Lagos Urban Transport Project

Environmental Management Framework

Final Report

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Prepared by BMT Cordah Limited
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1. Executive Summary

1.1 Introduction

The Lagos State Government (LSG) has developed a long-term policy and strategy for the development of the transport sector in Lagos State. This policy and strategy is to be implemented in several phases over the coming decades. LSG has requested the support of the World Bank to implement the first phase of the transport policy and strategy, called Lagos Urban Transport Project (LUTP). LUTP focuses on building up the capacity of the transport sector focal entity called Lagos Metropolitan Area Transport Authority (LAMATA), which was created by law on January 13, 2002. LUTP will furthermore implement maintenance and rehabilitation work on some of the main road network in Lagos metropolitan area (843 km), will introduce Traffic Systems Management (TSM) measures on the same network and in two central areas, will introduce a bus pilot scheme, and will take action to promote the provision of water transport services. LUTP will also include preparatory activities for the next phase of the implementation of the transport sector policy and strategy. Therefore, the project will consist of five components: (i) capacity building and preparation of phase II; (ii) road network efficiency improvement; (iii) bus services enhancement; (iv) rail mass transit and (v) water transport promotion.

The project has been defined by the World Bank as Category B, which requires 'more limited environmental analysis......as the project may have specific environmental impacts'. Preliminary design and cost estimates of maintenance and rehabilitation works, as well as TSM measures on the affected portion of the 643 kilometres of main road network have been prepared. During appraisal, a selection of low-cost works with high impacts will be made out of these preliminary designs. The first year program will cost about $25 million. The works selected will be within existing right of ways focusing on improving safety and network efficiency. These first year works will exclude any that would trigger resettlement action. Detailed design and tender documents will be prepared for the selected road links, and procurement will commence in such a way that works can be launched as soon as possible after effectiveness of the project (planned by September 2002). To guide the preparation of the second and subsequent year work programs, a resettlement policy framework (RPF) is being developed and this will be used to prepare resettlement action plans (RAP) for proposed works for which resettlement action is triggered. Most of the works requiring resettlement will be executed in a follow-on phase to this project which is being prepared as part of the LUTP (particularly those related to the development of rail mass transit), however second year and subsequent road works programs of LUTP might require temporary or permanent relocation of traders that have established themselves within the right of way of streets. Within six months of commencement of the project, a detailed sectoral environmental and social assessment (EA/SA) will be prepared to provide a strategic approach and to address safeguards issues in the sector. This sectoral EA/SA will be disclosed after approval by the relevant Nigerian agencies and the Bank.

This report presents an environmental management framework (EMF) for addressing the environmental and social issues generated by the proposed project. The report includes:

- an environmental/social assessment overview;
- an environmental/social assessment of the road network efficiency improvement component;
- Terms of References (ToRs) for the establishment and functioning of an environmental and social management unit at LAMATA;
- ToR for a detailed sectoral environmental/social assessment.

This document has been approved by the Bank for disclosure. It will be subject to the Government’s policy on in-country disclosure. This disclosure process will include stakeholder participation, the findings of which, together with comments of independent review experts, will be incorporated into the final document.
1.2 The Existing Physical and Institutional Environment

The population of Lagos has been estimated to be approximately 12 million growing at an annual rate of almost 4%. The rate of population growth in Lagos coupled with ongoing weak economic conditions has resulted in extensive informal development across the city over the last decade. The average population density within Lagos metropolitan area is approximately 2,400 persons per km², with peak levels in some districts in excess of 15,000 persons per km². Correspondingly, the poverty level has increased dramatically over the last 20 years, in Lagos State increasing from 26% in 1980 to 53% in 1996.

There is little quantitative data currently available which describes existing or recent environmental or social conditions. Previous reports and recent consultations with the relevant agencies indicate that environmental and social conditions in Lagos are characterized principally by:

- water pollution from sewage disposal and agricultural run-off;
- air pollution from road traffic exhaust emissions, domestic wood burning and industrial activities;
- noise from road traffic;
- traffic congestion due to lack of reliable public transport alternatives and poor traffic management;
- access difficulties for pedestrians due to lack of pedestrian facilities; and
- health and safety risks from traffic exhaust emissions and lack of road crossing facilities.

Road traffic congestion is severe across many parts of the network. Factors contributing to this include absence of alternatives to road travel, lack of comfortable and reliable bus services, encroachment of market trading activities onto the road, lack of enforcement of parking controls, lack of adequate road traffic management systems, and poor road surface conditions.

The policy, legislative and institutional framework which is responsible for the environment of Lagos includes institutions at federal and state level. The Federal Ministry of the Environment (FME), The Lagos State Ministry of Environment and Physical Planning (MEPP) and the Lagos State Environmental Protection Agency (LASEPA) – a parastatal agency of MEPP – are the key actors in environmental pollution control in Lagos. LASEPA is responsible for the setting, monitoring and enforcement of standards and guidelines on vehicular emissions. It is also responsible for monitoring pollution levels in surface and groundwater, and in the ground.

The Ministry of Women's Affairs and Poverty Alleviation is the apex body within Lagos State having poverty alleviation within its responsibilities remitted. Legislative controls currently in place at the Federal and State level provide a sound basis for pollution control, but are ineffective largely due to lack of financial resources for enforcement. Overlap exists between Federal and State laws which allows non-compliance to be pursued simultaneously by Federal and State authorities. Polluters may be successfully prosecuted and fined for the same offence by both regulatory levels. In certain instances, different regulatory environmental standards have been established by Federal and State agencies.

1.3 Environmental Impacts and Opportunities

The environmental impacts are expected to be light. All road activities are within the right of way of existing roads and include maintenance and repair works such as repair of traffic signs, street lighting, road furniture, road surface, and repair of bridges, cleaning of drainage structures, etc. Some resettlement action might be triggered starting from the second year of the project, due to the need for temporary or permanent relocation of street traders who currently trade within the right of way of roads.
On the other hand, the project presents important opportunities to reduce the environmental impacts of the traffic system and to enhance the urban environment by the establishment of LAMATA and the proposed creation of a Safeguards Unit within the organization.

The creation of LAMATA presents the opportunity to:

- establish an environmental policy for the transportation system in the Lagos metropolitan area;
- develop short and medium term strategic objectives and indicators for improvements in the environment;
- design and implement a system for monitoring environmental performance against these objectives;
- report on its performance, and make recommendations for continual improvement, including its policy and objectives;
- develop working arrangements to co-ordinate and liaise with MEPP and LASEPA on how proposed future transport investments will interact with land use planning.

The project will provide an opportunity to create a permanent improvement in living and trading conditions through improved air quality, safety and reduced noise and severance. Wider benefits of the project for the Lagos metropolitan area will include:

- a more efficient and effective institutional capacity to regulate and improve environmental conditions;
- harmonization of the legal and regulatory framework on environmental pollution;
- an improvement in air quality, especially in terms of particulates, lead, nitrogen dioxide, benzene and carbon monoxide;
- reduced journey times in certain corridors;
- socio-economic benefits through more affordable travel, opening up new employment opportunities;
- improved road surface conditions, reducing hazards and damage to vehicles; and
- improved arrangements for the collection and disposal of domestic waste.

1.4 Environmental and Social Safeguards of the Project

In order to respect the World Bank’s safeguard policies the project will adhere to the following sequence of safeguard actions:

(a) the project will assist LAMATA to establish a Safeguards Unit. The Safeguard Unit will consist of a qualified social scientist and an environmental specialist. Technical Assistance (TA) will be provided for the production of procedures manuals for the safeguards unit (TOR for safeguards specialists and TA are found in the annex to this report). Furthermore, the TA will assist (in lieu of the Safeguards Unit which is being created) to review the first year road works designs for appropriate environmental mitigation measures (these works will exclude any resettlement action). Establishment of the Safeguards Unit and appropriate procedural manuals will be done before commencement of implementation of the project. During project implementation, additional technical assistance will be provided to the Unit as required.

(b) A resettlement policy framework (RPF) is being developed which will be used to prepare resettlement action plans where needed. The RPF will, after approval by the Bank, by disclosed at the Bank’s Infoshop and in-country. Disclosure of the RPF is a condition of negotiations.

(c) Within the first six months of the execution of the project, a detailed sectoral environmental and social assessment (EA/SA) will be prepared. Disclosure of this EA/SA as per BP 17.50 will be a condition of disbursement for the second and third year works tranches.

(d) Based on the EA/SA and the RPF the Safeguards Unit of LAMATA will prepare for LASEPA and/or FME the environmental and, if triggered, resettlement action plans related to the second and subsequent years works.
The Safeguards Unit will also contribute to the transport master planning process, to the selection of priority investments, and will prepare the environmental thinking and documentation of future projects under LAMATA.

1.5 Disclosure at the Bank's Infoshop and in Nigeria

This report will be disclosed in accordance with the Bank's disclosure policy (BP 17.50) both at the Bank's Infoshop and in Nigeria.

In Nigeria this draft Environmental Management Framework will be disclosed for twenty one days in accordance with the public review process of the Federal Ministry of Environment (FME). This requires the notice of the project and availability of the EMF for public review to be advertised in relevant newspapers in the locality of the project and the EMF to be reviewed by experts to be nominated by the FME. It requires a public workshop to be organized to review the EMF within the locality of the project. Relevant stakeholders and the public will be invited to the workshop including representatives of local governments affected by the project proposals. At the workshop, the reviewers will present their findings and others will make their contributions. A report reflecting the outcome of the workshop including any recommended modifications to the EMF will be compiled and submitted to the FME for consideration. Approval of the final EMF is based on upon reflection of the agreed modifications in the draft EMF.

2 Overview

2.1 Introduction

Nigeria accounts for almost 50% of the population of West Africa, and comprises around 250 ethnic groups. It possesses considerable oil reserves and yet is ranked by the World Bank as amongst the 20 poorest countries in the world. About 66% of the population now falls below the poverty line (of roughly US$1 dollar/day) compared with 43% in 1985. The depth and severity of poverty is reportedly higher in Lagos State than the national average. Economic mismanagement, corruption, and excessive dependence on oil under the previous military administration are said to be the main reasons for the poor economic performance and rising poverty during the last 3 decades.

Also since the 1980s and 90s, environmental conditions in the city of Lagos have deteriorated steadily in the face of high population growth, with the current population of Lagos State estimated to be around 12 million. The United Nations Development Program (UNDP) estimates of future population growth indicate this figure rising to as high as 25 million by 2015. Within Lagos State, the poverty level of 26% in 1980 had grown to 53% by 1996. Waste disposal, flooding, and air pollution each present important and urgent challenges in the control of environmental pollution.

A previous EA of transport proposals was carried out in 1996. The 1996 proposals included a different combination of modal components. More crucially, it included land take, an issue which has been explicitly avoided for the first year of works of the current proposals. While the baseline data reported in the 1996 study are relevant to this project, and have been referenced in this report, the scope of the 1996 assessment exceeds that for the first year of works within this project. In this respect, findings and mitigation measures of EA performed in 1996 are not valid for this study.

This section of the report presents an overview of the environmental and social issues which will be addressed during the implementation of LUTP. These issues include institutional strengthening and capacity building, traffic congestion and associated air pollution, waste disposal, flooding, and road and pedestrian safety. The means by which these issues have been addressed include environmental assessment, mitigation, control and monitoring.
2.2 Institutional Assessment

The Federal Environmental Protection Agency (FEPA) was established under the Government Decree 58 in 1988, largely in response to the discovery of a toxic waste problem in the port town of Koto. In 1992, its authority was substantially strengthened through the FEPA Amendment (Decree) 59, mandating it with overall responsibility for biodiversity conservation and sustainable development of Nigeria's natural resources. In 2000, FEPA was transformed into the Federal Ministry of the Environment (FME), although in practice it remains widely referred to as FEPA. Its responsibilities include:

- preparation of a comprehensive national policy for the protection of the environment and conservation of natural resources, including a procedure for environmental impact assessment (EIA) for all developments;
- advising the Federal Government on national environmental policies and priorities, the conservation of natural resources and sustainable development, and scientific and technological activities affecting the environment and natural resources;
- advising the Head of State (of the federal Republic of Nigeria) on the use of the Ecological Fund for the protection of the environment;
- promoting co-operation in environmental science and conservation technology with similar bodies in other countries and with international bodies connected with the protection of the environment and the conservation of natural resources;
- co-operation with Federal and State ministries, local governments, statutory bodies and research agencies on matters and facilities relating to the protection of the environment and the conservation of natural resources;
- prescribing standards for and making regulations on water quality, effluent limitations, air quality, atmospheric protection, noise control, and the removal and control of hazardous substances; and
- monitoring and enforcing environmental protection measures.

In fulfilling the requirements of its mandate, FME undertakes policy formulation, setting of standards, establishment of guidelines and regulations, promotion of compliance with standards, and the monitoring and enforcement of standards, guidelines and regulations. In seeking to harmonise the implementation of environmental policies and strategies, the Federal government has encouraged the states and local governments to establish agencies with responsibilities for environmental protection and assisted each with the development of a State Environmental Action Plan (SEAP).

**Lagos State Ministry of Environment and Physical Planning**

As part of the Lagos State Government, the Ministry of Environment and Physical Planning (MEPP) comprises:

*Eight departments*
- Personnel Management;
- Planning Research and Statistics;
- Finance and Supplies;
- Environment, Sewage and Water;
- Drainage and World Bank Assisted Projects;
- Physical Planning;
- Development Matters; and
- Development Control.

*Five parastatals*
- New Towns Department Authority (NTDA);
- Lagos State Water Corporation (LSWC);
- Lagos State Urban Renewal Board (LASURB);
- Lagos State Waste Management Authority (LAWMA);
- Lagos State Environmental Protect Agency (LASEPA).
Two other units
- Task Force on Environmental Sanitation and Special Offences
- Committee on Illegal Conversion of Residential Buildings to Other Uses

**Lagos State Environmental Protection Agency (LASEPA)**

The Lagos State Environmental Protection Agency (LASEPA) was established in 1996, and is charged with:

- control of environmental pollution;
- industrial effluent discharge permitting;
- laboratory services;
- EIA monitoring;
- Management of street trading, illegal markets, sand laterite and gravel spillage;
- Monitoring of public water safety; and
- Co-ordinating environmental exercises in the State.

In seeking to discharge these responsibilities, LASEPA has indicated that it will:

- create systems of institutional environmental and legal management that will ensure effective and efficient implementation of protection measures;
- secure proper health conditions for the population and maintain supervision of its quality by efficient monitoring systems;
- provide conditions for the thriving of nature without hindrance by man-made activities;
- evolve a system of economic instruments for financing environmental protection;
- stimulate environmentally related research and environmental education for the populace to raise their awareness and sensitivity to the environment;
- liaise with international agencies and carry out international policy in the sphere of environmental protection; and
- initiate and co-ordinate activities aimed at protecting the environment by government and non-governmental organisations.

LASEPA currently operates seven departments:

- Pollution Control;
- Sanitation and Conservation;
- Research and Development;
- Hazardous Waste management;
- Laboratories;
- Engineering Services; and
- Finance and Administration.

From the above analysis of institutional responsibilities, scope would seem to exist for conflict between the different agencies as they discharge their functions. However, it is to be noted that generally, federal laws override those of lower levels of government except where constitutional provisions indicate otherwise. Thus, with regard to disclosure, federal processes are usually followed with oversight by FME and with other lower level environmental agencies involved. Where conflict arise, this is usually where there is no sectoral agency to coordinate compliance with environmental law provisions. Given the scale of potential activities in the transport sector in the coming years within the LUTP and successor projects, specific arrangements need to be made for dealing with their environmental impacts in addition to any existing arrangements.

With the creation of LAMATA, as earlier stated, Lagos State will have a single agency with a mandate to coordinate actions within the transport sector and thus to coordinate activities to ensure compliance with applicable environmental provisions by the sector. It is therefore proposed that LAMATA establishes a Safeguards Unit appropriately staffed to have responsibility for ensuring that activities within the transport sector fully take account of environmental and social issues. It will be the responsibility of this Unit to ensure that projects of LAMATA comply with applicable environmental laws and are carried out with due regard to social concerns using transparent methods and practises. By this arrangement, FME,
LASEPA and the private sector will have a single agency to deal with. It is expected that the Safeguards Unit to be established within LAMATA will, as part of its working procedures, define processes for informing and being informed by relevant agencies and stakeholders on specific activities with environmental impacts and will create a forum for regular exchange of information amongst institutional stakeholders and learning opportunities, thus promoting good practice. The role of the Unit and proposals for its establishment are further described in the Annex to this report.

2.3 Legal Assessment

Summary

The Federal Republic of Nigeria consists of Thirty-six States including the Federal Capital Territory, Abuja. Although Nigeria is a Federation, it does not practice true Federalism which presupposes that there is a weak central government with strong States which are independent and autonomous. The opposite is true for Nigeria since the Federal Government is stronger than the States and is clearly in control of revenue and resources which are distributed according to an approved Revenue Allocation Formula. Under the 1999 Constitution of Nigeria, there exists the Federal Government of Nigeria, the State Governments including the Federal Capital Territory (36) and the Local Governments. Legislative functions for all levels of government are clearly spelt out in the 1999 Nigerian Constitution. Thus, the Federal Government has exclusive jurisdiction to legislate on matters set out in the Exclusive Legislative List as set out in Part 1 of the Second Schedule to the Constitution.

Matters such as Railways, Construction, alteration and maintenance of roads that are declared by the National Assembly to be Federal Trunk Roads, and Maritime shipping and navigation including shipping and navigation on tidal waters are within the exclusive preserve of the Federal Government to legislate, control and generally deal with. Therefore the State Government cannot for instance, pass any laws or legislate on matters within the Exclusive Legislative List.

On the other hand, where any matter is listed on the Concurrent List, both the Federal and the State Governments have the power to legislate on such issues. (See Section 4(4) of the 1999 Constitution) Where there is a conflict between a Federal Law and a State Law, the Federal Law shall prevail and the State Law shall to the extent of the inconsistency be void. (See Section 4(5) of the 1999 Constitution). Apart from the matters set out in the Concurrent List, the State Government under Section 4(7)(c) is also empowered to make laws in respect of any other matters to which it is empowered to make laws in accordance with the provisions of the Constitution. Thus, on Environmental issues, the Federal Government established the FEPA which, as stated earlier, has now metamorphosed into the FME. Section 24 of the FEPA Act encouraged the establishment of State and Local Government Environmental Protection bodies. It is in pursuance of Section 24 that the Lagos State Environmental Protection Agency (LASEPA) was created vide Edict No. 9 of 1999 by the Lagos State Government.

At this point, it is important to note that Nigeria has spent the great part of its independence under several Military Regimes. Therefore, it is not unusual to find a number of Decrees or Edicts made under the past Military Administration which still subsists. Presently, Nigeria is a democracy and therefore its Laws are referred to as Acts or Bills (Federal and State respectively). Again, it is important to state here that Environmental Laws are of very recent antecedents in Nigeria. It was the dumping of over 3000 tons of toxic waste of Italian origin that spawned the birth of FEPA. Past Constitutions did not address environmental issues until the present 1999 Constitution which, under Section 20, sets out the protection and improvements of the environment as the Environmental Objectives for the State, thus safeguarding water, air, land, forest and wildlife of Nigeria.

Local Governments constitute the third tier of Government and their functions are clearly spelt out in the 4th Schedule of the Constitution. Thus, for instance, they are also responsible for
the construction and maintenance of roads, streets, drains and public highways, as may be prescribed by the House of Assembly of a State.

The level at which government legislation is formulated and implemented, depends on which level of government is involved. For instance, if the issue at hand is Road Construction and Maintenance and a road is designated as Federal road, only the Federal Government has the right to construct and maintain that road under the Constitution. Whereas if a road is designated as State road, only the State Government has the right to maintain or construct it. Local Government has a power to construct or maintain only those roads that are under its jurisdiction. The resultant effect is that there could be some Federal Roads within a State which may be in need of repairs. Instead of the State Government repairing such a road in order to facilitate easy movement for the citizens of the State, these roads are left unrepaired. When such issues are raised, the State Government would put up a defence that it is the job of the Federal Government to effect such repairs. This problem is highlighted because some State Governors are at loggerheads with the President and this translates into absence of Federal Government in matters which are under Federal jurisdiction in Projects within a State. There have been instances where a State Government (Lagos State) has gone ahead to repair Federal roads in order to alleviate the sufferings of its citizens. Attempts to reclaim monies spent on such repairs have resulted in controversy with the Federal Government accusing the State Government of eroding on its own powers as stated in the Constitution.

2.4 The Existing Environment

Socio-economic Conditions

Population

Lagos State covers approximately 3,500km², and in physical size, is the smallest state in Nigeria (approximately 0.4% of total area). This area includes 2750 km² of land, and 750km² of lagoon/swamp. Estimates of the State population vary, and the results of the most recent (1991) census were disputed. A 2001 population of approximately 12 million has been estimated, based on projections of previous figures, and is thought to be growing at an annual rate of nearly 4%. A high proportion of this population growth is estimated to be due to migration from rural areas of Nigeria.

The rate of population growth coupled with the ongoing poor economic conditions in the country have led to informal development across Lagos Metropolitan Area. The corresponding population density (compared with an average of Nigeria of 100 persons per km²) has increased to approximately 2,400 persons per km² in Lagos State, and in excess of 15,000 persons per km² in at least four LGAs within the State – Lagos Mainland, Mushin, Oshodi/Isolo and Surulere.

Employment.

(Further information has been requested from Lagos State Government)

The Federal Office of Statistics has reported (1995-96) employment figures in Lagos State in the age group 15-59 years across industry sectors as follows:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Agric</th>
<th>Mining</th>
<th>Manuf</th>
<th>Utility</th>
<th>Constr.</th>
<th>Trade</th>
<th>Trans</th>
<th>Finance</th>
<th>Service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.93</td>
<td>6.76</td>
<td>0.97</td>
<td>0</td>
<td>20.77</td>
<td>8.7</td>
<td>0.48</td>
<td>37.2</td>
<td>8.29</td>
<td>76.81</td>
</tr>
<tr>
<td>Female</td>
<td>5.18</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>41.15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8.29</td>
<td>54.62</td>
</tr>
</tbody>
</table>

Correspondingly, unemployment figures are reported as 1.18% (male), and 0% (female).

It is immediately clear from these figures that a substantial percentage of the working population remains unaccounted for in terms of employment statistics.

Visual evidence during a brief visit in November 2001 suggested that large numbers of people are involved in trading of basic domestic consumables and commodities:
- formal market places are widely distributed across the metropolitan area and appear to be the major source of consumable and domestic items for a large proportion of the population;
- informal markets have been established at transport nodes where food, clothing, and household and mechanical items are traded;
- roadside stalls are prevalent;
- individual traders patrol traffic queues selling a variety of items.

2.5 The Environment

General

LASEPA prepares a 'State of the Environment Report', the most recent of which was published for 1997. The report of 2000 that was scheduled for release in January 2002 was not available at the time of completing this report.

The 1997 report indicates that the functioning of LASEPA and its ability to tackle pollution control is constrained by:

- manpower shortages;
- lack of finance; and
- its relationships with other agencies.

It is under these circumstances that the 1997 report was prepared. The report provides a qualitative description of environmental conditions, and the generic nature of environmental problems. The principal issues of environmental degradation are summarised below.

- **Water pollution**  Sewage disposal and agricultural run-off are identified as the main sources of surface and groundwater pollution. Groundwater abstraction for domestic and industrial use is unregulated.
- **Ground contamination**  The disposal of municipal and hazardous wastes to registered landfill sites is reported as the main cause.
- **Air pollution**  Three types of source are identified - wood burning (energy use) for domestic cooking, road traffic exhaust emissions, and industrial activities.

Quantitative information is not provided in the report to support the above findings. The creation of adequate baseline data/information is therefore one of the priority areas for action by LAMATA through its proposed Safeguards Unit. These baseline data are proposed to be defined and established as part of the planned sectoral EA/SA.

Air Quality

The EIA\(^1\) carried out in 1996 for this project provided a description of atmospheric emissions of pollutants from three sources – stationary, mobile and industry. The results are presented below.

<table>
<thead>
<tr>
<th>Estimated Atmospheric Emissions from Different Sources, mt per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Stationary</strong></td>
</tr>
<tr>
<td>Power Plant</td>
</tr>
<tr>
<td>Industry/Commercial</td>
</tr>
<tr>
<td>Domestic</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>Mobile</strong></td>
</tr>
<tr>
<td>Road vehicles</td>
</tr>
</tbody>
</table>

In terms of urban transportation, these estimates are broadly in line with what might be expected as, for instance in the UK, road transport is responsible for:

- a quarter of the primary particulate air pollution (diesel exhaust emission contains a much higher concentration of particulates than petrol exhaust emission);
- a significant proportion of total emissions of carbon monoxide, but represents a minor source of sulphur emissions;
- a minor source of SO2, although concentrations may be elevated at heavily trafficked roadside locations; and
- half of the emitted NOx.

The three major atmospheric pollutants – NO, CO and VOCs - generated by road vehicles contribute either directly and/or indirectly to the greenhouse effect. Some VOCs are toxic or carcinogenic.

Noise

The noise environment is described here in quantitative terms, drawing on data from the 1996 ES, and in qualitative terms based on subjective impressions from travelling within the city. The principal source of noise is road traffic, comprising engine noise (vehicle silencers are poorly maintained), tyre noise when travelling at speed, and the frequent use of horns. The latter is possibly the most prominent source, employed during any type of overtaking manoeuvre, and often by all vehicles involved. Road surfaces are frequently in poor condition, however this does not contribute significantly to traffic noise as vehicles slow down to negotiate the obstacle. Other noise sources include occasional aircraft (audible only near the airport flight path), and industry.

Estimates of noise levels for the Yaba district were reported in the 1996 ES and are reproduced below.

**Estimates of Noise Levels, dB**

<table>
<thead>
<tr>
<th>Location</th>
<th>L10</th>
<th>% Heavy Goods Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1992 data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murtala Mohammed/Commercial Street</td>
<td>85</td>
<td>8.5</td>
</tr>
<tr>
<td>Murtala Mohammed/Hughes Avenue</td>
<td>83</td>
<td>10.0</td>
</tr>
<tr>
<td>Murtala Mohammed/Petgrave Street</td>
<td>82</td>
<td>10.0</td>
</tr>
<tr>
<td>Herbert Macauley/Hervey Road</td>
<td>81</td>
<td>6.0</td>
</tr>
<tr>
<td>Herbert Macauley/Club Street</td>
<td>79</td>
<td>7.0</td>
</tr>
<tr>
<td>University Road</td>
<td>77</td>
<td>2.0</td>
</tr>
<tr>
<td>Harvey Road</td>
<td>72</td>
<td>4.0</td>
</tr>
<tr>
<td>Borno Way</td>
<td>71</td>
<td>1.0</td>
</tr>
<tr>
<td>Akinwunmi Street</td>
<td>70</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>1996 data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moshalashi Crossing</td>
<td>86</td>
<td>6.5</td>
</tr>
<tr>
<td>Yaba Crossing</td>
<td>79</td>
<td>2.3</td>
</tr>
<tr>
<td>Oyingbo Crossing</td>
<td>79</td>
<td>4.8</td>
</tr>
<tr>
<td>Herbert Macauley</td>
<td>84</td>
<td>5.4</td>
</tr>
<tr>
<td>Western Avenue</td>
<td>82</td>
<td>11.0</td>
</tr>
<tr>
<td>Agege Motor Road</td>
<td>80</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Source: Mechelec Construction (Nigeria), 1996

Waste

Waste disposal is reported to be amongst the chief environmental problems in Lagos. According to LASEPA, in excess of 1M tonnes of municipal waste were collected and disposed of by the Lagos State Waste Management Authority (LAWMA) during 1997.
LASEPA reports that 142 accredited sites were used for waste disposal, and that a further 129 illegal sites were also used. No further waste data is reported.

Visual inspection offers numerous examples of substantial quantities of uncollected domestic waste randomly discarded by roadsides, around markets, along the railway, and on open ground. Waste was frequently observed being burnt at each of these types of locations.

Hydrology
The continued intensification of urbanisation in Metropolitan Lagos has brought about four different effects on the hydrological regime:

- an increase in the area of impervious surfaces has reduced the area available for natural drainage thereby increasing the demands on the drainage system;
- an increase in the capacity of the natural and man-made drainage network;
- increased discharges from this network into streams and other surface water bodies resulting in increased risk of flooding; and
- poor land-use planning further reducing drainage capacity.

Four key areas prone to flooding include Oshodi, where the natural drainage to the north of the expressway is impeded by a lack of provision of cross-drainage channels during the construction of the expressway. Apapa-Oworonsoki Expressway, City Way and parts of Lagos Island adjacent to Iddo and Victoria Island are also subject to severe flooding problems. Numerous other smaller areas are similarly affected. In excess of 80% of the flood prone areas are thought to be man-made.

Flooding during the wet season is exacerbated by loose garbage being washed into culverts and other parts of what drainage system exists and creating blockages.

Topography and Geology
The topography of Lagos is relatively flat, ranging from sea-level to around 50m AOD. The overall lack of gradient contributes to the drainage problems experienced in Lagos, especially during periods of heavy rain. The principal underlying geology comprises coastal plain sands which form the low lying, gently sloping uplands, and the coastal deposits forming extensive and swampy alluvial plains. The coastal plain sands consist of extensive red earths, and loose poorly sorted sands, mixed with an abundance of clays.

Soils and Vegetation
The soils and vegetation are closely related due to the influence of the marine and fluvio-lagoon sediments, and the prevailing climatic and drainage conditions. Three typical soil and vegetation types have been identified. The first type is the reddish brown loamy soils of the upland areas which were originally covered by dense tropical rain forests. This dense forest vegetation has been replaced by secondary vegetation, including bushes, oil palm and fallow, with occasional old plantations of kolanuts and cocoa. The light grey sandy soils form the second type and they are found over the low lying sandy plains and marshes near the lagoons and creeks. The vegetation comprises woody plants, shrubs and oil palm trees in the sandy areas, while the marshy areas are covered by mangrove swamp forests. The third type is formed by hydromorphic and organic soils which lie across the lagoon depressions, wetlands and on the sandy beaches. These soils cover approximately 50% of the land of Lagos State, and their typical vegetation includes shrubs, grasses, creepers and a few tall woody plants.

Climate
Lagos enjoys a littoral climate with an average temperature of 28°C, and a seasonal variation of around 2°C between the warmest month (March) and the coolest (August). Relative humidity is typically between 80-100%, dropping to around 70% during the afternoons in the dry season. The rainy season extends from April to October, with a typical annual rainfall of 1830mm. During June and July, the monthly rainfall in total may be as high as 430mm. Peak rainfalls may reach 100mm in one hour as a one in 15 to 20 year event. Prevailing winds are
2.6 Environmental Issues

Impacts from the proposed rehabilitation programme may occur either directly or indirectly. Examples of these include:

- **directly** as a result of maintenance activities (e.g. asphalting – air quality, noise);
- **indirectly** as a consequence of road maintenance activities (e.g. congestion – air quality).

This section summarises the types of activities which are proposed, and reviews the environmental issues arising from them.

Road Maintenance Activities

Improvements proposed for the selected roads will be carried out entirely within existing Rights of Way, and only where existing community activities (e.g. street trading) will be unaffected. It is emphasised that the scope of these works has been designed specifically to avoid either involuntary resettlement or expropriation.

The works will consist of a combination of the following:

**Road cleaning**
- Removal of wrecks and debris
- Surface wiping
- Drainage system cleaning
- Cleaning of traffic signs, street lights, etc.

**Pedestrian Safety Measures**
- Repair of sidewalks
- Repair of railings on bridges
- Establishment of pedestrian crossings
- Construction of pedestrian overpasses.

**Road and Bridge Repair Measures**
- Pothole repair, crack sealing, repair of damaged sections through overlays
- Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc.

**Traffic Management Measures**
- Repair of traffic lights
- Repair of street lights
- Repair of traffic signs
- Repainting of lane markings
- Establishment of new traffic lights, where needed.

Air Quality

As previously reported, the dominant source of air pollution in Lagos is expected to be road traffic. LUTP provides the opportunity to achieve improvements in local air quality by several means, including:

- **Reduced congestion.** Emissions of carbon monoxide, carbon dioxide, hydrocarbons and oxides of nitrogen are known to increase almost exponentially as vehicle speeds drop below 20kph. The majority of vehicles operate most efficiently at higher constant speeds. Beyond the period of the works, the emission of exhaust pollutants is expected to reduce through improved traffic flows.
- **Improved public transport alternatives.** A modern bus fleet operating in priority bus lanes will offer shorter journey times and more comfortable travel conditions compared with...
existing public transport options. An improved ferry service may offer a quicker and more
direct journey compared with the existing road bridge crossings. Modal shift from private
cars will offer further benefits by reducing their use, and by reducing congestion.

- **Improved level of engine maintenance.** Poorly maintained engines will emit increased
levels of pollutants. Improvements in vehicle testing and inspection arrangements to
regulate levels of vehicle maintenance would assist in reducing the number of poorly
maintained vehicles.

- **Fuel composition.** Reductions in sulphur content of diesel fuel, and of lead and benzene
content in petrol will reduce the emission of these pollutants. In terms of a replacement
bus fleet, the option of compressed natural gas (CNG) might be considered. Typical
reductions in CNG emissions compared with diesel engines are greater than 80% for
carbon monoxide, and greater than 95% for particulates.

Temporary increases in congestion may arise due to lane restrictions during implementation
of road rehabilitation works.

**Noise**

The potential to reduce road traffic noise is available through:

- **Repair of broken road surfaces.** Tyre noise and braking/acceleration will be reduced.

- **Improved driver behaviour.** Reduced congestion and improved lane controls will reduce
the habit of sounding horns.

- **Reduction in use of poorly maintained vehicles.** Attractive public transport alternatives
will generate a modal shift from use of private vehicles with ineffective silencers.

Temporary increases in noise levels may arise due to operation of construction equipment
(e.g. asphalting), and to increased braking and acceleration due to traffic delays.

**Flooding**

Flooding of sections of the road network may be reduced through improvements to the
existing drainage system and improved maintenance practices. At present, waste material is
washed into and chokes the drains during periods of heavy rain. Fitting of improved drain
covers coupled with periodic cleaning of drains will allow the drainage system to function
more effectively.

**Human Health and Safety**

The health effects of road traffic emissions extend from respiratory infections and diseases
(NOx and particulates) to cancer (benzene and particulates). The proximity of dense
populations to high levels of road traffic will put these communities at higher risk of air
pollution related health problems. The existing waste which lies openly in many areas is a
potential source of diseases, as well as being a hazard in itself. Putrescible material and
broken glass are two obvious examples of this. Improvements to the road conditions will offer
the opportunity to begin to deal with this issue.

Pedestrians and non-motorised vehicles are the most vulnerable users of roads, and are at
greater risk of being injured in accidents. In areas where these road users mix with motorised
traffic, measures must be adopted to prevent the increased mobility of motorists from
undermining the safety of all other road users. Provision of pavements and controlled
crossings will allow pedestrians safer access to local facilities.

**Participatory Preparation**

It is a fundamental requirement of the World Bank environmental and social assessment
procedures that stakeholders will be invited to participate in the EA/SA process. The purpose
of this participation is to ensure that the views of local communities and affected groups are
taken fully into account in developing the project design, and in its implementation. It is
important that these groups fully understand the impacts likely to arise from the project, and to
have an opportunity to contribute to the identification of measures envisaged to mitigate these impacts.

At this stage of the project development, specific details have not been finalised. For this reason, the participatory process has not begun. It is the intention of this project that all potentially affected groups are invited to contribute to a participatory process in which the proposals are presented, and that local views and other relevant information are gathered and taken into account in finalising the proposed package of works and mitigation measures. This process will begin once draft design of the site-specific nature and location of the proposed works has been completed. The process will be led and co-ordinated by LAMATA once capacity building in these issues will be completed.

During project implementation, strategies will be developed to: (a) collect local data and analysis on level of ambient air pollution; (b) disseminate basic knowledge on environmental impacts of transport modes; and (c) develop education campaigns on efficient vehicle operation and maintenance.

2.7 Social Issues
In this study, the scope of the social issues which are expected to arise include:

- *Involuntary resettlement* and compensation, in accordance with World Bank OP 4.12 on involuntary resettlement;
- *socio-economic impacts*\(^2\), including positive and negative changes in employment, in livelihoods and in per capita income;
- *health & safety*, in terms of changes in risk to infection and disease, and road accidents involving all road users; and
- *cultural heritage*, in terms of effects on religious, spiritual, historical or archaeological aspects

2.8 Disclosure
The disclosure process to which this EMF will be subjected will comprise:

- review by independent experts;
- review by stakeholders;
- public advertisement in Lagos;
- being made available at key locations in Lagos;
- workshops with stakeholders (including all local government areas where there will be activity);
- finalisation of the EMF taking account of comments by the reviewers and stakeholders
- compliance with Bank's Disclosure Policy (BP 17.50).

\(^2\) The transport sector is a significant source of employment. Employment benefits are likely to be both direct (operations and maintenance of infrastructure) and indirect (supply of services and materials), with associated changes in income and livelihoods for those employed.

Socio-economic analysis should also consider the livelihoods and assets of formal or informal street traders. The key issue is whether there will be any interference or disruption to street traders, whether that disruption is temporary or permanent, the degree of the disruption and the numbers affected. Where disruption is caused, there will be a need to consider the allocation of equivalent assets or livelihood opportunities on a corresponding temporary or permanent basis.
3 Environmental and Social Assessment of the Road Network Efficiency Improvement Component

3.1 Background

A road works program is being proposed, to be carried out over three years and costing an estimated amount of about $70m. This program will cover the backlog of maintenance of the main public transport road network which extends to 643 kilometres of federal, state and local government roads and includes 43 kilometres of bridges and fly-overs. The program will also include junction improvements, bus priority measures and a variety of TSM measures in Lagos Island and Ikeja Local Government Areas. Preliminary designs and cost estimates for such measures are currently being prepared. During appraisal, a selection will be made of measures to be financed under the project. The first year program will focus on low-cost and high-impact measures of which no activity would trigger the application of the World Bank Operational Policy 4.12 on involuntary resettlement, that is, no removal of any occupants of the right of way who have been in the habit of vending goods or services on a temporary or permanent, government-sanctioned or opportunistic manner.

The consultants engaged to assist LSG in preparation of this component will be advised during appraisal to commence the preparation of a first year priority program amounting to about $25m, for which detailed design and tender documents, appropriately packaged should be ready by end of June 2002. Works are planned to commence in October after the end of the rainy season and after the project has come into effectiveness. Second and third year road works might include some resettlement action (related to temporary or permanent relocation of street traders active in the existing right of way). No such works will be executed unless the necessary RAP has been prepared, as called for in the World Bank operational directives applied in this project, are in place. Following are the type of works envisaged under this component:

Road cleaning
- Removal of wrecks and debris
- Surface wiping
- Drainage system cleaning
- Cleaning of traffic signs, street lights, etc.

Pedestrian Safety Measures
- Repair of sidewalks
- Repair of railings on bridges
- Establishment of pedestrian crossings
- Construction of pedestrian overpasses.

Road and Bridge Repair Measures
- Pothole repair, crack sealing, repair of damaged sections through overlays
- Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc.

Traffic Management Measures
- Repair of traffic lights
- Repair of street lights
- Repair of traffic signs
- Repainting of lane markings
- Establishment of new traffic lights, where needed
- Establishment of bus priority lanes (on existing lanes)
- Parking control
- Establishment of one-way systems.
3.2 **Sources of Information**
In preparing this report, information has been gathered from the following sources:


3.3 **Requirements for EIA**
Federal legislation on EIA in Nigeria has been approved by The Federal Government as the *Environmental Impact Assessment Decree No 86 of 1992*. The Schedule of Mandatory Study Activities includes infrastructure, and the LSMEPP confirmed that this component of the project would be subject to the federal EIA legislation.

The World Bank has published an Operational Directive on EIA (OD 4.01 Environmental Assessment Sourcebook), and this EA has been prepared in accordance with its requirements.

3.4 **Objectives of the EIA**
The objectives of the EIA are to:

- provide a sound basis for decision-making about the design of the project components, taking account of its environmental aspects;
- ensure that the project is implemented with full awareness of likely environmental effects;
- inform the public as to how the project may affect its environment; and
- involve stakeholders in the decision-making process.

3.5 **Scoping**
Scoping was carried out with key government agencies during November 2001. These agencies included:

- Lagos State Ministry of Environment and Physical Planning;
- Lagos State Environmental Protection Agency (LAISEPA).

The key environmental issues in connection with this project component identified by the above agencies, and from review of available reports include:

- air pollution from traffic exhaust emissions;
- waste disposal;
- flooding of drainage systems;
- traffic congestion;
- socio-economic effects; and
- health and safety.

Further stakeholders identified by the above agencies and who will be invited to participate during the design process will include:

**Public Sector**
- Federal Ministry of the Environment;
- Federal Ministry of Works;
- Federal Ministry of Transport (FMT);
- Nigerian Telecoms (NITEL);
- Nigeria Electricity Power Authority (NEPA);
- Lagos State Ministry of Works (LSMW);
- Lagos State Ministry of Health (LSMH);
Lagos Urban Transport Project

- Lagos State Water Corporation (LSWC);
- Lagos State Urban Renewal Board (LASURB);
- Lagos State Urban and Regional Planning Board (LSURPB);

Commercial Interests
- Market Women Traders' Association;
- Molue Operators' Association; and
- Danfo Operators' Association;
- Okada Operators' Association;
- Taxi Operators' Association;
- Long-distance lorry operators association;
- Representatives of ordinary road users; and
- The State Government Transport Working Committee.

NGOs
- Nigerian Conservation Foundation
- Friends of the Environment

Due to time constraints on programming, these latter organisations have not been consulted as part of the EIA process at this stage. It is anticipated that the full participation of the above organisations will begin once site-specific details of the priority road maintenance works are known, and in advance of the arrangements being finalised.

Consideration for construction of additional lanes or lay-byes will be restricted to those sections of roads that have sufficient space available in the right-of-way and that would not lead to expropriation or occupancy displacement issues.

A summary of the construction process for the currently proposed upgrades including handling, types and quantities of materials, sources and/or extraction areas for materials, types, number, operation and storage of equipment and storage/staging of materials is currently being developed.

3.6 Predicted Impacts

Introduction
The roads maintenance and repair programme is expected to result in different types of impacts in environmental and social terms:

- temporary for the duration of the physical works; and
- permanent as a result of the works.

In considering the possible construction effects, it has been assumed that materials will be sourced only from existing sites, and that no new borrow pits or similar will be opened up. This section of the report reviews the types of impacts which are expected to occur, and presents summary tables (Tables 3a and 3b) relating each type of impact to specific environmental and social issues. It also describes appropriate measures to mitigate significant adverse impacts.

Environmental Impacts

Air Quality
Construction
Air quality impacts during construction activities will be generated directly by construction and maintenance equipment exhaust emissions, and indirectly by any increase in congestion to existing traffic flows. The pollutants in each case will be similar, and are discussed in more detail in the following section. The principal receptors will be road users (motorised and non-motorised) and local communities.

Air quality impacts will be negative. However due to the limited scale of the works and their short duration, these are expected to be non-significant. Measures to mitigate air pollution impacts during construction are discussed later in this chapter.
Operation

The emission of pollutants by vehicle contributes greatly to the total atmospheric pollution generated by people. The use of passenger cars alone is estimated to be responsible for 60% of carbon monoxide (CO) emissions, 60% of hydrocarbon (HC) emissions, and more than one-third of the nitrogen releases into the atmosphere. The health effects of traffic exhaust emissions are dealt with in the section on social assessment (health & safety). The major air pollutants of roadside are:

- **Nitrogen oxides (NOx)** which are converted to nitrogen dioxide (NO2) once released as exhaust emission. This gas reacts with other atmospheric gases to form acids in the atmosphere.
- **HCs** are produced by inefficient engine combustion, and are strongly influenced by fuel composition. Principal components include benzene and ethylene. Hydrocarbons combine with NOx to produce photochemical smog.
- **CO** is also produced by incomplete combustion. Diesel engines produce significantly lower emissions of HC and CO than petrol engines.
- **Sulphur dioxide (SO2)** is directly linked to the sulphur content of the fuel. Diesel engines produce higher emissions of SO2 than petrol engines.
- **Particulates** directly as a result of engine technology, and which are associated with respiratory diseases. Diesel engines produce higher emissions than petrol engines.
- **Lead** (Pb) which is added to petrol to aid engine lubrication, especially in demand for older engines.

Other atmospheric pollutants include dust generated during maintenance works through materials handling, vehicle movements on loosely surfaced roads, transportation of uncovered construction materials (e.g. sand, planings), and exhaust emissions from static equipment.

The volume and composition of vehicle emissions depends on a variety of factors, including:

- **Vehicle age**. Emission control technology has improved substantially in recent years. There is a close relationship between the age of the engine and exhaust technology and the emissions produced. Fleets with predominantly older vehicles produce significantly higher emissions than equivalent newer fleets.
- **Level of engine maintenance**. Poorly adjusted controls and non-replacement of standard maintenance items adversely affect performance and emissions.
- **Road conditions**. Circumstances which increase the frequency of acceleration and deceleration manoeuvres result in increased emissions compared with steady driving conditions.
- **Engine temperature**. Engines operate most efficiently at normal working temperature. Short journeys during which engines remain cooler reduce efficiency and increase emissions.

Air quality impacts following the maintenance and repair programme are expected to be positive due to reduced traffic congestion. No mitigation measures are required.

**Noise**

**Construction**

Construction works will introduce new noise sources such as:

- **Fixed equipment** such as compressors, generators, percussive tools;
- **Mobile equipment** audible reversing alarms;
- **Construction activities** materials transportation and handling (including loading of trucks).

The most noise sensitive receptors will include hospitals and health centres, schools, churches and dwellings. The effects of noise on people can include disturbance, annoyance, communication problems, increased stress levels, and associated behavioural and health
problems. It can result in fatigue, temporary and permanent damage to hearing ability, sleep disorder and, occasionally, learning problems amongst children.

The timing of works may also cause adverse impacts. Work on evenings, night-time and weekends may affect people during periods when they expect to relax or sleep. It is recognised that a lower noise level is beneficial to sleep, however as other noise sources cease and the ambient noise level falls, remaining sources may become more apparent. Intermittent, impulsive and tonal characteristics also contribute to noise disturbance.

Mitigation measures are discussed in a later section.

**Operation**

It is anticipated that the change in noise levels following the maintenance and repair works will be positive. Improvements in road surfaces and traffic management will reduce noise from tyres, acceleration and braking and the use of horns. Each of the impacts is considered to be positive, hence no mitigation is required.

**Flooding**

**Construction**

The proposed maintenance and repair activities on the drainage system will include cleaning, and fitting new covers where required. If the drainage capacity is reduced, even for short periods, these works will increase the risk of flooding, especially during the wet season. Measures to mitigate this risk are described later in this chapter.

**Operation**

The proposed improvements in the drainage system are expected to reduce the long term risk of flooding, particularly during the wet season, presuming the system is maintained. Measures to mitigate this risk are described later in this chapter.

**Social Impacts**

**Socio-economic**

**Construction**

The socio-economic impacts expected to arise may be of two types:

- *direct*, arising from any new jobs created to carry out the proposed works; and
- *indirect*, as a result of increased expenditure on the supply of goods and services.

In each of the above cases, the effect will be positive by putting money into the economy through new jobs or fuller employment and thereby increasing the local income *per capita*. This in turn is expected to improve food security, health, and access to education and health facilities.

In predicting the socio-economic impacts which are expected to occur, this study has also considered available labour capacity within appointed firms of contractors. Three alternative situations may exist, as follows:

- no spare capacity exists, in which case the maximum number of new jobs will be created;
- some spare capacity exists, in which case a limited number of new jobs will be created; and
- complete capacity is available, in which case no new jobs will be created.

Where new employment is created, the direct impacts of the proposed works will be positive. Whichever employment situation arises, the indirect impacts (also positive) will be the same for each. If the same contractor is appointed for the short term construction and longer-term maintenance works, then continuity of employment will be a further benefit. Overall, it is expected that the skill-base of the local labour pool will be strengthened, thereby enhancing prospects for future employment.

Road maintenance activities may also affect socio-economic conditions by creating more difficult trading conditions, thus having a negative effect on livelihoods. Activities such as
siting of noise or dusty/odorous equipment or material stockpiles may discourage trading in the immediate vicinity. Some traders may easily relocate nearby, however some may not. Although numbers may be small, effects could be significant by increasing individuals' vulnerability to poverty. Finally, local trading may increase at some locations due to the presence of local workforces.

Disruption to traffic and access caused by the works is also expected to affect socio-economic conditions through increased journey times.

Measures to mitigate the above adverse effects are presented later in this section.

**Human Health & Safety**

**Human health**

The transmission paths by which pollution from traffic exhaust emissions may affect people include:

- inhalation directly from the air;
- ingestion from food products grown or stored in proximity to roads;
- deposition directly onto external surfaces from the air;
- ingestion by hand after having touched contaminated surfaces (especially lead); and
- deposition via rainfall.

The health impacts of road traffic exhaust emissions have not yet been clearly established, and substantial research is ongoing. The health risks associated with chronic exposure to exhaust emissions are summarised below.

**Vehicle emission components and their health effects**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Health Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>Reduces the ability of the blood to carry oxygen. Symptoms of exposure include headaches, vertigo, impaired mental function, aggravated cardiovascular disease, and impaired foetal developments.</td>
</tr>
<tr>
<td>Oxides of nitrogen</td>
<td>Induced and aggravated respiratory and cardiovascular afflictions such as asthma, emphysema, tuberculosis and bronchitis.</td>
</tr>
<tr>
<td>Hydrocarbons</td>
<td>Eye, nose and throat irritations. Benzene is a known carcinogen.</td>
</tr>
<tr>
<td>Aldehydes</td>
<td>Eye, throat and lung irritations. Allergic reactions.</td>
</tr>
<tr>
<td>Particulates</td>
<td>Eye and respiratory irritation, aggravation of asthma. Possible carcinogens.</td>
</tr>
<tr>
<td>Lead</td>
<td>Nervous disorders, impaired mental function and behaviour problems, speciality in children. Also anaemia and possible brain damage.</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>Aggravated respiratory ailments such as asthma, bronchitis and emphysema.</td>
</tr>
</tbody>
</table>

**Safety**

Certain rehabilitation works will affect the level of risk to all road users including drivers, pedestrians, and traders.

- repair of pavements may affect access to children's school routes, health facilities and places of worship; and
- repainting of road lines, and maintenance/repair of traffic lights and street lighting will increase the risks of road traffic accidents.

Measures to mitigate these adverse effects are presented later in this section.

There is also a small risk that areas of stagnant water could be created during the project, giving rise to conditions suitable for the breeding or transmission of water-related disease, such as malaria. The drainage maintenance programme will offset this.
Cultural Heritage
It is not expected that any individual group of indigenous people will be adversely affected by
the proposed works. Similarly, it is anticipated that the cultural heritage in terms of religious,
spiritual, historical, or archaeological features will be unaffected. Measures to safeguard
cultural heritage are presented in the mitigation section later in this report.

3.7 Mitigation
A number of potential negative impacts arising from the proposed roads rehabilitation
programme have been identified. These effects are summarised in the Table 3c, together
with measures to mitigate them.

3.8 Environmental Action Plan
The impacts associated with specific activities identified in Tables 3a and 3b have been
correlated with the mitigation measures in Table 3c. These findings have been combined to
develop a set of specific environmental actions to be incorporated into the project design.
The action plan is presented in Table 3d. These environmental actions will form part of the
construction tender specification and will be included in the tender documents. A fuller
briefing on these requirements will be presented at the pre-tender conference. The actions at
this stage remain generic in nature. When more details of the works (nature and location) are
finalised, it is recommended that the action plan be reviewed and updated as appropriate.

3.9 Contractual Issues
It is envisaged that the measures identified in Table 3d will form the basis of contract clauses
which will be included in the contractors' tender documents. The final wording of the clauses
should be developed between the design consultant (where appropriate) and LAMATA (the
contracting agency). It will be important that the final clauses take into account local
conditions (e.g. legislative and regulatory requirements).

Example of generic clauses are given below:

Scheduling of works to avoid sensitive periods
Works shall take place between the hours of 0700-1900hrs on Monday to Friday, and
between 0700-1200hrs on Saturdays. Works will be prohibited on Sundays, except in
emergency circumstances.

Provision of suitable traffic control measures
The Contractor will consult with the Lagos State Police and with the Traffic department of
LAMATA to agree on traffic management arrangements for each item of project works.
Details of agreed arrangements to deal with all aspects of traffic control (e.g. lane closures,
diversions etc) will be submitted to LAMATA.

Dust
Vehicles transporting materials capable of generating dust to and from works shall be suitably
sheeted on each journey to prevent release of materials and particulate matter.

Noise
All vehicles, compressors and plant will be equipped with effective silencers.

Safety
Specific measures to ensure the safety of construction staff, pedestrians and road users will
be identified and implemented as part of the works. A safety risk analysis will be prepared for
the site of each works, and will include details of safety measures to be implemented where
necessary. The risk analysis will be submitted to LAMATA for approval.
### Table 3a: Construction Issues (temporary) - environmental and social effects

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental</th>
<th>Socio-economic</th>
<th>Health &amp; Safety</th>
<th>Cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Cleaning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal of wrecks and debris</td>
<td>X</td>
<td>X ✓ ✓</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Surface wiping</td>
<td></td>
<td>X ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage system cleaning</td>
<td>X</td>
<td>XX</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Cleaning of traffic signs, street lights, etc.</td>
<td></td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
</tbody>
</table>

**Pedestrian Safety Measures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental</th>
<th>Socio-economic</th>
<th>Health &amp; Safety</th>
<th>Cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair of sidewalks</td>
<td>X</td>
<td></td>
<td></td>
<td>XXX</td>
</tr>
<tr>
<td>Repair of railings on bridges</td>
<td></td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
<tr>
<td>Establishment of pedestrian crossings</td>
<td>X</td>
<td>X ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of pedestrian overpasses</td>
<td>X</td>
<td>XX</td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
</tbody>
</table>

**Road and Bridge Repair Measures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental</th>
<th>Socio-economic</th>
<th>Health &amp; Safety</th>
<th>Cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pothole repair, crack sealing, repair of damaged sections through overlays</td>
<td>X</td>
<td>X</td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
<tr>
<td>Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc</td>
<td>X</td>
<td>X</td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
</tbody>
</table>

**Traffic Management Measures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental</th>
<th>Socio-economic</th>
<th>Health &amp; Safety</th>
<th>Cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair of traffic lights</td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Repair of street lights</td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Repair of traffic signs</td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Repainting of lane markings</td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Establishment of new traffic lights, where needed</td>
<td></td>
<td></td>
<td>X ✓ ✓</td>
<td>X</td>
</tr>
</tbody>
</table>

**Key:**

- ✓ positive effect
- X negative effect
Table 3b: Operational Issues (permanent) - environmental and social effects

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Air Pollution</td>
<td>Noise</td>
</tr>
<tr>
<td>Road Cleaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal of wrecks and debris</td>
<td>✓ ✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Surface wiping</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Drainage system cleaning</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Cleaning of traffic signs, street lights, etc.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Pedestrian Safety Measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair of sidewalks</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Repair of railings on bridges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishment of pedestrian crossings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Construction of pedestrian overpasses</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Road and Bridge Repair Measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pothole repair, crack sealing, repair of damaged sections through overlays</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic Management Measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair of traffic lights</td>
<td>✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Repair of street lights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair of traffic signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repainting of lane markings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Establishment of new traffic lights, where needed</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
</tbody>
</table>

Key:
✓  positive effect
X  negative effect
## Table 3c: Mitigation Measures

<table>
<thead>
<tr>
<th>Potential Negative Impact</th>
<th>Type</th>
<th>Duration</th>
<th>Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased air pollution from exhaust emissions</td>
<td>Direct</td>
<td>Temporary</td>
<td>- locate equipment remotely from receptors where possible;</td>
</tr>
<tr>
<td>of equipment and machinery</td>
<td></td>
<td></td>
<td>- adhere to engine maintenance schedules and standards;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- include air pollution control equipment to asphalt plant.</td>
</tr>
<tr>
<td>Dust emissions</td>
<td>Direct</td>
<td>Temporary</td>
<td>- utilise dust suppression equipment such as water sprays.</td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased noise levels at residential properties</td>
<td>Direct</td>
<td>Temporary</td>
<td>- locate equipment remotely from receptors where possible;</td>
</tr>
<tr>
<td>schools, businesses and places of worship.</td>
<td></td>
<td></td>
<td>- adhere to engine maintenance schedules and standards;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- installation and maintenance of effective silencers;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- timing of activities.</td>
</tr>
<tr>
<td><strong>Flooding</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage to property</td>
<td>Direct</td>
<td>Temporary</td>
<td>- effective site management controls</td>
</tr>
<tr>
<td><strong>Socio-economic Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced activity for local traders</td>
<td>Direct</td>
<td>Temporary</td>
<td>- sensitive siting of heavy equipment and materials storage.</td>
</tr>
<tr>
<td>Increased journey times</td>
<td>Direct</td>
<td>Temporary</td>
<td>- Thorough planning of maintenance works, and implementation of traffic management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>measures which minimise disruption to traffic flows.</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased risk of respiratory infection and illness</td>
<td>Direct</td>
<td>Temporary</td>
<td>- locate equipment remotely from receptors where possible;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- adhere to engine maintenance schedules and standards;</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased risk to pedestrians through restrictions to access routes to schools, amenities, health facilities.</td>
<td>Direct</td>
<td>Temporary</td>
<td>- safe and clearly signed alternative routes must be provided;</td>
</tr>
<tr>
<td>Increased risk of road traffic accidents</td>
<td>Direct</td>
<td>Temporary</td>
<td>- suitable traffic control measures must be implemented.</td>
</tr>
</tbody>
</table>
### Table 3d: Environmental Action Plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental Action</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Cleaning</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Removal of wrecks and debris | - Activities to be scheduled to avoid sensitive periods  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Design Consultant  
- Contractor  
- LAMATA |
| Surface wiping | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |
| Drainage system cleaning | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |
| Cleaning of traffic signs, street lights, etc. | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |

**Pedestrian Safety Measures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental Action</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Repair of sidewalks | - Implement dust suppression measures (e.g. water spray)  
- Provide safe alternative pedestrian routes | - Contractor  
- LAMATA |
| Repair of railings on bridges | - Use equipment with effective silencers  
- Provide safe alternative pedestrian routes  
- Provide suitable traffic control measures which minimise disruption to traffic flows | - Contractor  
- LAMATA  
- Contractor |
| Establishment of pedestrian crossings | - Implement dust suppression measures (e.g. water spray)  
- Use equipment with effective silencers  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Provide safe alternative pedestrian routes | - Contractor  
- Contractor  
- Contractor  
- LAMATA |
| Construction of pedestrian overpasses | - Implement dust suppression measures (e.g. water spray)  
- Use equipment with effective silencers  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Provide safe alternative pedestrian routes | - Contractor  
- Contractor  
- Contractor  
- LAMATA |

**Road and Bridge Repair Measures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Environmental Action</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Pothole repair, crack sealing, repair of damaged sections through overlays | - Implement dust suppression measures (e.g. water spray)  
- Use equipment with effective silencers  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Provide safe alternative pedestrian routes | - Contractor  
- Contractor  
- Contractor  
- LAMATA |
### Lagos Urban Transport Project  
#### Environmental Management Framework

| Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc | - Implement dust suppression measures (e.g. water spray)  
- Use equipment with effective silencers  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Provide safe alternative pedestrian routes | - Contractor  
- Contractor  
- Contractor  
- LAMATA |

#### Traffic Management Measures

| Repair of traffic lights | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |

| Repair of street lights | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |

| Repair of traffic signs | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |

| Repainting of lane markings | - Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- LAMATA |

| Establishment of new traffic lights, where needed | - Use equipment with effective silencers  
- Provide suitable traffic control measures which minimise disruption to traffic flows  
- Appropriate safety measures to be implemented | - Contractor  
- Contractor  
- LAMATA |
4 **LAMATA Safeguards Unit Establishment**

LAMATA will establish a Safeguards Unit with environmental and social expertise. An outline Action Plan for this is presented, along with Terms of Reference for the two key staff. Terms of Reference are also outlined for technical assistance to the Unit for the production of procedural manuals on environmental and social assessment. Having established such a unit satisfactory to IDA is a condition of effectiveness of the project.

**4.1 Design of the Safeguards Unit**

Overview of Proposed Arrangements for LAMATA

LAMATA will have responsibility for the co-ordination of transport policies, programmes and actions of all agencies at the different levels of government. In particular, it will liaise with the government, as follows:

- **Federal** establishment of national policy goals and objectives and the appropriate provision of technical and financial assistance to State and local governments;

- **State** development of basic transport policy, establishment of policy goals and objectives for the transport sector, maintenance of existing primary and secondary roads, implementation of traffic management schemes, and the monitoring and evaluation of all players in the transport sector and the provision of technical support to the local governments;

- **Local** implementation of local area traffic schemes, maintenance of local roads, development of appropriate revenue generation policies (consistent with state and federal policies in these areas) and co-ordination with planning and other relevant departments at the local level on transport related matters.

**4.2 Corporate Environmental and Social Responsibilities**

In planning to address its environmental and social responsibilities, LAMATA will require the commitment of all of its staff, particularly at the management level, to minimise, and mitigate wherever possible, environmental and social impacts arising from developments within the transport sector programme. It will need to be able to count on and provide the appropriate resources to achieve this. Many of its environmental goals may be aspirational, however its is in the context of this longer-term view that initial actions will be planned.

Significant environmental and social issues for LAMATA may include or be related to:

- **Resettlement** of people displaced by transport project components;

- **Emissions** to atmosphere (transport fleet, effects of congestion, fuel type, vehicle efficiency and maintenance, non-motorised modes);

- **Waste** management (used oils, spare components, sewage disposal and water consumption);

- **Noise** (vehicle type and level of maintenance, driver behaviour, road surface condition, maintenance facilities).

The LAMATA Board will therefore develop environmental and social policies which elaborate:

**Policy Statement**

- corporate environmental and social responsibility goals;

- addresses awareness and understanding of the interactions of LAMATA on environmental and social issues;

- optimises environmental and social conditions of employees;

- fair treatment of those who have occupied rights of way for whatever reason;

- seeks to protect and enhance the environmental and social interests of the public it serves.

**Socially and Environmentally Responsible Strategy**

- defines objectives and targets;

- works constructively with organisations concerned with environmental protection and social issues of public concern;

- compliance with environmental and social regulations, standards and procedures;
- efficient use of natural resources;
- monitoring, auditing and review of performance.

**Responsibilities**
- a nominated Board member (or members) accountable for LAMATA environmental and social performance;
- line managers in relation to activities under their direct control;
- individual responsibilities;
- procedures to protect the working and external environment;
- monitoring of implementation of procedures;
- incorporation of environmental and social assessment into all future planning of facilities and operations, and particularly where resettlement is a potential issue;
- resettlement planning and review;
- record keeping;
- reporting to relevant statutory agencies on regulatory non-compliance, and effective remedies.

**Communication**
- informing key stakeholder of environmental and social performance.

### 4.3 Investment Decision Making

During the master-planning phase of the project, it is anticipated that a variety of project elements and sub-projects will be considered. These are expected to include a combination of inter-modal options (e.g. rail versus bus) and modal sub-options (e.g. core versus secondary bus routes). The environmental and social impacts of these options must be considered by LAMATA. The Safeguards Unit will therefore be required to contribute to this investment decision making process through a systematic review of project options. The Safeguards Unit will be expected to advise on the environmental and social costs/benefits of the different options, and to undertake a review of such comparative appraisals of these as they are put forward.

Within Lagos State, LASEPA has the lead role in providing the State Government's response to developers on EA matters. This includes provision of advice on screening, scoping, review of draft EA report (in liaison with MEPP), receiving comments from stakeholders, public airing of the project proposals, and convening a technical decision-making panel. It works with MEPP in discharging this function, and consults with a wider body of experts in reviewing EAs of proposed developments. It will be important that LAMATA (through its Safeguards Unit) liaises closely with MEPP and LASEPA in preparing a co-ordinated response on the environmental and social aspects of transport development proposals.

### 4.4 Resourcing Requirements

Previous studies in to the resourcing requirements of LAMATA have recognised that it should:

- adopt a 'lean and fit' approach to its staffing;
- contract out as much of its works as possible, and buy in technical skills as required;
- use short-term consultancy support to meet demand for discrete technical skills.

In this respect, environmental and social management may be most cost-effectively embodied within a structured management system. Such a system would be consistent with the requirements of a recognised international system (such as ISO14001), and would be managed initially from within LAMATA's Corporate Management Team comprising of the Managing Director, other Directors and the Legal Counsel. LAMATA will have two senior specialist in environmental and social development in the Safeguards Unit one of whom will be the Head of the Unit. The Head of the Unit will report directly to the Managing Director. In providing this general oversight, the Managing Director may:

- form an environmental and social management team which meets at periodic intervals;
- delegate specific duties to other staff;
- contract external support in specialist technical areas.
The Head of the Unit will be charged with responsibility for developing an environmental and social strategy which delivers the policy objectives, and which accords with LAMATA’s environmental and social goals.

The skills and experience of the Head of the Unit should include, as a minimum, an understanding of:

- interactions of LAMATA’s activities with the environmental and social issues of public concern;
- relevant environmental and social legislation;
- liabilities associated with the environmental and social impacts of the business;
- management of these issues;
- previous experience of environmental and social management;
- training needs analysis;
- developing environmental and social performance indicators; and
- reporting on environmental and social performance.

### 4.5 Outline Action Plan

It is recognised that the establishment of LAMATA and the furtherance of the LUTP are on an extremely restricted time scale. As such, the establishment of an effective Safeguards Unit within LAMATA, incorporating the mobilisation of sufficient human, financial and logistical resources must take into account and run in parallel with the milestones for the establishment of LAMATA itself. These milestones are identified in the LUTP Action Plan (March – September 2002), as outlined in the World Bank’s Aide Memoire of the LUTP Pre-appraisal mission (February 22 to March 6, 2002). Any slippage on the LUTP milestones is likely to constrain the process for successful establishment of the Safeguards Unit.

The relevant milestones for the establishment of LAMATA in the LUTP Action Plan are summarised in Table 4a. Table 4b outlines a suggested Action Plan for the establishment of the LAMATA Safeguards Unit.

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Responsibility</th>
<th>Date</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Appointment of members of the Board of LAMATA</td>
<td>Governor</td>
<td>Before April 3</td>
<td>Trigger*</td>
</tr>
</tbody>
</table>
| 10  | Recruitment of Managing Director  
- Presentation of short list  
- Offer letter sent  
- Commencement of assignment | LUTP Steering Committee with help of consultant | Before appraisal  
Prior to neg.  
Prior to effectiveness [end of Sept 2002] | Trigger* |
| 11  | Establishment of Financial Management, Procurement, and Safeguards Units, preparation of respective procedural manuals and satisfactory capacity assessment by Bank Team | LUTPO with help of consultants/ Bank Team | Prior to effectiveness [end of Sept 2002] | Trigger* |
| 15  | Environmental Management Framework (EMF)  
Final draft  
Approval by Bank and submission to FMOE Disclosure | LUTPO/ Consultant/ Bank Safeguards Group | March 14  
April 8 | Prior to Board  
Trigger* |

*Satisfactory and timely completion of action is trigger for follow-on action
<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Responsibility</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recruitment of Environment and Social Experts</td>
<td>LAMATA Board/ LUTP Steering Committee/ LUTPO (with help of consultant as required)</td>
<td>By April 2002</td>
</tr>
<tr>
<td>2</td>
<td>Establish Selection Committee (to include capacity to assess environmental and social capabilities of candidates)</td>
<td>LAMATA Board/ LUTP Steering Committee/ LUTPO</td>
<td>By May 15</td>
</tr>
<tr>
<td>3</td>
<td>Selection (and notification) of candidates for interview</td>
<td>Selection Committee (with help of consultant /</td>
<td>By May 10</td>
</tr>
<tr>
<td>4</td>
<td>Interviews</td>
<td>Selection Committee (with help of consultant</td>
<td>May /June</td>
</tr>
<tr>
<td>5</td>
<td>Offer letter sent</td>
<td>Selection Committee (or Managing Director if in post)</td>
<td>June</td>
</tr>
<tr>
<td>6</td>
<td>Commencement of assignments (assumption: contracts and funding resolved; successful candidates available and notice periods served or negotiated)</td>
<td>LAMATA/ LUTPO Human &amp; Financial Resources Co-ordinator, and the successful candidates</td>
<td>By end of June/July</td>
</tr>
<tr>
<td>7</td>
<td>Identification of Financial and Procurement of Logistical Requirements for Safeguards Unit (SU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Collation and storage of relevant reference materials (legal and policy documents on transport, related institutions, social and environmental issues and procedures, resettlement, etc.)</td>
<td>LUTPO and SU</td>
<td>By mid-July</td>
</tr>
<tr>
<td>9</td>
<td>Preparation of Procedural Manuals*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Identify and contract technical assistance as required</td>
<td>LUTPO and SU</td>
<td>July 1</td>
</tr>
<tr>
<td></td>
<td>Production of manuals (see TOR for technical assistance on this aspect)</td>
<td>Environment and Social Experts, in conjunction with consultant technical assistance</td>
<td>By end of September</td>
</tr>
</tbody>
</table>

* Preparation of procedural manuals will be seriously constrained by any slippage in LAMATA and Safeguards Unit establishment processes (especially no. 11, Table 4a and 1-7 of Table 4b). For this reason, activity 11 from Table 4a and activity 7 from Table 4b need to be significantly progressed well in advance of the envisaged end-of-September "effectiveness" date and ideally by mid-June.
5 Sectoral EA/SA

5.1 Scope

The overall objective of the sectoral EIA will be to present contributions to overall decision-making processes by reviewing existing and planned transport interventions under various scenarios ranked according to explicit criteria. It will evaluate and compare impacts against those of alternative options; assess legal and institutional aspects relevant to the issues and impacts; and recommend broad measures to strengthen environmental management in the sector. It will pay particular attention to potential cumulative impacts of multiple activities. The specific objectives of the sectoral EIA will be to: (i) carry out an environmental scoping exercise; (ii) prepare a description of the Sector Programme; (iii) collate relevant baseline environmental data; (iv) identify the policy, legal and regulatory framework; (v) develop a method of, and procedures for sectoral environmental impact assessment; (vi) present an analysis of the institutional framework for environmental decision making; (vii) set out safeguard frameworks for use in future investments; (viii) consider alternatives; and (ix) implement a programme of stakeholder consultation.

The ToR are presented in detail in the Annex.
Annex

Terms of References

1. Technical Assistance for the Production of Procedures Manual for the Safeguards Unit.
2. Environmental and Social Specialists in the Safeguards Unit.
3. Sectoral EA/SA.

1. TERMS OF REFERENCE

Technical Assistance for the Production of Procedural Manuals on Environmental and Social Assessment for the Safeguards Unit of the Lagos Metropolitan Area Transport Authority

Introduction

The Lagos Urban Transport Project (LUTP), to be co-ordinated under the auspices of a new body, the Lagos Metropolitan Area Transport Authority (LAMATA), seeks funding support from the World Bank. The LUTP comprises a number of discrete components that will form a wider, integrated transport system for Lagos. The components are:

- Capacity building and preparation of follow-on project
- Road Network Efficiency improvements
- Bus Services Enhancement
- Water Transport Promotion

Each of the components presents a number of challenges with respect to environmental and social opportunities and risks.

The purpose of this contract is to provide technical assistance to the environmental and social specialists of the LAMATA Safeguards Unit to produce procedural manuals on environmental and social assessment.

The manuals will be a critical resource for the Safeguards Unit at two levels. Firstly, they should ensure the effective consideration and management of environmental and social issues in the daily work of LAMATA from design, planning, implementation, monitoring and evaluation of transport initiatives. Secondly, they should provide guidance for mainstreaming environmental and social issues across the wider policy and investment spectrum and to seek a co-ordinated response to shared concerns where the transport sector interacts with other government institutions. Examples of this would be land use planning and development, water and sewerage provision, etc.

The manuals should be developed with the close involvement of the unit staff and LAMATA Steering Committee to ensure commitment. The procedures might be expected to include:

3 to be in post prior to July 2002
- **The roles of the unit staff.** The staffing level has been defined as initially consisting of one environmental specialist, and one social specialist.

- **The responsibilities of each staff member.** A ToR for each specialist is provided as part of this annex.

- **The scope of the processes covered by the procedures.** This needs to be developed with the Unit staff to encourage ownership. However, as a minimum, this should include resettlement, compensation, environmental assessment, social assessment, mitigation, monitoring and reporting.

- **Accountability.** One of the two staff in the Unit will be appointed as Head of Safeguards Unit, and will report directly to the MD of LAMATA.

A timescale of 3 months has been allocated for the development of the procedures. The schedule of tasks required to meet this timescale is set out in the following table. Whilst the 3 month period is tight, it is considered achievable. Consequently, each activity will lie on the critical path of the programme for this task. It is essential therefore that the staff appointments are in place by June 30.

### Tasks

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>No. of Days and possible Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attend meetings with LAMATA Board and LAMATA Safeguards Unit to agree the objectives of the manuals</td>
<td>3 days (July 1 – 3)</td>
</tr>
<tr>
<td>2</td>
<td>Identify, collate and review relevant literature and reference documents (including existence of similar guides, State and National Government environmental and social policy and corresponding LAMATA policies where these exist)</td>
<td>7 days (July 4 –12)</td>
</tr>
<tr>
<td>3</td>
<td>Produce and present a report on the literature review for the LAMATA Board</td>
<td>2+1 days (July 15 – 17)</td>
</tr>
<tr>
<td>4</td>
<td>Define the scope, style and content of the manuals with the Safeguards Unit and LAMATA Board</td>
<td>1 day (July 18)</td>
</tr>
<tr>
<td>5</td>
<td>Produce draft Manuals</td>
<td>20 days (July 19 –Aug 15)</td>
</tr>
<tr>
<td>6</td>
<td>Present first drafts to LAMATA Board</td>
<td>2 days (Aug 16 –19)</td>
</tr>
<tr>
<td>7</td>
<td>Obtain and Synthesise LAMATA Board comments</td>
<td>3 days (Aug 20 – 22)</td>
</tr>
<tr>
<td>8</td>
<td>Revise to produce second drafts</td>
<td>5 days (Aug 23 – 29)</td>
</tr>
<tr>
<td>9</td>
<td>Field test second drafts using LAMATA staff</td>
<td>10 days (Aug 30 –Sept 12)</td>
</tr>
<tr>
<td>10</td>
<td>Revise in light of LAMATA staff comments to produce third drafts</td>
<td>4 days (Sept 13 – 18)</td>
</tr>
<tr>
<td>11</td>
<td>Present to LAMATA Board and Bank Safeguards Team</td>
<td>2 days (Sept 19 – 20)</td>
</tr>
<tr>
<td>12</td>
<td>Synthesise comments to produce final versions</td>
<td>6 days (Sept 23 – 30)</td>
</tr>
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</table>
2. TERMS OF REFERENCE

for the Environmental and Social Specialists of the Safeguards Unit of the Lagos Metropolitan Area Transport Authority

Job Description 1: Environment Specialist for the LAMATA Safeguards Unit

1. Main Objectives

Ensure the effective consideration and management of environmental concerns in all aspects of LAMATA’s work, from the design, planning, implementation, monitoring and evaluation of transport initiatives in the Lagos Metropolitan area to the assessment of their impacts. Particular attention should be paid to the minimisation of environmental risks associated with the development of transport initiatives, as well as to the identification and maximisation of environmental opportunities arising from investments by LAMATA.

2. Key tasks

- Assist the production of an Environment Assessment Procedures Manual
- Contribute to the development of Environmental Policy, Strategy, Objectives, and Standards for LAMATA
- Undertake a training needs analysis of LAMATA staff to identify weaknesses in environmental capacity
- Design and deliver a training programme to enhance environmental capacity among LAMATA staff
- Identify opportunities for environmental capacity building in other institutions and government agencies whose remits overlap or influence transport or environmental outcomes
- Ensure staff and operational compliance with LAMATA policy, standards, etc.
- Contribute to the design of, and reporting on, a monitoring and evaluation programme for LAMATA’s environmental performance

3. Qualifications and Experience

A university degree to Masters level in Environmental Management or related subject. At least 5 years experience as a senior environmental professional preferably within the transport sector. Particular understanding of EIA procedures, sustainable development and assessment, environmental economics, and Nigerian Federal and State environmental legislation is essential. Experience in environmental advocacy, policy development, capacity building and production of training materials, and environmental monitoring and evaluation is desirable.

4. Reporting Arrangements

The occupant will report to the Managing Director of LAMATA or the Head of the Safeguards Unit.
Job Description 2: Social Specialist for the LAMATA Safeguards Unit

1. Main Objectives

Ensure the effective consideration and management of social concerns in all aspects of LAMATA's work, from the design, planning, implementation, monitoring and evaluation of transport initiatives in the Lagos Metropolitan area. Particular attention should be paid to the minimisation of social risks associated with the development of transport initiatives, as well as the identification and maximisation of social development opportunities arising from investments by LAMATA.

A key function of this role will be to engender a broad consensus, through participatory methods and extensive dialogue with affected and interested parties, on fair and adequate methods by which rights of way can be cleared of occupants as needed, taking account of international standards for involuntary displacement as incorporated into the World Bank's OP 4.12 on Involuntary Resettlement.

2. Key Tasks

- Establish a forum by which interested parties may make representations on involuntary resettlement
- In consultation with relevant parties, develop a Resettlement Policy Framework (RPF)\(^4\)
- Assist the production of a Social Assessment Procedures Manual
- Contribute to the development of Social Policy, Strategy, Objectives, and Standards for LAMATA
- Undertake a training needs analysis of LAMATA staff to identify weaknesses in understanding of social issues
- Design and deliver a training programme to enhance understanding of social issues among LAMATA staff
- Identify opportunities for capacity building on social issues among other institutions and government agencies whose remits overlap or influence transport or social development outcomes
- Ensure staff and operational compliance with LAMATA policy, standards, etc.
- Contribute to the design of, and reporting on, a monitoring and evaluation programme for LAMATA's performance in relation to social development parameters

3. Qualifications and Experience

A university degree to Masters level in Social Development or related subject. At least 5 years experience as a senior social development professional preferably within the transport sector. Particular understanding of social assessment procedures, sustainable development and assessment; gender, health and education; socio-economic principles and techniques, and Nigerian Federal and State legislation is essential, particularly in relation to involuntary resettlement. Experience in advocacy of social development, policy development, capacity building and production of training materials, and monitoring and evaluation is desirable.

4. Reporting Arrangements

The occupant will report to the Managing Director of LAMATA or the Head of the Safeguards Unit.

\(^4\) The RPF should be developed in accordance with the requirements of World Bank OP 4.12. In this regard, it should be noted that Annex A to OP 4.12 was unavailable at the time of preparation of this ToR. In addition, the publication Resettlement Sourcebook is currently under preparation by the Bank and should be referred to when it becomes available.
3. Terms of Reference for Sectoral EA/SA

Background

The Lagos Metropolitan area is by far the largest and most complex urban area in the country and, in economic terms, it is pre-eminent. It contains the largest manufacturing sector and generates over half of the National Value Added Tax in that sector. In addition, it contains well over 50% of invested manufacturing capital and provides employment for over 45% of the skilled manpower of the country. The commercial sector is similarly dominant with a vibrant local trading tradition.

While Lagos is no longer the nation’s capital with the budgetary benefits that this brings, its role as the gateway to the country is unquestioned, with the nation’s most important commercial sea and airports. While supporting the infrastructure of a large capital city, the Lagos State Government has less revenue for public services, now that the functions of a capital city have moved to Abuja.

During the last twenty years or more, levels of efficiency and productivity in the Metropolitan area have been adversely affected by the serious and growing weaknesses in the physical and social infrastructure needed to support the basic needs of the population and the productive sectors. For example, as long ago as in 1985 it was estimated that investments by the private sector designed to offset inefficiencies of public sector operations inflated the costs of production in Lagos by at least 30%. Integrated land use planning to accommodate the projected population growth and movement of people into already densely populated areas will be an important factor in deciding future transport proposals. Meeting the various demands for land use and the challenge of implementing a series of clear and transparent policies that will enable the private sector to deliver public transport services effectively, with greater modal diversity and efficient use of all the physical corridors will require careful consideration of the different uses for and needs of land.

Lagos is considered the sixth largest city in the world, and it is expected that population growth will continue at a rate of 6% per annum. The linear nature of the city urban area generates dense north-south movements of people along the peninsula to and from Lagos and Victoria Islands. This has resulted in an emphasis on building new major highways and bridges to serve the high vehicular flows. Recent evidence (2001) suggests that movement in the north-south traffic corridor has continued to increase with a much higher level of private sector buses on all routes.

While Lagos continues to grow and demands on its existing infrastructure increase, the overall capacity of its transport system is currently dependent on buses, mainly minibuses. Public transport in Lagos is almost entirely owned and managed by the private sector with some initiatives by the State in assisting with the procurement of new buses. However, the absence of defined bus stops, and the complete lack of lane discipline and driver consideration results in very poor and inefficient utilisation of the road space available. This reduces the effective throughput of people in the corridor, even if the movement of vehicles has increased. A measure of success in the provision of mass transit is the volume of passengers carried in a given period of time, rather than the number of vehicles on the road.

The 100-foot, Railway Right-of-Way running north south through the heart of the corridor is a major transport asset that is wholly under utilized. The rail contribution to total passenger journeys made in 1996 was 0.2%. Today, the number of passenger journeys on the railway within this corridor is around 3,000 per day, less than 0.5% of the capacity that could be achieved with a well-equipped railway using just one half of the corridor space.

At the human level those who suffer most from deficiencies in the transport sector are the poor. Because they are frequently obliged to live on the periphery of the city, they endure lengthy and uncomfortable journeys to work, which involve frequent interchange between routes and high prices. Estimates for public transport users of the share of their per capita expenditure on transport are of the order of 25%. The actual costs and physical hardships imposed on the workforce in simply getting to and from their place of work cannot be anything but detrimental to productive efficiency.

Since the Lagos Urban Transport Project (LUTP) was first conceived in 1995, much has changed in the country and in the transport world at large. The national political framework has changed with the
advent of democracy and the normalization of the economy. Confidence in the private sector shows signs of growing. The micro-economy at street level looks buoyant. This is accompanied by high expectations for improvements in urban transport that have not, as yet, been realized to the degree necessary in Lagos.

While there has been some movement, at both National and State level, towards commercialisation and privatisation of state assets, there have been few initiatives in the transport sector. The railways and ferries remain stuck in a nationalized ethos, either of their own making or through a lack of proper investment and direction, or, a combination of both. While reform at National level will be welcome, it is at the State level that the impetus for change in Lagos will be most effectively brought to bear.

Therefore, the challenge facing the administration of the State is to develop and implement a series of clear and transparent policies that will enable the private sector to deliver public transport services more effectively, with greater modal diversity and efficient use of all the physical corridors available.

It is anticipated that preparation of the sectoral EA/SA will begin within six months of commencement of implementation of the project. Its principles and key findings will be integrated into either the update of the Lagos Transport Master Plan, and/or the plans for individual investment in the sector which will be invited and designed within the period of this project's operations. The EA/SA will draw on the RPF as appropriate.

**LUTP Components**

The LUTP supports the transport sector policy and strategy of Lagos State Government (LSG). The implementation of the policy and strategy will be done in several phases and will require a period of at least a decade or two. The support to the implementation of phase one of the strategy is the LUTP. LUTP focuses on capacity building, on maintenance and rehabilitation of the main road network, on traffic system management (TSM) measures (such as parking control, establishment of bus lanes, one-way street systems, etc.) in two central areas, and on pilot bus and ferry schemes. It also finances the necessary studies for the preparation of the next phase of the implementation of the strategy.

**Capacity building & preparation of phase II:** This component focuses on institutional capacity building through the establishment of an adequate policy, regulatory and institutional framework for the management and financing of the transport system of metropolitan Lagos and preparatory activities for the next phase of the implementation of the transport policy and strategy. It includes the following elements: (a) institutional strengthening to bring into operational effectiveness the Lagos Metropolitan Area Transport Authority (LAMATA) including establishment of units responsible for procurement, financial management and safeguards, as well as the construction of a building for LAMATA and creation of a dedicated Transport Fund from sector based user charges for use by LAMATA to finance its operating costs and to discharge its key responsibilities; (b) strengthening the capacity of existing transport sector agencies, in particular the Lagos State Ministry of Transportation (LSMT), the Lagos State Ministry of Works (LSMW), the Lagos State Ministry for Women Affairs and Poverty Alleviation (LSMWAP) and the Lagos State Traffic Police and the establishment of Traffic Management Units (TMU) in key Local Government Areas (LGA); (c) establishing the framework for rail mass transit development; (d) studies to support policy reform measures and to prepare a follow-on project including preparation of a Transport Master Plan for Lagos State; and (e) and the operating cost of LAMATA including external audits and other activities consistent with the sector policy and strategy.

**Road network efficiency improvement:** This component is designed to enhance the efficiency of the existing road space, to reduce vehicle operating cost and to improve road safety, and in particular pedestrian safety. It comprises of (a) maintenance and rehabilitation measures on 643 kilometres of the main road network (including bridges) in Lagos Metropolitan Area that serves as the backbone of the bus system; (b) rehabilitation and improvement of major junctions on the above network using low cost Traffic System Management (TSM) measures; (c) preparation and implementation of TSM measures to improve traffic flow in Lagos Island and Ikeja.
**Bus services enhancement:** The objective of this component is to improve the efficiency of bus services through (a) the establishment of a regulatory framework for private sector bus services provision; (b) the study and implementation of pilot scheme for the purchase, operation and maintenance of 100 new buses by the private sector on selected routes; and (c) the rehabilitation of a bus depot.

**Water transport promotion:** This component contributes to improving modal diversity within an integrated urban transport system by promoting the enhanced provision and use of water transport. It includes:

(a) development and implementation of a detailed strategic plan for improving the use of the waterways of Metropolitan Lagos for transport services, including establishing an appropriate regulatory framework;

(b) privatisation of existing state owned ferries;

(c) encouragement of private sector participation in the provision of water transport services; and

(d) rehabilitation and judicious addition to existing terminal facilities.

**Objectives**

**Overall Objective**

The overall objective of the sectoral EIA will be to present contributions to overall decision-making processes by reviewing existing and planned transport interventions under various scenarios ranked according to explicit criteria. It will evaluate and compare impacts against those of alternative options; assess legal and institutional aspects relevant to the issues and impacts; and recommend broad measures to strengthen environmental management in the sector. It will pay particular attention to potential cumulative impacts of multiple activities. It will provide an informed basis for any needed modification to the RPF.

**Specific Objectives**

The specific objectives of the sectoral EIA will be to:

- carry out an environmental scoping exercise;
- prepare a description of the Sector Programme;
- define the role of LAMATA and related institutions in mitigating /managing the impacts of the LUTP;
- collate relevant baseline environmental data;
- identify the policy, legal and regulatory framework;
- develop a method of, and procedures for sectoral environmental impact assessment;
- present an analysis of the institutional framework for environmental decision making;
- set out safeguard frameworks for use in future investments;
- consider alternatives including but not limited to choice of technology, sitting, timing, training, equipment, etc;
- implement a programme of stakeholder consultation; and
- make suggestions on any needed changes to the RPF.

**Scoping**

The purpose of the scoping exercise is to identify the matters that should be covered in the environmental information to be submitted to the decision-makers. Scoping will identify some or all of the following matters to be covered in the environmental information:

- the impacts to be assessed, focussing in particular on the most important impacts;
- the types of alternatives to be examined, including measures to mitigate impacts; and
- any other relevant information.

The scoping should involve contributions from a wide range of disciplines and interests, and should cover knowledge of:
The scoping exercise should be systematic, and include the following steps:

I. Identification of Potential Impacts by consideration of how the project might interact with its environment during each phase of its implementation. It may be helpful to visit the key sites of the sectoral programme, liaise with relevant experts, and review other projects of a similar type.

II. Review of Alternatives that have been considered during the course of planning the sectoral programme. The reasons for taking forward the selected proposals should be considered, and any further alternatives that might be considered should be identified. Alternatives considered should include the 'do nothing' option.

III. Consultations with outside organisations should be carried out to identify potential impacts, issues, concerns and alternatives which they wish to see included in the EIA. Organisations may include, but not be restricted to government bodies, statutory agencies, local communities, landowners and NGOs.

IV. Determination of Significant Issues taking account of the information gathered in steps I-III above. The reasons for identifying the key issues should be clearly reported. Available methods for prediction of impacts and suitable evaluation criteria (most likely environmental/social/sustainability indicators) should also be identified for each key issue.

V. Preparation of Draft Scoping Report and circulation amongst consultees prior to finalisation. Where an issue has been raised by consultees but is not taken forward for inclusion in the sectoral EIA, the reasons for this should be reported.

VI. Preparation of Final Scoping Report, taking into account the views and comments made on the Draft Report.

Description of Sector Programme

Drawing on the preliminary design studies which have been completed for each of its elements, a comprehensive description of the LUTP programme should be prepared. The nature and objectives of the programme should be described, and the main environmental issues associated with it should be identified. Where other sector initiatives are being contemplated (beyond the scope of LUTP), these should also be described.

Baseline Data

This section of the sectoral EIA should collate, evaluate and present baseline data on the relevant characteristics of the project area. It should focus on the issues and problems that are typical of the sector as a whole, and where relevant should include:

- the physical environment in terms of geology, topography, soils, climate and meteorology, ambient air quality, surface and ground water hydrology, coastal parameters, existing sources of air emissions, existing water pollution discharges and receiving water quality.
- the biological environment; in terms of flora, fauna, rare or endangered species, and sensitive habitats including designated natural sites.
- the socio-economic and cultural environment in terms of population, land-use, planned development activities, community structure, employment, distribution of income, goods and services, recreation, public health, cultural properties, and customs.

The key organisations to be consulted on existing baseline information may include, but not be limited to:

- Federal Ministry of the Environment;
- Federal Ministry of Statistics;
- Federal Highways Department;
- Federal Ministry of Transport;
- Federal Inland Waterways Department;
- Lagos State Government Ministry of Environment and Physical Planning (MEPP);
- Lagos State Environmental Protection Agency LASEPA;
- Lagos State Waste Management Authority LAWMA);
- Lagos State Ministry of Transportation (LSMT);
- Lagos State Ministry of Health (LSMH); and
- Lagos State Ministry of Works (LSMW).
- Additionally, local NGOs and community representatives or organisations may hold useful
  relevant data and should be identified and contacted for their input to the baseline databank

Particular attention is drawn to the role of LASEPA in co-ordinating environmental data. It has
published a 'State of the Environment Report 1997'. This report is chiefly qualitative in its
descriptions. A corresponding report for the year 2000 is expected to be published by LASEPA in
January 2002. Any difficulties encountered in gathering data should be reported, together with an
analysis of the likely significance it will have on the study and needed remedial measures.

Policy, Legal and Regulatory Framework

This section should analyse the national environmental policy, legal, regulatory and framework, and
relevant sector-specific policies, laws and regulations. Where recent studies of these aspects have
been carried out, the study should draw on these rather than duplicate them. A policy matrix could
be developed to indicate potential regional/sectoral impacts of the overall LUTP strategy including
induced urban development, cumulative impacts, changes in land use, and related social impacts.

Two studies of the environmental legal framework have been carried out and should be consulted
during this task:

- 'Development of a Comprehensive Legislation on the Environment and Enforcement Procedures
  in Lagos State' was commissioned by LASEPA (supported by the United National Development
  Programme) in 1997.
- In 2001 as part of a package of environmental studies into LUTP, the Lagos Urban Transport
  Project Office commissioned an assessment of the legislative framework for environmental and
  social management related to transport issues.

In addition, given the possibility of resettlement arising from this project, particular attention should be
paid to reviewing the national policy, legal and regulatory framework in regard to resettlement,
compensation, etc. and relating them to World Bank Operational Policy 4.12 and Bank Procedure
4.12 – see Resettlement Framework below

National Framework

The relevant national environmental policies, laws and regulations should be assessed for
completeness and appropriateness in the light of the particular conditions and problems of the sector,
and gaps and weaknesses noted. Non-environmental laws and policies that have significance for the
sector's utilisation of resources, production processes or pollution should also be identified. Similarly,
the national regulatory framework for EA preparation and review should be assessed. The sectoral
EIA should look closely at the institutional capacity of FME, LSMEPP and LASEPA in terms of
effectiveness and capacity for developing guidelines, setting and enforcing standards, and reviewing
environmental assessments. FME has published sectoral guidelines for EIA.

Sector Framework

An analysis of sector-specific policies, laws and regulations should be carried out. It should identify
how environmental responsibilities are distributed among sector institutions, and assess their
capacity to administer these tasks. Particular attention should be paid to transport sector
interventions in regard to their interaction with metropolitan and state land use planning
arrangements. The consultants should develop and present an understanding of the effects of the
interaction between land use planning and transport interventions on environmental and social
concerns and whether such concerns can be addressed through the transport sector, the land use planning system, or through involvement of other institutions in the wider policy and regulatory spectrum. For example, the consultants should consider the existence of zonal planning within the Lagos metropolitan area, and the capacity of the authorities to control formal and informal developments within identified zones. Environmental and social concerns over uncontrolled development will necessarily include the involvement of authorities dealing with waste management, water and sanitation provision, health care and education provision, housing and public safety. The extent to which transport interventions hinder or assist the control of development should be ascertained.

The sectoral investment planning process should be reviewed in terms of objectives, methodology and procedures. The relationship between timing of project review, consenting and licensing should be reviewed, and the sectoral planning process should be described. The sectoral EIA should consider whether environmental and social issues are adequately covered by current procedures. The organisations identified in connection with baseline data collection should also be consulted to ascertain their respective environmental responsibilities.

**Land Use Planning**

Sustainable development will be a key theme which underpins the development of LUTP. The challenge of sustainable development is to provide an improving transport system supporting economic growth, while assisting social development and protecting the environment. Land use planning can contribute to achieving government policy objectives for integrated transport and land use planning through:

- supporting the provision of improved public transport access to development, in order to persuade motorists that public transport is more attractive than car use;
- reducing the need to travel by regulating the pattern of land uses in relation to each other, and to transport facilities;
- supporting the management of motorised travel to enable it to undertake its essential role effectively, but in all other respects to contribute to sustainable transport objectives;
- enabling people to access local facilities over local networks by short walking or cycling trips, in turn contributing to improved road safety and social inclusion.

Taking account of relevant development policies and plans, the sectoral EA should therefore examine how LUTP has been integrated into land use planning in terms of:

- meeting government commitments and targets on environmental improvement;
- supporting sustainable economic development within a pattern of land use and integrated land use which serves local communities and the economy, promotes genuine choice of transport mode, facilitates a reduction in car use, and supports more use of walking, cycling and public transport;
- ensures that the impact of development proposals on transport networks does not compromise their safety or efficiency.

**Sectoral Methods**

The adopted methods should include for valuing choices and preferences, designing scenarios and weighing alternatives, and overall indices and scoring devices on environmental and social issues.

Impacts must be predicted in a similar and systematic way for each of the transport modes. Review of EIA reports for other projects may be helpful in providing an indication of the state of the environment with no transport development. In turn, this will assist evaluation of the significance of the impacts of the proposed project components. Wherever possible, the impacts should be described in quantitative terms. When this is not possible, they should be described qualitatively. Once predicted, the impacts should be evaluated to determine their significance against the criteria adopted for the study. A critical aspect of this component of the study will be consideration of cumulative impacts arising from the sector programme.

The quality of available data, deficiencies in important data and relative uncertainties of impact descriptions should be described.
Institutional Framework

Drawing on the institutional assessment carried out in the development of an environmental and social management unit for LAMATA, the environmental and social decision-making framework will be reviewed and updated. The emerging definition of LAMATA’s function and responsibilities will be reviewed in the context of the existing framework, and recommendations made in order to further strengthen the institutional capacity for environmental (and social) protection within the sector. This will include responsibilities at all levels of policy-making, drafting of legislative and regulatory controls, preparation of guidelines, and monitoring and enforcement. This analysis may include, but not be limited to the following aspects: i) establishment of baseline data collection and management; ii) recommendations for drafting policy on emission and effluent standards; iii) establishment of criteria for sub-project prioritisation, site selection etc; iv) policies, formulas, criteria for land take/resettlement; v) institutional strengthening, training, equipments; vi) strategy and modes of public consultation and disclosure; and vii) possible harmonization of the Nigerian environmental policies.

Reference should also be made to the description of the institutional framework presented in the report ‘Detailed Framework for Establishment of the Lagos Metropolitan Area Transport Authority’ prepared by Transport & Development Consultants (Nigeria) Ltd for LSMPT in 1996.

Safeguard Frameworks

The sectoral EIA will set out the safeguard frameworks that will be used to evaluate future investments, ensuring that they meet both World Bank or other international standards, and those of Nigeria at the Federal and State levels. Both social and environmental safeguards will be annexed to the sectoral EIA. It will set out standards for categorisation and screening of future investments, and for the preparation and financing of investment-specific EIAs and EIA reviews. It will set standards for the review processes for EIAs.

Resettlement Policy Framework

Review the RPF being applied by LAMATA, comment on the implications of study recommendations and make recommendations on how these may be taken into account. Recommend modification, if necessary.

Analysis of Alternatives

An analysis of the alternative investment options and strategies for LUTP should be carried out in terms of environmental costs and benefits. All major options under consideration, including any by the private sector with proposed source of funding, should be considered, whether complementary or alternative to it. These may include investments by either the public or private sector. For example, the Nigerian Railway Corporation is understood to be considering the redevelopment of its existing railway corridor running north from Iddo. This and any similar proposals should be included in the analysis.

The ‘do-nothing’ option should be included in the alternatives considered. This will involve a projection of what is likely to occur if the proposed investments are not implemented. In evaluating the ‘do-nothing’ option, it will be important to take into account all public and private actions which are likely to occur in the absence of the project.

A comparative analysis of alternative modes is recommended, applying indicators of environmental and social impacts as previously adopted for this study (see Scoping section). The method of comparison selected as appropriate will reflect the relative importance of the key issues identified, the views of the consultees, and the availability of meaningful data. The method should be comprehensively described, including any assumptions made. The EA/SA will present a thorough analysis and consider all relevant strategic options including choice of technology, site, timing, institutional, and management intervention. The reasons why some options considered were rejected should also be documented in the study.
The analysis should conclude with a list of transport mode options, ranked according to environmental preference. The analysis of impacts and alternatives should result in a recommendation for an optimal investment strategy in terms of environmental and social costs and benefits.

**Public Consultation**

Consultation is widely regarded as one of the most important aspects of the EIA process. It involves soliciting the views of people on proposed actions, and engaging them in a dialogue. Consultation is characterised by a two-way flow of information between the project team and the consultees. While decision-making authority is retained by the project team, interaction with people and eliciting feedback allows affected communities to influence the decision-making process by raising issues that should be considered during stages of the project cycle, including scoping, project design, mitigation, monitoring and management planning, and analysis of alternatives.

Groups that are directly affected by the proposals should be accounted for in the consultation process. These may include intended beneficiaries, at-risk groups, and stakeholders. In some situations, affected groups may have difficulty in making known their concerns. Ethnic, religious, gender or racial boundaries may contribute to this. It will be important that the consultation process recognises these difficulties, and endeavours to overcome them.

Emphasis is placed on the need to include local communities, and particularly to ensure that the needs and concerns of women and the poor are fully understood. Consultation should include:

- dissemination of details of the transport sector proposals, and alternatives, and a summary (in non-technical terms) of the potential environmental impacts;
- ensuring that information is provided in the most widely spoken local languages;
- collection of local information relevant to the proposals;
- involving local leaders where appropriate in co-ordinating the consultation process;
- meetings with community representatives, NGOs and other interested bodies;
- surveys, where necessary, to ensure local opinion is canvassed;
- presentation of the draft report via workshops with stakeholders to take account of their comments and recommendations.

LAMATA will have an External Relations Unit which is expected to work closely with the Safeguards Unit in carrying out public consultation activities.
Dear Dieter,

Re: Disclosure Notice for LUTP Environment Management Plan (EMP)

The Federal Ministry of Environment has given approval (copy attached) for the disclosure of the EMP of the Lagos Urban Transport Project. Based on this approval, Lagos State has made the necessary arrangements required and the disclosure notice will be advertised in three national newspapers namely Daily Times, Guardian and Vanguard tomorrow Tuesday 7 May 2002.

In view of the above, we are please to give the permission to place the LUTP (EMP) on the Bank's info shop.

Your corporation will be highly appreciated.

Yours truly,

[Signature]

Dr Dayo Mobereola
Special Assistant to the Governor and Head of LUTPO.

Enc:FME approval letter

Board of Committee: Hon.Com for Economic Planning and Budget (Chairman), Hon.Com. for Transport and Hon.Com. for Works.
ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ON THE PROPOSED LAGOS URBAN TRANSPORT PROJECT (LUTP) BY LAGOS STATE GOVERNMENT

Please refer to your letter Ref. No. LGS/LUTPO/S.99/Vol.1/1 dated 19th April, 2002 submitting twenty (20) copies of draft EIA reports on the above project.

2. I am directed to inform you that approval has been granted for the mandatory 21-working days public review exercise on the EIA of the project.

3. In line with current temporary proponent-facilitated EIA review process practised by the Ministry, I am directed to request you to place quarter page newspaper advertisement of the display exercise in the Daily Times, The Guardian and the Vanguard on or before 9th May, 2002.

4. You are please further requested to place radio announcements in a popular Lagos State radio for the first and last five days of the display exercise. Copies of the Newspaper and Radio announcements are attached herewith. Evidence of the placement of the adverts should be forwarded to this Ministry early please.

5. A review panel exercise will follow immediately after the public review exercise and the date and venue will be communicated to you soon.

Thank you for your co-operation.

O. J. Omolehin
for: Honourable Minister.
RADIO ANNOUNCEMENT

FEDERAL MINISTRY OF ENVIRONMENT

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ON THE PROPOSED LAGOS URBAN TRANSPORT PROJECT (LUTP) BY LAGOS STATE GOVERNMENT

In accordance with the Environmental Impact Assessment (EIA) Decree No. 86 of 1992, which makes it mandatory for proponents of all new major development activities to carry out Environmental Impact Assessment of proposed projects, the Federal Ministry of Environment hereby announces a twenty-one (21) working days Public Notice for information and comments on the draft EIA Report submitted by Lagos State Government on the proposed Lagos Urban Transport Project.

The proposed shall be within Lagos State Metropolitan area.

The Display Ccentres are:

(i) Lagos State Ministry of Environment and Physical Planning
(ii) Lagos State Ministry of Works
(iii) Lagos State Environmental Protection Agency (LASEPA), The Secretariat, Alausa, Ikeja, Lagos State.
(iv) Federal Ministry of Environment Offices in Lagos and Abuja.
(v) Lagos Urban Transport Project Preparatory Office, Motorways Centre, 2nd Floor, Block C, Oregun, Ikeja, Lagos State.

Duration of Display

Date: 9th May to 7th June, 2002
Time: 8.00 am - 4.00 pm Daily

ALL COMMENTS SHOULD BE FORWARDED TO THE PERMANENT SECRETARY, FEDERAL MINISTRY OF ENVIRONMENT ON OR BEFORE 7TH JUNE, 2002

SIGNED
PERMANENT SECRETARY
FOR: HONOURABLE MINISTER.
PUBLIC NOTICE

FEDERAL MINISTRY OF ENVIRONMENT

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THE PROPOSED LAGOS URBAN TRANSPORT PROJECT (LUTP) BY LAGOS STATE GOVERNMENT

In accordance with the Environmental Impact Assessment (EIA) Decree No. 86 of 1992, which makes it mandatory for proponents of all new major development activities to carry out Environmental Impact Assessment of proposed projects, the Federal Ministry of Environment hereby announces a twenty-one (21) working days Public Notice for information and comments on the draft EIA Report submitted by Lagos State Government on the proposed Lagos Urban Transport Project (LUTP).

Project Description/Location:
The Proposed LUTP is located within Lagos State Metropolitan area. It is about the rehabilitation of 3,444km of road network, establishment of parking/one-way street systems, bus lanes, pilot bus/lorry schemes, etc.

VENUES OF DISPLAY
(i) Lagos State Ministry of Environment, Alausa, Ikeja.
(ii) Lagos State Ministry of Works.
(iii) Lagos State Environmental Protection Agency, Alausa, Ikeja.
(iv) FMENV Liaison Office, Games Village, Surulere, Lagos.
(v) FMENV Office, Plot 444, Aguiyi Ironsi Street, Maitama, Abuja.
(vii) LUTP Office Motorways Centre 2nd Floor, Block C Onigbagbo, Ikeja - Lagos.

DURATION OF DISPLAY
Date: 9th May to 7th June, 2002
Time: 8.00 a.m - 4.00 p.m.

ALL COMMENTS SHOULD BE FORWARDED TO THE PERMANENT SECRETARY, FEDERAL MINISTRY OF ENVIRONMENT ON OR BEFORE 7TH JUNE, 2002.

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