

Impact Assessment

The purpose of the assessment is to synthesise and analyse information relevant to the environmental impacts of a proposal. In order to achieve this, two elements, namely the outline of methodology used and the systematic assessment of the impacts are required. The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can be ecological, economic, social, or all of the aforementioned. The evaluation of the significance of an impact relies heavily on the values of the person making the judgement. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

1. Assessment Methodology

This section outlines the methodology used to assess the significance of the potential environments impacts. For each impact, the EXTENT (spatial scale), INTENSITY (Degree of the impact) and DURATION (time scale) are described. These criteria are used to ascertain the significance of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described represents the full range of plausible and pragmatic measures and does not imply that they would or should be implemented.

Assessment criteria for the evaluation of impacts

Duration		Extent		Intensity		Probability		Consequence = (Duration+Extent) x Intensity		Significance	
Short-term	0	Site-specific	0	Very high - negative	4	Very unlikely	0	-8	Extremely detrimental	-	Very high - negative
Medium-term	1	Local	1	High - negative	3	Unlikely	1	-7	Highly detrimental	3	High - negative
Long-term	2	Regional	2	Moderate - negative	2	Fairly likely	2	-6	Highly detrimental	2	Moderate - negative
				Low - negative	1	Very likely	3	-5	Moderately detrimental	1	Low - negative
				Negligible	0	Certain	4	-4	Moderately detrimental	0	Very low
				Low - positive	1			-3	Slightly detrimental	1	Low - positive
				Moderate - positive	2			-2	Slightly detrimental	2	Moderate - positive
				High - positive	3			-1	Negligible	3	High - positive
				Very high - positive	4			0	Negligible	4	Very high - positive
								1	Negligible		
								2	Slightly beneficial		
								3	Slightly beneficial		
								4	Moderately beneficial		
								5	Moderately beneficial		
								6	Highly beneficial		
								7	Highly beneficial		
								8	Extremely beneficial		

2. Subjectivity in Assigning Significance

To facilitate informed decision-making, Environmental Impact's Assessments (EIA's) must endeavour to come to terms with the significance of the potential environmental impacts associated with particular development activities. Despite their attempts at providing a completely objective and impartial assessment of the environmental implications of development activities, EIA processes can never completely escape the subjectivity inherent in attempting to define significance. Recognising this, we have attempted to address potential subjectivity in the current process as follows:

- Being explicit about the difficulty of being completely objective in the determination of significance, as outlined above.
- Developing an explicit methodology for assigning significance to impacts and outlining this methodology in detail in this BAR. Having an explicit methodology not only forces the assessor to come to terms with the various facets contributing toward determination of significance, thereby avoiding arbitrary assignment, but also provides the reader of the BAR with a clear summary of how the assessor derived the assigned significance.
- Wherever possible, differentiating between the likely significance of potential environmental impacts as experienced by the various affected parties.
- Although these measures may not totally eliminate subjectivity, they provide an explicit context within which to review the assessment of impacts.

3. Consideration of Cumulative Impacts

Section 24(4) of the National Environmental Management Act requires the consideration of cumulative impacts as part of any environmental assessment process. EIA's have traditionally, however, failed to come to terms with such impacts, largely as a result of the following considerations:

- Cumulative effects may be local, regional or global in scale and dealing with such impacts requires co-ordinated institutional arrangements; and
- EIA's are typically carried out on specific developments, whereas cumulative impacts may result from broader biophysical, social and economic considerations, which typically cannot be addressed at the project level.

4. Impacts on the Biophysical and Social Environment

4.1 Construction Phase

Mabopane Cemetery													
Construction Phase													
Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Dust generation	Short-term	Site-specific	Moderate - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Site-specific	Low - positive	Negligible	Very likely	Very low
2	Floral disturbance	Long-term	Local	High - negative	Highly detrimental	Certain	High - negative	Medium-term	Site-specific	Moderate - positive	Slightly beneficial	Very likely	Low - positive
3	Fauna disturbance	Long-term	Local	Moderate - negative	Moderately detrimental	Certain	High - negative	Medium-term	Site-specific	Moderate - positive	Slightly beneficial	Very likely	Low - positive
4	Soil erosion	Medium-term	Site-specific	Moderate - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Site-specific	Low - positive	Negligible	Very likely	Very low
5	Noise pollution	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative
6	Waste generation	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
7	Job creation	Long-term	Regional	Moderate - positive	Highly beneficial	Very likely	High - positive	Long-term	Regional	High - positive	Highly beneficial	Certain	Very high - positive
8	Groundwater contamination	Long-term	Local	Negligible	Negligible	Fairly likely	Very low	Long-term	Site-specific	Negligible	Negligible	Fairly likely	Very low
9	Increased traffic	Short-term	Local	Moderate - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low
10	Visual impacts	Short-term	Local	Negligible	Negligible	Very likely	Very low	Short-term	Local	Moderate - negative	Slightly detrimental	Unlikely	Very low
11	Cultural practises	Long-term	Local	High - positive	Highly beneficial	Certain	High - positive	Long-term	Local	High - positive	Highly beneficial	Certain	High - positive
12	Soil contamination	Short-term	Site-specific	Moderate - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
13	Stormwater management	Medium-term	Local	High - negative	Moderately detrimental	Very likely	Moderate - negative	Medium-term	Site-specific	Low - negative	Slightly detrimental	Fairly likely	Low - negative
14	Fire risks	Medium-term	Local	High - negative	Moderately detrimental	Fairly likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative
15	Security risks	Short-term	Local	Moderate - negative	Slightly detrimental	Very likely	Low - negative	Short-term	Local	Low - negative	Slightly detrimental	Very likely	Low - negative
16	Destruction of heritage resources	Long-term	Site-specific	Moderate - negative	Moderately detrimental	Unlikely	Low - negative	Short-term	Site-specific	Low - negative	Negligible	Fairly likely	Very low

Potential Impacts

Code	Impact
1	Dust generation
2	Floral disturbance
3	Fauna disturbance
4	Soil erosion
5	Noise pollution
6	Waste generation
7	Job creation
8	Groundwater contamination
9	Increased traffic due to construction vehicles
10	Visual Impact
11	Impact on cultural practises
12	Soil contamination
13	Stormwater
14	Fire Risk
15	Security Risk
16	Destruction of heritage resources

Significance:	Negative	Positive
Very high		
High		
Moderate		
Low		
Very low		

Pre-Mitigation

		Pre-mitigation																							
Probability	Certain			2.	3.													11.							
	Very likely				13.			9. 15.	1.	6.	10.							7.							
	Fairly likely				14.			4.	5. 12.		8.														
	Unlikely					16.																			
	Very unlikely																								
		Extreme	High	Moderate	Slight	Negligible						Slight	Moderate	High	Extreme										
		Detrimental				Consequence																Beneficial			

Post-Mitigation

		Post-mitigation																
Probability	Certain															11.	7.	
	Very likely						14. 15.		6. 12.	1. 4.		2. 3.						
	Fairly likely						5. 13.	9. 16.	8.									
	Unlikely						10.											
	Very unlikely																	
		Extreme	High	Moderate	Slight	Negligible					Slight	Moderate	High	Extreme				
		Detrimental					Consequence					Beneficial						

4.2 Operational Phase

Mabopane Cemetery													
Operational Phase													
Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
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4	Soil erosion	Medium-term	Site-specific	Moderate - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Site-specific	Low - positive	Negligible	Very likely	Very low
5	Noise pollution	Short-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative	Short-term	Local	Negligible	Negligible	Fairly likely	Very low
6	Waste generation	Short-term	Site-specific	Low - negative	Negligible	Very likely	Very low	Short-term	Site-specific	Negligible	Negligible	Very likely	Very low
7	Job creation	Long-term	Regional	Moderate - positive	Highly beneficial	Very likely	High - positive	Long-term	Regional	Moderate - positive	Highly beneficial	Certain	High - positive
8	Groundwater contamination	Long-term	Local	Negligible	Negligible	Fairly likely	Very low	Long-term	Site-specific	Negligible	Negligible	Fairly likely	Very low
9	Visual Impact	Long-term	Site-specific	Negligible	Negligible	Fairly likely	Very low	Long-term	Site-specific	Negligible	Negligible	Fairly likely	Very low
10	Impact on cultural practises	Long-term	Local	High - positive	Highly beneficial	Very likely	High - positive	Long-term	Local	High - positive	Highly beneficial	Very likely	High - positive
11	Stormwater	Medium-term	Local	Moderate - negative	Moderately detrimental	Very likely	Moderate - negative	Medium-term	Local	Low - negative	Slightly detrimental	Fairly likely	Low - negative

Potential Impacts

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8	Groundwater contamination
9	Visual Impact
10	Impact on cultural practises
11	Stormwater

Significance:	Negative	Positive
Very high		
High		
Moderate		
Low		
Very low		

Pre-Mitigation

		Pre-mitigation																
Probability	Certain			2.	3.													
	Very likely					11.	1.	6.							7. 10.			
	Fairly likely						4.	5.	8. 9.									
	Unlikely																	
	Very unlikely																	
		Extreme	High	Moderate	Slight	Negligible					Slight	Moderate	High	Extreme				
		Detrimental					Consequence					Beneficial						

Post-Mitigation

		Post-mitigation																
Probability	Certain															7.		
	Very likely					2. 3.			6.	1. 4.						10.		
	Fairly likely					11.			5. 8. 9.									
	Unlikely																	
	Very unlikely																	
		Extreme	High	Moderate	Slight	Negligible					Slight	Moderate	High	Extreme				
		Detrimental					Consequence										Beneficial	