

PRINCIPLES FOR TRAFFIC MANAGEMENT

1. PURPOSE

The purpose of this Traffic Management Plan (TMP) is to address regulatory compliance, traffic management practices, and protection measures to help reduce impacts related to transportation and the construction of temporary and long-term access within the vicinity of the Lichtenburg 1 project site. The objectives of this plan include the following:

- » To ensure compliance with all legislation regulating traffic and transportation within South Africa (National, Provincial, Local and associated guidelines).
- » To avoid incidents and accidents while vehicles are being driven and while transporting personnel, materials, and equipment to and from the project site.
- » To raise greater safety awareness in each driver and to ensure the compliance of all safe driving provisions for all the vehicles.
- » To raise awareness to ensure drivers respect and follow traffic regulations.
- » To avoid the deterioration of access roads and the pollution that can be created due to noise and emissions produced by equipment, machinery, and vehicles.

2. RELEVANT ASPECTS OF THE PROJECT

The road network within the area is operating at an acceptable level of service. There are no congestion problems, queue delays and delays in the surrounding road network. The routes leading to the site are Provincial and National Roads.

A formal gravel access road currently provides access from the Regional Road (R505), to the project site. The gravel road then becomes a gravel track, leading up to a gate used to access the Lichtenburg 1 project site. This is a SANRAL approved access.

During the construction phase imported elements associated with the development of Lichtenburg 1 will be shipped to and transported from the nearest and most practical port. It is estimated that the total number of heavy vehicle trips would vary between 4500 and 6000 during the construction phase. The calculated number of daily trips would be between 15 and 25. The impact of this on the road network would be negligible, as the additional peak hourly traffic would at most be 2 trips. The low construction and post construction traffic would have no significant impact on the existing traffic levels.

During the operation phase the total number of trips to be generated by the permanent workforce during the AM and PM peak period is 18 vehicles per hour. No other trips are expected to be generated during the operation phase and therefore the additional traffic is not considered to have a significant effect on the internal roads or the access roads and surrounding areas. The significance of the traffic impacts during the operation phase will be low with the implementation of the recommended mitigation measures.

3. TRAFFIC AND TRANSPORTATION MANAGEMENT PRINCIPLES

- » Prior to the commencement of construction the contractor must develop their own detailed Transport Management Plan (TMP) based on traffic volumes and road carry capacity outlines.

- » The transport contractor must ensure that all required permits for the transportation of abnormal loads are in place prior to the transportation of equipment and project components to the project site. Specific abnormal load routes must be developed with environmental factors taken into consideration.
- » Before construction commences, authorised access routes must be clearly marked in the field with signs or flagging.
 - * Traffic signs used must conform to the National Road Traffic Act and South African National Standards.
 - * Appropriate signs must be installed at locations as deemed necessary.
 - * Signage must be placed at intersections, speed limit alterations, severe changes in road grading, where road hazards are located and where usual traffic flow changes abruptly.
 - * All traffic signs must be obeyed by all staff and visitors on site, without exception.
- » The EPC Contractor must review the location of the designated access and will be responsible for ensuring construction travel is limited to designated routes.
- » All employees must attend an environmental training program (e.g. toolbox talks) by the Environmental Officer (EO). Through this program, employees will be instructed to use only approved access roads, drive within the delineated road limits, and obey jurisdictional and posted speed limits to minimise potential impacts to the environment and other road users.
- » The contractor will be responsible for making sure that their suppliers, vendors, and subcontractors strictly comply with the principles of this TMP and the contractor's TMP.
- » Adjacent landowners must be notified of the construction schedule.
- » Access roads and entrances to the site should be carefully planned to limit any intrusion on the neighbouring property owners and road users.
- » Signs must be posted in the surrounding area to notify landowners and others of the construction activity.
- » Flagging must be provided at access points to the project site and must be maintained until construction is completed on the site.
- » Speed limits must be established prior to commencement of construction and enforced for all construction traffic. The following limits are suggested for internal roads:
 - * 60 km/hour where sign posted.
 - * 40 km/hour where sign posted.
 - * 20km/hour around workshop areas, in all car parks and yards.
 - * A warning system, penalties or fines must be put in place where speed limits are not adhered to.
- » Speed controls and the implementation of appropriate dust suppression measures must be enforced to minimise dust pollution.
- » Throughout construction the contractor will be responsible for monitoring the condition of roads used by project traffic and for ensuring that roads are maintained in a condition that is comparable to the condition they were in before the construction began.
- » Inspect traffic/road signs regularly for cleanliness, condition and appropriateness. Take immediate action to rectify any problems with signage.
- » Drivers must have an appropriate valid driver's license and other operation licences required by applicable legislation.
- » All vehicles must be maintained in good mechanical, electrical, and electronic condition, including but not limited to the brake systems, steering, tires, windshield wipers, side mirrors and rear view mirror, safety belts, signal indicators, and lenses.
- » Any traffic delays attributable to construction traffic must be co-ordinated with the appropriate authorities.

- » No deviation from approved transportation routes must be allowed, unless roads are closed for reasons outside the control of the contractor.
- » Impacts on local communities must be minimised. Consideration should be given to limiting construction vehicles travelling on public roadways during the morning and late afternoon peak commute time.
- » A driver must not use the vehicle's horn except on the grounds of safety.
- » Drivers of vehicles must always keep to the left and must be observant of other road users.
- » Drivers must follow communication procedures and shall where applicable be trained in the correct use of two-way radios.
- » Ensure all staff are trained upon entering the site regarding the meaning and correct response to each traffic sign utilised on site.
- » All light vehicles must be fitted with a flashing amber strobe or revolving light.
- » Persons authorised to operate on site must have a legal valid appropriate code provincial driver's license and competency certificate where applicable.
- » No passengers are allowed in any construction vehicles. If an assistant is required, they must obtain permission.
- » Vehicles must be maintained at approved intervals and must be inspected daily before use to ensure safe operation.
- » All vehicles must only be used within the design specifications and limits set by the manufacturer.
- » All construction vehicles will be used according to the Health and Safety Plan and related Method Statements and/or Risk Assessments.
- » Weather and road conditions must be sufficient to allow safe vehicle operation to proceed. Head lights must be turned on at all times.
- » No vehicle will be driven with any defect that may impact on the safe operation of that vehicle.
- » Two-way radios shall only be used for official/work related matters.
- » The use of mobile phones while driving a vehicle is prohibited.
- » All vehicles shall carry a fire extinguisher (Dry Powder); 2.5kg for light vehicles, 4.5kg for haul trucks and 9kg for machinery.

4. MONITORING

- » The principal contractor must ensure that all vehicles adhere to the speed limits.
- » A speeding register must be kept with details of the offending driver.
- » Repeat offenders must be penalised.