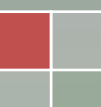


Environmental Guideline on Bus Depot of less than 50 buses



Department of Environment

The purpose of this environmental guideline is to provide guidance on the construction and operation of a bus depot to prospective developers on the basis of self-adherence and to assist Local Authorities at the Building and Land Use Permit stage.



1.0 Background

A bus depot serves as an area for parking buses and may also provide related facilities such as cleaning, washing, servicing and maintenance of buses, panel beating, painting and fuel dispensing.

The bus industry comprises currently five bus companies and a large number of individual or contract bus operators. The five bus companies already have well-structured bus depots inclusive of workshops for the maintenance and repair of buses. The depots are located either in industrial zones, residential areas or in the outskirts of urban and rural areas.

Conversely, the individual or contract bus operators either own one or a few buses or a small fleet of buses. In many cases, the buses are usually garaged on the premises of their owners situated in either rural or urban areas. Some of these bus depots are subject to complaints from the neighbourhood in terms of nuisances such as noise, smoke and odour (petroleum smell).

Major issues of environmental concern relate to:

- Site selection
- Noise
- Dust and exhaust emissions
- Wastewater
- Used oil, Hydrocarbon and oil spills from buses
- Solid wastes
- Odour
- Fire/ Explosion Risks

2.0 Objectives of the guideline

This guideline is meant to ensure that prospective developers:-

- adopt appropriate mitigating measures to safeguard the environment.
- comply with provisions of relevant laws/ regulations/standards.
- adopt eco-friendly practices to optimize use of resources.

3.0 Applicable Legislation

The construction and operation of a bus depot of less than 50 buses does not warrant a Preliminary Environmental Report (PER) Approval or an Environment Impact Assessment (EIA) Licence. It requires, amongst others, a Building and Land Use Permit under the Local Government Act 2011. The construction and operation of a bus depot has to be carried out in accordance with the provisions under the Planning Policy Guidance and Outline Planning Scheme.

Note:-

1. *The bus depot must comply with relevant provisions of the Local Government Act 2011, the Town and Country Planning Act 1954, the Building Control Act 2012, the Planning and Development Act 2004, Mauritius Fire and Rescue Service Act 2013, as subsequently amended and all applicable guidelines and regulations.*
2. *According to Part A of the Fifth Schedule of the Environment Protection Act(EPA), item 4 “Depot for 50 buses or more” warrants Preliminary Environmental Report (PER) Approval.*

4.0 Location and Siting

The selection of the site for a bus depot should be determined on the basis of associated activities that are proposed, the number of buses and the existing development context of the site.

- (i) Bus depot, even for one bus, should normally not be allowed in residential agglomeration and should be located in commercial or industrial areas or at a suitable site outside the defined settlement boundary / residential areas.

Note:-

- Parking of bus/ buses within residential premises are associated with noise, smoke and odour nuisances and are subject to complaints from neighbours.
 - Where the owner has ample space and the existing site context can accommodate for parking of one or few buses within a residential area, on-site activities such as maintenance, spray painting, servicing and panel beating should not be allowed.
 - Individual bus owners within a locality are advised to group themselves into cooperatives and have a common bus depot.
 - The site should be large enough to allow for the buses to reverse within the premises and park in a nose-out position.
- (ii) The existing development context of the site should be compatible with the activity.
- (iii) At the design stage of new bus depots or the relocation of existing ones, consideration should be given to the site lay-out, with a view to preventing noise disturbance. In particular, attention should be paid to the location of entrances, exits, access roads and amenities.
- (iv) The site should not be located within any Environmentally Sensitive Area (ESA) and its prescribed buffer zone as per ESA Study 2009 such as wetland, steep slope and in areas that are likely to be affected by hazards such as inland flooding, landslide and storm surges, amongst others.
- (v) On site wastewater disposal facility such as septic tanks and absorption pits/leaching fields shall be located not less than 30 m from any water course as per Rivers and Canals Act 1863.
- (vi) Existing natural drains and watercourses on or in the vicinity of the site shall not be tampered with.

5.0 Mitigation of Environmental Impacts

5.1 Noise abatement

Noise from bus depots arises from:-

- Engine noise
- Bus traffic to and from the site
- Use of pneumatic air impact wrench required for quick removal and replacing of bolts on tyres
- Electric motors and other equipment
- Operations such as washing, servicing, repairs, panel beating, etc

As such, necessary precautions shall be taken to ensure noise emitted from the bus depot is within permissible limits as per the Environmental Standards for Noise Regulations under the EPA which stipulates:-

Industrial Noise		Neighbourhood Noise	
Time	Noise exposure limits	Time	Noise exposure limits
07.00-21.00 hrs.	60 dB (A) L_{eq}	07.00-18.00 hrs.	60 dB (A) L_{eq}
21.00-07.00 hrs.	55 dB (A) L_{eq}	18.00-21.00 hrs.	55 dB (A) L_{eq}
		21.00-07.00 hrs.	50 dB (A) L_{eq}
A tonal character adjustment of +5 dB (A) should be applied to the measured value where the noise has a definite continuous note such as a whine or hiss.			

Mitigating measures include:-

- Appropriate noise abatement measures to prevent nuisance to the surrounding environment.
- Provision of appropriate noise attenuating materials/structures to abate noise generated from equipment such as generators, compressors.
- Proper maintenance of equipment and use of exhaust silencers.

5.2 Dust and exhaust nuisances

The movement of the buses within the compound generates dust and exhaust emissions. Abatement measures must be taken to avoid such nuisances.

Mitigating measures include:-

- Proper maintenance of bus engines.
- Monitoring of smoke emissions and replacement of old buses.
- Engines of buses should not be kept idling unnecessarily.
- The premises shall be kept clean and free of dust at all times.
- For bus depot where associated activities such as repairs, servicing, spray painting are proposed, the yard should be asphalted or in concrete.

5.3 Wastewater management

Wastewater generated on-site arises from both domestic and industrial sources.

- Domestic wastewater is generated by staff employed at the bus depot.
- Industrial wastewater is generated from washing of buses and surface runoffs. It is normally characterized by presence of detergents, solid suspended matter, oil and diesel. If the wastewater is discharged without treatment, it will potentially contaminate watercourses.

Mitigating measures include:-

- Provision of appropriate wastewater treatment and disposal to the satisfaction of the Wastewater Management Authority.
- Installation of grease traps or oil water separators for removal of floatable solids from water.

Note:- Maintenance of the grease trap or oil water separator is to be carried out by the owner / promoter.

- The washing bay should be on concrete surfaces to prevent infiltration of surface runoffs.

5.4 Used Oil, Hydrocarbon and oil spills from buses

For bus depot where servicing and fuelling is proposed:-

- Used oil / sump oil (huile de vidange) is generated during servicing and need to be properly collected for recycling .
- Hydrocarbon and oil spills from the fuelling bay or from buses, storage tanks or washing from paved surfaces, will contaminate the soil on the site and in the neighbourhood, if they are allowed to spread across the site.
- Safe and leak-proof storage of fuel and oil must be ensured.

Mitigating measures include:-

- Used oil shall be collected and disposed of as per the provisions of the **Environment Protection (Collection, Storage, Treatment, Use and Disposal of Waste Oil) Regulations 2006**.
- Proper disposal of used oil at approved oil recycling companies
- Hazardous wastes shall be collected and disposed as per the provisions of the **Environment Protection (Standards for hazardous wastes) Regulations 2001**.

- All petroleum products and other chemicals must have secondary containment. Areas enclosed by secondary containment should be maintained, and all accumulated water within secondary containment areas should be disposed of.
- Necessary measures to prevent any hydrocarbon spills from vehicles and from equipment.
- Necessary bunded wall to be provided around any fuel storage tank
- Provision of a separate collector drain with an oil interceptor to properly manage wastewater from washing of workshop areas
- Contingency plans should be developed for any accidental spillage of petroleum products or any other unforeseen circumstances.

5.5 Solid waste management

The main sources of solid wastes are:-

- Industrial wastes such as used tyres, metal scraps, batteries
- Domestic wastes

Mitigating measures include:-

- Domestic solid wastes to be regularly collected in bins or waste handling receptacles and disposed of to the satisfaction of the Local Authority.
- All recyclable wastes, including used tyres, batteries and metal scraps to be properly collected for eventual re-use and recycling.
- No waste of any type to be disposed of in any watercourse including drains, canals and the surrounding environment.

5.6 Odour and sanitary nuisances

Odour may be released from used oil, fuel or from painting activities. Poor housekeeping may also give rise to sanitary nuisances such as stray dogs and proliferation of pests and rodents.

Mitigating measures include:-

- The premises should be kept clean at all times with good housekeeping.
- Appropriate measures should be taken to prevent odour nuisances to the surrounding environment.
- Installation of bait stations/ traps to control pests and rodents.
- The used tyres should be kept in a sheltered place so as not to accumulate rain water. These are usually breeding places for mosquitoes and other vectors.

5.7 Fire/ Explosion Risks

The presence of potential ignition sources at a bus depot poses high risks of fire / explosion. Safety measures shall be taken to the satisfaction of concerned authorities, including Mauritius Fire and Rescue Service and the Ministry of Labour, Industrial Relations, Employment and Training. The bus depot must have a valid Fire Certificate at all times.

Mitigating measures include:-

- Parking of buses at the bus depot should be designed in such a way so as to mitigate the propagation of fire. Access to the site should be readily available to the fire and rescue service on their arrival.
- Provision of a Fire and Evacuation Plan and Fire Safety Management Plan as provided under the Mauritius Fire and Rescue Service Act 2013.
- Provision of an emergency lighting system, portable fire extinguishers and fire alarm system.
- Provision of means to contain any fuel spill.
- Provision of adequate fire hose reel for fire-fighting purposes in the event of an incident.
- Display of conspicuous Fire Safety signs.

- Paint works using inflammable liquids shall be carried out as per the provisions of the Inflammable Liquids and Substances Regulations 1953.

5.8 Other mitigating impacts

- Necessary precautions should be taken to avoid disturbance to the neighbourhood by way of odour, dust, mud, noise or traffic.
- Safe storage of materials on site and stored materials not to be unduly visible or intrusive in the street scene.
- Provision for a proper drainage scheme for evacuation of stormwater to avoid any risks of flooding/water-logging of site and adjoining areas to the satisfaction of the Local Authority.

5.9 Eco-friendly Measures and Sustainability

Best environment friendly practices and initiatives need to be adopted during the construction and operation of bus depot, such as water and energy conservation measures (rain water harvesting for washing of premises, LED technologies, sensor lights), use of eco-friendly detergents and other products. *Solar panels and rain water harvesting are highly recommended for bus depots.*

Note:

- a. Bus owners should ensure that their bus/ buses are in good running condition to avoid pollution by way of vehicular smoke and noise.
- b. Relevant organizations need be consulted with regard to health and safety, traffic implications, fire, amongst others prior to embarking on the project to ensure compliance with their respective laws/regulations/standards.
- c. Non-compliance with environmental laws namely standards for air and noise is an offence under the EPA.

Copies of this guideline are available at the Department of Environment and on the website of the Ministry at <http://environment.govmu.org>; the government's portal at <http://www.govmu.org>, including the websites of Local Authorities.