Report and Recommendation of the President to the Board of Directors

Project Number: 46417
October 2013

Proposed Loan
India: Jaipur Metro Rail Line 1-Phase B Project

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 2 October 2013)

Currency unit	–	Indian rupee/s (Re/Rs)
Re1.00	=	$0.015977
$1.00	=	Rs62.59150

ABBREVIATIONS

ADB	–	Asian Development Bank
DMRC	–	Delhi Metro Rail Corporation
EIA	–	environmental impact assessment
EMP	–	environmental management plan
JMRC	–	Jaipur Metro Rail Corporation
km	–	kilometer
LIBOR	–	London interbank offered rate
SHE	–	safety, health, and environment

NOTES

(i) The fiscal year (FY) of the Government of India and its agencies begins on 1 April and ends on 31 March. "FY" before a calendar year denotes the year in which the fiscal year starts, e.g., FY2013 begins on 1 April 2013 and ends on 31 March 2014.

(ii) In this report, "$" refers to US dollars.

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CONTENTS

PROJECT AT A GLANCE

1. Project Name: Jaipur Metro Rail Line 1-Phase B Project **2. Project Number:** 46417-001

3. Country: India **4. Department/Division:** South Asia Department/Transport and Communications Division

5. Sector Classification:

Sectors	Primary	Subsectors
Transport, and information and communication technology	√	Rail transport
		Urban transport

6. Thematic Classification:

Themes	Primary	Subthemes
Economic growth	√	Widening access to markets and economic opportunities
Environmental sustainability		Urban environmental improvement

6a. Climate Change Impact

Adaptation	Low
Mitigation	Medium

6b. Gender Mainstreaming

Gender equity theme (GEN)	
Effective gender mainstreaming (EGM)	
Some gender elements (SGE)	√
No gender elements (NGE)	

7. Targeting Classification:

General Intervention	Targeted Intervention		
	Geographic dimensions of inclusive growth	Millennium development goals	Income poverty at household level
√			

8. Location Impact:

Urban	High

9. Project Risk Categorization: Complex

10. Safeguards Categorization:

Environment	A
Involuntary resettlement	C
Indigenous peoples	C

11. ADB Financing:

Sovereign/Nonsovereign	Modality	Source	Amount ($ Million)
Sovereign	Project loan	Ordinary capital resources	176.0
Total			176.0

12. Cofinancing:

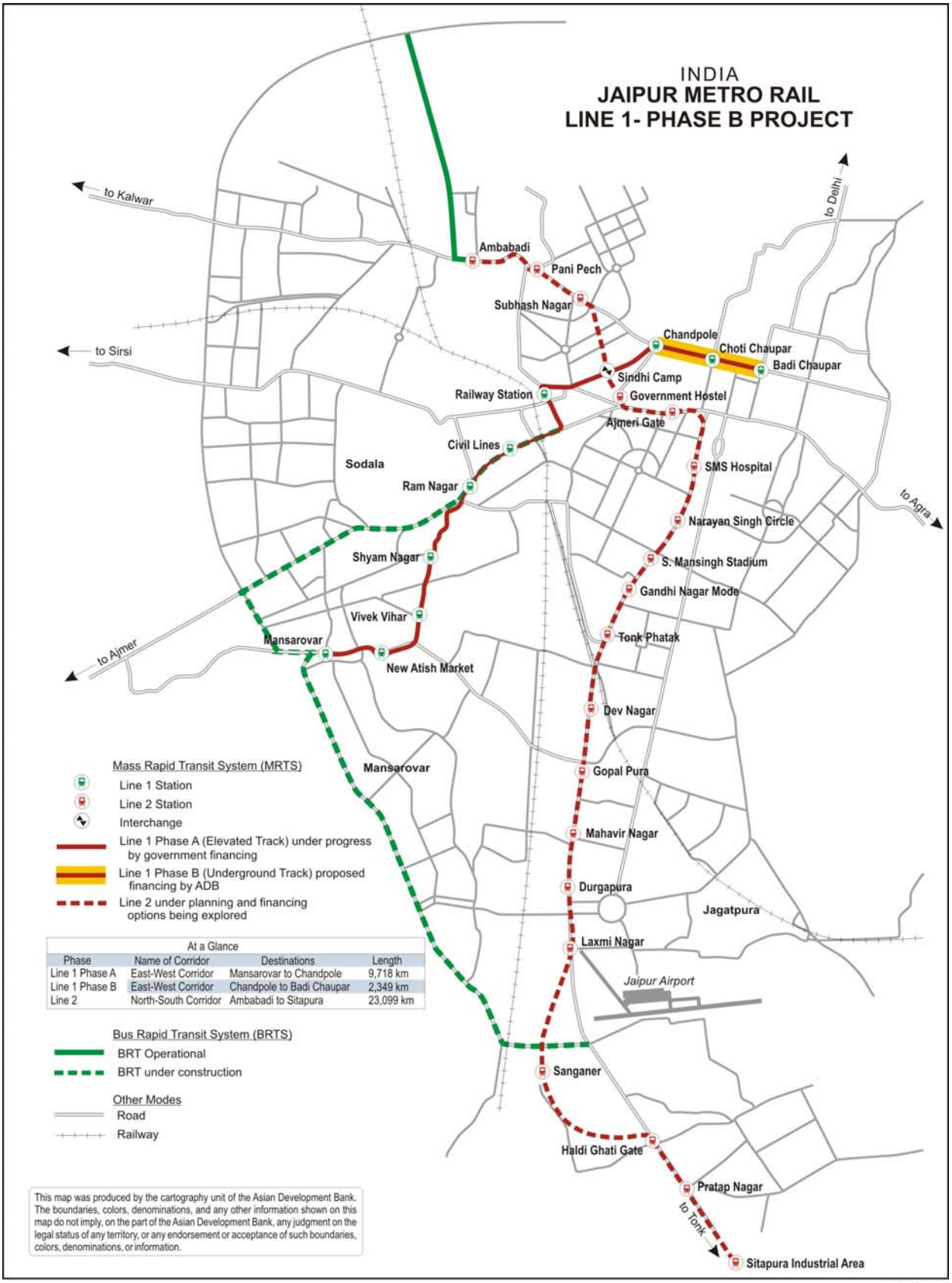
No Cofinancing available.

13. Counterpart Financing:

Source	Amount ($ Million)
Government of Rajasthan	83.0
Total	83.0

14. Aid Effectiveness:

Parallel project implementation unit	No
Program-based approach	No


INDIA
JAIPUR METRO RAIL
LINE 1- PHASE B PROJECT
to Kalwar
to Sirsi
to Delhi
to Agra
to Ajmer
to Tonk
Ambabadi
Pani Pech
Subhash Nagar
Chandpole
Choti Chaupar
Badi Chaupar
Sindhi Camp
Railway Station
Government Hostel
Ajmeri Gate
Civil Lines
Sodala
Ram Nagar
SMS Hospital
Narayan Singh Circle
S. Mansingh Stadium
Gandhi Nagar Mode
Shyam Nagar
Vivek Vihar
Mansarovar
New Atish Market
Tonk Phatak
Dev Nagar
Mansarovar
Gopal Pura
Mahavir Nagar
Durgapura
Jagatpura
Laxmi Nagar
Jaipur Airport
Sanganer
Haldi Ghati Gate
Pratap Nagar
Sitapura Industrial Area
Mass Rapid Transit System (MRTS)
Line 1 Station
Line 2 Station
Interchange
Line 1 Phase A (Elevated Track) under progress by government financing
Line 1 Phase B (Underground Track) proposed financing by ADB
Line 2 under planning and financing options being explored
At a Glance
Phase | Name of Corridor | Destinations | Length
Line 1 Phase A | East-West Corridor | Mansarovar to Chandpole | 9,718 km
Line 1 Phase B | East-West Corridor | Chandpole to Badi Chaupar | 2,349 km
Line 2 | North-South Corridor | Ambabadi to Sitapura | 23,099 km
Bus Rapid Transit System (BRTS)
BRT Operational
BRT under construction
Other Modes
Road
Railway
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I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to India for the Jaipur Metro Rail Line 1-Phase B Project.[1]

2. The project is to build Line 1-Phase B of the metro rail network in the city of Jaipur, India, consisting of underground rail infrastructure of 2.3 kilometers (km) and two stations. It will extend Line 1-Phase A, which is being undertaken by the government of Rajasthan, and is critical to ensuring that the combined overall impact is optimized and benefits are reaped in a timely manner. The project also includes support to study and update a future development plan for Line 2. The metro rail network is expected to provide mass rapid transit capacity for the city's major mobility corridors, aiming to reverse the rising shift to private cars and achieve a vision of an improved public transport system in Jaipur—optimizing general mobility, enhancing quality of life, and making the city more pleasant to live and work in. The outcome of the project supports the country's National Urban Transport Policy and the strategic objectives of the Asian Development Bank (ADB) in the transport sector, which aim to increase movement of people and goods in a more efficient, safe, and sustainable manner.

II. THE PROJECT

A. Rationale

3. 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 was 3.1 million in 2011, and it is projected to reach 8.1 million by 2031.[2] The fast-paced industrial and commercial development has resulted in a steep rise in travel demand, but the city's existing public transport infrastructure is inadequate in terms of capacity and service. With the growing economy, passengers are shifting to private modes of transport, as evident in the rise in vehicle ownership, aggravating congestion and pollution. The modal share for public transport was 19% in 2009—one of the lowest in cities with more than 3 million inhabitants in India.[3]

4. In 2009, Jaipur Development Authority developed a comprehensive mobility plan, seeking to provide an overall transport plan, up to 2031, that emphasizes the preeminence of public transport for the movement of people, not just vehicles, and integrating land use with transport networks.[4] It prioritized mobility corridors, which can be utilized to optimize movement of people, focusing on mass transport, rather than vehicular traffic; and identified solutions including bus fleet augmentation, bus rapid transit system, and a high-capacity rail-based system (metro). The city bus fleet has been augmented with modern buses and the bus rapid transit system is being introduced.[5] However, the main road corridors cannot accommodate segregated bus lanes, while the city's radial development pattern is generating high demand for trips to and from the central business and commercial districts. To meet the increasing mobility requirement and avoid further congestion, high capacity metro lines were recommended along

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[1] The design and monitoring framework is in Appendix 1.
[2] The population, including the immediate surrounding area outside of the Jaipur Development Authority, was 4.5 million in 2011, and is projected to reach 9.3 million by 2031.
[3] Other modes and their respective shares are non-motorized transport (32%), auto-rickshaw (6%), two-wheelers (27%), car or van (8%), and taxi (8%).
[4] Jaipur Development Authority. 2010. *Comprehensive Mobility Plan for Jaipur*. Jaipur.
[5] Under the Government of India's Jawaharlal Nehru National Urban Renewal Mission.

the city's two backbone arterial corridors. These consist of Line 1 for the east–west corridor of 12 km from Mansarovar to Badi Chopar, and Line 2 for the north–south corridor of 23 km from Ambabadi to Sitapura. The metro lines are mainly elevated along the major arterial roads and underground beneath the city's busy central zone.

5. In January 2010, the government of Rajasthan established the Jaipur Metro Rail Corporation (JMRC) as a special purpose vehicle to implement the metro rail lines. Line 1-Phase A (9.7 km elevated portion from Mansarovar to Chandpole), estimated to cost about $400 million and financed entirely by the government, is nearing completion and is expected to begin commercial operation in late 2013. The proposed ADB loan is to help finance Line 1-Phase B, consisting of the 2.3 km underground portion from Chandpole to Badi Chopar, with two stations for completion and operation by early 2018. Line 2 for the north–south corridor is being planned, and the proposed financing includes consulting services for JMRC to update the detailed project report, which includes updating traffic demand, reviewing route selection, the preliminary engineering and cost estimate, and assessing economic and financial viability. It will help JMRC identify viable financing options and implementation arrangements to take the next steps toward achieving comprehensive improvements for the mass rapid transit system in Jaipur.

6. Line 1-Phase A and Phase B comprise a single and continuous urban railway system, and will integrate with feeder routes of the bus rapid transit system under construction. The project location for Line 1-Phase B encompasses the core central business district, and is expected to generate about 61% of total trips for the entire Line 1, although only about 19% in total length. Therefore, the completion and operation of Line 1-Phase B is critical to ensuring the overall impact is optimized and benefits are reaped in a timely manner. The average daily number of passengers on Line 1-Phase B is forecast to reach 126,000 during the first full year of operation in 2019.

7. The primary reason for locating Line 1-Phase B underground is to minimize physical congestion in the busy central business district, and preserve its cultural heritage and historic architecture. The estimated cost per km for Line 1-Phase B is comparable to the construction of similar underground metro systems in the country.[6] Although capital-intensive, the cash flow projection indicates the project would generate sufficient cash resources to meet its operation and maintenance cost and debt service obligation.[7]

8. The project is consistent with the country's development goal of achieving faster, more inclusive and sustainable growth. It is well aligned with the National Urban Transport Policy to address mobility challenges and improve the quality of life in the urban cities of India. The project supports initiatives undertaken by the state government, and it is harmonized within the Comprehensive Mobility Plan for Jaipur, ensuring integrated land use and coordinated urban transport planning. It will help ADB achieve its strategic objective in the transport sector—to increase movement of people and goods in a more efficient, safe, and sustainable manner. The proposed ADB loan is included in the country operations business plan, 2013–2015.

[6] The cost per km of underground civil works for Line 1-Phase B is about $43.1 million, comparable to about $40.6 million for Bangalore Metro Phase I and about $40.8 million for Delhi Metro Phase II (in 2010 prices).

[7] Economic and Financial Analysis; Cash Flow Projection for Line 1-Phase B (accessible from the list of linked documents in Appendix 2).

B. Impact and Outcome

9. The impact will be improved public transport in Jaipur. The immediate outcome will be improved mass rapid transit system in Jaipur.

C. Outputs

10. The outputs will be (i) Line 1-Phase B, comprising the underground rail infrastructure of 2.3 km and two stations; and (ii) Line 2 plans updated, including a detailed project report.

11. The outputs will be achieved through key activities including: (i) for Line 1, procurement and execution of contracts for works, equipment installation, testing, and commissioning for the alignment and formation of the tunnel, standard gauge permanent way, traction system, signal and train control, telecommunication, and station facilities; and (ii) for Line 2, provision of consulting services to update the detailed project report.

D. Investment and Financing Plans

12. The project is estimated to cost $259 million (Table 1).

Table 1: Project Investment Plan
($ million)

Item			Amount[a]
A.	**Base Cost**[b]		
	1.	Works and equipment for underground tunnel, stations, and track	162.5
	2.	Rolling stock, depot, and substations	47.4
	3.	Consulting services	13.3
	4.	Project management	12.3
		Subtotal (A)	**235.5**
B.	**Contingencies**[c]		**20.2**
C.	**Financing Charges During Implementation** [d]		**3.3**
		Total (A+B+C)	**259.0**

[a] Includes central duties (customs and excise) of $16.1 million to be financed from Asian Development Bank (ADB) loan resources. Local state taxes, estimated at $7.65 million, are exempted by the state government.
[b] In mid-2013 prices.
[c] Physical contingencies computed at 5% for civil works, equipment, and consulting services. Price contingencies computed at 5% on foreign exchange costs and 8% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
[d] Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 5-year forward London interbank-offered rate plus a spread of 0.4% and applicable maturity based premium of 10 basis points. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.
Source: Asian Development Bank estimates.

13. The government has requested a loan of $176 million from ADB's ordinary capital resources to help finance the project.[8] The loan will have a 23-year term, including a grace period of 8 years, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements.

[8] Financing includes central customs and excise duties of about $16.1 million for Phase B, to help offset the financial burden to complete Phase A. The estimated expenditure is not excessive (9.2% of ADB loan resources) and will apply only with respect to ADB-financed expenditures.

14. The government has requested that repayment follow the straight-line repayment option in equal installments.[9] Based on this and the above loan terms, the average loan maturity is 15.75 years and the maturity premium payable to ADB is 0.10% per annum. The national government will make available the loan proceeds to the government of Rajasthan on a back-to-back basis. The government of Rajasthan will make available the loan proceeds to JMRC as an interest-free loan.

15. The financing plan is in Table 2. The detailed cost estimates by expenditure category and detailed cost estimates by financier are in the project administration manual.[10]

Table 2: Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank	176	68
Government of Rajasthan	83	32
Total	**259**	**100**

Source: Asian Development Bank estimates.

E. Implementation Arrangements

16. The implementation arrangements are summarized in Table 3 and described in detail in the project administration manual (footnote 10).

Table 3: Implementation Arrangements

Aspects	**Arrangements**		
Implementation period	January 2014–March 2018		
Estimated completion date	31 March 2018		
Management			
Executing agency	Government of Rajasthan acting through the Urban Development and Housing Department and JMRC		
Procurement	International competitive bidding	1 contract	$101.3 million
	National competitive bidding	10 contracts	$29.1 million
	Direct contracting for signal, train control, and telecom, to ensure safety critical standardization and technical compatibility required for a single, continuous, and integrated railway system[a]	6 contracts	$8.2 million
Consulting services	Facility access audit, using consultants qualification selection	6 person-months, national	$70,000
	Metro rail planning, using quality- and cost-based selection with simplified technical proposals and a 90:10 proportion of quality to cost, as the nature of the assignment requires priority consideration for quality	12 person-months, international; and 35 person-months, national	$0.9 million
Retroactive financing and advance contracting	Goods and works, and consulting services		

[9] The repayment period and grace period have been customized to suit the project cash flow requirements.
[10] Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Aspects	Arrangements
Disbursement	The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.

ADB = Asian Development Bank, JMRC = Jaipur Metro Rail Corporation.

[a] Alstom for train control and signaling; Samsung SDS-Kalindee Consortium for automatic fare collection system; Fibcom India for fiber optics transmission system; Consortium of ABS India and Carrycon India for telephone system; Fibcom Consortium for train radio tetra system, closed circuit television system, and uninterrupted power supply system; and Thales Consortium for passenger information display system, public address system, and master clock system.

Source: Jaipur Metro Rail Corporation.

III. DUE DILIGENCE

A. Technical

17. The technical viability is sound, with the use of proven technology. The engineering design and system selection are optimized for economy and efficiency in accordance with applicable international design standards. The construction method is reliable and conventional, using a shield tunnel boring machine for the underground section and top–down cut-and-cover method to construct stations.[11] To ensure operational reliability and safety, the signal, train control, and telecommunications will be identical to the tried and tested system under Line 1-Phase A, and will be integrated for standardization and technical compatibility. An accessibility audit will be conducted to check the status and suggest possible improvements for facility access by people with disabilities, including underground station facilities and amenities, and access areas for entry and exit.[12] The climate risk screening indicated a low to medium risk to urban flash floods, and waterproofing measures are being adapted in the design, including drainage pipes along the tunnel, with sump pumps located at low points; gaskets for segmental concrete lining; seepage pumps for each station; and waterproofing of underground station structures.[13]

B. Economic and Financial

18. Economic analysis was carried out by comparing the societal cost of transportation with and without the project, considering the benefits of Line 1-Phase B in terms of savings in vehicle operating costs derived from a reduction of traffic on the east–west corridor from vehicles' reduced and improved speed; and travel time savings for trips using the metro and for remaining vehicle users with improved speed. Also considered are savings resulting from reduced road accidents and reduced air pollution from reduced vehicle-km, which have been quantified and included in the analysis. The economic internal rate of return for Line 1-Phase B is estimated at 13.8%, indicating that the project is viable in social cost–benefit terms. Under a sensitivity analysis, testing the effects of possible unfavorable scenarios resulting from changes in the key parameters that determine the project's costs and benefits, the economic viability remained satisfactory with an economic internal rate of return of 12% or above. A marginal decrease to 11.4% is possible only when the cost increase and benefit reduction are considered simultaneously. Even under this scenario, considering the contribution to realizing the full

[11] Cut-and-cover is a simple method of construction for shallow tunnel where a trench is excavated with side support walls and capping beams from ground level, and roofed with overhead support system.

[12] JMRC will incorporate possible improvements in the design of the underground stations and immediate access areas. Findings regarding the pedestrian sidewalks, footpath, and road crossing will be shared with the Jaipur Development Authority as recommended improvements for future upgrading work in the area.

[13] Climate Change: Project Adaptation Action Report (accessible from the list of linked documents in Appendix 2).

potential and combined benefit of metro Line 1 to help sustain the city's economic growth, the project is recommended for implementation.

19. Financial analysis was carried out to assess the viability of the proposed project investment based on the incremental earnings and operational cost savings that would accrue to JMRC as a result of implementing Line 1-Phase B. The analysis was carried out on an incremental basis using the discounted cash flow method and calculating the internal rate of return of the project. The capital cost includes construction of the metro line and the associated facilities, and the rolling stock cost. The operation and maintenance cost includes staff costs, expenditure toward the upkeep and maintenance of the system, and energy costs. The revenue is generated from fare box collection, advertisements, and rentals at metro stations. All financial projections are made in 2013 nominal Indian rupees with no adjustment for inflation. The estimated financial internal rate of return for the project in real terms is 3.7%, which is above the estimated weighted average capital cost of 1.65% for Line 1-Phase B. The cash flow projections indicate that the project would generate sufficient liquid cash resources to allow the project to meet its operation and maintenance costs and debt service obligations.

C. Governance

20. **Policy, legal, and institutional capacity**. JMRC is a wholly owned company of the government of Rajasthan, incorporated on 1 January 2010 under the Companies Act of 1956, and established to provide a mass rapid transit system in the city of Jaipur via a metro rail network. JMRC is headed by a chairperson and managing director, with about 470 staff and a board of directors of 14 members.[14] The corporate organization has been developed on good practice principles, and a sound culture is emerging with an understanding of company values—aiming to provide high-class standards in regard to safety, reliability, punctuality, comfort, and user satisfaction; and to operate on sound ethical standards. As JMRC has been in existence for a relatively short time, Delhi Metro Rail Corporation has been providing professional support in project engineering and operation and management expertise.[15] JMRC has recruited an adequate number of staff necessary for metro operation, and the critical training for start-up and maintenance is being conducted at the Delhi Metro Rail Corporation Training Institute in Delhi. To implement the proposed project for Line 1-Phase B, JMRC at its own cost will retain Delhi Metro Rail Corporation as the project management consultant for engineering, procurement, and supervision.

21. **Financial management**. A financial management assessment was conducted, considering the capacity of JMRC, including funds-flow arrangements, governance, staffing, budgeting, accounting and financial reporting systems, internal control procedures, financial information systems, and internal and external auditing arrangements. JMRC has an accounting system that allows for the proper recording of project financial transactions, following the accrual accounting system and reporting process, in accordance with the generally accepted accounting principles in India, and in compliance with the accounting standards issued by the Institute of Chartered Accountants of India and the relevant provisions of the Companies Act of 1956 to the extent applicable. JMRC will maintain separate project records and accounts to identify the financing resources received and expenditures made for the project, ensuring an adequate audit

[14] The chairperson and managing director is from the Indian Administrative Service. Senior administrative and technical staff have experience with the state government, Indian Railways, and other metro rail corporations in India.

[15] Delhi Metro Rail Corporation has assisted JMRC with the implementation of Line 1-Phase A, which is nearing completion on time and within budget. It has a sound reputation and track record of executing metro systems in Delhi, and assisting with start-ups in other major cities in India.

trail, and will cause the annual financial statements to be audited by an auditor acceptable to ADB in accordance with auditing standards acceptable to ADB.

22. **Procurement and anticorruption**. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2013, as amended from time to time). All consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The general procurement environment is being strengthened with the recently enacted Rajasthan Transparency in Public Procurement Act of 2012, to regulate public procurement with the objectives of ensuring transparency, fair and equitable treatment of bidders, promoting competition, enhancing efficiency and economy, and safeguarding integrity in the procurement process.

23. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the Government of India, government of Rajasthan, and JMRC. The specific policy requirements and supplementary measures are described in the project administration manual (footnote 10).

D. Poverty and Social

24. **Poverty reduction and social impact.** The urban poverty level in the state of Rajasthan is higher than the national average of about 41.8%.[16] The incidence of rural poverty declined from FY1994 to FY2004, but the urban poverty level has remained almost at the same level during the same period, in contrast to the significant decline at national level. As part of the poverty and social assessment, households were surveyed and focus group discussions held. The majority of people indicated that the project will increase economic and employment opportunities by improving linkages to markets, production centers, and public and social service facilities, while providing a safe and reliable mode of public transportation. The project is expected to have significant development impacts since economic growth and delivery of infrastructure and social services to the population are instrumental for poverty alleviation. It supports the Jawaharlal Nehru National Urban Renewal Mission, which, among other things, seeks to bring about comprehensive improvements in urban infrastructure to provide easy and sustainable flow of goods and peoples in order to support the required level of economic activity.[17]

25. **Gender.** The improved access to markets and basic social and other services will contribute to improved health and education outcomes, particularly among women and children. Focus group discussions undertaken with women in the project influence area indicate that current travel by public transport is an uncomfortable experience—especially for women, the elderly, and persons with disabilities—as the buses and minibuses are congested. The metro rail will be a safe, comfortable, and reliable mode of public transportation, reducing journey time considerably and providing better access to markets, workplaces, higher education, health facilities, and employment opportunities. Reserved seats for women, the elderly, and persons with disabilities are some of the features planned. For the convenience and safety of all passengers, especially women and the vulnerable, station facilities include public

[16] The estimates of the Planning Commission in FY2009 set the poverty line in Rajasthan at Rs846 per month (Rs28.20 per day) in urban areas and Rs755 per month (Rs25.16 per day) in rural areas. This is a jump from Rs568.15 per month (Rs18.93 per day) in urban areas and Rs478 per month (Rs15.23 per day) in rural areas for FY2004.

[17] India's urban population of about 285 million is expected to almost double to 550 million over the next 20 years—an average addition of more than 11 million new urban residents each year. Urban areas are contributing about 60% to India's gross domestic product, estimated at $1,847.98 billion in 2011.

announcement systems in English and Hindi; electronic changeable message signs on the platform to announce the arrival of the next train; closed circuit television to monitor security; an automatic fare control system with enclosed tickets; and escalators, lifts, emergency lights, ventilation, and exits. The proposed project will also provide job opportunities for women in the operation and maintenance of the metro rail systems such as ticketing staff, station personnel, as well as in the technical aspects of driving the trains and other engineering-related jobs. The bidding documents provide clauses to ensure that all civil works contractors comply with labor laws by not employing child labor; encouraging the employment of the poor, particularly women; and not offering different wages to men and women for work of equal value.

26. **Sexually transmitted infections.** Combating HIV/AIDS is one of the UN Millennium Development Goals, which aims to halt the spread of HIV/AIDS by 2015. The Government of India, along with the National AIDS Control Organisation and Rajasthan State AIDS Control Society, has been successfully carrying out awareness campaigns and free health care to minimize the spread of HIV/AIDS in various parts of the country. Under the National Aids Control Program Phase III, district AIDS prevention and control units have been established in seven out of 32 districts in the state, as priority districts based on HIV Sentinel Surveillance 2004–2006. Based on the poverty and social assessment, the project does not anticipate any rise in the risk of HIV/AIDS incidence. Contractors will carry out HIV/AIDS awareness activities for laborers at work sites, which will be monitored by JMRC.

E. Safeguards

1. Involuntary Resettlement and Indigenous Peoples

27. **Land acquisition and resettlement.** The project is classified category C in accordance with ADB's Safeguard Policy Statement (2009). The underground stations will be constructed by cut and cover with the top–down method. No private land acquisition is envisaged as the entry and exit structures are planned in public squares, which have sufficient unencumbered government land available. If any changes or additional land requirements or involuntary resettlement impacts are identified, a resettlement plan will be prepared in accordance with the Safeguard Policy Statement for ADB approval before award of the related civil works contract, and for implementation before commencement of the relevant section of the civil works, as applicable. Due diligence on land acquisition and resettlement was carried out for Line 1-Phase A (existing facility being completed), financed by the Government of India and the state government, to review the resettlement actions conducted by JMRC and whether any reputation risk was involved for ADB in financing Line 1-Phase B. The due diligence conducted for Line 1-Phase A suggests that adequate and appropriate compensation has been paid to the affected persons. In the majority of cases, mitigation measures included compensation, relocation, livelihood rehabilitation measures, and ensuring restoration of incomes of both titled and non-titled affected persons.[18]

28. **Impact on indigenous peoples.** No impact on indigenous peoples is envisaged, as no physical or economic displacement will be required. Therefore, the project is classified category C. If any adverse impacts are identified during implementation, JMRC will ensure that the indigenous peoples plan is prepared in accordance with the Safeguard Policy Statement for

[18] All land acquisition and other mitigation measures for resettlement, rehabilitation, and relocation were completed for Line 1-Phase A, prior to ADB involvement in Line 1-Phase B. Due Diligence Report on Resettlement Activities for Line 1-Phase A (accessible from the list of linked documents in Appendix 2).

ADB approval before award of the related civil works contract, and implemented before commencement of the relevant section of the civil works, as applicable.

2. Environment

29. The project is categorized A in accordance with the Safeguard Policy Statement, as a result of potential impacts on heritage structures located in the area under which the underground metro section will be passing through. An EIA has been conducted to identify all sensitive issues and recommend mitigation measures. An environmental audit has also been conducted for Line 1-Phase A (existing facility), which is under construction with financing from the Government of India and the state government. Key findings show that the contractors are strictly abiding by the requirements of the safety, health, and environment (SHE) guidelines included in the contract agreements. The SHE guidelines form a comprehensive document that includes stringent requirements on environmental safeguards. The requirement of compliance with the SHE guidelines will be continued for the ADB-financed Line 1-Phase B. In addition, a site-specific environmental management plan (EMP) and environmental monitoring plan will be included in the contract agreements for the construction of Line 1-Phase B.

30. As Line 1-Phase B is an underground section, the key issues are anticipated to be vibration impacts on the heritage structures above ground, generation of large quantities of waste from the tunneling works, and occupational health and safety impacts. Measures to address these concerns have been taken through technical modifications in the structural design by referring to lessons from similar construction undertaken in the Delhi metro project, the requirement of continuous monitoring of heritage structures above ground, and strict compliance with the SHE guidelines and site-specific EMP and environmental monitoring plan. Consultations have been carried out, and stakeholder concerns have been addressed in the project design and EIA. Stakeholder concerns will continue to be addressed during construction through the grievance redress mechanism in the EIA. In accordance with the 120 days disclosure requirement of the Safeguard Policy Statement for environment category A projects, the draft EIA report was disclosed on the ADB website on 21 June 2013.

31. JMRC has a system in place for executing safeguards during the implementation of Line 1-Phase A. This will be enhanced, with clear demarcation of responsibilities for the safeguards cell in JMRC, improving the grievance redress mechanism, and ensuring rigorous monitoring of the heritage sites. The safeguards cell will include a senior officer with two assistant officers responsible for social and environmental safeguards. The safeguards cell will be responsible for the overall coordination of compliance with environmental safeguard requirements under the project. The project management consultant assisting JMRC with construction supervision will include an environmental specialist and a heritage site expert to ensure compliance with the SHE guidelines and site-specific EMP and environmental monitoring plan. The contractors will have a health and safety officer on site, responsible for day-to-day compliance with the SHE guidelines and site-specific EMP and environmental monitoring plan. A coordination meeting, along with a training workshop to clarify roles and responsibilities and reporting requirements will be held before construction works begin. Quarterly monitoring reports will be prepared and submitted to ADB for disclosure on the ADB website.

F. Risks and Mitigation Measures

32. The overall risk assessment is low, while the integrated benefits and impacts are expected to outweigh costs. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[19]

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Implementation capacity	JMRC, at its own cost, will retain DMRC as the project management consultant to expedite design engineering and assist with procurement and supervision. DMRC has successfully executed Line 1-Phase A for JMRC, and has a sound reputation and track record of implementing metro systems in Delhi, and assisting with start-ups in other major cities in India.
Operation and management capacity	JMRC has recruited an adequate number of staff for metro operation, and critical training for start-up and maintenance is being conducted at the DMRC Training Institute.
Initial delays in project implementation	JMRC, assisted by DMRC, has initiated advance action for procurement; and ADB has provided training to JMRC's senior staff for orientation in ADB requirements for procurement procedures, disbursement procedures, and safeguard procedures.

ADB = Asian Development Bank, DMRC = Delhi Metro Rail Corporation, JMRC = Jaipur Metro Rail Corporation.
Source: Asian Development Bank.

IV. ASSURANCES

33. The Government of India, government of Rajasthan, and JMRC have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and loan documents.

34. The Government of India, government of Rajasthan, and JMRC have agreed with ADB on certain covenants for the project, which are set forth in the loan agreement and project agreement.

V. RECOMMENDATION

35. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of $176,000,000 to India for the Jaipur Metro Rail Line 1-Phase B Project, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 23 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao
President

21 October 2013

[19] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Improved public transport in Jaipur	Public transport modal share increases to 30% by 2025 (2009 baseline: 19%)	Monitoring report of Jaipur Development Authority	**Assumption** Government of India and state government remain committed to public transit improvement
Outcome Improved mass rapid transit system in Jaipur	Average daily number of passengers using Line 1-Phase B reaches 126,000 in the first year of operation (2018-2019)	JMRC fare collection statistics	**Assumption** State government, through JMRC, completes and operates Line 1-Phase A
Outputs 1. Line 1-Phase B built 2. Line 2 plans updated	Underground rail infrastructure of 2.3 kilometers and two stations completed by 2018 Detailed project report updated by 2015	(For all indicators) Monitoring report of JMRC	**Risk** Unpredicted underground conditions delays construction

Activities with Milestones	Inputs
1. Line 1-Phase B built 1.1 Procurement of main civil works by December 2013 1.2 Procurement of other works and equipment by June 2015 1.3 Construction works and equipment installation by September 2017 1.4 Testing and commissioning by March 2018 **2. Line 2 plans updated** 2.1 Consultant recruitment by July 2014 2.2 Update detailed project report by December 2015	**Loan** **ADB: $176 million** **Government of Rajasthan: $83 million**

ADB = Asian Development Bank, JMRC = Jaipur Metro Rail Corporation.
Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://adb.org/Documents/RRPs/?id=46417-001-3

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Transport and Information and Communication Technology - Urban Transport
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Economic and Financial Analysis
8. Country Economic Indicators
9. Summary Poverty Reduction and Social Strategy
10. Environmental Impact Assessment
11. Risk Assessment and Risk Management Plan

Supplementary Documents

12. Due Diligence Report on Resettlement Activities for Line 1-Phase A
13. Climate Change: Project Adaptation Action Report
14. Cash Flow Projection for Line 1-Phase B