

CHAPTER 9 ASSESSMENT: MTHATHA (NGQELENI) TO NDWALANE

This chapter provides an assessment of the key potential biophysical, socio-economic and cultural/historical heritage impacts, as appropriate, that would result from the construction and operational phases of the proposed works, including physical toll plazas, between Mthatha (Ngqeleni) and Ndwalane (see Figure 9.1).

9.1 INTRODUCTION

The proposed works between Mthatha (Ngqeleni) and Ndwalane are described in detail in Section 4.2.3, with accompanying illustrations being shown in Figures 4.12 to 4.13. All proposed construction activities would take place within the existing road reserve, with the exception of short sections requiring widening, intersection upgrades, vehicular overpasses and interchanges. Measures to stabilise cuts and fills may also require additional land outside the existing road reserve.

In summary, the following works are proposed along this section of the proposed toll highway, where required:

- Widening, resurfacing and/or rehabilitation;
- Upgrading of intersections;
- Improvement of access control;
- Widening and construction of climbing lanes;
- Safety features such as over- and underpasses, improved intersections, fencing, road signs and guardrails;
- Provision of pedestrian and taxi facilities;
- Construction of dual carriageway at St Barnabas Hospital (2 km);
- Construction of slope stability measures;
- Possible construction of Alternative Ndwalane mainline toll plaza;
- Construction of a dual carriageway at Thombo (2 km); and
- Bridge widening at Mngazi River.

SANRAL's preferred mainline toll plaza position for the proposed toll section between Mthatha and Ntafufu (refer to section 3.5.2 and Table 3.4) is at Ndwalane – the Ndwalane Toll Plaza. The Alternative Ndwalane toll plaza location is in the vicinity of the Ntlaza Mission, near the Tutor Ndamase Pass (refer to section 5.3.8 and see Figure 9.1).

A description of the key characteristics of the biophysical, socio-economic and cultural/historical heritage environment along this section of the proposed toll highway is provided in Chapter 6, as appropriate.

The assessment of potential direct, indirect and cumulative impacts associated with the construction and operational phases of the proposed project are based on the findings of the relevant specialist studies undertaken during the EIA process. The respective specialist reports provide detailed descriptions of the study approach followed, the identified risk sources and potential impacts – Volumes 2 to 4, Appendices 1 to 13.

It should be noted that a comparative assessment of the SANRAL preferred mainline toll plaza location versus the Alternative Ndwalane Toll Plaza location is provided at the end of Chapter 10 (Section 10.3).



Figure 9.1: Section of the proposed toll highway between Mthatha (Ngqeleni) and Ndwalane

9.2 ASSESSMENT OF POTENTIAL IMPACTS

It is anticipated that the proposed works along this section of the proposed toll highway would result in key potential impacts relating to the following aspects: vegetation and flora; fauna; aquatic ecosystems; social; tourism; cultural and historical heritage; noise; visual; and planning/development. These are addressed below.

9.2.1 VEGETATION AND FLORA

The proposed interchanges, upgrading of intersections, widening of the existing road and bridge widening at the Mngazi River would result in key potential impacts on vegetation and flora in terms of increased run-off and drainage, soil erosion, silt loads and sedimentation, invasion by weeds and invasive alien plants, loss of habitat, fragmentation of habitat and disruption of the flow of nutrients and materials. A summary of the assessment of the key potential impacts on vegetation and flora is provided in Table 9.1.

Increased run-off and drainage, soil erosion, silt loads and sedimentation

Site clearing activities and the increased pavement area associated with the widening of the road would probably result in increased run-off and drainage, soil erosion, silt loads and sedimentation. The potential localised loss or disturbance to vegetation and flora would probably be of medium intensity over the long term and is thus considered to be of **medium** significance. Minimisation and restriction of site clearing to areas required for construction purposes only, implementation of erosion and sediment control measures, appropriate location of site offices and ongoing monitoring and maintenance of revegetation works would reduce the significance of the potential impact to **LOW**.

Invasion by weeds and invasive alien plants

Invasion by weeds and invasive alien plants would be facilitated by disturbance resulting from construction-related activities and would likely be of greater importance during the operational phase. Potential localised impacts on the composition and function of the natural vegetation and flora would probably occur at a medium intensity over the long term. These potential impacts are thus deemed to be of **medium** significance. It is considered that implementation of an effective weed control programme would reduce the potential impact to **LOW** significance.

Loss of habitat

The proposed widening of the existing road would probably result in some loss of habitats associated with Bhisho Thornveld (Least Threatened), Mthatha Moist Grassland (Endangered), Ngongoni Grassland (Vulnerable), Eastern Valley Bushveld (Least Threatened) and Transkei Coastal Belt (Vulnerable) vegetation while the proposed bridge widening at the Mngazi River may affect habitats associated with riparian vegetation alongside the existing bridges. The potential permanent, localised loss of habitat is assessed to be of **medium** intensity and significance. Minimisation and restriction of site clearing to the area required for construction purposes only, and limiting disturbance to adjacent undisturbed natural vegetation would result in probable residual impacts of **LOW** significance.

Fragmentation of habitat and disruption of flow of nutrients and materials

The proposed bridge widening at the Mngazi River would probably also result in potential fragmentation of habitat and disruption of the flow of nutrients and materials. The associated potential impact on the ecological functioning of vegetation and flora is assessed to be of local extent, long-term duration and medium intensity, and is thus considered to be of **medium** significance. Probable residual impacts of **LOW** significance would result through minimising potential impacts on riparian areas by way of the

design of the bridge and associated structures, the revegetation of disturbed areas with site indigenous species and minimisation and restriction of clearing to the area required for construction purposes.

Table 9.1: Summary assessment of key potential impacts on vegetation and flora – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with increased run-off and drainage, soil erosion, silt loads and sedimentation						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with invasion by weeds and invasive alien plants						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with loss of habitat						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with fragmentation of habitat						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with disruption of flow of nutrients and materials						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium

9.2.2 FAUNA

The anticipated increased road traffic associated with the operational phase of the proposed toll highway would result in the following key potential faunal impacts: disruption of faunal movement; invasion of alien faunal species; increased fire risk; chemical pollution; and noise and light pollution. A summary of the assessment of the key potential faunal impacts is provided in Table 9.2.

Disruption of faunal movement

Faunal diversity within this section of the proposed toll highway is relatively high, despite the region's long history of settlement and agricultural development. A number of threatened faunal species are known to occur in the region. Potential localised disruption to faunal movements is assessed to be of medium intensity over the long term and is considered of **MEDIUM** significance without and with mitigation since it is considered unlikely that the intensity and significance of the potential impact could be reduced.

Invasion of alien faunal species

The probable passive translocation of alien faunal species associated with increased road traffic and development along the proposed toll highway is assessed to be of medium intensity over the long term and is thus deemed to be of **medium** significance. Active culling programmes of problem animals would reduce the significance of the probable residual impact to **LOW**.

Increased fire risk

Fire, particularly in grasslands, is a natural phenomenon. However, it is probable that the risk of accidental fires would increase as a result of improved access to this section of the proposed toll highway. The associated permanent long-term loss of fauna is assessed to be of **medium** intensity and significance. Ensuring vegetation in the road reserve is kept low by way of regular maintenance and that rest stops and associated structures are not situated adjacent to sensitive habitats would reduce the potential impacts associated with increased fire risk to **LOW** significance.

Chemical pollution

Probable negative effects on population sizes and developmental abnormalities of amphibian populations due to polluted surface run-off are assessed to be of medium intensity over the long term. The significance of the potential impacts on fauna is thus considered as **medium**. Restricting and controlling the use of herbicides in the road reserve would reduce the significance of the potential impacts associated with chemical pollution to **LOW**.

Noise and light pollution

Probable long-term disturbance to breeding faunal populations as a result of increased noise and light pollution from increased traffic volumes and lighting at toll plazas and interchanges is assessed to be of **MEDIUM** intensity and significance. It is considered unlikely that disturbance to breeding faunal populations associated with noise and light pollution could be reduced.

Table 9.2: Summary assessment of key potential impacts on fauna – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with disruption of faunal movements						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Medium	Probable	MEDIUM	Medium
Impacts associated with invasion of alien fauna						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with increased fire risk						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with chemical pollution						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with noise and light pollution						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Medium	Probable	MEDIUM	Medium

9.2.3 AQUATIC ECOSYSTEMS

Riparian and instream vegetation

Key potential impacts on riparian and instream vegetation are anticipated during the construction and operational phases of the proposed toll highway. These would be associated with the following: destruction of riparian vegetation and loss of sensitive habitats; increased surface run-off; surface and groundwater pollution; reduction in permeable surfaces; diversion of flow by hard surfaces; and change in vegetation community type. A summary of the assessment of the key potential impacts is provided in Table 9.3.

Destruction of riparian vegetation and loss of sensitive habitats

The proposed works along this section of the proposed toll highway would result in destruction of riparian vegetation and loss of sensitive habitat. The expected permanent impact is assessed to be of medium intensity at a local level and is assigned a **high** significance rating due to the nature of the riparian vegetation and the important role it plays within the riverine ecosystems. Clearing of vegetation during the drier winter months, limiting clearing to areas immediately needed for construction, undertaking vegetation stripping in parallel with road construction and avoiding large stands of Palmiet would reduce the significance of the potential impact to **LOW**.

Increased surface run-off

Site clearing activities and the increased pavement area associated with the proposed upgrading and widening of the road would result in increased surface run-off and increased risk of erosion. Vegetation attenuates surface water flow which, consequently, encourages permeation of the soils and contributes to maintaining water table levels. The anticipated permanent impact on riparian and instream vegetation during the construction and operational phases is assessed to be of **medium** intensity and significance. Potential residual impacts of **LOW** significance are expected with implementation of a surface stormwater drainage system and the use of swales during construction (which should then be grassed for the operational phase).

Surface water and groundwater pollution

Construction activities would probably result in sediment loads entering the adjacent freshwater ecosystems, leading to increased turbidities and sedimentation risks in downstream areas. Diesel, oils and other chemical substances conveyed along the road during the operational phase would pose a threat to the continued functioning of the instream and adjacent areas, if by chance these are dispersed via surface run-off, or permeate into the groundwater. Changes to water quality (surface and groundwater) affect the functioning of plants and other instream biota. The potential impact on riparian and instream vegetation along this section of the proposed toll highway is assessed to be permanent and of medium intensity at a local level. The significance of the potential impact is thus rated as **medium**. Formulation and implementation of erosion and sediment control measures, proper storage of construction materials (including fuels and oils), emergency plans, construction camp management procedures and appropriate location (i.e. well removed from aquatic systems) of stockpiles, site offices, etc. would reduce the potential impact to **LOW** significance.

Reduction in permeable surfaces

The hard surfaces associated with the proposed upgrading and widening of this section of the proposed toll highway would reduce the amount of permeable surfaces for water to penetrate the soils and maintain the local groundwater systems. The potential indirect impact on riparian and instream vegetation due to changes in soil moisture status is assessed to be permanent and of medium intensity at a local level. This potential impact is thus rated of **medium** significance. Revegetation of all remaining disturbed areas with appropriate plant species would reduce the potential impact to **LOW** significance.

Diversion of flow by hard surfaces

The increased area of hard surfaces would probably divert flow away from water bodies, as well as increase flow velocities of run-off and increase the risk of pollution if the stormwater contains any spilled oils, fuels or coolants from passing traffic. This potential permanent impact on riparian and instream vegetation is assessed to be of **medium** intensity and significance. Residual potential impacts of **LOW** significance would result by way of the design and use of stormwater retention swales and oil traps to prevent contamination of downstream areas.

Change in vegetation community type

Disturbance of the natural vegetation caused by the construction activities would lead to the potential introduction of exotic plant species. The potential localised change to the indigenous riparian and instream vegetation is assessed to be of permanent duration and **medium** intensity and significance. Implementation of an appropriate rehabilitation and weed control programme would result in a potential residual impact of **LOW** significance.

Table 9.3: Summary assessment of key potential impacts on riparian and instream vegetation – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Destruction of riparian vegetation and loss of sensitive habitats						
Without mitigation	Local	Permanent	Medium	Definite	High	High
With mitigation	Local	Permanent	Low	Definite	LOW	High
Impacts associated with increased surface run-off						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High
Impacts associated with surface and groundwater pollution						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High
Impacts associated with reduction in permeable surfaces						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High
Impacts associated with diversion of flow by hard surfaces						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High
Change in vegetation community type						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High

Wetlands

The construction and operational phases of the proposed toll highway would result in key potential impacts associated with physical change to wetland areas. A summary of the assessment of the key potential impact is provided in Table 9.4.

Physical change to wetland areas

The proposed upgrading and widening of the road in this section of the proposed toll highway would probably result in physical change to wetland areas both directly and due to changes to the wetland plant communities and diversion of flows. This potential permanent, localised reduction in wetland functioning is assessed to be of **medium** intensity and significance. The potential impact would be reduced to **LOW** significance by ensuring that the location of construction infrastructure, materials and camps avoid wetlands as far as possible, and implementation of the recommended mitigation measures stipulated above.

Table 9.4: Summary assessment of key potential impacts on wetlands – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Physical change to wetland areas						
Without mitigation	Local	Permanent	Medium	Definite	Medium	High
With mitigation	Local	Permanent	Low	Definite	LOW	High

Estuaries

The construction and operational phases of the proposed toll highway would result in key potential impacts on estuaries as a result of the following: sedimentation; water quality changes; and improved access. A summary of the assessment of the key potential impacts is provided in Table 9.5.

Sedimentation

Sediments, deposited into the two river catchments crossed by the existing R61 as a result of the proposed works along this section of the proposed toll highway, would ultimately be conveyed into estuaries at which the ichthyofaunal, water quality and aesthetic status are described as “moderate-good” and “fair-good”, respectively. Potential impacts of high intensity in the short term would occur at a regional level due to the extent of the area covered and the importance of the estuaries in terms of diversity and fish breeding and nursery grounds. The highly probable impact is thus considered to be of **medium** significance. Implementation of mitigation measures applicable to “riparian and instream vegetation”, as stipulated above, would result in a probable impact of **LOW** significance.

Water quality changes

Water quality changes in the estuaries are expected as a result of potential oil, grease and fuel spillages in the river catchments during both the construction and operational phases. The potential impact on the currently “fair-good” water quality status of the estuaries in the region is assessed to be of high intensity during construction, and medium intensity during the operational phase. The potential impact is thus assessed to be of **medium** significance during both the construction and operational phases. Implementation of construction-related mitigation measures applicable to “riparian and instream vegetation”, as stipulated above, would reduce the potential impact to **LOW** significance during the construction phase. It is considered, however, that potential impacts associated with the operational phase, such as spillages and sheet-wash off the road into the river catchments (which would ultimately discharge into the estuaries) would be more difficult to mitigate. The significance of the potential residual impact on water quality changes in estuaries during the operational phase is thus considered to remain **MEDIUM**.

Improved access

It is anticipated that increased recreational and development-related pressures would be exerted on important and sensitive estuaries in this region (e.g. the Mngazana estuary is considered to be the most important estuary along the Wild Coast) as a result of the improved access to the region. The highly probable impacts on the ecological functioning and aesthetics of the estuaries would be of high intensity over the long term and are thus considered of **very high** significance. Implementation of applicable legislation promulgated for the protection of estuaries (see section 4.2.3 of the aquatic ecosystems specialist report – Volume 2, Appendix 3), enforcement of bag limits to protect estuarine resources such as fish and shell-fish (historically, however, this has proven difficult to manage) and the control of development in the floodplains of the estuaries would reduce the indirect impacts on estuaries to a probable residual impact of **HIGH** significance.

Table 9.5: Summary assessment of key potential impacts on estuaries - Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with sedimentation						
Without mitigation	Regional	Short term	High	Highly probable	Medium	Medium
With mitigation	Regional	Short term	Medium	Probable	LOW	Medium
Impacts associated with water quality changes						
Without mitigation	Regional	Short / Medium term	High / Medium	Probable	Medium	Medium
With mitigation	Regional	Short / Medium term	Medium	Probable	LOW / MEDIUM	Medium
Impacts associated with improved access						
Without mitigation	Regional	Long term	High	Highly Probable	Very high	Medium
With mitigation	Regional	Long term	Medium	Probable	HIGH	Medium

9.2.4 SOCIAL

The proposed toll highway would result in key potential social impacts relating to the following: increased employment opportunities; improved safety for vehicle road users; increased safety hazards for pedestrians and traffic; increased HIV/AIDS and STD risks; increased crime; construction-related traffic delays; increased taxi-related tension and violence; improved livestock safety; loss of use of the existing road reserve; resettlement of affected households; rural severance effects; uncontrolled secondary development; improvement in transport provision to the area; and negative influences on existing family networks and social structures. A summary of the assessment of the key potential impacts is provided in Table 9.6.

Increased employment opportunities

The anticipated positive social impact associated with increased employment opportunities (unemployment in the area is estimated at 64 %) is assessed to be of high intensity during construction and medium intensity during the operational phase. The significance of the impact is thus rated to be **positive high** (during construction) and **positive medium** (during the operational phase). Optimisation measures such as establishment of a “labour and employment desk”, use of labour-intensive methods where possible, use of local labour as far as possible and remuneration beyond the minimum wage rate would increase the significance of the potential positive impact to **POSITIVE HIGH** significance.

Improved safety for vehicle road users

The probable improved safety for vehicle road users (especially in terms of provision of over- and underpasses for pedestrians and animals) is considered a positive impact of high intensity over the long term and is thus rated to be of **POSITIVE HIGH** significance. Ensuring close cooperation and effective communication between all relevant traffic authorities, effective traffic control mechanisms and carefully positioned under- and overpasses would not result in any further improvement in traffic safety risks, but would further enhance the probability of improved safety for vehicle road users.

Increased safety hazards for pedestrians and traffic

Construction sites and associated activities, and an increase in traffic volumes during the operational phase, would lead to increased safety hazards for pedestrians and traffic, particularly where introduced into relatively remote rural areas. The potential impact is assessed to be of **medium** intensity and significance during the construction and operational phases. Regular inspection and maintenance of fencing, erection of appropriate warning signs and implementation of community risk awareness programmes would reduce the intensity and significance of the potential impact to **LOW**.

Increased risk of HIV/AIDS and STDs

The anticipated influx of construction workers during construction, and the anticipated increased long-distance truck traffic on the proposed toll highway, would probably result in an increased risk of HIV/AIDS and STDs. The potential impact is assessed to be of **medium** intensity and significance. Mitigation measures aimed at reducing the spread of HIV/AIDS and STDs, such as the design and implementation of appropriate HIV/AIDS and STD awareness and prevention campaigns, maximisation of job opportunities to local people who do not need to be housed in construction accommodation, and availability of an adequate supply of free condoms for workers would reduce the risk of the spread of HIV/AIDS and STDs to **LOW-MEDIUM** significance during the construction and operational phases.

Increased crime

Potential increase in criminal activity, especially stock theft, due to an influx of workers during construction and the greater accessibility of the area has been raised as a serious concern in this section of the proposed toll highway. In light of the heavy dependence on livestock to support livelihoods in the

area, the probable impact is assessed of **medium** intensity and significance during the construction and operational phases. Liaison with the local police to monitor changes during construction and operation, provision of additional security if required and assistance with establishment of Community Policing Forums where they do not exist would reduce the significance of the potential impact to **LOW**.

Construction-related traffic delays

Traffic delays and accommodation of traffic during construction, especially in and around the development node of Thombo, would result in potential increased incidences of road rage and time delays for road users. The probable impact is assessed to be of medium intensity during the construction phase and is considered of **medium** significance. Proper scheduling of construction activities to minimise delays, and the design and implementation of an effective public communication strategy to inform road users of construction activities would probably reduce the significance of the potential impact to **LOW**.

Increased taxi-related tension and violence

It is anticipated that the proposed toll highway would result in potential increased internal taxi-related tension and violence associated with the profitability of certain routes. This potential impact is considered to be of **medium** intensity and significance over the long term. The intensity, and hence significance, of this potential impact would be reduced to **LOW** through consultation with the relevant taxi industries, in particular regarding the implementation of tolling and potential discounts.

Improved livestock safety

The proposed works along this section of the proposed toll highway would probably result in improved livestock safety on an existing section of road which is characterised by significant safety hazards associated with the presence of livestock on the road. In addition to posing a safety hazard, the loss of livestock due to traffic collisions may lead to impoverishment of the families who owned them. The probable improved livestock safety is considered of high intensity over the long term and is thus rated to be of **POSITIVE HIGH** significance. The assessment is, however, made with a low level of confidence since it is uncertain to what extent it would be possible to keep fencing intact and thus preventing livestock from continuing to be present on the road. Close cooperation and effective communication between all relevant authorities, the introduction of active and efficient control mechanisms and carefully positioned under- and overpasses would likely increase the probability of this potential positive impact.

Loss of use of the existing road reserve

Much of the existing road reserve is used for grazing and other natural resource harvesting, as well as the cultivation of crops. The probable, localised loss of use of the existing road reserve as a result of the proposed toll highway is assessed to be of **medium** intensity and significance, given the high levels of poverty and low levels of resources in the adjacent, marginal communities. Implementation of mitigation measures, such as bailing the grass in the road reserve and making it available to adjacent communities as part of the maintenance programme for the fencing and road reserve, would reduce the potential impact to **LOW** significance.

Resettlement of affected households

Resettlement of affected households, particularly in the areas close to Thombo, could result in associated social impacts such as social and economic marginalisation, social and cultural disruption, landlessness, etc. This localised, permanent impact is assessed to be of **high** significance. This potential impact could be reduced to **MEDIUM** significance by undertaking resettlement in terms of international best practice, accompanied by a comprehensive resettlement action plan. These should ensure, amongst others, the following: that resettlement is avoided, or minimised where unavoidable; that resettlement plans and activities are seen and executed as development programmes (and are developed in full consultation with

local headmen); and that displaced persons (and “host” communities) are meaningfully consulted, prior to resettlement, and participate in the planning and implementation of the resettlement programme.

Rural severance effects

Concerns were raised that the proposed toll highway would create a barrier that would cut local residents off from their neighbours, as well as from educational and religious facilities, services, cultivated fields and grazing lands. The potential rural severance effects are assessed to be of medium intensity at a local level during construction, and high intensity at a local level during the operational phase. The potential rural severance effects are thus rated to be of **medium** (construction) and **high** (operational phase) significance. Implementation of effective mitigation measures, such as the appropriate location of crossing points (over- and underpasses), ensuring that central service nodes (such as schools, clinics, water points etc.) remain easily and safely accessible and that crossing points are adequate for people and livestock, as appropriate, would reduce the significance of the potential impact during the construction and operational phases to **LOW** and **MEDIUM**, respectively.

Uncontrolled secondary development

The proposed toll highway would probably lead to the creation of unplanned nodes. Concern has also been expressed that, due to the generally weak capacity of the local authorities along this section of the proposed toll highway, the potential unplanned developments would not be controlled. This is considered to result in potential negative, localised social impacts of **medium** intensity and significance. Active engagement between the Proponent and the relevant local, provincial and national authorities, aimed at ensuring that no unplanned secondary developments occur, would reduce the significance of the probable residual impact to **LOW**.

Improvement in transport provision to the area

It is anticipated that the proposed toll highway would enhance existing patterns of local and regional travel and transport and service delivery. Locally it is anticipated that the proposed project would provide better access to a wide range of medical services and to family and friends, and ease the burden of securing supplies. The potential positive impact is considered of **POSITIVE MEDIUM** significance without and with mitigation.

Negative influences on existing family networks and social structures

The construction and operation of the proposed toll highway would probably result in localised negative influences on existing family networks and social structures, such as increased prostitution, unplanned and unwanted pregnancies, pressure on local services and competition for available jobs and resources as a result of an influx of workers and job seekers. The potential negative influences on existing family networks and social structures are assessed to be of **medium-high** significance. A probable residual impact of **MEDIUM** significance would result through implementation of mitigation measures such as the maximisation of job opportunities to local people, establishing and maintaining communication channels with local community structures, ensuring condoms are readily accessible to workers and provision of adequate on-site temporary accommodation and amenities for non-local workers.

Table 9.6: Summary assessment of key potential social impacts – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with increased employment opportunities						
Without mitigation	Local-Regional	Short/Long term	Medium/High	Probable	Medium+/High+	High
With mitigation	Local-Regional	Short/Long term	High	Probable	HIGH+	High
Impacts associated with improved safety for vehicle road users						
Without mitigation	Regional	Long term	High	Probable	High+	Medium
With mitigation	Regional	Long term	High	Highly Probable	HIGH+	Medium

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Increased safety hazards for pedestrians and traffic						
Without mitigation	Local-Regional	Short / Permanent	High	Definite	Medium	Medium
With mitigation	Local-Regional	Short / Permanent	Medium	Definite	LOW	Medium
Impacts associated with increased risk of HIV/AIDS and STDs						
Without mitigation	Local	Permanent	Medium	Probable	Medium	Medium
With mitigation	Local	Permanent	Low	Probable	LOW-MEDIUM	Medium
Increased crime						
Without mitigation	Local	Permanent	Medium	Probable	Medium	Medium
With mitigation	Local	Permanent	Low	Probable	LOW	Medium
Impacts associated with construction-related traffic delays						
Without mitigation	Local	Short term	Medium	Probable	Medium	Medium
With mitigation	Local	Short term	Low	Probable	LOW	Medium
Increased taxi-related tension						
Without mitigation	Local	Long term	Medium	Probable	Medium	Medium
With mitigation	Local	Long term	Low	Probable	LOW	Medium
Impacts associated with improved livestock safety						
Without mitigation	Regional	Long term	High	Probable	High+	Low
With mitigation	Regional	Long term	High	Highly probable	HIGH+	Low
Impacts associated with loss of use of the existing road reserve						
Without mitigation	Local	Permanent	Medium	Definite	Medium	Medium
With mitigation	Local	Permanent	Low	Definite	LOW	Medium
Impacts associated with resettlement of affected households						
Without mitigation	Local	Permanent	Medium-high	Definite	High	High
With mitigation	Local	Permanent	Medium	Definite	MEDIUM	High
Impacts associated with rural severance effects						
Without mitigation	Local	Permanent	Medium / High	Probable	Medium / High	High
With mitigation	Local	Permanent	Low / Medium	Probable	LOW / MEDIUM	High
Impacts associated with uncontrolled secondary development						
Without mitigation	Local	Permanent	Medium	Probable	Medium	Medium
With mitigation	Local	Permanent	Low	Probable	LOW	Medium
Impacts associated with improvement in transport provision						
Without mitigation	Local-Regional	Long term	Medium	Definite	Medium+	Medium
With mitigation	Local-Regional	Long term	Medium	Definite	MEDIUM+	Medium
Impacts associated with negative influences on existing family networks and social structures						
Without mitigation	Local	Short/Long term	Medium-high	Probable	Medium-high	Medium
With mitigation	Local	Short/Long term	Medium	Probable	MEDIUM	Medium

9.2.5 TOURISM

The proposed toll highway would result in the following key potential impacts relating to tourism: increase in the number of tourism products; increase in growth in transit tourists on a KwaZulu-Natal/Eastern Cape/Western Cape route; and increased access to environmentally sensitive areas. A summary of the assessment of the key potential impacts is provided in Table 9.7.

Increase in the number of tourism products

As described in Section 7.2.5, the proposed toll highway would definitely result in an increase in the number of tourism products due to an expected increase in growth in overnight tourists and associated increase in the rate of growth of tourism products. The potential impact is rated to be of **positive medium** significance. Implementation of optimisation measures such as tourism promotion and product

development would most probably increase the intensity of the potential impact, resulting in an impact of **POSITIVE HIGH** significance.

Increase in growth in transit tourists on a KwaZulu-Natal/Eastern Cape/Western Cape route

As described in Section 7.2.5, it is anticipated that an increased growth in transit tourists on a KZN/Eastern Cape/Western Cape route would be of **positive medium** significance. Tourism promotion and development would increase the significance of the potential impact to **POSITIVE MEDIUM-HIGH**. However, there is a risk that this could be inhibited by various factors (availability of well-maintained feeder roads, ownership of land, alignment with municipal policies, etc.), therefore the assessment of the potential impact with mitigation is undertaken at a medium level of confidence.

Increased access to environmentally sensitive areas

A number of indirect ecological impacts associated with increased access to the study area have been predicted (e.g., refer to section 9.2.1 above). Since the biophysical environment of the study area is an important tourism resource it is considered probable that negative ecological impacts would have an impact on the sustainability of eco-tourism ventures as many of these businesses currently trade on the availability of a relatively undisturbed biophysical environment in the study area. The probable impact on the sustainability of eco-tourism ventures associated with increased access to environmentally sensitive areas is assessed to be of **MEDIUM** intensity and significance without and with mitigation (measures as applicable to potential impacts on vegetation and flora, fauna and aquatic ecosystems).

Table 9.7: Summary assessment of key potential tourism impacts – Mthatha to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with increase in the number of tourism products						
Without mitigation	Regional	Long term	Low	Definite	Medium+	High
With mitigation	Regional	Long term	Medium	Definite	HIGH+	Medium
Impacts associated with increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route						
Without mitigation	Regional	Medium term	Medium	Probable	Medium+	Medium
With mitigation	Regional	Medium term	Medium-high	Probable	MEDIUM-HIGH+	Medium
Impacts associated with increased access to environmentally sensitive areas						
Without mitigation	Regional	Long term	Medium	Probable	Medium	Medium
With mitigation	Regional	Long term	Medium	Probable	MEDIUM	Medium

9.2.6 CULTURAL AND HISTORICAL HERITAGE

The only key potential heritage impact identified along this section of the proposed toll highway relates to the presence of graves. A summary of the assessment of this key potential impact is provided in Table 9.8.

Graves

As described in Section 7.2.6, the resettlement of affected households would probably result in the need to relocate graves situated in the gardens of such households. Since all human remains have high heritage significance for their social value, the potential permanent, localised impact is assessed to be of **high** intensity and significance. Implementation of the recommended mitigation measures stipulated in Section 7.2.6 would reduce the significance of the potential impact to **MEDIUM**.

Table 9.8: Summary assessment of key potential heritage impacts – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with graves						
Without mitigation	Local	Permanent	High	Highly probable	High	Medium
With mitigation	Local	Permanent	Low-medium	Highly probable	MEDIUM	Medium

9.2.7 PLANNING/DEVELOPMENT

The proposed toll highway would result in key potential planning/development impacts relating to the following: nodes along the R61; and implications for the Thombo area. A summary of the assessment of the key potential impacts is provided in Table 9.11.

Nodes along the R61

Access to Libode and Ngqeleni, two main towns which service the municipal area of the Nyandeni LM, is currently obtained from the existing R61. In addition, the Ngqeleni Intersection and the Mafini area are recognised as local nodes since they also serve as the location for taxi ranks. The proposed works along this section of the proposed toll highway would result in a potential impact of **POSITIVE MEDIUM** significance without and with enhancement. SANRAL should consider whether the construction of interchanges would be required, where appropriate.

Implications for the Thombo area

The SDF of the Port St Johns LM identifies the Thombo area as having the potential to develop into the second largest node within the municipal area. Thombo currently serves as an important administrative node to the surrounding rural communities since it provides, amongst others, a post office, clinic, government offices, an art centre and community hall and training centre. The potential planning impact of the proposed toll highway in terms of facilitating the objectives of the SDF is rated to be of **POSITIVE MEDIUM** significance without and with enhancement. It should be ensured that possible uncontrolled growth around the node be controlled through proper management of the node.

Table 9.11: Summary assessment of key potential planning/development impacts – Mthatha (Ngqeleni) to Ndwalane

ISSUE / IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE	CONFIDENCE
Impacts associated with nodes along the existing R61						
Without mitigation	Local	Long term	Medium	Highly probable	Medium+	High
With mitigation	Local	Long term	Medium	Highly probable	MEDIUM+	High
Implications for the Thombo area						
Without mitigation	Local	Long term	Medium	Probable	Medium+	High
With mitigation	Local	Long term	Medium	Probable	MEDIUM+	High