

- Dams, pans and water courses – a 100m visual buffer zone should be respected in this regard;
- Major roads (mainly national and arterial, but also secondary) – a 150m visual buffer zone should be respected in this regard;
- Homesteads and residences – a 250m visual buffer zone should be respected in this regard.

The potential site as identified by ECsoft Pty Ltd lies within this 2,5km radius, with limited areas of high sensitivity (i.e. a non-perennial pan and a section of secondary road). As a result, this potential site is considered acceptable in terms of the visual screening criteria applied.

4.2.4 Cost and technical input

In order to ensure that the economic inputs are also taken into account within the sensitivity mapping exercise, information regarding technical issues and costs were obtained from the Power Station operations team.

The existing furthest discharge point on ash dam 4 is at a radius of 3.3km from the power station. This discharge point relays to a pipe with a length of 4.8km from the existing ash pump station, due to the route of the pipeline. This pipe length and static height is what the existing ashing system can accommodate at the moment. The future upgrade of the system will be required to accommodate the increase in ash dam height to 1702 meter above mean sea level (mamsl).

In terms of technical / cost criteria the following categories can be identified:

- **Preferred area** - a radius of 3.3km from the power station. Establishing the proposed ash dam within this radius will ensure limited additional costs due to additional infrastructure and upgrading of existing infrastructure.
- **Less preferred area** - a radius of 3.3km to 4.3km from the power station. Depending on the route of the pipeline, the pipe length may increase to 5.8km. In order to accommodate this increased pipe length the power station would be required to progressively reduce the static height of the ash dam (final height) to 1652 mamsl, the increased height would require additional costs due to plant upgrade.
- **Not preferred** - Areas further than 4.3km radius will require major plant upgrade and is therefore considered as not preferable due to the considerable increased costs required.

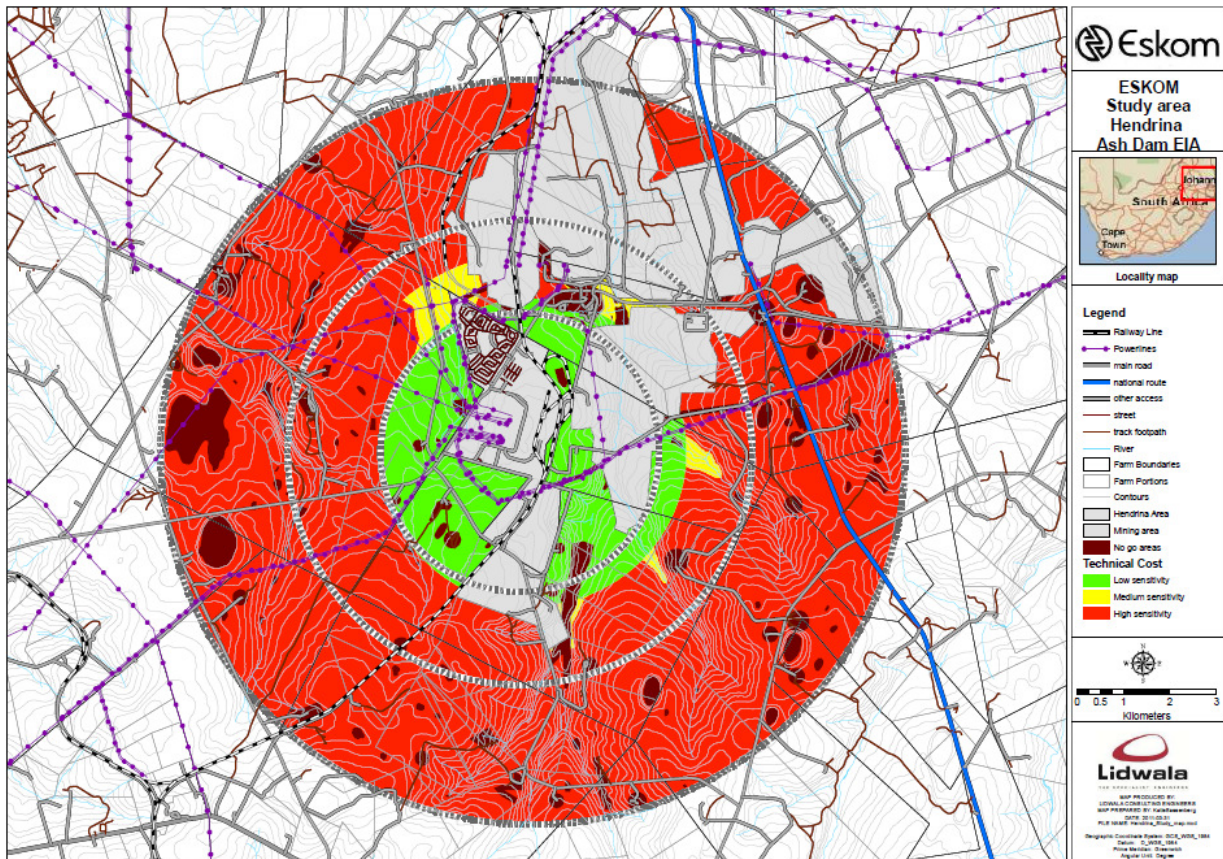


Figure 4.15: Technical / cost criteria map

4.3 Sensitivity Map Integration and Analysis

4.3.1 Consolidated Biophysical Sensitivity

The individual biophysical maps were overlaid and integrated to form the following combined biophysical sensitivity maps utilising the methodologies indicated in **Section 2**.

It can be noted that in terms of biophysical criteria, the most sensitive areas are those surrounding surface water structures, it will therefore be critical to ensure that the areas are avoided in terms of the identification of alternative sites.