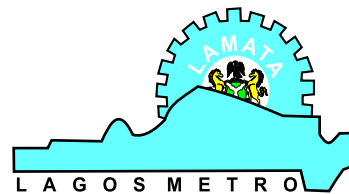


LAMATA Social/Environmental Management guide for civil works



By

Environmental/Social Safeguards unit, LAMATA



...think transport

LAGOS METROPOLITAN AREA TRANSPORT AUTHORITY

P r e f a c e


The city of Lagos is experiencing numerous problems of environmental degradation. This is due to rapid population growth and man's desire for improved living standards. Major environmental problems being experienced in Lagos include noise pollution, waste management, air pollution, threat to fish resources, threat to biodiversity, human habitat degradation, and climate change. The Lagos Metropolitan Area Transport Authority (LAMATA) activities with regards to road construction and maintenance contribute to these either directly or indirectly in its efforts to contribute to national development.

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 Koko, Delta State. 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 May 2001, FEPA was transformed into the Federal Ministry of the Environment (FMEV). Environmental Issues underscores the prevention of adverse environmental effects of road construction and ensuring that the infrastructure is environmentally friendly using the following strategies:

- ❑ Including in the planning for the construction of the roads environmental impact assessment (EIA) and energy conservation;
- ❑ Promoting environmental protection and resource evaluation;
- ❑ Ensuring that roads do not impact drainage negatively and cause accumulation of water pools that become breeding grounds for mosquitoes
- ❑ Ensuring that drainage outlets do not become the primary sources of soil erosion; and
- ❑ Promoting the use of more energy efficient and less polluting modes of transport.

The LAMATA law enacted in November 2002 empowers the Authority to make regulations and guidelines for better carrying into effect of the law. It is to fulfill this and achieve the LAMATA Mission Statement and Vision that these guidelines have been developed for Contractors, Consultants, and other stakeholders to facilitate the implementation of activities in the transport sector.

The users of the Guide are contractors, consultants, and stakeholders in the transport sector. It is my sincere hope that users of this Social/Environmental Management Guide will utilize these resources to the fullest for the benefit of inhabitants of the city of Lagos.



Dr. Dayo Mobereola

Managing Director/CEO
May 2007

LAMATA Social/Environmental Management guide for civil works

By

Environmental/Social Safeguards unit, LAMATA

The information contained herein are correct as at the time of going to press © LAMATA 2007, July

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Introduction: The challenge of Urban Transport and Environment

1. Background information

The management of urban transport is a major challenge for all cities in the world, be they in the industrial world or in developing countries. The problem is, however, more accentuated in the developing world where resources in terms of social capital and management experience are limited.

In Nigeria, Lagos is the economic capital of the country, and by all means the largest urban settlement of the nation with enormous urban transport challenges. Lagos has about 14 million inhabitants of which about half of this population commute to various destinations on daily basis for varied reasons.

To rise to the challenge, Lagos State government created in November 2003, the Lagos Metropolitan Area Transport Authority (LAMATA) as the implementing agency for the Lagos Urban Transport Project (LUTP). The LUTP is financed mainly by the World Bank credit and counterpart funding by the Lagos State Government.

LAMATA's mandate is to:

- Co-ordinate the transport policies, programmes and actions of all transport related agencies in the Lagos metropolitan area.
- Maintain and manage the declared road network of about 632 kilometres within Metropolitan Lagos. This may be expanded as the need arises.
- Plan, coordinate, manage and develop the supply of adequate and effective public transportation within Metropolitan Lagos.
- Recommend on route planning and general location of bus shelters, pedestrian ways and bridges.
- Collect and levy transport road user charges and establish a Transport Fund to sustain the performance of LAMATA.
- Coordinate activities of the State Licensing Authority and all vehicle

inspection units.

- Recommend on policy issues on public transportation to the Governor including mechanisms for implementation.
- Prepare plans for the management and development of transportation in Metropolitan Lagos.

To fulfill its mandate, LAMATA is organised into 10 departments/units: Procurement, External Relations, Finance, Roads, Corporate & Investment Planning, Corporate & Legal Services, Human Resources, IT, Public Transport and Traffic Management System.

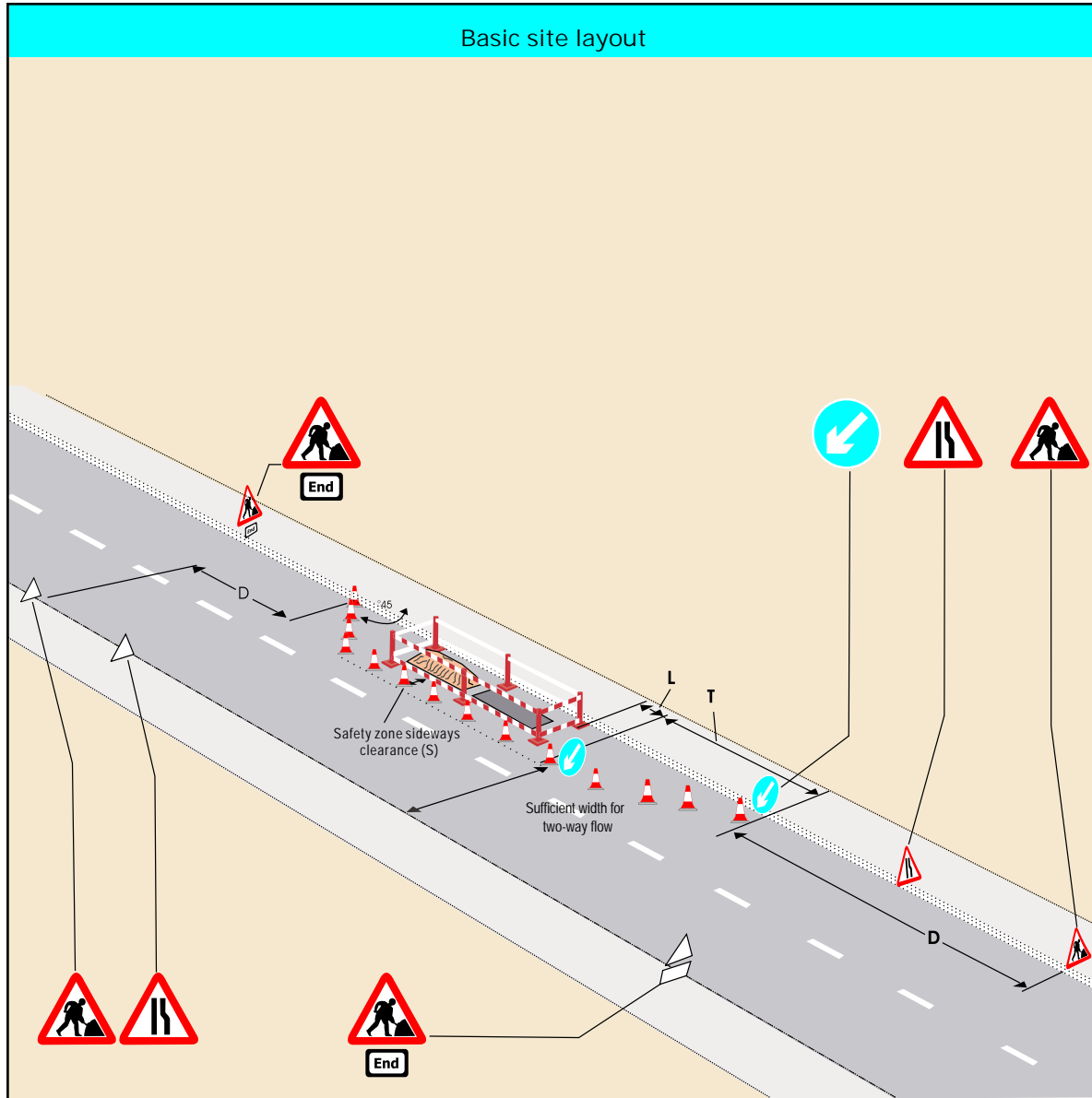
LAMATA collaborates with identified stakeholders comprising about 100 general contact groups classified into 10 major categories: Internal, Government, World Bank, Mass Media professional and institutions, Civil Society, Transport Associations, Police, Organised Private Sector, General public and UN/Donor/Bilateral agencies.

The paramount objective of the Environmental/Social Safeguards unit is to ensure the effective consideration and management of environmental/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 minimization of environmental/social risks associated with the development of transport initiatives, as well as the identification and maximization 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.

To that end, the unit has prepared the current Environmental/Social Management Guide, which replaces a folder/attachment that was previously provided to various stakeholders.

Basic site layout



2. Objective and Content of the Guide

2.1 Objective

This guide provides operational instructions on how to integrate environmental actions associated with road improvement into the planning, design and implementation of road rehabilitation and maintenance works. It complements the *Environmental Impact Assessment Procedure for Nigeria* (August 1994) developed by the Federal Ministry of Environment. It is neither a legal document nor a book of recipes to be followed mechanically. However, it is rather a set of instruments and options from which road authorities, consulting engineers and contractors can choose relevant to their works and contracts. The guide can be used for preparation of contracts, monitoring and supervision of major road works on urban and semi-urban areas. The kind of civil works targeted by this manual includes but not limited to: road reconstruction and rehabilitation and small works such as recurrent and routine maintenance. It can be used at national, State or Local Government level.

2.2 Content

The guide identifies and focuses on the main civil works activities of LAMATA. The content is organized as follows: The first part deals with Routine maintenance, the second part addresses recurrent maintenance, the third outlines issues relating to Periodic maintenance and last but obviously not the least is the Rehabilitation contracts

ROUTINE MAINTENANCE

Routine Maintenance works contract is an operation designed to function on a daily basis in maintaining the roads in the areas of desilting the drainages, controlling vegetation on the verges, sweeping of the road sides/medians and finally ensuring the successful disposition of the silts/debris generated from the operation.

RECURRENT MAINTENANCE

Recurrent maintenance works contract is involved with minor repair works on carriageway, sealing of cracks and treatment of swellings. Corrugation raveling, drainage repairs and minor Traffic System Management (TSM) measures, which include among other things lane markings are activities carried out in this maintenance contract.

PERIODIC MAINTENANCE

Periodic maintenance works contract is an operation designed to repair defects on shoulders and road surface. At least 50mm thick of hot rolled asphalt wearing course is placed on the carriageway including repair or construction of drainage systems. It also includes the provision of kerb, pedestrian walkways, provision of regulatory signs and markings.

REHABILITATION WORKS

Rehabilitation works contract involves the reconstruction of the road pavement and the provision of effective drainage facilities along the roadway. The project also includes the provision of lay byes and pedestrian walkways. It also includes the provision of kerb, pedestrian walkways, provision of regulatory signs and markings.

2.1 The importance of the Guide

The Lagos Urban Transport Project has been in existence since November 2003. The Environmental/Social Safeguards unit of the Authority, whose mandate is to mitigate any adverse effect of the project on the environment, has put in place measures to achieve this objective. Part of this is the inclusion in their contract document as annexure *Environmental/Social specifications and Checklist for Contractors*. The unit also organizes periodically one-day training workshop and interactive sessions with all the various categories of Contractors and Consultants on how to use this document (*Environmental/Social specifications and Checklist for Contractors*) on

their day-to-day operational and supervisory duties. Our experience over the years has shown that the provisions of the environmental/social specifications are observed more in breach than in compliance. Aside from this, the unit has made spirited effort during site visits to ensure that contractors comply with minimum environmental, health and safety issues in their work processes.

Inspite of these efforts, we are yet to be satisfied with the level of compliance of our contractors with the provisions of environmental and social specifications. This is one of the reasons why we consider it necessary to put this Guide, in print. What we want to achieve through this publication is to make the Guide a handy document that the user could refer to on a daily basis on site. It is also expected to serve the purpose of a checklist for the contractor.

3. Issues and subject

This section set out to examine what the environmental/social safeguard requirement of each contract entails. The activity to be carried out by the contractors is identified and measures to mitigate the adverse effect on the environment are suggested. The table below also recognizes Action Plans, which we expect the supervising consultant to complete during monitoring and site visits.

LAMATA's ENVIRONMENTAL/SOCIAL SAFEGUARD UNIT CHECKLIST FOR CONTRACTORS

Table 1 Environmental Action Plan ~~~~~

Activity	POTENTIAL NEGATIVE IMPACT	MITIGATION MEASURES	Institutional Responsibilities	Monitoring	Cost Estimate	Responsibility
<i>Road Cleaning</i>						
Removal of wrecks and debris		<ul style="list-style-type: none"> Activities to be scheduled to avoid sensitive periods Provide suitable traffic control measures which minimize disruption to traffic flows Appropriate safety measures to be implemented 				- Design Consultant - Contractor LAMATA/Safeguard
Surface wiping	•	<ul style="list-style-type: none"> Provide suitable traffic control measures which minimize disruption to traffic flows Appropriate safety measures to be implemented 				- Contractor LAMATA/Safeguard
Drainage system cleaning	•	<ul style="list-style-type: none"> Provide suitable traffic control measures which minimize disruption to traffic flows Appropriate safety measures to be implemented 				- Contractor LAMATA/Safeguard
Cleaning of traffic signs, street lights, etc.	•	<ul style="list-style-type: none"> Provide suitable traffic control measures which minimize disruption to traffic flows Appropriate safety measures to be implemented 				- Contractor LAMATA/Safeguard/TSM

Traffic Management & Safety						
Repair of sidewalks	•	<ul style="list-style-type: none"> • Implement dust suppression measures (e.g. water spray) • Provide safe alternative pedestrian routes 				<ul style="list-style-type: none"> - Contractor - LAMATA/TSM
Repair of railings on bridges	•	<ul style="list-style-type: none"> • Use of equipment with effective silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows. 				<ul style="list-style-type: none"> LAMATA/Safeguard - Contractor - LAMATA
Establishment of pedestrian crossings	•	<ul style="list-style-type: none"> • Implement dust suppression measures (e.g. water spray) • Use of equipment with silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows 				<ul style="list-style-type: none"> LAMATA/Safeguard - Contractor- - Contractor- - LAMATA/TSM
Establishment of pedestrian crossings	•	<ul style="list-style-type: none"> • Implement dust suppression measures (e.g. water spray) • Use of equipment with silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows 				<ul style="list-style-type: none"> Contractor/Safeguard - Contractor- - Contractor- - LAMATA/TSM
Road and Bridge Repair Measures						
Pothole repair, crack sealing, repair of damaged sections through overlays.	•	<ul style="list-style-type: none"> • Implement dust suppression measures (e.g. water spray) • Use of equipment with silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows 				<ul style="list-style-type: none"> -Contractor/ - Contractor- - Contractor- - LAMATA

Bridge maintenance works, including sanding and repainting of steel parts, repair of abutments, etc.	•	<ul style="list-style-type: none"> • Implement dust suppression measures (e.g. water spray) <ul style="list-style-type: none"> • Use of equipment with silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows 				<ul style="list-style-type: none"> - Contractor - Contractor- - Contractor- LAMATA/Safeguard
Traffic Management Measures						
Repair of traffic lights	•	<ul style="list-style-type: none"> • Provide suitable traffic control measures which minimize disruption to traffic flows • Appropriate safety measures to be implemented 				<ul style="list-style-type: none"> - Contractor LAMATA/Safeguard
Repair street lights	•	<ul style="list-style-type: none"> • Provide suitable traffic control measures which minimize disruption to traffic flows • Appropriate safety measures to be implemented 				<ul style="list-style-type: none"> - Contractor LAMATA/Safeguard
Repair traffic signs	•	<ul style="list-style-type: none"> • Provide suitable traffic control measures which minimize disruption to traffic flows • Appropriate safety measures to be implemented 				<ul style="list-style-type: none"> - Contractor LAMATA/Safeguard
Repainting of lane markings	•	<ul style="list-style-type: none"> • Provide suitable traffic control measures which minimize disruption to traffic flows • Appropriate safety measures to be implemented 				<ul style="list-style-type: none"> - Contractor LAMATA/Safeguard LAMATA/Safeguard
Establishment of new traffic lights, where needed	•	<ul style="list-style-type: none"> • Use of equipment with effective silencers • Provide safe alternative pedestrian routes • Provide suitable traffic control measures which minimize disruption to traffic flows 				<ul style="list-style-type: none"> - Contractor - Contractor LAMATA/Safeguard

4. HEALTH & SAFETY ISSUES

4.0 Description

The strategies to minimise the potential for large-scale traffic slowdown and any adverse effects on the environment, while maintaining safety for all during the construction phase are detailed in this specification.

These specifications should be applied in concert with the following specifications:

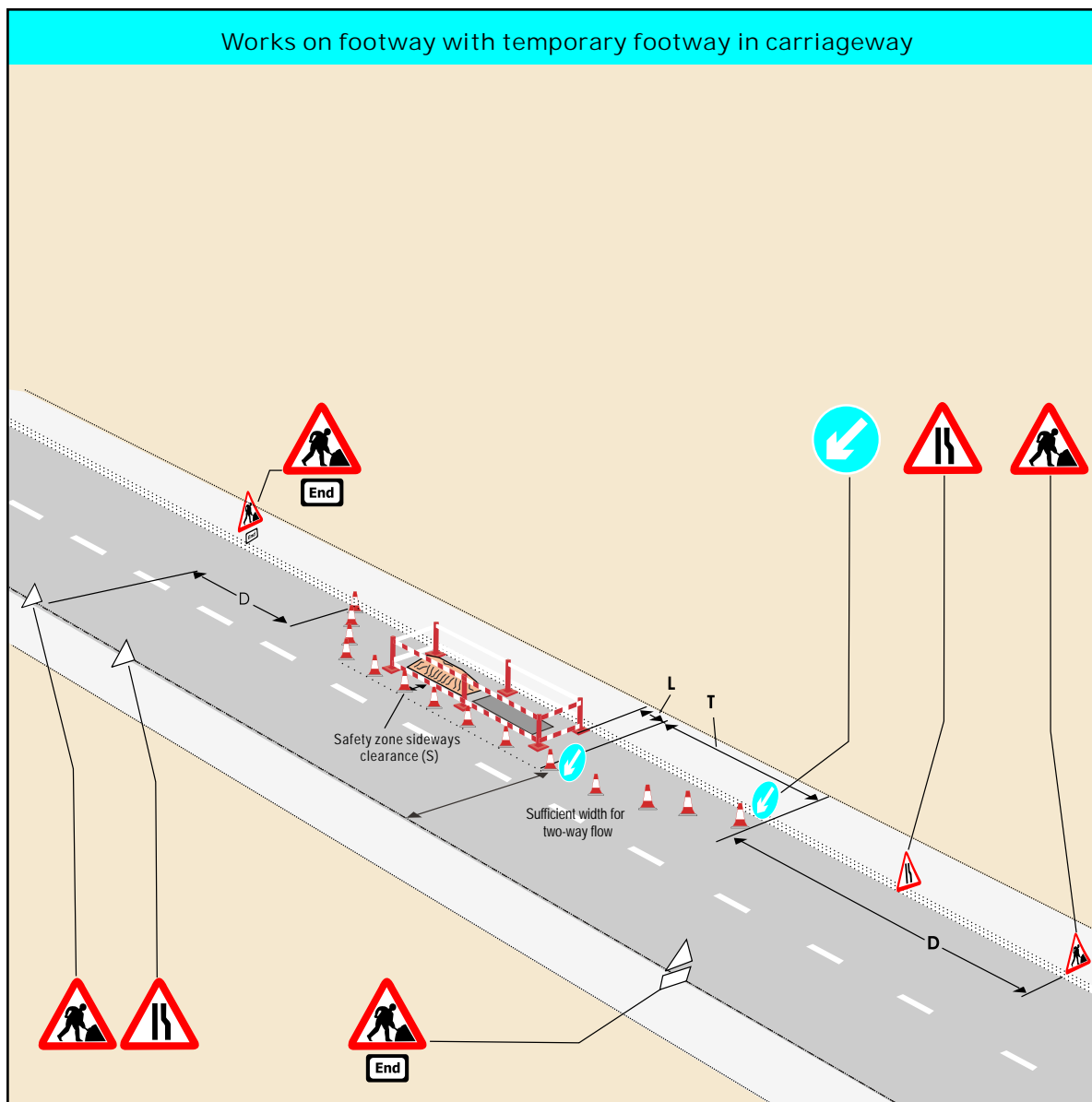
This section applies to all individuals who are responsible for the road projects with equipment, materials, supplies or personnel to and from the Project site during construction. Project personnel responsible for scheduling of construction activities also form part of this management process.

4.1.0 Traffic Management and Safety

To prevent unacceptable levels of traffic slowdown and to reduce the potential effects on various components of the environment due to the construction activity, it is recommended that the following should be accomplished.

- 4.1.1 Construction shall be scheduled in phases.
- 4.1.2 Construction shall be carried out in such a manner to avoid unnecessary traffic bottlenecks.
- 4.1.3 The Contractor shall be required to construct and maintain temporary detour roads adjacent to construction.
Where the new construction is exactly on the existing alignment and diversions or deviations are not possible
The Contractor will arrange the construction so as to maintain a single lane of controlled traffic as necessary on any particular portion of the Works.
- 4.1.4 *Manually operated “stop/go” signals, if used, shall be of the size and type*

Works on footway with temporary footway in carriageway



approved by the Supervisory Consultant and radio equipped flagmen should be used at all detours. The cost of this traffic control for the period agreed by the Engineer is the responsibility of the Contractor.

- 4.1.5 *All schemes for the temporary control of traffic must be submitted to the Supervisory Consultant and LAMATA for approval beforehand. Depending on legal, environmental or any other considerations, the Supervisory Consultant may refuse approval to certain schemes involving diversions or deviations on or off the Site of the road Works and the requirements for such measures must be decided as soon as possible after construction commences.*
- 4.1.6 *When required, the Contractor shall erect and maintain, all signs necessary for the proper direction and control of traffic. All such signs shall conform to international standards and shall be approved by the Engineer before erection.*
- 4.1.7 Road blocks/detours shall be installed and signed appropriately, where required, to direct traffic.
- 4.1.8 Safe access for pedestrian and non-vehicular traffic shall be provided through construction areas.
- 4.1.9 Pedestrian traffic shall be restricted to one side of the highway (non-active work area) for safety.
- 4.20 Drivers assisting the construction process must hold a valid Nigerian driver's license, appropriate to the vehicle in question, and have a good driving record.
- 4.21 Drivers assisting the construction process shall adhere to the speed limits posted along the length of the roads.
- 4.22 Speed limits shall be reduced temporarily and marked accordingly, where required, to provide for the safety of the drivers, pedestrians

- and workers.
- 4.23 Signs and road markers shall be installed to instruct and inform all drivers of local restrictions in a timely and safe manner.
- 4.24 *The Contractor shall furnish barricades or temporary fencing which may be required for the safety of the public or the security of the Works as required by the Supervisory Consultant, and erect such barricades or temporary fencing at locations specified by the Consultant.*
- 4.25 Gross vehicle weights for construction vehicles shall be limited according to road and bridge capacities.
- 4.26 Drivers assisting the construction process shall be instructed to be careful at all times, particularly when carrying material of which the spillage may be detrimental to the environment.
- 4.27 Such drivers shall also communicate the presence of traffic bottlenecks and the resulting time loss to the site engineer; data generated from these reports can be used for traffic management plan revisions where appropriate. The driver shall wear protective gear while on the wheel to protect himself from contamination arising from chemical spillage.
- 4.28 The Spill Contingency Plan shall be implemented, as required (Construction specification for spill Management). Material datasheet (MDS) of chemical carried shall be attached.
- 4.29 Drivers assisting the construction process shall be trained to perform spill reporting and clean-up procedures for minor spills.
- 4.30 Drivers assisting the construction process that demonstrate a lack of safety while driving shall be subject to warning(s) or, as required, additional measures to ensure the continued safety of pedestrians,

- drivers and workers.
- 4.31 The Supervisory Consultant Environmentalist and the Contractor shall be in regular communication and shall monitor the effects of construction on traffic pedestrians, and residents during the construction phase of the project. Operating procedures shall be adjusted to address any unexpected adverse effects.
- 4.32 The Contractor shall consult with officials of Lagos State Traffic Management Agency (LASTMA), Traffic Management units of Local Government councils and the Motor Traffic Divisional Police in the area regarding their requirements in the control of traffic and other matters, and provide all assistance and facilities, which may be required by such officials, in the execution of their duties.

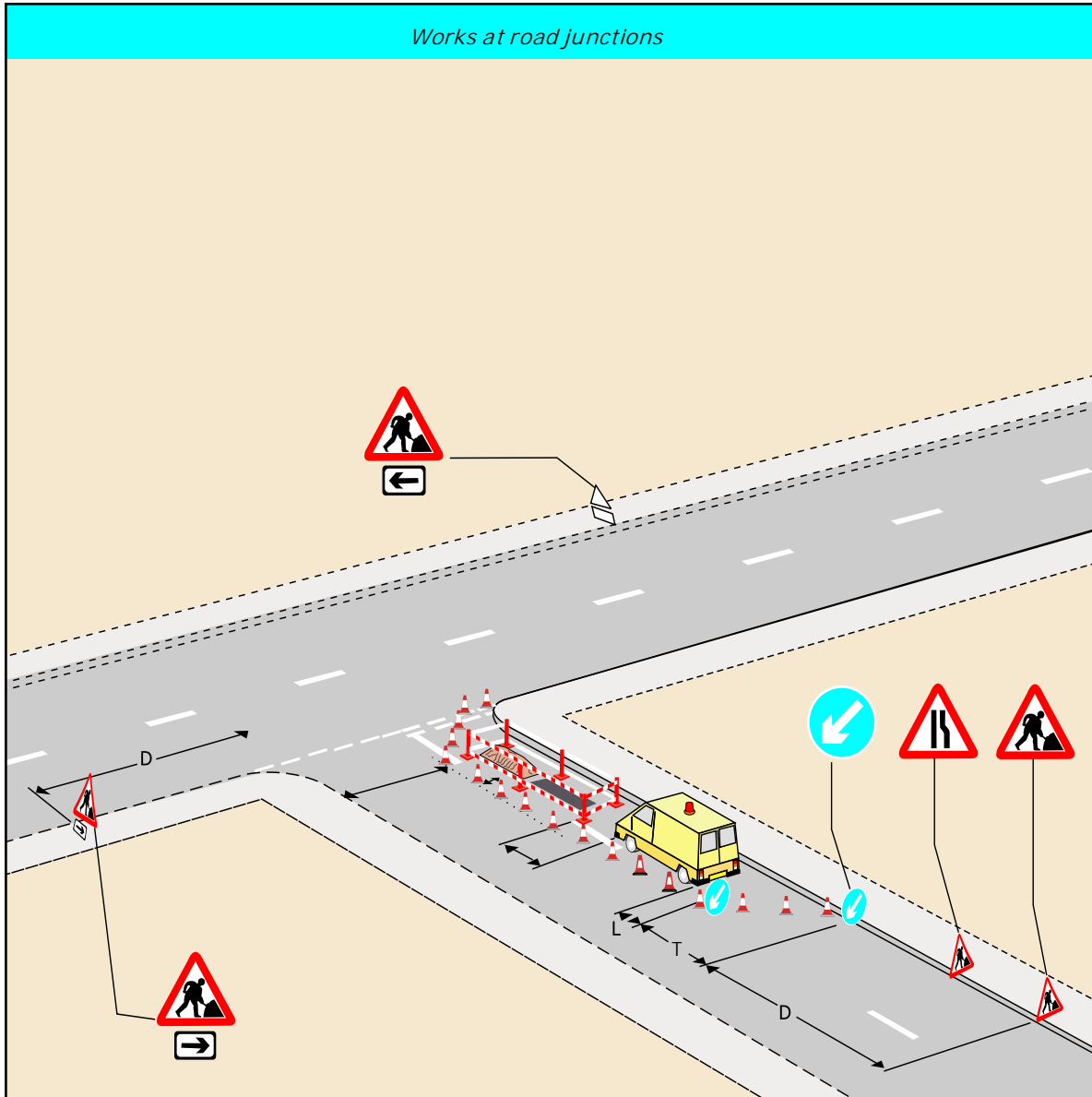
4.4.0 Human health and safety-related impacts

Road development is often instrumental in the transmission of diseases; the contamination of water supplies; air pollution; noise; road accidents caused by poor pavement and shoulder conditions; the creation of obstruction/unsafe conditions due to the presence of road side poles, ditches; trees; steep slopes and barriers; accidents caused by poor signage; markings, intersection layouts and traffic control systems; poor road side access and improper parking; and unsafe conditions due to poor or inadequate provisions for pedestrians, cyclists and other non-motorized users.

Safety is an issue that must be addressed since construction and operational related accidents result in death, injuries and damage to property, which are major public health problems and a significant factor to the national economy.

Within the spectrum of road safety, unguarded construction machines, ill-planned construction activities; and the carelessness of machine operators may lead to fatal accidents. Landslides and collapse of unstable cuts above or below the road can prove fatal to road users who happen to be at a wrong place at the wrong time.

Works at road junctions



Guidelines for the protection of human health and for ensuring safety from the negative impacts caused by road development projects and transport are outlined below:

- Carry out a comprehensive awareness campaign to prevent outbreaks of communicable diseases;
- Screen and treat the affected persons
- Road alignments should avoid human settlements;
- Control dust by spraying water and cleaning the plant and vehicle;
- Plant dense stands of trees and vegetation along the road to control and filter other pollutants;
- Prepare a construction site management plan, which should explicitly focus on the treatment or safe disposal of waste water;
- Assign high priority to accident preventive measures;
- Assign higher ranking to the proper design of safety features to prevent accidents;
- Examine road design standards and safety equipment specifications to ensure that design details take into account of safety concerns and that specific safety features are correctly designed and installed;
- Draft a proper traffic management plan including details of road signs; markings; intersection layouts, canalization of traffic flows; access restrictions; footpaths; bus stops; and provision for non-motorized vehicles;
- Enforce the mandatory use of seatbelts; compulsory driver training and testing; prohibition and punishment of driving while impaired with drugs or alcohol;
- Traffic safety education and testing and inspection of all vehicles to comply with national safety standards;
- Improve road safety features for non-motorized vehicles;
- Provide proper safety features for vulnerable road users- pedestrians, cyclists- to reduce traffic congestion;
- Provide rest areas on heavily traveled roads to ensure the safety of all road users

Provide and ensure that operatives and supervisors are constantly dressed in reflective materials.

- Develop a road safety programme to teach the people traffic safety rules;
- Follow strictly environmental specifications to cover correct practices for the installation of safety features e.g. guardrails, culvert end walls and road signs; as well as traffic safety requirements for the construction sites during operation and maintenance;
- Enforce laws, regulations and policies related to construction equipment and vehicle safety;
- Coordinate safety programme, policies, regulations and priorities with other agencies in the frame work of a comprehensive safety action plan;
- Enforce legislation to control air pollution and water contamination caused by activities in road projects;
- Consult local people and encourage their participation to protect public health and ensure safety;
- Maintain close cooperation and coordination among local residents, road agencies, engineers, safety officers and contractors.

4.5.0 HIV/AIDS prevention policy

Nelson Mandela, at the International AIDS conference had, had the following to say on the pandemic:

"A tragedy of unprecedented proportions is unfolding in Africa. Aids today in Africa is claiming more lives than the sum total of all wars, famines and floods and the ravages of such deadly diseases as Malaria"

"We must act now for the sake of the world"

"Aids is no longer a disease it is a human rights issue"

4.5.1 Description

These specifications describe mitigation measures to be undertaken by the contractor to assist in preventing the spread of HIV/AIDS amongst its personnel

or those they come in contact with.

4.5.2 Application

- The contractor shall prepare and submit an HIV/AIDS policy within 21 days of receiving the notice of award to the LAMATA Safeguards unit for review. The policy shall include an awareness and prevention program and details how the employers to all construction personnel will communicate this program. The policy shall not discriminate against workers on the basis of real or perceived HIV status and indicates that HIV/AIDS screening should not be required of job applicants or persons in employment. The policy shall outline a zero tolerant stance for discrimination at the workplace. A commitment shall also be made by company officials to enforce the policy and ensures that it reflects any developments in local policy or by international organizations or the WORLD BANK pertinent HIV/AIDS on this project. In addition, Contractor could supply condoms to workers and distribute retroviral to infected people. Finally ,Construction Workers and Community Members should:

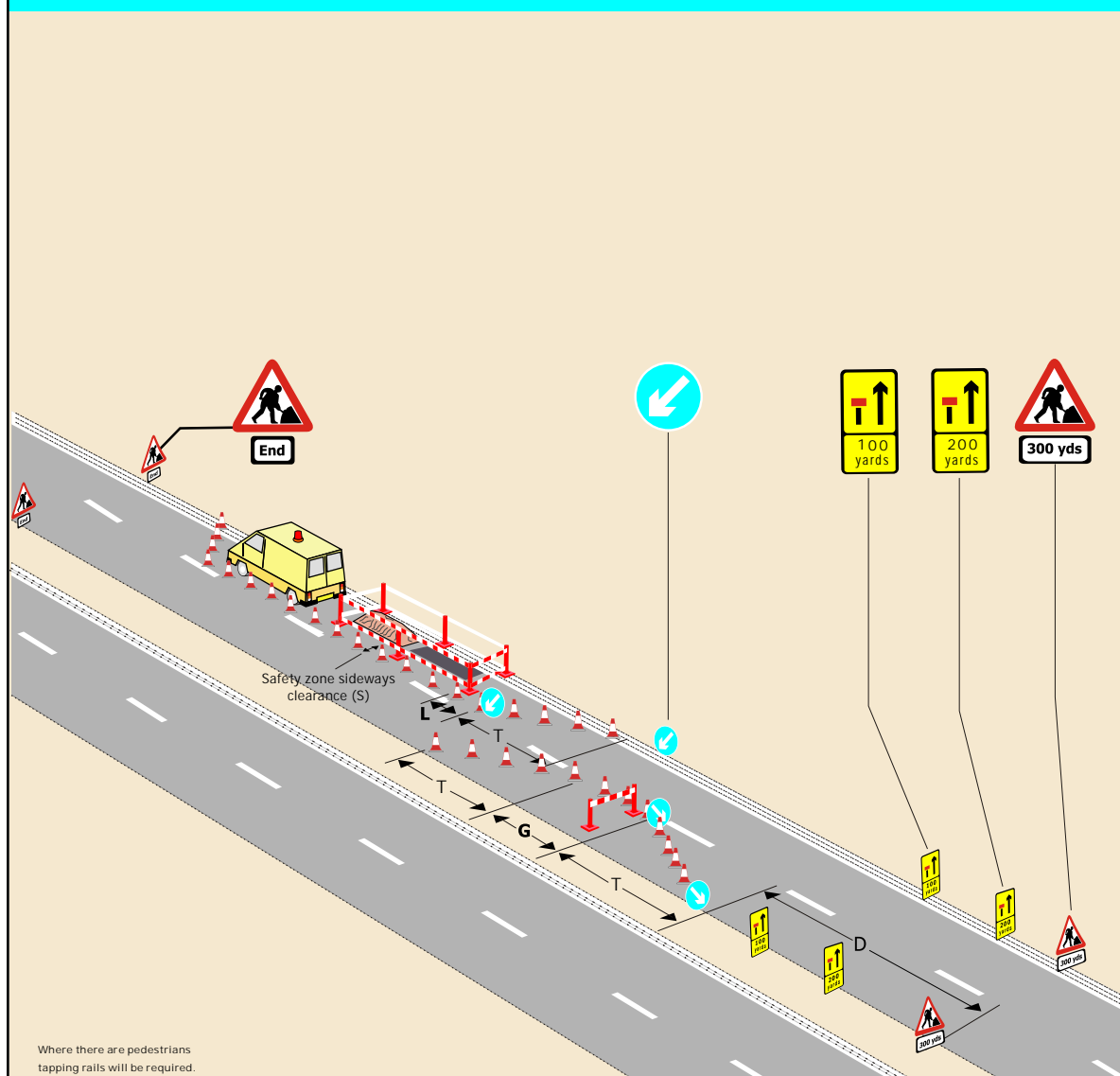
- Avoid promiscuity
- Use condoms
- Attend HIV/AIDS awareness meetings organized by Ministry of Health and other related HIV/AIDS agencies
- Follow the Church's 'One Man one Wife' doctrine

4.5.3 Awareness and Prevention Program.

The awareness and prevention program shall be communicated to all personnel at the start of the construction work and copies of the program kept on-site with other relevant documents and permits and accessible to all person. The program message will also be re-communicated to personnel at regular intervals not exceeding one month.

All new personnel hired by the Contractor shall be advised of the HIV /AIDS policy and sufficiently advised of its content and the seriousness of the disease. The policy shall outline how the awareness and prevention program will be the personnel.

Works on 50kmh dual carriageway road - right hand lane closed to traffic



The awareness and prevention program shall address, but not be limited to, the following:

- Background information about HIV/AIDS,
- Education about transmission, personal risk and health;
- Preventives measure;
- HIV testing facilities list;
- Contact names and numbers of health clinics, health officers, programs and support groups for those affected; and
- Measures for the care and support of those affected.

4.4.4 Payment made as a lump sum price for all costs associated with implementing and maintaining the HIV/AIDS policy and awareness and prevention program.

4.5.0 Waste Management

4.5.1 Scope

These specifications cover requirements for handling and disposal of wastes generated during road rehabilitation for the Lagos Urban Transport Project.

4.5.2 Application

These specifications apply to all Personnel and Contractors involved in the removal of materials or, otherwise generation of waste as well as its disposal during rehabilitation of the highway. This includes: used road/expressway resurfacing material removed as part of the project; waste petroleum products; used engine oil filters; spent batteries; domestic wastes; containers of chemical used as road mark ie. drums, cans etc, wastes generated during the disassembly of the staging areas and other solid wastes.

4.5.3 Waste Management General

The following specification applies to all waste materials:

- 4.5.3.1 All excess materials shall be managed so as to prevent their entry to water bodies and watercourses.
- 4.5.3.2 All stockpiles will be placed so as not to interfere with watercourses or surface drainage and shall not be placed within 10 m of a watercourse or drain.
- 4.5.3.3 All waste stockpiles shall be removed within one week of initial placement.
- 4.5.3.4 The Contractor shall develop a strategy for the reuse, recycling and/or disposal of all waste materials including waste hydrocarbon materials at the outset of construction. The strategy shall identify the types of materials that can be reused or recycled and shall specify the manner in which these materials will be removed from the site. The strategy shall also specify those materials, which are to be disposed and shall identify specific approved facilities where these materials shall be sent, and the manner in which materials will be removed from the site.

4.5.4 Used Road/Expressway surfacing material

The Road Rehabilitation portion of the Lagos Urban Transport Project will be generating large quantities of used road/expressway surfacing material (i.e., used bituminous pavement). Although widely used, asphalt contains bituminous and should not be treated as an inert product. In addition, asphalt to be removed from the qualified sections of roads has been exposed to contaminants generated by traffic.

- 4.5.4.1 Following removal, bituminous pavement used may be stockpiled within the project area or designated areas away from water bodies and watercourses.
- 4.5.4.2 *Used bituminous pavement shall not be stockpiled or otherwise stored within or in proximity to the water table (i.e., 1 m above).*
- 4.5.4.3 Stockpiled/used bituminous pavement should be disposed, re-used or (at the discretion of LAMATA) donated to an appropriate user within one month.
- 4.5.4.4 Bituminous pavement that has been removed can be re-used within the project area, for example, for surfacing the shoulders to provide a hardened surface. However, it cannot be used for re-surfacing of the travelled section of the road.
- 4.5.4.5 Where not required for the purposes of the project, used bituminous pavement should be properly disposed, or (at the discretion of LAMATA) donated to local government authorities, under the agreement that it will be used for surface uses and not be used for fill or otherwise exposed to the water table.
- 4.5.4.6 The Contractor shall store all used highway surface materials in areas provided by him and approved by the Supervisory Consultant and LAMATA, for a period not to exceed one month.
- 4.5.4.7 Storage areas shall have a beam around the perimeter of the stockpile, using material other than that being stored, to prevent erosion and sedimentation.
- 4.5.4.8 All stockpiles, waste material storage areas, etc. shall not be placed within 10 m of a river, watercourse or drain.

4.5.5.0 Waste petroleum products

Waste petroleum products, in the form of used engine oil, diesel fuel, lubricants and solvents, will be generated at the Project site. These wastes have properties that can result in adverse environmental impacts to terrestrial and aquatic habitat, soil and the quality of surface waters and groundwater if they are improperly managed or disposed. This section identifies the strategies for the recycling and disposal of waste petroleum products.

No formal arrangement exists at present for disposal or recycling of used engine oil and other lubricants, and oil filters. On the other hand, amounts to be generated are relatively small, probably not exceeding 700 litres per year (twice yearly oil change of 7 litres by 50 vehicles).

4.5.5.1 The Contractor shall develop a strategy for the reuse, recycling and/or disposal of waste petroleum products at the outset of construction with the objective of minimizing disposal.

The strategy shall apply to all personnel who are involved in servicing vehicles, handling fuel, using fuel and handling waste materials.

4.5.5.2 To minimise the generation of waste petroleum products requiring disposal:

- Best practical pollution control principles and technologies should be employed in all areas of the project operations;
- Activities generating waste petroleum products should be reviewed on a regular basis to identify and implement further waste reduction strategies where possible; and
- Waste petroleum products should be reused or recycled on-site as appropriate or transported off-site for commercial recycling purposes

- Or disposal.
- 4.5.5.3 To effectively manage the disposal of waste petroleum products;
- Sorting procedures should be communicated to all personnel;
 - Personnel assigned to handle waste materials should be properly trained;
 - Used engine oil, solvents and contaminated diesel should be stored in segregated, leak proof containers and tanks at a designated staging area in accordance with this Guide;
 - Waste engine oil, solvents and contaminated diesel containers should be fully and properly labelled in accordance with regulatory requirements;
 - Waste petroleum products not suitable for reuse or recycling on-site should be disposed of at an approved facility; and
 - The Contractor shall inspect all waste oil transfer and storage facilities regularly to ensure procedures are being followed and to recommend improvements as appropriate.
- 4.5.5.4 The Consulting Engineer Environmental Inspector shall inspect on-site waste petroleum products handling practices and the waste oil transfer and storage facility on a weekly basis. Operating procedures should be adjusted as opportunities are identified to further improve waste oil handling and disposal practices.
- 4.5.5.5 The Contractor is required to collect all used oil and lubricants and store these in a leak-proof container(s). The Contractor will notify LAMATA and the Consulting Engineer of the storage location. The

LAMATA Safeguards and the Contractor shall consult with the Lagos State Environmental Protection Agency (LASEPA) to find an acceptable final disposition of these liquids and instruct all personnel accordingly.

4.5.6.0 Used oil filters

A number of used engine oil filters will be generated along the Project Corridor. This section identifies the strategies for the management and recycling of waste engine oil filters.

These specifications apply to all personnel who are involved in servicing vehicles and handling waste materials on-site. It is recognised that servicing may be carried out at existing service stations along the highway corridor and hence precludes the need for on-site storage, etc.

4.5.6.1 Sorting procedures should be communicated to all personnel. Personnel assigned to handling waste materials should be properly trained;

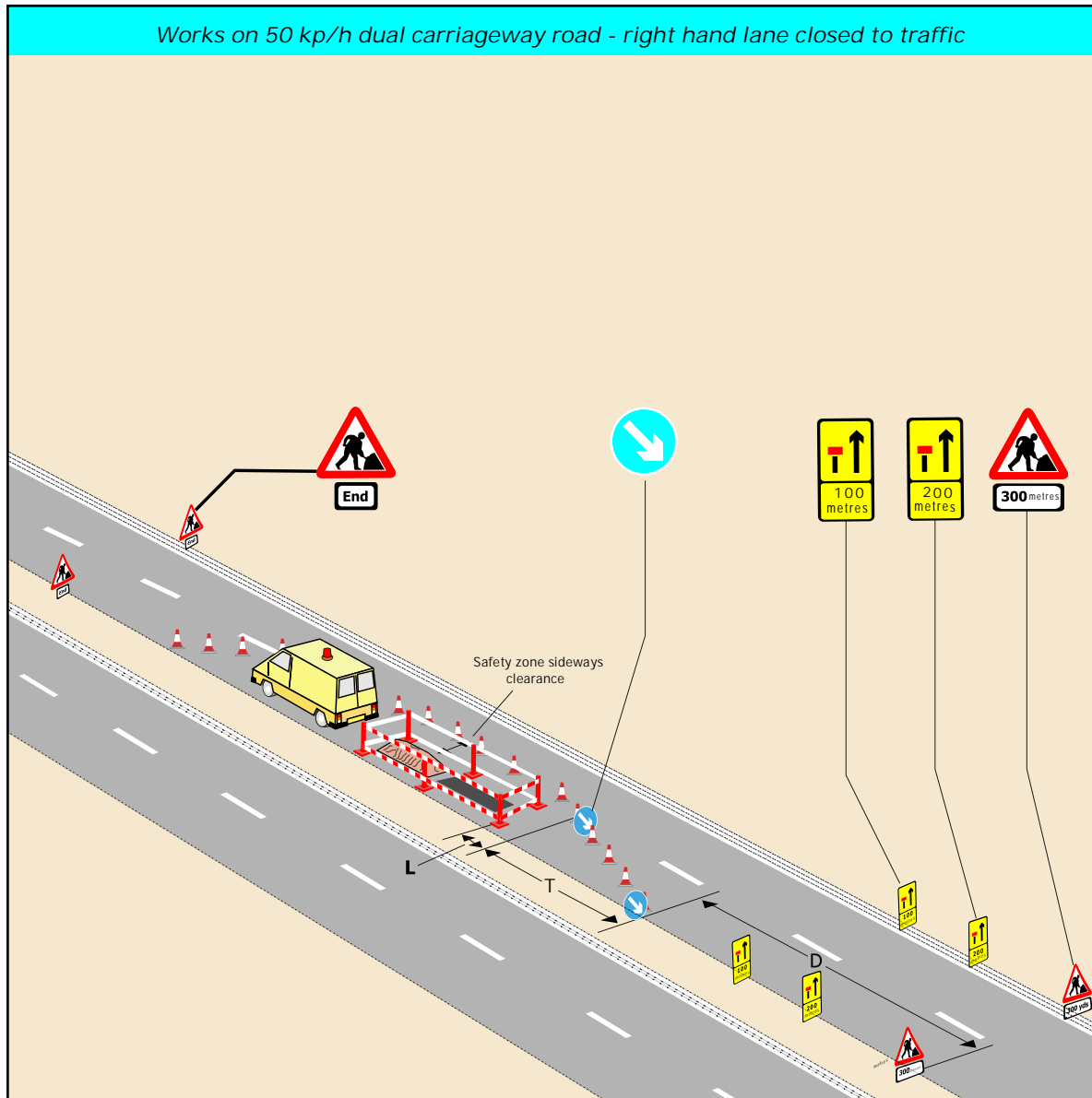
4.5.6.2 All oil filters should be collected and stored in segregated, leak-proof containers;

4.5.6.3 Full containers are to be stored at a designated staging area; and

4.5.6.4 Any waste oil recovered on-site from used oil filters is to be managed in accordance with the strategies contained in the Specifications for waste management

4.5.6.5 The Consulting Engineer Environmental Inspector will inspect used engine oil filter handling practices and storage facilities on a regular basis. Operating procedures should be adjusted to further improve used engine oil filter handling practices as appropriate.

Works on 50 kp/h dual carriageway road - right hand lane closed to traffic



4.5.7.0 Domestic solid waste

The effective management and disposal of solid, non-hazardous domestic wastes, including waste food, packaging, office wastes, paper, etc., is essential to reduce the volumes of materials to be landfilled. This section identifies strategies for the management and disposal of solid domestic wastes. The domestic waste management strategies apply to all personnel and visitors who are involved in the generation, storage, handling, transportation or disposal of domestic waste materials.

4.5.7.1 Solid waste reuse, recycling, sorting and disposal procedures shall
Ⓐ apply to all personnel and shall be undertaken consistent with the waste management strategy to be developed by the contractor as required by this Guide.

4.5.7.2 Ⓑ The Contractor shall provide sufficient numbers of waste collection receptacles to prevent littering of construction sites and staging areas.

4.5.7.3 Ⓐ All domestic waste shall be properly stored in designated containers and should be periodically removed for disposal at a designated landfill site.

4.5.7.4 The Supervisory Consultant Environmentalist shall monitor domestic waste handling practices on a regular basis. Operating procedures should be adjusted to further improve waste minimisation and waste handling practices as appropriate.

4.5.8.0 Disassembly of Construction sites

4.5.8.1 Upon completion of construction, the Contractor shall demolish wholly or in part, remove and dispose of all buildings, foundations, structures, pipe culverts, fences and any other obstructions that have not been approved by LAMATA to remain on-site, consistent with

the waste management strategy to be developed by the Contractor as required by this Guide.

4.5.8.2 The Contractor's waste management strategy shall specify the manner in which buildings, structures, fences, etc. shall be demolished, and removed from the Site for reuse by the Contractor or other recipients approved by LAMATA, or for disposal at a designated landfill site.

4.5.8.3 A specific plan for dismantling and re-using or disposing of demolition materials shall be prepared by the Contractor and submitted to the Supervisory Consultant and LAMATA for approval 60 days prior to initiation of demolition activities. This plan shall be consistent with the waste management strategy prescribed by this Guide

In general, the plan should provide procedures to ensure:

Minimum disturbance is caused to the occupants of adjacent buildings and properties and the general public, due to noise, dust, Water, projectiles, equipment or other causes.

No damage to vehicles or property.

The plan shall also include details of:

The methods to be used in operating the following generic Equipment or methods:

- Pneumatic concrete breaker
- Coring
- Electric saw
- Diamond wire sawing
- Diamond drilling
- Hydraulic bursting

- Concrete crushing
- Stitch drilling
- Blasting
- Cardhouse blasting
- Thermic lance
- “others to be specified”

The equipment to be used on site shall be listed together with any special precautions to be taken to minimise noise, dust, damage, personal injury or other nuisance including:

- The use of laminated saw blades
- The use of tents and sound absorbing hoods an/or blankets
- Protection against dust
- Protection against projectiles
- Protection against contamination and injury due to the use of chemicals, etc.
- Protection of the remaining structure, finishes and personnel against water and the collection and removal of water
- The support of the part of the structure being removed and the structure to remain to prevent premature collapse
- The removal of debris from the site

All concrete faces should be carefully trimmed back so as to leave a Face free from sharp projections, loose fragments or similar defects.

4.5.9.0 Other Solid waste

Given the large volumes of used highway material to be generated, the effective reuse, recycling and/or disposal of inert, non-hazardous solid wastes, including clean scrap steel, concrete, timber, glass and tires, is essential to reduce the potential for liability and environmental contamination.

Both temporary and permanent disposal of construction waste materials must be considered. Due to their value as fill or for construction, they will be in demand for these purposes, and individuals may come to construction sites to remove them.

4.5.9.1 The Contractor shall identify materials to be reused and recycled and the manner in which these materials shall be sorted and removed from the site, consistent with the waste management strategy to be developed in accordance with this Guide.

4.5.9.2 The Contractor shall identify waste materials to be disposed and shall identify the approved facility where these materials will be sent and the manner in which they will be removed from the site, consistent with the waste management strategy to be developed, consistent with this Guide. The Contractor will be responsible for the supervision and safety of any individuals entering their constructions sites to remove materials.

4.5.9.3 The waste management strategy shall specify that:

- Waste sorting procedures should be communicated to all personnel.
- Personnel handling solid wastes should be properly trained.
- Hazardous wastes, if present, must be segregated from solid wastes;
- An inventory should be maintained of the nature (type and mass) of solid waste to be disposed at a landfill; and

4.5.9.4 The Contractor shall consult with the Supervisory Consultant and LAMATA to identify suitable locations for waste material temporary storage areas.

4.5.9.5 Timber waste products, which are untreated, may be used as firewood.

- 4.5.9.6 Structural steel waste produced from demolition of existing structures may be sold to scrap metal merchants.
- 4.5.9.6 Concrete waste resulting from structural demolition may be recycled.
- 4.5.9.7 The Supervisory Consultant Environmentalist will monitor solid waste handling practices on a regular basis. Operating procedures should be adjusted to improve the efficiency of solid waste handling practices when improvements are required.

5. Consultation and Participatory Approach

5.1 This section of the Guide describes whose responsibility is to ensure mitigation of adverse effect of LAMATA road network efficiency programme.

5.2 Description: Participation

It is a fundamental requirement of 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. To this end, LAMATA Consultants and Contractors must first of all identify key stakeholders in the area they need to carry out civil works.

5.3 Description: 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 characterized 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 recognizes 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.

- 5.4 Consultants should ensure the following during project cycle:
- 5.4.1 Dissemination of details of the transport sector proposals, and alternatives, and a summary (in non-technical terms) of the potential environmental impacts;
 - 5.4.2 Ensuring that information is provided in the most widely spoken local languages;
 - 5.4.3 Collection of local information relevant to the proposals;
 - 5.4.4 Involving local leaders where appropriate in co-coordinating the consultation process;
 - 5.4.5 Meetings with community representatives, NGOs, Local Government Councils and other interested bodies; (market women, union executives of road transport workers and the executives of artisans associations.)
 - 5.4.6 Surveys, where necessary, to ensure local opinion is canvassed.
 - 5.4.7 Presentation of the draft report via workshops with stakeholders to take account of their comments and recommendations.

6. Important Contacts

6.1.1 Description: The last chapter of the Guide is to assist Contractors and Consultants working for LAMATA either on or off site enable them to contact individuals or bodies whose immediate assistance may be critical to the success of their work.

6.1.2 LAMATA Contact

LAGOS METROPOLITAN AREA TRANSPORT AUTHORITY (LAMATA)

Block C, 2nd Floor, Motorways Centre,

1 Motorways Centre Avenue,

Alausa, Ikeja, Lagos

Tel: 01-2702778-82,

Fax: 01-2702783

advert@lamata-ng.com; or

enquiries@lamata-ng.com;

www.lamata-ng.com

6.1.3 Metropolitan Lagos Local Government Council contacts

6.2.1: List Of Council Managers In All Local Governments

S/N	NAME OF MANAGER	LOCAL GOVTS	GSM NUMBER	
1	Mr. M. A Bisiriyu	Agbado –Oke – Odo	08058440969	
2.	Mr. H. A Adenusi	Yaba	08033074458	
3.	Mr. N.A Anibaba	Oto Awori	08034288735	
4.	Mrs.F. Peters	Ayobo – Ipaja	08023217593	
5.	Mrs. N.T.oloni	Alimosho	08033233757	
6.	Mrs.A.O.Rosiji	Amuwo – Odofin	08023152454	
7.	Mr. JJ Onala	Imota	08033477332	
8.	Mr. O.M Ajayi	Apapa – Iganmu	08023141153	
9.	Mr. B.O. Mesewaku	Ajeromi	08037234758	
10	Mr.V.O Layeni	Badagry West	08023033423	
11	Mr. FF Hunwi	Badagry Central	08022241761	
12	Mr. B.R Kaffo	Lagos Mainland	08033011303	
13	Mrs.O.F.Salami	Coker – Aguda	08023057112	
14	Mr. R.O.O.Oladeji	Ikeja	08023124428	
15	Mr. H.A Laguda	Iru-Victoria Island	08033162184	

16	Mr.A.A Oluniyi	Isolo	08057735215
17	Mrs. F.A Fasuyi	Itire – Ikate	08034743985
18	Mr.S.M Oduwole	Kosofe	08032336334
19	Mr. R.O Pedro	Bariga	08023117811
20	Mr.M.O.Williams	Lagos Island East	08033007538
21	Mr.B. I Akinsanya	Lagos Island West	08033073792
22	Mr. Jimoh A. Yusuf	Ojokoro	08023602214
23	Mr.D.K.Oyetayo	Mosan –Okunola	08033000393
24	Mr. S.S Ogabi	Mushin	08029074242
25	Mrs. O.O.Atunrase	Odi-Olwo- Ojuwoye	08033268710
26	Mr. R. O Amodu	Ojo	08033325808
27	Mr.WJ Hundehin	Ojodu	08033031804
28	Mr. E. A Asaolu	Lekki	08037227790
29	Mr. A.K.J..Sadare	Olorunda	08023124848
30	Mr.T.A Fowler	Onigbongbo	08034743724
31	Mr.J.K Adekoya	Agboyi Ketu	08033039945
32	Mr. E.A Aina	Orile – Agege	08023153350
33	Mr. R.A Erogbogbo	Ikorodu West	08051112040
34	Mr.Oladepo Ahmed	Eredo	08034265654
35	Mr. N.A Shobajo	Ikoyi – Obalende	08034265654

36	Mr. I R Bello	Eti –Osa	08023611710
37	Mr. M.Banwo	Ibeju	08023026317
38	Mr.K.A Yusuf	Iba	08023117818
39	Mr.Olawale Oladunjoye	Egbe Idimu	08023057112
40	Mrs. A K Bello	Ifelodun	08023037508
41	Mr F. O Awobajo	Igando – Ikotun	08023134520
42	Rev.A.O.Ajayi	Igbogbo – Baiyeku	08023082189
43	Mr. S.K Hundeyin	Iju - Ifako	08023092918
44	Mrs. I O Longe	Ikorodu North	08023105030
45	Mrs. O A. Longe	Ikorodu Central	08023105020
46	Mr. Rufus Shokoya	Epe	08034279979
47	Mr.A. O. Omolaju	Ikosi – Isheri	08023103041
48	Mr. N. A Shobajo	Ikosi - Ejirin	08023139302
49	Mr.R.O Fashola	Oshodi	08023183138
50	Mr. W.O. Balogun - Agbaje	Oriade	08033021534
51	Mr. O. Gbogboade	Shomolu	08023070595
52	Mrs Joke Sanyaolu - Adeola	Eti Osa West	08023117815
53	Mrs. F.T Godo	Surulere	08033216521
54	Mrs. Olubunmi Olopin	Agege	08023164231
55	Mr. S.O Anibaba	Ijede	08023040308
56	Mr.K.A Bello Aromire	Apapa	08033086722
57	Mrs. B.A Dalumo	Ejigbo	08033321244

- 6.2.2 **Contacts of Fire Agencies**
Ojuelegba / Barracks Road,
Surulere. Lagos
- Alausa, Secretariat
Ikeja.
- 6.2.3 **Contacts of the Nigerian Police**
Motor Traffic Division (MTD),
Ijora, Lagos.
- 6.2.4 **Contacts of LASAMBUS**
Ministry of Health,
The Secretariat, Alausa,
Lagos.
- 6.2.5 **Contact of Federal Road Safety Commission**
Ojodu Office Opposite Solid Rock Hospital,
Ojodu, Ikeja. Tel: 01-7933192
- 6.2.6 **Lagos State Traffic Management Authority (LASTMA)**
Operations Headquarters
Apapa - Oshodi Expressway
Oshodi, Lagos. Tel: 01-4703325, 7743028
- 6.2.7 **Lagos Waste Management Authority (LAWMA)**
Headquarters Office, Ijora Causeway
Ijora, Lagos. Tel: 01-4355655

