

## **DESCRIPTION OF ALTERNATIVES**

### 1 IDENTIFYING ALTERNATIVES

The IEM procedure (Department Forestry, Fisheries and the Environment) stipulates that an environmental investigation needs to consider feasible alternatives for proposed developments.

This means that for any project that is proposed, there should be a number of possible proposals or alternatives for accomplishing the same objectives or meeting the same need. The developer should be encouraged to consider alternatives that would still meet the objectives of the original proposal, but which would also have an acceptable impact on the environment (referring to physical, biological, socio-economic and aesthetic/visual).

### 2 REASONABLE RANGE OF ALTERNATIVES

Possible alternatives were identified through discussions with authorities, discussions with I&AP's, reviewing of existing environmental data bases and the client.

Alternatives can be categorized into the following:

- Location alternatives;
- Activity alternatives;
- The "no-action" alternative.

#### **a) LOCATION ALTERNATIVES**

The challenge in selecting a site for the installation of the diesel tank was finding one that can be developed economically without,

- unnecessarily stressing the environment,
- inducing large scale negative impacts on adjacent properties, and
- incurring excessive cost with regards to provision of engineering services.

The size of the site also had to be sufficient to accommodate the installation of the tank and other requirements regarding available space for the tucks to refuel. Therefor, the suitability of the site for the proposed project depended on the following factors:

- existing engineering services available could be connected to,
- enough space for the project (land available),
- the condition of the site (geo-technical / hydrological suitability, etc.), &
- limited impact on traffic in the area.

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The following contributed to the choice the site:

- the site is already used by M&M Transport and therefor the tucks won't have to leave the site to refuel,
- minimum impact on the environment,
- acceptable geo-technical soil & hydrological (ground water) conditions, and
- availability of bulk connector services (water, electricity & access roads),

The site of application was found to be a suitable option as it conformed to the following criteria:

- **Availability, accessibility and size of site:** the site falls within the Laboria industrial area on the premises already used of M&M Transport. The site is large enough for the proposed installation of the diesel tank and associated infrastructure as well as and other requirements regarding available space for the tucks to refuel.
- **Acceptable geo-technical soil & hydrological conditions:** No fatal flaws as from an engineering geological perspective were identified during the investigation. The site is deemed suitable for the proposed development as from a geotechnical and hydrological perspective, provided that the necessary design precautionary measures, pollution prevention measures and monitoring actions are implemented as outlined in the report (see Geotechnical Investigation and Hydrological Evaluation - Appendix D).
- **Availability of bulk connector (engineering) services (water, electricity & access roads):** The site is located in the Laboria industrial area and all engineering services are already available on site.
- **Environmental impact:** The site proposed for the installation of the diesel tank consists of a cleared area. There are no remaining natural vegetation on the site and this impact is therefore deemed to be of low significance.

Alternative sites need only be considered in cases where severe disturbance of ecological or bio-physical sensitive attributes might take place or where human health and safety will be forfeited.

From assessments conducted by the respective experts it does not appear as if any "fatal flaws" will result from the establishment and conducting of the proposed activities on the site of application. Alternative sites for the proposed development therefore need not to be considered.

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## **b) ACTIVITY ALTERNATIVES**

Due to the fact that no sensitive biological and/or archaeological aspects will be destroyed during construction, “activity alternatives” need not be considered with regards to the mentioned aspects.

With regards to operation of the intended activities, alternatives ways of conducting the activities should be identified using applicable standards for conduct e.g. SABS codes, as guidelines.

Any potential oil leaking from trucks/diesel spilled when refueling, mixed in with water when cleaning the concrete area of the pump/washing bay of the trucks will be collected in an oil separator before the water is disposed of in the municipal sewerage network. This will ensure that no pollution of underground water takes place.

The need of the proposed development with regards to water, electricity, sanitation, etc. can be met by making use of the existing engineering infrastructure of the Polokwane Municipality.

Passive solar design should be investigated to keep the buildings warm in winter and cool in summer. Special attention must therefore be given to orientation, shading and windows, circulation and designing adequate thermal mass. All devices installed should be energy efficient in order to lessen the demand for electricity.

An alternative to lessen the volume of water used by the intended facilities, would be to irrigate gardens/landscaped areas (if any) during the night or during the cooler parts of the day.

Appropriate indigenous plants should be used for landscaping as an alternative to exotic garden species. Indigenous species have lower water demand requirements than exotic introduced species.

## **c) NO ACTION ALTERNATIVE**

The Department Forestry, Fisheries and the Environment stresses the consideration of the “no development/no-action” option in cases where a proposed development is envisaged to have significant negative environmental impacts, or where such impacts cannot be mitigated against effectively or satisfactorily. The IEM procedure suggests that the “no action” option should be considered as an alternative. This option is normally considered during a full EIA where significant negative environmental impacts are expected or if the proposed site is considered to be ecologically sensitive or unique.

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In the case of the intended development, the consideration of the “no-action option” can be justifiably dismissed as an alternative due to the fact that no biologically sensitive areas or species are bound to be disturbed and due to the fact that the proposed development will not result in so-called “fatal flaws” (all identified impacts can be mitigated effectively through the implementation of the recommendations in this report). However, should evidence become available which suggests that the no action option should be reviewed as an alternative, then this alternative should warrant reconsideration.

If the proposed activity does not take place it will have the following implications:

- Loss of employment opportunities,  
The tucks of M&M transport will need to go to alternative filling stations/diesel depots located further away.

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