

**TA 9052-BAN: Dhaka Metro Project
Project Preparatory Technical Assistance**

A. Justification

1. The Government of Bangladesh intends to improve the public transport system in Dhaka by constructing additional metro lines. This project preparatory technical assistance (PPTA) will assess the findings of the Revised Strategic Transport Plan (RSTP) for Dhaka and recommend and prepare a priority metro project for investment by ADB. The RSTP is expected to be completed in 2015. 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 for detailed design to be prepared under the proposed TA loan, scheduled for approval in 2017.

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	November 2016	Inception Report	August 2016
Feasibility Study	April 2017	Interim Report	December 2016
Economic/Financial Analysis	June 2017	Draft Final Report	June 2017
Institutional Assessment	December 2016	Final Report	October 2017

Source: Asian Development Bank estimates.

C. Cost Estimate and Proposed Financing Arrangement

3. The technical assistance (TA) is estimated to cost \$1.5 million equivalent, of which \$1.3 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, provision of 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 (31 person-months)	675.0	
ii. National consultants (48 person-months)	225.0	
b. International and local travel	75.0	
c. Reports and communications	25.0	
2. Equipment (computer, printer, etc.)	25.0	
3. Workshops and training	25.0	
4. Surveys	100.0	
5. Miscellaneous administration and support costs	50.0	
6. Representative for contract negotiations	6.0	
7. Contingencies	94.0	
	Total	1,300.0

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

D. Consulting Services

4. 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 metro project. The consultants will be selected in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The consulting contract will be an output-based contract with lump-sum out-of-pocket expenses. The Communications Expert will be recruited as an individual consultant.

5. The PPTA will be carried out in two phases: (i) in the first phase, the consultant will select the most appropriate corridor for metro development by ADB based on the findings of the RSTP and consultations with stakeholders and the government; (ii) in the second phase, the PPTA will prepare the pre-feasibility study for the selected corridor, carry out the related surveys and studies and define the scope for the detailed design to be carried out under the proposed TA loan.

Table A3.3: Summary of Consulting Services Requirement

International Name of Positions	Person-months	National Name of Positions	Person-months
Urban Transport Planner (TL)	8	Transport Planner (Dty. TL)	12
Metro Operations Expert	2	Road and Bridge Engineer	6
Alignment Expert	3	Urban Planner	3
Rolling Stock Expert	3	Power Sector Expert	3
Systems Engineer	3	Rolling Stock Expert	3
Transport Economist	2	Traffic modeler	3
Social Development Expert	2	Procurement Expert	3
Environmental Expert	3	Financial Management Expert	2
Resettlement Expert	2	Social Development Expert	4
Communications Expert (individual consultant)	3	Environmental Expert	5
		Resettlement Expert	4
Total	31		48

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

Source: Asian Development Bank estimates.

6. The outline terms of reference for the PPTA consultants of the consulting team are described in paragraphs 7 to 13; the tasks for the individual communications expert are summarized in paragraph 14.

7. **Urban Transport Planner/Team Leader** (international, 8 person-months); **Transport Planner/Deputy Team Leader** (national, 12 person-months); **Metro Operations Expert** (international, 2 person-months); **Road and Bridge Engineer** (national, 6 person-months); **Alignment Expert** (international, 3 person-months); **Urban Planner** (national, 3 person-months); **Rolling Stock Expert** (international, 3 person-months; national, 3 person-months); and **Systems Engineer** (international, 3 person-months): Review the RSTP and other available master plans, data and studies, based on the future long-term plan for the Dhaka Metro network, identify priorities for ADB's investment, study alternatives and conduct the necessary surveys; propose improvements in integrating transport modes in physical, operational and commercial ways; assess the impact of the project on land-use planning and the targeted urban development in Dhaka; study the location of stations and depots with respect to the availability of land and access as well as expected origins and destinations of passengers; assess the technical feasibility of the proposed metro line 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; develop a design standard considering the ongoing JICA-financed project; prepare technical specifications for all railway components such as rolling stock, track, signal, telecom and interlocking system, structure gauges etc.; identify areas for private sector involvement, e.g. in the station development and public-private partnerships; study options for the organizational and institutional set-up of the Metro company for the operation phase considering cost-recovery strategies and the involvement of the public sector; Identify institutional and financial requirements for maintaining sustainability of the metro operations; prepare documents for ADB to process the loan; prepare an action plan for institutional development.

8. **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.

9. **Transport Economist** (international, 2 person-months); **Traffic Modeler** (national, 3 person-months); and **Financial Management Expert** (national, 2 person-months): Review RSTP, existing traffic data and studies for the project area, 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 the Dhaka Metro Corporation and fiscal assessment of the Ministry of Road Transport and Bridges, (ii) support the preparation and agreement of cost estimates and a financing plan; (iii) prepare fund flow arrangements and schemes considering ADB's disbursement procedures; and (iv) prepare financial projections and conduct financial analyses of Dhaka Mass Transit Company and the Ministry of Road Transport and Bridges, 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.

10. **Power Sector Expert** (national, 3 person-months): Together with Rolling Stock Experts and System Engineer, recommend the most suitable power supply system and locations for substations and feeding lines from the national grid, considering reliability and emergency operation based on the traffic forecast prepared and the options for future extensions of the metro network; prepare technical specifications for major 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; 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.

11. **Social Development Expert** (international, 2 person-months and national, 4 person-months): Prepare (i) poverty and social analysis 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, if required, in accordance with ADB's Safeguard Policy Statement (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.

12. **Resettlement Expert** (international, 2 person-months and national, 4 person-months): (i) advise and collaborate with technical team during project selection and design to ensure resettlement impact is minimized or mitigated; (ii) prepare involuntary resettlement screening and impact categorization checklists; and (iii) prepare resettlement plans, resettlement and indigenous peoples framework or other relevant safeguard planning documents such as land acquisition due diligence reports in accordance with government regulations, ADB's Safeguard Policy Statement (2009) and other related policies such as the ADB Public Communications Policy (2011).

13. **Environment Expert** (international, 3 person-months and national, 5 person-months): Prepare (i) environmental categorization form and rapid environmental assessment checklist; (ii) an environmental impact assessment in accordance with ADB's Safeguard Policy Statement (2009) including climate change assessments; and (iii) an environmental assessment review framework. The scope of environmental due diligence will entail assessment of impacts due to metro construction including related facilities such as stations, power supply system, and depots. The environmental analysis shall also include analysis of alternatives for depot sites.

14. **Communication Expert** (individual consultant assignment; international, 3 person-months): Conduct a communication assessment (including stakeholder analysis) and use findings to prepare a communication planning roadmap for subsequent stages of project preparation that will identify (i) communication activities that will be needed to support project preparation, especially safeguards and social development activities; (ii) further communication assessment activities that need to be completed in order to inform development of a full strategy for the projects engagement with stakeholder, project affected people, the public and media during project preparation, implementation and operation phases; (iii) a draft communication strategy that will serve as a living document to be updated throughout project preparation as further assessment and planning activities are completed during later TAs for this project; and (iv) an assessment of the capacity of Dhaka Mass Transit company in terms of communication and recommendations for setting up and staffing the company's communication unit.

E. Implementation Arrangements

15. The Dhaka Mass Transit Company Limited under the Ministry of Road Transport and Bridges will be the executing agency for the project.

16. All disbursements under the TA will be made in accordance with ADB's Technical Assistance Disbursement Handbook (2010, as amended from time to time). All equipment procured under the TA will be disposed in line with ADB's guidelines.

17. 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	July 2016
Physical completion	September 2017
Financial closure	December 2017

Source: Asian Development Bank estimates.