

SECTOR ASSESSMENT (SUMMARY): TRANSPORT AND INFORMATION AND COMMUNICATION TECHNOLOGY – URBAN TRANSPORT¹

Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. Jaipur, the capital of the Indian state of Rajasthan, is the 10th largest city and one of the fastest growing cities in India. It is a center of both traditional and modern industries, and is a very popular tourist destination for cultural heritage and historic architecture. The population of Jaipur city and the surrounding region was 4.5 million in 2011, and it is projected to reach 9.3 million by 2031. Fast-paced industrial and commercial development has resulted in a steep rise in travel demand, but the city's public transport infrastructure is inadequate in terms of capacity and service. With the growing economy, passengers are shifting to the private mode, as evident in the rise in vehicle ownership, aggravating congestion and pollution. The modal share for public transport in Jaipur was 19% in 2009—one of the lowest in cities with more than 3 million inhabitants in India.²

2. The public transport system in Jaipur consists mainly of city buses operated by Jaipur City Transport Services, minibuses operated by private operators, and intermediate public transport modes such as taxis and auto rickshaws. Jaipur City Transport Services operates a fleet of 300 buses. The existing city buses operate on seven radial and three circular routes spread across the city, with a high concentration around the core area. The minibus fleet of about 1,900 operates on 28 routes. Only about 30 buses are available per 100,000 population.³ Overall, the bus system available at present is inadequate, operating at crush capacity.

3. Several initiatives have been undertaken by state government agencies responsible for urban transport in recent years to address the inadequate public transport capacity, availability, and increasing congestion on the road network in Jaipur. In 2009, Jaipur Development Authority developed the Comprehensive Mobility Plan, seeking to provide an overall transport plan up to 2031, that emphasizes the preeminence of public transport for movement of people, not just vehicles; and integrating land use with transport networks. The plan prioritized mobility corridors, which can maximize throughput of people, focusing on mass transport rather than vehicular traffic; and identified solutions including bus fleet augmentation, a bus rapid transit system, and a high capacity rail-based system.

4. Following the guidelines of the National Urban Transport Policy, the government of Rajasthan has set up a Unified Metropolitan Transport Authority and special purpose vehicles for public transport system development. Jaipur City Transport Services was formed as a special purpose vehicle in 2007 by Jaipur Development Authority and Jaipur Nagar Nigam (Municipal Corporation) for the operation, control, and regulation of the bus rapid transit system; and was later made the nodal agency for planning and implementation of the Jaipur city bus services. The city bus fleet has been augmented with modern buses procured under the Jawaharlal Nehru National Urban Renewal Mission financed by the Government of India. Jaipur City Transport Services is implementing a bus rapid transit system along some of the major

¹ This summary is based on Jaipur Development Authority. 2010. Comprehensive Mobility Plan for Jaipur. Jaipur; Jaipur Metro Rail Corporation. 2012. Detailed Traffic and Transport Study. Jaipur; and Jaipur Metro Rail Corporation. 2012. Detailed Project Report. Jaipur. Available on request.

² Other modes and their respective share are non-motorized transport (32%), auto rickshaw (6%), two wheelers (27%), car or van (8%), and taxi (8%).

³ The desired availability is about 50 buses per 100,000 population.

corridors.

5. In January 2010, Jaipur Metro Rail Corporation was established as a special purpose vehicle to implement the metro lines along the city's two main arterial corridors—Line 1, 12 kilometers (km), from Mansarovar to Badi Chopar on the east–west corridor; and Line 2, 23 km, from Ambabadi to Sitapura on the north–south corridor. These lines are mainly elevated along the major arterial roads and underground beneath the city's busy central zone. Line 1 is being implemented in phases: Phase A for the 9.7 km elevated portion from Mansarovar to Chandpole, and Phase B for the 2.3 km underground portion from Chandpole to Badi Chopar. Line 1-Phase A is estimated to cost about \$400 million, and is being financed entirely by the Government of India and the state government. It is under construction, with about 85% of civil works completed, and is expected to begin commercial operation in late 2013. Line 1-Phase B is to be financed from the proposed Asian Development Bank (ADB) loan for completion by 2018. Line 1-Phase B is within the central business district area, expected to handle 60% of trips generated along the Line 1 east–west corridor, and is critical to ensuring the overall impact is optimized and benefits are reaped in a timely manner.

6. In India, urban cities and towns contribute more than 60% of the country's total gross domestic product. This is estimated to grow to about 70% by 2030.⁴ Therefore, provision of an efficient urban transport system is becoming critical to address mobility challenges and improve quality of life in the cities. With limited land availability in urban centers, public transport needs to be developed as the preferred mode, with a rail- and or bus-based mass rapid transit system to cater to high travel demand along major mobility corridors. This is in keeping with the country's National Urban Renewal Mission, which seeks to bring about comprehensive improvements in urban infrastructure, among other things, to provide for easy and sustainable flow of goods and people to support the required level of economic activity.

2. Government's Sector Strategy

7. The strategic goal of the Government of India's draft 12th Five-Year Plan (2012-2017) is to achieve "faster, more inclusive, and sustainable growth."⁵ The plan emphasizes the importance of the government's role in active management of urbanization. The five strategy pillars for urbanization include governance, planning, financing, capacity building, and innovation. The plan also emphasizes the need to build up the metro rail network.

8. In 2006, the Ministry of Urban Development, with responsibility for planning and coordination of urban transport matters, launched the National Urban Transport Policy, a nationwide initiative to address mobility challenges in India. The policy sets out a vision for urban transport to focus on mobility of people, and to improve quality of life in cities by ensuring integrated land use and coordinated urban transport planning. As incentives for states and cities to implement the policy at local level, the Ministry of Urban Development provides funding support through Jawaharlal Nehru National Urban Renewal Mission (JNNURM) launched in 2005. JNNURM provides cities with financial assistance for various urban development projects. Urban cities seeking assistance need to undertake urban reforms; develop a comprehensive city development plan, if not in place; and finance the residual portion through funding from a combination of state, city, or other resources such as international finance institutions.

⁴ Planning Commission (Government of India). 2011. *Recommendations of Working Group on Urban Transport for 12th Five Year Plan*. Delhi: India.

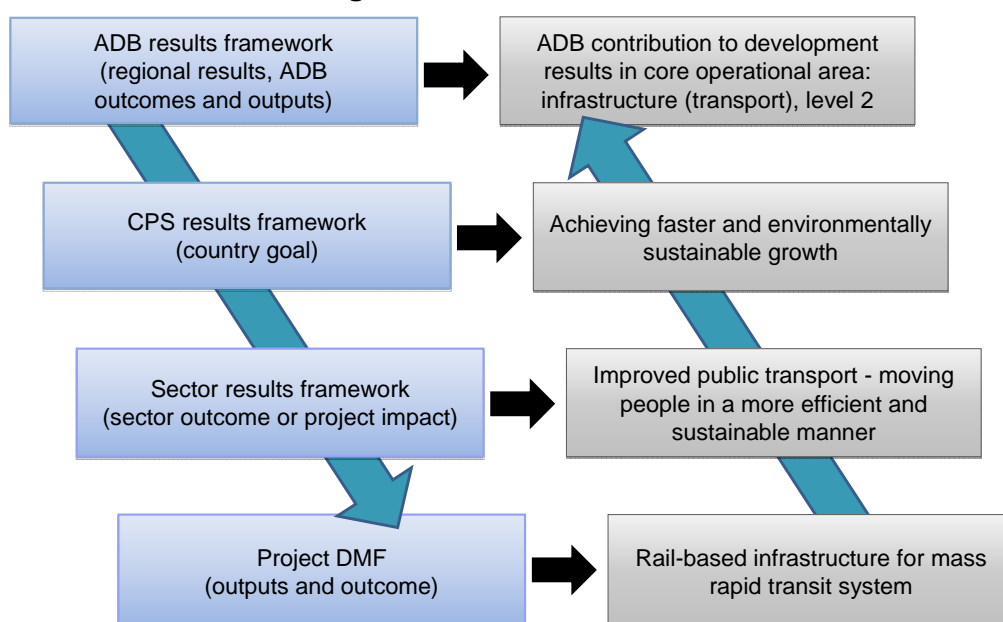
⁵ Planning Commission (Government of India). 2013. *Twelfth Five Year Plan (2012-2017)*. Delhi. SAGE Publications India Pvt Ltd. Volume 1: Page 3.

9. According to the Comprehensive Mobility Plan, most of the road network cannot accommodate segregated bus lanes for bus rapid transit system. Therefore, bus-based transportation alone cannot accommodate the significant additional capacity. The transport model predicts that the share of public transport will reduce to 18% in 2031 without mass transit, whereas it will increase to 32% with Line 1 and 2 implemented. The transport goal set for Jaipur is to reach a public transport share of 50%, and the Comprehensive Mobility Plan has proposed a public transit improvement plan for 2011–2031 to achieve this target. This plan includes (i) an increase of about 2,450 buses, (ii) restructuring of bus routes to achieve full intermodal integration, and (iii) mass transit corridors consisting of metro and monorail. The major public transport program involves developing 165 km of bus rapid transit systems, 49 km of monorail systems, and about 59 km of metro rail system. The total investment required to implement the improvement program is Rs241.2 billion (2010 prices), of which 80% is for public transport improvement. Implementation of the planned development program will require the majority of investment to come from state and national governments and external funding agencies. Rajasthan Infrastructure Development Fund has been set up for the execution of activities related to pollution control and facilitating planned and safe public transport. However, a much larger effort in resource mobilization is to be undertaken to generate the required funding for developing a sustainable public transport system in Jaipur.

3. ADB Sector Experience and Assistance Program

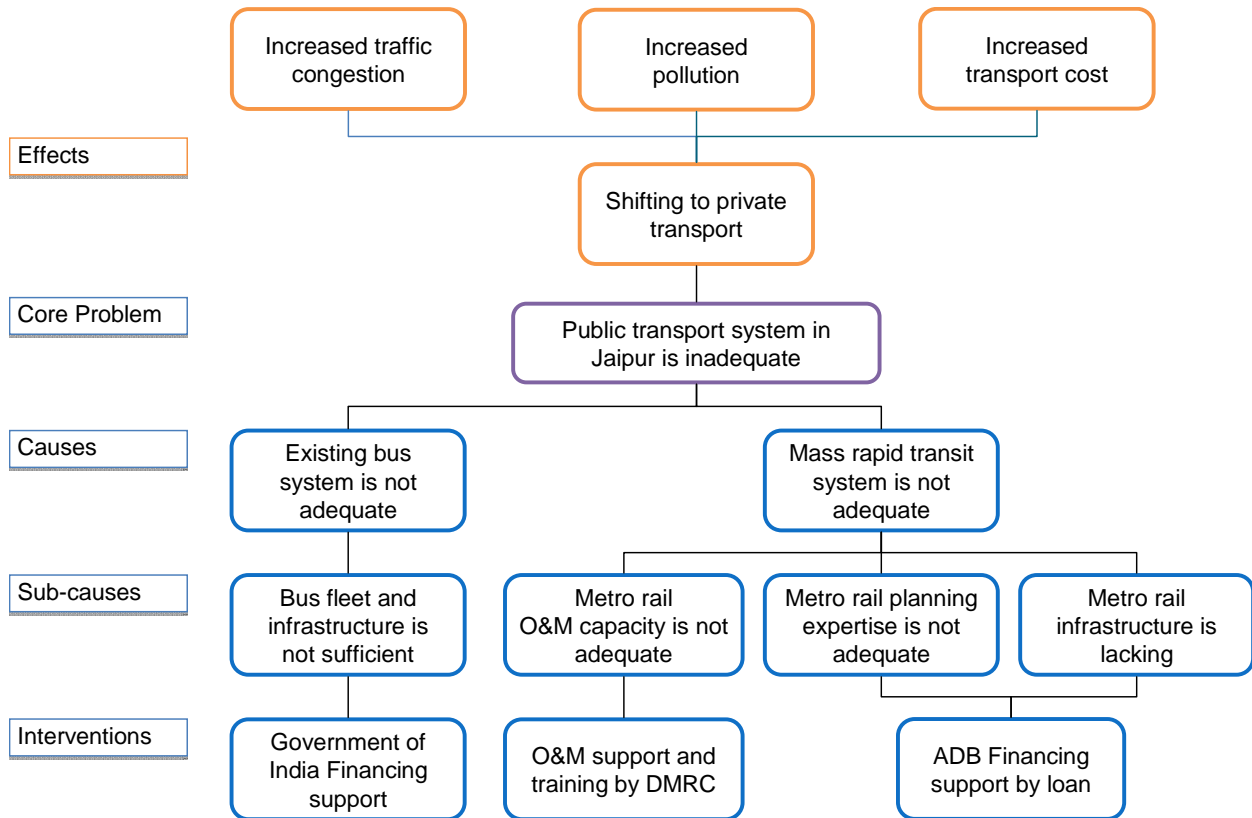
10. ADB's involvement in the urban transport subsector in India has been primarily to assist in policy and strategy aspects in line with the country's National Urban Transport Policy. The aim is to start scaling up assistance for the development and expansion of mass rapid transit systems in urban cities, targeting improvement of public transport—moving people in a more efficient and sustainable manner. The linkage to the ADB results framework is summarized in the figure.

Figure: Linked Frameworks



ADB = Asian Development Bank, CPS = country partnership strategy, DMF = design and monitoring framework.
Source: Asian Development Bank.

Problem Tree for Transport, and Information and Communication Technology – Urban Transport



ADB = Asian Development Bank, DMRC = Delhi Metro Rail Corporation, O&M = operation and maintenance.
Source: Asian Development Bank.

**Sector Results Framework
(Transport and Information and Communication Technology
– Urban Transport, 2013–2017)**

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contribution	Indicators with Targets and Baselines	Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
Increased movement of people and goods in a more efficient and sustainable manner	Modal share of public transport increased to 50% in 2017 (2008 baseline: 27%)	Transport systems with safety and accessibility features for women, the elderly, people with disabilities, and children expanded, improved, and maintained	Rail-based transport systems with women-friendly safety, accessibility, and affordability features in urban areas increased at 10 km per 1 million population in cities with more than 3 million population, including a 50 km expansion in cities with 4 million population, by 2017	<p>Planned key activity areas Urban transport (20% of funds)</p> <p>Pipeline projects with estimated amounts Bangalore Metro Project II (\$500 million)</p> <p>Ongoing projects with approved amounts Bangalore Metro Rail Transit System Project (\$250 million)</p>	<p>Planned key activity areas Urban rail-based mass transit systems built</p> <p>Pipeline projects 8.2 km of metro rail built</p> <p>Ongoing projects About 3.9 km of metro rail built</p>

ADB = Asian Development Bank, km = kilometer.

Source: Asian Development Bank.