department and the agencies under MESD employ about 500, while the seaports of Poti and Batumi employ about 1,800 permanent staff members. The rest are self-employed

or engaged informally. Human resources development programs for skills upgrading through dedicated basic and postgraduate degree programs are limited to a few universities across Georgia. Community colleges have yet to offer courses modern enough to meet the sector's needs.

Although national statistics on the workforce skills and experience are not

Figure 2 Skills, Experience, and Training Required of Ministry of Economy and Sustainable Development Staff (%)

Source: ADB estimates based on the Ministry of Economy and Sustainable Development's assessment of staff qualifications and training requirements.

available, data on MESD staff members in Figure 2 show that less than 50% are qualified or have received formal education in a transport-related discipline. Even among the staff members with experience, more than half do not have adequate sector-specific experience. About 90% of staff members require short-term training to handle their specific responsibilities, while around 20% require postgraduate specializations.

2. Roads

a. Institutions

LTA oversees road transport services, both freight and passenger. With about 50 staff members, it is responsible for ensuring that bus and freight vehicle operators comply with technical standards. It is also mandated to implement international conventions on trucking; issue certifications, permits, and concessions for operators; and introduce computer systems for transport management and monitoring. Coordination with other modes, taxi operations, and the setting of performance standards and pricing are not presently within its purview, although it expects to receive parliamentary approval by 2013 for

more regulatory powers to manage supply and to improve service quality.

The Ministry of Internal Affairs is responsible for registering vehicles, attending to and recording traffic accidents, and issuing driver licenses. Vehicle ownership in Georgia increased from 56 vehicles per 1,000 people in 2000 to 139 vehicles per 1,000 in 2011, an average annual growth rate of 9%.⁸ Since 2005, registration has been a one-time process for all new vehicles—there is no annual registration, and re-registration is needed only if the ownership changes. Insurance and roadworthiness testing are not mandatory. As a result, an accurate estimate of the vehicle fleet is not available, although the official register shows a fleet of 744,433 vehicles in 2011.⁹ Most of these are used vehicles imported from Europe, of which only 1% are less than 3 years old, while 90% are more than 10 years old. An estimated 40,000 registered vehicles are used as taxis.¹⁰ The safety and emission levels of older vehicles,

⁸ Consultants' calculations, assuming 20% of vehicles registered in 2006 are currently not operational.

⁹ The number of registered vehicles was reported at 613,000 in 2006, of which 543,000 were passenger vehicles, 58,000 goods vehicles, and 12,000 other vehicles.

¹⁰ LTA estimates provided to ADB.

particularly buses and trucks, are among the current concerns of MESD.

The Roads Department is responsible for planning, designing, constructing, and maintaining secondary and international roads. It has a large portfolio of projects in the preconstruction and construction stages (ADB 2009c). Most of its work, except some planning and programming work, is outsourced to national and international private companies. It has evolved into a contract administrator and manager of the network, but lacks sufficient expertise and personnel to deliver projects efficiently. Such capacity gaps are being plugged using consultants in parallel to continued capacity building within the department.

Local authorities oversee the roads in cities, towns, and villages. In addition to having insufficient technical staff, these authorities lack a formal organizational arrangement and consistent funding for maintaining existing assets in good condition.

b. Services

i. Intercity Buses

Regulatory reforms in 2005 and 2006, which removed market-entry requirements for private operators, have increased the supply of intercity bus services. These vehicles are operated mostly by owner–drivers, and according to informal schedules and tariffs. An estimated 25,000 buses and *marshtukas* (minibuses) now provide services on 450 urban and 650 intercity routes. Services on the 36 international routes are provided by 82 operators, mostly foreign companies (Government of Georgia, LTA). On both intercity and international routes, passengers have few choices in terms of speed, frequency, and comfort of service.

Fares and schedules, except on services between the main bus stations (e.g., Tbilisi and

Batumi), are neither managed nor published.

On a regular service, the fare is GEL20.

Corporate operators and standard procedures for managing bus routes have not been put in place, and bus stations are poorly designed and lack convenient access and intermodal integration. The municipalities own and operate bus stations in the main cities and towns, and charge a portion of the fare for station use and route capacity control, limiting the operating frequencies and number of operators (Ade Transport 2012). Taxis also offer competing intercity services on a shared basis from the same terminals.

Despite the relative increase in services, rural communities and small towns are inadequately served, and there is neither a policy on public service obligations nor minimum service requirements. Safety and environmental standards are not monitored, and penalties for noncompliance are unclear and inconsistently applied. The lack of such policies and rules and the spread of informal practices have hindered development of new services (ADB 2009d). LTA specialists believe that high costs and limited financing are preventing owners from upgrading their vehicles and fleets. Inadequate financial support also partly explains why foreign operators dominate international routes. LTA, with bilateral assistance from the Government of France, initiated a study in 2012 to examine the problems of public transport in Georgia.

ii. Freight Services

Georgia has simplified procedures at its borders and eliminated almost all causes of delay and corruption for trucks entering and leaving the country. In 2011, LTA issued permits according to bilateral agreements governing cross-border truck movements to 102 freight service providers, who collectively owned 40,000 trucks. These

providers are mostly foreign companies—the largest being Mediterranean Shipping Company—which made 183,000 crossings to and from Georgia during 2011, according to LTA. A GEL200 toll is levied on foreign trucks with containers transiting the country. This toll appears to be based on an agreed protocol between Georgia and Azerbaijan in October 2005 to charge \$0.28 per container kilometer (Ziyadov n.d.). Georgia's neighbors do not levy any charges, but the cost and delay at the borders offset this savings to truckers.

Secondary data on national freight operations—such as fleet size, vehicle types, and tariffs—are not available. According to national logistics academics, most national freight operators are individual truckers whose services are completely unregulated and market entry unhindered. The services are poor and fragmented, and, like the buses, customers have no formal sources of information on their availability and cost. An ADB study (2009d) found competition to be intense, with rates of GEL0.20–GEL0.27 per ton-kilometer (ton-km) charged for hauls of 100–500 km.

c. Infrastructure

i. Physical Network and Performance

The road network is about 22,000 km, and road density, at 318 km per 1,000 km², is higher than that of Armenia (279 km per 1,000 km²) and Azerbaijan (223 km). Roads are functionally classified as international, secondary (interprovincial), and local (municipal). As previously stated, the Roads Department manages international and secondary roads (6,835 km), and district administrations and cities manage local roads (around 15,000 km).¹¹

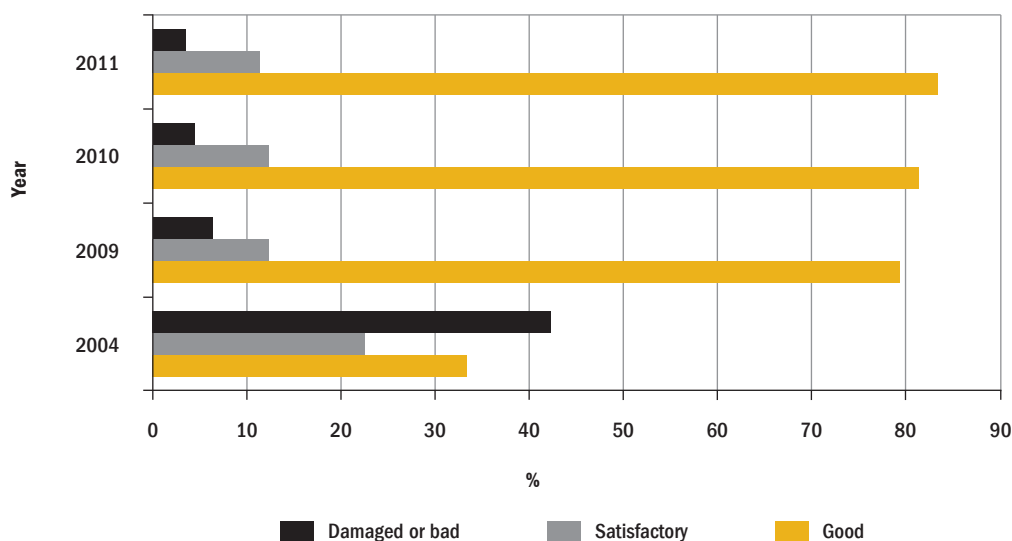
¹¹ In 2007, the Roads Department transferred local roads to 69 local governments as part of broader public sector reform aimed at decentralizing government functions.

Five international roads totaling 859 km are used mainly by transit traffic. About 95 km of those are four-lane, and the rest, including the secondary and local roads, are two-lane.¹² Two of these five roads, the E60 and E70 of the European network, form Georgia's East–West Highway (EWH)—part of the Europe–Asia corridor through the Caucasus. They run north from the Turkey border at Sarpi, serving the Black Sea ports of Batumi and Poti, then east past Kutaisi (Georgia's second-largest city) to Tbilisi, and then southeast to the border with Azerbaijan at Red Bridge, a total distance of more than 400 km. The other three international roads run south from Tbilisi to the Armenia border at Sadakhlo, Guguti, and near Ninotsminda. Georgia is a signatory to a number of international transport agreements for the continued development of an integrated road transport network that not only facilitates cross-border transit traffic but also contributes to regional cooperation and integration.

The E60 carries more than 60% of the international freight moved by roads.¹³ Total traffic on this road is increasing at around 10% a year, in part due to road improvements, streamlined border-crossing procedures, and harmonized standards and documents. Average daily traffic on its Rikoti and Samtredia sections increased to 9,000–10,700 vehicles by 2011, from 5,900–7,000 vehicles in 2007. Even though the feasibility study of rehabilitation options for these sections in 2008 forecast 17,000–20,000 vehicles a day by 2030, the current growth rate suggests that that volume of traffic will be reached by 2018 (JBIC 2012). As such, continuing highway investment for raising the capacity will become expensive

¹² The typical geometry of these roads, classified as Class 2 and 3, is 3.5-meter travel lanes and at least 1.0 meter of paved shoulders.

¹³ This is equal to an estimated 6.4 million tons transiting this highway (World Bank 2011).

Figure 3 Condition of International Roads in Georgia

Source: Government of Georgia, Roads Department (2011).

and unsustainable unless policy interventions manage demand.

The length of international roads in good condition increased to 84% in 2011 from 34% in 2004 (Figure 3). A road asset management system is expected to be operational in 2013, which will help plan and program maintenance and rehabilitation works, enable the selection of cost-effective design standards, and provide condition and travel time data both for road users and for project monitoring and evaluation (World Bank 2011). As of now, about 1,100 km of international and secondary roads (Appendix 2) have been programmed for improvement. The World Bank is supporting a program of multiyear, performance-based contracts for maintaining secondary roads, and the lessons from these contracts will be used to extend the concept over the entire network. However, it concluded that annual expenditure on maintenance is too low to keep the entire network in good condition (ADB 2009d).

In addition to inadequate maintenance, the poor condition of roads is attributed to

overburdened foreign trucks (ADB 2009d).

This occurs despite national regulations that conform to Europe-wide limits,¹⁴ and surveillance through permanent weighbridges at the border crossings and seven mobile bridges operated by the police. Offenders are fined a flat fee of GEL500. The pavement damage caused by a typical multi-axle truck is about \$0.50 per km (based on United States [US] rates). Accordingly, a truck crossing Georgia, traveling about 400 km, will cause \$200 of damage per trip, meaning that the current \$120 toll covers only 60% of the damage caused.

Further, construction and maintenance cost more in Georgia than in its neighbors. For example, in 2010, the tender price for topsoil removal was 17% higher than the Azerbaijan price. Tack coating was 46% more expensive than in Azerbaijan, and prime coating was 250% more expensive (yet only half the cost

¹⁴ The upper loading limit for each nondrive axle is 10.0 tons, and 11.5 tons for each drive axle; the total limit is 44.0 tons for articulated, multi-axle vehicles.

of the material in Armenia).¹⁵ However, some items were substantially cheaper. For instance, crushed-stone base course material was 6 times more expensive in Azerbaijan and 18 times more in Armenia. Yet overall, costs in Georgia are higher due to cost-insensitive design standards and specifications. For example, the volume specified for reinforcement steel in concrete box culverts on high-volume highways in Georgia is about 30% higher than in the US.

The 2010 revisions to national standards and specifications have not included any modern measures to address climate change, the environment, or sustainability issues, except for seismic considerations. There are no specifications for warm-mix asphalt, which can save energy, reduce the carbon footprint, and last a long time.

ii. Financing

Road construction and maintenance are financed from government revenue and donor funds. The share of public expenditure on roads increased from about 37% in 2009 to 47% in 2011. The share of GDP spent on maintenance and rehabilitation in 2010 increased to 2.4%, amounting to about \$265 million (World Bank 2011). About 75% of this has been financed through ADB, the European Union, Millennium Challenge Corporation (MCC), and World Bank. ADB's contribution since 2009 has been through a \$500 million multitranche financing facility for improving the highways that connect Georgia to its neighbors and institutional capacity building (Government of Georgia 2011b).¹⁶ A road fund, financed from taxes on fuel, transit tolls, and a road-use levy on individuals and enterprises, was reportedly

liquidated in 2005 after 10 years in existence (World Bank 2011).

Different sources have provided estimates of the investment needed to modernize and maintain Georgia's road network. ADB's 2009 estimate was \$3 billion (Government of Georgia 2011b).¹⁷ The 20-year investment needs assessment of the World Bank in 2012 puts the figure at about \$3.4 billion, \$2.0 billion for clearing the backlog of maintenance over 10 years, \$450 million for routine and periodic maintenance in the subsequent 10 years (World Bank 2011), and \$1.0 billion for modernizing the remaining parts of the EWH, along with the rehabilitation of secondary roads (Government of Georgia, LTA).¹⁸ The government intends to raise the needed funds from its development partners, but lacks a formal project assessment process and a firm investment plan, aside from the one mentioned in Appendix 3 (United Nations and World Bank 2010). Consultant support is used for due diligence at project appraisal.

Recovery of part of the investment costs from users remains an unexplored option to supplement budgetary allocations and borrowings. Despite differences in the number of foreign transit trucks on the road network reported by various government agencies, if taken as 150,000 trucks per year, about \$18 million can be recovered from the current transit fee of \$120 per truck. This fee could be increased to recover a larger share of the cost. Moreover, current legislation that precludes the levying of charges on roads where there are no alternative routes can be adjusted to allow time-of-day-based charges, for example, and can

¹⁵ ADB estimates, which are based on only one bid in each country in 2010.

¹⁶ Includes one loan of \$150 million, which was canceled after signing.

¹⁷ Comprised \$1.851 million for the EWH, \$594 million for other international roads, and \$500 million for secondary and local roads.

¹⁸ In 2007, the Roads Department transferred local roads to 69 local governments as part of a broader public sector reform aimed at decentralizing government functions.

be used for managing demand on the EWH. Risk-based design, procurement, construction, and maintenance principles are another option for reducing costs.

3. Railways

a. Institutions

Georgian Railway's core business is train operations, and it has three subsidiaries specializing in container handling, construction, and property management. MESD, which serves as its supervisory body, appoints a chief executive officer, three executive directors, and a board of directors to oversee operations. Operations are divided into three strategic business units: freight, passenger, and infrastructure. Each unit is a separate profit center under an executive director reporting to the chief executive and is responsible to the board of directors. The freight and passenger units make an internal ledger payment to the infrastructure unit for track use. The freight unit, being the only unit that is profitable, pays taxes and dividends to the government.

The freight unit earned over \$286 million in 2011 (RZD Information Agency 2012). In addition to nonsovereign bilateral and multilateral bank loans, the company raised funds through a \$500 million bond issue in June 2012. Georgian Railway went for an initial public offering (IPO) to sell 25% of its shares in 2012 but the IPO was not completed. Although it intends to complete it in the near future, there is no definite timeline for completion. The IPO had been expected to raise around \$250 million for developing the international freight operations (Antidze 2012). However, there is no clear, stated vision and strategy to align development with the national transport strategy or integration with other modes.

b. Infrastructure

Of the 1,326 km rail network, 293 km is double track and 1,251 km is electrified (Georgian Railway 2012). About 80% of the network is in mountainous terrain, and segments of the main line traverse narrow gorges, where any expansion will be costly and slow. Most of the network is designed for an axle load of 23 tons with speeds of 100 km per hour for passenger trains and 80 km per hour for freight trains. Most tunnels and bridges are 100 or more years old. The rail fleet, composed of 171 electric and 134 diesel locomotives, and the rolling stock of around 7,000 must also be modernized.¹⁹

The track between the Azerbaijan border and Poti, a mostly double-track electrified line of 385 route-km, and a mostly single-track electrified line of 104 route-km between Samtredia and Batumi, carries oil for export—most of rail freight traffic. However, the operating speed on the east–west corridor is only 33 km per hour. Improvements are either under way or planned to increase speed and connectivity. One is the reestablishment of the Tbilisi–Kars line, connecting Azerbaijan and Turkey through Tbilisi, for which Azerbaijan has provided Georgia with a \$220 million loan. Besides rehabilitation of the existing line, the project intends to add 27 km to Georgia's network. Its opening is slated for 2015, initially carrying about 1.2 million people and 3.5 million tons of cargo annually. It will enable increased trade between Turkey and eastern countries.

Other investments include upgrading and rehabilitating track and rolling stock. This will permit operating speeds to increase to 100 km per hour, especially on the line between Tbilisi and Batumi. Construction of a 68 km new line—including 6 km of double track and 8 km of single track that pass through tunnels

¹⁹ Based on ADB discussions with Georgian Railway officials.

in the mountainous section from Khashuri to Zestafoni, which is a major bottleneck on the Tbilisi–Batumi line—is scheduled to be completed by 2016. The travel time after reconstruction and the introduction of new rolling stock is expected to fall to about 3.50 hours from the current 4.75 hours. Freight capacity is estimated to increase to 45 million tons per year by 2016. However, activities have been temporarily halted on an earlier plan for a central Tbilisi bypass, financed by the European Bank for Reconstruction and Development (Georgian Railway 2012).

c. Services

The railway carried 20.1 million tons of freight in 2012. Out of the total revenue of approximately \$284.5 million, freight contributed 95%, of which half came from transporting oil from Kazakhstan and Azerbaijan to Georgia ports on the Black Sea. Freight traffic has grown at about 5% since 2009, despite a slight drop in 2012, and passenger traffic at about 2% per year, but rail transport is still losing market share to road transport. The net operating profit in 2012 dropped by nearly 80% due to a bond buyback and depreciation of the lari against the main foreign currencies.

About 37,000 twenty-foot equivalent unit (teu) containers were transported by rail along the east–west corridor in 2011, compared with an estimated 150,000 by road.²⁰ Double tracking from Samtredia to Poti and Batumi—in addition to the rehabilitation of the other sections—will benefit both modes and help change these shares. The level of service on the EWH will be sustained when more dry cargo shifts from road to rail, and rail’s revenue will increase, while costs to the environment will fall as greenhouse gas emissions decline.

²⁰ Based on truck movement data provided by MESD, assuming 1.5 teu per truck and 80% containers.

Private industries strongly support the development of railway freight capacity since cost, if not for the delay, is considered to be half that of trucking for certain cargoes. Moreover, sufficient non-oil freight is expected to flow to and from Central Asia to sustain the investments. Several railways, seaports, and cargo companies are implementing the “Viking Plan,” a joint operation to transport containers by rail from Europe through Latvia, Belarus, and Ukraine across the Black Sea to Georgia and Central Asia. The simplified customs formalities allow a container train to travel 1,734 km in just 52 hours. The traffic using this service has increased 50% since it started in 2010 (Pavilenene 2011). However, the railways do not have major contracts for freight movement with logistics providers such as the Poti Industrial Free Port or the Tbilisi Logistics Center.

Passenger traffic in 2011 was 3.3 million, of which only 3% were tourists. International passenger services are limited to overnight trains from Tbilisi to Baku (daily; about 15 hours) and Yerevan (every other day; about 12 hours), operated by Azerbaijan (Azerbaijan Railways) and Armenia railways (South Caucasus Railway). The current one-way fares from Yerevan to Tbilisi are \$18–\$36, and from Baku to Tbilisi, \$35–\$70, depending on the class of service. Daily domestic services are available from Tbilisi to most regional capitals. The overnight sleeper from Batumi to Tbilisi has air-conditioned first- and second-class compartments and takes 8 hours, while the day train takes 4 hours and 45 minutes.²¹ The current one-way fare on the overnight sleeper is about \$25 for a shared cabin. Most regional and commuter services, which link

²¹ Georgian Railway. <http://www.railway.ge>; Lonely Planet 2013; and Railway Transport. *Transport to/from Russia, Uzbekistan, Kazakhstan, CIS, SNG, and Mongolia*. <http://www.railwaytransport.eu/?gclid=CPrXk9mB0bACFUzd3wod807CXg>

provincial and rural areas to several main cities, operate mostly once a day. There is no public service obligation to the government or specific targets to develop passenger services, although the cost of operations is met by freight service surpluses. However, the fares are competitive with road transport, except in regional services, which are priced below bus fares as a public service obligation.

4. Maritime Transport

a. Institutions

MTA was established in April 2011 with a mandate to create a sustainable maritime system in Georgia. Its immediate tasks are to build industry capacity, intensify cooperation with international maritime authorities, enable the Batumi State Maritime Academy to regain authority to issue certificates of competency for seafarers, and help the Georgian shipping fleet obtain technical certificates for international operations. The loss of competency certification rights and vessel operating licenses has reduced the fleet size to only 6 in 2012 from 375 in 2006, and caused 3,700 seafarers to lose their jobs.

The Batumi State Maritime Academy, formed in 1921, is now a state-owned enterprise. It can produce up to 250 seafarers per year, including engineers and technicians. The academy is negotiating with a private education provider to offer a wider program and is preparing to satisfy audit requirements set by the International Maritime Organization. It expects this joint venture to increase student enrollment from 1,400 to 4,000, attracting 500 foreign students. It is also preparing for an audit for recertification of its courses.

b. Infrastructure

About 22 million tons, including 300,000 teu, were handled by the four ports in 2011: Poti,

7.2 million tons; Batumi, 6.8 million tons; Kulevi, 3.4 million tons; and Supsa, 4.0 million tons. This amounted to about 340 vessels a month on average. State earnings from port operations are not published, but the operators' financial reports show profits before taxes. The Port of Batumi's 2011 revenue was about \$30 million. Pre-tax annual profit has remained at about \$8 million since 2009. The four ports provide direct and indirect employment to about 30,000 people.

i. Port of Poti

The Port of Poti is operated by APM Terminals, a subsidiary of Maersk Shipping of Denmark, which in 2011 paid the RAK Investment Authority of the United Arab Emirates \$300 million for an 80% stake in the port. The RAK Investment Authority purchased the port from the government in 2009 and invested in port infrastructure and the adjacent Poti Industrial Free Zone.

The port spans 30 hectares and consists of 14 berths extending over 2.9 km. Container cargo constitutes 27% of the volume handled, while bulk cargo (36%), liquid cargo (16%), break bulk (10%), and roll-on and roll-off traffic (11%) make up the rest. About 46% of the cargo is transit traffic, while imports make up 37% and exports 17%. Total cargo handled grew at 10% a year from 2009 to 2011, and the number of containers handled increased 47% from 172,000 teu to 254,000 teu. The port's current container handling capacity is estimated at 450,000 teu.

APM Terminals plans to invest \$100 million over 5 years in expansion and modernization of the port. This may address the 13-meter approach channel draft limitation, which restricts ship size. However, road and rail capacity remains a concern. Only about 30% of containers are moved by rail, which has

a direct spur from the main line to the berths and Poti Free Industrial Zone. This strengthens the need for better planning and coordination among the modes to maximize the return on the investments.

ii. Port of Batumi

The Port of Batumi is owned and operated by Batumi Industrial Holdings, a subsidiary of KazTransOil of Kazakhstan, under a 49-year agreement signed with the government in 2008. The port has five separate berths for oil, containers, rail ferry, dry cargo, and passengers, and a conventional buoy mooring for larger vessels with a depth of 13.6 meters. The capacities of the oil and dry cargo berths are 15.0 million tons and 2.1 million tons, respectively. The two container berths have a combined capacity of 300,000 teu per year, but their drafts are only 11.7 meters. The ferry berth can accept 108 eight-wheel rail wagons, is completely automated, and can handle about 0.7 million tons of cargo per year.

The agreement requires the port to handle 6.0 million tons of cargo every year. It handled 5.3 million tons of oil, 1.5 million tons of bulk dry cargo, and 45,442 teu in 2011. However, Batumi Industrial Holdings has now leased two container berths and one ferry berth to Batumi International Container Terminals, a subsidiary of Manila-based International Container Services. The oil berths have been leased to Batumi Oil Terminals until 2019.

The total area of the port is 13.6 hectares, of which only 3.6 hectares have been developed. Therefore, the port has space for further expansion, although the immediate need is for improving handling equipment and berths. A new container yard of 15 hectares with new rail and road access is expected to be completed in 2013. This will increase container berth capacity to 400,000 teu. However, the port is in

the heart of Batumi, which is being promoted for tourism. Batumi Industrial Holdings is negotiating to transfer the passenger ferry operations to the city of Batumi in exchange for other land for the port. Regardless, access is a constraint. Without a grade-separated interchange at the port entrance, conflicts between port access and through traffic will increase as the port expands. As is the case for Poti, the port's capacity will remain constrained until the rail and road capacities in the east-west corridor are increased.

iii. Port of Supsa

The Port of Supsa is an offshore oil terminal, owned and operated by British Petroleum (BP). Opened in 1999, Supsa is the terminus of the 833 km Baku-Tbilisi-Supsa pipeline, also known as the Western Route Export Pipeline or the Western Early Oil Pipeline, from BP's Sangachal terminal south of Baku. The International Finance Corporation invested \$30 million in the Georgia portion of the pipeline in 1998. BP has since invested more than \$5 billion to develop other major oil and gas pipelines that cross Georgia: the Baku-Tbilisi-Ceyhan pipeline, with a capacity of 1 million barrels of oil per day; South Caucasus Pipeline, carrying 650 million cubic meters of gas per day; and the Western Export pipeline from Baku to Supsa (Government of Georgia, Ministry of Economy and Sustainable Development 2007).

iv. Port of Kulevi

This port, constructed in 2000, is an oil-exporting terminal owned and operated by a consortium comprising the State Energy Company of Azerbaijan Republic (51%), Middle East Petroleum (34%), and various Georgian investors (15%). The port has two berths (13.6 meters and 6.13 meters deep),

which can accommodate 100,000-ton and 40,000-ton vessels. A buoy mooring located 4 km offshore with a draft of 17.1 meters can accommodate vessels of 100,000–120,000 tons (World Bank 2008a). A 10 km spur connects the port to the main east–west railway. The port handled 3.3 million tons of crude oil and refined products in 2011. Its total capacity is 10 million tons of oil per year—transported from Azerbaijan by rail—and the terminal can accommodate up to 168 railway tank cars.

c. Services

Shipping services are provided by a few foreign companies. The largest operator is the Mediterranean Shipping Company, which provides global transshipment and relay services mainly through Istanbul. Scheduled passenger services operate, several of them directly, from Batumi and Poti to Bulgaria, Romania, Turkey, and Ukraine (Takaishvili 2012). While the Batumi passenger terminal capacity is about 180,000 passengers a year, only 21,520 passengers used it in 2011. The government signed a memorandum of understanding in November 2011 with Royal Caribbean Cruise Lines for reconstruction of the passenger terminal, allowing it to host large cruise ships (containing 3,000–5,000 passengers) by 2014.²² This will significantly increase cruise tourist throughput, which was only 2,900 in 2011.²³ Some companies also offer limited roll-on and roll-off services to Romania, largely for used-vehicle imports from Europe.

5. Aviation

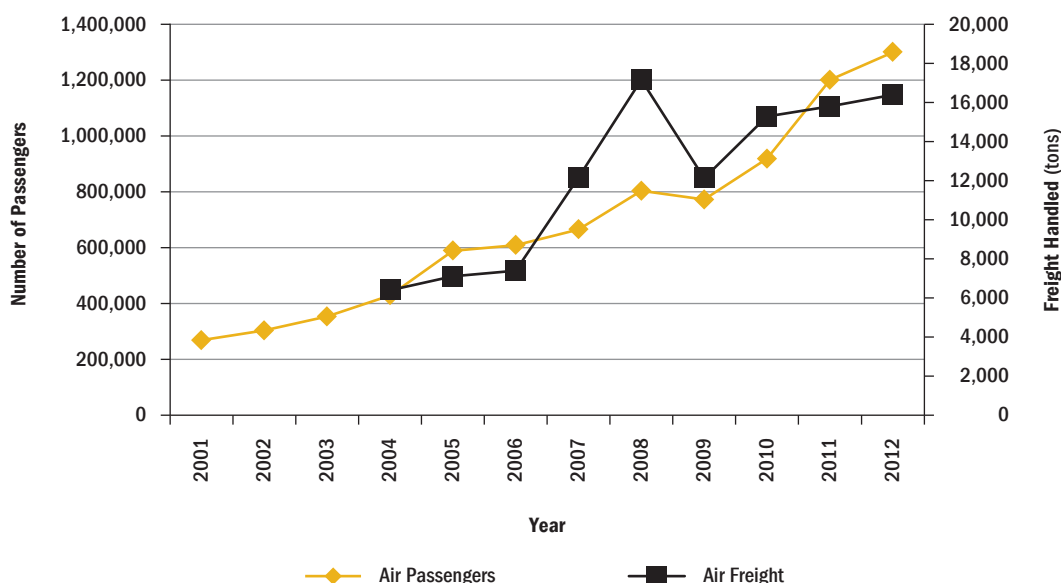
a. Institutional

The Georgian Civil Aviation Agency is responsible for certifying and licensing aircrafts and airline crew members, and ensuring that aircraft, aviation services, and airports conform to international and European standards. The agency's 56 staff members are also responsible for ensuring the supply of skilled workers for all aspects of aviation. Georgia has entered into 16 bilateral air service agreements and adopted the Open Skies policy with 11 European Union countries since 2010. In 2013, Georgia became the 40th member of the European Organisation for the Safety of Air Navigation.

SAKAERONAVIGATSIA, a limited liability company, has been responsible for managing Georgia's airspace since 1999. It monitors and provides aviation services and flight safety in the takeoff and landing zones of international airports in Batumi, Kutaisi, Mestia, and Tbilisi. Most aircraft and avionics maintenance works are performed by international companies. Georgian Aviation University, a nationally accredited institution, awards undergraduate and graduate degrees in aviation engineering and management, as well as associate degrees and certificates in technical and administrative subjects. After being part of the first institute of higher education in the Caucasus region that was established in 1917, the university is aspiring to become the region's center of excellence in aviation after it was granted autonomous status in 2005. The opportunities for acquiring technician-level accreditation, however, are limited, and this may impact the aviation industry's growth in the long term.

²² Autonomous Republic of Ajara, Ministry of Finance and Economy. Batumi Invest. <http://www.investinbatumi.ge>

²³ Commerciant. <http://www.commerciant.ge>

Figure 4 Passengers and Freight Handled at Georgia's Airports

Source: Consultant's computation based on statistics provided by the Ministry of Economy and Sustainable Development.

b. Infrastructure

United Airports of Georgia, a state-owned enterprise in operation since April 2011, owns all airports in Georgia. Operations of two international airports are outsourced. TAV Airports Holdings, a Turkish partnership, was awarded a concession for operating the Tbilisi and Batumi airports starting in October 2005. The initial agreement was for TAV to design, finance, construct, maintain, and operate the landside facilities, and provide ground-handling services, customs and noncustoms stores, and catering services at the two airports for 11.5 years. TAV built a new terminal and improved the runway, which opened in February 2007. Operations in the Batumi airport started in May 2007.²⁴ The concession period has been extended twice since 2005, and the current concession extends up to November 2037.

The airport in Tbilisi can handle up to 2.8 million passengers and 160,000 tons of

freight per year. It has two parallel runways, one of which is an International Civil Aviation Organization Code E runway. Several airlines offer scheduled services to Tbilisi from Europe, the Middle East, and Central Asia. Flights are also available from Tbilisi to Batumi, Kutaisi, and Mestia. Because it has both road and rail access, Tbilisi is also well positioned to serve the tourism industry with minor improvements to facilitate air–road–rail transfers. The airport in Batumi can handle 600,000 passengers a year. It has one Code E runway, and is served by mostly scheduled regional carriers and Turkish Airlines. Batumi also serves as an international gateway to border towns in Turkey. For example, passengers on Pegasus Airlines can purchase a ticket to Batumi from 56 destinations with land transport to Hopa in Turkey.

Since the improvements were completed at Tbilisi and Batumi, annual passenger traffic has almost doubled to more than 1.3 million in 2012 (Figure 4). Of these, Tbilisi handled about 1.2 million passengers, Batumi about 170,000,

²⁴ Government of Georgia, Georgian National Investment Agency. <http://www.investinggeorgia.org>

Kutaisi 13,000, and Mestia 3,000. Freight traffic increased by about 7% a year since 2004 to reach 165,000 tons in 2011, with Tbilisi handling the bulk. Although it is unlikely that this rate of growth will continue, there is sufficient landside capacity at both Tbilisi and Batumi to serve traffic until around 2020.

Kutaisi, which was a regional airport, was upgraded to international standards, opened for traffic in September 2012, and handled nearly 13,000 passengers that year. It is in Kopitnari, about 14 km west of Kutaisi, the country's second-largest city, which was slated to be the new capital until the government changed in 2013. It serves low-cost regional carriers and commuter service operators from Tbilisi. However, public transport from the airport to Kutaisi and Tbilisi is limited and informal.

Queen Tamar Airport in Mestia is served by about five flights a week from Tbilisi. A new airport is being constructed in Zugdidi, while the airport in Poti, which was closed in the 1990s, will also be developed. There is an aerodrome for small airplanes at Senaki. RAKIA, the owner of the Poti Free Industrial Zone, plans to develop a private cargo airport to attract air-sea traffic to Poti and serve the industrial zone traffic.

c. Air Services

In 2012, 23 registered airlines operated in Georgia, offering scheduled and charter services from Batumi, Kutaisi, and Tbilisi to 12 international destinations.²⁵ Privately owned Airzena Georgian Airlines, the national flag carrier with a fleet of seven aircraft,²⁶ had the largest market share in 2011, at 21%, followed by Turkish Airlines with 17%. Aerosvit, a Ukrainian airline, had 11%, followed by Pegasus

at 9%, and Belavia and Lufthansa, each with 6% of the market. FlyGeorgia is the latest Georgian airline to enter the market, offering scheduled flights to Tehran and Amsterdam. In June 2012, the largest low-budget airline of Central and Eastern Europe, Wizz Air, and United Airports of Georgia signed a memorandum for regular Kutaisi–Kiev flights three times a week. It expects to carry about 40,000 passengers in 2013.²⁷ Domestic air travel, however, is limited. Passenger traffic on the Kutaisi–Batumi route was only 38,654 passengers in 2011.

6. Pipelines

Georgia hosts two international pipelines: the Baku–Supsa line connected to the Supsa terminal, with a capacity of about 7 million tons of oil per year, and the Baku–Tbilisi–Ceyhan line, connected to Kulevi. The transport cost of using these two lines, which form the western route for moving Azerbaijan's oil to world markets, is reportedly half that of the northern route via the Russian Federation (IMF 2004). This competitive edge, through transit fees and in-kind payments in gas, has been a source of nontax revenue for the country.

C. Cross-Sector Issues

1. Policy and Planning

The transport sector lacks an explicit policy to guide its development in an integrated, inclusive manner. Coordination of modes is now done through the Commission of Transport, chaired by the Prime Minister. It meets only when called by MESD to discuss matters related to proposed legislation, foreign funding, project implementation, and

²⁵ Computed from data provided by United Airports of Georgia.

²⁶ Georgian Airways. <http://www.georgian-airways.com>

²⁷ Government of Georgia, MESD. <http://www.economy.ge>

technical standards, and is inadequate to foster development. Consequently, each agency and mode's vision, mission, and strategy are independent. This deficiency, part of which has been highlighted recently by the World Bank, has caused the sector to remain without three fundamental prerequisites for development (World Bank 2012a):

- (i) a development strategy with an economically justified road map for each mode and financing arrangements,
- (ii) regulators with authority to foster competition and ensure good-quality passenger and freight services, and
- (iii) a workforce with the right skills mix and experience.

2. Sustainability

The government has yet to start implementing corrective measures proposed by MESD against the potential impacts of increasing travel and trade resulting from transport development.²⁸ For instance, aspects that have an impact on climate change—such as energy use, greenhouse gas emissions, and renewable material use in construction and maintenance—are not fully considered in investment decisions. Although some steps have been taken in the right direction, they are often not fully realized. For example, ambient air quality is now monitored at seven stations in five cities, but is inadequate for effective monitoring of air pollution by motor vehicles (Government of Georgia, Ministry of Environment Protection 2011), and

28 These include (i) developing public transport, (ii) reducing travel distances, (iii) optimizing traffic flow, (iv) enforcing import limits on the age of old vehicles, (v) improving fuel quality, (vi) creating incentives for fuel-efficient commercial vehicles, (vii) reintroducing roadworthiness testing, (viii) conducting stricter enforcement of vehicle emissions, and (ix) developing electric transport systems. These measures are expected to reduce carbon dioxide emissions by 4%–7%, carbon monoxide by 20%, and nitric oxide emissions by 40%.

meaningless if the corrective measures are not implemented (World Bank 2011a; Government of Georgia, MESD 2010). In addition, design and supervision consultants, contractors, and materials suppliers are without national guidance on climate change requirements except for project-related environmental management plans, which are more in line with the safeguard policies of the donors than climate change.

Inadequate investment in asset preservation has caused many roads to deteriorate. Although the newly created assets are receiving considerable attention and are being constructed to higher standards, there is no long-term plan to keep them in good condition with timely maintenance. Investment is also lacking in research and development for producing construction materials and methods to suit local conditions.

Transport demand management plans to enable better distribution of traffic among the modes are also absent. Such plans would include information systems to assist travelers in planning trips using the best mix of modes and for enhancing safety in the context of a program already in place to reduce road accidents. The National Road Safety Action Plan sets out the strategy for cutting accidents (Government of Georgia, MESD 2010) by improving road geometry, conducting safety studies and educational campaigns, and increasing enforcement.

The plan has yet to be fully implemented. However, after peaking in 2008 at 10 times that of European countries, the total number of road accidents fell 25%, and fatalities declined 39% by 2011 (National Statistics Office of Georgia 2012).²⁹ This improvement can be attributed in part to the introduction of increased police surveillance that has reduced drunk driving

29 Also based on data from the Ministry of Internal Affairs.

and improved road conditions—parts of the road safety plan. Nonetheless, the accident rate remains high. The plan is unlikely to have a major impact, mainly because the proposed measures have not been fully researched and customized to the local conditions. Moreover, some prerequisites for their success, such as driver insurance, emergency medical services, and vehicle standards are neither present in the current legislation nor are they planned.

There is no information on the safety record of other modes. However, it is reasonable to assume that basic safety and emergency preparedness measures are in place at the ports and airports, and for maritime and aviation services, as they are mandatory under international conventions. Similar mandatory measures must be put in place for the railway.

3. Logistics Services

The most active logistical operation is used-vehicle trading. Georgia serves as marketplace for used vehicles, imported mainly from Germany, for buyers in Azerbaijan and Armenia. This has created informal jobs and helped keep export figures high. Other logistical operations are limited to trucking, shipping, and port handling, provided mainly by foreign companies. Processing, packaging, warehousing, or distribution services are informal and uncoordinated. There are no proper markets or storage facilities, and large amounts of waste occur in rural agriculture production areas (USAID 2011a). Waste can be attributed in part to the poor condition of the roads. Buyers and freight operators are unable or find it too costly to reach the sources. When they do, damage occurs in transit due to poor packaging and lack of refrigeration.

The goal to make Georgia an international gateway and the EWH a logistics corridor

is achievable with good planning and perseverance. Georgia's exports by value in 2011 comprised motor vehicles and parts (22.3%), iron and steel (20.0%), beverages (8.3%), fertilizer (6.6%), and fruit and nuts (6.4%),³⁰ all of which indicate that greater industrial value addition is possible. The government offers incentives for developers of logistics centers in the form of free land and assistance. Legislation on establishing industrial zones attracts investment (EU–Georgia Business Council 2007). Preference is given—in parallel to the traditional self-sufficient agriculture—to modern primary production and processing enterprises, and agricultural and logistics centers. All are intended to enable producers, exporters, importers, and distributors to have storage facilities, primary processing, sorting, packaging, retail and wholesale outlets, container warehouses, and laboratories (USAID 2011a). These incentives help address two critical issues—poverty and food security.

Hence, donors and private developers have shown considerable interest. The Tbilisi Logistics Center has been developed as a joint venture on a budget of \$26 million–\$38 million.³¹ Its aim is to use the direct railway connection to Georgia's seaports with Azerbaijan and Armenia to provide a unique combination of rail services for containers and warehousing in an area of 91,500 square meters (*Georgia Today* 2012). The Port of Poti has set up the Poti Free Industrial Zone of around 8,000 square meters. Some 145 companies and individuals have registered to use the zone for various logistics services, and 10 have started operations, performing warehousing and distribution functions or

³⁰ Provided by the Transport Policy Department, and based on data from the National Statistics Office of Georgia.

³¹ This is supported by the Economic Prosperity Initiative of the Government of the US and was launched in April 2012 to become a core for a multimodal transport system in the Caucasus and to serve as the main logistics center for Tbilisi and eastern Georgia.

virtual operations.³² The government has also invited investors to participate in a \$7 million venture for a 4.7-ton fruit and vegetable cold storage facility serving the Tbilisi–Rustavi area.

The Japan International Cooperation Agency (JICA) has studied the feasibility of the concept of *michi-no-eki*, or roadside stations, which are used in rural Japan by local farmers, food processors, and artisans to reach buyers. Such points of sale are also expected to address the problem of the declining rural population (footnote 5). The success of the concept also depends on the quality and cost of accessibility from the production areas to such stations. The World Bank has observed informal stations emerging along rehabilitated secondary roads. A cost-effective extension to this is to network the supply chain by connecting the smaller logistics centers to larger centers located along the EWH.

4. Transport for Tourism

The government is aiming to attract 5.0 million visitors per year by 2015, compared with 2.8 million in 2011 (Government of Georgia, Ministry of Environment Protection 2011). However, to support this target, transport development must be linked to tourism. Most tourist areas lack good-quality, all-weather access. Public and private transport from airports and railway terminals are unknown to visitors and residents, and are slow and unreliable (Government of Georgia, Ministry of Environment Protection 2011).

5. Users with Special Needs

Inclusive growth requires provision of mobility to all segments of the population. One part of

this is paying equal attention to the transport needs of women, children, senior citizens, and people with disabilities. The current design and operation policies and standards must be revised to meet their needs. For instance, bus and train stations and airports must have signs and facilities to aid disadvantaged users. Transport needs for implementing the government’s gender equality action plan must also be formally considered in investment decisions (Government of Georgia 2011a).

6. Workforce

Workforce issues in the transport sector have received limited attention. Donor assistance has been used for occasional training of government officials and private contractors, and facility and curriculum improvements at educational establishments. However, these activities are not sufficiently based on sound knowledge of workforce needs. MESD and MRDI staff do not have sufficient transport sector skills needed to manage the expanding transport network. Those who have obtained formal degrees and licenses from nationally and internationally accredited institutions need opportunities for continuing education and career advancements in the sector.

The World Bank and ADB continue to provide short-term training for Roads Department staff members to develop specific skills that can help them more effectively execute their roles. However, the department needs more skills and experience in planning and programming, developing public–private partnerships, communicating with road users and the public (Government of Georgia, LTA 2012), quality control and quality assurance, risk management and value engineering, and general project management. It cannot depend entirely on consultants,

³² Other centers have been created or are planned, but information on their operating status is unavailable.

because certain tasks cannot be outsourced and the national consulting firms are experiencing a shortage of skilled staff members. The Roads Department needs a forward-looking human resources development plan to attract and retain staff with advanced skills. However, universities in Georgia lack faculty and resources to produce graduates with such skills.

Skilled labor and semiskilled labor are also in short supply despite countrywide high unemployment. Vocational education and training opportunities for young people are lacking even in the cities, making labor costs rise. Wage demand by road construction workers in eastern Georgia in October 2012 was more than 50% higher than the national average. These factors, in concert with the pressure on contractors from the government for faster project delivery, are pushing up construction costs to uneconomical levels, and affecting quality and productivity as evidenced by the premature failure of several recently rehabilitated roads. Moreover, foreign contractors fear that they will be unable to meet the national labor quotas (e.g., at least 70% of contract workers must be Georgian nationals) stipulated in some contracts, and therefore incur delay costs.

Batumi State Maritime Academy, Free Tbilisi University, Georgian Aviation University, and Georgian Technical University currently offer degrees in transport-related

technical and nontechnical subjects. The Georgian Technical University's Center for Professional Development, Science and Culture offers a variety of training programs, some using international instructors, and hosts a "USA Summer" program. In the core transport subjects, however, curricula must be revised, delivery must be improved, and facilities must be updated. The schools also lack strong partnerships with industry that will allow a better understanding of each other's needs. Few firms or government agencies offer internships or apprentice programs. Further, few community colleges cater for the needs of the sector. There, too, the education programs are not equipped to produce the human resources with the required skills. Continuing education, which can update and enhance professional knowledge and trade skills, is also never offered.

D. Conclusions

Georgia's transport sector has improved substantially in the 10 years up to 2013. As summarized in Table 2, it has many strengths and opportunities for improving and sustaining its contribution to economic growth and poverty reduction. Its core weaknesses and threats stem mainly from the lack of a guiding policy and a skilled workforce. These are relatively easy to correct, and ADB can play a leading role in facilitating that.

Table 2 Transport Sector Strengths, Weaknesses, Opportunities, and Risks

STRENGTHS	
Institutions	<ul style="list-style-type: none"> (i) Legislation is in place to permit private sector participation in infrastructure and service provision.^a (ii) Each mode has a designated regulatory authority. (iii) Owners and operators of infrastructure and services, except the Roads Department, are financially independent.
Infrastructure	<ul style="list-style-type: none"> (i) Airports and seaports have adequate capacity to sustain current traffic growth rates at least until 2018.
Services	<ul style="list-style-type: none"> (i) Service quality and supply levels are higher than in 2005. (ii) Regional trade and travel were faster than in 2010 because of improvements to border transport infrastructure and procedures.
WEAKNESSES	
Institutions	<ul style="list-style-type: none"> (i) There is no overall policy to guide the sector. (ii) Regulatory and planning agencies lack clear visions, missions, targets, and mandates for planning, setting standards and tariffs, and managing competition. (iii) Gaps exist in professional and technical knowledge in the workforce. (iv) Educational institutions are ill equipped and lack partnerships with industry to reorient the curricula, training, and certification to match workforce education with industry needs. (v) Financing for road infrastructure is uncertain. (vi) No minimum requirements or public service obligations are placed on operators.
OPPORTUNITIES	
Institutions	<ul style="list-style-type: none"> (i) Educational institutions have the potential to supply a well-equipped workforce. (ii) Government agencies are enthusiastic about professional development and knowledge building. (iii) There is potential for linking user charges to service quality and reducing funding gaps.
Infrastructure	<ul style="list-style-type: none"> (i) Secondary and local roads can be improved to bring large economic benefits to small towns and villages through revitalized small industries and tourism. (ii) Physical improvements to the interfaces between modes (e.g., rail and bus terminals) will reduce travel times and increase comfort and safety. (iii) The railway has tremendous potential to be cost-effectively improved to absorb more road-based traffic and reduce the total investment needs of the sector while being competitive. (iv) The growth of industries and businesses providing advanced construction and maintenance materials from indigenous resources can be fostered.
Services	<ul style="list-style-type: none"> (i) Indigenous transport service providers have the potential to cut costs, fill the current service gaps, and enter new markets if they are helped to organize themselves and gain access to small-scale financing. (ii) Choices for passengers and shippers and competition among modes can be fostered through modal integration. (iii) Mobile and other advanced technologies have a massive role to play in awakening the latent demand for public transport and increasing road and rail asset performance with real-time information.
RISKS	
Institutions	<ul style="list-style-type: none"> (i) Funding is constrained by global economic events.
Infrastructure	<ul style="list-style-type: none"> (i) Investment is uneconomical due to high inflation and rising demand for equipment, labor, and materials. (ii) Infrastructure is damaged by natural disasters.
Services	<ul style="list-style-type: none"> (i) Operators are constrained by new rules and regulations of neighboring countries. (ii) Negative impacts on the environment and society are increased due to more movement of goods and people.

^a A list of related legislation can be found in TRACECA. Country Report on Infrastructure and Finance Georgia. http://www.traceca-org.org/fileadmin/fm-dam/Investment_Forum/101208_GEO%20country%20report.pdf
 Source: Compiled by ADB.

Chapter 3

Current Sector Strategies

A. Government Strategy

The government that took office in October 2012 has expressed its intention to retain the transport strategy in its national plans, focusing on (i) making Georgia a regional and logistics hub and business platform, (ii) upgrading multimodal infrastructure, and (iii) developing professional and higher education centers. These are aimed at making Georgia the preferred gateway between Asia and Europe. Accordingly, improvement of the EWH, which requires removing some of the bottlenecks and introducing advanced traffic management systems, remains the priority for public investment. The new administration will also pay more attention to improving international roads extending from the north to the south, and secondary roads connecting regional centers to international roads. Initiatives such as performance-based road maintenance and traffic and safety management will be implemented with more vigor.

B. ADB Strategy, Support, and Experience

ADB's current strategy for the transport sector in Georgia is focused on road infrastructure and institutions. It calls for financing for improving international roads and building institutional capacity to maintain those roads to facilitate subregional trade. As a first step, ADB provided a \$500 million multitranche financing facility to implement this strategy between 2009 and 2016 (ADB 2009b). The expected outputs of the investments from this facility are about 200 km of improved roads, and more capacity in the Roads Department to manage these assets and to improve safety. These are expected to help subregional trade grow at 4% a year to 2021. The first and third tranches of funding from the facility, amounting to about \$260 million, are used currently for project 1—constructing 30 km of a new two-lane road and upgrading 2 km of road from two lanes to four lanes to create a bypass around Kobuleti, a Black Sea resort town located between the ports of Batumi and Poti. This road will be operational

by mid-2015. The remaining \$240 million from the facility is available for use until 31 December 2019.

Project implementation has been difficult, however, partly because of the government's unfamiliarity with ADB policies and procedures on land acquisition and resettlement, procurement arrangements, and inadequate contract administration experience. The institutions also lack staff members with experience of international best practices in planning and design, as highlighted earlier in this report. Moreover, the estimated costs after detailed design have outstripped the appraised values of the first two projects, partly because these were not based on the lifecycle cost analysis. As a result, the government canceled tranche 2 (project 2), which was financing the Batumi bypass construction, and requested that tranche 3 be used to supplement tranche 1.

Despite the initial setbacks, ADB's continuous guidance and advice will help bring implementation of the first project back on track. Although the outcomes and impact of the multitranche financing facility are expected only by 2015, this assessment has shown that ADB's current strategy remains valid for roads and can be strengthened by widening its support for sustainability, innovation, and modal integration.

C. Other Development Partner Support

ADB works closely with development partners through frequent meetings and information exchanges. The key line ministries serve as liaisons and periodically bring the partners together for discussing critical development issues and financing needs. The Joint Needs Assessment in 2010 revealed that the post-conflict recovery and reconstruction program

formulated in October 2008 raised economic growth rates to about 5% in subsequent years. Of the \$4.5 billion committed for the program, \$2.5 billion had been disbursed as of March 2012. About 17% of that went into transport infrastructure, mostly roads (United Nations and World Bank 2010).

The European Bank for Reconstruction and Development, European Union, JICA, MCC, and World Bank have also assisted road network development in the past, especially the EWH. MCC and the World Bank have financed secondary road improvements, in addition to technical assistance for institutional strengthening and private sector development in areas such as project management, traffic safety, manpower training, curriculum development, and road maintenance procurement.

D. ADB's Forward Strategy and Program

ADB's forward strategy will be to continue supporting Georgia's efforts to develop an efficient, sustainable transport system in line with its vision of making the nation an international gateway and to promote inclusive growth. To this end, ADB will finance improvements to international and secondary roads that can bring benefits to the citizens and businesses of Georgia. It will coordinate with other development partners to speed up project delivery and maximize impact. ADB's technical assistance will be aimed at developing and implementing measures that will enhance the effectiveness of the physical improvements as shown in Appendix 4.

Remaining improvement works on the EWH will be the primary target of ADB funds, which will initially be from the current multitranche financing facility. These works are technically challenging due to the

environmentally and geologically sensitive terrain of the road alignment, and hence are estimated to cost substantially more than the earlier works. Given this, and the significance of the road to the country and the region, donors are combining their efforts to mobilize adequate financing and technical advice. With ADB assistance, these efforts will help create the first high-speed road facility across the country that serves both its domestic and international travel needs, and contributes to food and national security. ADB will ensure maximum return on investment through sound design, construction, and operation in full compliance with its environmental and social safeguards.

Effective implementation of the ongoing EWH work will play an important role in fostering trade and enhancing regional connectivity during the country partnership strategy period. ADB will also assist in linking this major road corridor to local regional centers through selected secondary road improvements. This will help bolster internal connectivity, making economic growth more inclusive. ADB will also provide support for modernizing technical standards and specifications for roads, and for addressing critical gaps in technical and project management skills. Capacity development support will also contribute to the enabling environments for private sector participation in the transport sector and encourage private participation in railway development for increased container transport, leasing for replacement of older vehicles used in commercial transport, and establishment of sector training structures and programs.

Given the urgent need for better direction for the sector, particularly the need for finding sustainable, multimodal solutions, ADB intends to provide technical assistance for developing a national transport policy and the transport planning capacity of government institutions.

The policy will foster economically, financially, and environmentally sustainable transport service delivery; boost transport safety and security; and establish environmental and social safeguard requirements, while meeting public service obligations. It will lead to clear sector investment targets and financing arrangements, both for capital and operating expenditure. The policy will set the stage for modal integration through road connections to rail and operational arrangements, while the investment in international roads and other transport assets continue. It will clearly outline the role and responsibility of each mode in serving the public and businesses, and set out the requirements for coordinating planning, prioritizing investment, modernizing technical standards and specifications, and developing the workforce.

Finally, ADB plans to provide technical assistance for modernizing technical standards and specifications in the roads subsector, and for addressing critical gaps in implementing the modernized standards. These initiatives will help the institutions and staff fully understand and incorporate social dimensions into the design standards and operation policies. It is expected that they will help the sector better meet the needs of women, children, senior citizens, and people with disabilities, and shift toward the use of climate-friendly materials and construction methods. The indirect outcomes of the technical assistance, particularly the policy work, will include enabling environments for private sector participation in railway development for increased container transport, leasing for replacement of older vehicles used in commercial transport, and establishment of sector-based training institutions and programs. An indicative investment pipeline is given in Appendix 5.

Chapter 4 Transport Sector Road Map and Results Framework

Country Sector Outcomes		Country Sector Outputs		ADB Sector Outputs	
<p>Outcomes with ADB Contributions</p> <p>Increased efficiency and sustainability of transport system</p>	<p>Targets with Indicators and Baselines</p> <p>Average journey speed on the EWH from Batumi to Tbilisi increased from 50 km/h in 2013 to 60 km/h by 2020</p> <p>Overall risk rating of the EWH based on road safety audits of improved sections no more than <i>low</i></p> <p>Length of improved secondary roads that support intermodal and multimodal transport</p>	<p>Outputs with ADB Contributions</p> <p>(i) Increased capacity of the EWH</p> <p>(ii) Improved secondary roads</p> <p>(iii) Transport development program created based on national transport policy</p> <p>(iv) Increased planning capacity of MESD</p> <p>(v) Uniform road standards adopted by the government</p>	<p>Indicators with Incremental Targets</p> <p>(i) About 60 km of the EWH upgraded to four lanes by 2020</p> <p>(ii) Share of secondary roads in good condition up from 25% in 2013 to 35% in 2020</p> <p>(iii) Investment pipeline, maintenance program, and firm financing plan updated for the road network</p> <p>(iv) Percentage of staff members with transport planning training and education in government agencies increased from 10% to 30% between 2013 and 2017</p> <p>(v) Designs based on revised manual become mandatory in 2018</p>	<p>Proposed and Ongoing ADB Operations</p> <p>Lending</p> <p>(i) Road Corridor Improvement Program</p> <p>(ii) Secondary Road Improvement Project</p> <p>Nonlending</p> <p>(i) Transport policy development</p> <p>(ii) Technical standards and specifications update</p>	<p>Main Outputs Expected from ADB Interventions</p> <p>Lending</p> <p>(i) 20 km of the EWH upgraded</p> <p>(ii) 50 km of secondary roads upgraded</p> <p>Nonlending</p> <p>(i) Guiding principles of transport development created</p> <p>(ii) Transport planning education and training program for staff of planning agencies completed by 2017</p> <p>(iii) Manual on uniform road design standards written</p> <p>Outputs expected from the Road Corridor Investment Program</p> <p>(i) 34 km of 2 lanes bypassing Kobuleti</p> <p>(ii) capacity assistance to the Roads Department</p> <p>(iii) road safety measures</p> <p>(iv) project management and consulting services for design</p> <p>(v) contractor supervision</p>

ADB = Asian Development Bank, EWH = East-West Highway, h = hour, km = kilometer, MESD = Ministry of Economy and Sustainable Development.

APPENDIX 1

List of Stakeholders Consulted in June–September 2012

Name	Designation	Organization
Ketevan Salukvadze	Head of Department	Transport Policy Department, Ministry of Economy and Sustainable Development
Gogita Gvenetadze	Deputy Head of Department	
Ketevan Takaishvili	Advisor to Head of Department	
David Javakhadze	Head, Maritime Transport Division	
Irakli Litanishvili	Deputy Chairman	
Mikheil Khmaladze	Director	Roads Department, Ministry of Regional Development and Infrastructure
Koba Baindurashvili	President	Land Transport Agency
Rusudan Mamatsashvili	Head, Department of Planning and Development	Chamber of Commerce
Temur Iobidze	Director	National Tourism Agency
Irakli Davitadze	Former Director	Maritime Transport Agency
Joseph Crowley	Managing Director	Civil Aviation Agency
George Doborjginidze	President	APM Terminals, Poti Seaport
V. Inaishvili	President	Georgia Logistics Association
Grigol Lazrievi	Head of Hydrology and Climate Control Division	Association of Freight Forwarders of Georgia
Ketevan Kordzakhia	Head of Atmospheric Air Protection Division	Ministry of Environment Protection
Sergo Tepnadze	Rector	Georgian Aviation University
Samson Uridia	Head of Department for International Relations	Georgia Revenue Services
Mamuka Akhladze	Director	Maritime Transport Agency
Giorgi Edisherashvili	Chief Executive Officer	SAKAERONAVIGATSIA
Kate Aleksidze	Director	United Airports Georgia
Irakli Gejadze	Chief Financial Officer, Passenger Transport	Georgian Railway
David Tsavtsivadze	Chief Financial Officer, Freight Transport	
Abel Giorgobiani	Deputy Director, Freight Strategic Business Unit	
Otar Gelashvili	Dean, Faculty of Transportation and Mechanical Engineering	
Vyacheslav Khartyan	General Director	Georgian Technical University
Joseb Nibladze	Senior Manager	Batumi Seaport
		Poti Free Industrial Zone

APPENDIX 2

Major Roads and Rehabilitation Status

Route	Section	Length (km)	Remarks	Lanes	Status of Rehabilitation
S-1 (E-60)	Tbilisi-Senaki-(Lesleidze)	348 (552)	Principal East-West Highway (Section currently closed to through traffic at Abkhazia border)	2 and 4	Upgrading, new construction
S-2 (E-70)	Senaki-Poti-Batumi-Sarpi	119	Black Sea coast highway	2	Upgrading, new construction
S-3	Mtskheta-Kazbegi-Larsi	139	Mtskheta to Russian Federation border	2	Rehabilitation
S-4 (E-60)	Tbilisi-Red Bridge	57	Continuation of S-1 to Azerbaijan border	4	Future project
S-5	Tbilisi-Sagarejo-Lagodekhi	160	Trunk highway east from Tbilisi toward Azerbaijan border	2	Future project
S-6	Tbilisi-Marmeuli-Guguti	98	Secondary international route to Armenia border at Guguti	2	Future project
S-7	Marmeuli-Sadakhlo	34	Main international route to Armenia border	2	Future project
S-8	Khashuri-Vale	97	Secondary international route to Vale (Turkey border)	2	Future project
S-9	Tbilisi Bypass	49	Eastern bypass of Tbilisi	2	Under construction
S-10	Gori-Tskhinvali-Gupta-Java-Roki	92	Gori on S-1 to Roki Pass (Russian Federation border) in Tskhinvali Region	2	Future project

km = kilometer.

Source: Roads Department.

APPENDIX 3

Road Projects Funded by ADB and Development Partners

Route	Section	Funding Source	Status	Length (kilometers)	\$ million
International Roads					
E60/E97	Tbilisi-Aghaiani	Government of Georgia	Completed	42	40
	Aghaiani-Igoeti	World Bank	Completed—2009	13	25
	Igoeti-Sveneti	World Bank—Second East-West Highway Project	Completed—2012	25	90
	Sveneti-Ruisi	World Bank—Third East-West Highway Project	Completed—2012	15	180
	Ruisi-Agara	Additional financing for Third East-West Highway Project	Started in 2012	19	43
	Agara-Zemo Osiauri	World Bank—Fourth East-West Highway Project	Under procurement	12	55
	Rikoti Tunnel	World Bank—Additional financing for the First East-West Highway Improvement Project	Completed—2012		28
	Rikoti-Zestaponi	TBD	Identified for future consideration	44	
	Zestaponi-Kutaisi-Samtredia	JICA—Rehabilitation and construction of this section of the East-West Highway	Under construction	58	230
	Samtredia-Grigoleti	European Investment Bank—Georgia East-West Highway	Under procurement	57	€170
E60	Tbilisi-Rustavi	ADB	Under procurement	21	50
	Rustavi-Red Bridge	TBD	Identified for future consideration	36	
E60/E70	Ajara Bypass Roads (Batumi Bypass)	ADB	Cancelled (Batumi Bypass)	14	159

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Continued

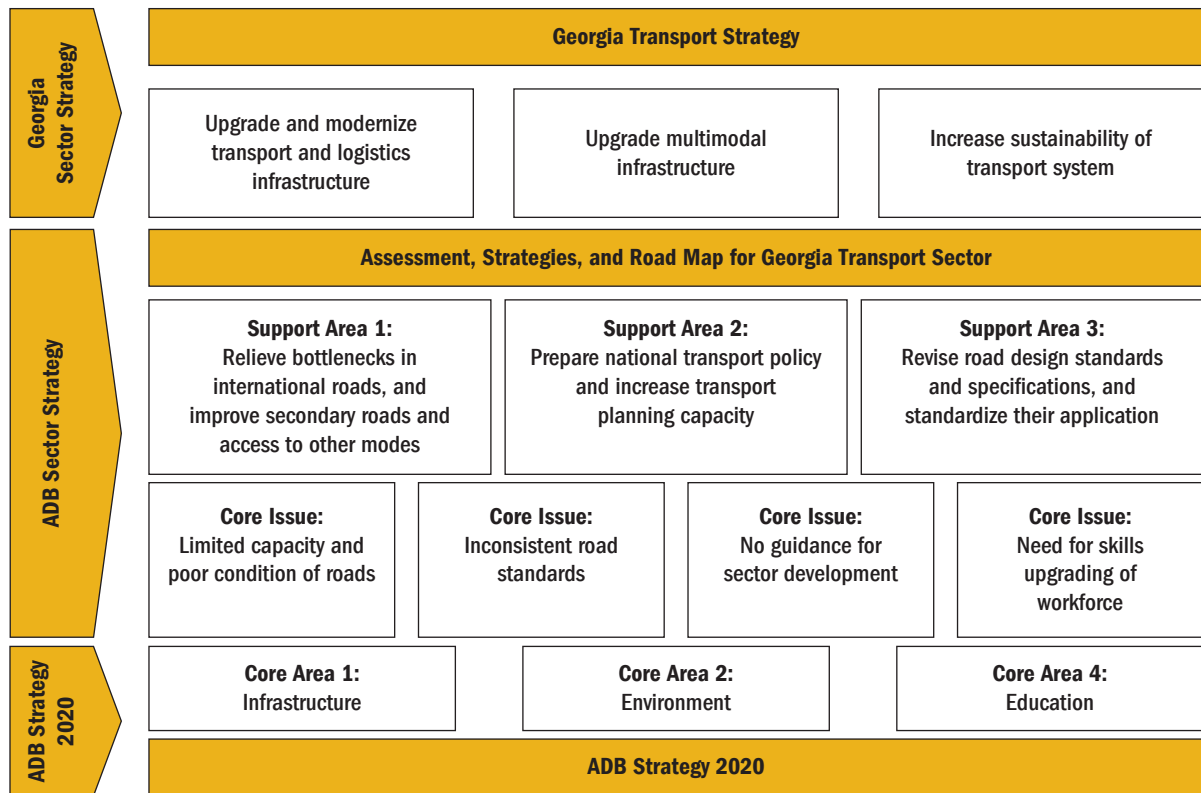
Route	Section	Funding Source	Status	Length (kilometers)	\$ million
International Roads					
E60/E70	Kobuleti Bypass	ADB	Under construction	33	284
	Zestaponi Bypass	TBD	Identified for future consideration	9	80
	Tbilisi-Marneuli	TBD	Identified for future consideration	43	
	Tbilisi-Sagarejo	TBD	Identified for future consideration	48	
	Vaziani-Gombori-Telavi	World Bank—Kakheti Regional Roads Improvement Project	Completed—2012	66	30
TOTAL				555	1,500
Other Roads					
	Secondary and Local Roads Project 1	World Bank—Additional financing	Completed	450	70
	Secondary and Local Roads Project 2	World Bank	Ongoing	225	70
	Samtskhe-Javakheti Roads Rehabilitation Project	MCC	Completed—2010	224	209
	Kharagauli secondary roads	TBD	Project preparatory technical assistance provided by ADB.	50	100
	Rehabilitation of 300 km of priority secondary roads	TBD		300	60
TOTAL				1,249	419

ADB = Asian Development Bank, JICA = Japan International Cooperation Agency, MCC = Millennium Challenge Corporation, TBD = to be decided.

Source: Roads Department.

APPENDIX 4

Strategic Links



APPENDIX 5

Indicative Investment Pipeline

Support Area 1: Institutional Strengthening				
	Issues	Forward Strategy	ADB Assistance Type	Amount and Timing
All Modes	<ol style="list-style-type: none"> 1. Unguided and unplanned investment and operation of transport system 2. Limited size of workforce with relevant education, training, and experience 	<ol style="list-style-type: none"> 1. Create national transport policy 2. Develop planning skills 	<ol style="list-style-type: none"> 1. Policy and Advisory Technical Assistance (PATA) for formulating a national transport policy, training planning specialists in key ministries, and conducting nationwide consultation with all stakeholders 	<ol style="list-style-type: none"> 1. \$1.0 million, 2014–2016
Roads	<ol style="list-style-type: none"> 1. Inconsistent and archaic road construction and maintenance standards 2. Uncertain financing for road network development and high risk of asset deterioration 	<ol style="list-style-type: none"> 1. Introduce new standards and specifications for road construction and maintenance, and promote indigenous research 2. Formulate new mechanisms for reducing public funds through equitable cost recovery from users according to national transport policy 	<ol style="list-style-type: none"> 1. CDTA for Roads Department 	<ol style="list-style-type: none"> 1. \$200,000, 2015
Support Area 2: Infrastructure				
Roads	<ol style="list-style-type: none"> 1. Delays and accidents on East–West Highway (E60 and E70) 2. Poor condition of the secondary roads connecting main agriculture and tourism regions to the international roads, tourist attractions, national markets, international gateways, and other modes 	<ol style="list-style-type: none"> 1. Relieve bottlenecks and correct hazardous locations 2. Upgrade secondary roads 	<ol style="list-style-type: none"> 1. Secondary Road Improvement Project Preparation Technical Assistance 2. Secondary Road Improvement Project 3. Roads and Market Connectivity Project 	<ol style="list-style-type: none"> 1. \$1 million, 2013 2. \$100 million, 2015 3. \$240 million, (standby)
Support Area 3: Services				
Road and Rail	<ol style="list-style-type: none"> 1. Increasing greenhouse gas emissions, accidents, delays, and inconveniences to passengers due to aging fleets 2. Overdependence on roads for freight transport and underutilization of rail passenger transport potential 	<ol style="list-style-type: none"> 1. Gradual fleet replacement by energy-efficient and safer vehicles 2. Facilitate a gradual diversion of long-distance passenger and freight traffic to rail 	TBD	TBD

ADB = Asian Development Bank, CDTA = capacity development technical assistance.

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Georgia Transport Sector Assessment, Strategy, and Road Map

The Asian Development Bank (ADB) is preparing sector assessments and road maps to help align future ADB support with the needs and strategies of developing member countries and other development partners. The transport sector assessment of Georgia is a working document that helps inform the development of country partnership strategy. It highlights the development issues, needs and strategic assistance priorities of the transport sector in Georgia. The knowledge product serves as a basis for further dialogue on how ADB and the government can work together to tackle the challenges of managing transport sector development in Georgia in the coming years.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.7 billion people who live on less than \$2 a day, with 828 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.