

## SECTOR ASSESSMENT (SUMMARY): TRANSPORT

### Sector Road Map

#### 1. Sector Performance, Problems, and Opportunities

1. Ji'an is a prefecture-level city in the central part of Jiangxi Province, 210 kilometers (km) south of the provincial capital, Nanchang, and about 600 km north of Guangzhou. The municipality consists of two urban districts, (Jizhou and Qingyua), nine counties,<sup>1</sup> and Jinggangshan City. Ji'an is situated along the north–south trunk corridor connecting Beijing to Hong Kong. The north–south transport corridors include the Beijing–Kowloon Railway, Daguang Expressway, and National Highway G105; while the east–west corridors include the Quannan Expressway and National Highway G319. By the end of 2012, the population of Ji'an Municipality had reached 4.96 million, of which 41.6% was urban. In 2012, the city's gross domestic product (GDP) reached CNY100.6 billion and per capita GDP was CNY20,282, which represented year-on-year growth of 14.6%.

2. The Ji'an central urban area,<sup>2</sup> the location of the project, had a population of about 550,000 in 2012 and is expected to grow to 730,000 by 2020 and 1,040,000 by 2030 according to the Ji'an Urban Master Plan (2007–2020).<sup>3</sup> The forecast growth in population and urbanization will put huge pressure on urban and transport infrastructure. In recent years, the urban area has vastly expanded, primarily along the Jinggangshan Avenue corridor. Convenient connections are lacking between the existing central business district and the neighboring urban fringe areas (i.e., Jizhou District, Qinyuan District, Jinggangshan Economic Development District, and Dunhou Town in Jizhou County).

3. The number of registered vehicles in the Ji'an urban area has been steadily increasing over the last decade. In 2012, there were approximately 180,000 vehicles, of which 17% were private cars and more than 70% were motorcycles. Electric motorcycles, locally known as e-bikes, are not included in these statistics because they have not been regulated until recently. The increase of vehicle ownership has resulted in deteriorating traffic congestion and slower public transport service. Traffic police data indicates that the average travel speed decreased from about 40 km per hour in 2008 to about 30 km per hour in 2013, and several intersections along Jinggangshan Avenue, the main thoroughfare of the city, are congested during peak hours.

4. **Need for better public transport.** The urban public transport system in Ji'an is facing several challenges. Existing bus services have relatively low route density and low frequency, and operate an aging bus fleet with poor schedule reliability and short operating hours. The bus company lacks modern management practices. The system is not coping with increasing demand (7% per year) and public transport is not given priority on the city's main roads. Substantial capacity expansion and quality improvements are needed to meet not only existing demand, but also the future demand that planned urban expansion will create.

5. There are about 200 bus stops within the Ji'an urban area. Many of those along the main roads are sheltered, but they are relatively small and have limited and uncomfortable seating and confusing passenger information. Many passengers board and alight on the vehicle

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<sup>1</sup> The nine counties are Xingan, Yongfeng, Xiajiang, Jishui, Taihe, Wan'an, Suichuan, Anfu, Yongxin.

<sup>2</sup> Ji'an's central urban area consists of Jizhou and Qingyua urban districts and Jian County.

<sup>3</sup> The People's Government of Ji'an. 2009. *Ji'an Urban Master Plan (2007-2020)*. Ji'an City.

carriageway, particularly when cars are parked near the bus stops. This reduces visibility for both passengers and approaching buses, disrupts traffic flow, and is unsafe. Street space in the urban area is not used efficiently and should be improved through better street design and layout, upgraded bus stops, and stricter regulation and enforcement to prevent stopping or standing or parking near bus stops.

6. The Ji'an Public Transport Company, jointly owned by Jiangxi Long Distance Bus Company (70% share) and Ji'an Municipality (30% share), operates bus services on 31 routes with 278 8-meter and 12-meter buses. Three major routes are carrying more than 10,000 passengers per day and four routes are carrying more than 5,000 passengers per day. The bus routes with the highest demand run on Jinggangshan Avenue for at least part of their routes. Jinggangshan Road is the main corridor for both private traffic and public transport. Increasing congestion along this road renders public transport service ineffective and reduces its attractiveness. Also, the capacity of the bus company needs to be strengthened to ensure operational efficiency, routing strategies, and integration of high-demand locations.

7. One of the high-demand bus routes connects the central business district and Jinggangshan Avenue with the Ji'an Railway Station on the east side of the city across the Ganjian River. The arrival and departure of railway passengers at this station has grown by 14.3% annually from 2005 to 2012. The loading and unloading zones for buses and taxis are chaotic and poorly controlled, and separated from the railway station by long stairs with no weather protection and little passenger information. Passengers, frequently with luggage, must navigate a difficult and treacherous path to access the station. The station square needs to be improved to ensure safety, improve convenience, and promote public transport as an attractive option for passengers.

8. **Need for urban road network expansion and traffic management.** The road network of the old city area was developed alongside the river to form a small grid with three horizontal and five vertical trunk roads. Under the Ji'an Urban Master Plan, the government plans to expend the city to the west and south of the old city due to the physical constraints of the river and mountains. This creates the need to (i) extend road network capacity and coverage to avoid further congestion from rapid motorization and urban expansion, (ii) build a road connection to the planned high-speed railway station on the west side of Ji'an, (iii) ensure efficient traffic management, and (iv) develop road safety measures for existing and future intersections and roads.

9. According to the traffic accident database established by the Ji'an Public Security Bureau's traffic police brigade in 2011, 390 traffic crashes occurred in Ji'an Municipality, including 105 fatal ones. In urban area, 22 road users died and 65 road users were injured. The crash rate per 100,000 people was 46.8 in 2011, which is much higher than the national urban average of 25.0. The main reason for the high rates is the high proportion of e-bikes and mopeds mixing in with pedestrians and motor vehicles in an unregulated environment, especially on busy intersections and main roads. The crash database identified two major intersections and five road sections as road safety black spots. Ji'an roads need better intersections and mid-block pedestrian crossings along with more stringent traffic regulation.

## 2. Government's Sector Strategy

10. Transport sector policy is guided by the 12th Five-Year Plan (2011–2015),<sup>4</sup> which continues the agenda of sustainable development initiated under the 11th Five-Year Plan. The overall strategic directions and priority areas are expected to continue in the 13th Five-Year Plan. The government places increasing emphasis on green and low-carbon growth and on coordinated urban and rural development with better basic public services. Its new objective for the sector is to develop an integrated transport system that provides high-quality, efficient, and affordable transport services in a safe and environmentally sound manner. A comprehensive reform agenda announced at the Third Plenary Session of the 18th Communist Party of China Central Committee<sup>5</sup> demands a more innovative and proactive approach to joint operations by the People's Republic of China (PRC) and the Asian Development Bank (ADB) to meet the PRC's complex and changing needs.

11. Despite Ji'an's recent progress, its economic development, which responds to the national strategy of "Rise of Central China" and "Develop Poyang Lake Ecological Economic Zone,"<sup>6</sup> has been constrained by its rural economy and lack of rural and urban infrastructure development. The Ji'an Urban Master Plan has established development strategies to transform Ji'an into a transport hub and logistics base for western Jiangxi Province by enhancing links between Guangdong to the south and better integrating it with Nanchang, the capital of Jiangxi Province.

12. The construction of the planned Nanchang–Ji'an–Ganzhou high-speed railway, which will serve Ji'an with a station about 4 km west of the existing city, will bring an unprecedented opportunity to Ji'an for economic growth and accelerate the city's pace of modernization. Ji'an will be better integrated into the Nanchang municipality city cluster and the West Straits Economic Zone. As part of the Ji'an urban development strategy, the new development area on the west side of Ji'an has been singled out as a preferred location for population expansion and land development in conjunction with the planned high-speed railway station. The intention is to consolidate commercial, residential, logistical, and business services, as well as tourism development, in an integrated, high-quality, efficient, and multifunctional new urban area.

13. The government expects the ADB-financed project to provide a boost to sustainable urban transport development in Ji'an. An advanced public transport system will be established in the main corridor of the existing city center to provide efficient access to the old city area by a high-quality bus rapid transit system. Complementary investments in new vehicles, multimodal connections, and training will improve public transport services and conditions across the urban area. A new road network will be developed to connect the planned high-speed railway station area to the existing city.

## 3. ADB Sector Experience and Assistance Program

14. ADB has been a key development partner of the PRC in its transport sector since 1991. It has provided 71 loans totaling more than \$13.8 billion to the PRC for transport and information technology projects since 1992. ADB has also provided \$70.5 million in technical assistance

<sup>4</sup> Government of the People's Republic of China. 2011. *12th Five-Year Plan (2011-2015)*. Beijing.

<sup>5</sup> The Third Plenum held on 9–12 November 2013 announced the Decisions on Major Issues Concerning Comprehensively Deepening Reforms, which provide a blueprint for deepening reform across wide-ranging areas.

<sup>6</sup> Poyang Lake Zone is located in the northern Jiangxi Province and comprises the cities of Nanchang, Jingdexhen, Yingthan, Jujiang, Xinyu, Fuzhou Yichun and Ji'an. The development zone accounts for 60% of Jiangxi's economy.

projects for policy reform, institutional strengthening, environmental management, poverty reduction, vocational training, and project preparation.

15. Through ADB's Sustainable Transport Initiative,<sup>7</sup> approved in 2010, ADB has established new strategic directions for its transport operations to 2020. The initiative identifies four new focus areas to be scaled up in future ADB operations—urban transport, climate change mitigation, cross-border transport and logistics, and road safety and social sustainability. In line with the initiative, ADB has recently begun to diversify its assistance to the PRC into urban transport, inland waterways, and logistics. It also initiated steps to provide assistance in the road subsector toward better road asset management and road safety. The goal of ADB transport sector support under the country partnership strategy, 2011–2015<sup>8</sup> is to promote inclusive growth and environmental sustainability in the PRC by developing a more efficient, safe, green, and sustainable transport system.

16. **Support for low-carbon transport systems.** ADB will support low-carbon transport by investing in regional railways, inland waterways, and multimodal logistics infrastructure. In the railway subsector, the focus of support will be on strategic railway programs, including subregional railway links, energy efficiency improvement, and investment to enhance the competitiveness of railways for freight and passenger traffic.

17. **Development of sustainable urban public transport systems.** ADB will provide support for efficient, high-capacity, and affordable public transport systems. It will help develop integrated and sustainable urban transport systems by supporting urban strategic planning, traffic management, public transport, and urban development. The main focus will be on improving transport services for people, and not simply on making room for more vehicles. In selected cities, ADB will support (i) integrated land and transport planning; (ii) road improvement, rapid transit, and local transit facilities; (iii) improved traffic management, enforcement, truck management; and (iv) nonmotorized transport systems, traffic safety, emissions control, and travel demand management.

18. **Improvements to the ordinary road network.** ADB will assist in improving the efficiency and sustainability of the road subsector, focusing mainly on providing support for planning, financing, and implementing arrangements to improve maintenance and road asset management. Toward these objectives, ADB will help (i) develop more effective ways of integrating the planning, financing, and execution of ordinary road upgrades, rehabilitation, and maintenance; (ii) prepare long-term and annual road network rehabilitation and maintenance plans; (iii) develop sustainable financing arrangements; (iv) accelerate sector reforms to promote market-based mechanisms in road maintenance; (v) reduce overloading; and (vi) promote transport efficiency through greater use of buses, containers, and large multi-axle trucks. Moreover, ADB will continue to support rural transport by providing year-round road access and related services to poor rural areas. In urban areas, ADB will make transport accessible and safe for all users and social groups, including poor women and other vulnerable groups.

19. **Improve safety and social sustainability.** In line with the PRC's commitment as signatory to the United Nations Decade of Action for Road Safety, 2011–2020 and of ADB's Road Safety Action Plan, ADB will scale up road safety in its operations. This will include piloting more effective approaches to road safety, i.e., with an emphasis on better engineering,

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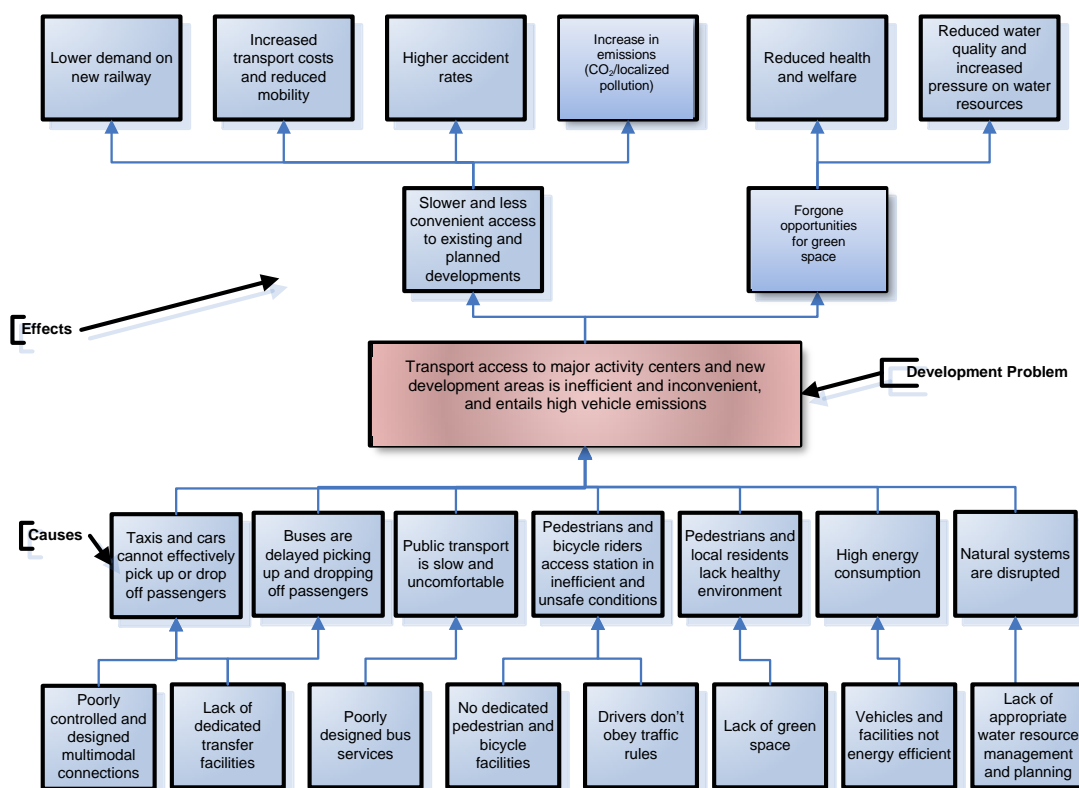
<sup>7</sup> ADB. 2010. *Sustainable Transport Initiative Operational Plan*. Manila.

<sup>8</sup> ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011-2015*. Manila.

enforcement, education, information sharing, evaluation, and emergency responses in road safety. ADB will expand its road safety operations, initially by including more road safety components in project loans, more technical assistance support, and regional cooperation in road safety. Further, ADB will integrate components in transport projects to promote inclusive dimensions such as nonmotorized transport systems, rural transport services, gender equity, and HIV/AIDS prevention.

20. **Value addition.** As ADB’s resources are small in comparison with the PRC’s transport development requirements, ADB will focus its transport support where it can add value, including financing innovative projects, piloting and scaling up successful projects, promoting technology and knowledge transfer, building capacity, and encouraging public–private partnership. Close integration of support for new knowledge, lending, technical assistance, and knowledge products and services will be forged. Through its projects, ADB will help the government apply new technologies and designs to make better use of existing transport infrastructure and to reduce emissions. This can involve innovations such as intelligent transport systems and advances in fleet technology. ADB will also help search for solutions to improve air quality and lower greenhouse gas emissions, utilizing resources from the Global Environment Facility and other trust funds.

### Problem Tree for Transport, Jiangxi Ji’an



### Sector Results Framework (Transport Sector, 2011–2015)

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Contributions
More efficient, safer, inclusive, and sustainable movement of people and goods in the PRC.	<p>Rail passenger traffic grows by 4% per annum, from 876 billion passenger-km in 2010.</p> <p>Rail traffic for freight grows by 3% per annum, from 2,733 billion tons-km in 2010.</p> <p>Energy consumption in railway per unit of traffic reduced by 5% from 2010 to 2015, from 4.94 tons of standard coal equivalent per million ton-km in 2010.</p> <p>Inland waterway traffic for freight grows by 1% per annum, from 433 billion ton-km in 2009.</p> <p>In areas supported by ADB urban transport projects, public transport ridership increases by 5% from 2010 to 2015.</p> <p>In areas supported by ADB road projects, the road accident fatality rate per vehicle-km and per 100,000 inhabitants in 2015 is 10% lower than in 2010.</p>	Integrated, low-carbon transport system expanded, improved, managed, and maintained	<p>Rail route network increased from 91,000 km in 2010 to about 120,000 km by 2015, including 45,000 km of high-speed (over 200 km per hour) railway network.</p> <p>42 national comprehensive transport hubs developed by 2015.</p> <p>High-class (class III and above) inland waterway network increased from 10,000 km in 2010 to over 13,000 km by 2015.</p> <p>In areas supported by ADB projects, new bus rapid transit system in operation by 2015 (baseline: zero).</p> <p>In provinces supported by ADB road projects and TA projects, increased financing for road maintenance by project completion from the current level.</p>	<p>Planned key activity areas:</p> <ul style="list-style-type: none"> <li>- Lending operations with a total investment of \$2.71 billion (2011–2014) in rail transport, especially regional or sub-regional link.</li> <li>- Inland waterway transport and urban transport.</li> <li>- Road asset management and rural transport.</li> <li>- Road, rail, and inland waterway safety.</li> </ul> <p>Pipeline projects (2011–2014), (total \$2.71 billion):</p> <ul style="list-style-type: none"> <li>- Railway (\$1,160 million)</li> <li>- Road (\$980 million)</li> <li>- Urban transport (\$370 million)</li> <li>- Inland waterways (\$200 million)</li> </ul> <p>Nonlending programs, e.g., in fuel tax reforms, low-carbon urban transport, intermodal logistics, energy efficiency, and safety.</p> <p>Knowledge products based on TA findings and policy notes aimed at supporting government policymaking.</p> <p>Ongoing projects: 24 ongoing projects totaling \$6.2 billion at end of 2010.</p>	<p>Pipeline projects:</p> <ul style="list-style-type: none"> <li>- The first bus rapid transit system operational in Lanzhou.</li> <li>- About 650 km of ordinary roads rehabilitated and operational.</li> <li>- Road asset management system established in one province and operational.</li> </ul> <p>Ongoing projects:</p> <ul style="list-style-type: none"> <li>- About 1,947 km of new railways built.</li> <li>- About 121 km of urban roads upgraded in Xi'an and Lanzhou.</li> <li>- About 1,883 km of expressways built.</li> <li>- About 3,881 km of local roads rehabilitated.</li> <li>- About 1,308 km of rural roads built or rehabilitated.</li> </ul>

ADB = Asian Development Bank, GDP = gross domestic product, km = kilometer, PRC = People's Republic of China, TA = technical assistance.  
 Source: Asian Development Bank estimates.