

**TA 9021-SRI: Colombo Suburban Railway Project
PROJECT PREPARATORY TECHNICAL ASSISTANCE**

A. Justification

1. The Government of Sri Lanka intends to improve the suburban railway system in the Colombo Metropolitan Region (CMR) including the 64 km Veyangoda–Colombo Fort–Panadura section. This project preparatory technical assistance (PPTA) will (i) assess the railway system in the CMR including the corridors linking to Kandy and Galle; and (ii) identify and prioritize interventions such as track rehabilitation and modernization of signaling and telecommunication systems, possible railway electrification and rolling stock required to increase railway operation and maintenance facilities. The PPTA will prepare pre-feasibility studies including cost-benefit analysis to decide on the priority interventions in consultation with the government, and define the scope of further projects to be prepared under the proposed technical assistance loan (TA loan), which will support detailed design, bid documents, safeguards documents, procurement and safeguards implementation.

B. Major Outputs and Activities

2. The major outputs and activities are summarized in Table A3.1.

Table A3.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Operations Plan and network	April 2016	Inception Report	January 2016
Feasibility Study	July 2016	Interim Report	April 2016
Economic/Financial Analysis	August 2016	Draft Final Report	July/August 2016
Institutional Assessment	August 2016	Final Report	October 2016

Source: Asian Development Bank estimates.

C. Cost Estimate and Proposed Financing Arrangement

3. The PPTA is estimated to cost \$1.25 million equivalent, of which \$1 million equivalent will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-V). The government will provide counterpart support in the form of counterpart staff, office space, and other in-kind contributions. The detailed cost estimate is presented in Table A3.2.

Table A3.2: Cost Estimates and Financing Plan (\$'000)

Item	Total Cost
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (20 person-months)	475.0
ii. National consultants (45 person-months)	225.0
b. International and local travel	50.0
c. Reports and communications	25.0
2. Equipment (computer, printer, etc.)	25.0
3. Workshops and training	25.0
4. Surveys	50.0
5. Miscellaneous administration and support costs	25.0
6. Representative for contract negotiations	6.0
7. Contingencies	94.0
Total	1,000.0

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-V).

Source: Asian Development Bank estimates.

D. Consulting Services

4. Sri Lanka Railway (SLR) is operating a 230-kilometer (km) railway network serving the CMR, comprising of four railway lines radiating from Colombo. The Main Line and the Coast Line are well patronized especially during peak periods. The Puttlam Line and the Kelani Valley Line are single-tracked and not as attractive due to low train speeds and frequencies. The government is also planning several extensions to the suburban railway network, such as the line to Battaramulla.

5. The project will improve the capacity and operation speed of the railway network in the CMR by (i) modernizing and upgrading track, signaling and telecommunication infrastructure; (ii) electrification of the suburban railway lines, initially on the 64 km Veyangoda–Colombo Fort–Panadura section; (iii) procurement of fast and modern commuter trains. The project will be designed on a modular basis to allow future expansion of the suburban electric network e.g. to the Puttlam Line and Colombo Airport or the Kelani Valley Line and to Battaramulla, expansion of the capacity of the railway lines by additional tracks to accommodate freight trains to Colombo Port and a regional express network towards e.g. Galle and Kandy.

6. An international consulting firm will be recruited by ADB using the quality and cost-based selection method with full technical proposal and a quality to cost ratio of 90:10 due to the specialized technical requirements and the nature of this project as a multidisciplinary railway project. The consultants will be selected in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

Table A3.3: Summary of Consulting Services Requirement

International		National	
Name of Positions	Person-months	Name of Positions	Person-months
Rail Transport Planner (TL)	6	Transport Planner (Dty. TL)	9
Railway Operations Expert	3	Road and bridge Engineer	4
Railway Track Expert	2	Railway Engineer	7
Rail Electrification Expert	3	Power Sector Expert	3
Signal and Telecom Engineer	2	Signal and Telecom Engineer	3
Transport Economist	2	Traffic modeler	3
Rolling Stock Expert	2	Procurement Expert	3
		Financial Management Expert	2
		Social Development Expert	2
		Environmental Expert	4
		Resettlement Expert	5
TOTAL	20		45

TL = Team Leader; Dty. TL = Deputy Team Leader

Source: Asian Development Bank estimates.

7. The outline terms of reference for the project preparatory TA consultants are described in paragraphs 8 to 15.

8. **Rail Transport Planner/Team Leader** (international, 6 person-months); **Transport Planner/Deputy Team Leader** (national, 9 person-months); **Railway Operations Expert** (international, 3 person-months); **Road and Bridge Engineer** (national, 4 person-months); **Railway Track Expert** (international, 2 person-months); **Railway Engineer** (national, 7 person-months); and two **Signal and Telecom Engineers** (international, 2 person-months; national, 3 person-months): Review available master plans, data and studies, establish the future long-term operation plan for the Colombo Suburban Railway network and identify priorities, study

alternatives and conduct the necessary surveys; establish a general layout of the future railway track layout to accommodate the forecasted traffic at a satisfactory service level, prepare technical specifications for all railway components to be modernized and/or affected by the railway electrification such as track, signal, telecom and interlocking system, structure gauges etc., and design and/or specify all adjustments required at the infrastructure; develop a design standard for rehabilitation/improvement of railways; propose improvements in integrating transport modes in physical, operational and commercial ways; assess the technical feasibility of the proposed design based on inputs from financial, social, resettlement and environmental studies, recommend a preferred alignment for further study; conduct a preliminary geometric design; prepare the Bill of Quantities (BOQ) and cost estimate within a 15% margin of error; investigate availability and costs of construction materials and equipment; identify institutional and financial requirements for maintaining sustainability of the railway operations; prepare documents for ADB to process the loan; and prepare an action plan for institutional efficiency improvement, corporate management improvement and financial management improvement.

9. **Procurement Expert** (national, 3 person-months): Suggest contract packaging and implementation arrangements; prepare master bid documents in accordance with ADB's standard bid documents and procurement guidelines; recommend a bid evaluation procedure, prepare executing agency procurement capacity assessment, and suggest remedial action plan to build capacity to minimize procurement and financial management risks; propose indicative loan related procurement plan with suggested level of post review based on executing agency capacity assessment; and indicative implementation schedule with proposed sequencing of consultant recruitment, procurement and most importantly project implementation.

10. **Transport Economist** (international, 2 person-months); **Traffic Modeler** (national, 3 person-months); and **Financial Management Expert** (national, 2 person-months): Review existing traffic data and study for the project area, if any; plan and carry out necessary traffic counts, origin-destination surveys and interviews; and forecast traffic demand over a 20-year period. The economist will undertake economic analysis of the project, following ADB's Guidelines for the Economic Analysis of Projects. The Financial Management expert will undertake (i) a governance (financial management, institution) appraisal for SLR and fiscal assessment of the Ministry of Internal Transport; (ii) support the preparation and agreement of cost estimates and a financing plan; and (iii) prepare financial projections and conduct financial analyses of SLR and Ministry of Transport, and incremental recurrent costs, to determine financial sustainability, and review proposed tariff policies. Based on the assessment, the financial management expert will recommend measures to strengthen specific areas.

11. **Railway Electrification Expert** (international, 3 person-months); **Power Sector Expert** (national, 3 person-months); and **Rolling Stock Expert** (international, 2 person-months): Based on the traffic forecast prepared and the options for future extensions of the suburban railway network including optional electrification, recommend the most suitable power supply system and layout for substations and feeding lines from the national grid, considering reliability and emergency operation; prepare technical specifications for all required equipment and review specifications for related items such as track, signal and telecom system; establish a structure gauge including the additional requirements for electric operation; establish the necessary safety guidelines and procedures for electric train operation; assist the engineering team with the review of existing structures to determine, where adjustments and upgrading are possible or required and where replacement is warranted; recommend suitable rolling stock design and fleet size considering future traffic growth; and recommend locations for the rolling stock maintenance plant and vehicle stabling areas, its capacity including individual workshops and general layout. Assess special requirements for the Kelani Valley Line with tight curve radii and

study alternative options for light-rail type of rolling stock, for example, assess options for the phased implementation of suburban railway improvement with e.g. initially high-performance diesel multiple units or hybrid trains for operation on electrified and non-electrified sections.

12. **Social Development Expert** (national, 2 person-months): prepare (i) poverty and social analysis (PSA) in accordance with ADB’s Handbook on Poverty and Social Analysis: A Working Document (2012), (ii) indigenous peoples screening and impact categorization checklist, and (iii) indigenous peoples plan (IPP), if required, in accordance with ADB Safeguard Policy Statement (SPS), (2009), and other related policies such as the Public Communications Policy (2011), and (iii) initial gender analysis on proposed subprojects and identify adequate gender design measures. The scope shall include assessing labor standards, HIV, trafficking, and other social risks, as identified in the Initial Poverty and Social Assessment.

13. **Resettlement Expert** (national, 5 person-months): (i) advise and collaborate with the technical team during project selection and design to ensure resettlement impact is minimized or mitigated, (ii) prepare involuntary resettlement (IR) screening and impact categorization checklists, and (iii) prepare resettlement plans (RPs) or other relevant safeguard planning documents such as land acquisition due diligence reports in accordance with government regulations, ADB SPS and other related policies such as the ADB Public Communications Policy (2011).

14. **Environment Expert** (national, 4 person-months): Prepare (i) environmental categorization form and rapid environmental assessment checklist; and (ii) an initial environmental examination (IEE) in accordance with ADB SPS including climate change assessments. The scope of environmental due diligence will entail assessment of impacts due to (i) construction within the port, (ii) electrification of the 64 km Veyangoda–Colombo Fort–Panadura rail section (ii) rehabilitation of the railway links and rolling stock maintenance facilities, (iii) new rail link if any and (iv) the dry ports and connecting roads. The environmental considerations will require assessment of environmental improvement due to diversion of cargo from the roads near port. The environmental analysis shall also include analysis of alternatives for each of the sites of the dry ports considered in the study.

E. Implementation Arrangements

15. The department of Sri Lanka Railways under the Ministry of Transport will be the executing agency for the project. The government has formed a Steering Committee for this project, chaired by Secretary, Ministry of Transport, and includes main stakeholders from the transport, urban development and power sector.

16. The proposed TA processing and implementation schedule is listed in Table A3.4.

Table A3.4: Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Commencement	January 2016
Physical completion	October 2016
Financial closure	January 2017

Source: Asian Development Bank estimates.