

- f) All other indigenous vegetation found outside of the areas marked as sensitive must not be destroyed but used as part of landscaping in the township's walkways and open spaces.
- g) The layout plan must be amended and a new one submitted to GDARD to indicate changes based on the conditions (a), (b), (c), (d) and (e) above. This layout plan must be submitted **within six months** of the issuing of this Amended EA for approval.
- h) A Maintenance Plan, Alien Invasive Plant Management Plan and a Rehabilitation Plan must be completed, submitted to Department and implemented as approved. The above plans must include the management of the natural open space. These plans must be submitted to GDARD **within six months** of the issuing of the Amended EA for approval.
- i) To reduce the carbon footprint of the proposed development, energy efficient materials such as solar geysers, water harvesting tanks and light bulbs (especially on the communal areas) must be installed throughout the development. If not, other alternative energy saving measures must be considered and implemented with easily attainable evidence.
- j) All other conditions contained in the initial Environmental Authorisation cited above must still be complied with i.e. no additions, alterations or realignments are to take place which would affect the conditions of the initial Environmental Authorisation, except in instances where such conditions and EMPr conflict with the conditions and specifications contained in this addendum to the EA; in that case, the contents of the addendum to the EA must be considered over those of the initial EA.

### 3.2. General conditions

- a) A copy of this Addendum together with a copy of the Initial EA must be kept on site. It must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the Environmental Authorisation ("EA") who works or undertakes work on site. If it is not possible to keep copies on site, it must be kept at the offices of the site manager.
- b) The holder of EA must notify registered interested and affected parties, in writing and within **fourteen (14) days**, of receiving notice of the Department's decision to amend the initial EAs.
- c) The notification referred to in 3.2b. must:
  - Specify the date on which the Addendum was issued and reasons for the decision.
  - Inform the Registered Interested and Affected Parties of the appeal procedure provided for in Chapter 2 of the National Appeal Regulations, 2014.
  - Advise the Registered Interested and Affected Parties that a copy of the Addendum will be furnished on request.
- d) Non-compliance with a condition of this Addendum may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 (Act No.107 of 1998 ("the NEMA") and the Regulations.
- e) The holder must notify the Department, in writing within **seven (7) days** if a condition of this Addendum is not adhered to. Any notification must be accompanied by reasons for the non-compliance.

GDARD  
Office of the HOD  
12 OCT 2016  
000014

## Reasons for Decision

### 1. Background

The Department issued Environmental Authorisation Gaut 002/05-06/1543 on 22 July 2008 to Zelphy 2883 (Pty) Ltd. for the proposed African Renaissance Proper on the Remaining Extent of Portion 6 and Portion 138 of the Farm Zwartkoppies 364 JR. An Amendment Gaut 006/10-11/N0047 dated 3 September 2010 was later granted for the development layout plan of Phase 4 and 8 for the mixed use development on the Remaining Extent of the Portion 6 and Portion 138 of the farm Zwartkoppies 364 JR. The applicant, Balwin Properties Limited applied for an amendment of the initial EA issued on the Remainder of Portion 6, Portion 241 and Portion 138 of the farm Zwartkoppies 364 JR. The site measures ±118 hectares associated with land uses such as, Residential 3 (90-95 units per hectare), Educational, Commercial, Private Open Space, Commercial, Roads and associated landscaped areas and sidewalks.

The applicant appointed **Bokamoso Landscape Architects and Environmental Consultants** to undertake the Impact Assessment process.

### 2. Key factors and information considered

The Department took, *inter alia*, the following into consideration -

- a) The information contained in the application for amendment of EA received by the Department on 12 September 2016.
- b) The Initial EA with reference number Gaut 002/05-06/1543 issued on the 22 July 2008.
- c) The Amendment to the initial Environmental Authorisation with the reference number Gaut 006/10-11/N0047 issued on the 3 September 2010.
- d) Environmental attributes of the site.
- e) The objectives, principles and requirements of relevant legislation, policies and guidelines, including section 2 of the NEMA.

### 3. Findings

Having considered the information and factors listed above, the Department made the following findings:

- a) Changes to the wording of the project description and specific conditions of the Environmental Authorisation would not lead to adverse impacts on the environment or rights of interested and affected parties.
- b) Specific conditions regarding the amendment of the layout plan will allow for the protection of all environmental sensitive features on site.
- c) All other conditions set out in the initial Environmental Authorisation are still applicable and will be implemented.

In view of the above, the Department is of the opinion that the amended sections of the EA would not result in a negative environmental impact that would conflict with the general objectives and principles of integrated environmental management laid down in Chapter 5 of the NEMA and that the detrimental environmental impacts resulting from the proposed amendment can be mitigated to acceptable levels. The EA is **accordingly amended**.

GDARD  
Office of the HOD  
12 OCT 2016  
000014



## AGRICULTURE, CONSERVATION AND ENVIRONMENT

Office of the Head of Department

Diamond Corner Building, 68 Eloff & Market Street, Johannesburg  
P O Box 8769, Johannesburg, 2000

Telephone: (011) 355-1900

Fax: (011) 355-1000

Website: <http://www.dacc.gpg.gov.za>

Reference: Gaut 002/05-06/1543

Enquiries: Olivia Letlalo

Telephone: (011) 355-1570

Email: [olivia.letlalo@gauteng.gov.za](mailto:olivia.letlalo@gauteng.gov.za)

Zelpy 2883 (Pty) Limited  
c/o Rob Taylor & Associates  
P.O. Box 416  
SAXONWORLD  
2132

Attention: J.L. Meyburgh

Fax: (011) 726 2157

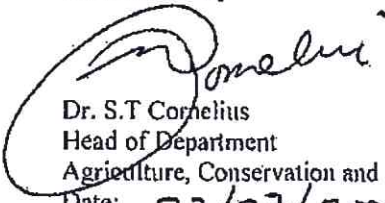
BY FACSMILE AND REGISTERED MAIL

Dear Sir/ Madam

**GRANTING OF ENVIRONMENTAL AUTHORISATION FOR PROJECT REFERENCE GAUT 002/05-06/1543, PROPOSED CHANGE OF LAND USE ON THE REMAINING EXTENT OF PORTION 6 AND PORTION 138 OF THE FARM ZWARTKOPPIES 364 JR: AFRICAN RENAISSANCE PROPER.**

Please find attached the Record of Decision in respect of your application for authorisation in terms of Regulations R1182 and R1183 (as amended) promulgated under sections 21, 22, 26 and 28 of the Environment Conservation Act (Act 73 of 1989)

Yours faithfully

  
Dr. S.T. Cornelius  
Head of Department  
Agriculture, Conservation and Environment

Date: 22/07/2008

CC. Wilchem CC

Kungwini Local Municipality

Classen & Gerner Prokureurs

Attn: Mr C.B. Williams  
Fax: (011) 704 4593

Attn: Abie Malaka  
Fax: (013) 932 4091/ 1311  
Attn: Jacques Andre Classen  
Fax: (012) 460 9434



## AGRICULTURE, CONSERVATION AND ENVIRONMENT

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### RECORD OF DECISION FOR PROJECT REFERENCE GAUT 002/05-06/1543: PROPOSED AFRICAN RENAISSANCE PROPER ON THE REMAINING EXTENT OF PORTION 6 AND PORTION 138 OF THE FARM ZWARTKOPPIES 364 JR

By virtue of the powers delegated by the Minister in terms of Section 22 of the Environment Conservation Act (Act 73 of 1989) ("the Act"), the Department of Agriculture, Conservation and Environment ("the Department") hereby authorises Zelpy 2883 (Pty) Ltd, to undertake the activity specified / detailed below.

#### 1. DESCRIPTION, EXTENT AND LOCATION OF THE ACTIVITY:

The proposed activity involves the change of land use from "Agriculture" to "Residential 1 to 3, golf course and commercial activities" which falls within the ambit of sub regulation 2(c) of Government Notice R1182 (as amended) promulgated under sections 21, 26 and 28 of the Act.

The proposed activity will be undertaken on the Remaining Extent of Portion 6 and Portion 138 of the farm Zwartkoppies 364 JR to be known as African Renaissance Proper. The site falls within the jurisdiction of Kungwini Local Municipality of the Metsweding District Municipality.

#### 2. KEY FACTORS INFORMING THE DECISION:

In reaching its decision to grant authorisation, the Department has taken, *inter alia*, the following into consideration:

- a) The information contained in the:
  - Plan of Study for Scoping dated 14 October 2005.
  - Scoping Report dated 18 December 2006.
  - The Appeal document and Member of Executive Council (MEC)'s decision dated 10 January 2007.
  - Supporting documentation dated 15 May 2008.
- b) Information obtained from the Departmental information base including *inter alia*
  - Gauteng Agricultural Potential Atlas Version 3 (GAPA 3, 2006);
  - Gauteng Open Space Project (GOSP 3);
- c) Compliance with applicable departmental, provincial and national legislation, policies and guidelines including:
  - The objectives and requirements of the Act;
  - The principles set out in section 2 of the National Environmental Management Act (Act 107 of 1998);
  - The Principles of the Development Facilitation Act (Act No. 67 of 1995);
- d) The site-specific merits of the application, the acceptability of the potential environmental impacts related to the proposal and the desirability of the development in the local and regional context.
- e) Advertising of the proposed development was carried out according to the EIA guidelines and departmental procedures.

- f) The Memorandum of Agreement for the purchase of a property or properties to offset the high potential agricultural land located on the proposed site signed between the Department and Zelpy (Pty) Limited.

2.2 Based on the evaluation of the above information, the Department concluded inter alia that:

- a) The proposal entails the following:

The establishment of 3355 dwelling units; an eighteen (18) Hole Championship golf course; a nine (9) hole Mashu course with driving range; a four storey Club House with corporate suite and penthouses ; a conference centre with theatre and a wellness centre; a hotel with two hundred (200) rooms with a swimming pool; a crèche; a fully equipped gymnasium, squash courts, a soccer field, basketball courts, tennis courts; a convenience store within the estate; a Laundromat and cleaning services; self storage space and offices; an office park / restaurant at the entrance.

- b) The principle of environmental off-set will be applied in the current circumstances and the developer will purchase agricultural properties as per the attached Memorandum of Agreement
- c) The Gauteng Agriculture Potential Atlas (GAPA 3) indicates that part of the site has moderate to high Agricultural Potential and has being designated as an Important Agricultural Site. However, the development will have minimal implications on the agricultural value of the site as the offset principle will be applied.
- d) A strong possibility exists that the activity will have minimal impact on the environment and that such impact as may eventuate could be mitigated.
- e) The proposed development is situated immediately adjacent to the Provincial Urban Edge, as demarcated in the Gauteng Spatial Development Framework (2002). The proposed development is nevertheless consistent with the surrounding development in the area and is accordingly not considered as constituting urban sprawl.
- f) The proposed development does not require a significant extension of services outside of the existing network.
- g) No objections were received from Interested and Affected Parties (I&AP's).

Based on the above, the Department's conclusion is that potential detrimental impacts resulting from this activity can be mitigated to acceptable levels and that the principles contained in section 2 of NEMA will be given effect to if the activity were to proceed.

The Department has accordingly decided to grant Zelpy 2883 (Pty) Ltd, an authorisation for the proposed development.

### 3. CONDITIONS

#### 3.1 Description and extent of the activity.

The authorisation applies in respect of the change of land use from 'Agriculture' to "Residential 1 to 3, golf course and commercial activities" on the Remaining extent of Portion 6 and Portion 138 of the farm Zwartkoppies 364 JR.

The above activity falls within the ambit of sub regulation 2(c) of Government Notice R1182 (as amended) promulgated under sections 21, 26 and 28 of the Act.

#### 3.2 Specific conditions

- a) This ROD is subject to the implementation of the Memorandum of Agreement signed between the Department and Developer, herein referred to as Annexure A.

- b) Landscaping must be indigenous and augmented with plants naturally growing on the development premises.
- c) All exotic plants must be eradicated and only indigenous plants must be used.
- d) A contingency plan must be in place to prevent storm water rich in sediments, nutrients and pollutants from entering the natural drainage system.
- e) The developer must contribute financially to the development of storm water master plan in the catchments area, road upgrade and maintenance.
- f) The developer must adhere to all Municipal by-laws.
- g) Adequate measures to collect, remove and safely dispose off waste must be implemented during each stage of the proposed development, from site preparation to final construction and operation. Proper waste handling facilities must be provided for on the construction site and emptied regularly.
- h) The applicant, contractors and sub-contractors working on the site must ensure that oil, fuel and chemicals are confined to specific and secured areas throughout the construction period. These materials must be stored in a bunded area with adequate containment (at least 1.5 times the volume of the fuel) for potential spills and leaks.
- i) Sufficient and temporary facilities including ablution facilities must be provided for construction workers operating and using the site. Such facilities must be maintained and no chemical or wastewater must be allowed to contaminate the runoff on site. Sanitary arrangements must be to the satisfaction of the Local Authority.
- j) Appropriate and visible signalling should be posted at every section of the construction area for the safety of residents. The developers must ensure that no trenches or holes are left unattended.
- k) A confirmation from the Local Authority that bulk services will be provided to the proposed development must be submitted to the Department prior to the commencement of construction activities.
- l) If any Red Data species of flora and fauna are discovered on site, they may not be removed, relocated, destroyed or disturbed in any way prior to authorisation from the Department.
- m) The golf green and fairways development within the flood lines must be designed to ensure that it does not invade the river and/or the riparian vegetation.
- n) All recommendations outlined in the specialists reports submitted with the Scoping Report must be adhered to.
- o) Effective measures to minimise the flow of surface water to the excavation during construction. Prevention of erosion or leaching of water from stockpiles must be maintained during construction.
- p) Compliance with Provincial noise requirements as outlined in Provincial Notice No. 5479 of 1999: Gauteng Noise Control Regulations.
- q) The Environmental Management Plan (EMP) is binding on all managers and contractors on site.
- r) An Environmental Control Officer (ECO) must be appointed by the developer to oversee all the environmental aspects emanating from the construction activities of the development. The ECO will be responsible for:
  - Liaison with authorities and contractors.
  - Undertaking routing monitoring.
- s) The removal, exhuming, destruction, altering or any other disturbance of heritage sites must be authorized by South African Heritage Resources Agency (SAHRA) in terms of the National Heritage Resources Act (Act No. 25 of 1999).

### 3.3 General conditions

- a) Any changes to, or deviations from, the project description set out in this letter must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations.

- b) This Department may review the conditions contained in this letter from time to time and then by notice in writing to the applicant, amend, add or remove a condition.
- c) The applicant must notify the Department, in writing, at least 10 (ten) days prior to the change of ownership, project developer or the alienation of any similar rights for the activity described in this letter. The applicant must furnish a copy of this document to the new owner, developer or person to whom the rights accrue and inform the new owner, developer or person to whom the rights accrue that the conditions contained herein are binding on them.
- d) Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
- e) Authorisation for the activity is granted in terms of the Environment Conservation Act, 1989 (Act 73 of 1989) only and does not exempt the holder from compliance with other relevant legislation.
- f) The applicant shall be responsible for ensuring compliance with the conditions contained in this letter by any person acting on his behalf, including but not limited to, an agent, servant, or employee or any person rendering a service to the applicant in respect the activity, including but not limited to, contractors and consultants.
- g) Departmental officials shall be given access to the property referred to in 1 above for the purpose of assessing and/ or monitoring compliance with the conditions contained in this document at all reasonable times.
- h) The applicant must notify the Department within 24 (twenty four) hours if any condition of this authorisation cannot, or is not, adhered to. The notification must be supplemented with reasons for non-compliance.

### 3.4 Duration of authorisation

If the activity authorised by this letter does not commence within 5 years from the date of signature of this letter, the authorisation will lapse and the applicant will need to reapply for exemption or authorisation in terms of the above legislation or any amendments thereto.

### 4. DURATION OF DECISION:

The applicant shall be entitled to reapply for authorisation in terms of the Act or any succeeding legislation after a period of 3 (three) years from the date of this Record of Decision or prior to the expiry of this period if the applicant believes that a material change in the factors which influenced the decision of the Department has occurred.

### 5. APPEALS:

Appeals in respect of this decision must be directed to the MEC, Mr. K. Mosunkutu, Agriculture, Conservation and Environment, Gauteng Provincial Government within 30 (Thirty) days of the date of this decision. Appeals can be submitted utilizing one of the following methods:

By facsimile: (011) 333 0620;  
 By post: P.O. Box 8769, Johannesburg 2000;  
 By hand: 16<sup>th</sup> Floor, Diamond Corner Building, 68 Eloff Street, Johannesburg.

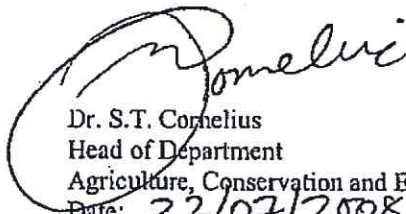
The applicant is required to inform all registered interested and affected parties of the decision contained in this Record of Decisions as well as the process for appeal described above within 7 (Seven) calendar

days of the date of signature of this Record of Decision. Failure to inform interested and affected parties within the stipulated time period may result in the MEC considering requests from such parties for condonation to submit a late appeal favourably.

Should the applicant wish to appeal this decision, or any aspect of this decision, the applicant must notify and furnish copies of the appeal which will be submitted to the MEC and to all registered interested and affected parties. Proof of such notification must be submitted to the MEC with the appeal. Failure to comply with this provision may result in the MEC refusing to consider the appeal.

Please note that any development that commences prior to the expiry of the time period allowed for the submission of appeals, or before the MEC has reached a decision on an appeal submitted, is done so solely at the applicant's risk.

Yours faithfully



Dr. S.T. Cornelius  
Head of Department  
Agriculture, Conservation and Environment  
Date: 22/07/2008





## DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

Diamond Corner Building, 68 Eloff & Market Street, Johannesburg  
P O Box 8769, Johannesburg, 2000

Telephone: (011) 355-1900  
Fax: (011) 355-1000

Reference:	Gaut 006/10-11/N0047
Enquiries:	Olivia Letlalo
Telephone:	(011) 355-1570
Email:	Olivia.Letlalo@gauteng.gov.za

Zelzy 2883 (Pty) Ltd trading as Living 4U Development (Pty) Ltd  
P.O. Box 74909  
Lynnwood Ridge  
0040

Attn: J A Coetzee  
Fax no: 086 513 5093

### PER FACSIMILE / REGISTERED MAIL

Dear Sir,

### AMENDMENT OF THE DEVELOPMENT LAYOUT PLAN OF PHASE 4 AND 8 FOR THE MIXED USE DEVELOPMENT ON THE REMAINING EXTENT OF PORTION 6 AND PORTION 138 OF THE FARM ZWARTKOPPIES 364 JR: AFRICAN RENAISSANCE PROPER

With reference to the abovementioned undated application for the amendment of Environmental Authorisation received by the Department on 29 June 2010, the Department has, in terms of the powers vested in it by Regulations 43 and 46 of the Environmental Impact Assessment Regulations, 2006, decided to amend the authorisation.

The application is for the amendment of the development layout plan of Phase 4 and 8 of the environmental authorisation issued by the Department on 22 July 2008 which provide the following associated approvals:

- 4 erven for residential 1,
- 1 Erf for self storage/business,
- 7 erven for dwelling units (3 and 4 storeys and loft),
- 1 Erf for open space.

The development layout plan is hereby amended to allow the following associated activities:

- 137 "Residential 1" erven,
- 3 "Residential 2" erven,
- 1 "business 2" erf and
- 1 "special for Private Road/Access control.

This decision must be read in conjunction with the Environmental Authorisation issued on 22 July 2008.

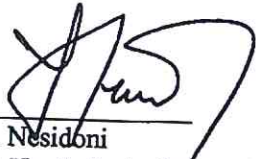
You are instructed in terms of regulation 10(2) of the Regulations to notify all registered Interested and Affected Parties, in writing and within ten (10) calendar days of the date of this letter, of the Department's decision to amend the environmental authorisation as well as the provisions regarding the making of appeals that are provided for in the regulations.

Your attention is drawn to Chapter 7 of NEMA Regulations from Government Notice R385 of 2006, which regulates appeal procedures. Should you wish to appeal any aspect of the decision, you must, *inter alia*, lodge a notice of intention to appeal with the MEC, within ten (10) days of the date of this letter, by means of one of the following methods:

By facsimile: (011) 333-0620  
 By post: P. O. Box 8769, Johannesburg 2000  
 By hand: 16<sup>th</sup> Floor, Diamond Corner Building, 68 Eloff Street, Johannesburg.

Should you decide to appeal, you must serve a copy of your notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where and for what period the appeal submission will be available for inspection.

Yours faithfully,



Adv J. Nesidoni  
 Acting Head: Agriculture and Rural Development  
 Date: 2010/09/03

CC: Lokisa Environmetnal Consulting CC  
 Compliance Monitoring  
 Ekurhuleni Metropolitan Municipality  
 Project Manager

Attn: Elaine Holtzhausen  
 Fax: 012 346 6074  
 Attn: Cecilia Petlane  
 Fax: (011) 355 1850  
 Attn: Lebohang Raliapeng  
 Fax: (011) 456-0114  
 Attn: Marc Leroy  
 Fax: 086 620 7364

## REASONS FOR DECISION

### 1. Background

The Department issued an environmental authorisation with reference Gaut: 002/05-06/1543 to Zelpy 2883 (Pty) Ltd on 22 July 2008 to undertake the following activity:

The change of land use from "Agriculture" to "Residential 1 to 3, golf course and commercial activities" on the remaining extent of Portion 6 and Portion 138 of the farm Zwartkoppies 364 JR.

The applicant appointed Lokisa Environmental Consulting CC to conduct the amendment application process.

### 2. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration –

- a) The information contained in the amendment of an environmental authorisation application received by the Department on 29 June 2010.
- b) The environmental authorisation issued on 22 July 2010.
- c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

### 3. Key Factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which in the Department's view were the most significant are set out below.

- a) The proposed amendment will not have an impact on the environment.
- b) The proposed development will not increase the footprint of the area.
- c) The need for the proposed activity was adequately demonstrated by the applicant from the economic context.

### 4 Findings

After consideration of the information and factors listed above, the Department made the following findings:

- a) The amendment will not result in any additional negative impacts on the environment.

In view of the above, the Department is of the view that the amendments would not result in a negative impact that would conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that the detrimental environmental impacts resulting from the proposed amendments can be mitigated to acceptable levels. It is accordingly decided to amend the Environmental Authorisation.

**Appendix 10: Wetland Rehabilitation Plan**

# REHABILITATION PLAN

## River Walk Development

### External Services and Open Space Area

WATER USE LICENSE APPLICATION TO THE DEPARTMENT OF WATER AND SANITATION IN TERMS OF  
SECTION 21 OF NWA (ACT 36 OF 1998) WATER USE AUTHORISATION

**Section 21 (c)**

**Impeding or diverting the flow of water in a watercourse**

**Section 21 (i)**

**Altering the bed, banks, course or characteristics of a watercourse**

**December 2016**

**Compiled by:**  
Ronell Kuppen

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## 1. Introduction

**Bokamoso Landscape Architects and Environmental Consultants CC** have been appointed by Balwin Properties Limited as the independent Environmental Assessment Practitioner (EAP) to undertake a Water Use License Application (WULA) in terms of the National Water Act (No 36 of 1998) (NWA). In terms of the Section 40 of the NWA, each party proposing water usage, as defined in Section 21 of the Act, must apply to the responsible authority for authorisation before such water use can commence. This document aims to provide the Department of Water and Sanitation (DWS) with the necessary information associated with the proposed project in order to approve the water uses in terms of the NWA related to the proposed development. This document represents that Rehabilitation Plan compiled for the external services for the proposed development.

### 1.1 Project Description

The project site is located along the R104, east of Pretoria. The existing K22 – Bronkhorstpruit Road will be upgraded to a new roadway consisting of two 8.0m wide carriageways with 2.4m gravel shoulders and all other associated infrastructure. The proposed upgrade falls within the Crocodile West Water Management Area within the quaternary catchment A23A. The culvert and associated gabion baskets can be located at the following coordinates:

Culvert:

- **Start:** 25°45'14.7"S & 28°22'30.10"E
- **Mid Point:** 25°45'13.91"S & 28°22'30.75"E
- **End:** 25°45'13.00"S & 28°22'30.80"E

No deviation of the water course will be required, and only in the case of a very large flood event will the construction work be affected. As further measure work will be done during the dry season to facilitate water management. Flood protection measures will be taken into consideration during construction as and when required.

## 2. Study Area

### 2.1. Geographical area

The development is located within the City of Tshwane Metropolitan Municipality, Gauteng Province. The property on which the activity is to be undertaken is on the Remainder of Portion 6 of the Farm Zwartkoppies No 364-JR, Portion 241 of the Farm Zwartkoppies No 364-JR, Portion 138 of the Farm Zwartkoppies No 364-JR

(location coordinates shown in **Table 1** below).

The town centre of Hillcrest is located approximately 8 Km north of the site. The site is currently zoned agriculture and used for commercial sugarcane farming. The site is located on the southern side of the N3 Highway and is bounded on the east by J.B. McIntosh Drive (extension of Kassier Road). Sugarcane forms the south and west boundaries.

The site is approximately 114 hectares in total and will be incorporate the following land uses; education/ private school ( $\pm 8,5$ ha, 85000m<sup>2</sup>); residential 4 (7 erven ( $\pm 90-95$  units per hectare) – size of area to be covered with residential units is  $\pm 70$ ha, 70000m<sup>2</sup>); Private Open Space ( $\pm 33$  ha, 330000m<sup>2</sup>); A low impact cycling track and on-going rehabilitation and open space management are planned for the natural private open space areas; road networks and associated landscaped areas and sidewalks ( $\pm 8$ ha, 80000m<sup>2</sup>); and Gatehouse, Club House and Entrance Gate ( $\pm 0,5$ ha, 5000m<sup>2</sup>).

The site is approximately 19km from Pretoria Central. Green open space is located to minimise the potential impact that the proposed development will have on the drainage line that transverses the site in a north east - south west orientation.

**Table 1: Location of the Riverwalk Development within in this WULA**

Riverwalk Development Co-ordinates			
1	25°45'32.64"S	28°22'46.88"E	Central point of the proposed RiverWalk Development

**Topography:** The topography of the site is generally flat.

**Vegetation:** The site falls within the Marikana Thornveld vegetation unit (Mucina and Rutherford (2006))

**Surface Water:** The area is a tributary of the Pienaars River located north of the site.

Kindly refer to **Figure 1** for Locality map and **Figure 2** for a satellite image of the Study Area.



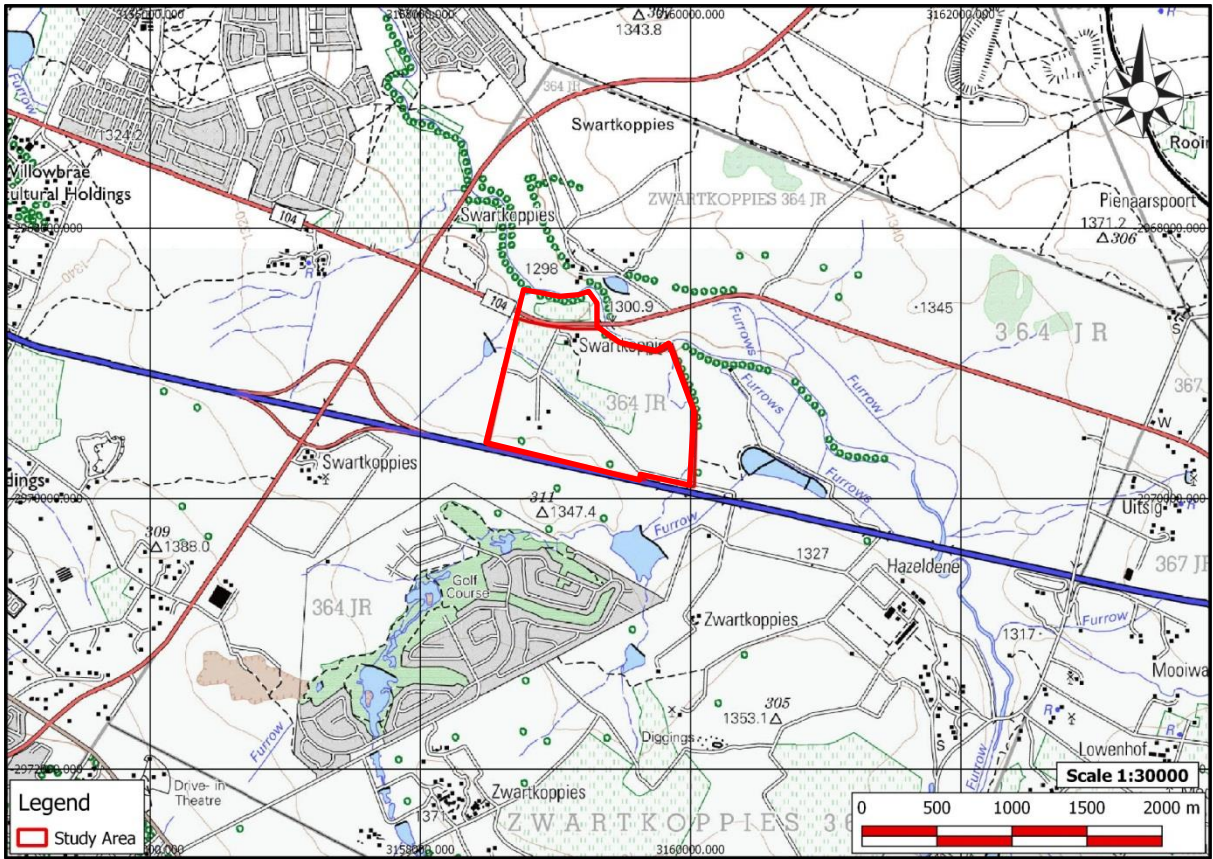


Figure 1: Study Area is outlined in red on the Locality Map

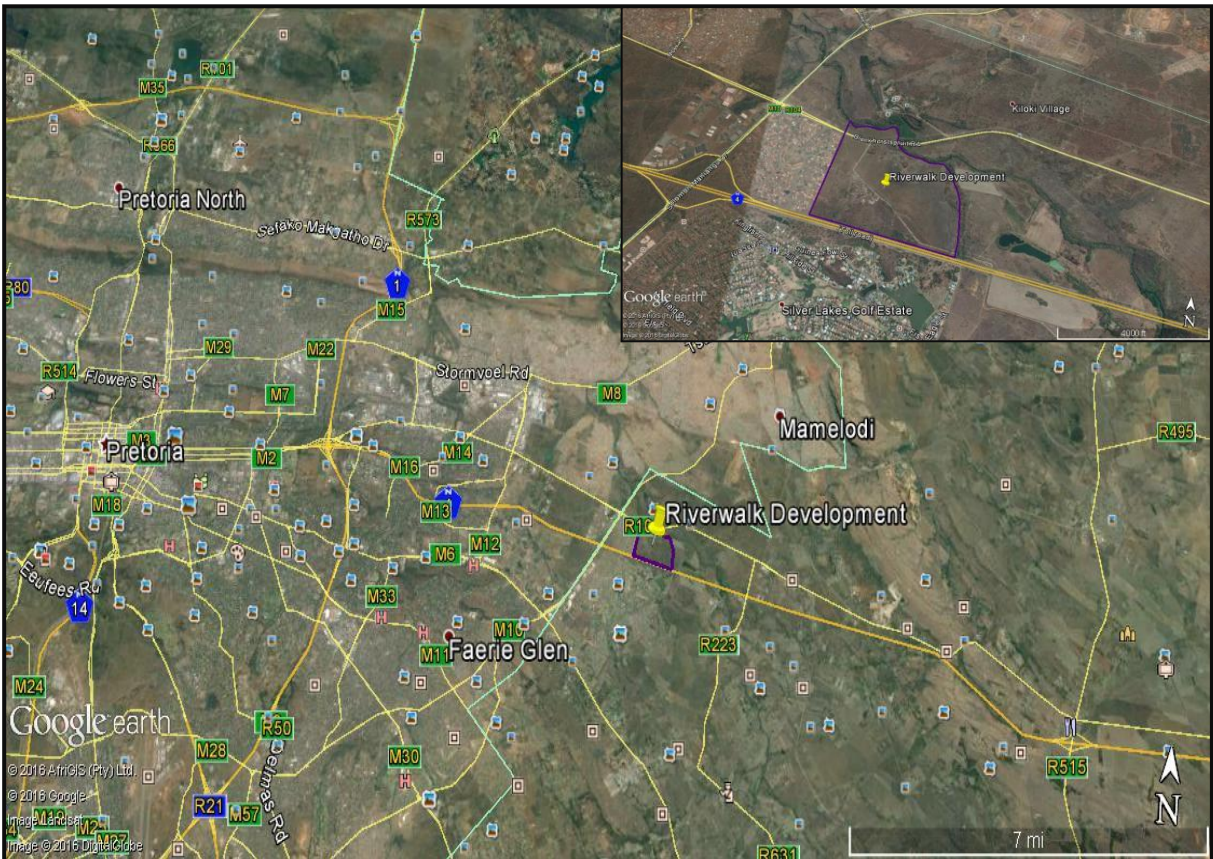


Figure 2: Aerial map of the location of the prosed development (Google Earth 2016)

### 3. Rehabilitation Plan

This Rehabilitation Plan was compiled in accordance with the Department of Water Affairs (DWA) **Environmental Best Practice Specifications** Integrated Environmental Management Series.

DWA defines Rehabilitation as:

*'Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydrologically stable landscapes that support the natural ecosystem mosaic.'*

### 4. Rehabilitation Methodology

The purpose of this Rehabilitation Plan is to improve the ecological status of the study area compared to the post-construction status, to prevent erosion, and to improve aesthetic appeal of the area.

The objective of this Rehabilitation Plan is to ensure:

- Ensure environment is reinstated in disturbed areas;
- Compacted areas are shaped, ripped and scarified;
- Indigenous vegetation is reintroduced;
- Alien vegetation is removed and controlled;
- Site is monitored following rehabilitation.

#### 4.1. Areas to be rehabilitated

All areas disturbed by the expansion of the culvert are to be rehabilitated. These areas include but are not limit to:

- Banks of the watercourse
- Riparian areas

#### 4.2. Rehabilitation Methods

#### 4.2.1. Cleaning

Site camp is to be de-established and all structures, infrastructure and waste removed in accordance with the Environmental Management Plan.

#### 4.2.2. Shaping/Sloping

All slopes should be shaped to a maximum slope of 1:3 to prevent erosion from occurring.

All disturbed areas should be sloped to blend in with the surrounding environment.

#### 4.2.3. Ripping/ Scarifying

Ripping entails loosening to soil up to a depth of 300mm.

Scarifying entails roughening the surface of soil to a depth of 50mm, creating a smoother surface than ripping.

Areas compacted during construction phase should be ripped and scarified in order to loosen soil to allow for seed germination.

#### 4.2.4. Planting/Re-vegetate

Re-vegetation is a very important part of sloping as it will make the soil more stable and create roughness.

Planting can be affected by utilising transplanted plants, nursery plants, seed or seedlings as identified in Section 4.5 of this report.

#### 4.2.5. Stabilisation

Slopes steeper than 1:3 or slopes where the soils are sandy, must be stabilised.

One or more of the following methods may be required:

- Topsoil covered with a geotextile, plus a specified grass seed mixture;
- A 50:50 by volume rock: topsoil mix 200mm thick, plus specified grass seed mixture logging or stepping (logs placed in continuous lines following the contours);
- Earth or rock-pack cut-off berms;
- Benches (sand bags);
- Packed branches;
- Ripping and / or scarifying along the contours;
- Storm water berms.
- **Gabion Baskets:** Trenches are required for the establishment of the gabions. The trench is lined with

wire netting and the gabion constructed with stones, when at the correct height, the wire netting is closed tightly over the gabion. Gabions must be enclosed in wire netting to prevent stones from rolling downstream during flooding.

Bokamoso will use this Rehabilitation Plan in conjunction with existing Rehabilitation plan for the original application.

#### **4.2.6. Landscaping**

The proposed culvert and gabion baskets are to fit harmoniously into the surrounding environment by means of landscaping.

### 4.3. Rehabilitation Action Plan

Rehabilitation actions to be taken together with assigned responsibility are listed in **Table 1** below.

**Table 1: Rehabilitation Actions & Responsibility**

#	Rehabilitation Action	Method	Responsibility
1	Remove and dispose of all waste onsite	Domestic waste to be removed to a registered landfill site. Hazardous waste to be removed to an appropriately classed h: landfill site. Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates.	Civil contractor/ Environmental Site Officer
2	Clean up Riparian zone	Any rubble visible within the riparian area should be collected and disposed of at a registered landfill site.	Civil contractor/ Environmental Site Officer
3	Slope/Shape embankments	The earth channel to be sloped at slopes no steeper than 1:3. Shape all disturbed areas to blend in with the surrounding landscape.	Civil contractor Site Manager
4	Rip and scarify compacted areas	Areas compacted should be ripped in order to loosen soil to allow for seed germination. Do not rip and scarify during wet conditions as soil will not break up. Rip and scarify along contours to prevent creation of channels which could lead to erosion.	Civil contractor Site Manager
5	Stabilise embankments/slopes	Slopes steeper than 1:3 or slopes where the soils are sandy, must be stabilised. One or more of the following methods are recommended: <ul style="list-style-type: none"> <li>• Topsoil covered with a geotextile, plus a specified grass seed mixture;</li> <li>• Ripping and / or scarifying along the contours;</li> <li>• Gabions.</li> </ul>	Landscape contractor
6	Vegetate channel walls	The inner and outer walls of the channel should be hydro seeded with using species	Civil contractor Site Manager

		identified within this report and confirmed with the ECO prior to commencement of Rehabilitation.	
7	Planting/Re-vegetation of open and sloped areas	<p>All planting is to be conducted by a suitably qualified contractor.</p> <p>Planting method suggested for this project is <b>hydroseeding</b> as it will be best for the sloped areas and is known to be a successful method. This is the most cost effective method for rehabilitation of large areas as all surfaces are covered and vegetation quality is high.</p> <p>Rehabilitated areas needs to have a ground cover of at least 80%.</p> <p>Only seed or seedlings indigenous to Marikana Thornveld Vegetation should be used for planting.</p> <p>Any materials used for seeding, mulching or fertilizing must be <b>certified as weed free</b>.</p> <p>Plants should be irrigated daily for at least 14 days until the grass is able to survive independently.</p>	Civil contractor Site Manager
8	Remove alien invasive vegetation	<p>All alien invasive vegetation encountered within the Study Area and along the riparian zone should be removed. <b>Section 5</b> describes a recommended alien invasive monitoring programme.</p> <p>A number of alien invasive species occur within the Study Area especially along disturbed areas e.g. clearings, excavations and dirt tracks.</p>	Civil contractor/ Environmental Site Officer
9	Install Reno mattresses downstream of weir	Install Reno mattresses downstream of the weir in accordance with design drawings and cover with geotextile.	Civil contractor/ Environmental Site Officer

#### 4.4. Timeframe for implementation

Implementation of this plan should commence immediately upon approval from DWS, the contents of this plan and the actual rehabilitation masterplan to be compiled as soon as DWS supplied their principle support for the rehabilitation methodology.

#### 4.5. Vegetation species to be utilised

Due to the study area being situated within the Marikana Thornveld Vegetation Unit (Mucina and Rutherford (2006)), it is recommended that vegetation species endemic to this area be utilised for rehabilitation. Below follows a list of plant species associated with the vegetation unit.

- **Grasses:**
  - *Cyndodon dactylon*,
  - *Digitaria eriantha*,
  - *Hyparrhenia tamba*,
  - *Setaria sphacelata*,
  - *Eragrostis curvula*
- **Sedges:**
  - *Bulbostylis burchellii*,
  - *Bulbostylis scleropus*,
  - *Bulbostylis hispidula*
  - *Coleochloa setifera*
  - *Cyperus congestus*,
  - *Cyperus sexangularis*,
  - *Cyperus decurvatus*,
  - *Cyperus esculentus*,
  - *Cyperus fastigiatus*
  - *Eleocharis dregeana*
  - *Fuirena pubescens*
  - *Pycneus macrathus*
- **Forbs: (if needed)**
  - *Berkheya radula*,
  - *Crinum bulbispermum*,
  - *Hypoxis hemerocallidea*

## 5. Alien vegetation eradication

An alien invasive eradication and monitoring programme is recommended for the Study Area for all phases of the construction/expansion activities as this will promote biodiversity in the area and limit the distribution of alien invasive species via water and human activity.

The purpose of the eradication of alien invasive plants is the restoration and rehabilitation of the Study Area.

Methods that may be used to control alien invasive species include:

- Mechanical treatment
  - Removing by means of hands, tools, instruments or machines.
- Chemical treatment
  - Using herbicides to control target species.
- Biological treatment
  - Using natural enemies of the target specie that affect the biological integrity of the target specie.
- Habitat management
  - Using burning, grazing etc.

Actions to be taken as part of an alien vegetation eradication programme are listed in **Table 2** below. Responsibility for implementing this eradication programme will resort with the appointed Civil Contractor.

**Table 2: Alien plant eradication programme**

#	Eradication Action	Method
1	Set aside funds for implementation of the programme	Funds should be made available for alien plant eradication.
2	Establish extent of infestation	Request alien vegetation specialist to conduct survey of the Study Area and adjacent watercourse prior to construction commencing in order to establish: <ul style="list-style-type: none"> <li>• Extent of infestation;</li> <li>• Species to be eradicated.</li> </ul>
3	Select treatment method	An appropriate treatment method based on species occurring in the Study Area should be selected.



4	Remove alien vegetation	Alien vegetation removal should commence in areas of highest infestation and prior to flowering. All disturbed areas should be scouted for presence of alien vegetation, and removed.
5	Rehabilitate cleared areas	Areas where alien vegetation has been removed must be rehabilitated in accordance with this plan ( <b>Refer Table 1</b> ).
6	Follow-up eradication	Eradication of alien vegetation must continue until natural vegetation coverage reaches 80% in all disturbed areas.

## 6. Rehabilitation Plan Responsibility

### 6.1. Implementation

It is proposed that responsibility for implementation of this Rehabilitation Plan in accordance with its content, rests with the appointed Civil Contractor.

### 6.2. Monitoring

#### 6.2.1. Monitoring Responsibility

It is proposed that the responsibility for monitoring the implementation of this Rehabilitation Plan rests with the appointed ECO.

#### 6.2.2. Monitoring Timeframe

It is proposed that effectiveness of rehabilitation be monitored by the appointed ECO from commencement of the rehabilitation phase of the construction/expansion, and for at least six (6) months following completion of the rehabilitation, to ensure that:

- Rehabilitation commences immediately following completion of the construction phase;
- 80% of endemic vegetation has re-established;
- Alien plant eradication continues until 80% of the endemic vegetation has re-established.

## 7. REFERENCES

1. Department of Water Affairs & Forestry, February 2005. ***Environmental Site Management & Rehabilitation Awareness Course Memorandum: Management Level.*** Integrated Environmental management Sub-Series No. IEMS 1.6. Third Edition. Pretoria
2. Department of Water Affairs and Forestry, February 2005. ***Environmental Best Practice Specifications: Construction.*** Integrated Environmental Management Sub-Series No. IEMS 1.6. Third Edition. Pretoria.