BACKGROUND INFORMATION DOCUMENT (BID) FOR CONSULTATION

as a component of the

Scoping Report and
Environmental Impact
Assessment

for

The Proposed Struwig Dam, on Portions 9 & 10 of 15375 of the Farm Langeboskop, Ward 1, Ndwedwe Local Municipality (KZN 293), iLembe District Municipality

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1. CONTACT NAMES AND ADDRESSES

Interested and Affected Parties may contact the Environmental Consultants listed below for additional information.

Environmental Consultants:	Applicant:
Enviroedge cc PO Box 1009, Kloof, 3640 Tel: 083 619 8683 Fax: (086) 654 6598 info@enviroedge.co.za www.enviroedge.co.za	STRUWIG GROEP PTY (Ltd)

2. INTRODUCTION

Environmental Impact Assessment in Terms of NEMA

Notice is given in terms of Chapter 6 Section 39 to 44 inclusive of the Environmental Impact Assessment Regulations, 2014 (GN No. R982), Government Notice No. R. 983, 984 and 985 and, under Chapter 6 Public Participation of the National Environmental Management Act (NEMA) Act 107 of 1998 as amended, that the Applicant, namely the Struwig Groep (Pty) Ltd intends to submit an application for environmental authorisation to the Department of Economic Development, Tourism and Environmental Affairs (EDTEA) for the proposed construction of a dam for agricultural purposes on portions 9 and 10 of 15375 of the Farm Langeboskop, which is located near Doornkop, 17.58km north of the town of KwaDukuza, and approximately 7km from the R74 main road from Stanger to Kranskop. The site is within the Ndwedwe Local Municipality, Ward 1, and the iLembe District Municipality.

The proposed activity requires a full Environmental Impact Assessment (EIA) in terms of the Environmental Impact Assessment Regulations of 2014 (Regulations in terms of Chapter 5 of the National Environmental Management Act (NEMA), 1998, as amended). Enviroedge cc has been appointed by the Struwig Groep (Pty) Ltd as the Environmental Practitioner in this regard. This first step in the EIA process is the compilation of a Scoping Report which documents the initial findings and Public Participation Process outcomes. The EIA process is summarised overleaf.

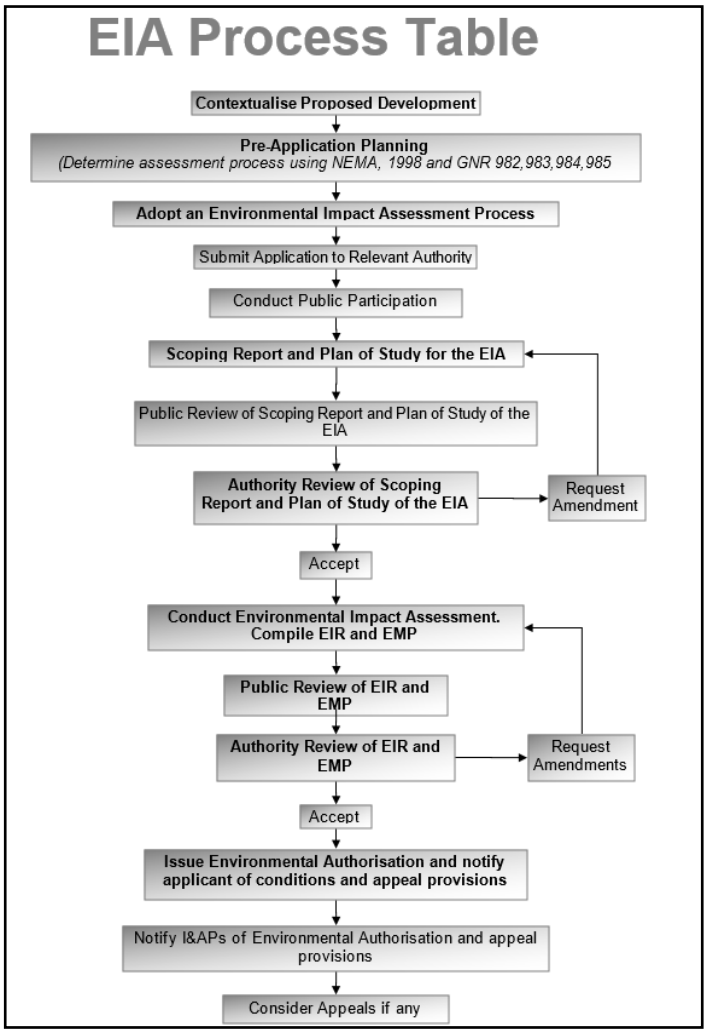

Figure 1: Scoping and EIA Process Diagram

Background Information Document

As part of the EIA and associated public participation process, this Background Information Document (BID) serves to inform all authorities, landowners, stakeholders, and Interested and/or Affected Parties (IAPs) of the applicant's proposed development. The BID provides IAPs an opportunity to submit any issues or concerns relating to the biophysical, social or socio-economic environment.

Public Participation Process

The public participation process (PPP) forms part of Scoping and the EIA, and helps to ensure that IAPs have an opportunity to participate throughout the process by providing comments or concerns. Members of the public have the right to be informed of decisions that may affect them. The public is provided with an opportunity during this process to raise issues or concerns regarding the proposed development.

Interested and Affected Parties

All IAPs wishing to become registered as such and receive additional information, as well as an invitation to any public meeting, should one be required, should contact the environmental consultant to register as soon as possible. Registered IAPs will be kept informed of the project developments during the course of the EIA process and comments received will be included in the Scoping and EIA reports submitted to EDTEA.

If you are aware of any IAPs who have not been informed or identified by ourselves, please let us know, so that they too may have the opportunity to register and / or receive information. Any issues, which you would like to raise and have not been identified to date, would be welcomed.

Press notices and roadside posters will notify the general public of the EIA (and Water Use Licence (see below)) process.

Water Use Licence in Terms of NWA

In terms of Section 21 of the National Water Act (NWA) 36 of 1998, the project will require Water Use Licencing (WUL). The construction of the dam and abstraction point will potentially trigger clauses (a), (b), (c), (d) and (i) of the Act, but this will be better determined after consultation with the Department of Water and Sanitation (DWS), as is required by the WUL process.
The public participation process associated with the EIA as described above, will run in parallel with the WULA PPP, as both processes are similar.

3. PURPOSE OF THIS DOCUMENT

This report provides preliminary project information to enable IAPs an opportunity to comment on the proposed development. All issues and comments raised by IAPs will be documented in the Environmental Scoping Report (ESR), EIA and WULA. This will assist in the identification of environmental issues that could have a negative and/or positive impact on the site, the site surrounds and the community.

Before any construction of the proposed project may commence, an environmental authorisation is required from the EDTEA, in compliance with the EIA Regulations, sections 39 to 44 inclusive of the EIA Regulations, 2014 (GN No. R982), Government Notice No. R. 983, 984 and 985 and, under Chapter 6 Public Participation of the NEMA (Act 107 of 1998) as amended. In order to obtain this authorisation, an EIA process is currently being undertaken by Enviroedge cc. The EIA Regulations identify various activities which may have a substantial detrimental effect on the environment. The Regulations also list procedures for assessing potential associated environmental impacts.

4. DEVELOPMENT PROPOSAL

The Struwig Groep (Pty) Ltd is submitting an environmental authorisation application for their proposal to construct a dam on Portion 9 and 10 of Farm Langeboskop, to provide water for agricultural irrigation requirements. The proposed irrigation will be for approximately 100 hectares of macadamia plantation. The proposed dam falls within the same footprint of an historical dam, which was destroyed after the 1987 flood event. The existing spill way on the northern dam wall is proposed for upgrading and re-use. The newly proposed Struwig Dam will be earth lined and will comprise a combination of concrete and earthfill dam wall. The proposed dam is described as follows:

- Water Level (spillway crest) – 349.7m above mean sea level
- Surface Area – 2.8 Ha
- Approx. Volume - 112 800 m^3
- Approx. Dam Wall Height to water level – 11.6m
- Approx. Dam Wall Length - 180m

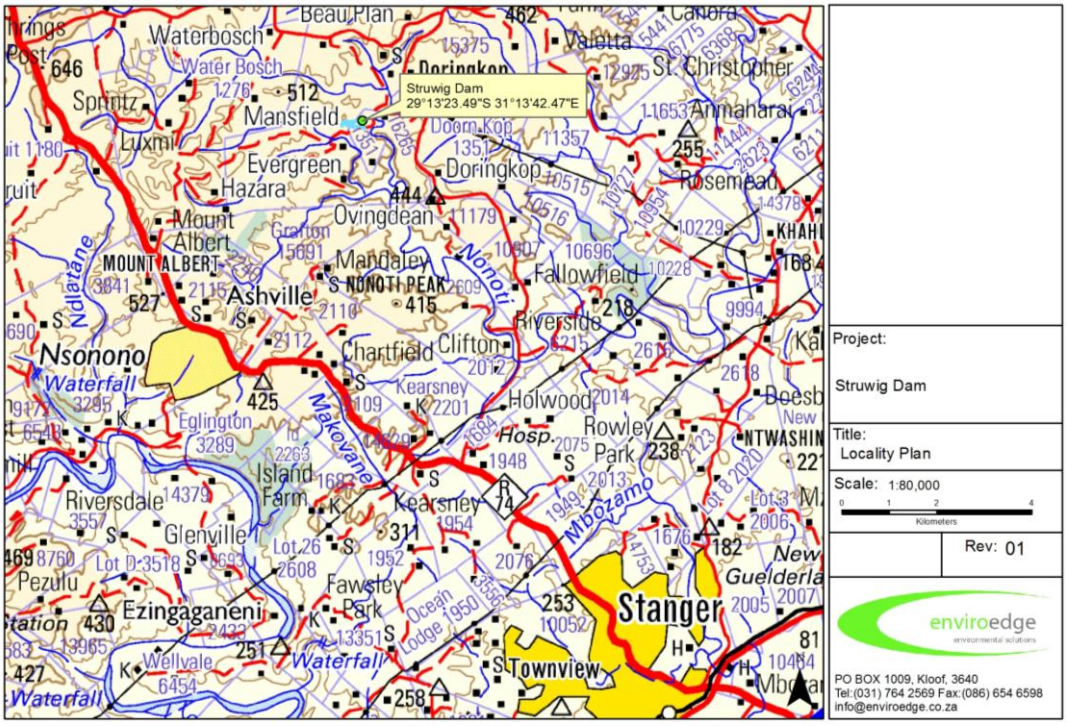

Figure 2. Locality Plan

Figure 2.Historical imagery (dated 1977) shows the presence of the dam.

Figure 3. Full Supply Level (FSL) and Flood plain of the newly Proposed Struwig Groep Dam

5. AFFECTED AREA

General

The proposed site is located in ward 1 of the Ndwedwe Local Municipality on portions 9 and 10 of 15375 of the Farm Langeboskop. The town of KwaDukuza is located 17 km to the south, and approximately 7km from the R74 main road from Stanger to Kranskop. The site is located within the U50A quaternary catchment, within the Little Nonoti Stream, a tributary of the Nonoti River. Water will primarily be sourced from the upstream catchment of approximately 17.6 km^2. The average slope of the catchment is 15.7%. The site is located within an existing sugar cane agricultural farm. A portion of the farm will be transitioned t macadamia plantation which is also dependent on a steady supply of water in order to ensure viability. The dam site is located is at 29°13'23.49"S 31°13'42.47"E. The farm is surrounded by open sugar cane plantations and incised drainage valleys vegetated with indigenous forest. The farm is accessed by existing all weather and gravel roads. It is proposed that the dam wall will comprise material from deposits from the historic dam, as well as from commercial sources. Re-shaping and excavation within the dam inundation area will be required.

Figure 5: View looking north west (upstream) from the dam wall location over current site conditions proposed for inundation.

Figure 6: View looking north from the southern bank showing historic dam wall and spillway.

Figure 7: View from the outside toe of the proposed dam wall location looking at the remaining dam wall on the southern bank.

Figure 4: Image showing the downstream Little Nonoti Stream, a tributary of the Nonoti River.

Climate

Stanger, the nearest weather station, receives approximately 866mm of rain per year, with most rainfall occurring during summer. It receives the lowest rainfall (16mm) in July and the highest (121mm) in January. The monthly distribution of average daily maximum temperatures show that the average midday temperatures for Stanger range from 22.4°C in July to 27.7°C in February. The region is the coldest during July when the mercury drops to 9.8°C on average during the night (http://www.saexplorer.co.za/south-africa/climate/stanger_climate.asp). The Köppen-Geiger climate classification system classifies the nearby KwaDukuza climate as humid subtropical. The highest record temperature was 43°C on 3 February 2008, while the lowest record temperature was 5°C on 12 June 2013.

Flora and Fauna

According to The Vegetation of South Africa, Lesotho and Swaziland, the vegetation within the study area, is classified as KwaZulu Natal Coastal Belt (CB 3) interspersed with subtropical dune thicket and forms part of a highly dissected and undulating coastal plain which presumably used to be covered to a great extent with various types of sub-tropical coastal forest. Some primary grasslands dominated by *Themeda triandra* still occur in hilly high rainfall areas where pressure from natural grazing and fire regimes prevail. At present the KZN CB 3 is affected by a mosaic of extensive sugar cane fields, timber plantations and coastal holiday resorts, with interspersed secondary *Aristida* grasslands, thickets and patches of coastal thornveld (Mucina and Rutherford, 2006).

The vegetation unit is described as endangered, with a target of 25%, of which only a very small part is currently statutorily conserved in various nature reserves. About 50% has been transformed for cultivation, by urban sprawl and for road building. Aliens include *Chromolaena odorata, Lantana camara, Melia azadarach* and *Solanum mauritianum*. Erosion is at low to moderate levels.

The proposed dam site (inundation area) is currently vegetated with indigenous Coastal Belt Vegetation that has rejuvenated from the remains of an historical dam floodplain. There is a presence of indigenous trees and shrub species within the flood plain. Significant invasive tree and plant encroachment is present throughout the site. Some alien invasive clearing has been undertaken. The northern side of the proposed dam has two non-perennial drainage features which directly drain toward the dam. These comprise intact riparian vegetation and typical coastal forest thicket. The upstream (western) topography of the dam becomes increasingly incised with

thicker riparian vegetation. The south side of the dam comprises a gentle drainage depression that also drains in a northerly direction toward the dam inundation area, this drainage area has, however been disturbed by agricultural activities.

Topography and Drainage
The topography of the site is highly undulating. The proposed dam wall is situated at 349.7 masl, and the valley is surrounded by rolling sugar cane hills with high points of 408masl to the south, 411masl to the north and 511masl to the west. The dam site is located on the Little Nonoti Stream which confluences with the Nonoti River 450 metres to the east downstream of the proposed dam wall.

Hydrology
No groundwater points have been noted. The site is located within the U50A quaternary within which the Nonoti is the primary river (and within the Mvoti to Umzimkulu WMA). The adjacent V50C quaternary is in very close proximity (within which the Thukela River is the primary river).

Geology and Soils
The geology and soils of the project area (ordinarily under coastal belt vegetation) consist of Ordovician Natal Group Sandstone, Dwyka tillite, Ecca Shale and Mapumulo gneiss. Weathering of old dunes has produced the red sand, called Berea Red Sand, in places. The soils supported by the aforementioned rocks are shallow over hard sandstones and deeper over younger softer rocks (Mucina and Rutherford, 2006).

Culture and Heritage
The presence of any features of cultural or historical importance is currently unknown. The remains of the old dam wall are present on site.

National and District Roads
The proposed project site is located approximately 7km east of the R74 between Stanger and Kranskop, and 13.5km and 16km south-east of the R102 and the N2 respectively. The site is accessed via a feeder road off of the R74, which passes the site approximately 400m to the east. The farm and dam itself is accessed via smaller gravel roads within the cane fields.

Services
The farm is serviced with all the requisite amenities such as water, electricity and telephone connections. All relevant government departments or parastatals will be consulted as part of the Public Participation Process.

Land use and Socio-economic Structure
Land use in the surrounding area consists almost entirely of sugar cane cultivation, interspersed with patches of indigenous forest vegetation and farmsteads. An informal residential area is located approximately 2km to the north east.

6. POTENTIAL KEY ISSUES

Loss of Indigenous Forest – The indigenous vegetation located within the dam footprint will be lost once the area is inundated by the proposed dam, this will include forest fauna and flora. In order to reduce this impact, a thorough search and rescue operation (with a site selected for relocation / rehabilitation of the removed species), ***prior to the*** flooding of the area must be undertaken. Vegetation clearing should be limited to the proposed flood plain of the dam.

Access to Indigenous Forest areas – Access to the forested areas adjacent to the study area (not affected by the actual construction of the dam) by construction vehicles will cause damage

to the fauna and flora associated with these systems; it will also alter water and soil characteristics and flow patterns, and must be prevented.

Surface Water Runoff – The construction activities may affect the area through changed hydrological patterns and this may have an ecological impact. Permanent alteration of flow patterns is a risk and could lead to detrimental effects on adjacent indigenous vegetation if these are not mitigated during and after construction. Storm water management associated with the proposed development to protect the associated vegetation should be incorporated into the design and should take into consideration the erosion potential of the region.

Rehabilitation – A rehabilitation programme should be developed for all areas to be affected by the proposed dam footprint. Any alien plants should be removed and replaced with indigenous vegetation.

Vegetation clearance – Where it is necessary for vegetation to be removed, this should not occur as a once off clearance, but should be phased, as needed, in order to help to reduce soil erosion potential and the proliferation of exotic weeds. The period that bare soil is exposed should be kept to a minimum. Weeds will thrive in disturbed soil, and will present an eradication problem later should these plants set seed, especially near any watercourses. If any protected plant species are identified, these plants should be relocated, and may not be removed without a permit from the Department Agriculture, Forestry and Fisheries (DAFF).

Erosion – Potential erosion should always be considered during and after construction. If strict mitigation measures are implemented these potential factors can be prevented / reduced. Mitigation measures include soil stabilisation and re-vegetation of affected areas as well as the avoidance (during construction and operation phases) of all areas susceptible to erosion.

References

Mucina. L & Rutherford. MC (eds) 2006. *The Vegetation of South Africa, Lesotho and Swaziland.* Strelitzia 19. South African National Biodiversity Institute. Pretoria.

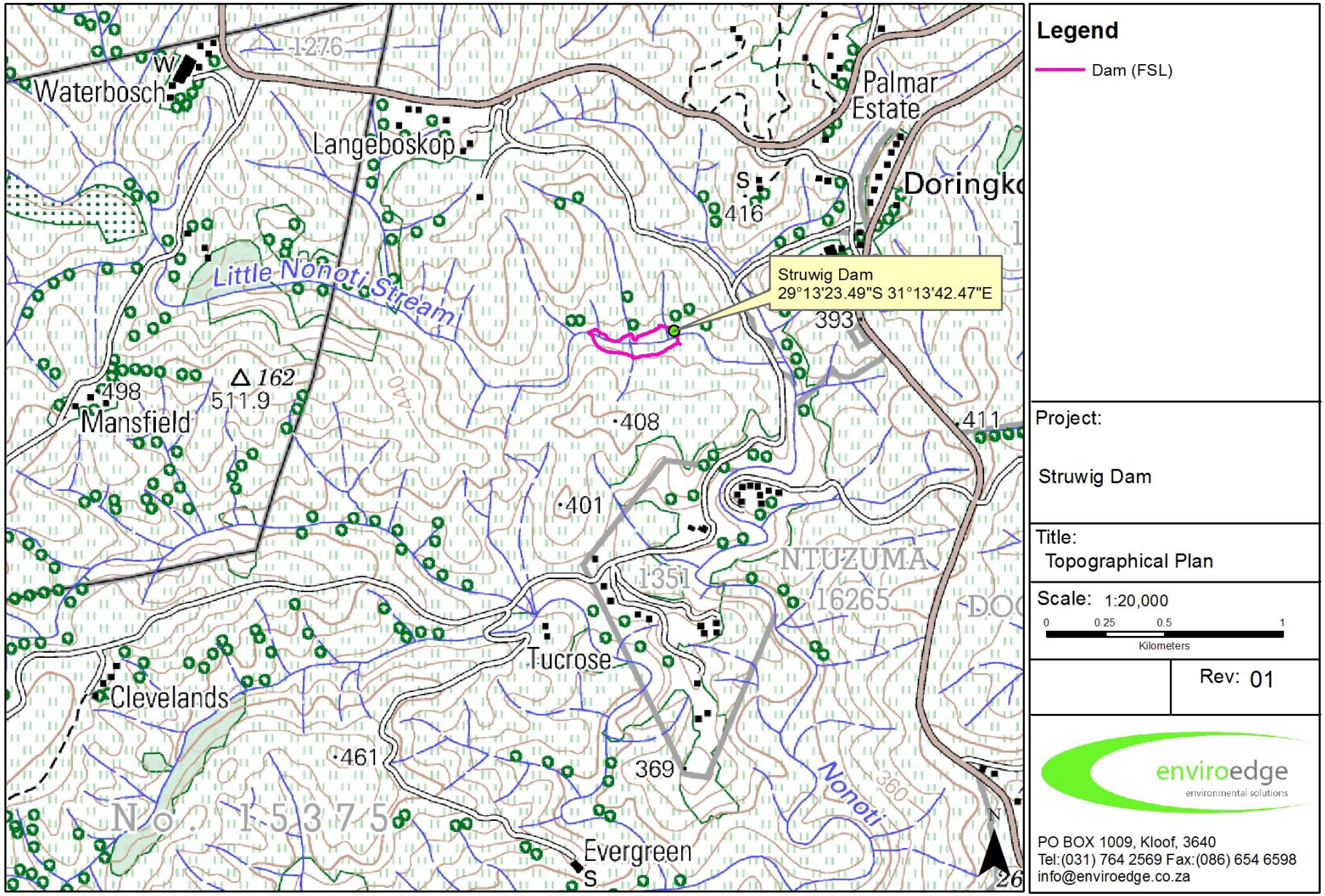

Figure 5: Topographical Map

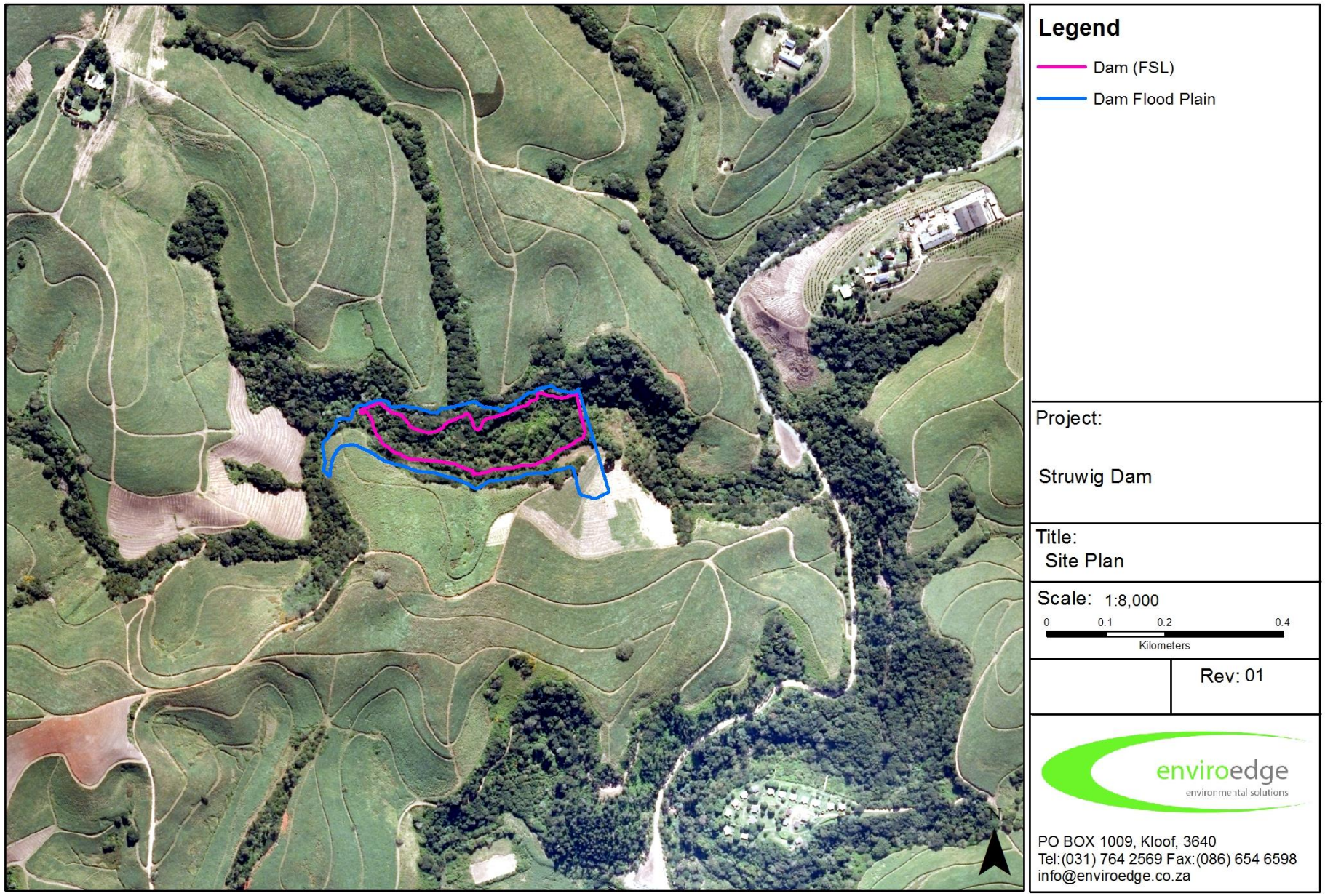

Figure 6: Preliminary Layout