



Technical Assistance Report

Project Number: 39500
October 2006

Socialist Republic of Viet Nam: Preparing the Ho Chi Minh City Metro Rail System Project (Financed by the Japan Special Fund)

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 31 August 2006)

Currency Unit	–	dong (D)
D1.00	=	\$0.000062
\$1.00	=	D16,019

ABBREVIATIONS

ADB	–	Asian Development Bank
BRT	–	bus rapid transit
DFID	–	Department for International Development of the UK
DTUPW	–	Department of Transport and Urban Public Works
HCMC	–	Ho Chi Minh City
JBIC	–	Japan Bank for International Cooperation
JICA	–	Japan International Cooperation Agency
JSF	–	Japan Special Fund
MRT	–	mass rapid transit
PPTA	–	project preparatory technical assistance
TA	–	technical assistance
UMRT	–	urban mass rail transit
UMPU	–	Urban Metro Preparation Unit

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	General intervention
Sector	–	Transport
Subsector	–	Urban transport, multimodal transport and sector development, Private sector participation
Themes	–	Sustainable economic growth, private sector development, capacity development
Subthemes	–	Fostering physical infrastructure development, developing urban areas

NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

Vice President	C. Lawrence Greenwood, Jr., Operations Group 2
Director General	R. Nag, Southeast Asia Department (SERD)
Director	J. Cooney, Infrastructure Division, SERD
Team leaders	H. Jenny, Senior Urban Development Specialist, SERD S. Thongplengsri, Structured Finance Specialist, Private Sector Operations Department
Team members	H. Brooke, Senior Counsel, Office of the General Counsel E. Cudilla, Administrative Assistant, SERD J. Everett, Infrastructure Development Specialist/Young Professional, SERD Yue-Lang Feng, Principal Environment Specialist, SERD M. Huddleston, Senior Social Development/Resettlement Specialist, SERD J. Leather, Transport Specialist, Regional Sustainable and Development Department (RSDD) A. Mehta, Financial Management Specialist, RSDD A. Samoza, Associate Project Analyst, SERD M. Sultana, Social Development Specialist, SERD L. D. Thang, Program Implementation Specialist, Viet Nam Resident Mission, SERD



I. INTRODUCTION

1. The Government of Viet Nam's strategy for Ho Chi Minh City (HCMC) is to develop public transport and road infrastructure to improve the quality of urban living and the urban environment. The People's Committee sees urban rail mass rapid transit (MRT) as a key pillar in its strategy to promote public transport use and restrain the use of private vehicles.

2. The Government has asked the Asian Development Bank (ADB) to provide a loan to construct two connected MRT lines.¹ The project is included in the 2007–2010 country partnership strategy prepared between ADB and the Government of Viet Nam.

3. In order to clarify the scope and feasibility of the proposed lines, it is proposed that ADB provide project preparatory technical assistance (TA).² ADB missions³ visited Ho Chi Minh City from 27 March to 1 April 2006 and 8–13 May 2006 to undertake fact-finding for the TA. The earlier mission reviewed the updated feasibility study prepared for HCMC People's Committee and funded by the Government of Germany, and other plans and studies. Preliminary environmental and social and resettlement reviews were undertaken in August 2005 and April 2006, resulting in the Project's initial classification as category A, for both environment and resettlement. The later mission held discussions with various government agencies⁴ and with the JBIC-financed Special Assistance for Project Formation study team. A memorandum of understanding (MOU) between the Urban Metro Preparation Unit (UMPU) and ADB was signed on 13 May 2006. The MOU reflects the latest findings of the mission and the understandings reached with the Government on objectives, scope, cost, implementation arrangements, and terms of reference for the proposed TA.

II. ISSUES

4. Viet Nam was among the world's fastest-growing economies in 2004 (7.5% GDP growth) and 2005 (8.1% GDP growth) and its large cities are the primary centers of economic activity. Greater HCMC is the largest city in Viet Nam and the country's economic hub, with a population forecast to grow by 2.1% per annum from the current 7.9 million to 13.5 million by 2020. In 2004, private vehicles represented an abnormally high proportion (93%) of total journeys (19.1 million non-pedestrian journeys per day), broken down between motorcycles 78%, cars 1.2%, and bicycles 14%. Historically, car ownership has been lower than in comparable economies in the region.⁵ With continued growth of the economy expected in the medium term, there is significant potential for household incomes to rise, enabling many more families to be able to afford to purchase cars (particularly as on 1 May 2006 the Government again allowed used cars to be imported, a move that is expected to lead to falls in prices). If current trends are not offset by better transport infrastructure and public transport systems, HCMC will face congestion, road security, and air pollution difficulties similar to those in other large Asian cities such as Bangkok, Beijing, Manila, and Jakarta. The goal of HCMC People's Committee is to raise the share of

¹ The proposed HCMC Second Ring Road project under preparation with ADB led ADB and HCMC to agree to work on the HCMC MRT and develop a comprehensive planning and institutional framework based on PPP/PSP for MRT in HCMC complementing other donors funded projects.

² The TA first appeared in *ADB Business Opportunities* on 1 June 2006. A Design and Monitoring Framework is included in Appendix 1.

³ Comprising Hubert Jenny, Senior Project Engineer (Mission Leader); Jeanne Everett, Infrastructure Development Specialist; David Bray, Senior Transport/Institutional Specialist; Phil Sayeg, Senior Transport/Financial Specialist; Le Ding Thang, Program Implementation Specialist.

⁴ Department of Planning and Investment, UMPU, DTUPW, Management and Operation Center for Public Transport, Department of Urban Planning and Architecture.

⁵ By mid-2005, only 1 in 145 people had a car, compared with 1 in 4–5 in Malaysia, 1 in 9–10 in Thailand and 1 in 30–32 in the Philippines (Source: *People's Daily*, 20 March 2006).

public transport to carry 25% of all daily motorized trips by 2010 and 50% by 2020, a sharp increase from mid 2005 levels which were as low as 2%.⁶

5. The HCMC People's Committee has prepared an MRT plan with a system of six lines to be developed in the period to 2020. It will require a total investment likely to exceed \$5 billion. It is envisaged that public and private sector financing will be required because of the anticipated community and environmental benefits of the project, the size of the initial investment, and the need to fill the gap between anticipated costs and revenues. Several feasibility studies have examined sometimes overlapping MRT lines and their integration into a wider mass transport plan for HCMC. These include the *Study on Urban Transport Master Plan and Feasibility Study in Ho Chi Minh Metropolitan Area (HOUTRANS)* funded by the Japan International Cooperation Agency (JICA), the Urban MRT "UMRT line 1" study by the Japan Bank for International Cooperation (JBIC), the *Feasibility Study for the Two Priority Lines in the METropolitan Rail System (METRAS)* funded by the German Government,⁷ the MRT "lines 1, 2, 3" by the Government of Russia, the Tramway Study by the Government of France, and the general demand model by the Department for International Development of the UK (DFID). A bus rapid transit (BRT) study is being completed by the World Bank. It is still uncertain which of these initiatives, if any, are likely to result in firm investment plans. However, the UMRT 1 line is currently being examined as part of a more detailed study by JBIC. The proposed TA project will help to foster a competitive and efficient public transport market that will encourage citizens to shift to the MRT. It will help to define how public-private partnerships and innovative financing schemes can be applied in the mass transport sector in Viet Nam. ADB will help to link the bilateral donors already actively involved in the urban transport sector.

6. The UMPU in the HCMC People's Committee's Department of Transport and Urban Public Works (DTUPW) is responsible for planning and implementing the system. The two lines as conceived will cover a total of 20.6 kilometers (km), with 22 stations, traversing the central business district of HCMC. They have been approved in principle by the Prime Minister and will be integrated into a wider intermodal city mass transit master plan.

A. Consolidated MRT Network Master Plan and Design Parameters

7. HCMC People's Committee needs to prioritize, integrate, and optimize the various MRT proposals into a coherent and suitable transport master plan. Without such a master plan the proposed MRT project lines will not form an integrated system that will maximize benefits, minimize costs, and deliver services to HCMC citizens at the lowest possible fares. A master plan would also (i) confirm whether the two proposed lines are potentially suitable projects for ADB financing and in what form; (ii) show the links and relative roles of all MRT lines, BRT lines, and other bus and commuter rail and road investments; (iii) provide a basis for integrated spatial planning and development management; (iv) assist in coordinating planning of MRT investments and complementary facilities; and (v) provide a basis for more detailed preparation of the project lines.

B. Preliminary Engineering Design and Project Feasibility

8. To date, MRT feasibility studies have been carried out only to a prefeasibility stage and on a stand-alone basis. Further studies are needed to establish engineering and operational issues and to ensure that the quantity and quality of MRT services will provide an attractive

⁶ Figure provided by the METRAS Study (referenced below) for the share of bus transport alone, excluding taxis, and other forms of small scale public transport.

⁷ Transport East West Expert Team. 2003. *Feasibility Study: Metropolitan Rail System (METRAS)*. Ho Chi Minh City; Transport East West Expert Team. 2005. *Metropolitan Rail System (METRAS)*. Ho Chi Minh City (Addendum to the Feasibility Study, October 2005); *METRAS, Metropolitan Rail System HCMC, Financing Report*. Berlin (November 2005).

alternative to private modes of transportation. Over 60% of the projected MRT lines will be underground and station locations will need to be fixed as accurately as possible in relation to adjacent properties. Further geotechnical testing will be needed to aid preliminary design. Consideration will have to be given to the poor mapping of utilities in HCMC. Environmental and social aspects will need to be addressed in detail.

C. Project Implementation and Financing Options

9. Options for institutional arrangements during implementation and operation need to be considered in detail. Possible risks affecting demand and revenues for the project, as well as costs and implementation schedules, need to be identified and a risk management strategy prepared. During the financial and economic evaluations of the project, special consideration needs to be given to operational cost-recovery, the affordability of fares, and the relationship between demand and government policy on fare levels and potential subsidies.

10. The form and content of concession arrangements and the associated potential for private sector involvement depends on the availability of sustainable revenues and other financing for operations. Potential non-fare revenue sources (such as associated commercial developments, property taxes, fuel levies, and other special charges) will be critical.

III. THE PROPOSED TECHNICAL ASSISTANCE

A. Impact and Outcome

11. The TA, which is a Project Preparatory Technical Assistance, will advise HCMC People's Committee on the integrated development of the first two MRT lines in HCMC. The goal of the MRT is to provide convenient, comfortable, safe, affordable, and clean urban travel that improves the quality of urban living and reduces reliance on private modes of travel (Appendix 1). An initial poverty and social assessment is included in Appendix 2.

B. Methodology and Key Activities

12. The TA will provide consulting and other services to the UMPU to develop plans to implement the first two lines of a proposed MRT system for HCMC. The TA is divided into three parts. Part I will prepare a consolidated MRT network master plan and land use strategy that maximizes MRT use and reflects anticipated demand. Part II will draw up preliminary engineering design and technical and operational standards, with supporting social, environmental, technical, economic and financial appraisals. Part III will propose institutional and implementation arrangements and financing options, introducing and facilitating public-private partnerships and innovative financing approaches. It is anticipated that, subject to the outcome of the TA, before the investment loan ADB will finance detailed engineering design, preparation of tender documentation, and other preparatory activities to support the implementation of the Project.

13. The TA will review conventional planning, engineering, and institutional techniques. Emphasis will be given to ensuring that the HCMC People's Committee can implement an integrated approach that considers the full range of issues affecting the effective implementation and eventual operation of the project.

14. Complementary studies on urban air quality management will be considered to (i) quantify the improvements in HCMC from the project, (ii) provide baseline data at the beginning of the implementation of the MRT projects, and (iii) review the impact on air quality of sound urban transport policies. Additional resources will be sought in partnership with the Clean Air Initiative for Asian Cities.

15. The TA will be supplemented with a parallel study to review the options for public–private partnerships for the MRT project. The objective of the review will be to determine an appropriate role for the private sector in implementing and operating the project, with a view to minimizing costs on a risk-adjusted basis and taking advantage of a market-oriented approach. The review will build on previous work done in Thailand⁸ and will provide (i) a framework for considering private sector participation in implementing and operating the project; (ii) a value-for-money analysis of implementation approaches that involve varying degrees of private sector participation and a more detailed financial model reflecting the preferred approach and measuring the performance of the project from the points of view of the government and private sector participants; and (iii) a description of necessary institutional and contractual arrangements given the preferred implementation approach.

C. Cost and Financing

16. The total cost of the TA is estimated at \$2.2 million equivalent, of which ADB will finance \$1.7 million. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. The Government has been informed that approval of the TA does not commit ADB to finance any ensuing project. The Government will finance \$0.5 million equivalent in-kind through the provision of geotechnical surveys, in-city transportation, adequate air conditioned office space, counterpart staff, and access to telecommunications facilities for the consulting firm during implementation of the TA. The Executing Agency (EA) and consultants will be located in the same office. The consulting firm will provide translators to prepare Vietnamese versions of study reports. The detailed cost estimates and financing plan are in Appendix 3.

D. Implementation Arrangements

17. The TA will be implemented over a period of 18 months commencing in November 2006 and ending in April 2008. The UMPU will be the EA and will appoint a project director and a technical counterpart team. The team will be drawn from UMPU, other arms of DTUPW, the Department of Urban Planning and Architecture, and other agencies. The HCMC People's Committee will appoint a steering committee, with representatives from UMPU, the People's Committee, the Ministry of Transport, Ministry of Finance, ADB, and other agencies.

18. The TA will be implemented by a consulting firm. It will require about 60 international person–months and 100 national person–months of consulting time during calendar year 2007. It is expected that consulting services will be allocated as follows: part I (30%), part II (60%), and part III (10%). The international consulting firm will have expertise in transport and urban planning; demand forecasting; civil, structural, geotechnical, tunnel, mechanical and electrical engineering; rolling stock; rail operations; financial and economic analysis; environmental assessment; resettlement; social assessment; and institutional planning and capacity building. The international consulting firm will be supported by domestic consultants in transport and urban planning; demand forecasting; engineering; institutional arrangements; law; financial and economic analyses; resettlement, environmental and social planning; and translation. The consultants will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants*. A list of local firms that have registered interest in the TA will be made.

19. The TA will use fixed budget selection, taking into account the importance of the project, the need for a high-profile consultant project team, and the fact that the work will take place in a relatively new subsector for ADB. The terms of reference are extensive and an outline is presented in Appendix 4. The request for proposals will include a matrix of consultant skills

⁸ ADB. 2005. *Small-Scale Technical Assistance for Infrastructure Investment Advisory Assistance*. Manila (TA 4676-THA).

required for the project so that time and personal inputs can be accurately defined. The consulting firm will be asked to produce a simplified technical proposal as (i) the short-listing process will have already established that the firm has outstanding competence in the urban transport sector and in the region; and (ii) the detailed terms of reference mean that only limited input is expected on the methodology and technical approach.

20. An inception report and detailed work plan will be submitted within 1 month of the start of the TA. Six dissemination and institutional capacity building workshops will take place with key stakeholders throughout the TA period. The consulting firm will provide a midterm report at the end of month 5 and a draft final report in month 10. The final report will be submitted at the end of month 12. In addition, the consulting firm will submit several working papers as detailed in the outline terms of reference (Appendix 4).

IV. THE PRESIDENT'S RECOMMENDATION

21. The President recommends that the Board approve the provision of technical assistance not exceeding the equivalent of \$1,700,000 on a grant basis to the Government of the Socialist Republic of Viet Nam for preparing the Ho Chi Minh City Metro Rail System project.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources / Reporting Mechanisms	Assumptions and Risks
<p>Impact</p> <p>Integrated development of project mass rapid transit (MRT) lines in Ho Chi Minh City (HCMC)</p>	<p>Reduced travel time in project corridors</p> <p>Improved level of service in MRT project lines</p> <p>Competitive, efficient and effective public transport services</p> <p>Increased share of travel by public transport modes</p> <p>Reduced traffic congestion, accidents and environmental pollution</p>	<p>Government and public transport operator statistics</p> <p>Traffic surveys, accident and hospital records</p> <p>Public opinion surveys</p> <p>Consultant's report</p> <p>Official reports and feedback from HCMC People Committee and the Ministry of Transport</p> <p>ADB monitoring of baseline Indicators</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • Government and private sector resources are available to operate and maintain the system • Use is in line with forecasts <p>Risks</p> <ul style="list-style-type: none"> • Integrated services are not planned or operated efficiently • Public transport services are not financially sustainable in the long term
<p>Outcome</p> <p>Project design and feasibility study agreed by Government and ADB</p>	<p>MRT system design and land use strategy that maximizes MRT use</p> <p>Appropriate engineering and operational design standards that minimize costs over the life of the system and negative social and environmental impacts and harmonize network operation</p> <p>Enduring institutional and implementation arrangements for mass transit development and operation</p> <p>Facilitation of public-private partnership approach</p>	<p>Consultant's working papers and reports.</p> <p>ADB missions</p> <p>Official reports and feedback from HCMC People's Committee and the Ministry of Transport</p> <p>Public feedback</p> <p>MRT consolidated plan incorporated into land use master plan for HCMC.</p> <p>Established institutional and implementation arrangements for mass transit development and operation</p>	<p>Assumption</p> <ul style="list-style-type: none"> • Concerned agencies and participating donors accept recommendations and are committed to implementing them <p>Risk</p> <ul style="list-style-type: none"> • Government resources to operate and maintain the system are insufficient

Design Summary	Performance Targets/Indicators	Data Sources / Reporting Mechanisms	Assumptions and Risks
<p>Outputs Consolidated MRT network master plan and design parameters, including key base line indicators</p> <p>Preliminary engineering design and social, environmental, economic and financial assessment for project lines</p> <p>Proposed institutional and implementation arrangements and financing options for project lines</p> <p>Detailed examination of implementation and financing arrangements separately undertaken by ADB in associated study</p> <p>Coordination of donor activities</p>	<p>Consolidated MRT network master plan by March 2007 submitted to government for approval</p> <p>Preliminary engineering design and social, environmental, economic and financial assessment Q3 2007.</p> <p>Project implementation, risk management, institutional arrangements and financing options by Q3 2007</p> <p>Detailed implementation and financing plan as part of associated study by end 2007</p> <p>Donor partnership agreement with the Government by Q3 2007.</p>	<p>Consultant working papers and reports</p> <p>Workshops</p> <p>ADB missions</p> <p>Market and industry feedback</p> <p>Standard ADB safeguard documents for project preparation (resettlement, social and environment)</p> <p>Draft ADB Board document for TA loan (detailed project preparation) and investment loan project (report and recommendation of the President)</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • Willingness of government to adopt consolidated plan as basis for further MRT development • Government demonstrates leadership to coordinate various stakeholders. <p>Risks</p> <ul style="list-style-type: none"> • Government underestimates major infrastructure project development and implementation needs • Problems arise as a result of the limited experience of implementing a large complex, internationally-supported project; operating the MRT system; and integrating transport modes • Inability to forge consensus among vested interests between stakeholders
<p>Activities with Milestones</p> <p>1. Consolidated Mass Rapid Transit Network Master Plan: March 2007</p> <p>1.1 Prepare Project Context</p> <p>1.2 MRT Network Master Plan</p> <p>1.3 Alignment Review and Project Concept for two Project MRT lines</p> <p>2. Engineering Design and Project Feasibility: May 2007</p> <p>2.1 Preliminary Engineering Design and Capital Cost Estimation</p> <p>2.2. Operating Plan, Recurrent Costs and Revenue</p> <p>2.3 Environmental and Social Analysis</p> <p>2.4 Financial and Economic Analysis</p> <p>3. Project Implementation and Financing: October 2007</p> <p>3.1. Implementation and Institutional Arrangements</p> <p>3.2. Financing Analysis</p> <p>4. Final study reports and other documentation output: December 2007</p>			<p>Inputs</p> <ul style="list-style-type: none"> • ADB: 60 person-months of international consultants and 100 person-months of national consultants • Government in-kind contributions: geotechnical surveys, office space, local transportation, counterpart staff • TA budget of \$2.2 million, consisting of \$1.7 million financed by ADB and an in-kind contribution of \$0.5 million from the Government.

John R. Cooney
Director, Infrastructure Division
Southeast Asia Department

Rajat M. Nag
Director General
Southeast Asia Department

INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Contribution of the sector or subsector to reduce poverty in Viet Nam: The Viet Nam country strategy and program, 2006-2009, stresses the importance of maintaining sustainable equitable economic growth to achieve further reductions in poverty. Viet Nam's success in bringing down the share of the population below poverty from 70% in 1990 to 27% in 2005 was based on rapid but equitable economic growth. The Government's strategy for Ho Chi Minh City (HCMC) is to develop public transport and road infrastructure to alleviate congestion and open up new areas for urbanization. Public transport links to new urban areas will provide better access to services and employment opportunities. The proposed project is expected to develop two MRT lines in Ho Chi Minh City to provide convenient, comfortable, safe, affordable and clean urban travel. The MRT lines will provide a cheaper alternative to traveling by car and possibly motorcycle and lead to time savings for road passengers. An urban public transport system will help address growing pressures on traffic and the environment in high-density areas. These pressures will ultimately affect the quality of life, the working environment, the ability to attract investment into the project area, and access to services and will therefore help to reduce poverty. The Government's poverty reduction strategy will be reviewed to identify the role and impact of such large-scale infrastructure projects on poverty reduction of Viet Nam.</p>			

B. Poverty Analysis

Targeting Classification: General Intervention

<p>What type of poverty analysis is needed? Following ADB's enhanced poverty reduction strategy,¹ projects classified as general interventions no longer require project-level poverty assessments. However, social assessments will be prepared for resettlement, HIV/AIDS, and the personal safety and security of passengers and staff. The resettlement plan will contain mitigation measures to address impoverishment due to displacement and land acquisition. Social development and resettlement specialists are included in the consulting services.</p>

C. Participation Process

<p>Is there a stakeholder analysis? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The consulting firm will conduct a stakeholder analysis.</p>
<p>Is there a participation strategy? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The consulting firm will prepare participation strategies for the PPTA and for project implementation.</p>

D. Gender Development

<p>Strategy to maximize impacts on women: The consulting firm will conduct a detailed gender assessment for the households affected by resettlements. In addition, an assessment will be done on the impact of MRT lines on private and public transportation user groups in terms of safety and saving of time and transport costs. Services and facilities for men and women in the metro stations will be also identified. A gender plan for addressing gender concerns in the Project related to resettlement, HIV/AIDS, safety measures, facilities in the station, and capacity building of the EA and relevant stakeholders will be prepared for the proposed project.</p>
<p>Has an output been prepared? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

¹ ADB. 2004. *Enhancing the Fight Against Poverty in Asia and the Pacific*. Manila.

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input checked="" type="checkbox"/> Significant <input type="checkbox"/> Not significant <input type="checkbox"/> None	Relocation will be required within the core urban center to allow access to metro stations. A resettlement plan will be prepared during the PPTA in compliance with ADB's <i>Policy on Involuntary Resettlement (1995)</i> . It will address resettlement impacts during construction and operation, including but not limited to the MRT lines, the stations and an MRT depot.	<input checked="" type="checkbox"/> Full <input type="checkbox"/> Short <input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The MRT operations plan will include a public service obligation approach.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	Project-affected people will be given opportunities for project-related construction work. Standard clauses with respect to international labor standards and national labor legislation will be included in the Loan Agreement.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indigenous Peoples	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	To be determined	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Total Cost
A. Asian Development Bank Financing^a	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	1,200.0
ii. Domestic Consultants	200.0
b. International and Local Travel	100.0
c. Reports and Communications	25.0
2. Equipment ^b	35.0
3. Training, Seminars, and Conferences	
a. Facilitators	0.0
b. Training and Dissemination Workshops ^c	45.0
4. Software	10.0
5. Miscellaneous Administration and Support Costs	25.0
6. Representative for Contract Negotiations	10.0
7. Contingencies	50.0
Subtotal (A)	1,700.0
B. Government Financing	
1. Office Accommodation and Transport	40.0
2. Remuneration and Per Diem of Counterpart Staff	60.0
3. Others	0.0
a. Cadastral survey	100.0
b. Geotechnical survey (up to 46 boreholes)	300.0
Subtotal (B)	500.0
Total	2,200.0

^a Financed by the Japan Special Fund, funded by the Government of Japan.

^b The equipment will comprise a photocopier, computers, notebooks, printers, plotters, and associated equipment for connectivity (network, cabling, routers). The equipment will be handed over to Ho Chi Minh City (HCMC) at the end of the Project. Equipment and software are provisional sums paid pending receipts.

^c Six workshops (30 participants each) will be provided, three of which will be held in HCMC and three in Hanoi or other Vietnamese cities.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Objective

1. The project preparatory technical assistance (TA) will assist the Urban Metro Preparation Unit (UMPU) to develop plans to implement two lines of a proposed rail mass rapid transit (MRT) system for Ho Chi Minh City (HCMC). It is also anticipated, subject to the outcome of the TA, that the Asian Development Bank (ADB) will finance detailed engineering design, preparation of tender documentation, and other preparatory activities. A more detailed examination of implementation arrangements and project financing will be undertaken as part of this work.

B. Detailed Tasks

1. Part I: Consolidated Mass Rapid Transit Network Master Plan and Design Parameters

2. The consultants will demonstrate the rationale for the Project by outlining the urban and transport planning context, developing a consolidated MRT network master plan within which the proposed lines and other future public transport infrastructure and services can be developed, reviewing the proposed alignment of the two project lines, and presenting an updated project concept and design parameters for the lines that will, following approval by the Government, be detailed during the remainder of the TA.

3. Specifically, the consultants will: (i) present the context for the Project by briefly describing and analyzing current economic, demographic, land use and transport features of HCMC, committed and probable road development projects, and current public transport proposals; (ii) conduct traffic surveys and update and recalibrate for 2006 conditions an existing computerized travel demand model.¹⁰ Planning forecasts (e.g., population and employment) for 2020 will be reviewed and modified as needed. Scenarios for a future integrated public transport system will be developed and tested using a model to indicate their performance. Particular consideration will be given to options for developing a comprehensive rail MRT, including integration of currently isolated lines. The consultants will also present indicative costs and scenarios for alternative approaches to rail MRT to provide benchmarks to support informed decision making.

4. The consultants will estimate likely demand for the two project lines. The consultants should indicate: (i) the anticipated level of demand for each of the two project lines (including during peak hours, average weekday use, annual use, and the level of demand on which station and train service capacity should be based); (ii) the likely sources of demand for the lines (i.e., the extent to which use of the lines will be transfers from other travel modes and the extent to which it is newly generated demand); (iii) anticipated demand at each station, transfers between MRT lines by direction, and mode of access to and from the station; (iv) average trip length on the lines; (v) the likely ramp up in use of the lines as people take advantage of the new services; and (vi) the sensitivity of demand to key variables such as fares (considering at least three fare scenarios—(a) maximization of fare revenue, (b) recovery of operating and maintenance costs from fare revenues using a flat fare, and (c) distance-related fares), the extent of the rail MRT system and its development staging, population, economic growth, value of personal travel time, and car and motorcycle ownership. A program of practical policy measures to improve the likelihood of forecast demand being achieved should be proposed. In particular, attention should be given to policies regarding land use development in general and redevelopment of land in the vicinity of stations in particular.

¹⁰ Preferably the model developed during the Houtrains Study, which is based on the CUBE platform. The model is now at the Transport Development Study Institute of the Ministry of Transport in HCMC. Other agencies and firms may have copies of this model or one developed in 1996 for a previous transport study. Data from the former model will be made available to the consultants, who will need to make their own arrangements to implement and use an effective travel demand model.

5. The consultants will propose an optimal integrated rail MRT network master plan. They will indicate the sensitivity performance of the two project lines with regard to other parts of the plan, including the sequence of network development and other transport investment. They will confirm the key design parameters for the two project lines that are consistent with service quality standards and underlying demand forecasts. They will optimize system design, and ensure harmonized technical and commercial operations across the network. Consideration will be given to options for the vertical and horizontal alignment of the lines, the location of stations, implementation of high-level design standards (including access to stations, air conditioning, gauge, grades, curves, noise and vibration, power supply, signaling, rolling stock, and ticketing), and the structure and level of fares. Indicative costs and benefits should be estimated to aid screening of potential options, with initial economic and financial evaluations prepared to guide decision making. Recommended design parameters should be documented for consideration and endorsement by the Government to provide the basis for ongoing engineering design and a more detailed study of project feasibility. The consultants will present their recommendations at a dissemination workshop of all key stakeholders.

2. Part II: Preliminary Engineering Design and Project Feasibility

6. Previous MRT feasibility studies have been carried out only to a prefeasibility stage and designs, if any, are conceptual. More detailed engineering, social (including poverty analysis and resettlement) and environmental investigations of the project lines are needed to provide the basis for more accurate cost estimations, development of safeguard measures, and confirmation of project feasibility.

7. To prepare the preliminary engineering design, the consultants will:

- (i) examine available geotechnical, cadastral, water chemistry and utility information and specify essential additional information needed to support the work of the current study in time to allow the government to assemble the data, including undertaking additional surveys as needed (the HCMC People's Committee has budgeted \$300,000 for surveys of up to 46 boreholes to collect further geotechnical information);
- (ii) prepare engineering specifications for civil works, railway works, electrical and mechanical services (including power supply, signaling, ticketing and rolling stock) and for service provision to guide subsequent work in the study and to ensure design standards are made clear for ongoing project development and implementation (design standards should ensure costs over the lifecycle of the project are minimized);
- (iii) prepare engineering layouts and plans for the recommended scheme in sufficient detail to estimate construction quantities and project cost to a preliminary engineering standard—this work will inform detailed engineering designs that will be undertaken after completion of the TA (it is expected that plans will generally be prepared to a scale of at least 1:500 in critical areas and to a suitable scale elsewhere, with more detailed standard designs prepared for stations, structures, tunnels and other unique elements of the system);
- (iv) make recommendations on construction methods that take account of impacts during construction and minimize overall costs to the community, review procurement issues to allow project costs to be estimated, and, to support project cost estimation, develop plans to mitigate traffic, environmental and social impacts during construction and operation of the Project; and
- (v) prepare best estimates ($\pm 25\%$ accuracy) and 90th percentile estimate of the capital cost of implementing the two project lines (i.e., respectively the expected median cost and the cost for which there is only a 10% probability of being exceeded), taxes, duties and physical and price contingencies should be identified separately and

costs, broken down into foreign exchange and local currency components, should be identified separately for individual project components and should include all items needed to ensure the delivery of a sustainable, operational project.

8. To prepare for project implementation, the consultants will:
 - (i) identify potential options for implementing the project, including sections of lines and stations (accommodating budget or construction industry constraints) and propose an implementation schedule to allow financial disbursements to be estimated and project implementation to be planned;
 - (ii) prepare a risk analysis for project implementation and outline a strategy to manage design and construction risk; and
 - (iii) prepare indicative timetables and operating plans for train services on project lines and use this information to determine rolling stock and operating resource needs, and to estimate operating and maintenance costs for the system (this should include a comment on the effect on costs of operation by a public or private agency).

9. On the institutional framework, the consultants will:
 - (i) assess options for a ticketing system and for revenue management (account should be taken of the need for an integrated ticketing system for both lines and for other MRT lines that might also be developed in the future); and
 - (ii) estimate fare revenue and other potential direct sources of revenue to the operator of the system, identify opportunities for revenue generation from property development and other sources, and prepare a risk management strategy to facilitate achievement of the revenue targets.

10. On safeguard compliance, the Project has received an initial A classification for both resettlement and environment. The consultants will identify the need for land acquisition for the project, as well as access restrictions that will be imposed and changes in land use and the number of people who will be affected permanently and temporarily by all project components (including MRT lines, depot, stations, borrow pits, and work camps). The consultants will ensure severance impacts are identified and addressed. They will assist the HCMC People's Committee to prepare, and lay the basis for the implementation, monitoring and evaluation of a resettlement plan that is in accordance with ADB's Policy on *Involuntary Resettlement (1995)* and the provisions in its *Operations Manual (section F2/BP)*. They will establish the cost of resettlement, compensation and income restoration measures. The consultants will review the HCMC People's Committee compensation proposals and prepare detailed resettlement plans based on national laws and ADB's policy on involuntary resettlement. Some initial preparation of land has started on a site that is planned to accommodate people displaced by construction of the two project lines (this site is also proposed as a depot for a possible future MRT line extension). Due diligence will be done on the initial land preparation and, if people were affected as a result of land preparation, a new resettlement plan will be prepared. If the existing site for relocation is being reserved as a depot, the consultants will identify other relocation sites and assess suitability in terms of location, quality of site, and development needs and prepare measure for AP integration with host communities. Resettlement plans will include socioeconomic surveys and social and gender analyses, with full consultation and timely disclosure of project and resettlement information, in accordance with ADB's policy on involuntary resettlement, and also ADB. *Gender and development (2003)*; and ADB. *Public Communications Policy (2005)* and the requirements of the Government of Viet Nam. A poverty assessment, a participation strategy and a social monitoring program will also be prepared. The consultants will also conduct an environmental impact assessment (EIA), a summary environmental assessment, and environmental management plans in accordance with ADB's *Environment Policy (2002)*, ADB's *Operations Manual F1/BP and F1/OP (2003)* and other environmental assessment guidelines. Identify adverse and beneficial impacts of the project, and

prepare an environmental monitoring program, estimate the cost of the program, and establish implementation arrangements.

11. The consultants will also prepare financial and economic evaluations for the proposed project in accordance with ADB guidelines, notably an extensive assessment as explained in ADB. *Guidelines for Economic Analysis of Projects (1997)* (paragraphs 112–115) and following the ADB *Financial Management and Analysis of Projects (2005)* to assess and address any fiduciary concerns. Considering the large size of the proposed MRT projects for HCMC, the consultants should review the impact at the national level on foreign exchange, debt management, and budget expenditure and should make an assessment of the affordability of such projects. The evaluations should take account of whole-of-life costs associated with planning, construction and operation of the two project lines, and should propose key scenarios (e.g., base case, upside, downside), incorporating quantitative sensitivity testing of key variables to indicate the probability of outcomes being achieved. In the economic evaluation, attention should be paid to defining the appropriate “without project” case, and to external costs and benefits of the lines (including disruption during construction, reduced traffic congestion when completed, and environmental impacts) in addition to other benefits such as savings in travel time and vehicle operating costs. The consultants should identify impacts not included in the economic evaluation as well as beneficiary groups. Consideration should be given to options for staging implementation of the project, and to the affordability of fares. The financial viability (financial internal rate of return, and operating and capital cost recovery) and economic merit (economic internal rate of return and net present value) of the project should be reported.

3. Part III: Project Implementation and Financing Options

12. Work will be undertaken to develop a plan to support implementation of the project, including capacity building and financing. The consultants will:

- (i) confirm key legal issues and approvals that must be taken into account in planning for project approval, construction and operation and in particular to accommodate private sector partnership arrangements;
- (ii) examine institutional arrangements for the delivery of infrastructure and operation of services, and recommend an approach;
- (iii) identify opportunities for private sector involvement in financing, implementing and operating the project, using the results of the financial evaluation (it is anticipated that the project infrastructure will be delivered through design-build arrangements with performance-based contracts);
- (iv) prepare a detailed program and estimated cost for the ongoing work needed to further prepare the project, leading to international competitive bidding for project implementation and provide input to terms of reference for ongoing engineering design work;
- (v) describe in detail the responsibilities, structure and staffing needs of the organization(s) involved in this work and identify capacity building and staff development needs for these organization(s), including a training program and study tours to cover supervision and coordination of the design, implementation and operation of the project in collaboration with various stakeholders, including procurement and implementation of safeguards;
- (vi) comment on potential sources of finance for project implementation, identify the gap between the estimated costs and revenues of the project, present a justification for an MRT subsidy (if one is required), identify potential sources of revenue to finance the gap (e.g., land taxation and special levies), and identify issues that should be addressed in the more detailed study of implementation arrangements and project financing; and summarize risks associated with implementation of the project and

subsequent operation of services, and prepare a strategy that the Government can use to manage the risks.

4. Reporting

13. The consultants will prepare reports in English, with summaries translated into Vietnamese. The final report and the preliminary engineering design will be translated into Vietnamese. All reports will be submitted in both electronic and paper form to ADB. All data and analyses will be consolidated and provided to the government in electronic form.

14. The consultants will also prepare technical working papers according to schedule during the study. Responses to comments on working papers may be presented as addendums to the papers. Fifteen copies of draft working papers and twenty copies of final versions will be provided. It is anticipated that technical working papers will include: (i) project context and MRT network master plan; (ii) alignment review and Project concept; (iii) technical specifications and preliminary engineering design (with engineering drawings); (iv) capital costs and ongoing maintenance and operating costs, and revenue; (v) resettlement plans and environmental and social assessments; (vi) financial and economic analyses; and (vii) project implementation, risk management, institutional arrangements, and financing options.

15. The consultants will prepare a final report. This will focus on the findings of the study and the actions needed to implement the Project. Fifteen copies of the draft final report and 20 copies of the final version will be provided. The consultants will prepare the following administrative reports: (i) an inception report 1 month after commencement of the study and (ii) a midterm report at the end of month 5. Six copies of each administrative report will be provided. The consultants will organize six dissemination and institutional capacity building workshops to take place with key stakeholders during the TA period. Three will be held in HCMC and three in Hanoi or another major Vietnamese city.

16. In addition, using standard ADB board document formats and guidelines, the consultants will draft the following: (i) ADB safeguard documents (resettlement, social, and environment); (ii) Board documents for a proposed technical assistance loan (or equivalent) for detailed project preparation; and (iii) Board documents for a loan investment project.

C. Study Schedule and Consultancy Requirements

17. It is anticipated that the TA will commence in January 2007. Work on parts I, II, and III will overlap to expedite the TA. Part I will be completed within 4 months of the commencement of the TA, part II within 9 months, and part III within 10 months. The draft final report will be submitted in October 2007.

18. The team leader will ensure the efficient and effective undertaking of the TA. The team leader must work for the project full-time, be located in HCMC for the duration of the study, be a long-term senior member of staff of the company, and must have the authority to act on the firm's behalf to achieve the objectives of the TA. Other members of the team should have sufficient breadth and depth of skills to minimize the number of individual team members, thus aiding efficiency and adding coherence to project delivery. An individual consultant can cover more than one skill area, in which case his or her curriculum vitae will be evaluated independently for each of the skill areas covered.