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REPORT No

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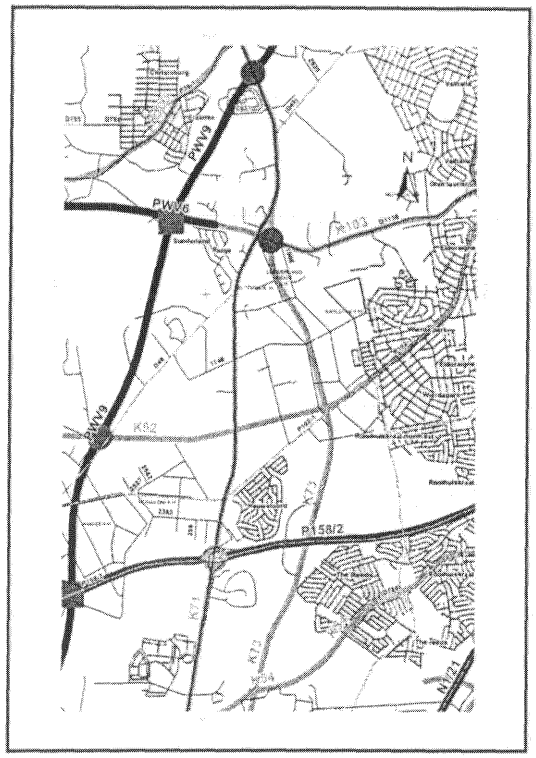
VOL 1 OF 2

GAUTRANS

DEPARTMENT OF
PUBLIC TRANSPORT,
ROADS AND WORKS

K 71 FINAL REPORT

VOLUME 1 OF 1



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1. INTRODUCTION

Rock Environmental Consulting was appointed by VKE MMA Joint Venture to conduct an environmental impact assessment. The project entails the upgrading of the existing north-south Provincial Road K71 (P66-1) between Road P158-2 (R28) and K103. The proposed section that will be constructed upon is approximately 6km. The proposed development entails the width extension of the existing road reserve from 48m to 62m accompanied by an upgrading and partial re-alignment to a dual carriage roadway. This roadway is to be surfaced with bitumen and the construction of side drains and required road signs and culverts. A short bridge will be constructed across the main drainage course.

The design of the road will comply to Gautrans road standards. The alignment will deviate to some extent from the existing route in basically two locations namely towards the northern end of the study area, near Sunderland Ridge and towards the southern end of the proposed project.

The project is a Blue IQ project as initiated by Gauteng.

METHODOLOGY

The objective of this study process is to ensure that the below-mentioned actions are strictly carried out in terms of Regulations No. R 1182 and No. R 1183 as published on 5 September 1997 of the Environmental Conservation Act, Act No 73 of 1989. During the course of the study the following actions were taken and achieved:

ACTION	MILE STONES / SUBMISSSIONS
Application for Authorization and Declaration of Independence	6/03/2003
Plan of study for Study for Scoping submission	6/03/2003
Approval of Plan of Study for Scoping by GDACEL	4/7/2003
Terrain assessments and study inputs	6/03/2003 - 8/03/2003
Public participation commence	18/8/2003
Public participation and social scoping report completed	October 2003

Environmental Scoping report completion (Report for comments) completed	30/3/2004

These steps and procedures were carried out in accordance with Regulations No. R 1182 and No R 1183 as published on 5 September 1997 in the Environment Conservation Act (Act 73 of 1989).

- A Plan of Study for Scoping was submitted for evaluation to the Gauteng Department of Agriculture Conservation and Environment and Land Affairs (DACEL) on 6/3/2003. It was also accompanied by the Application for Authorisation.

- The Plan of Study for Scoping approved by the department was received by our office on 2/7/2003.

- Once the POS had been approved the full public participation process could commence. The public participation consisted of the placement of on-site notifications and an advertisement in the local newspaper, "Centurion Rekord" dated 7 August 2003. To ensure transparency the public participation program additionally involved 2 open days at the Dutch Reformed Church (NG Kerk), cnr of Theuns van Niekerk & Theo Streets, Raslouw ; during which all surrounding landowners and other interested and affected parties were provided the opportunity to view the proposed planning and to comment on the project. These open days were held on 18 August 2003 and 19 August 2003. This process enabled the consultant to identify critical social and economic related issues (refer to Sub-Report 1).

- A terrain assessment and analysis was conducted during which focus was placed on the physical and biological environmental components.

- An assessment of land-use conditions surrounding the terrain was done.

- Anticipated impacts and issues, whether positive or negative, were identified and described.

- All impacts and issues resulted in recommendations, which are in the form of an Environmental Management Plan (EMP). The Environmental Management Plan will, if implemented properly, reduce the environmental consequences of the construction and gives guidance in applying sound environmental management practice even after construction.

The assessment of the biophysical and social environment (social scoping) resulted in four sub-reports, namely:

- Annexure 1: Locality and layout plan

- Annexure 2 : Details and design of the new bridge

- Annexure 3 : Geotechnical report

- Annexure 4 : Culture Historic report
- Annexure 5 : Sub-report 1 : Public participation and social scoping
- Annexure 6 : Impact Methodology Rating

STUDY OBJECTIVE AND PROJECT MOTIVATION

The objective of this report documentation is to:

- Identify biophysical and social environment issues associated with the future construction of the north-south Provincial Road K71 (P66-1) between Road P158-2 (R28) and K103.
- To create and formulate measures applicable during the design and construction phases and to present impact mitigation recommendations to be implemented to reduce the risk of detrimental impacts.

2. LOCALITY AND STUDY AREA

The area under investigation is located within the jurisdiction of the City of Tshwane Metropolitan Municipality and is generally surrounded by agricultural holdings, urban residential development and industrial factories. The start of the study area lies approximately 3 km west of Heuweloord and ends approximately 4 km south of Zwartkop 356-JR. This area transects through Raslouw Agricultural Holdings, Honeypark 437-JR and Brakfontein 399-JR. The R55 access interchange forms the southern limit of planning of the core study. The northern most section of the proposed roadway ends at the R55 and M10 Wierda T-junction. See Annexure 1.

3. PROJECT DESCRIPTION

The project extends across Olievenhoutbosch 389 JR, Brakfontein 399 JR, Swartkop 383 JP, Swartkop 385 JP, Honeypark 437 JR, Zwartkop 356 JR and Lekkerhoekie 411 JR. Raslouw, Sunderland Ridge and Deldoida Agricultural Holdings (AH) are also included. The road stretches through a relatively homogenous environment consisting of natural open veldt, agricultural land and semi-urban area. No fragmentation of intensively cultivated or grazing agricultural land will occur. Low key agriculture characterises the terrain.

The development of the road will take place in two phases (Refer to Annexure 1) namely:

Phase 1: Upgrade of the existing single carriageway road with bitumen.

Phase 2: km 0.0 to km 6.2 - construction of new dual carriageway road surfaced with bitumen and accompanied with the construction of side drains where necessary.

The project entails the following:

- Distance of planning: approximately 6.2 km
- Two lane double carriageway road with a bitumen-surfaced road with lanes.
- The road will contain side drains where needed
- The current road reserve of approximately 48m will be widened to 62m.
- Design speed: 100km/h
- The new alignment will deviate from the existing alignment at the following sections **(See Locality and Key Plan):**

Deviation 1: Ruimte Road (M34) which currently joins Road K71 roundabout at a 45° angle will be upgraded to a safe right angle intersection.

Deviation 2: Raslouw Agricultural Holdings located between Lochner Street and Mimosa (west) / Poole Street (east) presently gains direct access to and from the Road K71. Two parallel running service roads are proposed on either side of this road (between above-mentioned streets) to provide access in future to these properties.

Deviation 3: The existing T-junction intersection between Mimosa Street and Road K71, will be realigned in a southerly direction to intersect K71 at Poole Street. This realignment will comply with the required Gautrans road planning specifications.

Deviation 4: Road K71) will be realigned between Poole Street and Road K103. The road will be deviated in an easterly direction, but will rejoin the existing alignment before intersecting with Road K103.

- Raslouw Agricultural Holdings located between Lochner Street in the south and Mimosa Street/Poole Street in the north presently gains direct access to and from Road 71. Two parallel running service roads are proposed on either side of this road (between above-mentioned streets) to provide access in future to these properties.

3.1 ALTERNATIVES

During the assessment process no viable alternatives were put forward by the design team. At present the existing K71 is used to a great extent by small vehicular cars and large trucks. The traffic count survey indicates the extent to which the K71 is presently utilised, and therefore it is in need of repair and upgrading. The large trucks frequently using this road incur much damage and "wear-and-tear" to this road.

An upgraded dual carriage road way through the numerous farms and Sunderland Ridge industrial area, will serve to lighten the traffic volumes experienced along the existing Provincial road K71. This would be an advantageous effort for improving the road network in the growing urban and industrial area. By improving the Sunderland Ridge Interchange, the general flow of traffic and safety of car commuters and pedestrians will be increased. A safer and more efficient road link will also be established between these south western parts of Pretoria and the N14 freeway.

3.1.1 The No-Go Alternative

The no-go alternative was considered. However, due to the general degeneration in road surface quality and increased traffic movement along the existing K7, the initiative to improve the areas road infrastructure would be more advantageous. Due to the inevitable future urban and industrial development of the surrounding area, the improved road network will facilitate increased traffic volumes.

It is obvious that the "Do-nothing" option for this road will reduce the potential for environmental impact, but market forces pressing for the development of land will dictate road development. Poor access to developed land may affect economic sustainability, which may lead to poor environmental sustainability. The Do-nothing option may thus have positive environmental consequences on the short term, but on the long term it will have negative environmental consequences.

By improving the general layout of the road, the main aim is to benefit traffic and pedestrian safety. Therefore, the no-go alternative was not seen to be a viable option.

4. PHYSIOGRAPHIC DESCRIPTION

This section provides a broad description of the environmental conditions and the environmental setting in the study area. This serves as a general background for the identification of physical, biological and socio-economic issues related to this project. This is referred to as a physiographic description and it includes general vegetation characteristics, aesthetics, infrastructure elements, topography, and surface drainage.

This section provides a broad description of the environmental conditions along the route. In broad terms the general landscape of the study area can be divided into the following:

- Open vacant land with current existing small scale farming activities.
- Land that is used for a particular commercial purpose such as light industries, nurseries, entertainment and other small retail commercial land uses.
- Land occupied by road and other infrastructure.

- Land disturbed by excavations or other physical disturbances and the growth of exotic species.

The physiographic description of the study area is based on the kilometre distances along the road section under planning. These kilometre sections are summarized in Table 1 below.

4.5 ELEMENTS OF CULTURE HISTORICAL IMPORTANCE

The field assessments have, for the purpose of this Scoping report, focused on the occurrence of gravesites or any other structure of culture historical importance.

A culture-historical survey of the study area was included in the scope of work. This is an important step and is required in terms of the National Heritage Resources Act (Act No 25 of 1999). The findings of the Specialist Mr Robert De Jongh from the Cultmatrix CC are in summary as follows:

No significant archaeological and historical sites, structures, buildings or objects were detected in the area earmarked for development in phase 1. This is due to the fact that the area has already been changed by human interventions such as agricultural and previous road-building activities. This however, does not mean that there are no such sites, structures, buildings and objects at all. It can happen that they will only become visible when actual construction work begins.

During phase 2 of the construction period however, the new bridge structure to be built, will cut through open grassland areas as well as over the Riet Spruit. It is the recommendation of Mr De Jong that construction of this section must be closely monitored for any archaeological and historical sites or objects.

Please refer to Annexure 4 for Mr De Jongs remarks pertaining to sections of the development.

4.6 VISUAL AND AESTHETIC QUALITY

Overall the study area and surrounding region has a somewhat open and pleasant rural to urban atmosphere. The future development of the proposed dual carriageway K71 will probably have an affect on the visual and aesthetic quality of the terrain. It is important to remember that visual quality is a perceptual element. In this regard, no topographical features or prominent natural landscape features were identified by the consultants that could contribute in a special manner to the visual and aesthetic quality of the area.

The generally rural setting is regarded as contributing to an aesthetically pleasing environment. The busy traffic load on the existing road K71 and the proposed construction of the deviation of that road, will bring about an increase in litter along the roads and at the Riet Spruit bridge crossing. This will affect the aesthetic quality. The visual and aesthetic quality of the study area can be rated as of *medium* value to the general environmental conditions.

Since there are numerous features relevant to rural and rural residential areas, the visual and aesthetical attractiveness is often perceived as subjective.

These features are:

- Visual and aesthetic elements
- Cultural historical elements
- Fragmentation of agricultural land
- Land use

The identification of environmental issues relating to the future construction of the road K71, was done through a biophysical terrain assessment as well as contact and discussions with the local community and key role players. Contact with landowners or other interested and affected parties was conducted to obtain comments. For the purpose of this impact evaluation, the study area was divided into three areas with certain similarities in environmental character. These are:

- Zone A
- Zone B
- Zone C

ZONE A : (KM 0,0 TO KM 0.8)

C= CONSTRUCTION STAGE IMPACT

O = OPERATIONAL STAGE IMPACT

IMPACT ON SURFACE HYDROLOGY

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:4	1	2	2	8 Medium
O:4	2	4	3	12 Medium to high

IMPACT ON GEOLOGY AND SOIL CONDITIONS

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:4	1	4	2	8 Medium to Low
O: No impact				

IMPACT ON FLORA AND FAUNA

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:2	1	2	2	4 Low
O:2	1	2	2	4 Low

IMPACT ON THE VISUAL AND AESTHETIC ENVIRONMENT

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:4	2	2	2	8 Medium to low
O: 2	1	3	2	4 Low

IMAPCT ON THE CULTURAL HISTORY OF THE TERRAIN

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:2	1	2	2	4 Low *
O: No Impact				

* If no cultural history elements are found the impact will be negligible.

IMAPCT ON THE FRAGMENTATION OF THE AGRICULTURAL LAND

Probability value	Intensity value	Duration value	Severity value	Significance rating
C:4	1	4	2	8 Medium to low
O: No impact				