

Johannesburg Roads Agency

Environmental Impact Assessment (EIA) for the Route Determination of the Proposed Metro Boulevard

Information Sharing Meeting

19 February 2009

GDACE Ref: Gaut 002/06-07/N0169

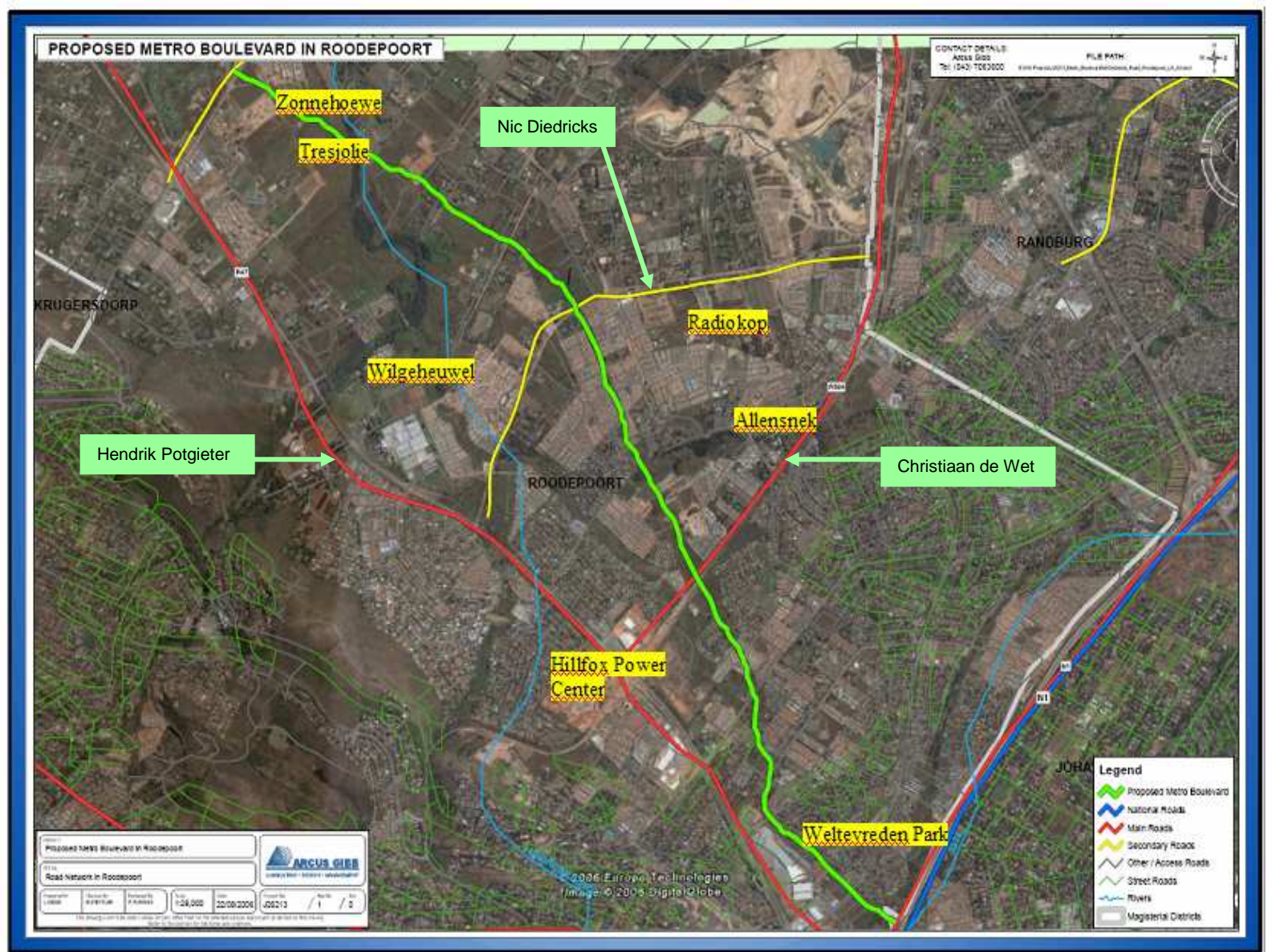
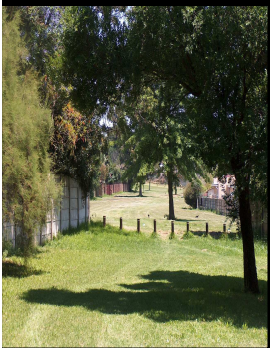


Agenda

- Welcome and introduction
- Conduct and purpose of the meeting
- Brief overview of project
- Public participation process
- Technical Studies
- Findings of the environmental impact analysis
- Conclusions and recommendations
- Way forward
- Response to I&AP queries by JRA

Brief Overview Of The Project

- *Route Determination* seeks to determine the boundaries of a proposed road, preceding the proclamation and gazetting of the reserve
- A separate EIA process is thus required for the construction of the road
- Previously known as the PWV10, the proposed route alignment runs in a north-westerly direction, parallel to Hendrik Potgieter
- The design indicates a dual-carriageway road, 12 km long and 40 m wide

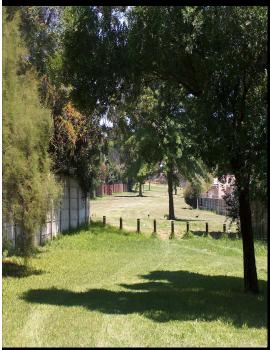


Associated Infrastructure

- The preliminary design of the road included the design and location of stormwater attenuation dams
- 12 attenuation dams are proposed
- A Return period of 1:25 years is the JRA requirement
- Suitable parcels of land were sought by the JRA, alternative locations were then considered due to the unavailability of the land
- The lack of available land led to the consideration of smaller areas with a 1:10 year and 1:5 year return interval storage

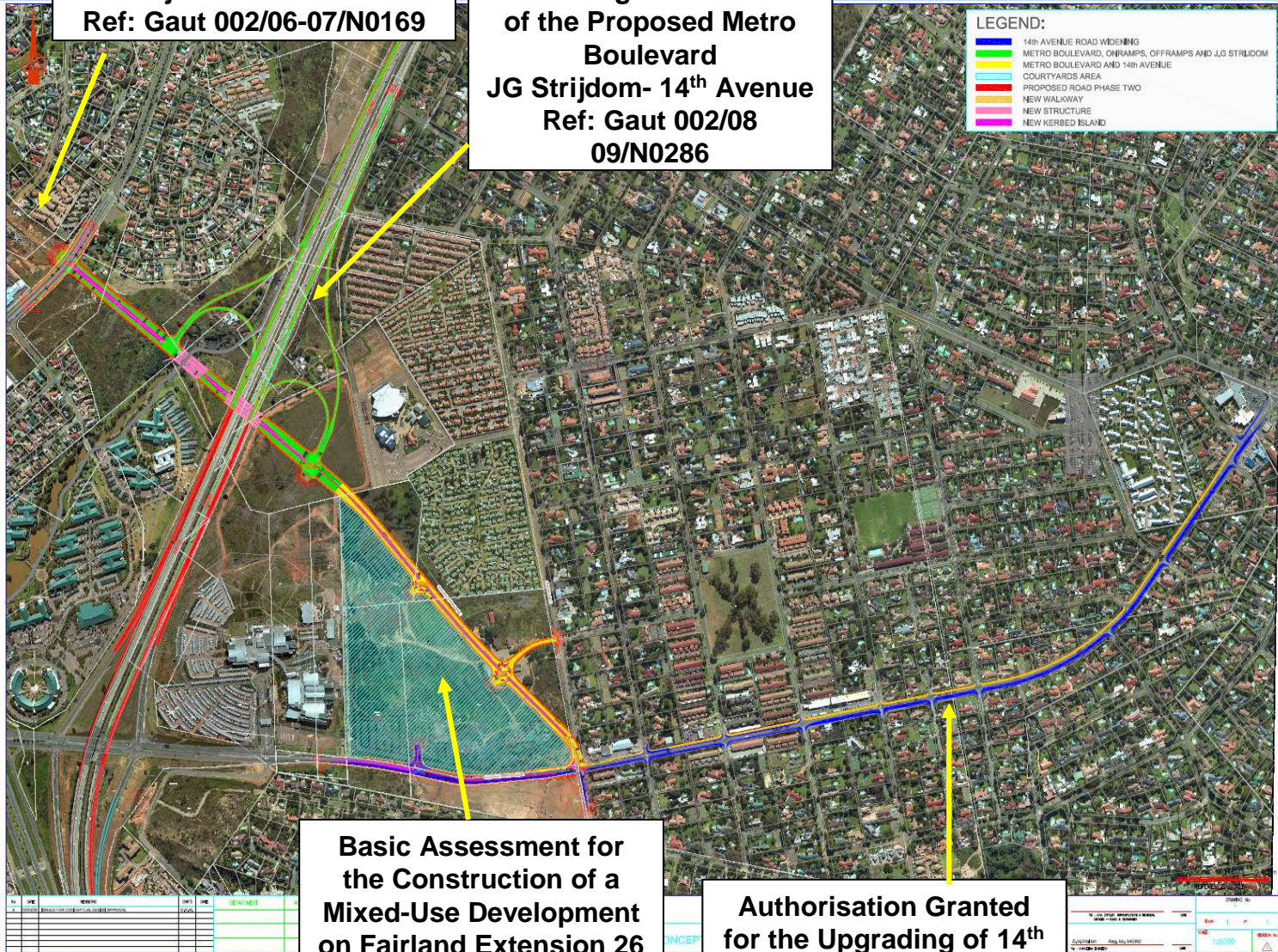
Related Projects

- EIA for the Construction of the Proposed N1-20 Metro Boulevard Interchange (***Gaut 002/08-09/N0286***), including:
 - A section of the proposed Metro Boulevard, from JG Strijdom to 14th Avenue
 - North bound on-ramp, a south bound off-ramp, a bridge over the N1, two bridges over the Jukskei River and a stormwater culvert
- Environmental authorisation granted for the Upgrading of 14th Avenue (***Gaut 002/04-05/1693***), from Golden Gate Road to Weltevreden Road
- Basic Assessment for the Construction of a Mixed-Use Development on Fairland Ext 26 (***Gaut 002/08-09/N0072***)



EIA for the Route Determination of the Proposed Metro Boulevard JG Strijdom- Fairview Road
 Ref: Gaut 002/06-07/N0169

EIA for the Construction of the Proposed N1-20 Metro Boulevard Interchange and Section of the Proposed Metro Boulevard JG Strijdom- 14th Avenue
 Ref: Gaut 002/08 09/N0286



Basic Assessment for the Construction of a Mixed-Use Development on Fairland Extension 26 Adjacent to the MTN Campus
 Ref: Gaut 002/08-09/N0072

Authorisation Granted for the Upgrading of 14th Avenue Golden Gate Road – Weltevreden Road
 Ref: Gaut 002/04-05/1693

Need And Desirability

- Provide an additional west-east link
- Redistribute traffic volumes, improving flow in the surrounding road network
- Upgrading of public transport networks
- Reducing pressure on major roads such as Hendrik Potgieter
- Addresses unemployment and lack of skills development in the short term

Financial Feasibility

- Annual benefit is estimated to be R 1.6 billion per annum
- The cost of construction is estimated to be R 2.5 billion
- This results in a positive Benefit Cost Ratio (BCR)
- Currently there is no budget provision for this proposed road
- This project shall compete with other projects within the City of Johannesburg for funding
- Public/Private partnerships with the JRA are open to developers

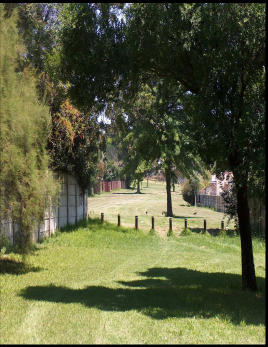
Project Alternatives

- **Upgrading of Surrounding Roads**

- The upgrading of Hendrik Potgieter and Beyers Naude was considered as only these two roads provide an east-west linkage
- These upgrades show very little benefit due to it:
 - Not addressing the existing congestion points
 - Not providing additional or alternative access to the highway
 - Not diverting traffic off these major arterials
- The upgrading of Hendrik Potgieter to a provincial road is currently under investigation, however this is seen as a short term solution to the congestion problems

Project Alternatives

- **Design Alternatives**
 - Structural Design Aspects
 - Roads and Bridges
 - Stormwater Attenuation Ponds and other Infrastructure
 - Noise Reduction
 - Specific Road Design
 - Positioning of Traffic Signals
 - Pedestrian Walkways
 - Public Transport System Design (i.e BRT, SPTN)

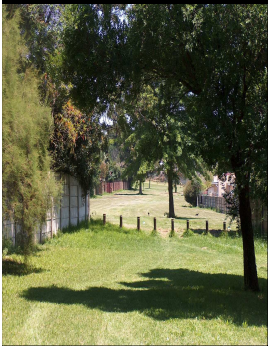


Project Alternatives

- **Road Alignment Alternatives**

- The proposed route traverses the following features, which required the consideration of shifts in the alignment:

- Wetland west of Christiaan de Wet Road
- Wilge River
- A 100 ha grassland site either side of the Wilge Spruit



Project Alternatives

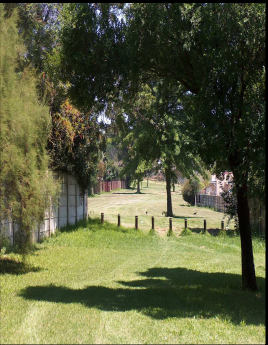
- **Dams Location Alternatives**

- Undeveloped land parcels in low lying areas along the proposed route were identified as potential dam locations
- Some locations were not available
 - Dam situated in Allens Nek Extension 57
- Various alternative dam locations were considered to replace the one dam mentioned above, however the initial location is the preferred location



Project Alternatives

- **Different Transportation Methods**
 - Monorail and train within the reserve
 - Eliminated this alternative as it does not meet the objective of the project which is to improve the surrounding road network



Project Alternatives

- **No-go Alternative**
 - This implies that the route determination process not proceed
 - Implications include:
 - Delay in alleviating congestion on Hendrik Potgieter Road and Beyers Naude Road
 - Inability of the JRA to release land adjacent to the proposed route for development
 - Alternatively the JRA may decide to release the entire route for development or public open space
 - Decline in traffic operations
 - Benefits include the prevention of negative impacts:
 - Impacts on ecological processes
 - Devaluation of property values

Project Alternatives

- The upgrading of Beyers Naude and Hendrik Potgieter will not serve the same purpose as the construction of the proposed Metro Boulevard
- The design alternatives and dam locations shall be forwarded to the design team for their consideration in the detailed design of the proposed road
- The proclamation and gazetting of the proposed Metro Boulevard from JG Strijdom to Peter Road with the recommended shifts in alignment is the preferred alternative

Legal Requirements

- **National Environmental Management Act (NEMA)**

- The EIA was undertaken under NEMA and the New EIA Regulations (published July 2006)
- Main listed activity is identified as activity number 5 in Government Notice R. 387 as follows:

The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before the publication of this notice and which has not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulation, 2006 made under section 24 (5) of the Act and published in Government Notice NO. R 387 of 2006, where

c) the road reserve is wider than 30 meters; or

d) the road will cater for more than one lane of traffic in both directions

EIA Process History

EIA for the Route Determination of the Proposed Metro Boulevard	
Application for Authorisation	12 October 2006
Scoping Phase	
Draft Scoping Report	23 May 2007
Public Meeting	13 & 14 March 2007
Public Review Period	23 May 2007 – 06 July 2007
Final Scoping Report & Plan of Study for EIA	20 September 2007
Acceptance of Final Scoping Report & Plan of Study for EIA by GDACE	07 February 2008
EIA Phase	
Draft Environmental Impact Report	12 November 2008
Public Meeting	26 November 2008
Public Review Period	12 November 2008 – 11 December 2008
Second Public Meeting	19 February 2009
Request for comments to be addressed at meeting	27 January 2009 – 16 February 2009

Public Participation Process

- What **is** Public Participation?
 - A tool to inform I&APs of a proposed project
 - A tool to help integrate the comments of the I&APs into the relevant phases of a proposed project
- What Public Participation **is not**?
 - Not a public relations exercise
 - Not a means to satisfy personnel grievances – rather to record issues related to the EIA and to respond to these

Public Participation Process

Public Participation Process

Approval of Final Scoping Report and
Plan of Study for EIA



Draft Environmental Impact Report
for Public Review



Focus Group Meetings



Public Meetings



Notify I&APs of Record of Decision

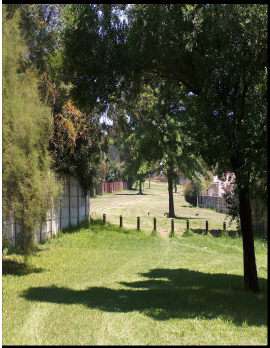
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Technical Studies and Main Findings

- **Terrestrial Ecology** – David Hoare Consulting cc
 - Only one grassland site (Egoli Granite) is considered to be of conservation value, located on either side of the Wilge Spruit
 - 3 Red List vertebrates could occur in the study area
- **Wetlands/Aquatic Ecology** – VC Management Services
 - 11 possible wetland sites were identified
 - 3 of these sites met the wetland or riparian habitat criteria as defined by DWAF
- **Agricultural Potential and Land Capability** – Agricultural Research Council – Institute for Soil, Climate and Water
 - Potentially high potential soils exist to the north-west of the crossing of Nic Diedrichs Road, however a residential complex has been built in that area (corner of Glover Road and Hans Road)

Technical Studies and Main Findings

- **Geology and Soils** – Moore Spence Jones (Pty) Ltd
 - There are no geotechnical constraints that could not be mitigated by normal construction or road-building procedures
- **Air Quality** – Gondwana Environmental Solutions
 - Concentration values for all emissions are confined to the paved road area and do not exceed prescribed limits for common air standards beyond the road reserve
 - The impact of the modelled emissions on surrounding residential areas is negligible thus there will be no health impacts on the surrounding community
- **Noise** – JH Consulting
 - An increase in ambient noise level between 20 to 25dB is expected at the boundary of the road reserve

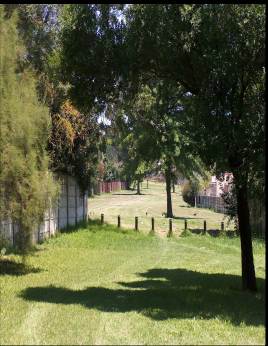


Technical Studies and Main Findings

- **Property Evaluation** – Norman Griffiths & Associates
 - Should the route differ from that determined in 1994, a 30% diminution in the value of adjacent residential properties will occur
 - If the proposed road were to be constructed, a maximum devaluation of 25% for residential properties adjacent to the proposed road can be expected
- **Traffic** – ARUP SA (Pty) Ltd
 - The construction of the Metro Boulevard will effectively reduce traffic volumes on both Hendrik Potgieter and Beyers Naude
 - The current congestion at the 14th Avenue and Beyers Naude Interchanges with the N1 Highway will be reduced resulting in an increase of travel speeds
- **Heritage** – Mr Johnny Van Schalkwyk
 - No sites, features or objects of cultural significance were found in the study area

Impact Analysis: Significance

- Process of assessing the impacts of the project encompasses the following four activities:
 - Identification and assessment of potential impacts
 - Prediction of the nature, magnitude, extent and duration of potentially significant impacts
 - Identification of mitigation measures that could be implemented to reduce the severity or significance of the impacts of the activity
 - Evaluation of the significance of the impacts after the mitigation measures have been implemented

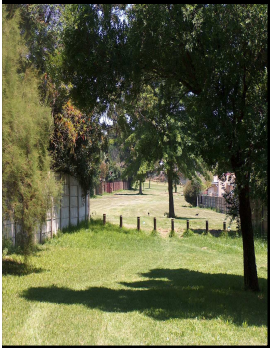


Impact Analysis: Significance

- Potential impacts are assessed according to the following criteria:
 - **Cumulative impacts** (incremental impacts of the activity and other past, present and future activities on a common resource)
 - **Nature**
 - **Extent** (the spatial limit of the impact)
 - **Intensity** (the severity of the impact)
 - **Duration** (the predicted lifetime of the impact)
 - **Probability** (the likelihood of the impact occurring)
 - **Non-Reversibility** (ability of the impacted environment to return to its pre-impacted state once the cause of the impact has been removed)
 - **Impact on irreplaceable resources** (is an irreplaceable resource impacted upon)
 - **Confidence level** (the specialist's degree of confidence in the predictions and/or the information on which it is based)

Impact Analysis: Significance

- Consequence Ratings assigned utilising Extent, Intensity, and Duration
- **Significance Ratings** assigned utilising the **Consequence Rating** and the **Probability**
- The analysis was undertaken for all impacts both before and after the implementation of mitigation measures



Impact Analysis

Impact	Before Mitigation	After Mitigation
Wetlands		
Impact on the wetland area, located west of Christiaan de Wet Road	High	Medium
Impact on the wetland area, located north of Krugerrand Road/Sovereign Road Intersection	High	Medium
Impact on the wetland area, located at the Wilge River crossing	Medium	Low
Terrestrial Ecology		
Loss or disturbance of vegetation and habitats	Medium	Low
Disturbance to ridge habitats	Low	Low
Fragmentation of vegetation and habitats	Medium	Low
Loss of migration corridors	Medium	Low
Loss or disturbance of populations of Red List organisms (wetland dependent species)	Medium	Low
Loss or disturbance of populations of Red List organisms (grassland dependent species)	High	Low
Invasion by weeds and alien species where disturbance occurs	Medium	Low

Impact Analysis

Impact	Before Mitigation	After Mitigation
Geology and Soils		
Sheared Granite affecting the southern half of the route	Medium	Low
Grey Granodiorite affecting the central area of the route	Medium	Low
Porphyritic granodiorite affecting the northern region of the route	Medium	Low
Diabase dyke affecting the central area of the route	Medium	Low
Transported Aeolian Sand affecting majority of the route	Medium	Low
Residual soils below the transported aeolian sands	Medium	Low
Geotechnical		
Based on the available information and experience in the area, the geotechnical constraints listed above can be mitigated by normal construction or road-building procedures, thus they are all considered to be of low significance		
Agricultural Potential		
Loss of Agricultural Land	Low	Low
Impact on wetlands	Low	Low

Impact Analysis

Impact	Before Mitigation	After Mitigation
Property Evaluation		
Impact of the Route Determination Process on the value of properties	Low	Low
Impact on property values should construction of the proposed Metro Boulevard proceed	Low	Low
Change in Land Use	High +	High +
Impact of the construction of the proposed Metro Boulevard along a different route	High	Low
Heritage		
Destruction of heritage resources	Low	Low
Traffic		
Reduction in traffic congestion	High +	High +
Redistribution of traffic during construction	Low	Low
Reduction in travelling time	High +	High +

Impact Analysis

Impact	Before Mitigation	After Mitigation
Noise		
Noise Impact during construction	High	Medium
Noise Impact during operation	High	Medium
Noise Impact during decommissioning	Low	Low
Air Quality		
Impact of PM10 emissions during construction	Low	Low
Impact of TSP emissions during construction	Low	Low
Impact of PM10 emissions during operation	High	Low
Impact of CO emissions during operation	High	Low
Impact of SO2 emissions during operation	High	Low
Impact of NOx emissions during operation	High	Low
Impact of TSP emissions during operation	High	Low
<p>The above concentration values are confined to the paved road area, and do not exceed prescribed limits for common air standards beyond the road reserve area. Due to the fact that the simulated impact will be confined to the road reserve area, the impact of the modelled emissions on the surrounding residential areas in the vicinity will be negligible.</p>		

Conclusions and Recommendations

- Potential positive and negative environmental (bio-physical and socio-economic) impacts identified and shall undergo revision during the EIA for the construction of the proposed Metro Boulevard
- No environmental fatal flaws – provided that mitigation and management measures are implemented to minimise potentially significant impacts
- This EIA is for the route determination of the proposed Metro Boulevard and not construction, an Environmental Management Plan (EMP) is thus not necessary
- It is recommended that the proposed route alignment from JG Strijdom to just after Peter Road be registered as a servitude with the recommended shifts in alignment

Way Forward

- Compilation and distribution of minutes
- Inclusion of I&AP comments in Final Environmental Impact Report (FEIR)
- Submission of FEIR report to GDACE and Provincial Environmental Authorities
- Release of FEIR into the public domain
- Authority review
- Record of Decision (Environmental Authorisation)
- Notify I&APs of Record of Decision
- Appeal Period

QUESTIONS

- Impacts on Property
 - From what source will JRA compensate affected property owners?
 - What compensation will be made to property owners?
 - What is the proposed date for affected parties to vacate their properties?
 - Will re-zoning rights be made available?
- Impacts on Existing Infrastructure
 - Access to properties (i.e closing of Kiewiet Street)?
- Technical Aspects
 - Number of lanes in either direction?

QUESTIONS

- Social Impacts
 - Why was a social study not undertaken, when will this be done?
- Alternatives
 - Why not improve roads such as Peter Rd, Nic Diedrichs Boulevard, Witkoppen and Northumberland to alleviate pressure?
 - Why not develop just a single carriageway instead of 4/6 lane carriageway?
 - Possible use of the Bus Rapid Transit System?
- Safety and Security
 - What will be done about the increase of crime due to the proposed road?

QUESTIONS

- Financial & Economic Impacts
 - How are sales of properties in affected areas addressed?
 - What is the estimated cost of the project?
- General
 - How long will the project take to complete?
 - Who will maintain the servitude?
 - What will happen to the road reserve should authorisation not be granted?
 - Why not maintain existing roads instead of building a new road?