



Technical Assistance Report

Project Number: 43060
Policy and Advisory Technical Assistance (PATA)
December 2009

Papua New Guinea: Improving Road User Charges and Private Sector Participation in Road Development (Financed by the Japan Special Fund)

CURRENCY EQUIVALENTS

(as of 1 December 2009)

Currency Unit	–	kina (K)
K1.00	=	\$2.597
\$1.00	=	K0.385

ABBREVIATIONS

ADB	–	Asian Development Bank
CSP	–	country strategy and program
DOW	–	Department of Works
HRRIP	–	Highlands Region Road Improvement Investment Program
km	–	kilometer
MTDS	–	Medium-Term Development Strategy
NRA	–	national road authority
NTDP	–	National Transport Development Plan
PNG	–	Papua New Guinea
PPP	–	public–private partnership
PSP	–	private sector participation
RAMS	–	road asset management system
RUC	–	road user charge
TA	–	technical assistance

TECHNICAL ASSISTANCE CLASSIFICATION

Type	–	Policy and advisory technical assistance (PATA)
Targeting classification	–	General intervention
Sector (subsectors)	–	Transport, and information and communication technology (road transport, transport management and policies)
Themes (subthemes)	–	Economic growth (promoting macroeconomic stability, widening access to markets and economic opportunities), private sector development (public–private partnerships), capacity development (institutional development)

NOTE

In this report, "\$" refers to US dollars, unless otherwise stated.

Vice-President	C. Lawrence Greenwood, Jr., Operations 2
Director General	S. H. Rahman, Pacific Department (PARD)
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In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

I. INTRODUCTION

1. The Government of Papua New Guinea (PNG) has requested technical assistance (TA) from the Asian Development Bank (ADB) for improving road user charges and private sector financing in road development. The fact-finding was undertaken from 21 to 30 April 2009 to discuss and formulate the policy and advisory TA. The fact-finding mission reached agreement with the Government on the impact, outcome, outputs, cost estimate, financing, implementation arrangements, and terms of reference for the TA consultants. The TA¹ is an outcome of the midterm review of the Country Strategy and Program (CSP), 2006–2010² and is included in the new Country Operations Business Plan, 2009–2011 for PNG.³ The design and monitoring framework is in Appendix 1.

II. ISSUES

2. Development and sustainability of infrastructure is a key pillar of the Government's Medium-Term Development Strategy (MTDS), 2005–2010.⁴ Roads are an important link connecting the country's natural resources to its people, markets and ports, and thus play a critical role in economic development and in reducing poverty. The Government's National Transport Development Plan (NTDP) 2006–2010⁵ provides the strategic framework and plan for developing and sustaining the road infrastructure to meet the MTDS goals. ADB's CSP (2006–2010) for PNG helps support the MTDS in four areas, including transport infrastructure. ADB has been providing assistance for road infrastructure improvements since 1972. A recent midterm review⁶ of the CSP proposes an even higher level of assistance for the rehabilitation and maintenance of transport infrastructure.

3. PNG's 8,700 kilometers (km) of national roads constitute the primary network linking the provincial capitals and main population and economic centers. Provincial and district roads (totaling about 10,000 km) provide the secondary and tertiary links. In addition to the Government's own investments in the road network, PNG's development partners contribute significantly to improving the road system. Ongoing ADB initiatives include the Road Maintenance and Upgrading Project,⁷ with \$116 million in financing and covering 700 km of roads in the five provinces of the Highlands region. The project is scheduled for completion in 2010, although implementation has slowed due to significant delays in procurement of civil works. In December 2008, ADB approved a multitranche financing facility of \$400 million for the Highlands Region Road Improvement Investment Program (HRRIIP)⁸ that involves improving 1,400 km of roads and maintaining the entire 2,500 km core roads network in the Highlands over a 10-year period. The Australian Agency for International Development—one of PNG's major development partners—is implementing the long-term Transport Sector Support Program, which provides annual financing of A\$50 million over 10–15 years for road improvement, policy and planning, and capacity development. The World Bank's ongoing road maintenance and rehabilitation project provides financing of \$77 million and

¹ The TA first appeared in the business opportunities section of ADB's website on 17 April 2009.

² ADB. 2009. *Papua New Guinea Country Strategy and Program Midterm Review 2006–2010*. Manila.

³ The new country operations business plan is awaiting circulation to the Board; the TA concept paper was approved by Vice-President (Operations 2) on 18 May 2009.

⁴ Government of PNG. 2004. *The Medium Term Development Strategy 2005–2010: Our Plan for Economic and Social Advancement*. Port Moresby.

⁵ Government of PNG. 2006. *National Transport Development Plan 2006–2010*. Port Moresby.

⁶ Undertaken from November 2008 to February 2009.

⁷ Financed through ADB. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Papua New Guinea for the Road Maintenance and Upgrading (Sector) Project*. Manila; and ADB. 2006. *Report and Recommendation of the President to the Board of Directors on Proposed Supplementary Loans to Papua New Guinea for the Road Maintenance and Upgrading (Sector) Project*. Manila.

⁸ ADB. 2008. *Report and Recommendation of the President to the Board of Directors on a Proposed Multitranche Financing Facility to Papua New Guinea for the Highlands Region Road Improvement Investment Program*. Manila.

covers eight provinces. The Government of Japan has provided financing of over \$150 million for improvement of national roads and bridges.

4. Two major constraints impede improvement and sustainability of the road network. The first is lack of maintenance. About half of the roads in PNG and 70% of the roads in the Highlands region remain in poor condition due to the absence of regular maintenance. Without routine maintenance, improved roads quickly fall into disrepair, leading to poor road conditions, longer journey times, higher vehicle operating costs and isolation of rural communities. Consequently, significant national income from export of agricultural products and other businesses is lost and social conditions worsen, exacerbating the problems of social unrest and lack of security. Recent expenditures by the Department of Works (DOW) on roads indicate that less than 5% is spent on routine maintenance, with most maintenance funds used to respond to emergency maintenance needs resulting from the frequent landslides in the Highlands region.

5. Under the National Road Authority Act of 2003, a national road authority (NRA) was established to manage and maintain the national road network, using revenues from road user charges. A road fund was also established to ensure a sustainable stream of resources for maintenance. Technical assistance (TA)⁹ provided by ADB played a critical role in supporting the newly-created NRA through policy and institutional reforms, legislative support and capacity development. A study on cost recovery carried out under the TA for preparing the Road Authority Development Project recommended a levy on petrol and diesel fuel, and a road damage charge on heavy vehicles.¹⁰ In 2005, the Government approved these recommendations as well as use of the existing tax credit scheme¹¹ to finance maintenance. However, only a small levy on diesel was approved, which generates about K16 million annually. This funding is sufficient to maintain about 650 km, or less than 15% of the national roads. Transfer of these resources to the road fund commenced in January 2006.¹²

6. The HRRIP (para. 3) focuses on gradually improving the entire 2500 km Highlands core road network through long-term performance-based maintenance contracts. Road maintenance financing needs under HRRIP will increase from \$4 million (or K12 million) per year to \$25 million (K75 million) per year. Under the Framework Financing Agreement for the multitranche financing facility for HRRIP and the loan agreements for the first tranche, the Government is committed to increasing the maintenance resources of the road fund through road user charges and meeting any shortfall from its budgetary resources.¹³

7. The Government is committed to expand maintenance financing through road user charges as provided for under the NRA Act. The Government intends to (i) increase the existing levy on diesel, (ii) add a similar levy on petrol, (iii) commence collection of road damage charges on heavy vehicles, (iv) institute a mechanism to transfer resources from the tax credit scheme to the road fund, and (v) explore other potential means of enhancing cost recovery in order to finance road maintenance.

⁹ ADB. 1999. *Technical Assistance to Papua New Guinea for Road Sector Cost Recovery Improvement*. Manila (TA 3191-PNG); and ADB. 2001. *Technical Assistance to Papua New Guinea for Preparing the Road Authority Development Project*. Manila (TA 3716-PNG).

¹⁰ Assessed on vehicles with gross vehicle weight that exceeds 4 tons.

¹¹ This scheme allows commercial enterprises to invest part (0.75%) of their tax liability on infrastructure development and maintenance in the area where they operate. NRA was given responsibility to reach an agreement with the commercial operators.

¹² To date, about K50 million has been deposited in the road fund.

¹³ Performance Milestones for Tranches, para. 4, Schedule 3 of the Framework Financing Agreement; and Road Maintenance Funding, para. 4, Schedule 4 of the Loan Agreement for Loans 2496/2497-PNG(SF): Highlands Region Road Improvement Investment Program - Project 1 (footnote 5).

8. The second impediment to the improvement and sustainability of the road network is the lack of skilled national and international contractors to undertake road improvement and maintenance works. Implementation of the ongoing Road Maintenance and Upgrading Project (footnote 7) has experienced significant delays in civil works procurement due to lack of competitive bids and frequent re-bidding. At present, there are less than five international and 15 national contractors capable of working on road projects. ADB-sponsored private sector analysis¹⁴ has identified the constraints faced by the private sector in doing business in PNG. Law and order is perceived as the primary constraint; other constraints relevant to infrastructure contractors include the rules and taxes imposed by local governments, the high cost and low quality of utilities and communications, land compensation claims, the lack of skilled laborers and incentives, and the high cost of labor.

9. The capacity of the national contractors is limited. These international and national contractors have already been awarded several contracts each and are working close to, or beyond, their capacity. As a result, progress on the awarded works is slow and contract completion is delayed. Furthermore, there is limited response to bid invitations for new works. The contractors who submit bids for these works generally fail to meet the financial capacity criterion, necessitating several rounds of re-bidding. The contractor who substantially completes the works in hand eventually qualifies and wins the bid. However, there is a significant loss of time and resources. Lack of competition has also led to increased bid prices, resulting in cost overruns and implementation delays, which affect the economic viability of projects.

10. There is a need to encourage more national and international contractors to work on road improvement and maintenance contracts in PNG that offer long-term opportunities. Experience has shown that large international contracts provide excellent opportunities for national contractors to initially work as subcontractors and gain sufficient experience and skills to grow and eventually function as main contractors. The Government is keen to learn from the experiences of other countries in the region in successfully promoting private sector participation in infrastructure projects. The Government also recognizes the importance of addressing the barriers that prevent international contractors from bidding on infrastructure development works in PNG.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

11. The impact of the TA will be sustainable financing for road maintenance that will facilitate improved access to ports, markets and livelihood opportunities. This will improve road conditions, reduce travel time and transport costs, and will contribute to overall economic development. The outcome of the TA will be the establishment of a functioning system for collection of road user charges to finance road maintenance needs. Another outcome will be increased competition and increasing predictability in road infrastructure contracts.

B. Methodology and Key Activities

12. The TA will not only improve sustainable financing of road maintenance but will also help the Government in creating an enabling environment for the private sector to participate in improvement and maintenance of road works in PNG. Regular maintenance will improve road conditions and will also save large amount of resources that are currently spent on reconstruction

¹⁴ ADB. 2008. *Foundation for Growth: A Private Sector Assessment of Papua New Guinea*. Manila. The findings of the private sector assessment are echoed in the accompanying document ADB. 2008. *The Challenges of Doing Business in Papua New Guinea: An Analytical Summary of the 2007 Business Environment Survey by the Institute of National Affairs*. Manila.

of unmaintained roads. Increased interest from national and international contractors will promote competitive bids and timely completion of road contracts.

13. The TA will have two components: (i) increasing road user charges (RUCs) to enable financing of national road network maintenance, and (ii) reducing barriers to international and national contractors and private sector to enable their participation in long-term opportunities for road improvement and maintenance in PNG.

14. The RUC component of the TA will involve: (i) assessing the maintenance needs, available funding, and the resource gap; (ii) preparing proposals for the NRA for generating and collecting RUCs under the NRA Act; (iii) identifying additional road user-related resources that could be mobilized for road maintenance; (iv) preparing policy and legislative reforms, as needed; and (v) assisting NRA secure endorsement by the Government.

15. The private sector participation (PSP) component of the TA includes: (i) review of the Government's policies governing national and international contractors and identification of the barriers, (ii) preparing proposals for reforms, (iii) seminars and workshops to create awareness among national contractors and entrepreneurs regarding long-term opportunities for road improvement and maintenance in PNG, and (iv) international road shows to selected countries in the region to learn from their experiences in successfully engaging private sector in infrastructure development and promoting opportunities in PNG. The national seminars will be held at selected large cities, including Port Moresby, Lae and Mount Hagen, and the invitees will include national contractors, entrepreneurs from the local chambers of commerce and business councils. The international road shows will cover up to ten selected countries in Asia and the Pacific regions. In addition to meetings with the counterpart agencies in the countries visited, the international road shows will provide opportunity to the PNG Government to (i) inform the private sector and international contractors about the upcoming infrastructure development projects in PNG, and (ii) help improve perceptions of the work environment in PNG as it relates to the execution of civil work contracts. These presentations by PNG Government representatives will be followed by individual meetings with interested contractors and private sector representatives. In view of its mandate and experience, Investment Promotion Authority will help coordinate and assist DOW and NRA in undertaking the international study. Prior to the road shows, the TA will assist the Government in addressing the issues faced by international contractors working in PNG and creating a more enabling environment for the private sector and for foreign direct investment.

16. International and national consultants will be engaged to assist NRA and DOW in implementing the TA. The TA will also benefit from, and complement, ADB's ongoing TA for private sector development in PNG,¹⁵ which is focused on implementing PNG's public-private partnership (PPP) policy, which was approved by the Government in December 2008. The implementation phase includes development of a PPP Act and establishment of a PPP Center to facilitate projects and identify potential projects. The TA will also benefit from the proposed second phase of the ADB's Private Sector Development Initiative.¹⁶ The TA will contribute to the delivery of PPP projects in PNG. The long-term, performance-based road maintenance contracts under HRRIP involve risk sharing among the Government (NRA) and the contractors, and there is a unique opportunity to gradually develop these into more PPP-oriented contracts.

¹⁵ ADB. 2005. *Technical Assistance to Papua New Guinea for Policies for Private Sector Development*. Manila (TA 4722-PNG).

¹⁶ ADB. 2006. *Technical Assistance for Private Sector Development Initiative*. Manila (RETA 6353). The initiative addresses the binding constraints to PSD in the Pacific region through support for (i) state-owned enterprise reform and public-private partnerships, (ii) financial sector reforms, and (iii) reform of the legal and business environment. The second phase will continue focusing on these areas.

C. Cost and Financing

17. The total cost of the TA is estimated at \$1,000,000. The Government has requested that ADB finance \$800,000 to cover the cost of international and national consultants' remuneration and per diems, international and local travel, equipment, and international road shows. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. The Government will contribute \$200,000 to cover the cost of international and national road shows, office accommodation, and remuneration to the counterpart staff. The cost estimates and financing plan are in Appendix 2.

D. Implementation Arrangements

18. NRA will be the Executing Agency for the TA. NRA will also be responsible for implementing the RUC component. DOW will be responsible for implementing the PSP component. TA implementation will require close coordination with the Treasury Department, Department of Transport, Department of National Planning and Monitoring, Central Supply and Tenders Board, Investment Promotion Authority and other relevant government agencies, local governments, and development partners. The TA is expected to commence in January 2010 and will be closed by December 2011. NRA and DOW will provide guidance to the consultants and will make available all relevant materials, studies, and reports.

19. The TA will require about 28 person-months (18 international and 10 national) of consulting services. Individual consultants will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants* (2007, as amended from time to time). Four international consultants will be needed with expertise in (i) road user charges, (ii) road funds, (iii) private sector development, and (iv) road asset management. The three national consultants will have expertise in (i) financial management, (ii) national legislation, and (iii) taxation. The international road user charges specialist will function as the team leader for the RUC component and the international private sector development specialist will be the team leader for the PSP component. Outline terms of reference for the consultants are in Appendix 3. The equipment procured under the TA will be procured following ADB's *Procurement Guidelines* (2007, as amended from time to time) and will be turned over to the executing agency after completion of the TA. The TA proceeds will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook*.¹⁷

20. The team leaders for the RUC and PSP components will submit ten copies of the following reports to NRA, DOW and ADB: (i) inception report; (ii) interim progress reports; (iii) draft final report; and (iv) final report, 2 weeks after receiving all comments from NRA/DOW and ADB. As needed, the consultants will hold stakeholder consultation workshops to disseminate the TA findings and seek comments on the draft final reports.

21. The Government will nominate up to ten senior-level officials (heads or deputy heads of the relevant government agencies) to participate in the international road shows. These officials will make presentations and respond to queries relating to their areas of responsibility. The DOW will prepare detailed proposals for the international road shows and will seek prior ADB approval.

IV. THE PRESIDENT'S DECISION

22. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$800,000 on a grant basis to the Government of Papua New Guinea for Improving Road User Charges and Private Sector Participation in Road Development, and hereby reports this action to the Board.

¹⁷ ADB. 2008. *Technical Assistance Disbursement Handbook*. Manila.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
<p>Impact Sustainable financing of road maintenance</p>	<p>Increase in the length (km) of the road network that is in good condition</p>	<p>National statistics, National Road Authority (NRA), and Department of Works (DOW) reports</p>	<p>Assumptions Continued government support for the transport sector</p> <p>Implementation of the Medium-Term Development Strategy (MTDS)^a and National Transport Development Plan (NTDP)^b as planned</p> <p>Risks Deterioration of security conditions</p> <p>Slowdown in economic growth and development</p>
<p>Outcome Functioning system of road user charges (RUCs) established for road maintenance financing</p> <p>Competitive procurement of road development and maintenance contracts</p>	<p>15% annual increase in the current annual RUC collection of K15 million</p> <p>Reduction in the number of contracts with delays and cost overruns</p>	<p>NRA and DOW reports</p>	<p>Assumptions Timely transfer of RUCs to the road fund</p> <p>Improved and transparent procurement process</p> <p>Risk Delays in the award of contracts</p>
<p>Outputs 1. Expansion of the existing RUCs to improve resources for the road fund</p> <p>2. Increase in the number of contractors interested in bidding on road improvement and maintenance contracts</p>	<p>Addition of a levy on petrol and road damage charges, an increase in the levy on diesel, and other RUCs</p> <p>10% annual increase in the existing base of about five international and 15 national contractors for infrastructure development works</p>	<p>Consultant's reports, ADB review missions, and government reports on proceedings of national seminars and international road shows</p>	<p>Assumptions Government support for increase in RUCs</p> <p>Incentives by the Government to international and national contractors</p> <p>Support of other development partners</p> <p>Risk Increase in fuel prices</p>
<p>Activities with Milestones 1.1. Review all resources available for maintenance of national roads 1.2. Compare with road maintenance needs and identify the resource gap</p>			<p>Inputs ADB: 18 person-months of international and 10 person-months of national</p>

Activities with Milestones	Inputs
<p>1.3. Make recommendations to enhance RUCs in accordance with the National Road Authority Act of 2004</p> <p>1.4. Identify other potential resources for road maintenance</p> <p>1.5. Propose draft changes in legislation, if needed</p> <p>1.6. Prepare a detailed implementation plan for increasing RUCs</p> <p>1.7. Prepare and deliver the following reports:^c</p> <p style="padding-left: 20px;">Inception—4 weeks after commencement of consulting services</p> <p style="padding-left: 20px;">Interim—16 weeks after commencement of consulting services</p> <p style="padding-left: 20px;">Draft Final—32 weeks after commencement of consulting services</p> <p>2.1. International road shows (May–December 2010)</p> <p>2.2. National seminars for local contractors and entrepreneurs (November 2009–April 2010)</p>	<p>consulting services, and international road shows amounting to \$800,000</p> <p>Government: \$200,000 contribution (international and national road shows, office accommodation and remuneration of counterpart staff); all relevant reports are made available to the consultants as needed</p>

ADB = Asian Development Bank, DOW = Department of Works, km = kilometer, MTDS = Medium-Term Development Strategy, NRA = National Road Authority, NTDP = National Transport Development Plan, RUC = road user charge.

^a Government of PNG. 2004. *The Medium Term Development Strategy 2005–2010: Our Plan for Economic and Social Advancement*. Port Moresby.

^b Government of PNG. 2006. *National Transport Development Plan 2006–2010*. Port Moresby.

^c Schedule of main reports to be submitted by the team leaders for the two components. Other consultants will submit additional reports as needed.

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	441.0
ii. National Consultants	80.0
b. International and Local Travel	66.0
c. Reports and Communications	10.0
2. Equipment ^b	12.0
3. Seminars (International Road Shows)	
a. Travel ^c	150.0
4. Miscellaneous Administration and Support Costs	5.0
5. Contingency	36.0
Subtotal (A)	800.0
B. Government Financing	
1. Seminars (International Road Shows)	
a. Per Diem ^d	90.0
b. Facilities ^e	50.0
2. Seminars (National Road Shows)	
a. Travel and Per Diem	20.0
b. Facilities	20.0
3. Office Space	10.0
4. Remuneration of Counterpart Staff	10.0
Subtotal (B)	200.0
Total	1,000.0

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

^b Includes computers, printers, fax machines, etc.

^c ADB will finance only travel costs (airline tickets) following ADB travel policy of commercial and most direct and cost-effective route.

^d Per diem will be based on up to 2 days in each selected country excluding travel time. The Government will finance per diem and accommodation.

^e Includes charges for seminar hall, etc.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE

1. The technical assistance (TA) component for improving road user charges (RUCs) includes: (i) assessing the maintenance needs, available funding, and the resource gap; (ii) preparing proposals for the National Road Authority (NRA) for generating and collecting RUCs under the NRA Act; (iii) identifying additional road user-related resources that could be mobilized for road maintenance; (iv) preparing policy and legislative reforms as needed; and (v) assisting NRA secure endorsement by the Government.

2. The private sector participation (PSP) component of the TA includes: (i) detailed review of the Government's policies governing national and international contractors and identification of barriers; (ii) preparing proposals for policy reforms, including related legislation; and (iii) undertaking international road shows to regional countries to learn about successful engagement of private sector for long-term opportunities for infrastructure improvement and maintenance in Papua New Guinea (PNG).

A. International Consultants

1. Road User Charges Specialist and Team Leader for Road User Charge Component (international; 9 person-months)

3. The consultant will:

- (i) prepare a proposal for the adoption of road use charges comprising an enhanced levy on diesel and a similar levy on gasoline to cover the maintenance costs associated with the general use of roads;
- (ii) prepare a proposal for the adoption of road damage charges comprising (a) a flat increase in annual vehicle registration fees, applicable to all vehicles; and (b) a heavy vehicle charge, based on the laden axle weight of vehicles, intended to cover maintenance costs attributable to different vehicles depending on their size and weight;
- (iii) develop detailed proposals for the use of the Government's tax credit scheme for financing road maintenance;
- (iv) develop a detailed plan for collection by NRA of fines from overloaded vehicles, based on the operations of NRA's weighbridges;
- (v) design systems and procedures for the collection of revenues from the above-mentioned sources, in coordination with (a) the Internal Revenue Commission for the road use charge, (b) Motor Vehicle Insurance Limited and some provincial traffic registries for the road damage charge, (c) Department of National Planning and Monitoring for the tax credit scheme, and (d) the Treasury Department for the legal and regulatory aspects of revenue collection from the various sources;
- (vi) estimate road maintenance financing needs based on NRA's annual maintenance programs, and identify the road user levies to be collected to generate the required funds;
- (vii) develop awareness and undertake publicity campaigns designed to explain the operation of the road maintenance cost-recovery system to road users;
- (viii) identify the need for and assist in preparation of any policy changes required to enable full implementation of the system for collecting RUCs;
- (ix) review existing regulations and legislation, including the NRA Act, to determine any adjustments needed to enable NRA and its partner agencies to operate the cost-recovery system;

- (x) detail the roles and responsibilities of NRA staff in managing the road fund system; and
- (xi) prepare a program to implement the cost-recovery system in coordination with the Treasury Department and DNPM, and assist with initial implementation.

2. Road Fund Specialist (international; 1 person-month)

4. The consultant will:

- (i) advise NRA on cost recovery and road funds under operation in other countries and propose best practices that could be introduced in NRA;
- (ii) advise NRA on the key elements of the road fund, its operations, and the roles and responsibilities of the road fund manager and the NRA board;
- (iii) advise NRA on possible additional sources of maintenance financing;
- (iv) advise on tracking the road user-related funds collected by the tax authorities and the amounts transferred to the road fund; and
- (v) assist in creating awareness within the Government, particularly the Treasury and Finance departments, about the importance of providing budget support from the Government's consolidated budget to finance road maintenance.

3. Road Asset Management Specialist (international; 1 person-month)

5. The consultant will:

- (i) review the structure of the existing road asset management system (RAMS) and maintenance management tasks, and recommend updates where necessary;
- (ii) review the existing road network referencing system with respect to GIS and HDM-4 requirements;
- (iii) review pavement data collection, relevance and sustainability with respect to Department of Works (DOW) resources and HDM-4 requirements;
- (iv) review tools for data transfer from the existing database and any given source to integrate with HDM-4;
- (v) review configuration of HDM-4 to PNG conditions (including the mining and processing of complete data sets for traffic flow patterns for different road use categories, speed-flow relationships for different road types, climatic characteristics, and the relationship between aggregate and detailed data);
- (vi) review the level of calibration of HDM-4 to PNG conditions (review the mining and processing of complete data sets for pavement performance, effects of road works, traffic and road-user effects);
- (vii) review the interface between RAMS and the bridge management system;
- (viii) review the level of competence within DOW RAMS staff in the use of HDM-4 technology, the data transfer software, the road management system guide, data collection, database management techniques, and any other relevant systems, and recommend training as required;
- (ix) review the current process for the preparation of the Multiyear Maintenance, Rehabilitation and Development Program, which enables DOW to prepare a medium-term expenditure framework for the national budget; and
- (x) recommend measures and procedures on how identified issues can be resolved.

4. Private Sector Development Specialist and Team Leader for the Private Sector Participation Component (international; 7 person-months)

6. The consultant will:

- (i) undertake a detailed review of the Government's policies relating to the work of national and international contractors and identify barriers, which may include, among others, national and local taxes, registration of international firms, work permits for expatriate staff, duties on construction equipment, and labor laws;
- (ii) prepare proposals for overcoming these barriers, including reforms needed in the existing policies and related supporting legislation;
- (iii) in consultation with the relevant government agencies, propose subsidies that could be extended to national and international contractors to facilitate bidding on road contracts in PNG; and
- (iv) assist in undertaking international road shows including coordination with counterparts in the countries visited and private sector, and preparing detailed work plans, itineraries and reports.

B. National Consultants

5. National Legislation Specialist (national; 4 person-months)

7. The consultant will:

- (i) review the existing NRA Act to ascertain whether the act is explicit on the purpose of the fund, source of revenues, eligible expenditures, method of managing the fund, etc. Based on this information, amend sections and subsections where necessary and draft gazettal notices for consideration by relevant ministers;
- (ii) liaise with other members of the transport sector legal team and develop specific requirements to introduce legislative amendments to ensure road-related charges are deposited only in the road fund;
- (iii) facilitate dialogue with other stakeholders to demonstrate the use of the road fund and the tangible affect on the road network, if concerns are raised by stakeholders;
- (iv) review the existing National Road Authority Act 2003 and other consequential legislation with a view to improving service delivery in carrying out NRA's mandated function;
- (v) undertake reviews of legislation related to RUCs and road use functions, including (a) Motor Traffic Act 1950, (b) Roads Maintenance Act 1971, (c) Transport Collection of Information Act 1969, (d) National Roads Safety Council Act 1997, (e) The Motor Vehicle Insurance Limited Act, (f) The Licensing of Heavy Vehicles Act 1977, and (g) other relevant acts;
- (vi) review operational arrangements to remit all vehicle license fees and road damage charges to the road fund account (currently the remittance is collected by Motor Vehicle Insurance and deposited in consolidated revenue). Inform provincial governments of the arrangements, and draft gazettal notices for consideration by relevant public departments and entities; and
- (vii) liaise with the attorney general's office on the effects of such legislative amendments and advise NRA accordingly.

6. Taxation Specialist (national; 4 person-months)

8. The consultant will:

- (i) review existing RUCs and road-related taxes, identify additional revenue options, and establish operational arrangements for transfer of the revenue to the road fund;
- (ii) liaise with government agencies and propose mitigation for certain aspects of the revenue transfer, should it occur;
- (iii) propose other road taxation options for consideration by NRA;
- (iv) provide advice and support to the NRA management and board on any issues relating to imposition of road taxes;
- (v) compile a summary of enabling legislation that may need to be amended or harmonized with the NRA Act;
- (vi) assist with other activities consistent with the above that may be required by NRA during the term of engagement;
- (vii) recommend procedures under which the NRA board can seek increases in RUCs to ensure that revenues can be raised when required to maintain their real value and meet agreed revenue targets; and
- (viii) support the outreach activities of the NRA board, which should be designed to inform the public of the road fund's work, and justify any increased charges.

7. Financial Management Specialist (national; 2 person-months)

9. The consultant will:

- (i) review and recommend suitable financial reporting arrangements for the road fund, together with appropriate internal and external auditing through the NRA financial management system;
- (ii) develop the nature of the regular reports to be published for submission to the NRA board, treasury and finance departments and Parliament, together with an indication of the scope of such reports;
- (iii) develop performance indicators to be used by the NRA board to measure its effectiveness (e.g., administrative costs vs. total funds disbursed, average time taken for payment of invoices or transfer of funds, actual vs. required maintenance funding, etc.);
- (iv) recommend how the financial management system should be managed on a day-to-day basis to ensure that system is used effectively; and
- (v) ensure procedures for tracking all activities of the NRA board that have financial impacts.

C. Reporting

10. Under the guidance of the team leaders for the RUC and PSP components, the consultants will submit 10 copies of the following reports for each component to NRA, DOW, and the Asian Development Bank: (i) inception report; (ii) interim progress reports; (iii) draft final report; and (iv) final report, 2 weeks after receiving all comments from NR, DOW and the Asian Development Bank. The consultants will hold stakeholder consultation workshops to disseminate the TA findings and seek comments on the draft final reports.