	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
CONSTRUCTION PHASE																	
Atmospheric Emissions	Negative	Dust emissions	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**270**	*High*	Dust emissions are similar between both Alternative 1 and 2. '• A speed limit of 20km/h must be maintained on all dirt roads. • Dust suppression by means of either water with dust suppressant is required, if necessary. • Adherence to the prescribed dust fallout rates for non-urban areas from the National Dust Control Regulations, 2013 (600 < D <1200 mg/m2/day – 30 day average) • Dust monitoring spot checks (with hand held devices) should be undertaken by the ECO to ensure dust does not exceed allowable levels. • Activities such as crushing of aggregate should be halted in high wind speeds (i.e. during storms) • Where possible, fine aggregate material should be covered to reduce potential for dust. • Any soil excavated, and not utilised for rehabilitation, must be removed from site or covered and no large mounds of soil may be left behind after construction.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**270**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	*Not Applicable*	*Not Applicable*
	Negative	Emissions from vehicles ad equipment as well as materials requried for the upgrade (CO_2, NOx, SOx, VOC's etc.) (and associated	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into	N/A	Yes	Direct	*Local*	*Short-term*	*Low-Medium*	*Likely*	*Low*	**135**	*High*	• In terms of transportation of workers and materials, collective transportation arrangements should be made to reduce individual vehicle journeys where possible.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
		potential Climate change implications)	account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**											• All vehicles used during the project should be properly maintained and in good working order. • All vehicles and other machinery should comply with road worthy requirements and comply with legislation in terms of allowable emissions. '• Road closures and staging of construction to be planned as far as possible to reduce traffic disruptions (as traffic disruptions are a large source of emissions in road construction projects). '• Plant and vehicles to be switched off when standing idle for longer than 3 minutes (instead of idling engines for long periods).			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Local*	*Short-term*	*Low-Medium*	*Likely*	*Low*	**135**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Climate Change (Impacts on Construction timeframes and design requirements)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Indirect	*Neighbouring*	*Short-term*	*Low-Medium*	*Improbable*	*Low*	**30**	*High*	• Construction planning should take into account weather patterns as well potential changes to these due to climate change (for example, extreme events, flooding etc.) '• Design to take into account relevant floodlines to ensure infrastructure will not be impacted by potential for increased extreme events.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning	N/A			*Neighbouring*	*Short-term*	*Low-Medium*	*Improbable*	*Low*	**30**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**														
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Noise	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Possible*	*Low*	**60**	*High*	• Equipment and/or machinery which will be used must comply with the manufacturer's specifications on acceptable noise levels. • Construction activities should be limited to daytime only. • Spot checks using hand held noise monitoring devices should be undertaken to ensure minimal noise pollution during construction.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A	No	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Possible*	*Low*	**60**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Impacts to Drainage lines	Negative	Water quality	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Wetland Assessment**	No	Direct	*Local*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**120**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring. Storm water management. Erosion control. Waste management (litter). Additional detailed prevention and mitigation measures are included in the EMPr which is to be complied with during construction and operation of the project.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**75**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*None*	None required.	*None*	Not Applicable	Not Applicable
	Negative	Flow regime	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and**		No	Indirect	*Local*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Stock piling outside the drainage lines and other water courses, stormwater management and diversion structures, dry season construction, filtration. **As the alternatives continue to affect drainage lines, the**	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			associated access roads											**study found no preference for either.** In addition, the following general measures should be implemented: • Instability and erosion of steep slopes must be stabilised immediately. Re-vegetation in consultation with landscape architect and ECO should be done if and where required. • To reduce the loss of material by erosion, disturbance must be kept to a minimum. • Where possible, natural vegetation should be retained to reduce the risk of erosion. • Silt fences must be used to stabilise the sites, reduce erosion and silt entering the natural environment. No unchecked silt may enter the natural environment. • Sound stormwater management as per the approved stormwater management plan. • Increased run-off during construction should be managed using berms, temporary cut-off drains, attenuation ponds or other suitable structures, in consultation with the ECO and resident Engineer. • Stormwater management system is to be installed as soon as possible following site establishment, to attenuate stormwater during the construction phase, as well as during the operational phase. • Surface-water run-off and stormwater must be directed away from trenches and areas of excavation.			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required.	*None*	Not Applicable	Not Applicable
	Negative	Habitat	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Indirect	*Site*	*Medium-term*	*Low-Medium*	*Likely*	*Low*	**120**	*High*	• The following mitigation measures suggested by the wetland specialist apply: minimal ingress and egress. As the alternatives continue to affect drainage lines, the study found no preference for either. In addition, the following general measures should be implemented: • The wetland areas should be declared 'no-go' area's during the construction and must be demarcated prior to construction; • All laydown, storage areas etc. should be restricted to within the development footprint; • Compilation and implementation of a Wetland Rehabilitation Plan.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Medium-term*	*Low-Medium*	*Likely*	*Low*	**120**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required.	*None*	Not Applicable	Not Applicable
	Negative	Biota	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into		No	Indirect	*Neighbouring*	*Short-term*	*Low*	*Likely*	*Low*	**75**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Stock piling outside drainage line and water course, erosion control, stormwater management, dry	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**											season construction, silt barriers and filtration. **As the alternatives continue to affect drainage lines, the study found no preference for either.** In addition, the following general measures should be implemented: • The wetland area should be declared 'no-go' area's during the construction and must be demarcated prior to construction; • Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site; • No trapping, killing or poisoning of any wildlife should be allowed on site; • Staff should be educated about the sensitivity of faunal species and measures should be put in place to deal with any species that are encountered during the construction process. The intentional killing of any animals including snakes, insects, lizards, birds or other animals should be strictly prohibited.			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Short-term*	*Low*	*Likely*	*Low*	**75**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Geomorphology	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 -**		No	Direct	*Neighbouring*	*Medium-term*	*Low-Medium*	*Likely*	*Low*	**135**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Stormwater management design and erosion control measures. As the alternatives continue to affect drainage lines, the study found no preference for	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Inclusion of consolidated accesses and associated access roads											either. In addition, the following general measures should be implemented: • Instability and erosion of steep slopes must be stabilised immediately. Re-vegetation in consultation with landscape architect and ECO should be done if and where required. • To reduce the loss of material by erosion, disturbance must be kept to a minimum. • Where possible, natural vegetation should be retained to reduce the risk of erosion. • Proper stormwater management as per the approved stormwater management plan. • Increased run-off during construction should be managed using berms, temporary cut-off drains, attenuation ponds or other suitable structures, in consultation with the ECO and resident Engineer. • Stormwater management system is to be installed as soon as possible following site establishment, to attenuate stormwater during the construction phase, as well as during the operational phase. • Surface-water run-off and stormwater must be directed away from trenches and areas of excavation.			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Medium-term*	*Low-Medium*	*Likely*	*Low*	**135**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	Not Applicable	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
Impacts to Crocodile River and its tributaries	Negative	Water quality	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Aquatic Assessment**	No	Direct	*Local*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*	• The following mitigation measures were suggested by the aquatic specialist: Preventative and remedial methods for chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Stormwater management. See EMPr specific measures for water quality. No difference in the ratings apply between the two alternatives. In addition, the general measures as discussed under impacts to drainage lines above should be implemented.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*None*	None required.	*None*	Not Applicable	Not Applicable
	Negative	Flow regime	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Indirect	*Site*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**125**	*High*	• The following mitigation measures suggested by the aquatic specialist: Flow modification measures to prevent reduction and significant increase of flow. Stormwater management. See EMPr specific measures. No difference in the ratings apply between the two alternatives.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**125**	*High*	In addition, the general measures as discussed under impacts to drainage lines above should be implemented.	*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required. However, it should be noted that the existing Crocodile Bridge does modify flow already.	*None*	Not Applicable	Not Applicable
	Negative	Habitat	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Indirect	*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*	• The following mitigation measures suggested by the aquatic specialist: Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Rehabilitation methods to restore favourable habitat. See EMPr on water quality for detailed measures. No difference in the ratings apply between the two alternatives. In addition, the general measures as discussed under impacts to drainage lines above should be implemented.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads,**				*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option		Not Applicable	Not Applicable	*Site*	*Long-term*	*Low-Medium*	*Likely*	*Low*	**165**	*High*	None required.	*None*	Not Applicable	Not Applicable
	Negative	Biota	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Indirect	*Local*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*	• The following mitigation measures were suggested by the aquatic specialist: Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Rehabilitation methods to restore favourable habitat. See EMPr in terms of water quality for specific requirements. No difference in the ratings apply between the two alternatives. In addition, the general measures as discussed under impacts to drainage lines above should be implemented.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Geomorphology	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Neighbouring*	*Medium-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	• The following mitigation measures were suggested by the aquatic specialist: Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Rehabilitation methods to restore favourable habitat. See EMPr in terms of water quality for specific requirements. No difference in the ratings apply between the two alternatives. In addition, the general measures as discussed under impacts to drainage lines above should be implemented.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Medium-term*	*Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Waste Generation	Negative	Domestic waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Local*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	• Waste recycling to be put in place. • Solid waste shall only be stored in the designated general waste storage area which must be enclosed and impermeable. •All solid waste shall be disposed of by a certified contractor, off-site, at an approved landfill site. The Contractor shall supply the ECO with a certificate of disposal	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	**Description**	**Alternative**	**Link to Specialist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Local*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	for auditing purposes. • Waste separation and recycling must be undertaken as part of construction as much as possible.	*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Construction waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Local*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**360**	*High*	• Construction waste must be separated on site and placed in different waste bins allocated for: glass, metals, plastics, carboards/paper, domestic and hazardous. These wastes shall be collected or sent for recycling. Domestic waste shall be landfilled at a registered landfill facility, whilst the hazardous wastes are to be collected for safe disposal at a registered hazardous landfill facility like Holfontein. • Construction rubble must be disposed of at a registered site if required. • Waste separation and recycling must be undertaken as part of construction and operation.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing**	N/A			*Local*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**360**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Hazardous waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Local*	*Short-term*	*Low-Medium*	*Definite*	*Low-Medium*	**270**	*High*	• The classification of waste determines the handling methods and the ultimate disposal of the material. The contractor shall manage hazardous wastes that are anticipated to be generated by his operations as follows: Characterise the waste to determine if it is general or hazardous. Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste. • Only temporary storage of waste is allowed (once of storage of waste for a period less than 90 days). The volume of material should be limited to less than 80m3 of hazardous waste. Should this be exceeded the Norms and Standards for the Storage of Waste will need to be complied with.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A	Yes	Direct	*Local*	*Short-term*	*Low-Medium*	*Definite*	*Low-Medium*	**270**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
Soil Alteration	Negative	Loss of topsoil	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Site*	*Permanent*	*Medium*	*Definite*	*Medium*	**480**	*High*	• Once the sites have been cleared of vegetation (i.e. trees and shrubs), the topsoil including the existing grass cover is to be shallowly ripped before removal. • Topsoil must only be handled twice, once to strip and stockpile and once to replace and level. • Topsoil must be stripped in as dry condition as possible in order to prevent compaction. • The depth of topsoil to be stripped will vary between 200 – 300 mm (depending on each specific soil strata characteristics). The depth of the topsoil shall be determined by the EM before soil stripping commences. • Topsoil must be stored in a demarcated area which is protected from wind and rain. • It is strongly recommended that the topsoil from the natural areas be stored and used in the subsequent rehabilitation of the road reserve and access routes once construction had ended. The topsoil should be stored in low (1 m high), levelled stockpiles which would reduce the establishment of alien invasive species, as well as facilitate the control alien invasive species which could establish. • Topsoil stockpiles must be above the 1:50 year flood lines of the Crocodile River and its tributaries. • Stockpile topsoil in windrows parallel to the road servitude and associated works. • Do not stockpile	*Low-Medium*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Permanent*	*Medium*	*Definite*	*Medium*	**480**	*High*		*Low-Medium*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														topsoil in drainage lines. • All grass and other vegetation should be left on the topsoil stockpiles so that they colonise the area after construction.			
			No-Go Option	N/A	Yes	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	*No Loss*	*Reversible*
	Negative	Loss of land capability	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Site*	*Long-term*	*Low-Medium*	*Definite*	*Low-Medium*	**330**	*High*	• Land capability will not be significantly affected sicne most of the upgrade activities and infrastructure either fall within the existing SANRAL servitude or or existing gravel routes and/or remain as close to the existing servitude as possible by design. Most of the upgrade footprints however are altered by anthropogenic activities or is more indicative of veld/ riparian area. This is further corroborated by information in the Mbombela Municipality SDP which note that the land with a low agricultural capability is located in the Kruger National Park, Schoemanskloof, Ngodwana, at Pienaar, Matsulu, Daantjie, north-east of Legogote, Hilltop areas along the R40, and the western & southern escarpments of the municipality. The western section of the Schoemanskloof Route is dominated by plantations, whilst the eastern section by citrus and other fruit farming.	*Low-Medium*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Long-term*	*Low-Medium*	*Definite*	*Low-Medium*	**330**	*High*		*Low-Medium*	*Partial*	*High Degree*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Alteration of topography	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Permanent*	*Low-Medium*	*Definite*	*Medium*	**390**	*High*	Cuts will be put in place to allow for the re-alignment of some sections of the Schoemanskloof Road. In order to ensure the change in topography does not impact stormwater, the following must be implemented: • Stormwater management measures must be implemented to ensure these designs do not impact on stormwater. • Erosion control measures to be implemented. • Remediation of development footprint.	*Low*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Permanent*	*Low-Medium*	*Definite*	*Medium*	**390**	*High*		*Low*	*Partial*	*High Degree*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Soil pollution	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**60**	*High*	• Drip trays must be placed under all vehicles and plant that have evidence of oil leaks when immobile for longer than 24 hours. Vehicles suspected of leaking must be monitored and conduct a pre start-up inspection checklist. '• All vehicle/equipment maintenance and washing must be done in the workshop area,	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**60**	*High*	equipped with a bund wall and grease trap oil separator. • Workshop area must be monitored for fuel and oil spills. • Drip trays must be checked and replaced for vehicles standing (parked) for prolonged periods. • Drip trays must be of a sufficient size and volume to collect any hydrocarbon leakages from a stationary vehicle. • Spill kits (absorbent material) must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. • Spilled substances must be contained in impermeable containers for removal to a licensed hazardous waste site. • Significant spills should be reported to the Project Manager or Contractors Manager and ECO who should report this to the relevant authority. • Waste must be managed in line with the requirements of the EMPr.	*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Resource Consumption	Negative	Electricity consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Site*	*Short-term*	*Low-Medium*	*Likely*	*Low*	**75**	*High*	•During the construction phase the contractors will mainly make use of generators or connect to existing services. The requirements will not be extensive and the impact will therefore be low. '•Energy saving measures should be put in place and environmental awareness training regarding this should	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Short-term*	*Low-Medium*	*Likely*	*Low*	**75**	*High*	be undertaken to ensure compliance.	*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Water consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Local*	*Incidental*	*Low-Medium*	*Definite*	*Low-Medium*	**240**	*High*	• Enforce water saving strategies. • Environmental awareness training. • Comply to the GA conditions in terms of volumes and abstraction point localities along the Crocodile River.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing**	N/A			*Local*	*Incidental*	*Low-Medium*	*Definite*	*Low-Medium*	**240**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Fuel consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Local*	*Short-term*	*Low-Medium*	*Definite*	*Low-Medium*	**270**	*High*	• Record and monitor fuel consumption • Prevent theft of fuel (increase security) '• Environmental awareness training regarding this should be undertaken to ensure compliance.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Local*	*Short-term*	*Low-Medium*	*Definite*	*Low-Medium*	**270**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Raw materials consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	Yes	Direct	*Local*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**360**	*High*	There is a small difference in intensity between the alternatives in terms of raw material usage. The following general measures apply: '• Promote effective use of raw materials. '• Designs of new access roads to utilize existing infrastructure as far as possible. '• Material from cuts to be utilized to reduce need for additional materials to be imported to the site.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Low-Medium*	*Definite*	*Low-Medium*	**270**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Effects on Biodiversity	Negative	Loss of sensitive vegetation habitat (Threatened Ecosystem and CBA) and associated impact to flora	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Ecological Assessment**	Yes	Direct	*Site*	*Long-term*	*Low*	*Definite*	*Low-Medium*	**300**	*High*	The botanist found that it cannot be considered that the project would contribute significantly to habitat loss, whether for plants or animals within the immediate landscape. The following mitigation measures were recommended by the specialist: '• A vegetation scientist specialising in vegetation ecology should do a	*Low*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Permanent*	*Low*	*Definite*	*Low-Medium*	**360**	*High*	walkthrough prior construction commencing during the summer season, optimally January/ February to identify and mark protected plants for which permits are required. Those plants small enough to translocate could be temporarily stored in a nursery for re-introduction post construction. '• It is strongly recommended that the topsoil from the natural areas be stored and used in the subsequent rehabilitation of the road reserve once construction had ended. The topsoil should be stored in low (1 m high), levelled stockpiles which would reduce the establishment of alien invasive species, as well as facilitate the control alien invasive species which could establish.	*Low*	*Partial*	*High Degree*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required. However it should be noted that the specialist found that part of the site was modified by historic use.	*None*	Not Applicable	Not Applicable
	Negative	Impact to Fauna	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Site*	*Permanent*	*Low*	*Definite*	*Low-Medium*	**360**	*High*	Impacts to fauna relate to loss of vegetation. The upgrade of the road will result in the removal of natural vegetation, associated with a threatened vegetation unit on a regional scale and Critical Biodiversity Area on a provincial scale, however taking in consideration the extent of the area involved, of approximately 1 % of	*Low*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Permanent*	*Low*	*Definite*	*Low-Medium*	**360**	*High*	the larger landscape of primary persistent vegetation; it cannot be considered that it would contribute significantly to habitat loss, whether for plants or animals within the immediate landscape. The following mitigation measures were recommended by the specialist: '• A vegetation scientist specialising in vegetation ecology should do a walkthrough prior construction commencing during the summer season, optimally January/ February to identify and mark protected plants for which permits are required. Those plants small enough to translocate could be temporarily stored in a nursery for re-introduction post construction. '• It is strongly recommended that the topsoil from the natural areas be stored and used in the subsequent rehabilitation of the road reserve once construction had ended. The topsoil should be stored in low (1 m high), levelled stockpiles which would reduce the establishment of alien invasive species, as well as facilitate the control alien invasive species which could establish. '• The upgrade of the Schoemanskloof Road allows for an opportunity to increase the permeability of the road infrastructure to facilitate animal movement in the landscape. Therefore, culverts should be designed to allow	*Low*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														movement for small to medium size mammals to and from a water source such as the Crocodile River.			
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required. However, please note that the site is highly disturbed and degraded in parts.	*None*	Not Applicable	Not Applicable
Incidents, accidents and potential emergency situations	Negative	Pollution incidents	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium*	*Highly Likely*	*Low*	**175**	*High*	• Spill kits to be located in strategic areas for when needed • Regular site and plant inspection must be conducted • Environmental awareness training • Measures included in the EMPr in regard to pollution prevention shall be implemented to reduce pollution impacts.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium*	*Highly Likely*	*Low*	**175**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Health and safety - General	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	• 24 hour security and access control. • Health and Safety awareness training. • Contractor to submit a Health and Safety Plan, prepared in accordance with the Health and Safety Specification, for approval prior to the commencement of work. • A Safety Agent should be appointed • A Dedicated Occupational Health and Safety system to be implemented by Contractor's Safety Officer. To be monitored and audited by the Client's Safety Agent, in terms of the Construction Regulations (2003).	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Yes	Direct	*Local*	*Permanent*	*High*	*Definite*	*High*	**750**	*High*	The Schoemanskloof Road as it stands has dozens of motorist fatalities for various reasons - a significant factor being the treacherous bends at Poplar Creek. Upgrade and safety enhancements are required here.	*Medium*	Not Applicable	High Degree

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Health and safety - Construction risk	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	No	Direct	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	Whilst as with all projects, there will be some heath and safety risks, these can be mitigated through the implementation of the following: • Health and Safety awareness training. • Contractor to submit a Health and Safety Plan, prepared in accordance with the Health and Safety Specification, for approval prior to the commencement of work. • A Safety Agent should be appointed • A Dedicated Occupational Health and Safety system to be implemented by Contractor's Safety Officer. To be monitored and audited by the Client's Safety Agent, in terms of the Construction Regulations (2003).	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Short-term*	*High*	*Possible*	*Low*	**130**	*High*	Whilst as with all projects, there will be some heath and safety risks, these can be mitigated through the implementation of the following: • Health and Safety awareness training. • Contractor to submit a Health and Safety Plan, prepared in accordance with the Health and Safety Specification, for approval prior to the commencement of work. • A Safety Agent should be appointed • A Dedicated Occupational Health and Safety system to be implemented by Contractor's Safety Officer. To be monitored and audited by the Client's Safety Agent, in terms of the Construction Regulations (2003).	*Medium*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	**Description**	**Alternative**	**Link to Specialist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Storage of hydrocarbons resulting in spillages	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*	• Best practice regarding storage of substances - Hazardous substances must be stored and handled in accordance with the appropriate legislation and standards, which include the Hazardous Substances Act (Act No. 15 of 1973), the Occupational Health and Safety Act (No. 85 of 1993), relevant associated Regulations, and applicable SANS and international standards. - Any hazardous materials (apart from fuel) must be stored within a lockable store with a sealed floor. Suitable ventilation to be provided. - All storage tanks containing hazardous materials must be placed in bunded containment areas with impermeable surfaces. The bunded area must be able to contain 110% of the total volume of the stored hazardous material. • Spillages - In the event of spillages of hazardous substances, the appropriate clean up and disposal measures are to be implemented. - The contractor must ensure that necessary materials and equipment are available on site to deal with spills of any hazardous materials present - The ECO and Project Manager must be notified of all significant spillages.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Fire	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Local*	*Incidental*	*Medium*	*Possible*	*Low*	**110**	*High*	• During site establishment, contact must be established with the LEFPA Manager, Mr Andre Scheepers via e-mail: manager@lefpa.co.za ; or cellphone number: 083-310-7252 • Basic fire-fighting equipment must be available on site. Pages 17 and 18 of the Rules and minimum requirements document of LEFPA must be consulted regarding equipment required by Contractors in the region. This includes rubber beaters, gloves, fire extinguishers and masks. A water cart with a minimum capacity of 5000 litres, equipped with a pump and hose must be permanently on site(s) susceptible to the spread of uncontrolled fires. • Basic wildland fire fighting training is recommended. The LEFPA must be contacted in this regard. • The contractor must supply electrical or gas food warming facilities for the labourers at the contractor's yard. • Do not store any fuel or chemicals under trees but rather in properly bunded vessels and flammable stores. • Do not store gas and liquid fuel in the same storage area. • Staff must be adequately trained to operate all fire-fighting equipment on site and records of training must be kept for EMS and ECO auditing requirements. • All incidents should be reported to the	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														Concessionaire's EM, the ECO and be investigated, documented and kept in the environmental file. • No decanted fuel to be left unattended in the sun to avoid fire. • No open fires permitted anywhere on site. No on-site burning of waste materials, vegetation, litter or refuse shall be permitted. • Smoking shall only be allowed in designated areas that include fire extinguishers. • Appropriate facilities such as sand bins must also be provided at dedicated smoking areas. • Emphasis must be placed on the risk of cigarette butts during toolbox talks.			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Local*	*Incidental*	*Medium*	*Possible*	*Low*	**110**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	No	Direct	*Neighbouring*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**50**	*High*	The site is currently unoccupied and the risk for fire remains.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
Social	Negative	Visual impact - Construction	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**270**	*High*	During the construction phase the short-term visual disturbance is kept to a minimum that any such disturbance is adequately rehabilitated such that no long term disturbance remains. General mitigation measures include the following: • Erosion: special attention to erosion control is important as erosion tends to develop long term scars in the landscape. • Clearing of vegetation: Clearing of any vegetation that would provide a screening effect should be avoided. Generally, the overall area has abundance vegetation which could be utilised as a shield. • Access Roads: Use existing roads and tracks as far as possible • Rehabilitation: Any temporary disturbance should be rehabilitated as soon as possible to reduce the effects of erosion In addition, the following general measures apply: • Suitable screening to be put in place during construction to minimise visual impacts. • No littering to be allowed. • Good housekeeping practices to be followed	*Low*	*No Loss*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**270**	*High*		*Low*	*No Loss*	*#N/A*
			No-Go Option	N/A	Yes	Direct	*Neighbouring*	*Permanent*	*Low-Medium*	*Definite*	*Medium*	**420**	*High*	The sites are already affected by existing infrastructure such as the Schoemanskloof Road and upgrading it will mostly be visual influence during construction only.	*Medium*	*No Loss*	*#N/A*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Safety and security	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Possible*	*Low*	**60**	*High*	• 24 hour access control to the site and 24 hour security. • Workers found to be engaging in activities such as excessive consumption of alcohol, drug use or selling of any such items on site must be disciplined.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Low-Medium*	*Possible*	*Low*	**60**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	No	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*Low*	*No Loss*	*Reversible*
	Negative	Traffic disruptions	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	No	Direct	*Local*	*Short-term*	*Medium-High*	*Definite*	*Medium*	**450**	*High*	• All incidents should be reported to the Concessionaire, investigated, documented, closed out and record kept in the safety file. • Deliveries should preferably be scheduled for off-peak hour traffic times. • Where construction will obstruct existing access, be sure to allow for alternative temporary access routes.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Medium-High*	*Definite*	*Medium*	**450**	*High*	• Allow for safe pedestrian crossings where necessary. • Traffic calming measures must be implemented in consultation with the provincial traffic department. • Warning signs must be placed on and around the site as per the Occupational, Health and Safety Act and Road Traffic Act requirements. • Clearly indicate which activities are to take place within which areas of the site using demarcation and/or signage. • Traffic warning signage must be erected where applicable, along transport routes and access roads. Stop & go set-ups must be planned and agreed on with the Engineer and Traffic Department.	*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Impacts to structures and ruins of archaeological value. (Sites SCH023 and SCH025)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Phase 1 Heritage Impact Assessment**	No	Direct	*Regional*	*Permanent*	*Medium-High*	*Likely*	*Medium*	**390**	*High*	The area should be cleared, the features should be mapped after which a destruction permit should be applied for. The area should be monitored during construction. The site does not occur in a significant palaeontological area. There was no preference between either the proposal or alternative options.	*Low*	*Irreplaceable*	*Irreversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 -**				*Regional*	*Permanent*	*Medium-High*	*Likely*	*Medium*	**390**	*High*		*Low*	*Irreplaceable*	*Irreversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Impacts to structures and ruins of archaeological value. (Sites SCH005, SCH006, SCH022, SCH028, SCH030 and SCH032)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Phase 1 Heritage Impact Assessment**	No	Direct	*Neighbouring*	*Permanent*	*Low-Medium*	*Possible*	*Low*	**140**	*High*	The sites must be indicated on development plans and avoided.	*Low*	*Irreplaceable*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Permanent*	*Low-Medium*	*Possible*	*Low*	**140**	*High*		*Low*	*Irreplaceable*	*#N/A*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**		None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Impacts to archaeological resources (Iron Age Sites SCH009, SCH010, SCH011, SCH015, SCH016 and SCH017)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Indirect	*Neighbouring*				*Medium*			The area should be cleared, the features should be mapped after which a destruction permit should be applied for. The area should be monitored during construction.	*Low*	*Irreplaceable*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**		No	Indirect	*Neighbouring*				*Medium*				*Low*	*Irreplaceable*	*#N/A*
			No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**		None required	*None*	Not Applicable	Not Applicable
	Negative	Impacts to archaeological resources (Iron Age Sites SCH26 and SCH27)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct					*Medium*			The sites must be indicated on development plans and monitored during construction.	*Low*	*Irreplaceable*	*#N/A*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**		No	Direct					*Medium*				*Low*	*Irreplaceable*	*#N/A*
			No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**		None required	*None*	Not Applicable	Not Applicable
	Negative	Impacts to archaeological resources (Iron Age Sites SCH22 and SCH29)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Neighbouring*	*Short-term*	*Low*	*Possible*	*Low*	**50**	*High*	The sites must be indicated on development plans and monitored during construction.	*Low*	*No Loss*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing**		No	Direct	*Neighbouring*	*Short-term*	*Low*	*Possible*	*Low*	**50**	*High*		*Low*	*No Loss*	*#N/A*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**		None required	*None*	Not Applicable	Not Applicable
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*National*	*Permanent*	*High*	*Highly Likely*	*High*	**750**	*High*	'• Retain *in-situ* • Consultation with next-of-kin to obtain permission for encroachment onto burial sites • Implementation of a DHMP • The area sites should be monitored during construction and operation	*Medium*	*No Loss*	*#N/A*
	Negative	Potential impacts to burial sites (Burial Sites SCH018, SCH019, SCH020 and SCH024)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**		No	Direct	*National*	*Permanent*	*High*	*Highly Likely*	*High*	**750**	*High*		*Medium*	*No Loss*	*#N/A*
			No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**		None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Loss of sense of place	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Neighbouring*	*Short-term*	*Low*	*Possible*	*Low*	**50**	*High*	'• Suitable screening to be put in place during construction to minimise visual impacts. • No littering to be allowed. • Good housekeeping practices to be followed	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Short-term*	*Low*	*Possible*	*Low*	**50**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Change of land use	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Site*	*Permanent*	*Low*	*Definite*	*Low-Medium*	**360**	*High*	'• Land capability will not be significantly affected since most of the upgrade activities and infrastructure either fall within the existing SANRAL servitude or existing gravel routes and/or remain as close to the existing servitude as possible by design. Most of the upgrade footprints however are altered by anthropogenic activities or is more	*Low*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Permanent*	*Low*	*Definite*	*Low-Medium*	**360**	*High*	indicative of veld/ riparian area. This is further corroborated by information in the Mbombela Municipality SDP which note that the land with a low agricultural capability is located in the Kruger National Park, Schoemanskloof, Ngodwana, at Pienaar, Matsulu, Daantjie, north-east of Legogote, Hilltop areas along the R40, and the western & southern escarpments of the municipality. The western section of the Schoemanskloof Route is dominated by plantations, whilst the eastern section by citrus and other fruit farming.	*Low*	*Partial*	*Medium Degree*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Economic	**Positive**	Decline/increase in economy	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Regional*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**540**	*High*	The proposed development will provide a significant boost to the local economy. The following measures are applicable: • Local sub-contractors and suppliers to be used during the construction phase as far as possible. • Local accommodation venues, Viva Fuel Station etc. should be utilized as far as possible during construction.	*+ Medium- High*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and**	N/A			*Regional*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**540**	*High*		*+ Medium- High*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	Negative		No-Go Option	N/A			*Regional*	*Long-term*	*Medium-High*	*Definite*	*Medium-High*	**720**	*High*	Should the development not proceed, the benefits to the local community will be long term and negative. Firstly, there will be a loss of the injection of cash in the area. Secondly, the existing Schoemanskloof Road will function at a 'Level of Service' D – classification, which is still acceptable and the existing operational impacts of the road onto the environment would remain the same. However, with the projected traffic growth, a substandard 'Level of Service" E classification is expected in the year 2028 and the safety issues along the route will increase over time.	*Medium-High*	*Partial*	*High Degree*
	Negative	Construction impacts on existing businesses on N4 Schoemanskloof (R539)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Indirect	*Neighbouring*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	The proposed re-alignment of the Schoemanskloof Road may negatively impact on existing businesses which are currently located on the current alignment during construction due to noise, traffic disruptions etc. This could have a negative economic impact on these businesses. Mitigation measures related to noise, traffic disruptions etc. are	*Low*	*No Loss*	*#N/A*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	vital and must be stringently applied. Adequate signage should be put in place where applicable.	*Low*	*No Loss*	*#N/A*
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required.	*None*	Not Applicable	Not Applicable
	Positive	Construction costs (affordability)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	No	Direct	*Site*	*Short-term*	*Medium*	*Definite*	***+ Medium***	**240**	*High*	Affordability is an important consideration as the SANRAL and its implementing agents have limited budgets which need to be utilized for a multitude of projects. Excluding the safety upgrades of the Poplar Creek bend would be preferred from an affordability perspective.	***+ Medium***	*No Loss*	*Reversible*
	Negative		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads,**				*Site*	*Short-term*	*Medium*	*Definite*	*Low-Medium*	**240**	*High*	Due to the additional construction works required for the road safety upgrades of Poplar Creek bend, this alternative is costly and therefore not preferred (purely on costs involved).	*Low-Medium*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	Negative		No-Go Option				*National*	*Long-term*	*Medium*	*Highly Likely*	*Medium-High*	**575**	*High*	Although the no-go option will require direct capital investment, overall, it will result in a negative impact to the economy and therefore is not the affordable option.	*Medium-High*	*No Loss*	*Reversible*
	Positive	Employment	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Local*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**450**	*None*	The proposed development will result in approximately 250 construction related employment opportunities for the local community. Local labour should be utilised as far as possible and local businesses such as the Viva fuel station and accommodation venues supported.	*+ Medium*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**450**	*None*		*+ Medium*	*No Loss*	*Reversible*
	Negative		No-Go Option				*Local*	*Long-term*	*Medium-High*	*Definite*	*Medium-High*	**630**	*None*	Should the development not proceed, the benefits to the local community	*Medium-High*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Specialist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														will be long term and negative as potential employment opportunities will be lost. No mitigation measures are available.			

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
OPERATIONAL PHASE																	
Atmospheric Emissions	N/A	Dust emissions	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*Neighbouring*	*Long-term*	*Low-Medium*	*Likely*	*Low*	**180**	*High*	After the widening and re-alignments of the Schoemanskloof are completed, dust emissions would not be different to current levels. However, the inclusion of new access roads linked to consolidated accesses, will be sources of dust emitted since these are gravel roads.	*Medium*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Long-term*	*Low-Medium*	*Likely*	*Low*	**180**	*High*		*None*	*No Loss*	*Reversible*
	Negative		No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*Low-Medium*	*No Loss*	*Reversible*
	Negative	Emissions from vehicles and equipment (CO_2, NOx, SOx, VOC's etc.) (and associated potential Climate change implications)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*	With an increase in road traffic projected to at least increase by 3,6 % in the next few years, an increase in exhaust emissions will also be inevitable. By improving the road to be more free flowing, less prominent acceleration and deceleration of vehicles and trucks can be expected which would result in less fuel burned per capita	*Low-Medium*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*	vehicles passing through the Schoemanskloof.	*Low-Medium*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Not Applicable	*Neighbouring*	*Short-term*	*Medium*	*Highly Likely*	*Low-Medium*	**225**	*High*	With an increase in road traffic projected to at least increase by 3,6 % in the next few years, an increase in exhaust emissions will also be inevitable. By not improving the road to be more free flowing, more prominent acceleration and deceleration of vehicles and trucks can be expected which would result in more fuel burned per capita vehicles passing through the Schoemanskloof than using the same route in upgraded form.	*Low-Medium*	*No Loss*	*Reversible*
	Negative	Climate Change (Impacts on infrastructure)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Improbable*	*Low*	**30**	*High*	In terms of climate change models in South Africa, data suggests that temperatures will be hotter and there will be more extreme events (for example, similar levels of rain but in a shorter period). '• Detailed designs to consider impact of heat on materials. '• Design to take into account relevant floodlines to ensure	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Low-Medium*	*Improbable*	*Low*	**30**	*High*	infrastructure will not be impacted by potential for increased extreme events.	*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Not Applicable	*Local*	*Short-term*	*Medium-High*	*Likely*	*Low-Medium*	**225**	*High*	In terms of climate change models in South Africa, data suggests that temperatures will be hotter and there will be more extreme events (for example, similar levels of rain but in a shorter period). These impacts will be felt on the no-go option as the road and bridges are existing but as they are already constructed, no mitigation is available.	*Low-Medium*	*No Loss*	*Reversible*
	Negative	Noise	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Neighbouring*	*Incidental*	*Low*	*Highly Likely*	*Low*	**100**	*High*	It is expected that the proposed road upgrades may even result in reduced (in comparison to the no-go option) road noise levels due to the free-flowing nature of upgraded design with less deceleration and acceleration of vehicles and trucks. Less accidents are also expected. Some noise impacts will remain. '• Employ speed limits on road • Employ mechanisms to ensure that road users stick to the speed limit, such as speed traps etc. • Road surface will be layered with asphalt and materials to minimize noise impacts	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of**	N/A			*Neighbouring*	*Incidental*	*Low*	*Highly Likely*	*Low*	**100**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option	N/A	No	Direct	*Neighbouring*	*Incidental*	*Medium*	*Highly Likely*	*Low-Medium*	**200**	*High*	Existing noise in the area is mostly originating from the road traffic along the Schoemanskloof Route. With an increase in road traffic projected to at least increase by 3,6 % in the next few years, an increase in noise levels will also be inevitable. By not improving the road to be more free flowing, more prominent acceleration and deceleration of vehicles and trucks can be expected which would result in added noise levels in the valley especially as opposed to the road not upgraded to be more suitable for the increased traffic. Therefore, from a noise perspective, the no-go option is not preferred.	*Low-Medium*	*No Loss*	*Reversible*
Impacts to Drainage lines	Negative	Water quality	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Wetland Assessment**	No	Indirect	*Local*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**80**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring. Storm water management. Erosion control. Waste management (litter). As the alternatives do not impact the drainage lines, the study found no preference for either.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 -**				*Local*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**80**	*High*		*Low*	*No Loss*	*Reversible*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
		Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
		No-Go Option		No	Direct	*Local*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**80**	*High*	The current Schoemanskloof Road affects the drainage lines and therefore the same impacts in terms of water quality apply. The existing stormwater management system reduces these impacts.	*Low*	*No Loss*	*Reversible*
Negative	Flow regime	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Neighbouring*	*Permanent*	*Low-Medium*	*Likely*	*Low-Medium*	**210**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring and maintenance. Storm water management. Design requirements to mitigate impacts. As the alternatives do not impact the drainage lines, the study found no preference for either.	*Low*	*No Loss*	*Reversible*
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Permanent*	*Low-Medium*	*Likely*	*Low-Medium*	**210**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			No-Go Option		No	Direct	*Neighbouring*	*Permanent*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**350**	*High*	The current Schoemanskloof Road affects the drainage lines and therefore the same impacts in terms of flow regime already apply. The existing stormwater management system reduces these impacts.	*Low*	*No Loss*	*Reversible*
	Negative	Habitat	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Site*	*Permanent*	*Low*	*Likely*	*Low*	**180**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring, storm water management. As the alternatives do not impact the drainage lines, the study found no preference for either.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Permanent*	*Low*	*Likely*	*Low*	**180**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option		No	Direct	*Site*	*Permanent*	*Low*	*Likely*	*Low*	**180**	*High*	The current Schoemanskloof Road affects the drainage lines and therefore the same impacts in terms of habitat already apply. The existing stormwater management system reduces these impacts.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
	Negative	Biota	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Indirect	*Neighbouring*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**50**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring and maintenance. Storm water management. Design requirements to mitigate impacts. As the alternatives do not impact the drainage lines, the study found no preference for either.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**50**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option		No	Indirect	*Neighbouring*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**50**	*High*	The current N4 Schoemanskloof (R539) affects the drainage lines and therefore the same impacts in terms of biota already apply. The existing stormwater management system reduces these impacts.	*Low*	*No Loss*	*High Degree*
	Negative	Geomorphology	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Site*	*Permanent*	*Low*	*Possible*	*Low*	**120**	*High*	• The following mitigation measures suggested by the wetland specialist apply: Rehabilitation of construction impacted area, continuous monitoring and maintenance. Storm water management. Design requirements to mitigate impacts.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Permanent*	*Low*	*Possible*	*Low*	**120**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option		Not Applicable	Not Applicable	*Site*	*Permanent*	*Low*	*Possible*	*Low*	**120**	*High*	The current Schoemanskloof Road affects the drainage lines and therefore the same impacts in terms of geomorphology already apply. The existing stormwater management system reduces these impacts.	*Low*	*No Loss*	*High Degree*
Impacts to Crocodile River and its tributaries	Negative	Water quality	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Aquatic Assessment**	Yes	Direct	*Local*	*Permanent*	*Medium*	*Highly Likely*	*Medium*	**500**	*High*	• The following mitigation measures suggested by the aquatic specialist: Rehabilitation of construction impacted area, continuous monitoring. Stormwater management. Discussions with the Aquatic specialist indicate that in terms of operation, there is no significant difference between alternatives in terms of water quality.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades**				*Local*	*Permanent*	*Medium*	*Highly Likely*	*Medium*	**500**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option		Yes	Direct	*Neighbouring*	*Permanent*	*Low-Medium*	*Likely*	*Low-Medium*	**210**	*High*	The no go option would mean that no additional access gravel roads will be constructed, with less expected sediments being washed off these roads and into the drainage lines and tributaries to the Crocodile River.	*Low*	*No Loss*	*Reversible*
	Negative	Flow regime	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Indirect	*Site*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**110**	*High*	• The following mitigation measures suggested by the aquatic specialist: Preventative and remedial methods for flow modification, resuspension and introduction of sediment/materials. Rehabilitation of construction impacted area, continuous monitoring and maintenance. Storm water management.. Discussions with the Aquatic specialist indicate that in terms of operation, there is a slight difference between the alternatives in terms of the intensity of the impact. However, overall both alternatives result in low significance of the impact and therefore due to potential long term safety issues, Alternative 2 is preferred.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Long-term*	*Low*	*Possible*	*Low*	**100**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option		Not Applicable	Not Applicable	*Site*	*Long-term*	*Low*	*Possible*	*Low*	**100**	*High*	There are existing bridges and culverts for the Crocodile river and its tributaries, therefore in terms of operation, the no-go option has	*Low*	*No Loss*	*Reversible*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
													similar impacts to flow regime.			
Negative	Habitat	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Indirect	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	• The following mitigation measures suggested by the aquatic specialist: "Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Rehabilitation methods to restore favourable habitat. See EMPr for detailed measures. Discussions with the Aquatic specialist indicate that in terms of operation, there is no significant difference between alternatives in terms of habitat.	*Low*	*No Loss*	*Reversible*
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*		*Low*	*No Loss*	*Reversible*
		No-Go Option		Yes	Yes	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	There are existing bridges and culverts for the Crocodile river and its tributaries, therefore in terms of operation, the no-go option has similar impacts to habitat.	*Low*	*No Loss*	*Reversible*
Negative	Biota	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	• The following mitigation measures suggested by the aquatic specialist: "Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction.	*Low*	*No Loss*	*Reversible*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	Rehabilitation methods to restore favourable habitat. See EMPr for detailed measures. Discussions with the Aquatic specialist indicate that in terms of operation, there is no significant difference between alternatives in terms of habitat.	*Low*	*No Loss*	*Reversible*
		No-Go Option		No	Direct	*Site*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**40**	*High*	There are existing bridges and culverts for the Crocodile river and its tributaries, therefore in terms of operation, the no-go option has similar impacts to habitat.	*Low*	*No Loss*	*Reversible*
Negative	Geomorphology	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		No	Direct	*Site*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**110**	*High*	• The following mitigation measures suggested by the aquatic specialist: "Preventative and remedial methods for habitat loss, chemical spillages, soil erosion, harmful conditions for aquatic biodiversity, resuspension of sediment/benthic materials, and hazardous, human and/or general waste introduction. Rehabilitation methods to restore favourable habitat. See EMPr for detailed measures. Discussions with the Aquatic specialist indicate that in terms of operation, there is no significant difference between alternatives in terms of habitat.	*Low*	*No Loss*	*Reversible*
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and**				*Site*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**110**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			along the existing bend at Poplar Creek														
			No-Go Option		No	Direct	*Site*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**110**	*High*	There are existing bridges and culverts for the Crocodile river and its tributaries, therefore in terms of operation, the no-go option has similar impacts to geomorphology.	*Low*	*No Loss*	*Reversible*
Waste Generation	Negative	Domestic waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Incidental*	*Low*	*Possible*	*Low*	**40**	*High*	• As part of management of the road, litter should be collected and disposed of at an approved landfill site.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Incidental*	*Low*	*Possible*	*Low*	**40**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Not Applicable	*Neighbouring*	*Incidental*	*Low*	*Possible*	*Low*	**40**	*High*	As the road is existing, similar impacts in relation to domestic waste (litter) apply for the no-go option. '• As part of management of the road, litter should be collected and disposed of at an approved landfill site.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
	N/A	Construction waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	Not Applicable	Not Applicable
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	Not Applicable	Not Applicable
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Hazardous waste	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*	The only hazardous waste expected is through incidents/accidents resulting in oil/fuel spillages. Should this occur, the following process must be followed: • Characterise the waste to determine if it is general or hazardous (Use the Appendix 1 of the Norms and Standards for the Classification of Waste for landfill to determine whether additional classification is required). Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account	N/A			*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek											container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.			
			No-Go Option	N/A			*Site*	*Incidental*	*Medium*	*Definite*	*Low-Medium*	**210**	*High*	As the road is existing, impacts in relation to hazardous waste (spillages due to accidents) are expected. Further, the likelihood of these events is greater in the no option as leaving the current road as it is may result in a higher number of road accidents, resulting in a higher volume of hazardous wastes being generated. The no option is therefore not preferred.	*Low*	*No Loss*	*Reversible*
Soil Alteration	N/A	Loss of topsoil	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	Not Applicable	Not Applicable
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			along the existing bend at Poplar Creek														
	Negative		No-Go Option	N/A	Yes	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	The sites are mostly degraded by historic land use. It is unlikely that there will be an increase in the loss of topsoil should the development not proceed.	*Low*	*Partial*	*High Degree*
	N/A	Loss of land capability	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*Site*	*Long-term*	*Low-Medium*	*Improbable*	*Low*	**55**	*High*	Land capability will not be significantly affected since most of the upgrades will either fall within the existing SANRAL servitude or or existing gravel routes and/or remain as close to the existing servitude as possible by design. Most of the upgrade footprints however are altered by anthropogenic activities or is more indicative of veld/ riparian area. This is further corroborated by information in the Mbombela Municipality SDP which note that the land with a low agricultural capability is located in the Kruger National Park, Schoemanskloof, Ngodwana, at Pienaar, Matsulu, Daantjie, north-east of Legogote, Hilltop areas along the R40, and the western & southern escarpments of the municipality. The western section of the Schoemanskloof Route is dominated by plantations, whilst the eastern section by citrus and other fruit farming.	*Low-Medium*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Long-term*	*Low-Medium*	*Improbable*	*Low*	**55**	*High*		*Low-Medium*	*Partial*	*High Degree*
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	N/A	Alteration of topography	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	*No Loss*	*Reversible*
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Soil erosion	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*Site*	*Medium-term*	*Medium*	*Likely*	*Low*	**165**	*High*	During operation, some erosion may occur if proper rehabilitation and stabilitation measures are not implemented and due to poor stormwater management. The following must be undertaken: • Stormwater management • Proper stabilitation and erosion control measures to be put in place.	*Low*	*No Loss*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account	N/A			*Site*	*Medium-term*	*Medium*	*Likely*	*Low*	**165**	*High*		*Low*	*No Loss*	*#N/A*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option	N/A			*Site*	*Medium-term*	*Medium*	*Highly Likely*	*Low-Medium*	**275**	*High*	The sites are impacted by historic use and where erosion is occurring, this will continue if not mitigated.	*Low-Medium*	*Partial*	*Reversible*
	Negative	Soil pollution	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account Alternative 1 - Inclusion of consolidated accesses and associated access roads.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek	*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	No	Direct	*Site*	*Incidental*	*Medium*	*Highly Likely*	*Low*	**175**	*High*	As the road is existing, impacts in relation to hazardous waste (spillages due to accidents) are expected. Further, the likelihood of these events is greater in the no option as leaving	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														the current road as it is may result in a higher number of road accidents, resulting in a higher volume of hazardous wastes being generated. The no option is therefore not preferred.			
Resource Consumption	Negative	Electricity consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Site*	*Long-term*	*Low*	*Improbable*	*Low*	**50**	*High*	Electricity consumption will not be a factor of significance for the operational phase of the upgraded road.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Long-term*	*Low*	*Improbable*	*Low*	**50**	*High*		*Low*	*No Loss*	*Reversible*
	N/A		No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	N/A	Water consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	*No Loss*	*Reversible*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	*No Loss*	*Reversible*
		No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Negative	Fuel consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Yes	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*	The proposed roads upgrades will be used by cars however the impact in term of fuel consumption is expected to be lower than in comparison to the no-go option because vehicles and large trucks would not need to decelerate and accelerate as much as the current road conditions and therefore less fuel will be burned. There is however no difference between the two alternatives.	*Low*	*No Loss*	*Reversible*
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Short-term*	*Low-Medium*	*Highly Likely*	*Low*	**150**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			No-Go Option	N/A	Not Applicable	Not Applicable	*Neighbouring*	*Short-term*	*Medium-High*	*Highly Likely*	*Low-Medium*	**300**	*High*	With the no option, the status quo will remain and vehicles and trucks will be required to decelerate and accelerate more due to the current road configuration. The no go option is therefore not preferred.	*Low-Medium*	*No Loss*	*Reversible*
	N/A	Raw materials consumption	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	*No Loss*	*Reversible*
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Effects on Biodiversity	N/A	Loss of sensitive vegetation habitat (Threatened Ecosystem and CBA) and associated impact to flora	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and**	**Ecological Assessment**	Yes	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	The botanist found that it cannot be considered that the project would contribute significantly to habitat loss, whether for plants or animals within the immediate landscape.	*None*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			associated access roads														
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	*No Loss*	*Reversible*
			No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Impact to Fauna (road kill etc.)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Site*	*Incidental*	*Low*	*Improbable*	*Low*	**15**	*High*	Due to the existing road infrastructure, it is highly unlikely that the upgrade of the road and introduction of access roads would significantly contribute to incidents of roadkill as the animals present in the landscape is used to the existing road infrastructure and traffic volumes. The mitigation measures recommended by the specialist include: '• The upgrade of the route allows for an opportunity to increase the permeability of the road infrastructure to facilitate animal movement in the landscape. Therefore, culverts should be designed to allow movement for small to medium size mammals to and from a water source such as the Crocodile River, this is especially relevant for the section towards the east.	*Low*	*Partial*	*High Degree*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades**				*Site*	*Incidental*	*Low*	*Improbable*	*Low*	**15**	*High*		*Low*	*Partial*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option		Not Applicable	Not Applicable	*Site*	*Incidental*	*Low*	*Improbable*	*Low*	**15**	*High*	None required.	*Low*	*Partial*	*Medium Degree*
Incidents, accidents and potential emergency situations	Negative	Pollution incidents	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*	The only pollution incidents expected is through is oil/fuel spillages and existing littering by motorists. Should this occur, the following process must be followed: • Characterise the waste to determine if it is general or hazardous (Use the Appendix 1 of the Norms and Standards for the Classification of Waste for landfill to determine whether additional classification is required). Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium*	*Likely*	*Low*	**105**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	Not Applicable	Not Applicable	*Site*	*Incidental*	*Medium*	*Definite*	*Low-Medium*	**210**	*High*	As the road is existing, impacts in relation to pollution incidents (spillages due to accidents and littering) are expected. Further, the likelihood of these events is greater in the no option as the current road conditions may result in higher number of accidents.	*Low-Medium*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
														'• The same mitigation as above applies. The no option is therefore not preferred.			
	Negative	Health and Safety	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium-High*	*Improbable*	*Low*	**50**	*High*	During operation, routine maintenance will be required (for example, grass cutting etc.). All health and safety requirements in terms of legislation and TRAC N4 policies must be adhered.	*Low*	*No Loss*	*#N/A*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium-High*	*Possible*	*Low*	**100**	*High*		*Low*	*No Loss*	*#N/A*
			No-Go Option	N/A	No	Direct	*Site*	*Incidental*	*Medium-High*	*Improbable*	*Low*	**50**	*High*	As there is an existing structure in place, routine maintenance is also required, and the same health and safety risks apply.	*None*	Not Applicable	Not Applicable
	Negative	Structural Safety	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Site*	*Incidental*	*Medium-High*	*Improbable*	*Low*	**50**	*High*	• From a safety risk perspective, the very principal reason for the Schoemanskloof Road upgrades is to improve the safety and Level of Service of the route. Safety will greatly be enhanced by the upgrades once in operation. **<u>Alternative 2 - Inclusion of consolidated accesses and associated access</u>**	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Site*	*Incidental*	*Medium-High*	*Improbable*	*Low*	**50**	*High*	**roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek will undoubtedly be the preferred option in terms of safety risks.**	*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	No	Direct	*Local*	*Permanent*	*High*	*Definite*	*High*	**750**	*High*	If left in the same condition, the Schoemanskloof Route holds numerous safety risks for motorists given the current traffic volumes and predicted future volumes. More fatalities can be expected at the Poplar Creek bend.	*Medium-High*	Not Applicable	Not Applicable
	N/A	Storage of hydrocarbons	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	Not Applicable	Not Applicable
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road**	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	Not Applicable	Not Applicable

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
			No-Go Option	N/A	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Fire	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Direct	*Neighbouring*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**75**	*High*	•Maintenance of road reserve (e.g. grass cutting) to prevent high fire load and to act as a firebreak. '• Signs / environmental awareness regarding fires (in line with TRAC N4 current policy)	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Incidental*	*Low-Medium*	*Likely*	*Low*	**75**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option	N/A	No	Direct	*Neighbouring*	*Incidental*	*Low-Medium*	*Possible*	*Low*	**50**	*High*		*Low*	*No Loss*	*Reversible*
Social	Negative	Visual impact	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated**	N/A	Yes	Direct	*Neighbouring*	*Long-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*	TRAC complies with SANRAL specifications in terms of road and associated signage visibility and safety requirements. A greater visual impact is expected if the gravel access roads are introduced along the existing Schoemanskloof Road on neighbouring farms.	*Low*	*No Loss*	*Reversible*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
		accesses and associated access roads														
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Neighbouring*	*Long-term*	*Low-Medium*	*Highly Likely*	*Low-Medium*	**300**	*High*		*Low*	*No Loss*	*Reversible*
		No-Go Option		Yes	Direct	*Neighbouring*	*Long-term*	*Low*	*Possible*	*Low*	**110**	*High*	The existing road visual impacts will remain the same.	*None*	*No Loss*	*Reversible*
	Negative	Visual impact - Lighting	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Yes	Direct	*Neighbouring*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**120**	*High*	TRAC complies with SANRAL specifications in terms of road and associated lighting visibility and safety requirements.	*Low*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and**				*Neighbouring*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**120**	*High*		*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek														
	N/A		No-Go Option		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Positive	Traffic incidents and accidents (safety)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	No	Direct	*Local*	*Long-term*	*Medium-High*	*Definite*	***+ Medium***	**630**	*High*	The proposed road upgrades will drastically improve the safety of motorists. Alternative 2 where Poplar Creek's bends are also upgraded.	***+ Medium***	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Long-term*	*Medium-High*	*Definite*	***+ Medium***	**630**	*High*		***+ Medium***	*No Loss*	*High Degree*
	Negative		No-Go Option		No	Direct	*Local*	*Permanent*	*High*	*Definite*	*High*	**750**	*High*	If left in the same condition, the Schoemanskloof Route holds numerous safety risks for motorists given the current traffic volumes and predicted future volumes. More fatalities can be expected at the Poplar Creek bend. **The no go option is therefore not preferred.**	*Medium-High*	*Irreplaceable*	*Irreversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Positive	Traffic disruptions	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	No	Direct	*Neighbouring*	*Short-term*	*Low-Medium*	*Improbable*	***+ Medium***	**30**	*High*	The proposed new road upgrades and access roads introduction will improve traffic flow speeds and therefore decrease traffic disruptions on the route which is a main transportation corridor.	***+ Medium***	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*Local*	*Long-term*	*Medium*	*Definite*	***+ Medium***	**540**	*High*		***+ Medium***	*No Loss*	*Reversible*
	N/A		No-Go Option		No	Direct	*Local*	*Permanent*	*Medium*	*Highly Likely*	*Medium*	**500**	*High*	If left in the same condition, the Schoemanskloof Route holds numerous safety risks for motorists given the current traffic volumes and predicted future volumes. Traffic disruptions are often seen due to incidents experienced on the route. Overtaking ability passed slower moving vehicles and trucks will be greatly enhanced by the upgrades thereby drastically improving on traffic disruptions. **The no go option is therefore not preferred.**	*Medium*	*No Loss*	*High Degree*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Not Applicable	Loss of cultural heritage	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Phase 1 Heritage Impact Assessment**	Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts not applicable to the operational phase. No mitigation required.	*None*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*None*	*None*	*None*	*None*	*None*	**0**	*High*		*None*	*No Loss*	*Reversible*
			No-Go Option				*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
	Negative	Loss of sense of place	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*	Impacts to sense of place are not expected during operation, as the proposed upgrade occurs within existing road route.	*Low*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
	Negative	Change of land use	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**		Not Applicable	Not Applicable	*None*	*None*	*None*	*None*	*None*	**0**	*High*		*Low*	*No Loss*	*Reversible*
			No-Go Option				*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A			*Neighbouring*	*Long-term*	*Low*	*Possible*	*Low*	**110**	*High*	Land use will not be significantly affected since most of the upgrade activities and infrastructure either fall within the existing SANRAL servitude or existing gravel routes and/or remain as close to the existing servitude as possible by design. Most of the western section of the Schoemanskloof Route is dominated by plantations, whilst the eastern section by citrus and other fruit farming and accommodation venues and the access roads will not have a significant negative impact on these operations - rather, the improved accessibility to properties on- and off the Schoemanskloof Road will be greatly enhanced.	*None*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Long-term*	*Low*	*Possible*	*Low*	**110**	*High*		*None*	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
			No-Go Option	N/A			*None*	*None*	*None*	*None*	*None*	**0**	*High*	None required	*None*	Not Applicable	Not Applicable
Economic	**Positive**	Decline/increase in economy	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	**Preliminary Design Report**	Yes	Indirect	*National*	*Long-term*	*Medium*	*Definite*	*+Medium-High*	**690**	*High*	The proposed development will ensure safe and efficient transport along the MDC between South Africa and Mozambique and thus has indirect benefits at a national level.	*+Medium-High*	*No Loss*	*Reversible*
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**				*National*	*Long-term*	*Medium*	*Definite*	*+Medium-High*	**690**	*High*		*+Medium-High*	*No Loss*	*Reversible*
	Negative		No-Go Option				*National*	*Long-term*	*Medium-High*	*Definite*	*High*	**780**	*High*	Should the development not proceed, the benefits to the local community will be long term and negative. Firstly, there wil be a loss of the injection of cash in the area. Secondly, the existing Schoemanskloof Road will function at a 'Level of Service' D – classification, which is still acceptable and the existing operational impacts of the road onto the environment would remain the same. However, with the projected traffic growth, a substandard 'Level of Service" E	*Medium-High*	*Partial*	*High Degree*

IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
Nature	**Description**	**Alternative**	**Link to Speciaist Study**	**Cumulative**	**Type**	**Extent (A)**	**Duration (B)**	**Intensity (C)**	**Probability (P)**	**Significance (A + B + C) X P**		**Confidence**	**Description and/or Mitigation and Management Measures (if applicable)**	**Significance**	**Loss of Resources**	**Reversibility**
													classification is expected in the year 2028 and the safety issues along the route will increase over time			
Negative	Decrease in visibility of current businesses on existing N4 Schoemanskloof (R539)	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and associated access roads**	N/A	No	Indirect	*Neighbouring*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**120**	*High*	Clear and adequate signage should be put in place where applicable - especially if consolidated accesses are introduced (Alternatives 4 & 5).	*Low*	*No Loss*	*#N/A*
		Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Neighbouring*	*Long-term*	*Low-Medium*	*Possible*	*Low*	**120**	*High*		*Low*	*No Loss*	*#N/A*
		No-Go Option	N/A			*Neighbouring*	*Long-term*	*Medium*	*Highly Likely*	*Medium*	**375**	*High*	None required.	*Medium*	Not Applicable	Not Applicable
Positive	Employment	Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 1 - Inclusion of consolidated accesses and**	N/A	Yes	Indirect	*Local*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**450**	*None*	The proposed road upgrade development will ensure safe and efficient transport along the MDC between South Africa and Mozambique and thus has indirect benefits at a national level. Although no direct employment will be undertaken during the operational phase, the development is	***+ Medium***	*No Loss*	*Reversible*

	IMPACTS						CONSEQUENCE			PROBABILITY	RANKING WITHOUT MITIGATION		CONFIDENCE	IMPLEMENTATION OF MANAGEMENT MEASURES	RANKING WITH MITIGATION	DEGREE REVERSABILITY & LOSS OF RESOURCE (AFTER MITIGATION)	
	Nature	Description	Alternative	Link to Speciaist Study	Cumulative	Type	Extent (A)	Duration (B)	Intensity (C)	Probability (P)	Significance (A + B + C) X P		Confidence	Description and/or Mitigation and Management Measures (if applicable)	Significance	Loss of Resources	Reversibility
			associated access roads											necessary to improve the current status of the MDC. This will likely have a number of positive multiplier effects in terms of employment in the region and growth of economy within the Schoemanskloof could also stimulate further employment opportunities.			
			Upgrades of Schoemanskloof Road inclusive of lengthening of passing lanes, widening some lanes and re-aligning certain sections; taking into account **Alternative 2 - Inclusion of consolidated accesses and associated access roads, and introducing road safety upgrades and features on either end of- and along the existing bend at Poplar Creek**	N/A			*Local*	*Short-term*	*Medium-High*	*Definite*	***+ Medium***	**450**	*None*		***+ Medium***	*No Loss*	*Reversible*
	Negative		No-Go Option	N/A			*Local*	*Long-term*	*Medium*	*Definite*	*Medium*	**540**	*None*	Should the development not proceed, the benefits to the local community will be long term and negative as potential employment opportunities will be lost. No mitigation measures are available. The no-go option is therefore not preferred.	*Medium*	*No Loss*	*Reversible*