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I. SETTING UP A NEW ROAD AGENCY

1. West Bank-Gaza: Development of a Roads Administration

Background

The TA program, which is part of the overall Emergency Assistance Program to the Gaza Strip and the West Bank, consists of more than a 100 priority activities phased over the next three year period with an estimated aggregate cost of US$75 million. Fourteen donors have pledged US$29 million to establish a separate Trust Fund to be administered by the World Bank to finance the most urgent priority activities, mainly policy and feasibility studies, institution-building activities and development of human resources. One important element of this program is to assist the Palestinian authorities in developing an institutional capacity and capability to manage the highway network, severely deteriorated after minimal maintenance over the last 27 years. Initially the intention is to focus on the Gaza strip and the Jericho area, but the intention is that following agreement with the Israelis it is expected that the established Roads Administration will take over the authority and responsibility for the main road network on the whole of the West Bank.

The total length of the road networks in the West Bank and Gaza are 2000 and 168 km, respectively. This network consists of main, regional and local roads. The main road network, constructed before 1967, is about 750 km long and was meant to serve the major population centers at the time it was constructed. The regional road network is about 550 km in length, and the local road network, about 850 km, connects smaller communities and provides access to regional and main roads. It is also expected that there are other low standard roads, tracks and trails serving local communities.

Currently most of the road works in the West Bank are carried out by the Department of Public Works of the Israeli Civil Administration. A Ministry of Transportation has recently been established under the Palestinian Authority with offices in Gaza and Jericho. It is proposed to establish a new Central Roads Administration (CRA) as a Directorate within the Ministry. It's highest priority, once it is appropriately staffed and equipped, will be to manage the main road network. Other roads may also be placed under the jurisdiction of the CRA, or may be assigned to the municipalities. The CRA will undertake planning, programming, budgeting, financing, maintenance, rehabilitation and, eventually, new construction for all main roads in the WBG. Most of the services and physical works will be carried out by private consultants and contractors. To manage all of these services and works, CRA will require an appropriate management and administrative structure, adequate staff, and clear rules and regulations.

The objective of this consultancy is to assist the Palestinians in creating a functioning CRA. This will include a number of activities that will have to be carefully sequenced and implemented in coordination with ministries, and the Palestinian Economic Council for Development and Reconstruction (PECDAR).

Scope Of Work

The consultant will be expected to undertake the following tasks:
(i) Recommend an appropriate institutional structure for managing the overall road network, including the local roads, tracks and trails left in the hands of local communities.

(ii) Recommend an appropriate financing mechanism which ensures that maintenance is adequately funded and that sufficient funds are available for rehabilitation, improvements and new construction.

(iii) Recommend appropriate management structures for managing each part of the road network.

(iv) Provide administrative support to the Roads Administration to enable it to recruit staff, undertake an initial road inventory, and develop systems and procedures to manage the road network effectively.

(v) Assist CRA to prepare an initial 5-Year Road Improvement Program.

(vi) Review the draft laws being prepared under another consultant contract and turn them into a draft Roads & Highways Bill for consideration by PECDAR.

**Institutional Structure**

The main task of the consultants under this heading is to seek agreement from the various parties involved on the way in which roads are to be administered. Among other things, they will be expected to examine the following options:

(i) Should there be a single highway authority responsible for all classified roads and, if so, should any special steps be taken to ensure that municipal and regional roads receive adequate attention (i.e., should there be separate municipal and regional roads departments within the CRA)?

(ii) Under the above unitary arrangement, what role would be played by the municipalities?

(iii) Should the above arrangement provide for CRA to hand over management of municipal roads to the municipalities (or other competent bodies) when they have the capacity to manage them on their own?

(iv) Should some, or all of the municipalities be designated as highway authorities in their own right, with the responsibilities of CRA being primarily confined to main roads? Furthermore, in this case, should CRA remain responsible for all main roads, even the sections of main road which pass through urban municipalities?

(v) What should be done about the unclassified network of roads, tracks and trails? Should local communities be encouraged to take ownership of these roads with a view to taking responsibility for maintaining them?

(vi) In the latter case, what institutional mechanism might be used to persuade them to take ownership of these roads, tracks and trails? Should it take the form of road cooperatives, local roads boards, village roads committees, or what?
**Financing**

It is generally accepted that one of the best ways to finance most road expenditures is by putting roads on a fee-for-service basis. The key elements of this approach are a road tariff and a road fund managed by a representative board of management. The representative board of management wins public support for more road spending and provides road users with the assurance that the funds will be spent wisely, and that road spending will be constrained to what road users are willing to pay. When the fund is used to finance roads under the jurisdiction of different highway authorities, it should be managed independently of the main road agency (in this case, CRA) to avoid any conflict of interest. Against this background, the consultants will be expected to:

(i) Estimate how much money needs to be spent on routine and periodic maintenance to keep the road network in a stable long-term condition. Also estimate counterpart funds for any proposed rehabilitation programs. Separate estimates should be prepared for main roads, regional roads, municipal roads, and unclassified roads, tracks and trails.

(ii) Review existing road user taxes and charges and estimate how much money is currently collected in the form of vehicle license fees, bridge and ferry tolls (if any), and any other genuine road user charges (i.e., payments by road users, but excluding service fees and general taxes).

(iii) The road tariff is expected to consist of vehicle license fees, a road maintenance levy added to the price of fuel, and international transit fees (if any) paid by foreign vehicles entering WBG. Recommend an appropriate level for the various charges to ensure that they generate sufficient revenues to maintain the road network and provide counterpart funds for rehabilitation (it is expected, at least for the time being, that new works would be financed through the PECDA budget). In this connection, the tariff should finance all maintenance costs on the main road network, and part of the costs on the municipal and unclassified networks. Recommend appropriate cost-sharing arrangements for municipal and unclassified roads (and hence the overall costs to be financed through the road fund), together with the best ways of collecting the road tariff and depositing the proceeds into the road fund.

(iv) Recommend the composition of the board of management, bearing in mind the need to include persons representing the main constituencies whose support is needed to win broad-based public support for introduction of a road tariff and an increase in user charges. The board should include representatives of the key ministries involved in decisions on road financing, together with representatives of the business community, road users, farming interests, etc.

(v) Recommend how board members should be nominated (e.g., by the constituencies they represent) and appointed (e.g., by the Minister of Finance, or the President). Also recommend procedures for selecting the Chairman and Vice-Chairman (e.g., by appointing an outside Chairman after consultation with the board, or by leaving it up to the board to select a Chairman from among their members).

(vi) Recommend a suitable structure for the road fund secretariat, including an Executive Secretary, an internal auditor and other accounting, planning and engineering staff. It is not expected that the secretariat would consist of more than five persons. Also recommend how the staff should be appointed (e.g., the Executive Secretary to be appointed by the board, or in consultation with the board) and under what terms and conditions of service.

(vii) Recommend procedures for revising the road tariff to ensure that the board is able to raise and lower charges to meet agreed revenue targets and also to maintain the real value of the
road tariff. Outline the sort of guidance that MOF might offer regarding the setting of the road tariff and also define areas where the board should be able to act on its own.

(viii) Recommend basic procedures for allocating funds to the different road agencies entitled to draw from the fund.

(ix) Recommend procedures for withdrawing funds from the road fund to avoid any undue delays (e.g., by having all cheques signed by two signatories: either the Executive Secretary or Accountant from the roads board, plus either the Chairman or Vice-Chairman of the board).

(x) Recommend how the road fund should be managed on a day-to-day basis to ensure that funds are used efficiently. In this connection, recommend the financial systems to be used, and the role of the board and the secretariat. Draw up terms of reference for the board and recommend what the relationship should be between the board and the Ministry of Transportation.

(xi) Recommend procedures for disbursing funds from the road fund. In particular, examine ways in which the board can use disbursement arrangements to strengthen financial discipline (e.g., should funds only be disbursed for tendered work after certification that the work has been carried out according to specification).

(xii) Recommend suitable financial reporting arrangements, together with appropriate internal and external auditing arrangements. Also propose the nature of the regular reports to be published for submission to concerned government agencies and the public, together with an indication of the scope of such reports.

Management Structures

The institutional analysis should have determined how each part of the road network is to be managed. The task of this part of the TOR is to recommend appropriate organizational and management structures for each highway authority, and also for unclassified roads, tracks and trails. The intention is to do most road works under contract. CRA should thus be primarily staffed to plan and manage the road network, and to hire and supervise consultants and contractors to carry out any required civil works. In this connection, the consultant will be expected to:

(i) Recommend an appropriate organizational structure for the CRA. The recommendations should include the need for a management Board and, if so, its functions, composition, remuneration of Board members, etc. Also recommend the management structure (e.g., Chief Executive Officer and line managers), procedures for appointing the CEO and, if thought necessary, the Deputy CEO and spell out the relationship between Ministry of Transportation, the Board and the CEO.

(ii) Define the middle-management structure indicating the way in which it is proposed to deal with municipal roads, if any. Such arrangements should spell out the regional structure of the proposed organization. The proposals should indicate the middle management structure, how it relates to the CEO and appropriate terms & conditions of employment for staff. Terms & conditions of employment should be sufficiently attractive to ensure the agencies can attract and retain suitably qualified staff.
(iii) Propose suitable financial reporting and accounting arrangements. The proposals should include recommended formats for simple accounts to aid CRA in maintaining effective control over its finances. Among other things, it should enable CRA to identify costs by activity and project. It should also enable them to prepare a consolidated Income Statement, Partial Balance Sheet and Cash Flow Statement. Also advise on the most appropriate way of reflecting in the accounts shortfalls in regular road maintenance and erosion of capital.

(iv) Propose arrangements for establishing a performance budgeting system for planning, implementing and monitoring road maintenance. Also propose an appropriate auditing system, including internal audit and control procedures, together with independent external audit arrangements.

(v) If some, or all municipalities are to be designated as highway authorities, recommend how they should deal with planning and management of their road networks. Should they manage the roads themselves, or have it done on an agency basis by CRA or other competent bodies? If planning and management are to be contracted out, recommend what in-house capacity the municipalities need to monitor these arrangements effectively, the contractual arrangements they should use, and what role CRA might play to support the municipalities in this matter.

(vi) What arrangements should be put in place to deal with the unclassified network. Should some form of cost-sharing arrangement be put in place to encourage local communities to take ownership? When they agree to take ownership of these roads, tracks and trails, how should their commitment be registered, how should advice and technical assistance be provided, and what arrangements should there be to ensure the funds allocated from the road fund are used effectively?

**Administrative Support**

It is expected that the consultants would assist PECDAR to establish the CRA as a going concern and would assist it to undertake its initial work program. To do this the consultants would:

(i) Assist in recruitment of appropriate staff to make CRA operational. Staffing should be increased gradually, taking into account the gradually evolving road program and the managerial capacity of CRA.

(ii) If experienced professional local staff are in short supply, assess technical assistance needs and develop TORS for the required technical assistance personnel.

(iii) Assist CRA staff to carry out a simple road inventory of all main, regional and municipal roads. The initial inventory, which would be repeated later in greater detail, should at least identify the road cross-section, surface type, condition, and the characteristics of significant structures. Estimate the likely extent of the network of roads, tracks and trails serving local communities (to remain as the unclassified network).

(iv) Carry out simple traffic counts to establish the broad order of magnitude of traffic flows. On major routes, simple traffic counts should be carried out using local consultants. On other routes, moving observer methods may be used in conjunction with carrying out the road inventory.
(v) Carry out a functional re-classification of the road network and assign each class of road to an appropriate legal entity (central administration, or municipality). Ensure, to the extent possible, that all main roads – even when they pass through areas under the jurisdiction – are assigned to CRA.

(vi) Prepare guidelines for identifying road projects, evaluating them and establishing priorities. In the first instance, these guidelines are expected to be relatively simple, because of CRA’s limited technical capacity and shortage of experience. Proposals should also be made for the manner in which these procedures might be refined under a separate consultancy assignment. Guidelines dealing with road works involving municipalities and the unclassified network, should be simple and robust enough to be used and understood at the local level.

(vii) Prepare guidelines which ensure that all road projects take adequate account of environmental issues. Where appropriate, these guidelines should be developed to involve public consultation.

(viii) Prepare guidelines for dealing with road safety matters, including collecting information on road accidents, analyzing it, and preparing programs to generally improve road safety. These programs should at least cover physical interventions, vehicle inspection, publicity and driver training.

(ix) Prepare specifications and sample bid documents for all works expected to be contracted out (design, supervision, routine maintenance, periodic maintenance, rehabilitation, and new works). Also prepare sample contract documents under which such work might be carried out. In the case of unclassified roads, tracks and trails, prepare simple contracts and guidelines suitable for use by local communities.

(x) Review the local consultant and construction industries and detail what work they can do, the amount of road work they can handle on an annual basis, and the sort of support (training and otherwise) they might need to improve their effectiveness.

Initial 5-Year Road Improvement Program

The main task under this heading is to help the staff of CRA to prepare an initial 5-Year Road Improvement Plan (RIP) covering main, regional and municipal roads and unclassified roads, tracks and trails. It is expected that the first RIP will be a relatively simple affair, developed using simple tools and a limited amount of data. As part of this task, the consultants will therefore also be expected to recommend the basic principles which should cover preparation of future RIPs and the consulting services needed to support the analytical tools and data needed to prepare them. The main tasks of the consultants under this heading will therefore be to:

(i) From the road inventory and information on traffic volumes, identify roads requiring emergency repairs, routine and periodic maintenance, rehabilitation, and urgent improvements (particularly where road safety is a consideration). To minimize budget requirements, short-term spot-patching (rather than rehabilitation) should be considered for roads in poor condition.

(ii) Based on the recommended evaluation procedures, and in discussion with CRA and municipalities, agree on main priorities and on a tentative time-scale for their implementation. In this connection, maintenance of all roads in fair to good condition should generally receive highest priority.
(iii) Review proposals put forward by community groups (e.g., road cooperatives, local roads boards, etc.), draw up a tentative plan for the unclassified network and, in consultation with community leaders, agree on priorities.

(iv) Use the above information to prepare a tentative 5-Year RIP, clearly separating maintenance, rehabilitation, and new works. The information should also be presented separately for main, regional, municipal and unclassified roads, etc.

(v) Bearing in mind the funds likely to be generated by the proposed road fund (which will probably build up from a narrow base over several years), and funds likely to be available from donors and other sources (e.g., the central budget), adjust the above tentative program to be consistent with the available resources.

(vi) Also prepare an action plan to improve road safety, divided into the items to be financed through the road fund, and those to be financed by donors.

(vii) Prepare a plan for strengthening the local consulting and construction industries to be financed as part of donor programs.

(viii) Prepare bid documents for the above works, making sure that those prepared for projects to be financed by donors meet their procurement requirements. In doing this, attempt as far as possible to use local WBG consultants and contractors.

(ix) Oversee implementation of the agreed RIP and prepare monthly and quarterly progress reports detailing physical progress, disbursements, quality of work completed, any problems encountered, and how they might be resolved.

(x) Prepare TORS for consultants to be recruited to develop the methodology for preparing future RIPs.

**Roads & Highways Bill**

The consultant will be expected to review the draft laws being prepared under another consultancy and, taking into account the work specified in the above TOR, to prepare a draft Roads & Highways Bill. The Bill should be divided into sections and should have separate sections dealing with:

(i) The general responsibilities of MOT with regard to classifying roads, assigning them to a legally constituted highway authority, promulgating authorized road signs and signals, setting appropriate geometric standards for the construction of roads, issuing of notices regarding regulation of roads and road traffic (e.g., regulations governing vehicle weight and dimensions), delegating administration of the above responsibilities to a designated highway authority, and initiating research on matters related to roads.

(ii) Depending on the outcome of the institutional study, the section dealing with the responsibilities of MOT may also cover the manner in which management of municipal roads is to be dealt with.

(iii) The detailed responsibilities of CRA, including its role (if any) in negotiating and signing contracts to have part of the road network under its jurisdiction managed under a concession agreement.
(iv) The establishment of the road fund and its basic working modalities. The preference here is for short, enabling legislation, supported by regulations to be published (and updated) by MOT.

**Timing And Implementation Schedule**

It is expected that the above consulting services would be provided over a period of about 2 years.

**Reporting Arrangements**

The consultants shall indicate in their technical proposal the reports that will be submitted during the course of the assignment. The contents, frequency and number of copies of such reports will be discussed during contract negotiations and agreed between the consultants and PECDAR and recorded in the minutes of negotiations.

In addition to the preparation and submission of reports, documentation, schedules, etc., specific to each task, the consultants shall submit to PECDAR within five days of the end of each month, a composite report on the performance and achievements in respect of each task during the previous month. Such reports shall be preceded by an Executive Summary. Two copies of the monthly Executive Summary shall also be submitted by consultants directly to the IDA Office, Att. -----, World Bank, 1818 h Street, NW, Washington, DC 20433, USA, and also to the Project Coordinator.

All communications, reports, documents and instructions for staff in PECDAR prepared by the consultants shall be in English.

**Services To Be Provided By MOT**

PECDAR will provide copies of draft legislation being prepared by other consultants and will arrange for consultations with other agencies as, and when, needed. The government will not provide any office space, vehicles, or any other support services to the consultants. PECDAR will make available to the consultants the services of one or two counterpart staff on a part-time basis to assist the consultants with their work and strengthen the capacity of the ministry. All fieldwork should be planned to involve counterpart staff.

**Equipment To Be Provided By Consultants**

Since PECDAR is seriously short of office equipment to support the work of the consultants, the consultants should include in their proposal the supply of the following office equipment: (i) three computers (486s); (ii) one laser printer; (iii) one photocopier; and one fax machine. This equipment will become the property of the government at the end of the contract.

**Staff Requirements**

It is expected that the above activities would require about 96 man-months of consulting services, including the services of a Project Manager to manage the program and liaise with interested parties. Foreign consultants are encouraged to employ, or associate with local WBG consultants for purposes of carrying out the work. The bulk of the consultants will probably be road specialists, management and financial specialists, construction industry specialists, a legislative draftsman knowledgeable in Arabic law, and personnel specialists.
## II. RESTRUCTURING AN EXISTING ROAD AGENCY

### 1. LESOTHO: Terms of Reference for a Study to Improve the Management and Financing of Roads

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### 1. Introduction

Lesotho depends almost entirely on road transport for its internal movement of freight and passengers between economic centres. In spite of its importance, however, the Government of Lesotho (GOL) recognises that the roads sector faces a number of serious problems. These include an inadequate level of funding, most especially for recurrent expenditures; the difficulty of recruiting and retaining high quality staff; the poorly developed local construction industry; the regionally unbalanced level of investments; and the fragmented organisational structure of the public agencies responsible for roads. In
addition, the mountainous terrain of much of the country makes the provision and upkeep of roads all the more problematic. The result is that a number of underfunded and unaccountable road agencies are providing an inefficient, inequitable and ineffective level of service to the general public with serious ramifications for the economic and social development of the country.

In response to this situation, the Government of Lesotho (GOL) has taken the initiative to pursue a more appropriate policy environment for managing and financing the entire road network to ensure the conservation of this key national asset on a long term basis. A number of studies are or have been conducted to guide the GOL in the reform of their roads sector, to which this study will also contribute. The GOL is now seeking a consulting team, hereafter known as the consultant, able to perform the following terms of reference.

2. Background Information to the Road Sector

2.1 Road Network Responsibility

2.1.1 Introduction

A number of road agencies are currently de facto responsible for the road network. First, there are three national agencies within the Ministry of Works - Roads Branch, the Labour Construction Unit and the Civil Works Section; second the municipal authorities; and finally, by default, the Lesotho Highlands Development Authority.

2.1.2 The Roads Branch (RB)

This is currently responsible for the administration of 2,295 km of paved, gravel and earth roads, and includes the bulk of the paved road network and declared roads in Lesotho. The Roads Branch (RB) is headed by the Chief Roads Engineer. The roads it is responsible for represent about 35% of the road network and carry about 80% of the national traffic. The maintenance of the RB road network is the responsibility of its three regional offices (North, South and Central), all of which are managed by a Regional Engineer. Routine maintenance and the majority of periodic maintenance (resealing and regravelling) used to be carried out by force account works within each region, in accordance with available resources. Increasingly, the RB has used local contractors to carry out maintenance works. The condition of the RB network is reasonable, partly due to its age.

The RB in-house construction operations are currently implemented by two separate construction organizations: the Road Improvement Unit (RIU) and the Road Construction Unit (RCU). These are set up in entirely different manners, for historical reasons.

- RIU is a quasi-autonomous unit and operates as an almost completely discrete cost center, with its own bank account (rolling fund). The work undertaken is the improvement of largely existing gravel roads to paved road standards. For day-to-day purposes the contact with RB is via the Planning Engineer in the RB Projects and Planning Section. The RIU Manager ultimately reports directly to the Chief Roads Engineer.
RCU is a sub-section of the Design and Materials Section of RB managed by a Roads Engineer, with some measure of independence from the bureaucracy of the Branch, including keeping control accounts and ordering materials and supplies directly. The Unit was originally set up to upgrade existing gazetted roads to higher (gravel) standards, as part of the stage construction process. In recent years, this gravel road construction work has continued, but been interspersed with some bridge and paved road construction.

### 2.1.3 The Labour Construction Unit (LCU)

This department differs from the function of the Roads Branch in that it constructs and maintains its road network using labour-based methods (i.e. a combination of labour-intensive and plant-based methods). The LCU constructs roads to all-weather gravel standards, and to date has constructed and is responsible for maintaining 900 kms of gravel roads. LCU roads tend to be of local importance with many of them being cul de sacs. Together with its objective of providing all-weather road access in rural areas, LCU also has the objective of creating employment through the utilization of labour-based methods in road construction. Wages and salaries account for about 60% of the total project cost, with the wages being paid fully in cash at the government approved rate for casual labour. Roadworks are prioritised by way of both economic and other criteria.

The LCU is headed by a Chief Engineer and currently has two regional offices (North and South) which are managed by Regional Engineers. Each established regional office currently has three construction units and one regravelling unit. All construction and rehabilitation works are carried out in-house, while maintenance is gradually involving a greater proportion of private contractors as a result of the World Bank/GOL funded project. This commenced in 1993 and sought to train local small-scale contractors in the execution of labour-based routine and periodic maintenance of gravel roads within the LCU. The condition of the network is poor with a substantial backlog of deferred work.

### 2.1.4 The Civil Works Section (CWS)

This was established in 1968 for the purpose of providing drought relief on a food-for-work basis. It is responsible for the construction and maintenance of some 1570 kms of earth roads, sections of gravel roads, and footbridges. It now falls under the Ministry of Works after its recent transfer from the Ministry of Local Government. The CWS is headed by a Senior Engineer and has four regional offices nationwide, all of which are managed by regional engineers. The CWS constructs earth roads using labour intensive methods, with a minimal use of plant and equipment, using casual labour paid with a combination of food and cash. It is supported by the World Food Program (WFP) and the Government of Lesotho (with additional donor support from the European Community and the Government of Japan). It is currently in the middle a five year construction and maintenance program for which funding is fully committed by those bodies. As part of the ongoing reorganisation of the MOW, LCU and CWS are in the process of being entirely integrated.

### 2.1.5 Municipal Authorities

Urban streets and roads within municipal and town boundaries fall under the Ministry of Local Government (MLG). Work on them is administered by MLG, which in
turn commissions one of the main road agencies to undertake the work under a sub-warrant agreement, following requests for action from Village or District Development Councils. However, the Roads Act of 1969, laying responsibility for the upkeep of roads with the MOW, can be interpreted to include urban roads. Indeed, this is the case of those roads running directly through urban areas which are part of inter-urban links.

The experience with the only independent local government, Maseru City Council, itself responsible for some 600 kms of roads, shows that limited local financial and technical capacity has resulted in poor maintenance of urban streets. Both the Town and Country Planning Act, 1980, and the Urban Government Act, 1983, indicate that the ultimate intention is that planning and control of urban development, including roads, is to be the responsibility of municipal councils.

2.1.6 Lesotho Highlands Development Authority (LHDA)

This is a parastatal responsible for the Lesotho Highlands Water Project. In order for a series of dams and connected structures to be built, the LHDA was required to construct or improve a considerable length of roads to gain access to the various sites. LHDA has assumed temporary responsibility for some 200 kms of roads but it is GOL policy that, in due course, the responsibility for these will devolve to the Roads Branch

2.2 Road Sector Policy

A National Transport Study (NTS) was carried out in 1994/1995. Thereafter, the GOL adopted a national road policy and a Letter of Sector Policy (LSP) for the Road Rehabilitation and Maintenance Project (RRMP) to be financed by various donors. Details can be found in the Letter of Sector Policy, a copy of which is attached at Appendix A.1. The strategy emphasizes, inter alia:

- reforming the institutional structure of the roads sector along more commercial lines;
- strengthening the capacity of the MOW to plan for and manage the road sector through human resource development;
- stimulating participation of the private sector in the implementation of works at the same time as gradually reducing the dependence on force account road units;
- improving cost recovery from road users;
- ensuring the participation of all stakeholders from both the public and private sectors in the management of roads at both national and local level;
- giving priority to routine and periodic maintenance; and
- initiating an integrated planning approach for the sector as a whole.

2.3 Developments to Date in Commercialising the Management of Roads

As a first step in commercialising the road sector, the GOL created a Road Fund in 1996 as a separate administrative body. The objectives of this fund are to ensure that i.) sufficient resources are available for the maintenance of all roads in Lesotho; ii.) road users participate in the management of the sector to improve decision making and consumer willingness to pay iii.) financial discipline is strengthened so that the public gets value for
money iv.) the fiscal burden on the government is reduced to manageable proportions; and v.) road users pay more equitably for the damage they inflict on roads. The Road Fund, hereafter the Fund, has been established by Legal Notice published in the Government Gazette. This specifies its purpose, sources of revenues, its management by a representative board and the manner of its auditing. A copy is attached at Appendix A.2.

At present, revenues come from four main sources: (i) road toll-gate fees collected on all vehicles leaving Lesotho, including government vehicles; (ii) border fees/short-term SACU permits charged on all foreign trucks entering Lesotho; (iii) annual license fees collected from all types of vehicles; (iv) a road maintenance levy added to the price of all transport fuels, including the fuel consumed by government. Total annual revenues of the Fund are in the region of US$11 million and are being paid directly into a special account at the Central Bank.

The Government has given road users an active role in the road sector by creating a representative Road Board, hereafter the Board. The members of the Board come from relevant institutions in both the public and the private sectors. Their role is to advise on the management of the Fund and monitor the use of the resources. The Board reports to the Ministry of Finance and is an advisory body only with Government retaining ultimate decision-making powers. The Board reviews the annual expenditure programs put forward by the various road agencies and decides, in light of these requests and in consultation with Ministry of Finance (MOF), on the overall size of the road program to be financed through the Fund. Based on these revenue requirements, it then recommends to MOF the required levels of road user charges. A senior public officer has been seconded to be the Secretary to the Board who is the chief executive and accounting officer of the Fund. She is supported by a secretariat composing of a number of staff from a local firm of chartered accountants.

Concurrent with this move and on the implementation side, the GOL continues with:

(i.) the training and encouragement of the Local Road Construction Industry, to a size appropriate for the amount of work available, for the purpose of eventually undertaking all routine and periodic maintenance in the country, as well as minor construction work; and

(ii.) the associated reduction in government activity in road construction and maintenance, which will be based on a carefully planned and gradual restructuring of selected force account operations.

2.4 Road Legislation

The Roads Act of 1969 is the fundamental legislation concerning “the locating, constructing, opening, maintaining, protecting/deviating, working and closing of roads, and for matters incidental thereto”. The Minister of Works is responsible for the administration of the Act, and may declare, or gazette, any existing road to be a road within the meaning of the Act, as well as appoint a public officer by name or office to be a road authority for all roads, or for specific roads. Currently, only the RB is appointed as such a roads authority with responsibility for the administration of all declared roads at the beginning of the 1970’s. All the roads administered by the Labour Construction Unit
(whether declared on non-declared), and all those administered by the Civil Works Section are therefore administered outside the jurisdiction of a roads authority.

As already stated above, the Town and Country Planning Act, 1980, and the Urban Government Act, 1983, indicate that the ultimate intention is that planning and control of urban development, including roads, is to be the responsibility of municipal councils. However, urban streets and roads within municipal and town boundaries currently fall under the Ministry of Local Government which in turn commissions one of the main road agencies to undertake the work. The consultant should be aware that the GOL is currently trying to decentralise decision making and public service provision to sub-national governments. Moreover, there are also many undeclared rural access roads and tracks, the length of which is unknown but is thought to be substantial, and whose legal status is unclear.

In addition, two legal notices have been gazetted which established and circumscribed the existing Road Fund and Board, as described above.

2.5 Other Relevant Studies

This terms of reference must be approached in the light of other connected studies, to which the consultant must relate this work. Studies have or are to be conducted on:

(i.) the reclassification of the overall road network (MOW);

(ii.) the definition of environmental standards, quality control procedures, and adapted design standards for road works (MOW);

(iii.) the performance of the Road Fund, Board and its secretariat as part of the legally required audit for FY 1997/98 (Auditor General’s Office); and

(iv.) broad based civil service reform (Ministry of Public Service).

3. Purpose

The purpose of this study is to recommend to the Government of Lesotho a workable plan for the phased implementation over the next two to three years of a commercial approach to the management of road services in the country. The reason for pursuing a more commercial approach in the management of roads is the anticipation that this will produce a more efficient, effective and equitable roading system which will in turn enhance the sector’s contribution to the economic development of the country.

4. Objectives of this Study

The objectives of this study are to recommend:

(i) how all types of roads and all types of roadworks should be financed;

(ii) how all types of roads and all types of roadworks should be managed, particularly by assessing the feasibility and conditions for creating an autonomous and accountable Road Authority; and

(iii) an appropriate new legal framework for managing roads.
This will be achieved through a review of the existing institutional and financial situation of all roads in Lesotho. The consultant will be required to state and evaluate options before making recommendations, including a timescale for each item.

5. Scope of Services

5.1 Introduction

The consultant, in making his recommendations under the specific tasks outlined below, is to ensure that the method of translating these recommendations into action are also described: including, as appropriate, any additional inputs such as technical assistance, workshops and study tours to achieve this end. The proper phasing of the changes will be a key aspect and consideration must be made of the modest absorptive capacity of the road sector institutions. The consultant will be expected to counsel with: (a.) all relevant parties in government, at both national and sub-national levels, and (b.) with representatives of key non-governmental constituencies such as the freight and passenger transport industries, commerce and agriculture. The scope of works has been divided into three sections for convenience only. The consultant must ensure that all aspects interrelate as appropriate.

5.2 Financing the Sector

The resource mobilization objectives of GOL, as stated in the Letter of Sector Policy (LSP), are to improve cost recovery from road users in order to make the sector financially self-sufficient by 2001 in terms of covering the recurrent costs of road maintenance and rehabilitation. What is not yet clear is: (a.) how any new construction or upgrading of national roads and the upkeep of municipal roads is to be financed; nor (b.) how large a contribution road users should make to the general government budget. In the light of these uncertainties, the consultant will be required to recommend:

(i.) the mechanisms for the periodic revision of road user charges to meet the expected increasing needs and to maintain their real value, including the degree of guidance that the MOF might offer regarding the setting of the road user charges and where any future road management board should be able to act autonomously in relation to setting such charges;

(ii.) how to ensure an equitable road user charge structure which distinguishes, to the extent possible, between users and the differential damage they do to the road;

(iii.) where resources for the construction of new roads might come from and whether it is possible or desirable to use the Lesotho Highlands Development Fund proceeds for such investment;

(iv.) how, if at all, proposals and budgets for construction of new roads, upgrading/rehabilitation of existing roads should be submitted to Parliament;

(v.) whether the Food for Work Program should move from a mix of food aid and cash incentives to a labour-wage only basis and, if so, where the money should come from in the longer term;
whether road user charges should be sufficient to resource all items in the upkeep of the road network, i.e. the salaries and pensions of staff at the MOW who work on roads

(vii.) the procedures for allocating funds to the different road agencies entitled to draw from the Fund;

(viii.) how best to provide incentives for the complete financing of the conservation of existing road assets before any further expenditure on new construction;

(ix.) the procedures for disbursing money from the Road Fund, especially ways in which the Fund can use its disbursement arrangements to strengthen financial discipline in the road agencies;

(xi.) ways in which local resources, both financial and other, could be combined with the Fund in the upkeep of municipal or village roads; and

(xii.) ways in which the results of audits should be reflected in subsequent budget allocations such as to ensure that road agencies wasting the funds are suitably penalized.

5.3 Managing the Sector

In the Letter of Sector Policy, the GOL stated its commitment to the creation of an environment that allows road agencies to operate on a commercial, autonomous and accountable basis. In the light of this commitment, the consultant will be required to carry out the following tasks.

(i.) Recommend what needs to be done to ensure that the agencies responsible for managing the road network have the capacity to do so effectively. Options might include: (a) restructuring these road agencies within the existing civil service framework; (b) establishing a new Road Authority to manage the trunk road network; (c) establishing a separate organisation to manage urban roads on behalf of urban district councils; (d) establishing a separate organisation to assist with the management of rural district roads; (e) if the previous two options apply, advise on what basis the two organisations should be operated (as departments under a Ministry as now, semi-autonomous or autonomous); or (f) whether all roads should be managed by a single Road Authority with the ability to hand over selected roads to local authorities as and when they have developed the capacity to manage them effectively.

(ii.) Review the current role and status of the existing Roads Board and recommend how it should evolve in future to ensure it can manage the Road Fund effectively and in the light of recommendations from para 5.3 (i.). Recommend whether the Board should: (a) remain as presently constituted as an advisory board; (b) evolve into a fully autonomous board; (c) evolve into a semi-autonomous agency, i.e. be merged with the management board of any eventual Road Authority. If (c.) relates, propose what should happen to the existing Fund secretariat.
Thereafter, on the assumption that the conclusion of the consultant is for the establishment of a single autonomous road authority\(^1\), the following tasks are to be fulfilled.

(i.) **Recommend functions for any new Road Authority, hereafter RA, clearly circumscribing its roles as a planner, purchaser, and if deemed necessary, provider of services.**

(ii.) **Recommend options for the senior management structure of the RA and whether the RA should have a board. Suggest a mission statement, a clear terms of reference and accompanying performance indicators for such a board. Recommend the composition of its members, their nomination, appointment, tenure and remuneration as well as functioning procedures for the RA board. Indicate what the relationship would be between this board and the GOL, particularly in relation to strategic decision making such as major new road construction. Propose to whom and how this board would be accountable.**

(iii.) **Recommend how the RA should make the public aware of the changed arrangements and how it might conduct a public outreach campaign to win public support.**

(iv.) **Recommend whether the RA should have a Chief Executive Officer (CEO). If so, provide a terms of reference and accompanying performance indicators for the post and the procedures for appointing and removing the CEO.**

(v.) **Spell out the relationship between the relevant ministries, any board and the CEO in the RA.**

(vi.) **Recommend the number and type of staff required to operate any RA, together with the level of logistical support. The consultant should bear in mind that the RA must maintain a minimum number of competent staff, who can be adequately compensated and provided with appropriate office space, transport and support services, to manage the road network effectively.**

(vii.) **Define the middle-management structure, including providing an organogram. Particular attention should be paid to: (a.) illustrating the regional structure of the proposed organisation to promote de-centralization of responsibility to subnational units; (b.) how the middle management structure relates to the CEO; (c.) defining the various departments and their core functions, especially whether a financial department is required; and (d.) providing the terms of reference of the directors of the various departments suggested.**

(viii.) **Assist the MOW in the production of a staff development plan. Particular attention should be paid to professional development, job rotation, short term training requirements, the timescale and manner of the phasing out of long term TA, and incentive schemes.**

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\(^1\) In the event that the conclusion is for the establishment for two agencies, for example one for national and one for local roads, the consultant is to carry out the tasks in this section for both. In this case, the consultant would also be required to spell out the relationship between the two.
(ix.) Advise as to whether their will be a requirement for redundancies to take place and, if so, estimate the number, type of staff and timescale over which this might reasonably be achieved. Recommend how any such redundancies might best be mitigated and estimate the costs of any such mitigation plan.

(x.) Recommend appropriate terms and conditions of employment for all staff in the RA, bearing in mind the ongoing civil service reforms. Terms and conditions of employment should be sufficiently attractive to ensure the agencies can recruit and retain qualified staff. Suggest other non-economic incentives for staff and sanctions against poor performance.

(xi.) Suggest how quality management procedures might, to the extent possible, be introduced over time.

(xii.) Recommend whether the RA should maintain some in-house implementation capacity to provide for emergency cover and a means to compare the cost effectiveness of contractors in such a small market as Lesotho’s. If so, suggest the number of resources required to fulfill this capacity.

(xiii.) Recommend suitable financial reporting and accounting arrangements for the RA. The proposals should include recommended formats for simple accounts. The consultant is also expected to advise on the most appropriate way of reflecting shortfalls in regular road maintenance and erosion of capital. In addition, the consultant will propose arrangements for establishing a performance budgeting system for planning, implementing and monitoring road maintenance, and an appropriate auditing system, including internal audit and control procedures, together with independent external audit arrangements.

5.4 Legal Framework

The above changes need to be set in the context of existing road legislation. The GOL recognises the need to prepare new legislation to provide a firm basis on which any new management and financing arrangements can be soundly based as well as to consolidate changes already made to road funding, road classification and road management responsibility. Any new legal framework should, to the extent possible, be designed to be consistent with that of adjoining countries and provisions entered into under regional agreements such as SATCC. The consultant will conduct the following tasks.

(i.) Provide a summary of where the government stands in revising and amending the existing road related laws and regulations. Summarise the shortcomings in road legislation, using as necessary other recent reports. Recommend whether it is possible and preferable simply to amend existing legislation or whether new legislation is required. Thereafter, on the assumption that new legislation is required:

(ii.) Recommend whether a single new bill encompassing all aspects of road transport should be put before Parliament. Alternatively, consider whether all matters pertaining to the management and financing of roads should be placed in a separate act, for example such as the National Road Administration Act in Malawi, rather than combined with other matters relating to road classification, declaration and safety and the regulation of road traffic.
(iii.) Draft the new bill(s) and accompanying initial regulations for the consideration of Ministry of Law, Constitutional, and Parliamentary Affairs. Ensure that any new legislation is grounded in the legislative environment in Lesotho and is as brief and flexible as possible with the detail of the new arrangements left for inclusion in regulations.

(iv.) Recommend whether any new legislation should make provision for private individuals and groups, or road co-operatives, to become the legal owners of as yet undeclared urban and village roads. The details of the way in which such private or co-operative roads might be partially supported by resources from any road fund should be provided in the regulations.

6. Outputs and Timescale

The full study will be carried out over a period of about five months. The consultants shall indicate in their technical proposal the reports that will be submitted to MOW during the course of the assignment. However, the actual contents, frequency and number of copies of such reports will be discussed during contract negotiations, agreed between the consultant and MOW, and then recorded in the minutes of negotiations. However, as guidance only at this stage, the following outputs will certainly be required;

(i.) a draft three page summary for presentation as a Cabinet Paper;
(ii.) a schematic diagram illustrating recommended changes in the operation of the Road Fund, the Road Board and MOW;
(iii.) a draft bill(s) and accompanying regulations; and
(iv.) a draft timetable of actions to implement the process.

At mid term of the study, the draft proposals are to be discussed at a national policy seminar. The consultant will liaise closely with the Executive Secretary of the Fund to assist in the organisation of this. The objectives of this seminar are to elicit ideas from relevant stakeholders and build a consensus as to the way forward. This will require a number of resource people including an international facilitator, and one or two senior staff from other existing RA's (e.g. Sierra Leone, Ghana and perhaps Malawi). The costs of this seminar will be met through the Roads Rehabilitation and Maintenance Project.

In addition to the preparation and submission of reports, documentation, schedules, etc., specific to each task, the consultant shall submit to MOW and the Executive Secretary, Roads Board within five days of the end of each month, a composite report on the performance and achievements in respect of each task during the previous month. Such reports shall be preceded by an Executive Summary. Two copies of the monthly Executive Summary shall also be submitted by consultants directly to IDA, and to the RRMP Project Coordinator.

All communications, reports, documents and instructions for staff in MOW prepared by the consultant shall be in English and shall be provided in both hard copy and diskette form (MS Word).

7. Services To Be Provided By The Government
Within two days of their arrival in Maseru, the consultant will attend a one-day meeting chaired by MOF and relevant staff from the Road Fund and MOW to obtain information on how staff view the actions that are required to transform the existing institutions into more efficient instruments for delivering road services. A meeting will also be held with senior representatives of the MOF to confirm government policy regarding the road tariff levels and general taxation of the road transport sector.

MOW will furnish copies of the relevant legislation governing construction, operation and management of roads and will arrange for consultations with other government ministries, Road Board members and private sector stakeholders as necessary. The government will provide office space, vehicles, and any other required support services to the consultants.

MOW would also make available to the consultant the services of one or two counterpart staff on a part-time basis to assist the consultant with the study and strengthen the capacity of the Ministry. All fieldwork outside Maseru should be planned to involve counterpart staff.

8. Staff Requirements

It is expected that the above activities would require about 14 man-months of consulting services, including the services of a Project Manager to be accountable for the programme and liaise with interested parties. The consultant is encouraged to employ, or associate with local Basotho consultants and will be expected in their proposal to state how many such staff they intend to use on their team. The bulk of the consultants should be economists, management and financial specialists, and personnel and institutional development specialists. CVs of all proposed staff are to be provided.

Introduction

The Government of the State of Andhra Pradesh (GOAP), with the support of the Government of India (GOI), has commenced preparations for a proposed World Bank-assisted project to upgrade the major road network in Andhra Pradesh (AP). The objective of the proposed Andhra Pradesh State Highways Project is to invest in high-return enhancements to AP's major road transport infrastructure and institutional capacities, so that these more effectively meet the demands of users and contribute towards the State's economic objectives.

An integral part of the proposed Project, therefore, is the development of a strategy (hereafter referred to as the Institutional Development strategy) for modernizing and strengthening the GOAP’s institutional and financial resources for the management of the AP road network and road infrastructure, for implementation during the project. The strategy should be developed alongside the main techno-economic project studies, and finalized in time for the formal appraisal of the project proposal by the World Bank in early 1996.

Background

The State of Andhra Pradesh is the fifth largest in India, in terms of both population and area. The traffic between the north and south regions of India passes through either AP or Maharashtra, its adjoining State, and hence the north-south roads infrastructure across AP carries inter-alia considerable traffic flow between the two regions. The total length of roadways in AP is about 137,500 kms, consisting of National Highways (NH), State Highways (SH), Major District Roads (MDR) and Other District Roads (ODR). Leaving aside the NH segments, which are the principal responsibility of the Government of India (GOI), the majority of the State's main roads are single lane and in unsatisfactory condition, while the traffic being carried is above design capacity and growing.

A Strategic Options Study (SOS) and major techno-economic feasibility studies to comprehensively prepare the proposed project have been underway since mid-1994. These are focusing on approximately 3000 km of roads in 12 high-priority corridors in AP, where reduced carriageway width and/or pavement deterioration have resulted in direct capacity constraints for the high volumes of traffic carried and forecast. The reports from these studies will form the basis for final selection by GOAP and the Bank of the road improvements to be included in further Project preparations and specifications.

The overall objective of the Bank's assistance in this sector in India is to achieve improvements in the State-level road transport system (viz. the physical network, operations and the affective institutions) in a sustainable manner, to efficiently meet the transport demands of its users. Consistent with this, the objectives of the proposed AP project are:

(a) promote a more rational and efficient approach to road investment planning, maintenance and funding at the state level;

(b) improve the institutional capabilities in the sector through a comprehensive revision of the focus, organization and resourcing of the main GOAP road transport bodies;
(c) improve resource mobilization in the sector to ensure the sustainability of the State’s SH/MDR network;

(d) upgrade the capabilities of the private engineering and construction industry to meet growing demand for high quality highways engineering and construction services; and

(e) improve the riding quality and capacity of selected congested segments of the SH/MDR network to reduce vehicle operating costs, travel time, accidents and pollution.

The funding for the proposed project will therefore include provision for technical assistance for reforms in and institutional strengthening of the State’s road transport agencies/bodies.

The Institutional Context

For the purposes of the proposed Review, there are two main dimensions to the institutional context of public road transport infrastructure in AP. The first is the organizational dimension, comprised of the structures, physical resources, legislation, powers and policies which together manifest the GOAP responsibilities and capacities in this field. The second is the financial dimension, embracing the various elements of budgets, financial planning, sources of revenue, expenditure and financial management applicable in GOAP's resourcing of current and planned road infrastructure commitments, covering both maintenance and new investments.

The Organizational Dimension: The GOAP's Roads & Buildings Department (RBD) will be the executing agency for the proposed Project, assisted by internationally-experienced Project Coordinating Consultants (PCC) in all aspects of project preparation and implementation. The road upgrading and improvement works will be undertaken by construction firms selected through normal World Bank procurement provisions and international competitive bidding (ICB), with contract supervision undertaken by independent Engineers employed under FIDIC conditions.

The RBD is presently charged with the planning, survey, design, construction and maintenance of roads, bridges and buildings throughout the State, as well having special responsibility for ongoing Cyclone Reconstruction activities. The Department is headed by the Principal Secretary, Transport (Roads & Buildings), who is responsible to the GOAP Minister for Roads & Buildings. The main headquarters organization of the Department is comprised of ........ units, covering ........ and with a total staff strength of ........ The field organization of the Department consists of .... Regions each headed by a ----- Engineer having a number of Circles and Divisions headed by Superintending Engineers and Executive Engineers, respectively. The Chief Engineers and Superintending Engineers are in overall charge of survey, preparation of plans and estimates, construction and maintenance of works within their territorial jurisdiction. There is/are --- Engineer/s responsible for vigilance and Quality Control under each Regional Chief Engineer. Additionally, there is/are ----- Engineer (.........) looking after certain major engineering works as discrete special projects (?).

In the wider GOAP context, the RBD shares the responsibility for GOAP road transport planning and roads financing with the (?) department/s of ............ ? There are also ........ (organizations/wings ?) responsible for Electrical and Mechanical Engineering, headed by ............, as well as an organization for.........(? research ? architecture) and a Transport Commissioner, responsible for ........ aspects. With the RBD, these bodies represent the main current institutional capabilities for GOAP's roads planning, financing and management needs.
The Financial Dimension: The main sources of GOAP roads funding at present are (i) cyclically-determined long term State “plan” allocations for new works, (ii) annual “non-plan” budget allocations for maintenance and administration, and (iii) federal “Plan allocations” for selected capital expenditures from the GOI’s central revenues, typically determined within cyclical federal/state negotiation of long term sector targets. At the same time, some major additional revenues derive from State-level levies and excises on fuels, licensing and various other “user”aspects of activities in the AP road transport sector. However, these revenues typically accrue to the State’s general revenue and budgeting, rather than returning for direct application to roads needs. The combination of central Plan capital allocations and cyclical “plan”provisions from the state’s Budget has so far been tight yet manageable for the RBD’s network management purposes. However, this has been at the cost of some recurrent under-funding (by objective criteria) of the road network’s essential maintenance requirements.

The resulting deterioration of road network assets, during a period of strong annual traffic growth, is now a major contributing factor in the need for increased AP road investments. Within the limits of the present road financing sources, however, any move to significantly increase GOAP funding allocations for road network needs would give rise to unacceptable pressures on funding targets for other sectors in the overall GOAP budget funding context. Accordingly, the growing financial needs for both proper ongoing maintenance and new investments in AP road infrastructure require new sources of such finance to be developed, with appropriate institutional measures. While opportunities for greater cost-efficiencies and improved roads investment returns in financial terms may realize a useful contribution to this scenario, this is unlikely to be significant enough to obviate the need for new sources of funds.

Objectives Of The Review

The GOAP has decided that the proposed State Highways Project should include a comprehensive Review of the focus, organization and capacity of the main GOAP institutions administering the State’s roads infrastructure and road transport responsibilities, and that the Review is to be undertaken by internationally-experienced Consultants. This Review will require (i) the assessment of all relevant aspects of the present GOAP situation, (ii) development of a strategy encompassing the specific aims, measures and interventions needed to achieve the medium-to-long term institutional and financing enhancements in the GOAP “road transport infrastructure” framework, and (iii) proposals for the short-to-medium term strengthening meanwhile of the present RBD and other roads-related bodies of GOAP to improve their ongoing effectiveness in their present forms. The more immediate institutional strengthening measures proposed during the Review must be compatible with and not prejudice the viability of any alternate future institutional options also arising from this Review. Proposed aims, measures and actions arising from the Review should be feasible within the Project’s implementation period.

The overall objective for the Review is to establish an Institutional Development strategy for sustainable improvements to the State’s institutional framework and financing capacity for effective and efficient management of the AP road transport network and related infrastructure, suitable for implementation during the proposed Project. The strategy should cover (at least in broad detail) the purpose, scope and timing of measures and interventions required to improve the State’s capabilities in:

- roads planning and investment selection, based on user requirements, road transport network factors and sound economic considerations;
- the planning, implementation and management of road construction programs;
- the development and management of efficient, cost-effective and rationally-determined road network maintenance programs;

- the generation of increased, dedicated and sustained levels of funds for ongoing road network maintenance needs and planned road investment requirements;

- the effective use of private sector resources in the engineering and execution of AP roads projects/programs; and

- interaction with private and commercial road users in AP in the planning of road network developments and investments for the facilitation of road transport.

This carries the inherent aim of an increased role and capacity for GOAP's roads-related technical and management resources in roads network planning, policy advising/formulation, budgeting/financial management and program management. Simultaneously, there should be a lessened need for dedication of GOAP resources to the design and operational aspects of road works execution, wherein private sector resources can play an increasingly larger role.

**Scope Of Work**

The Review should focus on at least the following matters in appropriate detail:

(a) the current main GOAP functions, roles and priorities in the roads and road transport infrastructure contexts;

(b) whether the present technical, managerial and operational capabilities and arrangements in relevant GOAP agencies/entities match these, and whether any gaps/deficiencies are being satisfactorily addressed;

(c) important aspects of the present organizational structures, legislation and regulations, delegation of powers, processes and/or systems that may be significant constraints on efficiency and effectiveness in this context;

(d) the adequacy of current finances and financing mechanisms for re-current (non-Plan) needs for effective road network asset maintenance, and the scope for alternatives such as a dedicated Roads Fund; and

(e) the appropriate Institutional Development strategy and measures (both short-to-medium term and medium-to-long term) realistically available to GOAP to achieve significant sustainable improvements in key areas, including any transitional stages/steps, for implementation during the proposed Project.

In devising the proposed Institutional Development strategy, close regard should be given to:

- the scope for achieving significant early improvements in relevant key capacities and performance through modification and strengthening of existing GOAP institutions, within existing GOAP powers, regulations and procedures, feasible without prejudice to the possibility of more substantial later institutional changes/developments;
- the possible advantages of establishing a dedicated institution(s) specifically for the management of the major road network in AP, and the major role, features and requirements of such an organization(s);

- the present GOAP provisions for funding of road maintenance and works, in terms of the actual funding levels and the sources and mechanisms generating these, and any relevant previous GOAP experiences with alternate road funding mechanisms/approaches; and

- the appropriate model(s) for a possible AP Roads Fund, aimed at integration of a dedicated roads revenue base and road network asset maintenance financing in future, achievable within the GOAP's powers and jurisdictions.

The Review should take into account the findings of relevant international case studies and “best practice,” particularly in relation to other “developing country” contexts with similar roads-financing constraints and comparable needs for institutional strengthening in the roads sector.

The operational, financial and business objectives of any proposed new organization(s) and/or structure(s) should be clearly defined, at least in broad terms. To be practicable and sustainable, any institutional changes proposed must either be feasible within the present GOAP legal and policy frameworks, or involve amendments and/or initiatives which in that context are realistic, coherent and persuasive.

Finally, the Review should present outlines of both the necessary transitional strategy(-ies) and the timetable(s) to achieve any new institutional framework(s) from the existing structures and arrangements for AP road network management and financing. Such outlines should cover estimated time, resources and broad costs for the transitional strategy(-ies), together with broad draft Terms of Reference (TOR) identifying the scope of services/inputs likely to be required for further preparation during the Project of (inter alia) such tasks as:

- the development of specific action plans for any proposed transformation(s) of GOAP institutional structure(s) and responsibilities in the road transport field;

- the detailed financial and strategic planning for the initiation of new financing and/or revenue-collection mechanisms for AP road network funding needs;

- the pre-implementation planning for the organizational, administrative and financial aspects of any proposed new structure(s),

- the identification of needs for enhanced/new systems, processes, technologies and resources, particularly in relation to financial management and accounting, information technology/systems, procurement and contract administration, technical planning and project management; and

- assistance with implementation of new approaches, systems and processes, and the introduction of appropriate longer term training programs for the organization(s) and staff concerned.

Review Approach

The Review process should involve substantial participation by relevant GOAP officials and professional staff, as well as taking directly into account feedback from representatives of road
users (particularly the providers of road transport services) in the State. In particular, the Review must have early confirming inputs from the GOAP on:

(a) the over-arching objective of the GOAP administration for road transport infrastructure in AP;

(b) which entity/organization(s) should henceforth carry principal responsibility for (and provide the dedicated focus for) the effective management and financing of AP’s road network assets; and

(c) the role and mission of that organization(s).

Accordingly, a high-level GOAP officials’ workshop should be convened in early December 1995, with an external facilitator provided to assist the participants to undertake a comprehensive, candid and constructive engagement of these three matters. The workshop should produce specific positive recommendations on each of these, for subsequent higher-level GOAP consideration and confirmation. The workshop's duration should be about 1-2 days only, the participating numbers should be constrained carefully and the main participants should be drawn from:

(a) the highest available senior representatives of the main GOAP authorities for road transport issues (namely the Transport (Roads & Buildings) Department, the Transport Commission/er, the Finance & Planning Department and the Police, at least):

(b) representatives of the main external assistance agencies currently engaged in efforts in this sector in AP; and

(c) high-level nominees of organizations representing road users and providers of road transport services in and across AP.

While some prior development of materials for consideration by the workshop would be necessary, this should be kept to a minimum and the emphasis should be on vigorous discussion-based exploration of current institutional strengths, weaknesses, opportunities and dangers, as a basis for firm proposals by the end of the workshop on these matters. The workshop’s proposals should be prepared for formal presentation to the GOAP through the Chief Secretary within two (2) weeks of the workshop’s conclusion. The outcome of the GOAP’s considerations would then frame the directions, possibilities and priorities of the proposed Institutional Development strategy.

During the course of the Review, at least one other mid-Review seminar/workshop should be convened to engage all main stakeholders in direct consideration of the issues, the range of options and the viability of likely solutions in the AP context. Progressive consultations should also be held (e.g. starting within two weeks of the Review commencement and at three weekly intervals thereafter) with the RBD's Head Office and Regional Management staff. These consultations should particularly cover the origins, purposes and expectations of this study, and to elicit staff inputs to the Review's work program and endeavours, particularly concerning the possibility of adjustments between public and private sector roles in this field in AP and/or devolution to new institutional forms.

**Timeframe And Reporting Requirements**

The overall duration of the Review is expected to be four (4) months from inception in November 1995 to submission of the Final Report, which is due no later than March 31, 1996.
The consultant will be required to submit the following Reports and documents to the GOAP:

(a) an Inception Report within three (3) weeks of starting the Review, which should contain:
   (i) a summary of the proposed overall Review work program and the timetable;
   (ii) any suggested enhancements to these TOR for greater benefits from the Review;
   (iii) many issues or strategic choices (beyond those to be addressed in the inaugural GOAP officials’ workshop) needing early resolution by the Client in the overall interests of the Review; and
   (iv) an outline of the arrangements proposed for participation by the affected staff and for the proposed open seminar/workshop(s) to be conducted at mid-Review;

(b) a draft Final Report, due at the end of three (3) months from the Review’s commencement, which addresses the substantive requirements identified above and which in particular details the proposed Institutional Development strategy; and

(c) a Final Report, which takes into account the comments of the Client on the draft Final Report, due with the Client within one month of the receipt of such comments and in any event no later than March 31, 1996.

The consultants should also arrange regular progress meetings with the GOAP’s Steering Committee for this Review (see paragraph 26 below), at intervals of no more than three (3) weeks. Progress to date, provisional ideas for change, problems encountered, and the program for the next few weeks should be discussed at these meetings.

Following receipt of the Final Report on the review, the GOAP will determine the nature and scope of the next phase (for example, on development and implementation of agreed re-organizations), which may or may not require the further engagement of consultants.

The Review Team Composition

The review team to be provided by the consultant should across its membership offer a sound combination of high-level professional expertise in the engineering, managerial and financial dimensions of public roads programs, including the key fields of relevant network planning, procurement, works management and maintenance operations. Between them, team members’ qualifications and backgrounds/experience should therefore ideally include:

   Institutional reform and management in public and/or private sector contexts, with experience in reform strategies involving important human resource development (HRD) and staff rationalization/redeployment aspects and the introduction of modern business management practices, systems and standards;

   Road sector planning, engineering, works programming and management for the enhancement, rehabilitation and maintenance of public sector road networks in developing countries, including experience in the comparative economic and qualitative merits of using road agencies' own workforce/plant/facilities/resources and the alternate use of private consultants, contractors and project supervision/management services;
Economics of highways/roads-related activities and the application of computer-based road investment and maintenance management models, preferably in a “developing country” context;

Financing systems design and implementation as applicable to the dedicated financing of public/semi-public infrastructure in a “developing country” context, and the related technical accounting, financial management and audit methods/requirements;

Legal systems under parliamentary government such as in India, and the implications for institutional changes/reforms in public sector services and finances; and

Study management and leadership in a “developing country” context and involving sensitive public sector reform/change issues.

It is expected that the review team proposed by the consultant will comprise two or more senior experts including the review team leader, all of whom will stay with the study for its duration. The team is also expected to include a number of national experts having extensive familiarity with India's socio-economic conditions, governmental and administrative frameworks, and the relevant aspects of the cultures, structures and capacities of the Indian public and private sectors, preferably as these relate to infrastructure matters.

Data And Assistance To Be Provided By The Client

The following will be provided to the consultant by the GOAP:

- access to all documentation and data on the present organizational arrangements and structures in GOAP for the administration of State highways and roads, in terms of planning, regulation, financing, auditing and physical operations, covering both the RBD and those other GOAP departments and instrumentalities with a direct role in these aspects;

- information on the activities, resources, systems and facilities of the RBD in relation to all its responsibilities for State, District and Local roads;

- details of current GOAP statutes, powers, authorizations, delegations, policies and arrangements for the approval, procurement and management of road works and maintenance operations in AP; and

- current data on the overall AP budgets, expenditure and finance and of the State's roads funding in that context.

Steering Committee

The GOAP will establish a Steering Committee, comprised of (i) senior officials of the Transport, Finance and Planning portfolios of the GOAP Secretariat, (ii) nominated representatives both of major stakeholders in the AP private sector, and (iii) donors active in the AP infrastructure area. The Steering Committee, to be chaired by the GOAP Chief Secretary, will guide the consultant's work and ensure that the Review is aiming at a future institutional framework appropriate to agreed sector reforms in AP and compatible with the objectives of the GOAP.

A secretary to the Steering Committee will also be appointed by the GOAP to (inter alia) undertake the necessary liaison and coordination between the consultants/review team and the
Committee. The Steering Committee will meet as deemed necessary by the Chairman to give effective guidance to the study and respond to each of the consultant's Reports, but in any event at least once every three (3) weeks.

**Contractual Arrangements**

The consultant's contract will be with the GOAP, and will be based on a Contract Agreement consistent with the current GOI-endorsed Contract For Consultants' Services for externally-assisted projects.
3. Sierra Leone: Establishing a New Roads Authority

Introduction

The Roads Department of the Ministry of Works (MOW) is responsible for the maintenance of about 10,200 km of a classified road network. Under the Second Highway Project (1982-1987), IDA, OPEC and ADB provided funds for the periodic maintenance of selected primary roads. The start of the preparation of a follow-up Third Highway Project was delayed due to arrears in credit payments. In the meantime, UNDP financed an Organisation and Management Study (OMS) in 1988/89. The study recommended the need to establish a semi-autonomous Sierra Leone Roads Authority (SLRA). The government of Sierra Leone decided in principle to establish such an Authority by 1992.

The establishment of SLRA is considered a prerequisite for the effective implementation of the proposed Third Highway Project, which is expected to be funded by the World Bank. The Consultant services under those TORs are to provide required details, in line with the recommendations provided under the UNDP-financed O & M Study, to initiate the establishment of SLRA so that the SLRA can be legally established by the Government and become operational by mid 1992.

The services will be financed by UNDP and supervised by the World Bank. The World Bank, UNDP and MOW have agreed to engaged Mr. Edward Donkor, Civil Engineer, who is a private consultant registered with the World Bank, to render the services under those TORS. Mr. Donkor's assignment will be for 4 months, spread over 8 months, from about March 1991. Mr Donkor will be the main consultant and will be assisted by a legal consultant, who will prepare the draft legal documents establishing the SLRA.

Objectives

The main objectives of the consultant services under these TORS, in line with the recommendations provided under the UNDP-financed O & M Study, are to:

(a) define the duties and responsibilities of the SLRA in the development and maintenance of a trunk and feeder road network system;

(b) define the powers and functions of the SLRA and its relationship with Ministry of Works;

(c) develop a staffing plan and prepare job description for departments, divisions, sections, and unit level positions for headquarters and district offices;

(d) establish norms for the distribution of maintenance works between contract and force accounts;

(e) devise a system whereby surplus employees can be recruited as small routine road maintenance contractors;

(f) develop SLRA headquarters and district organizational structure; and

(g) develop a timetable for actions to be taken, to ensure that SLRA becomes fully operational by mid 1993.
Scope of Services

The road organization consultant (Mr. Donkor) shall carry out the assignment in close consultation with the Honorable Minister of MOW, and others, in particular with the Roads Department. The consultant shall also review the organizational structure, delegation of authority and accountability of other authorities in Sierra Leone, and, based on the results of this assessment, shall recommend the provisions required for an effective SLRA. The consultant will also assess the institutional support needed for the new SLRA to effectively undertake its responsibilities. He shall estimate funds needed for establishing and running the SLRA.

The consultant, inter alia, shall:

(i) define the authority and responsibilities of SLRA's Board of Governors and its Chief Executive; specify the composition of the SLRA Board of Governors, whose chairman shall be the Minister of MOW and the Chief Executive of SLRA, as one of the members; and develop guidelines specifying the routine operational relationship between the Chairman (Minister of MOW) of the Board of Governors and the Director or Chief Executive of SLRA;

(ii) define the level of authority to be delegated to the Director or Chief Executive of SLRA in personnel management, procure, utilization of road fund, budgetary allocations and other resources, technical decisions, and long and short term planning and programs;

(iii) develop guidelines and procedures for the processing and approval of contracts for works, goods, and services, specifying contract cost ceiling to be approved by the Director or Chief Executive of SLRA;

(iv) review and assess the distribution of works between contract and force accounts, and, based on the results of the review, revise/update the organizational structure proposed in the O & M Study, Exhibit V-4, and develop regional/district organizational structure, clearly delineating line of functions between headquarters and regions/districts;

(v) define the organizations structure needed for a separate department within SLRA to manage a feeder roads programs;

(vi) determine routine and recurrent maintenance and extraordinary/emergency operations which need to be carried out by force account, and for such works, develop a field level organizational structure;

(vii) identify and define the functions and responsibilities at each management level for the proposed headquarters and field level organizational structure;

(viii) develop staffing requirements for each of the identified functions, including job descriptions for key supervisory positions, clearly defining functions and accountability;

(ix) carry out a brief review of remuneration levels in both the private and government sectors for job descriptions similar to those defined for the SLRA, and recommend an acceptable salary scale for the SLRA;

(x) assess staff training and recruitment needs for SLRA and develop a plan-of action to conduct training and recruitment;
(xi) assess technical assistance needs where experienced professional local staff are in short supply, and develop TORS, including a timetable for the assumption of technical assistance by local staff; and

(xii) determine requirements for road maintenance, equipment, finance/accounting, and personnel management systems, and prepare the relevant TOR’S.

**Work and Reporting Schedule**

The road organization consultant’s assignment is expected to last for 4 months, spread over 8 months (March to October, 1991): of the 4 months, 1 month may be spend at his home office, Ghana. A legal expert (consultant) from Sierra Leone is expected to assist Mr. Donkor mainly in preparing draft enabling legislation, and to offer advice in related areas. The legal expert’s assignment will be for 2 months, spread over 8 months (March to October, 1991). He will advise and provide inputs to Mr. Donkor to enable him to produce the following reports, as well as to prepare a draft enabling Act and related legal documents.

The following reports will be produced:


- A draft final report, by August 31, 1991. The Bank and MOW will submit comments within one month of receipt of the draft final report.

4. Zambia: Study to Improve Management and Financing of Roads

Background

Zambia has 3,119 km of international trunk roads (T-roads), 4,048 km of main roads (M-roads), 23,882 km of district roads and 5,714 km of rural roads. Of this, about 2,979 km of T-roads, 2,008 km of M-roads and 1,489 km of district roads are paved. About 20,783 km of roads fall under the jurisdiction of the Roads Department (RD) and its provincial engineers, while the remaining 15,980 km are under the jurisdiction of 9 Urban and 48 Rural District Councils (DCs). There are also thought to be about 25,000 to 30,000 km of un-gazetted roads under the jurisdiction of the Game Department and Village Councils.

National road policy is laid down in the Roads and Road Traffic Act (CAP 766) passed in 1969 and marginally amended in 1974. The Act lays down regulations governing construction and maintenance of roads, and the responsibility for managing different types of road. The Act defines five types of road: (i) T-roads and M-roads outside local authority areas; (ii) M-roads inside local authority areas; (iii) district roads; (iv) rural roads; and (v) branch and estate roads. The first type are managed by RD and financed from the central government budget. The second type are managed by the concerned local authority and are also, according to the Act, supposed to be financed from the central government budget (i.e., the local authority is supposed to manage these roads on an agency basis). In the third case, the Minister appoints a highway authority to manage the roads, while central government is again supposed to finance them (sometimes the highway authority is RD; otherwise it is the concerned district council). The fourth type are managed by the rural DCs and are supposed to be financed through a combination of RDC revenues and central government grants. In the fifth case, the Minister again designates the highway authority and the roads are supposed to be financed through a combination of rural DC revenues (for Branch roads) and taxes imposed, at the discretion of the Minister, on adjoining property owners.

CAP 766 was passed when all responsibilities for roads fell under a single ministry. This has now changed and the Ministry of Communications and Transport (MC&T) is now responsible for setting overall transport policy, the Ministry of Public Works and Supply (MWS) is the designated highway authority for all T, M, and some D roads, while the Ministry of Local Government & Housing (MLGH) is responsible for coordinating all work related to urban and district council roads. However, although CAP 766 clearly sets out who is responsible for what, it has not been customary during the past ten years for the government to provide any specific finance to support maintenance of urban and rural DC roads, nor has the government exercised its powers to require adjoining property owners to contribute to the upkeep of Branch and Estate roads. The government has likewise not always ensured that an appropriate highway authority has been designated to manage each and every section of road.

Recent allocations for maintenance have been well below the levels needed to maintain the road network in a stable long-term condition. Spending on roads under the jurisdiction of RD currently cover about 20 to 40 percent of requirements for T and M roads, and a mere 10 to 20 percent for district roads. As a result, over 80 percent of the paved road network is now in fair or poor condition. The condition of DC roads is no better. Expenditures cover about 20 to 50 percent of requirements and rural roads often become impassable during the rainy season. Routine maintenance has virtually ceased, road rehabilitation has become a substitute for regular road maintenance and low maintenance expenditures have seriously impaired the capacity of RD and the various DCs to undertake serious road maintenance.
The government is mindful of these problems and has taken a number of important steps to improve the situation. First, a Road Fund has been opened and a fuel levy of K15 per liter is now being deposited into a Road Fund account. The money is deposited directly by the oil company into this account. The Road Fund is also entitled to receive funds from: (i) Parliamentary appropriations; (ii) donors; and (iii) other tariffs, taxes and tolls recommended by the Board. Second, the government has established a National Roads Board to manage the Road Fund (established through Statutory Instrument No. 42, 25 February, 1994). The Board has 12 members, 7 of whom represent and are nominated by the private sector. Board members have been appointed and the inaugural meeting of the Board is due to take place in October, 1994.

The Issues

In spite of the above initiatives, four major issues still require attention. First, in spite of the clear way in which CAP 766 lays down the responsibility for managing and financing different parts of the road network, the status of urban roads (described as local authority roads) is unclear, and its provisions, at least with regard to designating highway authorities have not been rigorously applied. Responsibilities for managing different parts of the road network are consequently unclear, more roads need to be gazetted, much of the network needs to be reclassified and all roads need to be clearly assigned to an appropriate highway authority. The status of Branch and Estate roads is even less clear.

Second, all road agencies are seriously short of qualified technical staff. RD now has only a limited number of qualified Zambian engineers and 6 expatriates left in-post (most engineering positions are vacant). Furthermore, of the 27 positions established for technicians, only 4 are filled and one of these is filled by an expatriate. Even if funds were available, RD is in no position to spend the money effectively. Similar problems affect rural district roads and they are being studied under another component of the Transport Engineering and Technical Assistance Project (TETAP) being financed by the World Bank and administered by the Feeder Roads Section of MLGH.

Third, now that there is a National Roads Board and a Road Fund, there is an urgent need to develop arrangements for: (i) setting the road tariff; (ii) managing the funds; (iii) allocating funds between different road agencies (districts receiving funds on a matching grant basis); (iv) disbursing funds to the different road agencies; and (v) auditing use of funds disbursed from the Road Fund. Advice may also be needed on arrangements for collecting international transit fees and a heavy vehicle license fee under contract.

Fourth, the above changes need to be set in the context of existing road legislation. The government is already mindful of preparing a new road Act which might involve preparation of a separate Road Act. This might be needed to provide a firm legislative basis for the kinds of actions needed to deal with the first three issues above and also to consolidate other changes recently made to CAP 766.

Ongoing Initiatives

An AfDB-financed Road Maintenance, Organization and Training Study has evaluated about 13,500 km of roads under RD, and about 2,000 km of rural district roads in 9 rural DCs (one rural DC selected in each of the 9 provinces). The final report was completed in January 1993. The study prepared a 10-year (and a more detailed 5-year) maintenance and rehabilitation program for both RD and rural DC roads based on the results of an inventory and condition survey. It has also recommended an appropriate management structure for RD and DC roads, detailed personnel development plans (including training requirements) and an outline financing plan. FINNIDA has
also provided assistance to RD’s provincial roads department in Lusaka province. A maintenance management system has been established, which may be extended to other provinces during a proposed second phase of the FINNIDA road program.

Objectives of Consulting Services

The proposed consulting services will be expected to examine the issues identified under item 3 above with a view to: (i) reclassifying that part of the road network under the jurisdiction of RD and DCs; (ii) providing advice on what needs to be done to restructure RD so that it has the capacity to manage the main road network, plan road works, prepare contracts and administer their implementation; (iii) recommending what needs to be done to ensure the FRS can operate on a sustainable long-term basis; and (iv) recommending ways of strengthening financing of roads. The consultants will also be expected to examine the existing legislative framework governing management and financing of roads (CAP 766, plus amendments) with a view to recommending an appropriate new framework for managing roads. In particular, they will be expected to advise on the desirability of separating all matters pertaining to management and financing into a separate Road Act, rather than (as at present) combining them with other matters relating to road safety and the regulation of road traffic. The new institutional framework should also, to the extent possible, be designed to be consistent with adjoining countries and provisions entered into under regional agreements such as PTA and SATCC (particularly with regard to treatment of international traffic).

Scope of Consulting Services

The proposed consulting services are expected to focus on: (i) administrative reclassification of the road network; (ii) restructuring of RD and advising on what needs to be done to put the FRS on a sustainable long-term basis; (iii) strengthening financing of roads; and (iv) advising on the desirability of having a separate Road Act and preparing material to enable MC&T to prepare a draft Cabinet Paper setting down the proposed new arrangements for managing roads.

Reclassification of the Road Network

In recent years, some gazetted roads have reverted to bush, while new roads have been added to the network without being gazetted, or having formal managerial responsibility clearly assigned to an established highway authority. Traffic has grown on some rural DC roads which now need to be upgraded to main roads, traffic has declined on other roads which should now be downgraded to rural DC roads, and no one is quite sure which agency is meant to maintain (or pay for maintenance of) T and M roads in local authority areas. Before examining options for restructuring RD and putting the FRS on a sustainable basis, the existing road network therefore needs to be measured and reclassified.

The consulting services under this heading will be expected to:

(i) Define a new administrative classification scheme for roads in consultation with MC&T, MWS and MLGH. In doing this, the consultants should consider classifying all T and M roads (whether in local authority areas or not) as trunk roads (possibly with a sub-classification to designate international transit routes), all roads in urban DC areas (other than trunk roads) as urban local authority roads, and all other roads as rural DC roads. Estate roads could either become private or urban local authority roads, while Branch roads could either become private or rural DC roads.
(ii) Review the road inventories for RD roads carried out under the recent EEC, AfDB and other donor-financed road programs and recommend which gazetted roads should be deleted from the list (because they no longer exist), which should be downgraded to DC roads, which roads currently un-gazetted should be added to the list, and which DC roads (being studied under technical assistance managed by the FRS) should be upgraded to RD roads.

(iii) Classify these roads into the new categories defined in (i) above, making clear which roads (other than newly designated trunk roads) are to be taken over from each of the nine urban DCs, and which are to be handed over to or taken over from each of the 48 rural DCs.

**Strengthening Management of Roads**

The consulting services under this heading will be expected to:

(i) Undertake a brief review of the capacity of RD and district councils to operate and maintain their road networks. The review should cover staffing, equipment and other resources available to each road agency (including crushing plants, etc.). Among other things, the consultants should evaluate whether existing terms & conditions of employment make it possible to recruit and retain competent, qualified staff. Also review the newly established FRS and advise on whether it is likely to be sustainable once the staff financed under the TETAP have to be replaced by local staff paid regular civil service salaries.

(ii) Recommend what needs to be done to ensure the agencies responsible for managing the road network have the capacity to do so effectively. Options might include: (a) restructuring these road agencies within the existing civil service framework; (b) establishing a new semi-autonomous Road Authority to manage the trunk road network (as in Ghana); (c) establishing a separate organization to manage urban roads on behalf of urban district councils (as per the Department of Urban Roads in Ghana); (d) establishing a separate organization to assist with the management of rural district roads (similar to the Department of Feeder Roads in Ghana); (e) advising on whether the latter two organizations also needs to be operated on a semi-autonomous basis; or (f) whether all roads should be managed by a single Road Authority (as in Sierra Leone) with the ability to hand roads over selected roads to local authorities as, and when, they have developed the capacity to manage them effectively.

(iii) Recommend functions for the above institutional structures, together with the number and type of staff required to operate them. In this connection, the government's intention is to do all new construction and periodic maintenance under contract, and also to do as much routine maintenance as possible under contract. The new Road Authority(ies) should therefore be primarily staffed to plan and manage the road network, and to hire and supervise consultants and contractors to carry out any required civil works.

(iv) The recommendations should include the need for a management Board and, if so, its functions, composition, remuneration of Board members, etc. Also recommend the management structure (e.g., Chief Executive Officer and line managers), procedures for appointing the CEO and, if thought necessary, the Deputy CEO and spell out the relationship between the parent ministries (i.e., MWS, MC&T and the district councils), the Board and the CEO. In this connection, the consultants should ensure that each road agency has the minimum number of staff required to manage the road network effectively.
(v) Define the middle-management structure indicating the way in which it is proposed to deal with international transit routes, trunk roads and district council roads. Such arrangements should spell out the regional structure of the proposed organization(s) to promote decentralization of responsibility to provincial areas. The proposals should indicate the middle management structure, how it relates to the CEO and appropriate terms & conditions of employment. Terms & conditions of employment should be sufficiently attractive to ensure the agencies can attract and retain qualified Zambian staff.

(vi) Propose suitable financial reporting and accounting arrangements for the restructured road agencies. The proposals should include recommended formats for simple accounts, perhaps including an Income Statement, partial Balance Sheet and Cash Flow Statement (as in Sierra Leone). Also advise on the most appropriate way of reflecting shortfalls in regular road maintenance and erosion of capital. In addition, propose arrangements for establishing a performance budgeting system for planning, implementing and monitoring road maintenance. Also propose an appropriate auditing system, including internal audit and control procedures, together with independent external audit arrangements.

(vii) Recommend appropriate coordination and reporting arrangements for the above organizational structure(s).

**Strengthening Financing of Roads**

A fuel levy is currently being paid into the special Road Fund account at the Central Bank of Zambia. In due course, it is expected that international transit fees and a heavy vehicle license fee will also be paid into the Fund. The consultants will be expected to outline detailed arrangements for managing the Road Fund. The task of the consulting services under this heading will therefore be to:

(i) Review the current role and status of the National Roads Board and recommend how it should evolve in future to ensure the Board can manage the Road Fund effectively. Among other things, the consultants should recommend whether the Board should: (a) eventually be merged with one or more of the other institutions proposed under item 5.3 of this terms of reference; (b) remain as presently constituted as an advisory board; (c) evolve into a semi-autonomous agency; or (d) evolve into a fully autonomous Road Fund board.

(ii) Review the existing structure of road user charges, including international transit fees and the supplementary heavy vehicle license fees proposed by the RMI program. Recommend the best ways of collecting these fees and depositing them into the Road Fund. Also recommend an appropriate level for the various charges (international transit fees being set under the PTA agreement) to ensure they generate sufficient revenues to maintain the road network on a sustainable long-term basis.

(iii) Recommend procedures for revising road user charges to ensure the Board is able to raise and lower charges to meet agreed revenue targets and also to maintain their real value. Outline the sort of guidance that MOF might offer regarding the setting of the recommended road user charges and also define areas where the Board should be able to act on its own.

(iv) Recommend basic procedures for allocating funds to the different road agencies entitled to draw from the Fund. In this regard, the consultants should consider at least two options: (a) a system where preliminary allocations are made for trunk, urban and rural roads, followed by a secondary allocation to the individual urban and rural district councils (as is done in
Tanzania); and (b) a system where allocations are based on a simple formula which can be improved over time (as in South Africa).

(v) Recommend procedures for disbursing funds from the Road Fund. In particular, examine ways in which the Fund can use its disbursement arrangements to strengthen financial discipline at the district level. Should use of funds be audited during implementation, at least on large projects (as in Mozambique), or should the quality of work be audited ex post (as is done with most other Road Funds)? Advise on ways in which the results of such audits should be reflected in subsequent budget allocations (to ensure that road agencies wasting the funds are suitably penalized).

(vi) Recommend appropriate arrangements for auditing the Road Fund. Also propose the nature of the regular reports to be published for submission to concerned government agencies (e.g., MOF, MWS, MC&T, MLGH and urban district councils) and the public, together with an indication of the scope of such reports.

**Preparation of a Proposed Road Act**

The final task will be to advise on what needs to be done to translate the recommendations made in sections 5.2 to 5.4 into action on the ground. The consultants will be expected to cover the following ground:

(i) Provide a summary of where the government stands in amending CAP 766, and advise on the desirability of consolidating these amendments into one Act or into separate Acts dealing with Roads, Road Safety and Transport Regulation.

(ii) Provide a summary of all the actions which need to be taken emerging from the above studies and assign responsibilities to each of the concerned ministries and institutions.

(iii) Provide an analysis of which actions can be implemented under existing legislation and which require new or amended legislation.

(iv) Provide a time-bound action plan outlining what is required to translate the recommended actions into action on the ground.

**Timing and Implementation Schedule**

It is expected that the above consulting services would be provided over a period of about 9 months. During the first six months, the consultants would carry out an administrative re-classification of T and M roads, define the proposed new arrangements for operating and maintaining the road network and develop appropriate procedures to strengthen financing of roads. These proposals would then be discussed at a national policy seminar. Following discussion at the seminar, together with further consultation with key ministries (MC&T, MWS and MLGH), the consultants should prepare material to enable MC&T to prepare a draft Cabinet Paper.

**Reporting Arrangements**

The consultants shall indicate in their technical proposal the reports that will be submitted to MC&T during the course of the assignment. The contents, frequency and number of copies of such reports will be discussed during contract negotiations and agreed between the consultants and MC&T and recorded in the minutes of negotiations.
In addition to the preparation and submission of reports, documentation, schedules, etc., specific to each task, the consultants shall submit to MC&T within five days of the end of each month, a composite report on the performance and achievements in respect of each task during the previous month. Such reports shall be preceded by an Executive Summary. Two copies of the monthly Executive Summary shall also be submitted by consultants directly to the IDA Office, Attn. Ms. I. Jensen, Africa Region, World Bank, 1818 h Street, NW, Washington, DC 20433, USA, and also to the Project Coordinator.

All communications, reports, documents and instructions for staff in MC&T prepared by the consultants shall be in English.

Services to be provided by the Government

MC&T would furnish copies of the relevant legislation governing construction, operation and management of roads and would arrange for consultations with other government ministries (e.g., Ministry of Legal Affairs on interpretation of the legislation) as, and when, needed. The government would not provide any office space, vehicles, or any other support services to the consultants.

MC&T would also make available to the consultants the services of one or two counterpart staff on a part-time basis to assist the consultants with their work and strengthen the capacity of the ministry. All fieldwork outside Lusaka should be planned to involve counterpart staff. In addition, the Director of Planning would also be available to assist the consultants on an ad hoc basis.

Equipment and Allowances to be provided by Consultants

Since MC&T is seriously short of office equipment to support the work of the consultants, the consultants should include in their proposal the supply of the following office equipment: (i) three computers (486s); (ii) one laser printer; (iii) one photocopier; and one fax machine. This equipment would become the property of the government at the end of the contract. The consultants should also make provision in the proposal for the payment of field allowances to staff from MC&T who may be assigned to accompany the consultants on field trips outside Lusaka. A sum of $6,000 should be included for this purpose.

Staff Requirements

It is expected that the above activities would require about 35 man-months of consulting services, including the services of a Project Manager to manage the program and liaise with interested parties. The consultants are encouraged to employ, or associate with local Zambian consultants and will be expected in their proposal to state how many Zambians they propose to use on their team. The bulk of the consultants will probably be economists, management and financial specialists, and personnel specialists.
5. General: Issues to be Addressed in Studies Looking at the Desirability of Establishing an Autonomous Road Authority

Context

The usual context which prompts countries to consider establishing an autonomous Road Authority include some, or all of the following factors:

(i) Terms and conditions of employment are such that the road agency cannot recruit and retain qualified technical and managerial staff. Many authorized technical positions are vacant, staffed by expatriates (financed under foreign aid), underfilled, or occupied by staff who spend most of their time supplementing their income doing other jobs.

(ii) The recurrent budget is grossly under-funded, with allocations for road maintenance running at 15 to 25 percent of requirements. Most periodic maintenance is funded under the development budget as new investment.

(iii) The road agency has a poorly developed management structure (compared to other public enterprises). It has no Board (representing the interests of government [the owners] and road users), no chief executive (being effectively managed by the chief civil engineer), and no line managers.

(iv) There is growing recognition that road agencies preside over large assets, employ a large number of staff and, with road maintenance fully-funded, have a large turnover. However, their financial accounting and management information systems are not well enough developed to enable them to effectively plan, deploy and control the large sums of money under their control.

(v) Arrangements for managing and maintaining urban and rural roads are unclear and many lower-level road agencies have neither the technical, not the financial capacity to effectively maintain their road networks.

Possible Solution

There are various ways of tackling these problems and several attempts have been made to use training, expatriate staff, performance budgeting and pavement management systems to overcome them. These initiatives have rarely been successful, because they do not address the fundamental institutional problems of terms and conditions of employment (without qualified staff no solutions will be effective) and the absence of professional management and an appropriate management culture (without which no management systems will function). It is to overcome these institutional barriers that governments are now considering options for managing roads along the lines of a public enterprise.

The public enterprise solution contains two important parts: (i) establishment of a Road Fund to make user charges explicit, separate the proceeds from the government's other general revenues and channel the proceeds to the different road agencies; and (ii) introduction of suitable management structures for managing trunk roads, urban roads and rural roads.
The Road Fund

The scope of a potential Road Fund has to be developed in conjunction with the Ministry of Finance. Proposed arrangements need to answer the following questions:

(i) How will the Fund be managed? By the MOF, jointly by the MOF and MOT (to discourage raids during periods of fiscal stringency), or should it be an autonomous body with its own Board of management?

(ii) If the Fund is autonomous, what Board should it have (e.g., representatives of all the agencies entitled to draw from the fund), how should they be appointed, which of them should be executive directors and what should their functions be?

(iii) What auditing arrangements should there be and should there be any specific arrangements to discourage fraud?

(iv) Where will the revenues come from? There should clearly be a specific fuel charge (e.g., probably $0.10 to $0.15 per liter) added to the regular excise tax on fuel (road use is not an exempt category so that road users are expected to pay regular excise taxes). But should the Road Fund also receive the proceeds of international transit fees and vehicle license fees?

(v) How should the above revenues be collected? Should the fuel charge be collected by MOF as part of the overall fuel tax, or should it be collected by the fuel companies on an agency basis and remitted directly to the Road Fund? Should fee income be collected by the Road Fund (or by agents on their behalf) to strengthen revenue administration and discourage avoidance and evasion?

(vi) How should revenues be disbursed from the Road Fund? Should initial disbursements be based on a simple formula (e.g., 65 percent for trunk roads, 15 percent for urban roads and 20 percent for rural roads) and should there be a longer term plan to move towards a more elaborate block grant system? In the latter case, how should the grants be decided (e.g., based on road length, population, per capita income, etc.) and can they be crafted to encourage more local tax effort by requiring matching local government grants?

(vii) How should use of these funds be audited (in both financial and physical terms) to ensure funds are not diverted and spent on other (non-road) purposes?

Road Authorities

The examination of the various options under this heading, have to consider appropriate management arrangements for: (i) trunk roads (usually referred to as the main road network); (ii) urban roads which are usually administered by several fairly large municipalities and numerous small urban district councils; and (iii) rural roads which may be managed by provinces, or lower level rural district councils. The arrangements in urban areas can usually be left to the urban governments, although the arrangements for disbursing funds from the Road Fund can usually be used to strengthen financial management and improve accountability. The main problems arise with trunk roads and the rural road network.
The format to be considered for trunk roads will usually consist of commercializing the road agency and turning it into an agency managed as a public enterprise (i.e., like the railways and national airline). The key questions to ask in relation to this proposal include:

(i) Should the new organization be registered under the Companies Act (with all shares being held by the government), or should it become a public enterprise? Which format is likely to enable it to recruit suitable staff by being able to pay competitive wages?

(ii) What should be the composition of the Board (ideally, it should include representatives of the road transport industry, the consulting and construction industries, agricultural interests, MOF and MOT), how should the chairman be selected (and should he be an executive chairman) and on what terms and conditions should the Board and chairman be appointed?

(iii) What relationship should there be between the Board and the MOT? The substance of this relationship, together with the objectives set for the Board, should probably be set out in a memo from the Minister of Transport to the Chairman (a draft memo should be prepared as part of any study of a Road Authority).

(iv) The chief executive (CEO) would report to the Board and should also be a member of the Board. What sort of management structure should there be below the CEO (e.g., directors of finance, personnel, engineering, road safety, etc.) and what should be the broad terms of reference for the CEO and directors?

(v) The terms of reference for the CEO and directors should cover development of appropriate financial accounting systems (including an income statement, balance sheet, sources and applications of funds statement) and an appropriate set of cost accounts. They should also cover development of suitable management information systems (including pavement/maintenance management systems, equipment management systems, etc.).

(vi) Most of the agency's revenues will come from the Road Fund. However, should the agency attempt to supplement this income with charges for easements (i.e., charges for use of right-of-way) and land-value increment taxes? Should they also request a grant in lieu of road user charges on exempt vehicles (e.g., diplomatic and government vehicles)? What procedures should be used to estimate and administer such income?

(vii) How should the agency be audited and should the auditors report only to the Board, or also to the MOT/MOF?

(viii) Should most work continue to be done on the basis of force account, done by force account but in competition with private consultants and contractors, or should all (or most) work be done under sub-contracts?

(ix) What should be done with the road agency's plant pool (if there is one) in light of the above reforms? Should it be hived off as a separate subsidiary competing with the private sector, should it be privatized, or should the stock of equipment simply be auctioned to the private sector?

(x) What should be the staffing profile of the new (slimmed down) agency? What sort of staff does it need, how many can be found from within the old road agency, how many new
staff need to be recruited and how many of the existing staff are likely to be made redundant? What sort of redundancy arrangements will be needed to handle the transition?

**Rural Roads**

Rural roads nearly always need to be dealt with on a country-specific basis, since they are intimately affected by local government arrangements. The basic model can usually follow that for trunk roads, with several important differences:

(i) What can be done to create competent road agencies at the local level (e.g., by designating one highway authority to serve a group of local government bodies)?

(ii) How should such highway authorities be managed? Should the Board consist of elected members of all the local government entities covered by the authority? How will the chairman be elected and what will be his terms and conditions of employment?

(iii) Can some of the authority's functions be handled on an agency basis by the agency responsible for trunk roads and, if so, which ones?

(iv) Since rural roads provide services to adjoining property owners, how should these services be charged for? Should some of the authority's revenues come in the form of grants from the local government agencies, or should there be a separate property assessment for roads collected by, or on behalf of the highway authority?

(v) Should there be land-value increment taxes and how should they be assessed and administered?
III. REVIEWING TERMS AND CONDITIONS OF EMPLOYMENT

1. Tanzania: Study of Terms and Conditions of Employment for Road Agency Staff

Introduction

The objectives of the study are to: (i) establish a reasonable bench-mark for the terms and conditions of employment which DRA needs to offer to ensure they can recruit and retain qualified professional and technical staff; (ii) examine to what extent the present civil service reform program is likely to give DRA freedom to offer competitive terms and conditions of employment; (iii) what other options are available within the current civil service framework to enable DRA to offer such terms; and (iv) if neither of the above options proves feasible, what needs to be done to ensure DRA can eventually offer competitive terms and conditions of employment.

Scope of the Study

The proposed study is expected to cover the following ground:

(i) Review the terms and conditions of employment offered by the national road agencies in Botswana, Ghana, Malawi, Sierra Leone, South Africa and Zimbabwe for professional and technical staff. This should include salary, field allowances, overtime, medical benefits, housing and car allowances, and any other fringe benefits offered as part of the salary package.

(ii) Compare the above terms and conditions with those offered for comparable positions in the private sector in these countries and decide whether the terms offered by the national road agencies are reasonably competitive.

(iii) Based on the above analysis, recommend a remuneration package for professional and technical staff in Tanzania, including an explicit comparison of salaries offered for comparable staff in the private sector, which would be reasonably competitive in regional terms (bearing in mind that other countries in the region will be bidding for the same staff).

(iv) Review the current civil service reform program currently being implemented in Tanzania and examine to what extent this program is likely to improve terms and conditions of employment for professional and technical staff. Compare the likely remuneration package to emerge from this process with that identified under (iii) and comment on whether or not it is likely to be competitive on a regional basis.

(v) Explore all possible options within the existing civil service framework to supplement the remuneration of professional and technical staff, including provision of responsibility and field allowances, luncheon allowances, housing allowances, free cars, etc. Compare the total amount likely to emerge from such an exercise with the remuneration package identified under (iii) and comment on whether or not it is likely to be competitive on a regional basis.

(vi) If strategies (iv) and (v) do not result in competitive remuneration packages, explore all other options available for improving terms and conditions of employment, including that of granting DRA more autonomous status. Also recommend how the granting of such status
can be reconciled with the need to ensure staff are remunerated in accordance with their responsibility and productivity, but are not over-paid.

(vii) Summarize the above findings in a short report for consideration by the National Steering Committee and, subject to their concurrence, for consideration by the Central Road Board.

**Study Team**

It is proposed that the above study should be carried out by a Tanzanian consultant working under the direction of an MOW Steering Committee consisting of the Principal Secretary, MOW, the RMI Coordinator, DRA, DAP and representatives from the Ministry of Finance and the Civil Service Department. It is proposed that the MOW Steering Committee should accompany the consultant on the field visits to Southern and Eastern African countries. Since a government team has already visited Sierra Leone and Ghana, the Director Generals or their alternates, should be invited (under URT/90/010) to visit Tanzania for 3 weeks to present their employment conditions and to work with the MOW Steering Committee and the local Tanzania consultant advising them.

The MOW Steering Committee should also participate in the formulation of the subsequent recommendations. The visit to Zimbabwe would be arranged in collaboration with the RMI coordinator who would arrange meetings with representatives from both the Roads Departments and the local consulting industry.

**Timing and Costs**

The above study should be completed by the end of December 1993. It is expected that the study would be done by one or more local consultants and would cost about $50,000. IDA funds for IRP I may be used for the consultant contract and the visits to Southern and Eastern African countries.
IV. DEALING WITH UNDESIGNATED ROADS

1. Zambia: Study on Ways of Maintaining and Improving Undesignated Roads

Introduction

Zambia has an estimated 20,000 to 30,000 km of undesignated roads which do not fall under either the Roads Department or the rural district councils. These roads have no formal owners and are either maintained by local communities, or are simply abandoned. This state of affairs is not unique to Zambia. Virtually every country worldwide has a significant network of undesignated roads, even in industrialized countries (over 50 percent of the network in Finland is undesignated). In Africa, about one-third of the network is typically undesignated and the great challenge is to find ways of bringing as many of these roads as possible under regular maintenance.

Several countries have tried to address the problem of undesignated roads by attempting to find owners for the undesignated network. This usually requires an incentive system in the form of a cost-sharing arrangement. However, cost-sharing is usually not enough. First, the agency sharing the costs expects some form of accountability (to ensure funds are used effectively) and also looks for an assurance that guarantees that the work will be carried out to a reasonable standard. Second, the communities receiving the transfers usually need assistance to help them: (i) learn how to plan local road works; (ii) acquire the skills needed to carry out the necessary work; and (iii) assist in supervising the work and determining maintenance requirements to ensure that it stands up to the weather and delivers a sustainable service to the community.

The cost sharing schemes usually treat maintenance and upgrading/new works differently and the approval process may also differ. When roads are upgraded, they often end up at a standard which makes them candidates for being taken over by the lowest levels of government (rural district councils in Zambia). Once they are taken over, they then become part of the classified road network and maintenance of these roads then become a responsibility of the rural district council. The rural district council should thus be involved in approving upgrading schemes (and also new works), since this often leads to an increase in the network under their jurisdiction.

The purpose of the present consultancy is to explore, in two selected districts (selected to typify two distinct rural communities in Zambia), ways in which an informal institutional framework might be set up to enable the National Roads Board (NRB) to share costs and ensure that maintenance is carried out to an acceptable standard. Likewise, the Ministry of Local Government and Housing (MLGH) is anxious to ensure that funds allocated for improvement of roads and tracks is used effectively and is coordinated with the plans of rural district councils. The client for this consultancy is the National Task Force for the preparation of a Bankable Road Rehabilitation Project.

Scope of Consulting Services

With that in mind, the consultants appointed to carry out the above work will be expected to carry out the following tasks:

(i) Identify which rural institutions at the sub-district level might be willing and able to take ownership of undesignated roads and tracks. The institutions may be based on wards,
villages, groups of villages, or other organizational units. For purposes of this TOR they will be referred to as village councils.

(ii) Establish whether the village councils currently undertake any maintenance of undesignated roads and tracks (or other infrastructure facilities) and, if so, how the work is carried out. Do they, or have they, received any training in planning such facilities or in carrying them out, and is any supervision provided? Who provides the training/supervision?

(iii) Establish whether the village councils might be willing to take ownership of the roads and tracks which they consider important and would they be willing to maintain them on a cost-sharing basis? What kind of network might this involve and what would it consist of (i.e., MOTerable roads, tracks, footpaths, etc.)?

(iv) Provide some indication of the sort of cost-sharing arrangements which might be acceptable to village councils – both in terms of proportions and the nature of the local contributions (i.e., cash or contributions in kind) – and indicate how they might differ as between roads, tracks, footpaths and between maintenance, upgrading, and new works.

(v) Suggest ways in which people living in village council areas can acquire the skills needed to undertake effective maintenance works using labor-based work methods. Should the training be provided through on-the-job training while working on trunk or district road projects, or should it be provided (or done in conjunction with) more formal training at the Roads Training School?

(vi) Suggest ways in which appropriate supervision might be provided (e.g., through district councils, NGO involvement, or in other ways).

(vii) How should work by village councils be supervised and what other forms of accountability should be introduced? Is it expecting too much to require them to keep accounts and to have them audited?

(viii) What would be the best way to provide village councils with training to enable them to prepare and prioritize projects to improve/construct local roads, and how should these projects be evaluated for purposes of cost-sharing (see Annex 1 for an example of how this is done in Lesotho)?

(ix) How can the above institutional framework be implemented and what role might MLGH, the rural district councils, the consultants currently assisting district councils, or other organizations play in putting the framework in place and supporting it on an ongoing basis?

**Reporting Arrangements**

The results of the above work should be summarized in a report which compares differences between the two target districts and recommends a common framework approach to all undesignated roads and tracks in Zambia. The report should also detail how the recommended approach might be implemented in one pilot district per Province, monitored and – based on the monitoring – scaled up to cover the entire Province within a period of about one year.
Timetable

The above assignment is expected to start at the beginning of November and the draft final report should be completed by end January. A brief inception report, outlining the districts to be covered and the broad methods to be used, should be submitted by mid November. The final report should be submitted within 2 weeks of receiving comments on the draft final report from the National Task Force.
V. DEVELOPING THE LOCAL CONSTRUCTION/CONSULTING INDUSTRY


1. Background

1.1 The present Government wishes to encourage the development of the private sector, hereunder the construction industries and the related service sector. Because of the previous predominance of statal and parastatal enterprises and the general economic recession the sectors mentioned are not in good shape and may find it difficult to play the important part which the Government has intended for them in its reconstruction program. It has therefore been considered advisable to conduct a study with the purpose of assessing the present capabilities of the sectors and to formulate plans for their future development. The study shall cover the following sectors:

1. The Civil Works Construction Industry
2. The Building Construction Industry
3. The Consulting Services

1.2 Due to an extreme shortage of funds the Zambian road network has for many years suffered from lack of maintenance with severe deterioration as the result. A number of major rehabilitation works is being undertaken at present, financed by donors and implemented in most cases by foreign contractors and designed and supervised by foreign consultants. Other maintenance is supposed to be carried out by Roads Department's own labor force and equipment but, as mentioned, this has been done to a very limited extent only.

1.3 Due to the economic recession the activity within the building construction sector has been limited and the situation has been aggravated by the fact that lack of foreign exchange has caused shortages of such building components which are not produced in Zambia.

1.4 Most of the local engineering and planning consulting firms are branches of foreign firms. When needed they can always draw on their home office to provide specialist staff. In contrast, it would appear that the truly indigenous firms are staffed by design engineers with little opportunity to find the specialists required in most study projects.

2. Objectives

The objectives of the consultancy shall be:

2.1 To evaluate the technical and professional capacities of the existing, locally based civil works construction firms seen in relation to the demand for rehabilitation/major maintenance for roads during the period 1994-2003 and to present proposals for such feasible developments which may be considered necessary for the upcoming tasks.

2.2 To develop a framework for the creation and training of a core of small-scale road contractors, including labor-only contractors in rural areas, who can take over large parts of the routine and recurrent road maintenance which at present is supposed to be done by Roads Department.
2.3 To evaluate the technical and professional capacities of the existing, locally based building construction industry. The survey shall include not only contractors but also manufacturers of, for instance, concrete products, bricks, tiles, doors and windows, fittings etc.

2.4 To evaluate, concentrating on the indigenous sector, the present capacities of the local consulting services firms and to make proposals for how these firms’ capacity and, equally important, their professional range can be expanded so that they can successfully compete with foreign firms.

3. Scope Of Work

3.1 General

3.1.1 In carrying out the work the consultant shall co-operate with the Government and in particular with the Roads Department of the Ministry of Works and Supply as well as with other agencies related to the project, including the World Bank. Clause 6 states which reports the consultant shall submit to Roads Department during the course of the study.

3.2 The Civil Works Construction Industry

The consultant shall:

3.2.1 Estimate the annual demand for road works for the period 1994-2003, grouped in types of activities, e.g. routine maintenance, recurrent maintenance, periodic maintenance and full rehabilitation/reconstruction. The estimates shall be based on the information, contained in a study, "Road Organization, Maintenance and Training", prepared for Roads Department and published in February 1993 plus information collected from Roads Department, including its Provincial Roads Engineers.

3.2.2 Conduct a survey of existing civil works contractors, who could undertake road works, including investigation of:

- plant and equipment (type, capacity, age)
- technical staff (numbers, training, experience)
- workshop facilities
- previous work
- financial status

3.2.3 Establish suitable criteria for dividing the contractors into categories or classes, based on the magnitude and the type of work they can undertake.

3.2.4 Examine to which extent facilities exist in Zambia for major maintenance and repairs to equipment and plant, including availability of spare parts.

3.2.5 Examine which credit facilities are available to contractors, including access to foreign exchange, as well as to bank guarantees and bonds for bid and performance securities. Access to insurance of the work shall also be examined.
3.2.6 Evaluate the current legal basis for establishment and operation of firms within the construction industry, including laws regulating the activities of foreign firms and foreign investment in local firms as well as laws governing arbitration and litigation.

3.2.7 Evaluate current government and local government regulations and procedures for procurement of works and services and determine if any changes of these could facilitate development of contracting and consulting services industries.

3.2.8 Investigate current availability and general skill levels of engineers, technicians and skilled laborers, and their prevailing wages and benefits for the public sector and the private sector respectively.

3.2.9 Examine the functions of existing contractors' associations (if any) and assess how such associations can benefit the development of the contracting industry. If appropriate, make proposals for the set-up of such organization(s).

3.2.10 Examine the availability and quality of local and imported civil works materials, including crushed stones, bitumen, cement, and reinforcing bars, and suggest what steps, if any, are needed to improve such supplies.

3.2.11 Identify candidates for a group of small-scale contractors, including labor-only contractors, on a sample basis to carry out routine and recurrent maintenance. Possible sources are small-scale "General Contractors" and experienced road foremen and workers from Roads Department.

3.2.12 Prepare work procedures for the various maintenance operations and establish a training program to teach these procedures, including an on-the-job training period, to be set up in conjunction with the Roads Department's Road Training School.

3.2.13 Make proposals for how the contractors can set up shop with regard to organization, financing and equipment.

3.2.14 Establish criteria and simplified bidding documents for awarding contracts to the small-scale contractors.

3.3 The Building Construction Industry

The consultant shall:

3.3.1 Conduct a survey of the existing building contractors including investigation of:

- plant and equipment (type, capacity, age)
- technical staff (numbers, training, experience)
- workshop facilities
- previous work
- financial status

3.3.2 as 3.2.3
3.3.3 as 3.2.4
3.3.4 as 3.2.5
3.3.5 as 3.2.6
3.3.6 as 3.2.7
3.3.7 as 3.2.8
3.3.8 as 3.2.9

3.2.10 Identify existing manufacturers of components for the building construction industry, assess existing capacity, the need for expanding it and the feasibility of expanding the range of products.

3.3.11 Examine the existing government Standards for building components and the present procedures for checking the manufacturers' products. If appropriate propose measures for improvements.

3.4 Consulting Services

The consultant shall:

3.4.1 Conduct a survey of the local consulting firms within the engineering sector, including an examination of which fields the various firms cover, an assessment of the professional training and experience of their staff and to which extent they rely on resources outside Zambia for special assignments. Special attention shall be paid to the indigenous consulting firms with an in-depth analysis of their capabilities as well as their shortcomings with regard to undertaking more complex assignments such as studies including technical, economic and environmental aspects.

3.4.2 Make an assessment of which resources with regard to specialist knowledge are available within Zambia, e.g. staff from universities and other institutions, and how they can most efficiently be explored/utilized.

4. Obligations Of The Consultant

4.1 The consultant shall include in his proposal the numbers and types of personnel and their periods of employment, together with curricula vitae, that he needs to carry out the services required. During the field work the consultant shall provide at least one senior engineer in Zambia.

4.2 The consultant shall make his own arrangements for all office and living accommodation, transportation, supplies, investigations, secretarial services etc. in connection with the work.

5. Obligations Of The Government Of Zambia

5.1 The Government will make available to the consultant all relevant reports and data in its possession but the consultant shall be fully responsible for the interpretation and use of the material in question.

5.2 The Government will liaise with other government offices as required in order to facilitate the consultant's work.
6. **Reports And Time Schedule**

The consultant shall:

6.1 Commence his work within 28 days of the date of award of the contract (effective date of contract)

6.2 Within 56 days of the effective date of contract submit an Inception Report describing actual progress of work and indicating possible changes in methodology and work program.

6.3 Within 154 days after the effective date of contract submit his Draft Final Report, containing the data collected, analyses, conclusions, and proposals for which measures can be taken to achieve the desired goals.

6.4 Within 28 days after having received RD's comments to the draft report, submit the Final Report to Roads Department.

6.5 All reports shall be submitted in 5 copies.
VI. DEVELOPING A HIGHWAY MANAGEMENT SYSTEM

1. Zambia: Study to Develop and Implement a Highway Management System

Background

The Zambian network has for many years suffered from lack of maintenance, which has resulted in pronounced deterioration of the network. The situation is slowly improving as a result of donor assistance and increased ministerial allocation of funds, but funds are still scarce and it is therefore of utmost importance that those available are put to optimum use.

For this purpose improvement in the planning, programming and budgeting process for preservation of the existing road and bridge networks have been identified as an urgent need. The priority identified for this project component is pavement management. The task is to adapt technical standards to levels that are economically sustainable in the long run, and to identify and prioritize preservation works in a way that minimizes the social cost of transport within applicable budgetary constraints. Specifically, the tool should analyze the pavement and traffic data, evaluate technical options and develop annual and rolling programs of works and expenditures that optimize the net social benefits under whatever funding constraints may be applied. There are also needs for tools for planning long-term policies and expenditure plans for the preservation and expansion of the network, for programming bridge expenditures, evaluating and designing construction projects, managing maintenance operations, and for enhancing the safety performance of the network.

As the RD is severely understaffed it is intended that operation of the system, including data updating shall be undertaken by staff from a private firm for an extended period. The full system will have to be built up step by step over a number of years.

Because of the heavy costs of systems development and programming Roads Department wants to make use of an existing system, proven successful elsewhere, but customized and adapted for its use in Zambia.

General Framework for Development of Highway Management Systems

The highway information system and pavement management system are to be designed in the context of a general framework for a comprehensive Highway Management System (HMS) which will be implemented in stages. The HMS would be centered around a highway information system and eventually comprise some or all of the following subsystems:

Highway information subsystem, comprising the collection, storage and reporting of data on the highway inventory, pavement, structures, traffic, accidents, costs and projects;

Planning and policy development subsystem, central tools for evaluating long-term expenditure plans and policies and their impacts on the performance of the network in respect of pavements, structures, safety and traffic capacity.

Pavement management subsystem, tools for annual and multi-year programming and design works for maintaining, rehabilitating and improving paved and unpaved roads, in accordance with economic optimization and budgetary constraints;
Bridge and structures management subsystem, tools for programming designing works for maintaining, rehabilitating and reconstructing bridges and other road structures;

Capacity expansion subsystem, tools for the planning, feasibility evaluation and design of new roads, bridges and road improvements;

Maintenance and project operations management, comprising the monitoring and administration of routine maintenance operations and supervision of rehabilitation and construction projects.

Whether a safety management subsystem shall be included will be decided at a later stage.

Although the subsystems are to be developed at different stages, they are to be modular parts of a linked or integrated total HMS within a compatible, efficient and user-friendly computer environment.

Objectives

The objectives of this project are:

To provide a sustainable source of relevant and valid information for managing the highway system through a system of road monitoring and a highway data base;

To enhance the programming and budgeting of periodic maintenance and rehabilitation of road pavements using economic efficiency criteria.

Scope of Work

The following tasks shall be undertaken:

Establishment of a computer-based highway information subsystem, including road data base, data entry facilities, data access and reporting facilities, administrative procedures for updating, maintenance and operation of the subsystem and staff training;

Establishment of road monitoring procedures, including selection of methods, survey sampling rates and survey frequencies, recommendations on equipment and contracting options, the initial surveys of each type and the training of staff for subsequent surveys;

Adaptation, installation and initial application of a model for central preparation of rolling annual programs and budgets of road works, comprising periodic maintenance, rehabilitation and reconstruction and routine maintenance;

Adaptation, installation and initial application of a model for the central preparation of a long-term plan of all highway expenditures, works and system trends.

Nature of the Services Required

The consultant shall provide a team of specialists, including highway planners, highway engineers, economists and systems analysts to undertake the following:
Data Requirements and Dictionary

A review is to be made of all highway-related information required for planning, programming and budgeting of road and bridge works and of the data currently available in the department. The data items to be collected are to be identified and defined, based on the review and consistent with current World Bank Highway Design and Maintenance Model (HDM) guidelines. Data should be identified for the following information groups: road inventory, pavements, structures, traffic, finance and operations. The information quality levels required shall be decided upon in consultation with RD. A data dictionary is to be prepared, defining each item, specifying the units, format and precision of the data, and identifying the method of collection.

Highway Information System Database

The design of the information system database shall comprise the hardware, software, administration and documentation to provide a computing environment and operation which is sustainable and appropriate to the size, structure and personnel resources of RD. The database structure shall be relational and permit future expansion to include other data not included in the initial data dictionary developed in this project. The system shall be able to support the applications software for the decision-support models adapted in this project and also other application models to be used regularly by the department, such as mapping and graphics etc.

System Software: The operating system shall support the chosen database management and application software. The database management system (DBMS) shall be relational, preferably adapted to transport applications but in any case satisfying the requirements of all functional applications, with a high surety of continuing software support and compatibility with future developments. A transport-oriented Geographic Information System (GIS-T) may be considered provided due comparison is made with alternatives of conventional DBMS plus graphic and mapping facilities.

Hardware: The configuration should accommodate a centralized database with microcomputer terminal access. The configuration should take account of estimates of eventual capacity required for the database and applications within a seven-year horizon. Data entry devices should accommodate both manual and electronic entry compatible with the format of the collected data. Output devices shall include graphic display and printing, and mapping capabilities.

Administration: Recommendations shall be presented on the administration and operation of the information system with the aims of effective coordination and consultation among the relevant staff members, efficient service, clearly defined responsibilities and rules for maintaining and updating each data file, and allocation of system security levels.

Data Processing and User Interface: Applications software for entering, auditing, pre-processing and storing the data from the various surveys, and for maintaining the data files, is to be adapted, including provisions for ensuring data integrity and security of access. Modules for standard and ad hoc reporting and mapping are to be adapted, using user-friendly query formats. The scope of the reports and maps should satisfy the primary information requirements identified in the review, and permit flexible subsetting and grouping of data.

User's Documentation: All written presentations should be easily understandable to the users and include a data dictionary, user's manual, technical manual and administrative manual.
Road Monitoring Procedures

Standardized procedures are to be developed for the collection of data of road inventory, pavement structure and condition bridge inventory and condition bridge inventory and condition, traffic volume and loading, and unit costs. The procedures are to be in accordance with the chosen information quality level, and should include the method, equipment, sampling plan, and survey frequency to be applied. The choices of procedure should be based on consideration of continued sustainability, efficiency of the whole collection and entry process (e.g. use of electronic field data logging), affordability (total collection costs should aim for a target of 0.3 percent and not exceed 0.5 percent of annual total highway expenditures), and an accuracy consistent with the IQL. Particular considerations should include:

Road Inventory: The existing location reference method should be revised and one system adopted for all roadway items. The inventory shall comprise all physical elements within the road reserve at a specified level of detail. Curvature and gradient are to be measured continuously by instrument and stored at intervals not greater than 100 m;

Pavement Roughness: Measurements are to be mechanical or electronic on all primary and secondary roads, and calibrated to the International Roughness Index (IRI), and may on other roads be controlled ratings expressed in terms of IRI;

Pavement Condition: On primary and secondary roads this shall include at least separate measures of cracking, raveling, potholes, rutting, patching, edge state and surface texture on paved roads, and rutting, potholes, corrugations and crown on unpaved roads. On tertiary roads single value measures of condition related to an objectively defined scale may be used. Measurements should be repeatable, with clear guidelines that permit reproducibility by different surveyors within a standard variation of less than 10 percent for primary and secondary roads or 25 percent for tertiary roads.

Pavement Strength: Measurements are to be made by non-destructive methods on paved roads, and two survey procedures are to be developed: 1) a stratified sample survey of the entire network to provide initial pavement inventory information, and 2) a detailed survey for the preparation of rehabilitation design projects. For unpaved roads, gravel thickness and subgrade soil classification are to be classified using a sample technique;

Bridges: Basic inventory survey and routine condition inspections are to be made following an established method;

Traffic: Monitoring procedures and locations should be reviewed. Control counts should be automated; coverage and vehicle classification counts may be manual, and adjustments for seasonal and daily fluctuations should be revised at least every three years by sample counts. Heavy vehicle and axle load factors should be determined from sample axle load surveys, updated at least every five years;

Unit Costs: Costs are to be a rolling average determined from an analysis of recent and current road works contracts, in both financial and economic (without taxes and duties) terms, and vehicle operating costs are to be determined by components suitable for use in the HDM-III model.
**Decision Model for Roads Works Programming**

The model shall analyze data directly from the highway data base and be capable of comparing alternative maintenance strategies for all homogeneous pavement segments of the network on the basis of a life-cycle technical-economic evaluation and generating a yearly program (of at least a five years period) of pavement maintenance and rehabilitation and routine maintenance that optimizes the net benefits within annual budget constraints. The model should utilize the principles of life-cycle simulation and economic analysis embodied in the HDM-III model, and may be implemented by customizing available software or be custom-developed. The model should have the following particular capabilities:

Technical analysis: A full life-cycle prediction of physical pavement deterioration and maintenance effects under applicable environmental conditions, of traffic volume and loadings, of pavement strength, and of vehicle speeds and operating costs as effected by road condition and characteristics for bituminous-paved and unpaved roads;

Validation: Where foreign technical models are used, their validity to local conditions is to be established, the basic calibration is to be made using local field data, and recommendations are to be given on further steps that are needed to complete the adaptation of the models;

Segmentation: Preliminary identification of road sections that are homogenous for analytical purposes, and subsequent review to rationalize treatments of adjacent sections into segments that are viable for implementation and into viable contract packages;

Economic Evaluation: Determination of cost streams over the analysis period for road works and vehicle operating costs, and of standard economic criteria including present value of costs at applicable discount rates, internal rate of return and first year benefits;

Optimization: A multi-year (of flexible period but at least five years), multi-section, multi-option optimization of net economic benefits with annual constraints on total budget, taking account of committed and continuing projects;

Interaction: Facility for interactive refinement of the works program and budget by the user, indicating the impact of individual adjustments on the costs, benefits and rate of return.

**Routine Maintenance Management Sub-system**

A maintenance management system for routine and periodic maintenance activities should be developed/adapted to interface with the road programming model and to enhance the efficiency and effectiveness of its operation. In particular, the reporting requirements, data processing and feedback to implementation and budgeting should be enhanced.

**Decision Model for Long-term Planning and Policy Development**

The system shall include an option for the development/adaptation of a Planning and Policy model to evaluate alternative policies and optimize the net economic benefits of all highway expenditures over a 10-year period for capital development and preservation of the network, including new construction, road improvements and upgrading, road maintenance and rehabilitation, bridge rehabilitation and replacement, and safety enhancement.
Implementation and Technology Transfer

The work is to be undertaken in four phases as follows:

Preliminary Phase: Review information needs, existing systems and data collection options, make recommendations on a management and information system configuration, information quality levels, data collection procedures and equipment, system capital and operating costs, and a proposed implementation schedule.

Development/Adaptation Phase: Development/adaptation and inception of information subsystem, road monitoring procedures, and decision models, comprising pilot demonstration and a completion of systems to operational status.

Implementation Phase: Full-scale implementation for the primary and secondary road networks.

Operation Phase: Providing staff—partly through a local firm—for the operation and updating the HMS for a period of probably five years, in two phases of three and two years, respectively. This part of the consultancy services shall include physical updating of road performance data. It is anticipated that four man-months plus casual field staff per annum can be allowed for this service, hence a carefully planned program will be required. During these periods training of staff from RD in operating HMS shall take place.

In each phase the consultant is to work closely with the RD to ensure that the system design meets RD's requirements and that RD will be able to operate and maintain the system smoothly and effectively with its available resources.

Equipment

Procurement of equipment shall be discussed with and agreed by RD beforehand. Special arrangements for advance financing and subsequent handover to the Department may be made for equipment considered essential for the execution of this project.

Obligations of the Consultant

The consultant shall include in his proposal the numbers and types of personnel and their periods of employment, together with curricula vitae, that he needs to carry out the services required.

The consultant shall make his own arrangements for all living accommodation, transportation, supplies, surveys, investigations, testing, secretarial services etc. in connection with works.

The consultant shall include in his proposal a comprehensive description of the Highway management system which he proposes to implement.

Obligations of the Government of Zambia

The Government will make available to the consultant all relevant reports and data in its possession, but the consultant shall be fully responsible for the interpretation and use of the material.
in question as well as for the conversion of available data into a form that can be used in the system he sets up.

The Government will provide an office which shall serve as the future computer room and which can be used by the consultant's staff.

The Government will liaise with other government offices as required in order to facilitate the consultant's work.

**Reports and Tentative Time Schedule**

The consultant shall:

Commence his work within 28 days of the award of the contract (effective date of contract)

Within 112 days of the effective date of contract produce:

- A Data Collecting Rating Guide and Manual
- Training Manual for Field Collection Staff
- Quality Assurance Procedures
- Data Collection Sheets and Equipment

Within 168 days of the effective date of contract ensure:

- Implementation of software facilities to store the pavement condition survey data and other related data in computerized files
- Implementation of data validation and updating procedures and routines
- Implementation of an information system which can:
  - Produce detailed condition reports for the road network
  - Produce and print statistical analyses (presented in both graphical and tabular form) comparing the condition of selected roads with the overall road network
  - Calculate costs of various maintenance strategies for improving the condition of roads
  - Produce a map of the road network and display road segments in poor condition on the map
- Produce a user manual for operating the segments of the highway management system indicated above.
- Submit a comprehensive report and a tentative program for the progressive development of the full highway management system.
VII. RESTRUCTURING A GOVERNMENT PLANT POOL


1. Background

1.1 From an early stage Roads Department's road maintenance policy has relied on the use of mechanized plant. This policy was initiated at a time when Zambia's economy was prospering and foreign exchange readily available. When this situation changed the shortage of foreign exchange made the situation with regard to maintenance and repairs of the plant very difficult with the result that a large part of the plant fleet is grounded.

1.2 Maintenance and repairs of plant and equipment was originally handled by Maintenance Services Department. This was in 1989 transformed into a parastatal, Engineering Services Corporation, which was intended to operate on a commercial basis. As Engineering Services Corporation's services proved inadequate and too expensive all major repairs are carried out by equipment suppliers or privately owned workshops. Only minor repairs and service can be carried out in Roads Department's own workshops.

1.3 Roads Department has recently received the report on an African Development Bank financed study, "Road Organization, Maintenance and Training Study", dealing with Zambian conditions. The report contains extensive sections on the objectives listed below and is anticipated to form the major background for the present study.

1.4 To assist with this study, RD has requested assistance from the Zambia Road Maintenance Initiative financed by the Government of Denmark, to undertake a detailed inventory of all RD's plant and equipment, and also of its workshop facilities. This information will provide the basis for the following consultancy.

2. Objectives

2.1 To examine the operation and maintenance of RD's in-house plant and equipment with a view to exploring all options for improving its availability and utilization. The options will include: (i) reorganizing the existing Mechanical Engineering Section to make current operations more cost effective; (ii) setting up the Section as an autonomous unit within RD and operating it under a private sector management contract; (iii) separating the Section from RD, restructuring it as a plant hire company and privatizing it, preferably through a management-staff buy-out; and (iv) liquidating the Section through sale of equipment to the private sector. The study should examine the advantages and disadvantages of each option, recommend which option appears most appropriate and propose a time-bound implementation plan.

3. Scope Of Work

3.1 General

3.1.1 In carrying out the work the consultant shall co-operate with the Government and in particular with the Roads Department of the Ministry of Works and Supply as well as with other agencies related to the project. In clause 6 it is stated which reports the consultant shall submit to Roads Department during the course of the study.
3.2 Review of Equipment and Workshops

3.2.1 Review the inventory of plant and equipment prepared by the consultant mentioned in para. 1.4 above. The inventory is expected to include a list of all plant and equipment, the number of items past economic repair and due for disposal, the number requiring repair (together with a summary of the type of repairs required) and the items of equipment still in good working order. The inventory will also include an estimate of the residual life of equipment to be repaired and in working order. In case there are any shortcomings in this inventory, undertake supplementary investigations to supplement the above work.

3.2.2 Review the inventory of repair facilities to be carried out by the consultant mentioned in para. 1.4. Based on this information, and any supplementary field visits which might be considered necessary, assess the condition of the workshops; the workshop equipment and tools available for carrying out repairs; the availability of spare parts (and whether those in stock match the equipment owned by RD and include sufficient high-turnover spares); the number of authorized technical staff positions attached to the workshops, how many are filled by qualified technical staff and whether terms and conditions of employment enable RD to attract and retain qualified staff; and, in light of the foregoing, the kind of repairs these workshops can undertake.

3.2.2 Make a general assessment of other repair facilities operated by ESCO and the private sector, in both the major urban centers and in the provinces. Also assess the availability of spares available through these organizations.

3.3 Defining the Options

3.3.1 Estimate the true unit costs of operating RD's equipment fleet under the existing Mechanical Services Section. The unit costs should be based on feasible changes in current procedures for procuring spares, disposing of obsolete plant, standardizing equipment types and hiring and firing staff. The unit costs should also be based on realistic availability and utilization rates and should include commercially-based depreciation and financing charges.

3.3.2 Estimate the likely unit costs of operating RD's equipment fleet under a private sector management contract. Under this option, the equipment would still belong to RD, but would be maintained by a private sector organization which would operate all RD's workshops (and possibly also use some workshops of its own) under a management contract. The contractor would be expected to provide all staff (and would be encouraged to recruit for this purpose any qualified staff currently employed in the Mechanical Services Section) and to take over management of all equipment, workshops and spares. The likely unit costs of operation are to be calculated on the same basis as 3.2.1. The consultant should also identify possible organizations, both domestically and abroad, with the capacity to take on such a management contract.

3.3.3 Draw up plans for privatizing the Mechanical Services Section by separating it from RD and offering it for sale, or facilitating a management and/or staff buy-out (preference generally being given to the latter option). The plans should include recommendations on whether the organization should be privatized as a whole or as separate units (e.g., perhaps on a provincial basis) and whether the Mechanical Services Section should be privatized as a whole or RD should keep some equipment and workshops for its own use. The consultants should also prepare an outline plan for implementing the privatization program. The consultant should again provide indicative unit costs of hiring equipment back from the privatized plant pool.
3.3.4 Prepare a program for liquidating the Mechanical Services Section. The program should include an assessment of the number of staff likely to be made redundant (making sure that all ghost workers and "one-day a week" workers are excluded), an implementation plan which takes account of the absorptive capacity of the market for second-hand equipment and workshops (there being no objection to selling equipment to foreigners willing to pay in foreign exchange), and the amount of money likely to be realized from liquidating the plant pool. In the case of redundant workers, an estimate should also be made of likely redundancy payments and these should be deducted from the aggregate proceeds of sale to arrive at the net liquidated value of the plant pool.

3.4 Evaluation of Options

3.4.1 The consultant should finally evaluate the above four options and make recommendations based on: (i) the likely unit costs of equipment under each option; (ii) the number of staff who might be made redundant; and (iii) any other factors which the consultant considers relevant to the evaluation. Based on this evaluation, the consultant should recommend the preferred solution and provide an outline implementation program for putting it into effect.

4. Obligations Of The Consultant

4.1 The consultant shall include in his proposal the numbers and the types of personnel and their periods of employment, together with curricula vitae, that he needs to carry out the services required. During the field work the consultant shall provide at least one senior engineer in Zambia.

4.2 The consultant shall make his own arrangements for all office and living accommodation, transportation, supplies, investigations secretarial services etc. in connection with the work.

5. Obligations Of The Government Of Zambia

5.1 The Government will make available to the consultant all relevant reports and data in its possession but the consultant shall be fully responsible for the interpretation and use of the material in question.

5.2 The Roads Department will liaise with other government offices as required in order to facilitate the consultant’s work.

6. Reports And Time Schedule

The consultant shall:

6.1 Commence his work within 28 days of the date of award of the contract (effective date of contract).

6.2 Submit an Inception Report describing actual progress of work and indicating possible changes in methodology and work program within 56 days of the effective date of contract.

6.3 Submit his Draft Final Report, containing the data collected, analyses, conclusions and proposals for which measures can be taken to achieve the desired goals within 154 days after the effective date of contract.

6.4 Submit the Final Report to the Roads Department within 28 days after having received comments from RD and the World Bank to the draft report.

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All reports shall be submitted in 10 copies.