DRAFT AMENDMENT REPORT

MARCH 2026

PROPOSED AMENDMENTS TO THE MOOI RIVER TRUCK STOP EXPANSION PROJECT

REF NO: DC/AMEND/0006/2021/2026

Report Prepared By

GREEN CHOICE CONSULTING

Project Title:	Proposed Amendments to the Mooi River Truck Stop Expansion Project.
Applicant:	Mooi River Truck Stop (Pty) Ltd
Project Location:	Remainder of the Farm de Oewer No. 17763.
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Company	Green Choice Consulting	Applicant
Signature		
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NEMA REQUIREMENTS FOR AMENDMENT REPORTS		
Section 32	Content as Required by NEMA	Chapter/Section
(1)	The applicant must Within 90 days of receipt by the competent authority of the application made in terms of regulation 31, submit to the competent authority –	
(a)	A report, reflecting -	
(i)	An assessment of all impacts related to the proposed change;	Chapter 7
(ii)	Advantages and disadvantages associated with the proposed change;	Chapter 8
(iii)	Any changes to the EMPr which report -	Chapter 9.2
(aa)	Had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and	Chapter 5 and Appendix G
(bb)	Reflects the incorporation of comments received, including any comments of the competent authority; or	Chapter 5 and Appendix G
(b)	A notification in writing that the report will be submitted within 140 days of receipt of the application by the competent authority, as significant changes have been made or significant new information has been added to the report, which changes or information was not contained in the report consulted on during the initial public participation process contemplated in subregulation (1)(a) and that the revised report will be subjected to another public participation process of at least 30 days.	N/A
(2)	In the event where subregulation (1)(b) applies, the report, which reflects the incorporation of comments received, including any comments of the competent authority, must be submitted to the competent authority within 140 days of receipt of the application by the competent authority.	N/A

GLOSSARY OF TERMS

Environment	The surroundings (biophysical, social and economic) within which humans exist and that are made up of i. The land, water and atmosphere of the Earth; ii. Micro-organisms, plant and animal life; iii. Any part of combination of (i) and (ii) and the interrelationships among and between them; and iv. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
Environmental Impact Assessment (EIA)	A study of the environmental consequences of a proposed course of action.
Amendment Report	A report assessing the potential significant impacts of an amendment to an already approved layout.
Environmental Impact	An environmental change caused by some human act.
Environmental Management Programme (EMPr)	A document that provides procedures for mitigating and monitoring environmental impacts during pre-construction, construction, operation and decommissioning phases of a project.
Public Participation Process	A process of involving the public in order to identify needs, address concerns, to contribute to more informed decision making relating to a proposed project, programme or development.

ABBREVIATIONS AND ACRONYMS

AEL	Air Emissions Licence
DWS	Department of Water & Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
EDTEA	Department of Economic Development, Tourism & Environmental Affairs
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
I & AP	Interested & Affected Party
MRTS	Mooi River Truck Stop
NEMA	National Environmental Management Act (Act No. 107 of 1998)
PPP	Public Participation Process
RAM	Risk Assessment Matrix
WULA	Water Use Licence Application

EXECUTIVE SUMMARY

This Draft Amendment Report has been compiled by Green Choice Consulting (Pty) Ltd on behalf of Mooi River Truck Stop (Pty) Ltd in support of an application for a Part 2 Amendment to the existing Environmental Authorisation (EA dated 17 September 2021) issued in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the 2014 Environmental Impact Assessment Regulations (as amended).

The amendment relates to approved expansion works at the Mooi River Truck Stop located on the Farm De Oewer 17763, off the R103, within the Mpofana Municipality, KwaZulu-Natal.

Project Overview

Environmental Authorisation was granted in 2021 for the expansion of the Mooi River Truck Stop, including additional truck parking and associated infrastructure. Construction of the authorised expansion has not yet commenced.

During detailed design and operational planning, it became evident that additional manoeuvring space is required to safely accommodate heavy-duty vehicle movements within the approved expansion area. The Applicant therefore proposes:

- The construction of a dedicated departure lane to facilitate safe truck circulation and exit.

The departure lane alignment results in a limited reduction of the previously delineated 30m wetland buffer, with approximately 0.45ha of buffer area being permanently adjusted. No direct wetland habitat will be lost.

No additional listed activities are triggered in terms of the EIA Regulations. A Part 2 Amendment process is therefore being followed in accordance with Regulation 31 and 32 of the EIA Regulations.

Motivation for the Amendment

The Mooi River Truck Stop forms part of the N3 national freight corridor and provides essential services to the heavy-vehicle transport industry.

The proposed amendment is necessary to:

- Improve internal traffic flow and operational efficiency;
- Reduce congestion and idling within the truck stop;
- Enhance safety for drivers and staff;
- Ensure that the approved expansion can operate as intended.

The amendment does not alter the scale or capacity of the facility. Rather, it represents a functional refinement of the previously approved layout to ensure safe and efficient long-term operation.

Legal & Regulatory Context

The amendment has been undertaken in terms of:

- National Environmental Management Act (NEMA), 1998;
- 2014 EIA Regulations (as amended);
- National Water Act (Act No. 36 of 1998)

A Water Use Licence (WULA) has been obtained from the Department of Water and Sanitation (DWS), which considered the reduced wetland buffer and confirmed acceptability from a water resource protection perspective. This amendment does not constitute a listed activity in terms of GN R327, R325 or R324.

Specialist Studies

A Wetland Risk Assessment was undertaken by NatureStamp (Pty) Ltd to assess the implications of the proposed buffer reduction.

Key findings include:

- No direct loss of wetland habitat;
- Approximately 0.45 ha reduction in wetland buffer width;
- Potential indirect impacts relating to sedimentation and stormwater inputs;
- All impacts rated as Low risk in terms of the DWS Risk Assessment Matrix; and
- No fatal flaws identified.

The specialist confirmed that previously approved mitigation measures remain appropriate, including:

- Implementation of the approved Stormwater Management Plan;
- Rehabilitation and formalisation measures associated with the Bruntville Wetland; and
- Ongoing alien invasive plant control within wetland areas.

The findings and recommended mitigation provided in the 2020 Watercourse Assessment remain applicable to the amended layout.

Impact Assessment Summary

An environmental impact assessment was undertaken in accordance with the adopted significance methodology. The following potential impacts associated with the proposed amendment include -

Construction Phase:

- Temporary impacts include sediment mobilisation and localised alteration of surface runoff.
- The permanent reduction in wetland buffer width was rated High prior to mitigation, driven primarily by permanent duration and definite probability.
- Following implementation of approved mitigation measures, residual significance is reduced to Medium.

Operational Phase:

- Potential impacts relate to stormwater runoff and sediment deposition.
- These impacts are incremental to the already authorised development.
- Residual impacts are assessed as Low following continued implementation of stormwater controls.

Cumulative Impacts:

- Cumulative effects relate primarily to incremental buffer reduction and hardened surface area.
- With approved mitigation and rehabilitation measures, cumulative impacts are not anticipated to result in significant degradation of the wetland system or the downstream Mooi River.

A summary of the impact assessment undertaken for the proposed project is provided in the table below, with a full impact assessment with mitigation measures provided in Chapter 7 of this report.

Activity/Impact	Impact Significance Prior to Mitigation	Impact Significance After Mitigation
Construction Phase		
Altered surface water flow patterns	Low	Low
Soil erosion & sediment mobilisation	Medium	Low
Reduced ecological functioning of wetland buffer	Medium	Negligible
Reduced integrity of wetland buffer	High	Medium
Operational Phase		
Sediment deposition within wetland buffer	Medium	Low
Increased stormwater runoff	Medium	Low
Cumulative Impacts		
Reduction in buffer width & functioning	Medium	Low
Increased stormwater runoff	Medium	Low
Increased sedimentation of downstream wetland	Medium	Low
Decreased functionality of ecological services	Medium	Low

Public Participation

The amendment application has been subjected to a public participation process in accordance with the EIA Regulations.

Stakeholders were notified via:

- Newspaper advertisement in English and isiZulu published in the Estcourt & Midlands News;
- English and isiZulu site notices placed at the entrance to the site;
- Circulation of a Background Information Document to relevant stakeholders; and
- Direct notification of identified authorities and adjacent landowners.

The Draft Amendment Report is being circulated for a 30-day comment period. All comments received will be recorded and responded to in the Final Amendment Report.

No objections to the proposed amendment have been received to date.

Environmental Impact Statement

- The proposed amendment results in a limited and controlled reduction of the wetland buffer within an already authorised development footprint.
- No direct wetland habitat loss will occur.
- Specialist assessment confirms that residual risks to the wetland system are low.
- The stormwater management system and rehabilitation measures approved under the original Environmental Authorisation and Water Use Licence remain applicable and enforceable.
- The amendment improves operational safety and efficiency without expanding the development boundary or introducing new environmental impact pathways.

Conclusions & Recommendations

It is the reasoned opinion of the Environmental Assessment Practitioner that:

- The proposed amendment will not result in unacceptable environmental degradation;
- No fatal flaws have been identified;

- Residual impacts remain within acceptable levels following mitigation;
- The amendment is consistent with the intent and scope of the original Environmental Authorisation; and
- The development remains aligned with applicable legislative and planning frameworks.

It is therefore recommended that the Competent Authority approve the proposed Part 2 Amendment, subject to:

- Continued implementation of the approved Stormwater Management Plan;
- Implementation of specialist rehabilitation and alien invasive control measures;
- Compliance with the existing Environmental Authorisation and Water Use Licence conditions; and
- Ongoing environmental management in accordance with the approved EMPr.

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1. INTRODUCTION & BACKGROUND

1.1 Introducing the Project & Project Background

Green Choice Consulting (Pty) Ltd has been appointed by Mooi River Truck Stop (Pty) Ltd (hereinafter referred to as "the Applicant") to manage the environmental regulatory compliance process for the proposed amendment to the approved Mooi River Truck Stop expansion project, located off the R103, in Mooi River, KwaZulu-Natal.

Environmental Authorisation (EA) for the expansion of the Mooi River Truck Stop was granted on 17 September 2021, permitting additional fuel storage capacity and the extension of the truck parking facility. Construction associated with the authorised expansion has not yet commenced.

As part of the operational planning and detailed design for the expanded facility, it has become evident that additional manoeuvring and turning space will be required within the approved truck parking extension to safely accommodate heavy-duty vehicle movements. This is necessary to prevent congestion, maintain efficient circulation, and ensure that trucks are able to enter, park, and exit the facility without operational or safety risks.

To achieve this, the Applicant proposes the construction of a dedicated departure lane within the authorised development footprint. The lane will facilitate safe access into the extended parking area and provide a structured route for vehicles navigating toward the designated exit point. While these internal layout adjustments do not trigger any new listed activities in terms of the EIA Regulations, the lane alignment will result in limited clearance within the previously delineated wetland buffer, and therefore requires a Part 2 Amendment to the EA to regularise this change.

The proposed amendment remains consistent with the intent, scale, and operational function of the truck stop as authorised under the existing EA, and are aimed at enhancing the overall safety and efficiency of the facility's long-term operation.

1.2 Project Location

The Mooi River Truck Stop is located on the Farm De Oewer 17763 off the R103 in Mooi River, and is situated within the Mpofana Municipality of the Umgungundlovu District (refer to Figure 1). The site's location details are provided in Table 1 below, while locality maps are attached as Appendix A.

Table 1: Project Property Location Details

Name of Landowner	Mooi River Truck Stop (Pty) Ltd (The Applicant)
Property Description	Farm De Oewer 17763
SG Code	N0FT00000001776300000
Zoning	Commercial/industrial
Central Co-Ordinates	29° 13' 30.43"S 30° 00' 08.51"E

Figure 1: The Mooi River Truck Stop property boundary outlined in yellow, with the approved expansion area shaded in red (Source: ©Google Earth Satellite Imagery, Imagery Date: 23/04/2023).

1.3 Description of the Proposed Amendment

The proposed amendment relates specifically to the operational safety of the approved expansion area.

The amendment entails the development of an additional departure lane to allow heavy vehicles to safely exit the newly approved truck parking area and re-enter the public road network. The current approved layout does not adequately accommodate the safe turning movements of trucks leaving the expansion area, which has operational and road safety implications.

The development of the departure lane will result in limited encroachment into an existing wetland buffer. No new infrastructure is proposed beyond what is required to safely facilitate vehicle movement.

Without the development of the additional departure lane, the approved expansion project would be operationally constrained and, from a safety perspective, potentially unfeasible.

The proposed amended site layout plan is provided in Appendix B.

1.4 Purpose of This Report

This report has been compiled in accordance with the required Part 2 amendment process as described in Regulation 32 of the EIA Regulations, 2014 (as amended). The objective of this report is to provide details pertaining to the significance and impacts of the proposed change to the approved site layout plan associated with the Mooi River Truck Stop expansion project. These details are required for the Competent Authority to be able to reach an informed decision in this regard. The KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs (EDTEA) is the Competent Authority which will ultimately make a decision on whether to approve or reject the proposed amendment.

This Draft Amendment Report comprises the following chapters:

- Chapter 1 introduces the proposed amendment activity, the project location as well as the project team.
- Chapter 2 outlines the legal framework applicable to this project.
- Chapter 3 describes the proposed amendment and provides a motivation for the proposed amendment.
- Chapter 4 provides a summary of the findings of the specialist studies that were undertaken for the proposed amendment.
- Chapter 5 provides a summary of the public participation process undertaken for the Part 2 amendment process.
- Chapter 6 provides the methodology used to compile the environmental impact assessment.
- Chapter 7 provides an environmental impact assessment with potential mitigation measures for the proposed activity.
- Chapter 8 describes the advantages and disadvantages associated with the proposed amendment.
- Chapter 9 provides the concluding statement from the Environmental Assessment Practitioner.

1.5 EIA Project Team

The Applicant has appointed Green Choice Consulting (Pty) Ltd to execute this project in a professional and unbiased manner. Sarah Stalberg of Green Choice Consulting (Pty) Ltd is an EAPASA registered Environmental Assessment Practitioner (EAP) with 16 years' experience in various fields of environmental consulting, including the undertaking of Environmental Impact Assessments, feasibility and due diligence studies, construction monitoring (performing the duties of an Environmental Control Officer), and environmental auditing. Sarah's *curriculum vitae* and EAPASA registration certificate are attached as Appendix C.

1.6 Independence

The amended 2014 EIA Regulations pursuant to NEMA, provide general requirements for Environmental Assessment Practitioners (EAPs) and specialists with the intention of reducing the potential for bias in the environmental process. The first requirement is that the EAP should be independent (Regulation 13(1)(a) of GN R982, as amended).

Neither Green Choice Consulting (Pty) Ltd nor any of its sub-consultants are subsidiaries of Mooi River Truck Stop (Pty) Ltd, nor is Mooi River Truck Stop (Pty) Ltd a subsidiary to Green Choice Consulting (Pty) Ltd.

Green Choice Consulting (Pty) Ltd and its sub-consultants do not have any interests in secondary or downstream developments that may arise out of the authorisation of the proposed project.

1.7 Assumptions, Limitations and Gaps in Knowledge

In undertaking this investigation and compiling this Amendment Report, the following has been assumed:

- The information provided by The Applicant is accurate and unbiased, and no information that could change the outcome of the amendment application process has been withheld.
- A site visit has been undertaken to better understand the project location and proposed activities, and to ensure that the information provided by The Applicant is correct, based on site conditions observed.
- The comments received in response to the public participation process are representative of comments from the broader community.
- The amendment application process is based on Best Practice Guidelines which were available at the time of writing this report.

Notwithstanding these assumptions, it is the view of this EAP that this Amendment Report provides a good description of the anticipated impacts associated with the proposed development, with the provision of well-informed mitigation measures to ensure the future sustainability of the project property and the neighbouring properties.

2. LEGAL AND PLANNING CONTEXT

The South African regulatory framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Environmental protection functions are carried out by different authorities at both national and regional levels.

There are a host of legal and policy documents and guidelines to consider when undertaking a project of this nature. This Chapter outlines the following:

- Current national, provincial and local legislation framework in South Africa as it relates to the project during planning, development and operation, including national policies and standards referred to as guidelines for the identification and management (including mitigation) of impacts.
- Key regulatory authorities and other relevant bodies related to the proposed activities, and other permitting requirements.

2.1 Relevant Legislation

The current assessment is being undertaken in terms of NEMA, to be read with Section 24(5): NEMA EIA Regulations. However, the provisions of various other Acts must also be considered. The legislation relevant to this study is outlined below.

2.1.1 The Constitution of the Republic of South Africa (Act 108 of 1996)

The Constitution, which is the supreme law of the Republic of South Africa, provides the legal framework for legislation regulating environmental management in general, against the backdrop of the fundamental human right. Section 24 of the Constitution states that:

- "Everyone has a right:
  - To an environment that is not harmful to their health or well-being; and
  - To have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that –
- Prevent pollution and ecological degradation;
- Promote conservation; and
- Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

Section 24 of the Bill of Rights therefore guarantees the people of South Africa the right to an environment that is not detrimental to human health or well-being, and specifically imposes a duty on the State to promulgate legislation and take other steps that ensure that the right is upheld and that, among other things, ecological degradation and pollution are prevented.

Project Applicability: In support of the above, The Applicant is committed to supporting sustainable development and conserving natural resources, whilst promoting justifiable socio-economic development by generating employment opportunities.

2.1.2 National Environmental Management Act (Act No. 107 of 1998), EIA Regulations Published on 7 April 2017 (GN R327, GN R326, GN R325 and GN R324)

The National Environmental Management Act (Act No. 107 of 1998, NEMA) provides the environmental legislative framework for South Africa and establishes a set of principles which all authorities have to consider when exercising their powers. These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and

- Responsibility for the environmental consequences of a policy, project, product or service applies throughout its life cycle.

Section 28(1) states that "every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring". If such degradation/pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;
- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution.

Project Applicability: The Applicant has a general duty of care and a responsibility to take action to prevent pollution or degradation of the environment in terms of Section 28 of NEMA, and to ensure that the environmental impacts associated with the proposed development are mitigated. Listed activities in terms of the EIA Regulations are triggered by the proposed development, these are discussed in Section 3.2.

2.1.3 National Heritage Resources Act (No. 25 of 1999)

The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares. The Act makes provision for the potential destruction of existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

It is important to note that in terms of the Act, all historical sites and materials older than 50 years are protected. It is an offence to destroy, damage, alter or remove such objects from the original site, or excavate any such site(s) or material without a permit from the National Monuments Council. Gravesites are subject to the requirements of the National Monuments Act, No. 28 of 1969.

Project Applicability: This application pertains to the amendment of an existing Environmental Authorisation for the expansion of the Mooi River Truck Stop. A Heritage Study was undertaken during the Basic Assessment process for the expansion project, the results of which indicated that there were features or items of heritage and cultural significance located on, or surrounding, the project property.

2.1.4 National Environmental Management: Air Quality Act, 2008 (Act No. 36 of 2008)

The National Environmental Management: Air Quality Act, 2004 has been promulgated with the objective of reforming the law regulating air quality in order to protect the environment. It also aims to comply with general environmental policies and to bring legislation in line with international air quality management practices. All outstanding sections of the Act came into effect on the 1st of April 2010 (Government Gazette, 26 March 2010). The Act has established a National Framework for Air Quality Management with standards.

A revised schedule of Listed Activities and Minimum National Emission Standards was published on the 22nd of November 2013 (GN R 893). Listed activities may only be undertaken after an Air Emissions Licence (AEL) has been obtained and must comply with the prescribed emissions standards set for that activity.

Project Applicability: The proposed development does not call for any air emissions control systems, and no component of the proposed development will require authorisation through an AEL. However, measures have been provided in the Environmental Management Programme (EMPr) to ensure that air quality is managed in line with the requirements of the Air Quality Act, particularly during the construction phase of the project.

2.1.5 National Water Act (Act No. 36 of 1998)

The National Water Act (Act No. 36 of 1998, NWA) fundamentally reforms the law relating to water resources, recognising that water is a scarce and unevenly distributed national asset that belongs to the people of South Africa. The NWA provides the Department of Water and Sanitation (DWS) with the mandate to protect, use, develop, conserve, manage and control the country's water resources in an integrated manner. In terms of the Section 21 of the National Water Act, the developer must obtain water use licenses if the following activities are taking place:

a) Taking water from a water resource;
b) Storing water;
c) Impeding or diverting the flow of water in a watercourse;
d) Engaging in a stream flow reduction activity contemplated in section 36;
e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
g) Disposing of waste in a manner which may detrimentally impact on a water resource;
h) Disposing in any manner of water which contains waste from or which has been heated in any industrial or power generation process;
i) Altering the bed, banks, course or characteristics of a water course;
j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) Using water for recreational purposes.

Project Applicability: The Mooi River as well as various wetlands are located within the 500m regulated area of the Mooi River Truck stop site. Should the proposed amendment be authorised, construction will encroach into an approved wetland buffer. A Water Use Licence (WULA) has been obtained from the DWS taking both the property's proximity to watercourses, and the proposed amendment (i.e. reduced wetland buffer) into consideration – the WULA is attached as Appendix D.

2.1.6 National Environmental Management: Biodiversity Act, 2008 (Act No. 10 of 2004)

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004, NEMBA) provides for "the management and conservation of South Africa's biodiversity within the framework of the NEMA, the protection of species and ecosystems that warrant national protection, and the use of indigenous biological resources in a sustainable manner, amongst other provisions". The Act states that the State is the custodian of South Africa's biological diversity and is committed to respect, protect, promote and fulfil the constitutional rights of its citizens.

Furthermore, NEMBA states that the loss of biodiversity through habitat loss, degradation or fragmentation must be avoided, minimised or remedied. The loss of biodiversity *includes inter alia* the loss of threatened or protected species. Biodiversity offsets are a means of compensating for the loss of biodiversity after all measures to avoid, reduce or remedy biodiversity loss have been taken, but residual impacts still remain, and these are predicted to be medium to high. Chapter 5 of NEMBA (Sections 73 to 75) regulates activities involving invasive species, and lists duty of care as follows:

- The landowner/land user must take steps to control and eradicate the invasive species and prevent their spread, which includes targeting offspring, propagating material and regrowth, in order to prevent the production of offspring, formation of seed, regeneration or re-establishment;
- Take all required steps to prevent or minimise harm to biodiversity; and
- Ensure that actions taken to control/eradicate invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.

An amendment to the NEMBA has been promulgated, which lists 225 threatened ecosystems based on vegetation types present within these ecosystems. Should a project fall within a vegetation type or ecosystem that is listed, actions in terms of NEMBA are triggered.

Project Applicability: A Terrestrial Biodiversity Study was undertaken as a specialist component of the Basic Assessment process for the Mooi River Truck Stop expansion project. Further biodiversity studies were deemed unnecessary for this amendment application, as the proposed amendment would not have a significant impact on biodiversity.

2.2 Amendment Process in terms of NEMA

The proposed change results in an increased level of impact relative to the originally assessed layout due to localised buffer reduction, and therefore requires a Part 2 amendment.

According to Regulation 31 of the EIA Regulations:

"An environmental authorisation may be amended by following the process prescribed in this Part if the amendment will result in a change to the scope of a valid environmental authorisation where such change will result in an increased level or change in the nature of impact where such level or change in nature of impact was not –

(a) Assessed and included in the initial application for environmental authorisation; or
(b) Taken into consideration in the initial environmental authorisation;

And the change does not, on its own, constitute a listed or specified activity".

Regulation 32(a) of the EIA Regulations states that a report must be submitted to the competent authority reflecting –

(i) An assessment of all impacts related to the proposed change;
(ii) Advantages and disadvantages associated with the proposed change;
(iii) Measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
(iv) Any changes to the EMPr;

Which report –

(aa) Had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and
(bb) Reflects the incorporation of comments received, including any comments of the competent authority.

A pre-application meeting was held with EDTEA on the 14th of March 2024 to confirm that a Part 2 amendment process in terms of Regulation 31 and 32 would be appropriate for the proposed change. The minutes of this meeting are attached as Appendix E.

This report has been compiled in accordance with the required Part 2 amendment process as described in Regulation 32 of the EIA Regulations.

2.3 Relevant Policies, Regulations and Guidelines

Various policies, regulations and guidelines relating to environmental management have been published. Those that are relevant to the proposed development are provided below.

- Guideline on Public Participation (DEADP, 2011)
- Impact Significance (DEAT IEM Series, 2002)
- Screening (DEAT IEM Series, 2002)

3. PROPOSED AMENDMENT & MOTIVATION FOR AMENDMENT

3.1 Proposed Amendment

Environmental Authorisation (EA) for the expansion of the Mooi River Truck Stop was granted on 17 September 2021, permitting additional fuel storage capacity and the extension of the truck parking facility. Construction associated with the authorised expansion has not yet commenced.

As part of the operational planning and detailed design for the expanded facility, it has become evident that additional manoeuvring and turning space will be required within the approved truck parking extension to safely accommodate heavy-duty vehicle movements. This is necessary to prevent congestion, maintain efficient circulation, and ensure that trucks are able to enter, park, and exit the facility without operational or safety risks.

To achieve this, the applicant proposes the construction of a dedicated departure lane within the authorised development footprint. The departure lane will facilitate safe access into the extended parking area and provide a structured route for vehicles navigating toward the designated exit point. While these internal layout adjustments do not trigger any new listed activities in terms of the EIA Regulations, the lane alignment will result in limited clearance within the previously delineated wetland buffer, and therefore requires a Part 2 Amendment to the EA to regularise this change.

The proposed encroachment into the buffer has been assessed by a wetland specialist who confirmed that the associated risk to the wetland system remains low, provided appropriate mitigation and stormwater controls are applied.

The proposed amendment remains consistent with the intent, scale, and operational functioning of the truck stop as authorised under the existing EA, and are aimed at enhancing the overall safety and efficiency of the facility's long-term operation.

3.2 Motivation for the Proposed Amendment

The Mooi River Truck Stop is a key logistical facility located along the N3 national freight corridor, providing critical refuelling, rest, parking, and support services to the heavy-vehicle industry. The facility experiences high volumes of truck traffic, and the approved expansion (granted on 17 September 2021) was intended to enhance capacity and reduce congestion within the precinct.

During the detailed design phase of the approved expansion, it became clear that additional manoeuvring and departure space is required to ensure safe heavy-vehicle circulation between the newly authorised parking bays and the existing exit point. Without this adjustment, there is a risk of traffic bottlenecks, conflict between moving and stationary vehicles, and compromised safety for both operators and drivers.

The proposed introduction of the additional departure lane:

- Improves internal traffic flow and operational efficiency;
- Reduces congestion and idling time (air-quality and noise benefits);
- Enhances safety for drivers, staff, and pedestrians;
- Supports compliance with recommended road transport design geometries; and
- Ensures that the expanded layout can operate as intended and authorised.

The realignment required to accommodate the departure lane results in a limited encroachment into the previously delineated wetland buffer. This amendment is minor in environmental consequence, as confirmed through specialist assessment, which identifies a low risk to the functionality and integrity of the wetland, subject to existing mitigation measures. Furthermore, the Department of Water and Sanitation has reviewed and authorised the proposed layout through the Water Use Licence process, confirming that the reduced buffer is acceptable from a water resource protection perspective.

In summary, the proposed amendment:

- Does not trigger any additional listed activities under the EIA Regulations;
- Does not alter the scope, capacity, or intensity of the authorised development;
- Remains consistent with land-use rights and the intent of the original EA; and
- Results in overall safety and operational benefits without introducing new impacts.

For these reasons, the amendment is both necessary and desirable to ensure that the authorised expansion operates efficiently, meets its service function within the national logistics network, and maintains appropriate environmental safeguards.

4. SPECIALIST STUDIES

This section provides a summary of the results of the specialist studies undertaken for the proposed amendment activity. The need for specialist studies was determined by the Department of Water & Sanitation as a component of the Water Use Licencing Process. The following specialist studies were determined to be necessary for the amendment application:

- Risk Assessment associated with (c) and (i) water uses in terms of the National Water Act.

Please note that a Wetland Assessment was undertaken as a specialist component of the Basic Assessment process for the Mooi River Truck Stop expansion project. The results of said study have not been discussed in detail in this report.

4.1 Wetland Risk Assessment

NatureStamp (Pty) Ltd was appointed to provide specialist comment on the proposed amendment to the approved expansion layout of the Mooi River Truck Stop, specifically relating to the encroachment of a truck departure/turning lane into a delineated wetland buffer area.

The proposed layout change does not result in the direct loss of any wetland habitat. However, it does involve a reduction of the established 30m wetland buffer, with the buffer reduced in places to a minimum distance of approximately 8.6 m from the wetland boundary, resulting in a total loss of approximately 0.45ha of buffer zone.

NatureStamp's assessment builds on the findings of the Watercourse Assessment undertaken in August 2020, which provided specialist input to the Basic Assessment process for the original Mooi River Truck Stop expansion project. The study identified several wetlands on and around the site that drain into the Mooi River, a NFEPA-listed river classified as Class B (Largely Natural). While no NFEPA wetlands occur on the site itself, the functional linkages between the wetlands and the Mooi River were confirmed, and a 30m buffer was previously determined as appropriate using the Macfarlane et al. (2014) methodology.

The specialist notes that although no wetland will be directly impacted by the proposed amendment, the effectiveness of the buffer zone will be reduced, particularly in terms of its role in limiting sedimentation, managing stormwater inputs, and protecting wetland ecological functioning. Potential indirect impacts include increased sediment loads, edge effects, and disturbance associated with construction and operational activities.

A DWS Risk Assessment Matrix (RAM) was completed to assess the implications of constructing and operating the truck departure lanes within the wetland buffer (refer to Table 2). The RAM assessed impacts during both the construction and operational phases, including alteration of water flow, sedimentation, disturbance from machinery and personnel, and loss of buffer area. All assessed impacts were rated as low risk, both individually and cumulatively.

Although the risks are considered low, the specialist highlights that the loss of buffer area remains a concern. As a result, NatureStamp recommends that mitigation and offset-type measures previously identified in the 2020 Watercourse Assessment be implemented. These include, in particular:

- The formalisation and rehabilitation of the Bruntville Wetland, which plays a key role in improving water quality entering the Mooi River system; and
- Ongoing alien and invasive plant control within onsite wetlands and buffer areas.

NatureStamp confirmed that no fatal flaws were identified in relation to the proposed layout amendment, provided that the recommended mitigation measures are implemented. The findings and recommendations of the 2020 Watercourse Assessment remain applicable and relevant to the proposed amendment, and MRTS has indicated its willingness to implement mitigation measures in line with the approved Stormwater Management Plan and the specialist recommendations.

Table 2: DWS RAM Output for the Construction of a Truck Departure Lane in a Wetland Buffer Zone (Source: NatureStamp, 2024)

Phase	Activity	Impact	Risk Ratings
CONSTRUCTION	Construction of truck departure lane within a 30m wetland buffer zone	Impeding or Diverting the Flow of Water in a Watercourse & Altering the beds, banks course or characteristics of a watercourse.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Edge effects such as the increase in surface flow, dumping of spoil material and soil disturbance.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased activity of workers and machinery on-site (noise, dust, traffic disturbance)	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased sediment loads into downstream wetlands.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased sediment loads into downstream wetlands.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Loss of wetland buffer zone to truck departure lane	L
	Construction of truck departure lane and affects within 500m	Increased sediment loads into downstream wetlands.	L
OPERATIONAL	Operation and maintenance of departure lane and stormwater infrastructure	Sedimentation into buffer zone and UCVB wetland directly downstream of departure lane	L

The specialist's comment with associated report is attached as Appendix F.

5. PUBLIC PARTICIPATION

5.1 Importance of Public Participation

Stakeholder engagement has been described by the International Finance Corporation (IFC) of the World Bank Group as a broad, inclusive and continuous process of communication between a Proponent of a project, and those potentially affected by the activities of the proposed development. This can include a wide range of activities that are relevant to the entire life of a project. The aim of stakeholder engagement differs at different stages of the project lifecycle. During the EIA process, the aim is to provide an opportunity for stakeholders to be informed of projects occurring in their area and that may affect them directly or indirectly. It also aims to provide an accessible and meaningful opportunity for stakeholders to ask questions, raise concerns or grievances and to ensure that these are used to guide the proposed development in a responsible manner, that complements the local socio-economic environment and enhances the benefit of a given project.

South African legislation and guidelines have formalised stakeholder engagement in the EIA process and refers to it as the Public Participation Process (PPP). PPP forms an integral component of this investigation and enables interested and affected parties (I&APs) to identify their issues, concerns, and suggestions during the EIA process. This PPP has been structured to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/ reports, and to voice any issues of concern at various stages throughout the EIA process.

A Public Participation Report has been attached as Appendix G, and provides details of the Public Participation Process that has been followed to date. The Public Participation Report will be updated as the amendment process progresses.

5.1.1 Stages of the Public Participation Process

The public participation process for this project is provided in Table 3.

Table 3: Public Participation Process

Phase	PPP Activities Undertaken/To Be Undertaken
Pre-Application Phase	❖ The Applicant is the landowner, therefore the need for landowner notification was not applicable. ❖ A newspaper advertisement in English and isiZulu was placed in The Estcourt & Midlands News on the 6th of February 2026 to notify the general public of the proposed amendment and inviting them to register as I&APs for the project. ❖ Site notices in English and isiZulu were placed at the entrance to the Mooi River Truck Stop site on the 4th of February 2026 to notify the general public of the proposed project and inviting them to register as I&APs for the project. ❖ Circulation of a Background Information Document to landowners located within a 100m radius of the project property. ❖ Circulation of a Background Information Document to notify stakeholders and relevant authorities.
Draft Amendment Report (current stage)	❖ The Draft Amendment Report will be circulated to registered I&APs and identified stakeholders and authorities for a 30-day comment period. ❖ I&APs will be notified of the availability of this report via email. ❖ Electronic copies of the Report will be made available for download on the Green Choice Consulting website (www.greenchoiceconsulting.co.za/publicparticipation), or via USB flash drives to be delivered to I&APs via courier by request. Hard

Phase	PPP Activities Undertaken/To Be Undertaken
	copies of the report may also be delivered to I&APs via courier by request. ❖ Translations of the report may be provided by request. ❖ Following the closure of this comment period, the Report will be updated where appropriate. All comments submitted will be recorded and responded to in a Comments and Responses table included in the Public Participation Report.
Final Amendment Report	❖ Following finalization of the Amendment Report, it will be submitted to EDTEA for review and decision.

5.1.2 Identification of Stakeholders

A database of I&APs has been developed for this amendment application. The database was compiled using details from the original Basic Assessment to ensure proper alignment with the process, and was updated using the details of the following affected parties:

- Adjacent landowners;
- Relevant district and local municipalities and ward councillors; and
- Relevant national and provincial government officials; and

This I&AP database will be continually updated as new I&APs are identified during the amendment process. The I&AP database is included in the Public Participation Report, attached as Appendix G.

5.1.3 Summary of Comments & Responses

To date, no comments or requests for registration have been received from I&APs in response to the call to register. Any comments received during review of the Draft Amendment Report will be incorporated and addressed in the Final report.

6. IMPACT ASSESSMENT METHODOLOGY

6.1 Environmental Impact Assessment, Significance & Mitigation Methodology

6.1.1 Impact Assessment Criteria

The method for assessing impact is guided by the requirements of the NEMA EIA Regulations. The broad approach to the significance rating methodology is to determine the environmental risk or significance of the impact (S) by considering the consequence of each impact The consequence of each impact comprises the nature (N), extent (E), duration (D) and magnitude of the impact (M) and relate this to the probability (P) of the impact occurring. The criteria are defined follows:

- Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity. Scoring does not apply, the impact will either be negative or positive.
- Extent: The area of which the impact will be expressed.
- Duration: Indicates the anticipated lifespan of the impact.
- Magnitude: Describes whether an impact is destructive or benign.
- Probability: Describes the likelihood of an impact actually occurring.

Each aspect in the determination of consequence is represented by a rating scale, as defined in Table 4.

Table 4: Criteria to be Used for the Rating of Impacts

Description	Score	Definition
Nature		
Negative (-)	N/A	Likely to result in a negative impact.
Positive	N/A	Likely to result in a positive impact.
Extent		
Activity	1	Limited to the area applicable to the specific activity.
Site	2	Within the development property boundary.
Local	3	The area within 5 km of the site.
Regional	4	Extends between 5 and 50 km from the site.
Provincial	5	Extends beyond 50 km from the site.
Duration		
Immediate	1	<1 year.
Short term	2	1 – 5 years.
Medium term	3	6 – 15 years.
Long term	4	15 – 65 years, the impact will cease after the operational life span of the project.
Permanent	5	>65 years, no mitigation measure will reduce the impact after construction.
Magnitude		
Minor	1	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
Low	2	Where the impact affects the environment in such a way that natural, cultural, and social functions and processes are slightly affected.
Moderate	3	Where the affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way, moderate improvement for positive impacts.
High	4	Where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease, high improvement for positive impacts.
Very high / Unsure	5	Where natural, cultural or social functions or processes are altered to the extent that it will permanently cease, substantial improvement for positive impacts.

Description	Score	Definition
Probability		
Highly Improbable	1	Impact will probably not occur.
Improbable	2	Some possibility of the impact occurring, but the likelihood is low.
Probable	3	There is a distinct possibility that the impact will occur.
Highly Probable	4	It is highly probable that the impact will occur.
Definite	5	The impact will occur regardless of the implementation of prevention measures.

6.1.2 Determining Impact Significance

The significance (S) of each impact is determined by combining the aforementioned criteria into the following formula:

S = (E+D+M) x P

Where: S = Significance of impact M = Magnitude P = Probability
E = Extent D = Duration

The significance weightings applied in assessing each potential impact are described in Table 5 below:

Table 5: Significance Weightings

Total score	Impact Significance	Description
<10 points	Negligible	The impact is not substantial and does not require any mitigation
11 - 20 points	Low	Minor alterations of the environment and can be easily avoided by implementing mitigation measures.
21 – 40 points	Medium	Moderate alteration of the environment. Mitigation is required to reduce the negative impacts to acceptable levels.
41 – 60 points	High	The impact is of great importance. Major alteration of the environment even with the implementation of mitigation measures.
>60 points	Very High	The impact is significant with recovery not possible following mitigation. The impact will have an influence on decision-making, and may present as a fatal flaw.

In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances, the impact will be assessed with a statement on the mitigation measure that could/should be applied. Specialist recommendations and mitigation measures will also be included.

6.1.3 Impact Reversibility, Residual Impacts & Degree of Certainty

The EIA Regulations also call for the consideration of the reversibility of impacts, as well as the degree to which the impact can cause irreplaceable loss of resources. Additionally, residual impacts (the impact remaining after mitigation) should be ranked, and the degree of certainty pertaining to the impact significance rating should be indicated. These criteria are described in Table 6 below:

Table 6: Additional Assessment Criteria Considered

Criteria Description	Description
Reversibility of Impact	
The extent to where the impacts are reversible	**Yes** The impact is reversible within two years following construction
	No The impact is reversible within 2 to 10 years following construction
Loss of Resources	
The degree to which the impact can cause irreplaceable loss of resources	**Low** The impact results in the loss of resources but the natural, cultural and social processes/functions are not affected.
	Medium The loss of resources occurs but natural, cultural and social processes continue, albeit in a modified manner.
	High The impact results in the irreplaceable loss of resources.
Ranking of Residual Impacts	
Ranking of impact remaining after mitigation	**Very Low** **Low** **Moderate** **High** **Very High**
Degree of Certainty	
Confidence of impact rating based on available information	**High** **Moderate** **Low**

6.1.4 Positive Impacts

Positive impacts associated with the proposed development will not be assessed as the Environmental Impact Assessment is based on risk. Similarly, mitigation measures and impact reversibility are not applicable to positive impacts. A list of positive impacts will be provided in Chapters 8 and 9 of this report (Advantages and Disadvantages of the Proposed Amendment, and Concluding Statement).

7. IMPACT ASSESSMENT

The objective of this section is to provide independently and scientifically sound information on the potential impacts identified associated with the proposed amendment. Based on the requirements of the impact assessment, impacts identified and issues and concerns raised by Interested & Affected Parties are assessed with regard to their significance as described in Chapter 6 of this report. The impact assessment is aimed at determining the potential impacts associated with the proposed amendment and the prescription of mitigation measures to reduce the significance of the identified impacts.

The impacts discussed in this Chapter were identified by reviewing the receiving environmental characteristics of the site (geographical, physical, biological, social, economic, heritage and cultural), having an understanding of the environmental impacts caused by similar activities, as well as input from the Project Team, including specialists.

7.1 Impacts Likely to Occur During the Design & Planning Phase

Impacts associated with the design and planning phase are not discussed here, as these impacts have already been identified and assessed during the Basic Assessment process for the Mooi River Truck Stop expansion project. Impacts Likely to Occur During the Construction Phase

7.2 Impacts Likely to Occur During the Construction Phase

Potential impacts associated with the construction of the departure lane which will encroach into a delineated buffer wetland include:

- Loss of wetland buffer zone
- Soil related impacts;
- Alteration in surface flow; and
- Reduced buffer integrity.

An Environmental Management Programme (EMPr) was compiled and approved as part of the original Basic Assessment process for the Mooi River Truck Stop expansion project (Environmental Authorisation dated 17 September 2021). The approved EMPr incorporates specialist recommendations, including wetland protection measures, rehabilitation commitments and implementation of a detailed Stormwater Management Plan. The approved EMPr therefore does not require amendment, and is attached as Appendix H.

The proposed amendment does not introduce new impact pathways that were not previously assessed during the Basic Assessment process. Rather, it results in a limited adjustment to the wetland buffer configuration within the already authorised development footprint. Accordingly, the mitigation measures, specialist rehabilitation recommendations and stormwater management controls previously approved remain applicable and enforceable for the amended layout.

The impact assessment presented below therefore confirms the adequacy of the existing approved mitigation framework, with specific emphasis on continued implementation of the specialist's wetland rehabilitation and buffer management measures.

The potential impacts associated with the construction phase of the project, with mitigation measures, are provided in Table 7.

Table 7: Impacts Associated with the Construction Phase

Activity	Aspect/Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
Construction of a truck departure lane within the approved development footprint and wetland buffer.	**Surface Water Flow Patterns** • Localised alteration of runoff and potential diversion of flow within buffer area (no direct alteration of the wetland channel or habitat).	Duration	1	• No encroachment into the delineated wetland boundary is permitted. • The wetland boundary must be clearly demarcated prior to construction and treated as a no-go area. • The approved stormwater management plan must be implemented in full. • Temporary stormwater diversion and erosion control measures must be installed during construction.	Duration	1
		Extent	1		Extent	1
		Magnitude	3		Magnitude	2
		Probability	4		Probability	3
		Significance Rating	-20 (Low)		Significance Rating	-12 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High
Earthworks and soil disturbance associated with lane construction.	**Soil Erosion & Sediment Mobilisation** • Temporary increase in sediment mobilisation within the buffer area, with potential downstream transport during rainfall events.	Duration	1	• Installation of silt fencing and sediment traps prior to the commencement of earthworks. • No stockpiling of soil within the wetland buffer. • Stabilisation of exposed surfaces immediately after vegetation clearing. • Phased earthworks is recommended to minimise exposed soil areas. • Compliance with erosion control measures contained in the approved EMPr.	Duration	1
		Extent	3		Extent	2
		Magnitude	3		Magnitude	2
		Probability	4		Probability	3
		Significance Rating	-28 (Medium)		Significance Rating	-15 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High
General construction activities	**Wetland Buffer Ecological Functioning**	Duration	1	• Construction activities to remain strictly within the approved development footprint.	Duration	1
		Extent	3		Extent	2
		Magnitude	3		Magnitude	2

Activity	Aspect/Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
(machinery movement, materials handling)	• Temporary disturbance to wetland buffer functioning due to edge effects and construction-related activity (no direct wetland loss).	Probability	3	• Demarcation of remaining buffer as a no-go area. • ECO monitoring as per the approved EMPr to ensure compliance with approved environmental controls.	Probability	2
		Significance Rating	-21 (Medium)		Significance Rating	-10 (Negligible)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources Ranking of Residual Impacts Degree of Certainty	Low Low High
Construction of a truck departure lane resulting in adjustment to previously delineated 30m wetland buffer.	**Wetland Buffer Integrity** • Permanent reduction of approximately 0.45ha of wetland buffer width (no direct wetland loss). *Note: The elevated pre-mitigation significance rating is driven by the permanent duration and definite probability of the buffer reduction, rather than by high ecological magnitude.*	Duration	5	• Continued implementation of the wetland specialist's rehabilitation and "offset" measures approved under the 2021 Basic Assessment as per specialist recommendations. • Formalisation and enhancement of the Bruntville wetland. • Ongoing alien invasive plant control within buffer and adjacent wetland areas. • Maintenance of stormwater infrastructure in accordance with the approved Stormwater Management Plan. • Protection of the remaining buffer as a no-go area. • Compliance with all conditions of the existing Environmental Authorisation and Water Use Licence.	Duration	5
		Extent	1		Extent	1
		Magnitude	3		Magnitude	2
		Probability	5		Probability	4
		Significance Rating	-45 (High)		Significance Rating	-32 (Medium)
		Reversibility	No		Reversibility	No
		Loss of Resources	Medium		Loss of Resources Ranking of Residual Impacts Degree of Certainty	Low Low High

7.3 Impacts Likely to Occur During the Operational Phase

The operational impacts associated with the proposed departure lane are limited to stormwater and sediment-related considerations within the already authorised expansion footprint. The stormwater management system was designed and approved as part of the original Environmental Authorisation and Water Use Licence processes, and remains applicable to the amended layout. Operational impacts are therefore assessed as incremental in nature and controllable through the continued implementation of the approved management framework.

The potential impacts associated with the operation of the departure lanes, with mitigation measures, are provided in Table 8.

Table 8: Impacts Associated with the Operational Phase

Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
Operation and maintenance of departure lane and stormwater infrastructure within the authorised expansion footprint.	**Sediment Deposition within Buffer** • Localised sediment deposition within the reduced buffer area due to runoff from hardened surfaces (incremental to already authorised development)	Duration	4	• Continued implementation of the approved Stormwater Management Plan. • Routine inspection and maintenance of drainage channels and attenuation structures. • Vegetation rehabilitation and maintenance within the remaining buffer area in accordance with the specialist rehabilitation plan. • Immediate repair of any erosion or scouring identified.	Duration	4
		Extent	2		Extent	1
		Magnitude	3		Magnitude	2
		Probability	4		Probability	2
		Significance Rating	-36 (Medium)		Significance Rating	-14 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Low		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High
Operation of departure lane and associated impermeable surface area within the authorised expansion.	**Stormwater Runoff** • Marginal increase in stormwater runoff volume and velocity entering the reduced wetland buffer (managed through engineered stormwater controls).	Duration	4	• Full and ongoing implementation of the approved Stormwater Management Plan. • Regular inspection of stormwater infrastructure, particularly following significant rainfall events. • No informal or uncontrolled discharge points permitted. • Maintenance of vegetative cover within the remaining wetland buffer. • Compliance with Water Use Licence conditions.	Duration	4
		Extent	2		Extent	1
		Magnitude	3		Magnitude	2
		Probability	4		Probability	3
		Significance Rating	-36 (Medium)		Significance Rating	-21 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High

7.4 Cumulative Impacts

In terms of the EIA Regulations, consideration must be given to the potential for cumulative impacts arising from the proposed amendment in combination with existing activities and previously authorised development. Cumulative impacts refer to the incremental environmental effects that may result when the proposed amendment is considered together with the established operations of the Mooi River Truck Stop, the approved expansion footprint, and broader catchment-level influences affecting the wetland system and the Mooi River.

Although the proposed amendment does not result in the direct loss of wetland habitat, it entails a reduction in wetland buffer area and a marginal increase in hardened surfaces. When assessed cumulatively with the existing and authorised infrastructure on site, these changes may contribute incrementally to reduced buffer effectiveness, altered stormwater dynamics, and sediment transport within the local wetland system. These potential effects must therefore be considered within the broader environmental context, including existing anthropogenic pressures within the catchment.

The cumulative impacts associated with the proposed amendment are assessed in Table 9 below.

Table 9: Cumulative Impacts Associated with the Proposed Amendment

Source of Cumulative Effect	Cumulative Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
Existing truck stop operations and previously authorised expansion with proposed departure lane.	Progressive reduction in wetland buffer width and ecological functioning.	Duration	4	• Limit further encroachment into wetland buffer. • Implement specialist rehabilitation plan including alien invasive plant control measures. • Ongoing buffer management.	Duration	4
		Extent	1		Extent	1
		Magnitude	4		Magnitude	2
		Probability	4		Probability	2
		Significance Rating	**-36 (Medium)**		Significance Rating	**-14 (Low)**
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High
Incremental increases in hardened surfaces.	Increased stormwater runoff volume and velocity entering the wetland buffer.	Duration	4	• Full implementation and maintenance of approved stormwater management plan. • Regular inspection of drainage and stormwater infrastructure. • Stabilisation of disturbed areas.	Duration	4
		Extent	3		Extent	1
		Magnitude	3		Magnitude	2
		Probability	4		Probability	3
		Significance Rating	**-40 (Medium)**		Significance Rating	**-21 (Low)**
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High

Source of Cumulative Effect	Cumulative Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
Construction and operational sediment contributions with existing upstream pressures.	Incremental sedimentation and reduced resilience of downstream wetlands.	Duration	4	• Implementation of erosion and sediment control. • Maintenance of vegetated wetland buffer.	Duration	4
		Extent	3		Extent	1
		Magnitude	4		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-33 (Medium)		Significance Rating	-14 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High
Wetland buffer loss within broader Mooi River catchment.	Reduced local capacity of wetland system to absorb existing upstream water quality pressures (e.g. Bruntville flows).	Duration	4	• Formalisation of Bruntville wetland as per approved specialist rehabilitation plan. • Implementation of appropriate stormwater management measures.	Duration	4
		Extent	4		Extent	3
		Magnitude	3		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-33 (Medium)		Significance Rating	-18 (Low)
		Reversibility	Yes		Reversibility	Yes
		Loss of Resources	Medium		Loss of Resources	Low
					Ranking of Residual Impacts	Low
					Degree of Certainty	High

8. ADVANTAGES & DISADVANTAGES OF THE PROPOSED AMENDMENT

Approval of the proposed amendment will enable the safe and efficient movement of trucks within the authorised expansion area, reducing the likelihood of congestion and extended idling periods. This will result in:

- Reduced air emissions from stationary and slow-moving heavy vehicles;
- Lower fuel consumption due to improved circulation efficiency; and
- Reduced noise emissions associated with idling and stop-start movements.

By enabling the expanded parking area to operate as intended, the amendment also supports:

- Reduced pressure on informal/unregulated roadside stopping, which helps to mitigate environmental degradation along the N3 corridor;
- Better containment of operational activities within a controlled and serviced site; and
- Maintained stormwater control and wastewater management already approved and designed for the facility, thereby avoiding unmanaged discharges elsewhere.

The footprint of disturbance remains within the area already authorised, with only minor adjustment to the wetland buffer edge. Specialist assessment has confirmed that this results in a low residual environmental risk, while delivering operational and safety benefits that help ensure efficient, compliant long-term use of the site.

The primary disadvantage of the proposed departure lanes relates to the reduction of the established wetland buffer associated with a delineated wetland located to the south of the site. While the amended layout does not result in the direct loss of wetland habitat, it will lead to the loss of approximately 0.45 ha of wetland buffer, with buffer widths reduced in places to as little as approximately 8.6m. The reduction in buffer width diminishes its effectiveness in fulfilling key ecological functions, including the attenuation of stormwater flows, filtering of sediments, and protection of wetland ecological processes. The specialist has further noted that the compromised buffer may increase the risk of indirect impacts, such as elevated sedimentation, edge effects, and increased stormwater inputs associated with road infrastructure and traffic movement.

Although these impacts have been assessed as low risk in terms of the Department of Water and Sanitation Risk Assessment Matrix, the loss of buffer area represents a permanent change to the existing buffer configuration and necessitates the implementation of appropriate mitigation and rehabilitation measures to ensure the ongoing protection of downstream wetland and river systems.

9. ENVIRONMENTAL IMPACT STATEMENT

9.1 Summary of Key Findings

This Amendment Report has assessed the environmental implications associated with the proposed development of a dedicated departure lane and associated internal layout adjustments within the already authorised Mooi River Truck Stop expansion area.

The proposed amendment results in a limited reduction of the previously delineated 30m wetland buffer, with approximately 0.45 ha of buffer area being permanently modified. Importantly, no direct loss of wetland habitat will occur.

The Wetland Risk Assessment undertaken by NatureStamp (Pty) Ltd confirmed that:

- Risks to the wetland system during construction and operation are low;
- No fatal flaws were identified; and
- Impacts can be adequately mitigated through implementation of the approved Stormwater Management Plan and specialist rehabilitation measures.

The Department of Water and Sanitation has reviewed the proposed buffer reduction through the Water Use Licence process and has authorised the layout, confirming acceptability from a water resource protection perspective.

The impact assessment undertaken in Chapter 7 indicates that:

- Construction-phase impacts are predominantly short-term and reversible;
- The permanent loss of buffer area represents the most significant impact, but can be reduced to Medium significance through mitigation and rehabilitation;
- Operational impacts are Low following implementation of stormwater management measures; and
- Cumulative impacts are not anticipated to result in significant degradation of the wetland system or downstream Mooi River.

It is noted that the permanent loss of approximately 0.45ha of wetland buffer was assigned a High significance rating prior to mitigation. This rating is primarily driven by the permanent duration (score of 5) and definite probability (score of 5) in accordance with the adopted significance methodology. The elevated rating therefore reflects the certainty and permanence of the modification, rather than a high ecological magnitude of impact. The magnitude of the impact on ecological functioning remains moderate, as no direct wetland habitat will be lost and specialist assessment confirms that residual risk to the wetland system is low. Following implementation of mitigation and rehabilitation measures, the significance is reduced to Medium, reflecting the permanent nature of the buffer adjustment but acknowledging the limited ecological consequence.

The proposed amendment does not trigger any additional listed activities in terms of the EIA Regulations and does not alter the overall scale, capacity or function of the authorised development.

9.2 Confirmation Regarding the Approved Environmental Management Programme

In accordance with Regulation 32(a)(iii) of the EIA Regulations, 2014 (as amended), consideration has been given to whether the proposed amendment necessitates any changes to the approved Environmental Management Programme (EMPr).

An EMPr was compiled and approved as part of the Basic Assessment process for the Mooi River Truck Stop Expansion Project (Environmental Authorisation dated 17 September 2021). The approved EMPr incorporates mitigation measures and specialist recommendations relating to wetland and buffer protection, stormwater management, erosion control, rehabilitation, alien invasive plant control, and environmental monitoring.

The proposed amendment entails a localised adjustment to the wetland buffer configuration within the already authorised development footprint. The amendment does not introduce new listed activities, new infrastructure types, or new environmental impact pathways that were not previously assessed.

The mitigation measures required to manage the impacts associated with the amended layout are already comprehensively addressed within the approved EMPr and associated specialist recommendations.

Accordingly, no amendments to the approved EMPr are considered necessary. The existing EMPr remains applicable, enforceable, and sufficient to manage the impacts associated with the proposed amendment.

9.3 EAP's Opinion as to Whether the Proposed Activity Should be Authorised

Having considered:

- The findings of the wetland specialist;
- The DWS Risk Assessment Matrix outcomes;
- The Water Use Licence approval;
- The implementation of the approved Stormwater Management Plan;
- The approved proposed rehabilitation and buffer management measures; and
- The outcome of the public participation process,

It is the reasoned opinion of the Environmental Assessment Practitioner that the proposed amendment will not result in unacceptable environmental degradation or irreversible loss of ecological function.

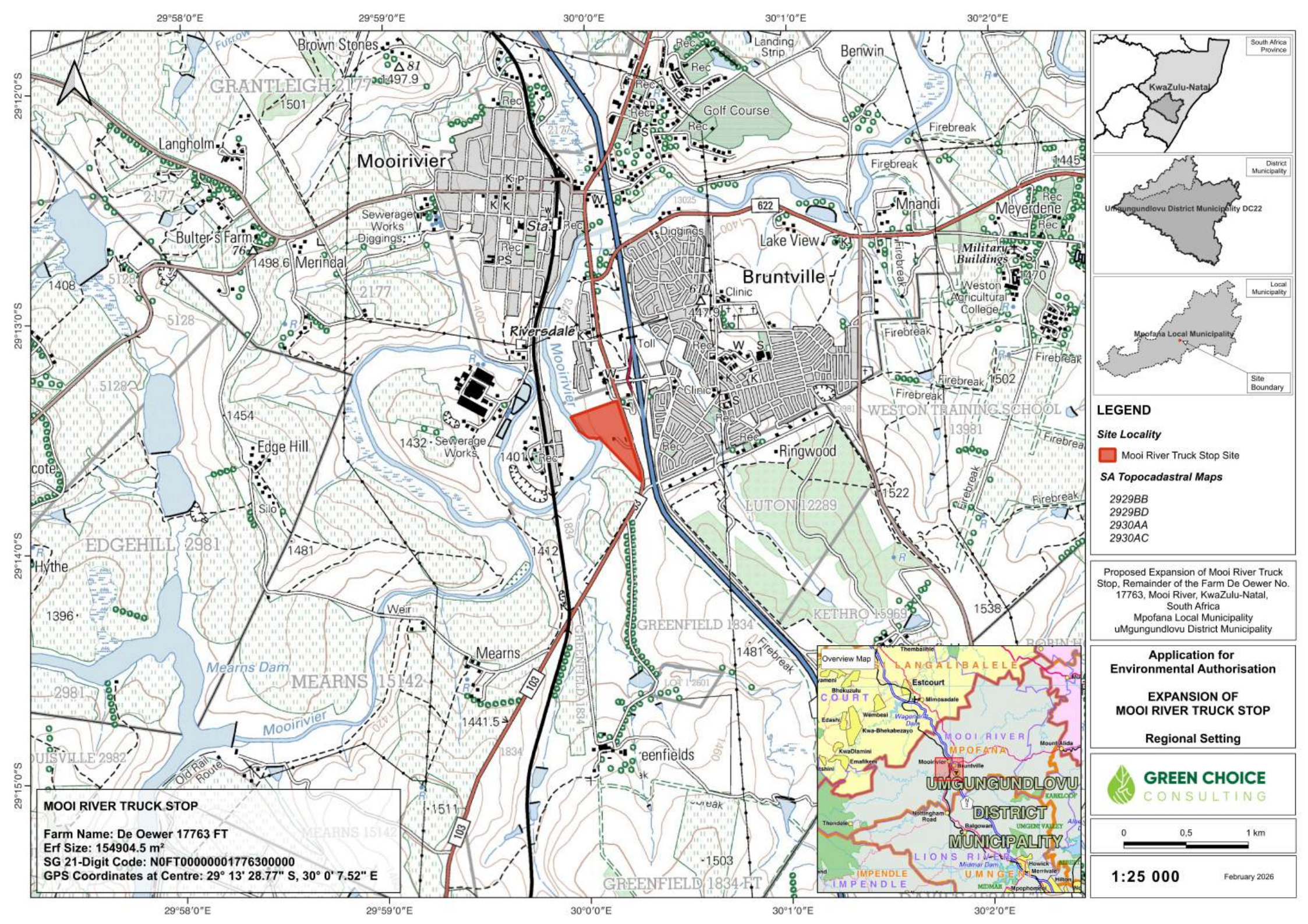
While the reduction in wetland buffer width represents a permanent modification to the site configuration, the absence of direct wetland loss, combined with enforceable mitigation measures and specialist rehabilitation commitments, ensures that residual impacts remain within acceptable levels.

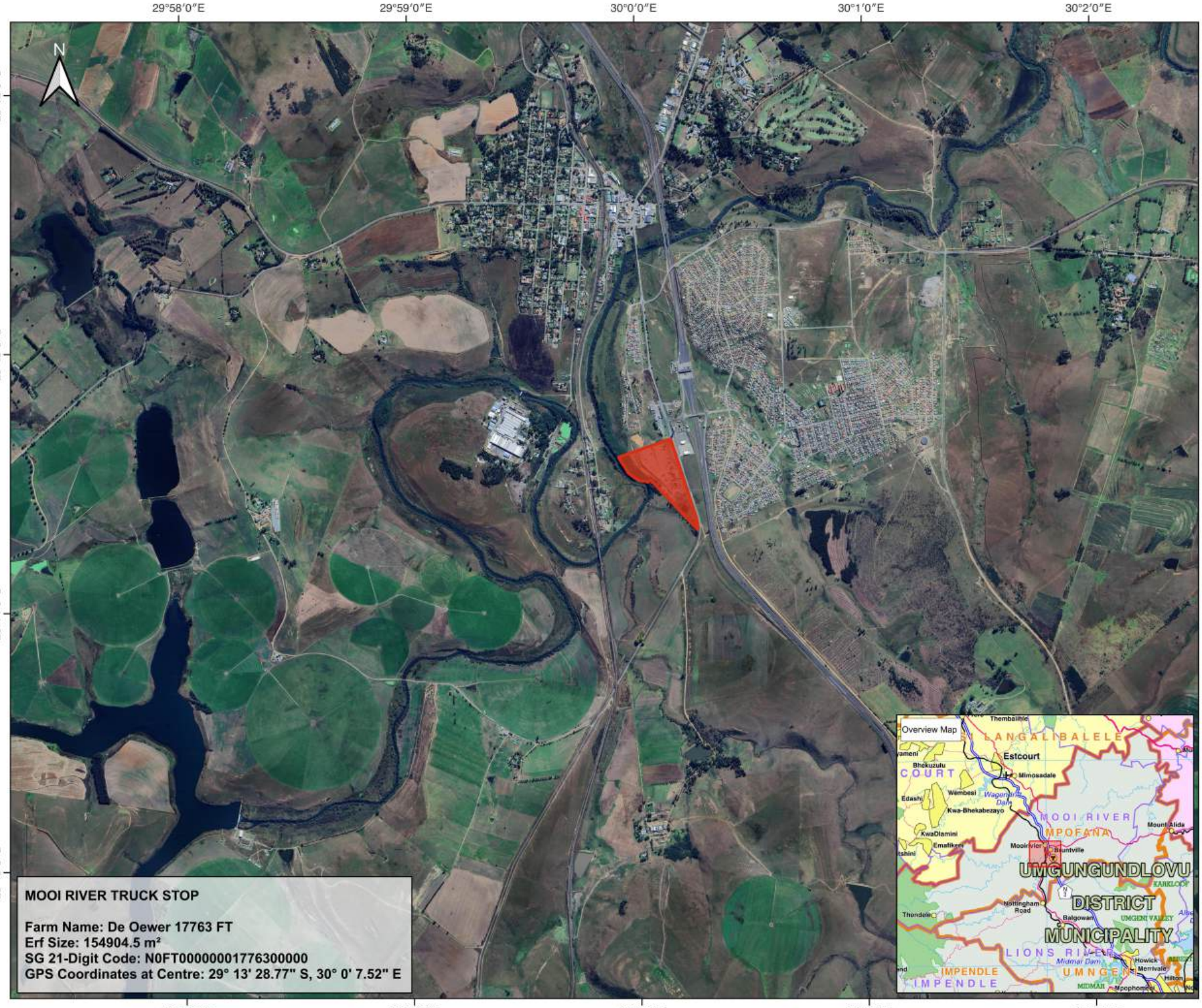
The amendment improves operational safety and efficiency within an already authorised footprint, without introducing new environmental risks.

It is therefore recommended that the Competent Authority approve the proposed Part 2 Amendment, subject to the continued implementation of:

- The approved Stormwater Management Plan;
- The specialist rehabilitation and alien invasive control measures;
- Ongoing maintenance of stormwater infrastructure; and
- Compliance with all conditions of the existing Environmental Authorisation and Water Use Licence.

APPENDIX A: LOCALITY & SENSITIVITIES MAP


29°58'0"E
29°59'0"E
30°0'0"E
30°1'0"E
30°2'0"E
29°12'0"S
29°13'0"S
29°14'0"S
29°15'0"S
Brown Stones
GRANTLEIGH 2177
Langholm
Mooirivier
Bulter's Farm
Merindal
Sewerage Works
Diggings
Landing Strip
Benwin
Golf Course
Firebreak
Mnandi
Meyerdene
Lake View
Military Buildings
Bruntville
Weston Agricultural College
Riversdale
Toll
Clinic
WESTON TRAINING SCHOOL
Ringwood
LUTON 12289
Edge Hill
EDGEHILL 2981
Hythe
Silo
Weir
Mearns
Mearns Dam
MEARNS 15142
Mooirivier
Old Rail Route
GREENFIELD 1834
KETHRO 15969
622
103
MOOI RIVER TRUCK STOP
Farm Name: De Oewer 17763 FT
Erf Size: 154904.5 m²
SG 21-Digit Code: N0FT00000001776300000
GPS Coordinates at Centre: 29° 13' 28.77" S, 30° 0' 7.52" E
Overview Map
LANGALIBALELE
Estcourt
Bhekuzulu
Mimosadale
Wembezi
Kwa-Bhekabezayo
KwaDlamini
Emaklikeni
MOOI RIVER
MPOFANA
Mount Alida
Mooirivier
Bruntville
UMGUNGUNDLOVU
DISTRICT
MUNICIPALITY
Nottingham Road
Balgowan
Howick
Merrivale
Hilton
IMPENDLE
LIONS RIVER
UMNGENI
South Africa Province
KwaZulu-Natal
District Municipality
Umgungundlovu District Municipality DC22
Local Municipality
Mpofana Local Municipality
Site Boundary
LEGEND
Site Locality
Mooi River Truck Stop Site
SA Topocadastral Maps
2929BB
2929BD
2930AA
2930AC
Proposed Expansion of Mooi River Truck Stop, Remainder of the Farm De Oewer No. 17763, Mooi River, KwaZulu-Natal, South Africa
Mpofana Local Municipality
uMgungundlovu District Municipality
Application for Environmental Authorisation
EXPANSION OF MOOI RIVER TRUCK STOP
Regional Setting
GREEN CHOICE CONSULTING
0
0,5
1 km
1:25 000
February 2026



LEGEND

Site Locality

Mooi River Truck Stop Site

Base Maps

Google Satellite

Proposed Expansion of Mooi River Truck Stop, Remainder of the Farm De Oewer No. 17763, Mooi River, KwaZulu-Natal, South Africa
Mpofana Local Municipality
uMgungundlovu District Municipality

Application for Environmental Authorisation

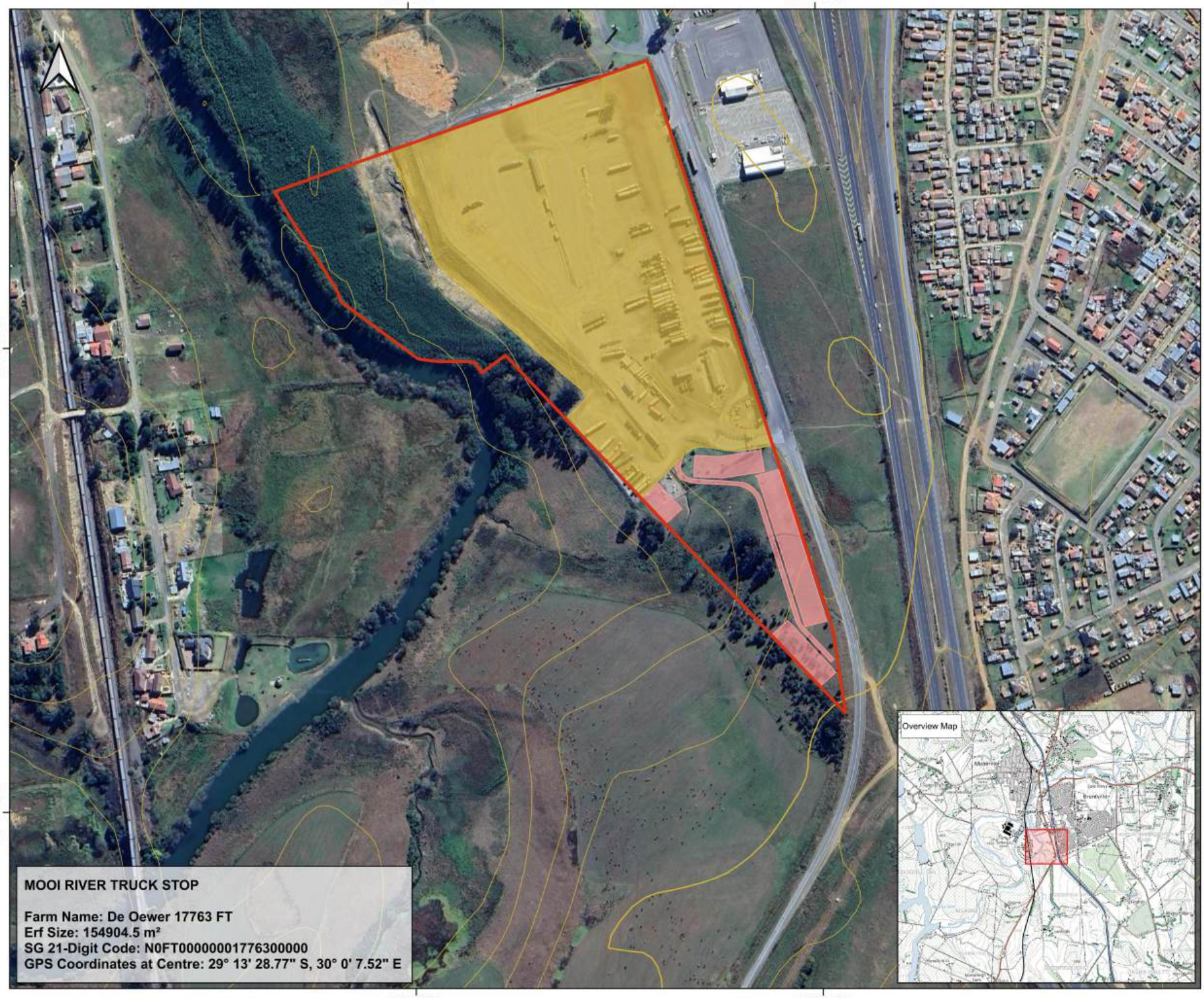
EXPANSION OF MOOI RIVER TRUCK STOP

Regional Setting

GREEN CHOICE CONSULTING

0 0,5 1 km

1:25 000 February 2026



LEGEND

MRTS Site Layout

Property Boundary

Existing MRTS Footprint

Existing Parking and Infrastructure

Proposed New MRTS Footprint

New Parking and Infrastructure

Topography

Contour Lines (5m Interval)

100m Major Contour Line

5m Minor Contour Line

Base Maps

Google Satellite

Proposed Expansion of Mooi River Truck Stop, Remainder of the Farm De Oewer No. 17763, Mooi River, KwaZulu-Natal, South Africa
Mpofana Local Municipality
uMgungundlovu District Municipality

Application for Environmental Authorisation

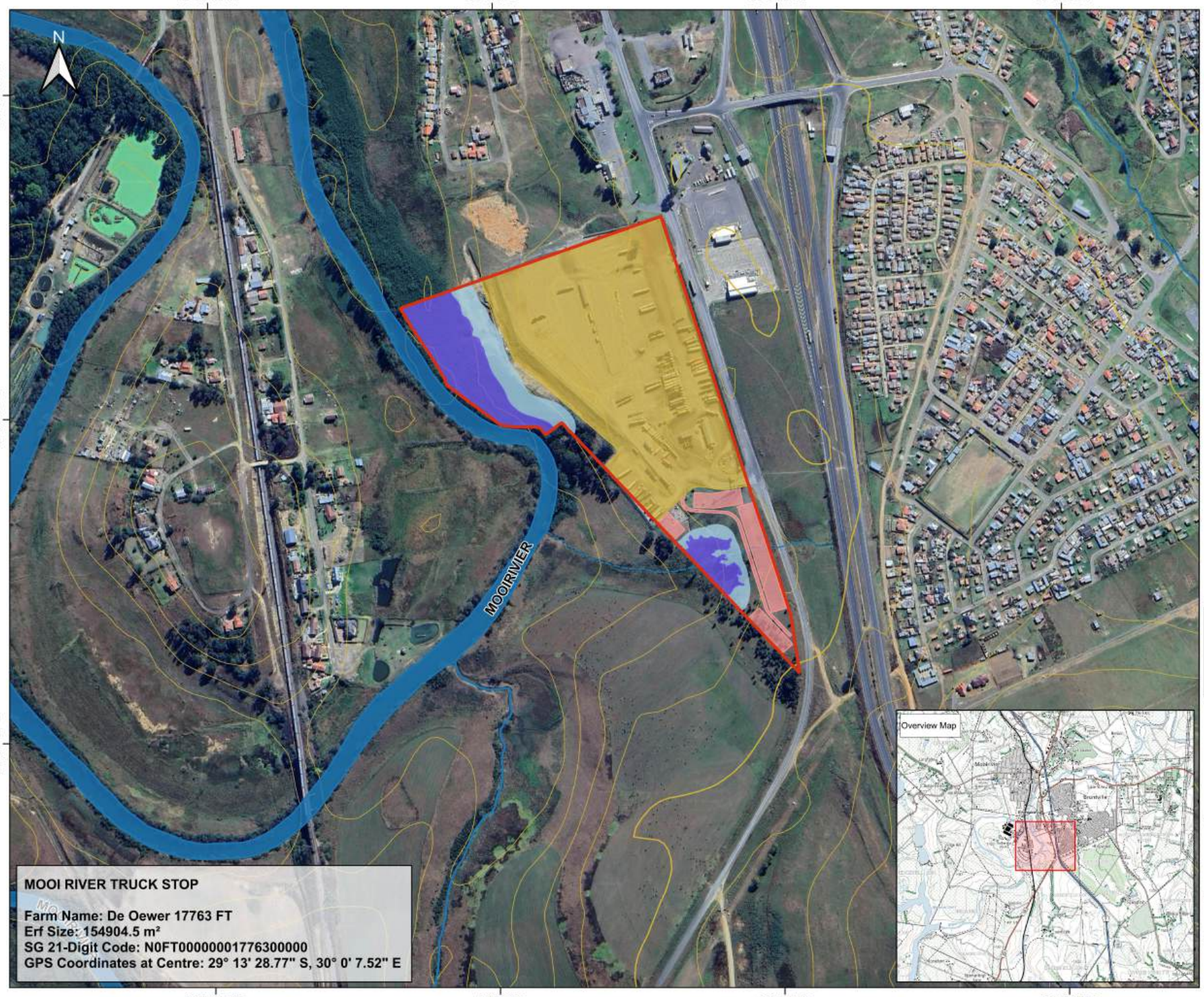
EXPANSION OF MOOI RIVER TRUCK STOP

Site Layout

GREEN CHOICE CONSULTING

0 50 100 m

1:3 500 February 2026



LEGEND

MRTS Site Layout

Property Boundary

Existing MRTS Footprint

Existing Parking and Infrastructure

Proposed New MRTS Footprint

New Parking and Infrastructure

Site Sensitivities

Delineated Wetlands

Wetland Buffers

Surrounding Hydrology

Perennial Systems

Perennial River

Non-Perennial Systems

Non-Perennial River

Drainage Channel

Topography

Contour Lines (5m Interval)

100m Major Contour Line

5m Minor Contour Line

Base Maps

Google Satellite

Proposed Expansion of Mooi River Truck Stop, Remainder of the Farm De Oewer No. 17763, Mooi River, KwaZulu-Natal, South Africa
Mpofana Local Municipality
uMgungundlovu District Municipality

Application for Environmental Authorisation

EXPANSION OF MOOI RIVER TRUCK STOP

Site Sensitivities (Hydrology)

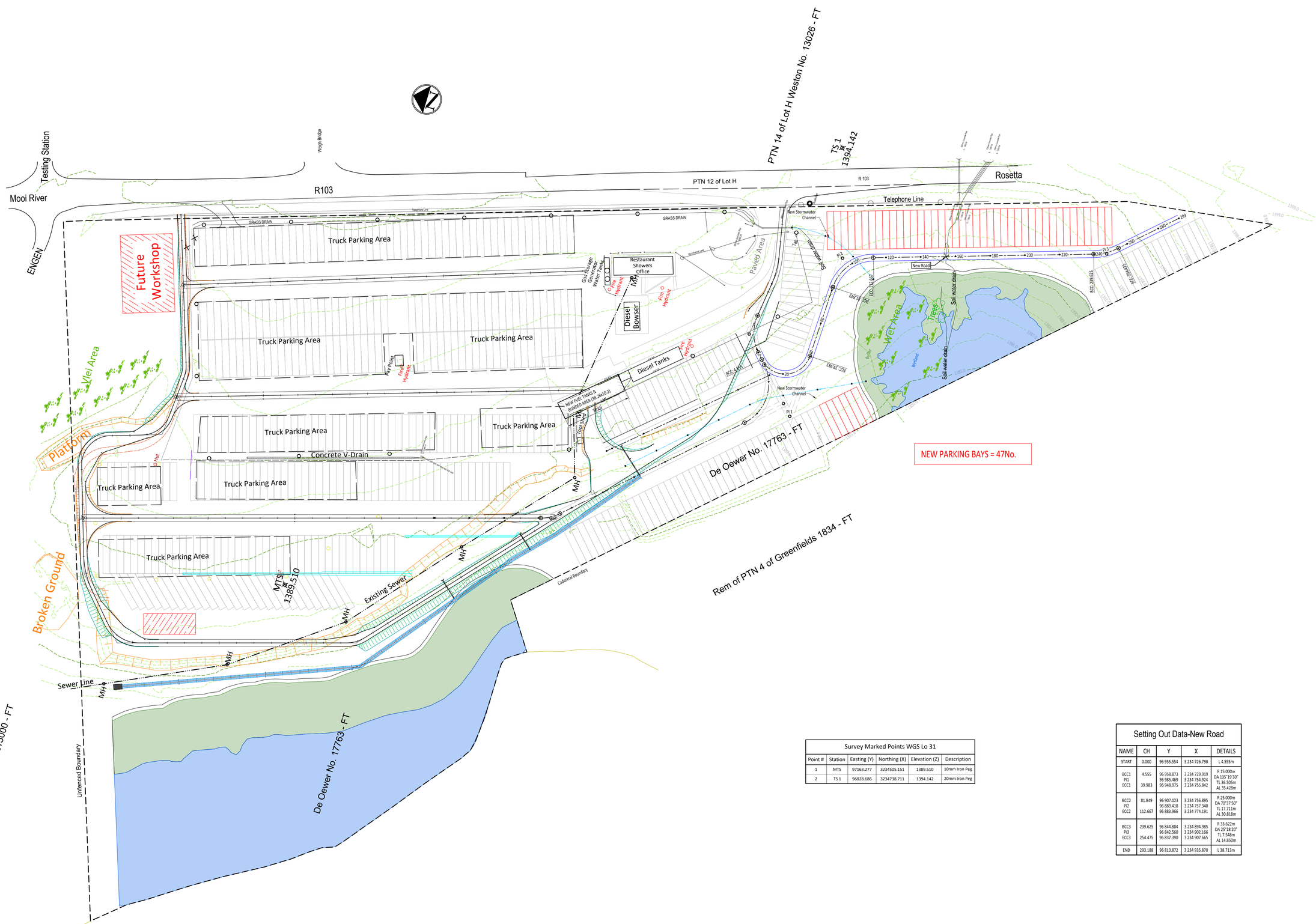
GREEN CHOICE CONSULTING

0 50 100 m

1:5 000

February 2026

APPENDIX B: AMENDED SITE LAYOUT PLAN



Survey Marked Points WGS Lo 31					
Point #	Station	Easting (Y)	Northing (X)	Elevation (Z)	Description
1	MTS	97163.277	3234505.151	1389.510	10mm Iron Peg
2	TS 1	96828.686	3234738.711	1394.142	20mm Iron Peg

Setting Out Data-New Road				
NAME	CH	Y	X	DETAILS
START	0.000	96 955.554	3 234 726.798	L 4.555m
BCC1 PI1 ECC1	4.555 39.983	96 958.873 96 985.469 96 948.975	3 234 729.919 3 234 754.924 3 234 755.842	R 15.000m DA 135°19'30" TL 36.505m AL 35.428m
BCC2 PI2 ECC2	81.849 112.667	96 907.123 96 889.418 96 883.966	3 234 756.895 3 234 757.340 3 234 774.191	R 25.000m DA 70°37'50" TL 17.711m AL 30.818m
BCC3 PI3 ECC3	239.625 254.475	96 844.884 96 842.560 96 837.390	3 234 894.985 3 234 902.166 3 234 907.665	R 33.622m DA 25°18'20" TL 7.548m AL 14.850m
END	293.188	96 810.872	3 234 935.870	L 38.713m

Notes

Reference Drawing

Ref Number	Description

Revision Details	By	Rev Date	Suffix
Added Additional Parking Bays	JSM	25/7/21	B
Revised As Per Client	JSM	25/7/21	B
Issued For Information	JSM	18/7/21	A

Client
Mooi River Truck Stop (Pty) Ltd

Mooi River
Old Main Road
Kwazulu Natal 3300
Tel.: (033) 263-2673 Fax.: (033) 263-2673

Approved On Behalf Of Client
By:
Signature:

HEMINGWAY AND ASSOCIATES cc
Consulting Engineers
Fuschia Grove Farm
D183 Mount West
P.O. Box 91 Mooi River 3300
Kwa-Zulu Natal
South Africa
Email: Rob.Archer@iburstwc.com
Cell: +27 (0)3 263-2673

Approved On Behalf Of Hemingway And Associates
By: (Pr. No.)
Signature:
Date:

Project
Mooi River Truck Stop
Additions & Extensions

Title
Proposed Site Plan

Scale
1:750

Drawn	Designer
J.S.M.	J.S.M.

Check	Tech Check	Date
M.S.H.	M.S.H.	01-09-24

Project Number	Drawing Number	Revision
21052	C02	C

APPENDIX C: EAP CV & EAPASA CERTIFICATION

CURRICULUM VITAE OF SARAH STALBERG

(NEE FERNANDES)

Hi there! My name is Sarah Stalberg and I am a passionate registered Environmental Assessment Practitioner with 15 years' experience in various fields of environmental management. My interests lie in environmental impact assessment, environmental auditing, and compliance.

CONTACT

PHONE:
+27 71 851 6976

EMAIL:
sarah@greenchoiceconsulting.co.za

DATE OF BIRTH

24 January 1985

RESIDENCE

Gillitts, KwaZulu-Natal

QUALIFICATIONS

University of KwaZulu-Natal
2008 - 2012
MSc (Environmental Science)
Thesis Title: An Analysis of the Net Flux of Nitrates from the Isipingo, Mgeni and Tongati Estuaries of the eThekwini Metropolitan Area, KwaZulu-Natal, South Africa.

University of KwaZulu-Natal
2007
BSc Honours (Geography & Environmental Management)
Thesis Title: Investigating the Impacts of the March 19th Storm on the Geomorphology of Zinkwazi Beach.
Golden Key International Honour Society Membership Awarded.

University of KwaZulu-Natal
2003 – 2006
BSc (Geography & Environmental Management)

ADDITIONAL COURSES

Business Success Solutions
2024
Practical Implementation of Environmental Auditing and Monitoring

SE Solutions
2023
Integrated Environmental Management

Business Success Solutions
2022
Environmental Legal Compliance, Auditing & Monitoring

Terra Firma Academy
2021
Solar Feasibility Assessment
Certificate of Competency achieved.

Terra Firma Academy
2020
Carbon Footprint Analyst
Certificate of Competency achieved.

Institute of Waste Management of South Africa
2018
Waste Legislation Training Course

University of South Africa (UNISA)
2016
Programme in Business Management – passed with distinction

South African Association for Marine Biological Research (SAAMBR)
2015
Introduction to Marine Biology Course

Marine & Estuarine Research (MER)
2009
The Management of Estuaries in South Africa Course

PUBLICATIONS

Environmental Science Journal
A Study of the Net Flux of Nitrates from Estuaries of the eThekwini Municipality of Durban, KwaZulu-Natal

Reference: Fernandes, S. & S. Pillay, 2012 A study of the net flux of nitrates from estuaries of the eThekwini Municipality of Durban, KwaZulu-Natal, South Africa. Environ Earth Sci. J.: 67 (8), 2193 – 2203. DOI 10.1007/s12665-012-1659-2.

MEMBERSHIPS

Environmental Assessment Practitioners Association of South Africa (EAPASA)
Registered Environmental Assessment Practitioner
Registration No: 2019/1841

International Association for Impact Assessment (IAIASA)
Membership No: 6673

WORK EXPERIENCE

Green Choice Consulting – Founder & Registered Environmental Assessment Practitioner
January 2021 – Present
Green Choice Consulting offers the following environmental consulting services:

- Basic Assessments.
- Scoping & Environmental impact reporting.
- Waste management license applications.
- Water Use License applications.
- Environmental feasibility assessments.
- Environmental due diligence assessments.
- Environmental management programmes.
- Environmental monitoring & auditing.
- Environmental advice.
- Carbon footprint analysis.

Green Office (Pty) Ltd – Sustainability Officer
January 2018 – 2020
My duties included:

- Develop environmental strategies that ensure corporate sustainable development.
- Continually strive for improved environmental performance within the organization.
- Monitor and ensure compliance with environmental legislative requirements.
- Calculate, analyze and report on the organization's carbon footprint.
- Oversee and ensure best practice surrounding waste management and recycling.
- Lead ISO 14001: 2015 within the organization and assist with ISO 9001: 2015.
- Provide input in quarterly SHE meetings.
- Lead environmental strategies that enhance environmental sustainability for the organization's clients.
- Drive awareness on environmental issues both internally and for the organization's clients.
- Driving One Planet Living within the organization.

Marine & Estuarine Research – Consultant
April 2016 – November 2017
My duties at Marine & Estuarine Research included:

- Management of biomonitoring projects associated with the estuarine/coastal environment.
- Water quality, sediment and benthic macroinvertebrate sampling.
- Processing scientific data.
- Interpretation and analysis of data and results.
- Report preparation.
- Consultation with various stakeholders, clients, specialists and organs of state.
- Environmental impact assessment.

Kantey & Templer Consulting Engineers – Environmental Scientist
January 2011 – March 2016
I undertook and managed various environmental impact assessments for clients within the petro-chemical industry. My duties included:

- Management of the environmental impact assessment process.
- Preparation of Basic Assessments, Scoping and EIA reports.
- Management of the public participation process.
- Preparation of environmental management programmes.
- Client, specialist and government liaison.
- Preparation of environmental queries.
- Performed the duties of an environmental control officer (ECO).
- Preparation of environmental audit reports.
- Preparation of proposal and cost estimates and invoicing of projects.

Kerry Seppings Environmental Management Specialists – Junior Environmental Consultant
March 2010 – August 2010
I began my career working as a junior environmental consultant at KSEMS. My duties included:

- Environmental authorization application and report preparation.
- Involvement in the public participation process.
- Project research.
- Performing duties of an environmental control officer.

REFERENCES

Sharon Joubert (ex-supervisor at Green Office
Tel: 084 511 3333

Bianca McKelvey Morgan (previous colleague at Marine & Estuarine Research)
SAAMBR
Ushaka Marine World
Point
Durban
Tel: 071 625 0829
Email: bmckelvey@ori.org

Torin Pfotenhauer
Kantey & Templer Consulting Engineers
9/11 University Road
Westville
Tel: 031 266 6535

Kerry Stanton
Kerry Seppings Environmental Management Specialists
4 Woodville Lane
Summerveld
Tel: 082 823 1844

Environmental Assessment Practitioners Association of South Africa

Registration No. 2019/1841

Herewith certifies that

SARAH KATE STALBERG

is registered as an

Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective: 01 April 2026

Expires: 31 March 2027

Chairperson

Registrar

SAQA
SOUTH AFRICAN QUALIFICATIONS AUTHORITY

APPENDIX D: MRTS WULA

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X9029, DURBAN, 4000 , Southern Life Building 88 Joe Slovo Street, DURBAN, 4000, www.dws.gov.za

Enquiries: Mrs B Dukhea
Email: dukheab@dws.gov.za
Ref. No: WU35717

Tel: 031 336 2872
Fax: AssessorFax
File No: 27/2/1/V520/4/5/8

Mooi River Truck Stop (Pty) Ltd
PO Box 107 Mooi River
3300

Dear Mr. S Palmer

REGISTRATION OF WATER USE IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, NO 36 OF 1998: FOR THW MOOI RIVER TRUCK STOP EXPANSION PROJECT IN QUATERNARY CATCHMENT V20E, PONGOLA - MZIMKHULU - DURBAN

Your request dated 13 August 2024 to be registered to use water in terms of General Authorisation no. 4167 dated 08 December 2023 refers.

The Department is pleased to confirm that the intended water use falls within the ambit of the General Authorisation. Therefore, you may continue with the water uses as permissible in terms of Section 22 (1) (a) (iii) of the NWA. You are therefore requested to adhere to the conditions stipulated in the said General Authorisation.

Water use(s) registered:

No	Water Use Section 21	Quat	Property Description	Purpose	Co-ordinates	Vol/Discharge Vol (m3/Year)	Capacity (m3/Year)
1	(i)	V20E	The Farm De Oewer No. 17763	Establishment of the Mooi River Truck Stop Within a 500m radius of a wetland.	-29.224955716299224, 30.00237129839609	N/A	N/A
2	(c)	V20E	The Farm De Oewer No. 17763	Establishment of the Mooi River Truck Stop Within a 500m radius of a wetland.	-29.224918263663756, 30.002392756068268	N/A	N/A

You are required to fully comply with the conditions of aforementioned Government Notices. Please take note that if you do not comply with the conditions of the General Authorisation, your Section 21 (c) and (i) water uses will be regarded as unlawful. You may subsequently be required to apply for a water use licence in terms of the National Water Act, (Act 36 of 1998), however the issuing of such a licence cannot be guaranteed. Furthermore, failure to comply with the conditions of the General Authorisations constitutes an offence and is subject to a penalty as set out in Section 151(2) of the Act.

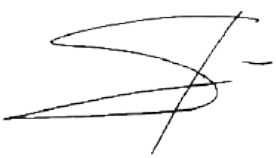
Your attention is further drawn to the following:

1. This Department reserves the right to request additional measures that could be taken, which may include an application for a water use licence, should the activity be deemed to cause a significant impact to the environment
2. This Authorisation is valid as per the General Authourisation Notice mentioned above, or the water user is required to apply for a licence in terms of the Act. .
3. The conditions of this authorisation shall be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of this activities and the authorised party shall take such measures that are necessary to bind such persons to these conditions.
4. The proposed water use activities have been Generally Authorised because the ecological risks involved are minimal.
5. The responsible person for these activities shall immediately inform the Department of any change in the name, address and/ or premises and legal status.
6. The Department accepts no liability of any damage, loss or inconvenience of whatever nature, suffered as a result of the authorised activities.
7. This Authorisation shall not be construed as exempting the water user from compliance with any other applicable Act, Ordinance, Regulation or By-law.
8. This Department reserves the right to request additional measures that could be taken, which may include an application for a water use licence, should the activity be deemed to cause a significant impact to the environment.

You are required to comply with the conditions of the General Authorisation.

Yours sincerely

Comments:



I, Mr Shaun Oeveshen Naidoo (WULA Manager) herewith electronically sign this document.

Serial Number : 5190184657574405674
WUL Manager
Date: Oct 8 2024 10:25AM

APPENDIX E: PRE-APPLICATION MEETING MINUTES

MINUTES OF PRE-APPLICATION MEETING

MOOI RIVER TRUCK STOP – PROPOSED AMENDMENT TO APPROVED LAYOUT

Meeting Date & Time: 14 March 2024, 12h00

Venue: MS Teams

Attendees:

Shawn Janneker	EDTEA
Mavis Padayachee	EDTEA
Nombasa Kama	EDTEA
Nonto Khumalo	EDTEA
Sphelele Makhwasa	EDTEA
Sarah Stalberg (EAP)	Green Choice Consulting (Pty) Ltd
Johan Maree	Mooi River Truck Stop (Pty) Ltd
Shaun Palmer	Mooi River Truck Stop (Pty) Ltd

1. Purpose of the Meeting

   To introduce and discuss the proposed amendment to the approved Mooi River Truck Stop site layout plan, comprising two additional departure lanes encroaching into an existing wetland buffer on Remainder of Farm De Oewer 17763.

2. Background

   2.1 Environmental Authorisation for the expansion of the truck stop was granted on the 17 September 2021 to include additional fuel storage and truck parking.
   2.2 The wetland in question is an unchanneled valley-bottom wetland, historically influenced by a sewerage outlet pipe, and has a 30m operational buffer applied.
   2.3 The truck stop requires additional maneuvering/turning space for heavy-vehicle safety and flow, necessitating clearance within the wetland buffer (i.e. a reduction in the wetland buffer is required).
   2.4 No new listed activities under NEMA are triggered by the amendment proposal.

3. Presentation Overview

The EAP presented:

3.1 Rationale for the encroachment to ensure safe vehicle movement.
3.2 Confirmation that the wetland impacts were assessed in the Basic Assessment and remain low with mitigation.
3.3 Need to obtain competent authority input on wetland buffer relaxation.

4. EDTEA Comments & Requirements

4.1 EDTEA paused the discussion, noting that the wetland buffer matter falls partially under the Department of Water and Sanitation (DWS) mandate.
4.2 EDTEA required specialist input from the original wetland specialist (NatureStamp), as well as review and written comment from DWS regarding buffer reduction.
4.3 EDTEA indicated that the amendment may need to follow a regulatory amendment process, pending DWS input.

This approach was confirmed in subsequent emails from the EAP to EDTEA.

5. Agreed Way Forward

The following action plan was confirmed via email:

5.1 Obtain wetland specialist risk assessment of encroachment.
5.2 Submit this information to DWS for review and comment.
5.3 Feedback to be provided to EDTEA to determine the environmental authorisation pathway.

6. Meeting Outcome

6.1 The meeting was cut short due to the need for input from the relevant water authority (DWS).
6.2 No final regulatory decision was made at the meeting.
6.3 The EAP committed to distributing specialist findings and DWS feedback to EDTEA for further decision making.

7. Post – Meeting Progress

7.1 Specialist assessment was completed, the risk to the wetland from buffer encroachment and reduction was confirmed as low.
7.2 DWS issued a General Authorisation for the entire site, including the proposed amended layout.
7.3 EDTEA has since determined that a Part 2 NEMA amendment process is required.

The above minutes reflect the shared understanding of the matters discussed and the agreed next steps relating to the proposed amendment.

Signed in agreement with minutes –

Scriber (S. Stalberg)
27/11/2025

Approved (EDTEA)
15/01/2026

APPENDIX F: SPECIALIST COMMENT & REPORT

The White House
NatureStamp (Pty) Ltd
22 Hilton Avenue
Hilton
3245

04 April 2024

THE PROPOSED EXPANSION OF THE MOOI RIVER TRUCK STOP INTO A WETLAND BUFFER AREA

To whom it may concern.

NatureStamp (PTY) Ltd. has been approached to provide comment on the proposed expansion of the Mooi River Truck Stop (MRTS) into an existing wetland buffer zone, as part of a change in layout from the approved expansion (Environmental Authorisation: DC22/0006/2021). MRTS proposes to include two departures / turning lanes exiting from the truck stop, however these lanes are located within a 30m buffer of an already delineated wetland. This letter serves to confirm the risks associated with the proposed expansion and provides a Risk Assessment Matrix as per the Department of Water and Sanitation (DWS) template.

Buffer zones:

A buffer zone is defined by Macfarlane *et al., 2014* as "A strip of land with a use, function or zoning specifically designed to protect one area of land against impacts from another." Functions of buffer zones include:

1. Maintaining basic aquatic processes;
2. Reducing impacts on water resources from upstream activities and adjoining land uses;
3. Providing habitat for aquatic and semi-aquatic species;
4. Providing habitat for terrestrial species; and
5. A range of ancillary societal benefits.

Further to the above, buffer zones are proposed as a standard mitigation measure to reduce impacts of land uses / activities planned adjacent to water resources. Buffer zones are not an appropriate tool for mitigating against point source discharges (such as sewage), which are more effectively managed by targeting through specific source-directed controls (Macfarlane *et al.,* 2014).

Previous findings:

A Watercourse Assessment for the Proposed MRTS expansion was undertaken by Dr Bruce Scott-Shaw of NatureStamp in August 2020, and is appended to this letter (Appendix 1). The report showed that numerous wetlands were noted on site and in the surrounding landscape, with a close proximity to

the NFEPA listed Mooi River (Class B: Largely Natural). No NFEPA Wetlands or Rivers are noted on site, however wetlands on site do drain into the Mooi River. Of particular reference from the report is that the buffer zone determination (Macfarlane *et al.,* 2014), gave an output of 30m around the wetlands on site (please refer to Figure 13 of Appendix 1, and Figure 1 below).

Section 9 of the Watercourse Assessment focused on potential expansion areas in relation to wetlands. The assessment showed that a wetland situated between the N3 and the R103 to Rosetta was an ideal wetland for formalisation (hereafter referred to as Bruntville Wetland). This wetland is providing ecosystem services to the Mooi River by remediating some of the very poor water quality entering the system from Bruntville, which flows into HGM 3 within MRTS. This was confirmed by the water quality assessment which showed that discharge of water onto the MRTS property (HGM 3) is mostly made up of raw sewerage which emanates from Bruntville. Nonetheless, the author notes that the discharge of effluent into the Mooi from Bruntville is a significant concern and should be addressed by formalising the Bruntville Wetland, which will have a positive impact on HGM 3.

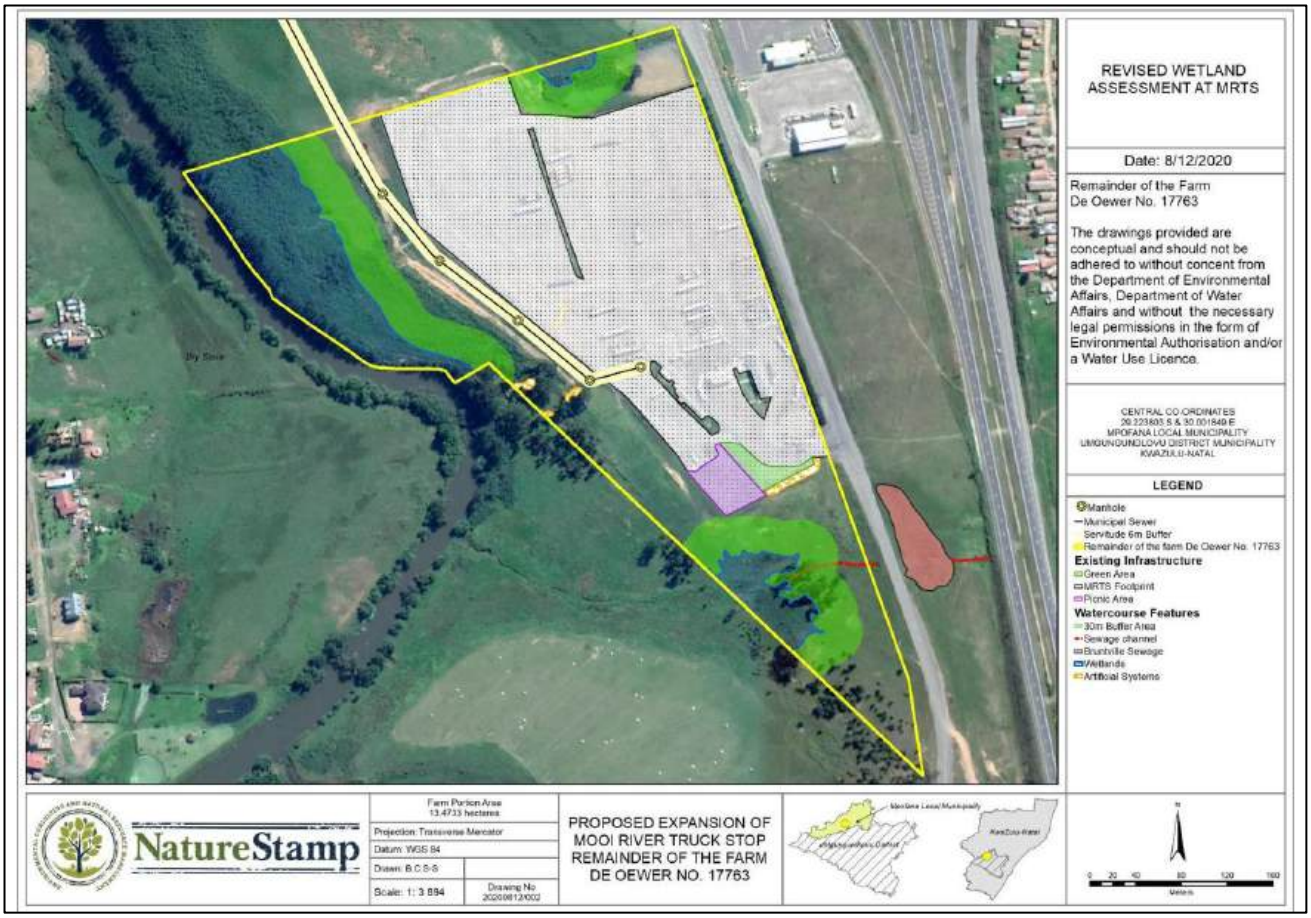


Figure 1: Wetlands and associated buffers noted on site.

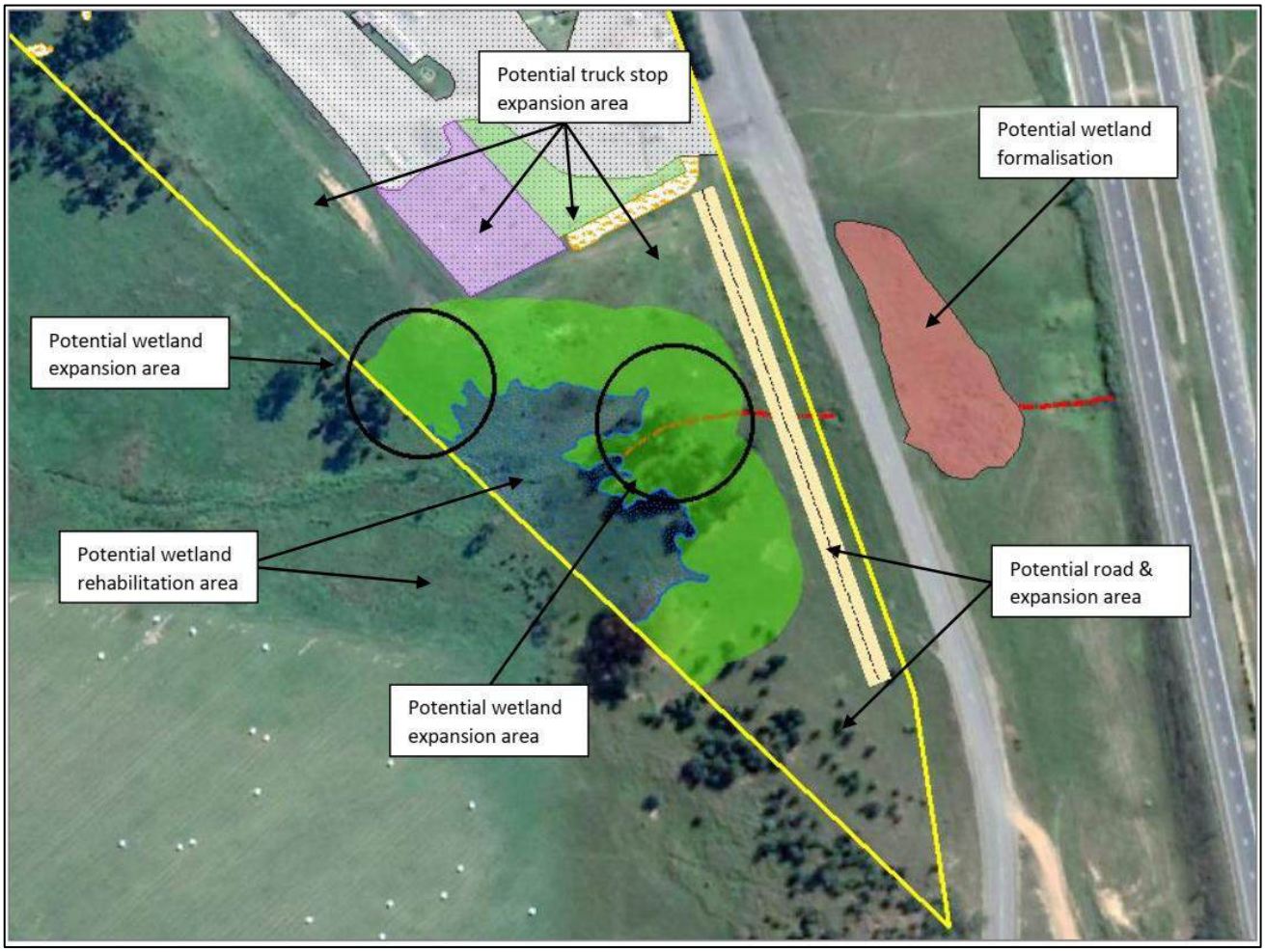


Figure 2: Potential expansion areas and areas for wetland formalisation (NatureStamp 2020).

Proposed layout

The approved layout as per the EA is attached in Appendix 2. A layout change of the proposed expansion of the MRTS has been provided in Appendix 3. The layout change affects the wetland buffer noted to the south of site, but not the wetland itself. The MRTS seeks to relax the buffer zone to allow for space for the truck departure lane to be built, allowing MRTS to expand their business opportunity. The buffer is planned to be reduced by varying widths to as close as 8.6m from the wetland boundary.

Specialist opinion

No direct loss of wetland will occur with the change in layout, however the effectiveness of the buffer to provide protection for the wetland will be compromised, particularly with potential increased sedimentation from the road verge, and increased stormwater inputs. A loss of 0.45 ha of buffer zone will occur due to the proposed layout change. A DWS Risk Assessment Matrix (RAM) has been included to assess the impact of the proposed layout change on the buffer. Of importance is that the DWS RAM has shown that the risk of the loss of a portion of the buffer zone to be **Low**.

Table 1: DWS RAM output for the construction of a truck departure lane in a wetland buffer zone.

Phase	Activity	Impact	Risk Ratings
CONSTRUCTION	Construction of truck departure lane within a 30m wetland buffer zone	Impeding or Diverting the Flow of Water in a Watercourse & Altering the beds, banks course or characteristics of a watercourse.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Edge effects such as the increase in surface flow, dumping of spoil material and soil disturbance.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased activity of workers and machinery on-site (noise, dust, traffic disturbance)	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased sediment loads into downstream wetlands.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Increased sediment loads into downstream wetlands.	L
	Construction of truck departure lane within a 30m wetland buffer zone	Loss of wetland buffer zone to truck departure lane	L
	Construction of truck departure lane and affects within 500m	Increased sediment loads into downstream wetlands.	L
OPERATIONAL	Operation and maintenance of departure lane and stormwater infrastructure	Sedimentation into buffer zone and UCVB wetland directly downstream of departure lane	L

Although risks are deemed to be low to the wetland and its associated buffer, there is still a loss of buffer zone. It is therefore recommended that the findings of the 2020 NatureStamp report, with particular reference to the formalisation of the Bruntville wetland, and control of alien and invasive species of onsite wetlands be implemented to act as a "offset" to the loss of a buffer zone. Details of this can be found in Section 9 of the report. No fatal flaws are noted.

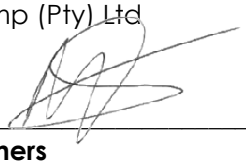
MRTS has indicated their willingness to undertake mitigation measures as per the approved Storm Water Management Plan, and to implement Section 9 of the Watercourse Assessment.

Further to note is that the findings of the Watercourse Assessment by NatureStamp (2020) are still considered relevant.

Should you have any queries, please feel free to contact the undersigned.

Yours faithfully,

Mark Summers
NatureStamp (Pty) Ltd



Signed _____ Date _28/03/2024

Mark Summers
BSc, BSc Hons (Zoology), MSc (Ecological Sciences)
NatureStamp (Pty) Ltd.
Natural Scientist (120309)

Bruce Scott-Shaw
NatureStamp (Pty) Ltd

Signed _____ Date _28/03/2024

Dr Bruce Scott-Shaw
BSc, BSc Hons (Hydrology), MSc (Hydrology), PhD (Hydrology)
NatureStamp (Pty) Ltd. Director
Natural Scientist (118673)

Appendix 1: Watercourse Assessment for the Proposed MRTS expansion

WATERCOURSE ASSESSMENT

FOR THE PROPOSED EXPANSION TO MOOIRIVER TRUCK-STOP, PORTION 15 OF LOT H WESTON 13026 AND SUB 1 OF ILLSLEY 8768, MPOFANA LOCAL MUNICIPALITY, UMGUNGUNDLOVU DISTRICT KWAZULU NATAL

Compiled by

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August 2020
DRAFT REPORT

Acronyms

CVB	Channeled Valley Bottom
DWS	Department of Water & Sanitation
DWAF	Department of Water Affairs & Forestry
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
FEPA	Freshwater Ecosystem Priority Area
GIS	Geographical Information Systems
HGM	Hydro-Geomorphic
IAPs	Invasive Alien Plants
IHI	Index of Habitat Integrity
PES	Present Ecological State
NFEPA	National Freshwater Ecosystem Priority Areas

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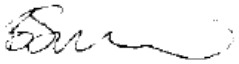
Specialist Details & Declaration

This report has been prepared in accordance with Section 13: General Requirements for Environmental Assessment Practitioners (EAPs) and Specialists as well as per Appendix 6 of GNR 327 Environmental Impact Assessment Regulations and the National Environmental Management Act (NEMA, No. 107 of 1998 as amended 2017). It has been prepared independently of influence or prejudice by any parties. A full declaration of independence has been provided in Annexure F.

The details of Specialists are as follows –

Table 1 Details of Specialist

Specialist	Task	Qualification and accreditation	Client	Signature
Bruce Scott-Shaw NatureStamp	Fieldwork, Assessments & report	BSc, BSc Hon, MSc, PhD, Hydrology	J Maree	 Date: 10/08/2020
Nick Davis Isikhungusethu Environmental Services	Design & GIS	BSc, BSc Hon, MSc Hydrology	J Maree	 Date: 11/08/2020

Details of Authors:

Bruce is a hydrologist, whose focus is broadly on hydrological perspectives of land use management and climate change. He completed his MSc under Prof. Roland Schulze in the School of Bioresources Engineering and Environmental Hydrology (BEEH) at the University of KwaZulu-Natal, South Africa. Throughout his university career he has mastered numerous models and tools relating to hydrology, soil science and GIS. Some of these include ACRU, SWAT, ArcMap, Idrisi, SEBAL, MatLab and Loggernet. He has some basic programming skills on the Java and CR Basic platforms. He has spent most of his spare time doing field work for numerous companies and researchers. Bruce has completed his PhD which focuses on rehabilitation of alien invaded riparian zones and catchments using indigenous trees. The aim is to select Working for Water (WfW) sites throughout the country and use micro-meteorological techniques to measure the water use of both the indigenous and alien tree species in the riparian areas. This research will assist in land rehabilitation and restoration in the highly sensitive riparian areas. A modelling approach has been incorporated into the research to improve the spatial resolution of the research and to work as a management tool. Bruce has worked on numerous projects for the CSIR and Ezemvelo KZN wildlife which has included micrometeorological work, EIAs and wetland mapping for KZN. Bruce has presented his research around the world, where most recently he represented South Africa at the Singapore International Water Week on water policy and implementation.

Details of Reviewer:

Nicholas Davis is a hydrologist whose focus is broadly on hydrological perspectives of land use management, climate change, estuarine and wetland systems. Throughout his studies and subsequent work at UKZN he has mastered several models and programs such as ACRU, HEC-RAS, ArcMap, QGIS, Indicators of Hydrologic Alteration software (IHA) and Idrisi. He has moderate VBA programming skills, basic UNIX and python programming skills.

1. INTRODUCTION

1.1 Project Background and Description of the Activity

The proposed truck-stop (Mooi River Truck Stop – MRTS) expansion is found at 29° 13' 30" south and 30° 00' 15" east, just outside MooiRiver town. The plot (Farm de Oewer No. 17763) is 13.46 hectares in size and is located between the N3 freeway and the Mooi River. The Mooi River (and possibly associated wetlands) runs to the west of the proposed site. This report aims to identify suitable areas for development which fall outside any identified wetlands and sensitivity buffers. A pervious assessment was undertaken for the now approved expansion. The client whiches to determine which areas they could further utilise without impacting upon the environment. The client also wishes to make the truck stop into a green development with minimal impact.

Uninformed and poorly planned construction activities in the vicinity of watercourses can rapidly degrade these systems. Due to the possibility of negative impacts on nearby watercourses, pre-development assessments are required to gain an understanding of the natural environment and guide the planning and approval process in order that site-specific mitigation measures can be put in place.

The project layout includes the expansion of the existing developed area to include a road (likely in the place of an old vegetable garden, which is now a picnic area). The site has been re-assessed by NatureStamp since the first assessment in 2015.

The proposed development layout is seen in Figure 1.

Figure 1 The typical setting around the MRTS area

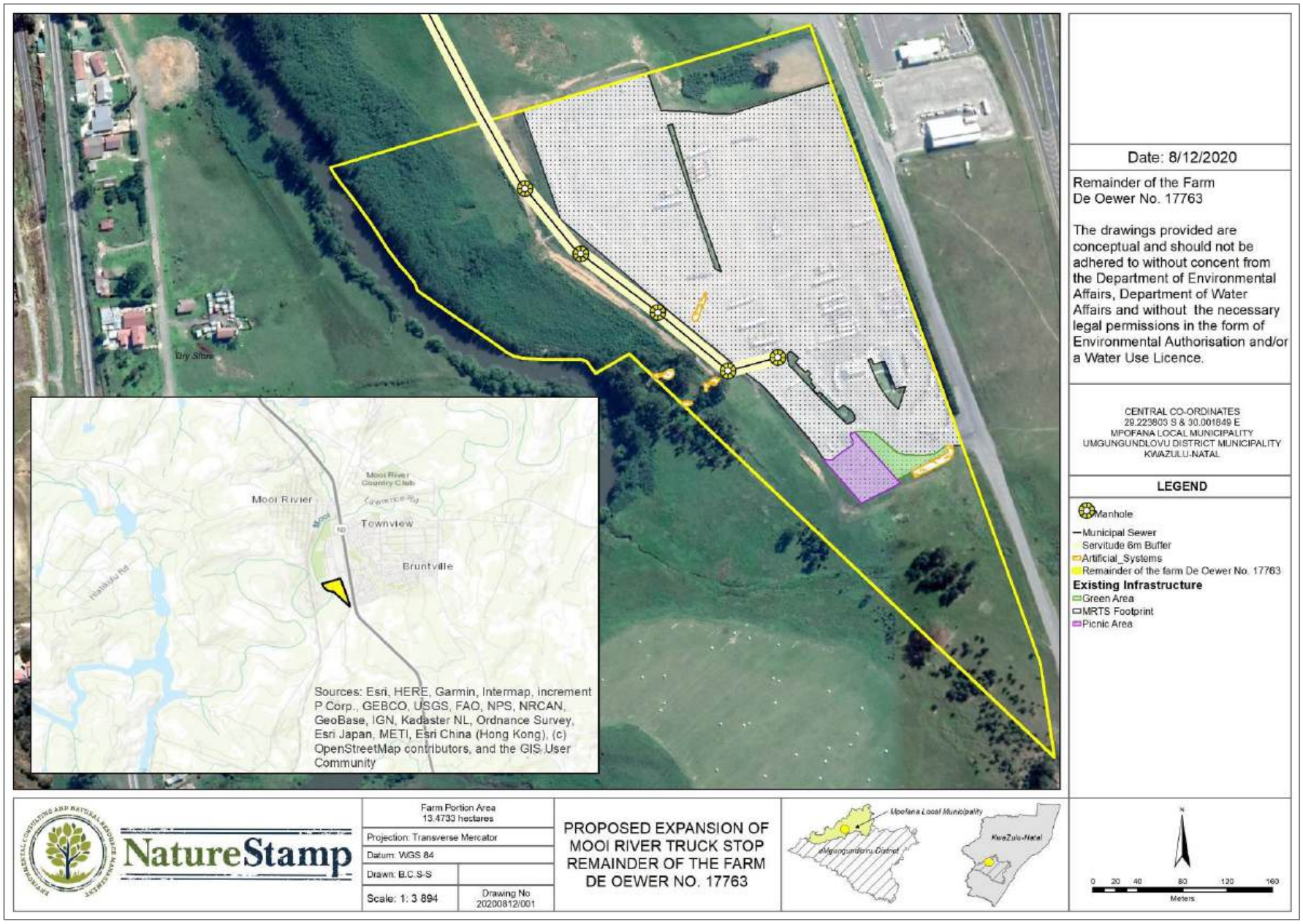


Figure 2 Locality map of the MRTS site

1.2 Terms of reference

i. Wetland & Aquatic Assessment

The condition/Present Ecological State (PES) of the delineated riverine and wetland areas present within 500 m of the proposed site; as well as the functional importance of any wetlands present within and near the development footprint would be assessed. This will involve:

a. an assessment of the delineated riverine areas by:
    i. determining the condition/PES of the riverine system using the rapid/qualitative Index of Habitat Integrity (IHI) tool (Kleynhans, 1996) for rivers (in-stream and riparian habitats assessed separately); and
    ii. determining the health/ecological importance & sensitivity (EIS) using the DWAF riverine EIS tool (Kleynhans, 1999).
b. an assessment of the delineated wetland areas by:
    i. determining the condition/ PES of the delineated wetlands using the Level 1 WET-Health tool (Macfarlane et al, 2009); and
    ii. determining the ecological importance & sensitivity (EIS) of the delineated wetlands using the Department of Water Affairs and Forestry (DWAF) wetland EIS tool (Duthie, 1999).
c. an impact assessment to investigate, evaluate and assess the impacts of the abovementioned activities on the environment.

1.3 Classification System for Wetlands and Other Aquatic Systems

Differences in terminology can lead to confusion in the scientific and consulting fields. As such, terminology used in the context of this report needs to be defined. The National Water Act (No. 36 of 1998) defines a watercourse, wetland and riparian habitat as follows:

- A **watercourse** means - (a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

- A **wetland** means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

- A **riparian habitat** includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas.

Any features meeting these criteria within the development site were delineated and classified using the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems hereafter referred to as the "Classification System" (Ollis *et. al*., 2013). A summary of Levels 1 to 4 of the classification system are discussed further below.

Inland wetland systems (non-coastal) are ecosystems that have no existing connection to the ocean which are inundated or saturated with water, either permanently or periodically (Ollis *et. al*., 2013). Inland wetland systems were divided into four levels by the Freshwater Consulting Group in 2009 and revised in 2013. Level 1 describes the connectivity of the system to the ocean, level 2 the regional setting (eco-region), level 3 the landscape setting, level 4A the hydro-geomorphic (HGM) type and level 4B the longitudinal zonation. Further information has been provided in Annexure B.
The level 3 classification has been divided into four landscape units. These are:

a) **Slope** – located on the side of a mountain, hill or valley that is steeper than lowland or upland floodplain zones.

b) **Valley Floor** – gently sloping lowest surface of a valley, excluding mountain headwater zones.
c) **Plain** – extensive area of low relief. Different from valley floors in that they do not lie between two side slopes, characteristic of lowland or upland floodplains**.**
d) **Bench** (hilltop/saddle/shelf) - an area of mostly level or nearly level high ground, including hilltops/crests, saddles and shelves/terraces/ledges.

Level 4 HGM types (which is commonly used to describe a specific wetland type) have been divided into 8 units. These are described as follows:

- **Channel** (river, including the banks) - an open conduit with clearly defined margins that (i) continuously or periodically contains flowing water. Dominant water sources include concentrated surface flow from upstream channels and tributaries, diffuse surface flow or interflow, and/or groundwater flow.
- **Channelled valley-bottom wetland** - a mostly flat valley-bottom wetland dissected by and typically elevated above a channel (see channel). Dominant water inputs to these areas are typically from the channel, either as surface flow resulting from overtopping of the channel bank/s or as interflow, or from adjacent valley-side slopes (as overland flow or interflow).
- **Un-channelled valley-bottom wetland** - a mostly flat valley-bottom wetland area without a major channel running through it, characterised by an absence of distinct channel banks and the prevalence of diffuse flows, even during and after high rainfall events.
- **Floodplain wetland** - the mostly flat or gently sloping wetland area adjacent to and formed by a Lowland or Upland Floodplain river, and subject to periodic inundation by overtopping of the channel bank.
- **Depression** - a landform with closed elevation contours that increases in depth from the perimeter to a central area of greatest depth, and within which water typically accumulates. Dominant water sources are precipitation, ground water discharge, interflow and (diffuse or concentrated) overland flow.
- **Flat** - a near-level wetland area (i.e. with little or no relief) with little or no gradient, situated on a plain or a bench in terms of landscape setting. The primary source of water is precipitation.
- **Hillslope seep** - a wetland area located on (gentle to steep) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope.
- **Valley head seep** - a gently-sloping, typically concave wetland area located on a valley floor at the head of a drainage line, with water inputs mainly from subsurface flow.

1.4 Mpofana Spatial Development Framework

The MooiRiver area falls within the Mpofana Local Municipality. All new development should consider whether it is in alignment with the Strategic Development Framework (SDF), or whether it is in conflict with any strategy plans identified by the municipality. According to the 2010/2011 Integrated Development Plan (IDP, which will be updated in 2015), MooiRiver / Bruntville is the tertiary node within the district and it is considered to be highly dependent on agriculture, while providing services to the local economy. The function of the N3 is mainly that of a mobility route and, as such, the economy of MooiRiver is currently not benefiting strongly from the high traffic volumes from the N3 since the motorists easily pass the area. However, this route still presents good economic opportunities for the area especially in terms of attracting investment and trade.

Much of MooiRiver is considered to have a high agricultural potential, with some areas being identified as environmentally sensitive with endemic species. In addition, the spatial structure of the area is fragmented with settlements located away from economic/employment opportunity areas. Furthermore, the capacity of bulk services such as electricity, water and sewer systems is inadequate. However, due to the close proximity of the truck stop to the N3 freeway and potential employment areas such as Bruntville, this development is in alignment with the Mpofana SDF. The framework has also identified the availability of strategically located commercial and industrial land in the Mpofana area, of which the truck stop falls under.

2. STUDY SITE

2.1 General Description

The site is within Quaternary Catchment V20E and falls under the Thukela WMA and the uMgeni waterboard. The site is within the catchment area of the Mooi River (PES class B; Largely Natural, WRC 2011). Rainfall in the region occurs in the summer months (mostly December to February), with a mean annual precipitation of 753 mm (observed from rainfall station 028882 W). Summers are warm to hot and winters are cool with frequent frost days. The mean annual temperature is approximately 19 °C in summer (5.9 °C minimum and 35.5 °C maximum) and 10 °C (-5.8 °C minimum and 24.5 maximum) in the winter months. The underlying geology of the site is Natal mudstone.

The wetland systems identified on-site are currently providing important eco-services to the Mooi River. These include biodiversity services from the vegetation units, such as grazing land for livestock and water consumption for animals and to a small extent for human consumption (stream channel). The old vegetable patch area (Plot D, Figure 2) has been subject to past disturbances and alien plant invasion. Moreover, it is isolated due to the perimeter fencing – thus, limited services are gained from this area. The dry land grasslands surrounding most of the development are intact with a high basal cover. The hydrological regime of the wetland systems is well maintained (evident with the slow seepage). However, due to historical contouring and development, the flow paths have been diverted and concentrated in some areas.

Table 2 Mean monthly rainfall and temperature observed at MRTS (derived from historical data)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Mean Rainfall (mm)	149	137	115	40	12	4	2	11	28	66	98	127	**917**
Mean Temperature (°C)	21.6	21.4	20.3	17.3	14.1	11.5	11.8	14.1	17.1	18.6	20.0	21.3	**14.1**

Figure 3 Typical setting around the wetland areas

2.2 Legal Framework of the Study

The table below lists some of the legislation that may be relevant to the proposed development.

Table 3 Legislation relevant to the Mooi River proposed expansion

Law/Act	Description (after Macfarlane et al., 2013)
South African Constitution Act 108 of 1996	The Constitution of South Africa requires that development be 'ecologically sustainable'. This includes the right to have the environment protected through legislative or other means. This is the core of other environmental legislation.
National Environmental Management Act (No. 107 of 1998) (This act is divided into further components)	The environment is held in public trust for the people, and must be protected as the 'people's common heritage'. The principles point to the need to conserve biodiversity and ecological integrity and, where impacts on biodiversity and disturbance to ecosystems cannot be altogether avoided, they must be minimized and remedied. The NEMA principles state that the party who causes environmental damage is responsible for 'paying' or remedying that damage.
The National Water Act (No. 36 of 1998)	Chapter 3 of the National Water Act provides a series of measures to ensure protection of all water resources. Water use is defined in the Act in Section 21 and effectively requires that if any of the defined water uses have a potential impact on water resources, it must be authorized by the Department.
National Environmental Management Biodiversity Act (No. 10 of 2004)	The State has trusteeship of the country's biodiversity and must 'manage, conserve and sustain' South Africa's biodiversity and its components and genetic resources. The Biodiversity Act provides for the listing of threatened or protected species and ecosystems, and for the publishing of Bioregional Plans, thus identifying our priority biodiversity areas.

3. METHODOLOGY

A detailed description of the methods has been provided. The regional context and desktop analysis were used as the point of departure. Subsequently, a site visit was undertaken to delineate any wetlands and riparian areas. These systems were then assessed to determine the potential impacts that have been caused. The assessment of these systems considered the following tools where relevant:

Table 4 Assessment approach and the recommended tools for rivers and wetlands

Aquatic Component	Method/Technique	Tool Utilized
Rivers	Delineation	*A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas' (DWAF, 2005).*
	Classification	*National Wetland Classification System for Wetlands and other Aquatic Ecosystems in South Africa (Ollis et al, 2014).*
	River condition/Present Ecological State (PES)	DWAF IHI (Index of Habitat Integrity) tool (Kleynhans, 1996) for rivers (riparian habitat only)
	River Ecological Importance & Sensitivity (EIS)	DWAF riverine EIS tool (Kleynhans, 1999)
Wetlands	Delineation	*A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas' (DWAF, 2005).*
	Classification	*National Wetland Classification System for Wetlands and other Aquatic Ecosystems in South Africa (Ollis et al, 2014).*
	Wetland condition/Present Ecological State (PES)	Level 1 WET-Health tool (Macfarlane *et al*., 2009)
	Wetland Functional/Ecosystem Services Assessment	Level 2 WET-EcoServices assessment tool (Kotze *et al*., 2009)
	Wetland Ecological Importance & Sensitivity (EIS)	DWAF wetland EIS tool (Duthie, 1999)

Table 5 Data type and source for the MRTS assessment

Data Type	Year	Source/Reference
Aerial Imagery	2016	Surveyor General
1:50 000 Topographical	2011	Surveyor General
5m Contour	2010	Surveyor General
River Shapefile	2011	EKZNW
Land Cover	2014	EKZNW
Water Registration	2013	WARMS - DWS

*Data will be provided on request

3.1 Regional Context

3.1.1 National Freshwater Ecosystem Priority Areas (NFEPA) Project / Assessment

The 'National Freshwater Ecosystem Priority Areas' (NFEPA) project is a systematic biodiversity planning tool developed by the CSIR (2011) to identify freshwater areas considered the most important for biodiversity conservation. The key objectives of the NFEPA project are to ensure that all ecosystems and species are represented and that key ecological processes remain intact – achieving biodiversity targets within the smallest, most efficient area possible, with attention to connectivity over large areas (CSIR, 2011).

The conservation importance of the MRTS site was determined by consulting the relevant NFEPA layers (NFEPA WMA map, NFEPA wetlands and NFEPA rivers) in a geographical information system.

NFEPA was a three-year partnership project between South African National Biodiversity Institute (SANBI), CSIR, Water Research Commission (WRC), Department of Environmental Affairs (DEA), Department of Water Affairs (DWA), Worldwide Fund for Nature (WWF), South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks). NFEPA map products provide strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting sustainable use of water resources. These strategic spatial priorities are known as Freshwater Ecosystem Priority Areas, or FEPAs.

FEPAs were determined through a process of systematic biodiversity planning and were identified using a range of criteria for conserving ecosystems and associated biodiversity of rivers, wetlands and estuaries. FEPAs are often tributaries and wetlands that support hard-working large rivers, and are an essential part of an equitable and sustainable water resource strategy. FEPAs need to stay in a good condition to manage and conserve freshwater ecosystems, and to protect water resources for human use. The current and recommended condition for all river FEPAs is A or B ecological category. Wetland FEPAs that are currently in a condition lower than A or B should be rehabilitated to the best attainable ecological condition.

3.1.2 Terrain, Soils, Geology & Vegetation

Contour lines (2 meter) were used to calculate the slope of each of the banks. The soils and geology were obtained from GIS layers obtained from the Soil Science department at the University of KwaZulu-Natal (UKZN). Various vegetation databases were used to determine the likely or expected vegetation types (Mucina & Rutherford, 2006; Scott-Shaw & Escott, 2011). A number of recognized databases were utilized in achieving a comprehensive review, and allowing any regional or provincial conservation and biodiversity concerns to be highlighted. The Guideline for Biodiversity Impact Assessment (EKZNW, 2013) was followed where applicable. The following databases were interrogated:

- *Ezemvelo KZN wildlife (C-Plan & SEA Database)*

The C-Plan is a systematic conservation-planning package that consists of metadata within a shapefile, used by ArcGIS (or similar tool), which analyses biodiversity features and landscape units. C-Plan is used to identify a national reserve system that will satisfy specified conservation targets for biodiversity features (Lombard *et al*, 2003). These units or measurements are ideal for areas which have not been sampled. The C-Plan is an effective conservation tool when determining priority areas at a regional level and is being used throughout South Africa to identify areas of conservation value. Some of this information extends into the Eastern Cape.

The Strategic Environmental Assessment (SEA, 2000) Plan is a database of the modelled distribution of a selection of red data and endemic species that could, or are likely, to occur in an area.

- *Mucina and Rutherford's Vegetation Assessment*

The South African National Biodiversity Institute (SANBI) developed a database of vegetation types. This database provides information on groups of vegetation at a course scale. It is useful in determining the expected species, conservation status and management practices of an area. However, this database does not provide information on species of conservation concern. This database is used as a step towards grouping vegetation types identified on site.

3.2 Extent, Classification and Habitat Characteristics

The boundary of wetlands and riparian areas occurring on the site was identified and delineated according to the Department of Water Affairs wetland delineation manual '*A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas*' (Department of Water Affairs, 2005). Land cover data, contour data and the latest aerial imagery were examined in a thorough desktop analysis of the site. This provided important background information to the specialists' understanding of the broader context of the landscape (e.g. baseline vegetation, geology and climate). An on-site delineation was undertaken as described below.

3.2.1 Wetland Delineation

The following indicators stipulated in the national delineation guidelines were considered in the field. Not necessarily all of these indicators were used at each site. Mention was made in the results which of these indicators were used:

- **Terrain Unit Indicator** – this relates to the position within the landscape where a wetland may occur. A typical landscape can be divided into five main terrain units, namely the crest (hilltop), scarp (cliff), midslope (often a convex slope), footslope (often a concave slope), and valley bottom. As wetlands occur where there is a prolonged presence of water, the most common place one would expect to find wetlands is on the valley bottom (Rountree *et al,* 2008*)*.

- **Soil Form Indicator** – this identifies the soil forms, as defined by the Soil Classification Working Group (1991), which are associated with prolonged and frequent saturation.

- **Soil Wetness Indicator** - Prolonged saturation of soil results in the development of anaerobic conditions, which has a characteristic effect on soil morphology, causing two important redoximorphic features: mottling and gleying. The hue, value and chroma of soil samples obtained at varying depths can be visually interpreted with the aid of the Munsell Colour Chart and the interface between wetland and non-wetland zones determined.

- **Vegetation Indicator** – Plant species have varying tolerances to different moisture regimes. The presence, composition and distribution of specific hydrophytic plants within a system can be used as an indication of wetness and allow for inference of wetland characteristics.

The area was extensively traversed, auger sample points were taken as required and the exact location of sample points logged using a Garmin GPSMAP 64. At each sampling point the soils were sampled at depths of 0-10 cm and 40-50 cm below surface. The soil value, hue and matrix chroma were recorded for each sample according to the Munsell Soil Colour Chart, and the degree of mottling and/or presence of concretions were recorded. Although the site was severely transformed, any vegetation of interest was noted for the assessments. If the author was not able to identify any potentially important species, a leaf and bark sample was taken for analysis using a key guide.

3.2.2 Riparian Delineation

Riparian area/zone delineation is similar to wetland delineation in that indicators are used to define the edge of the system. It considers indicators such as topography, vegetation, alluvial soils, and deposition of material

to mark the outer edge of the macro-channel and its associated vegetation. The Figure 4 shows the typical morphology of a river channel.

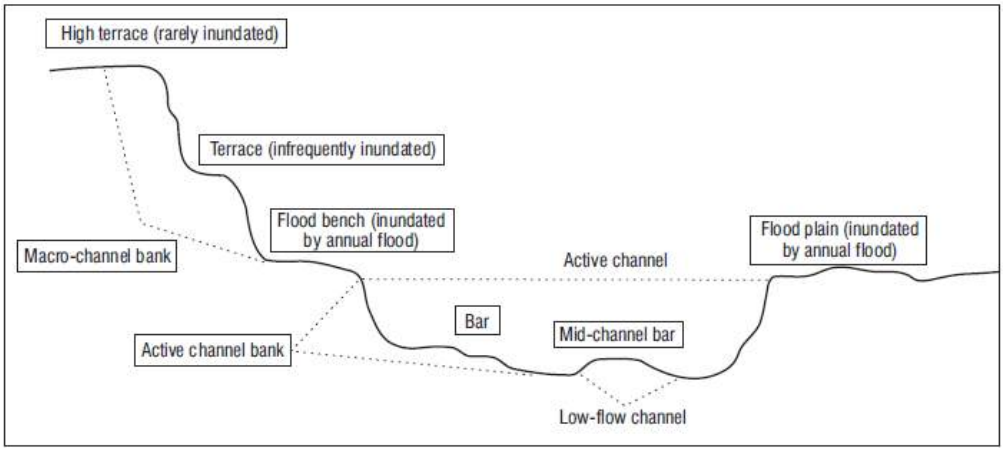


Figure 4 **Typical cross-section of a river showing channel morphology 'A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas – Edition 1' (Department of Water Affairs, 2005)**

A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas (DWAF, 2005) was used in the delineation of the riparian zone boundary. Delineated riparian zones were then classified using an HGM classification system based on the system proposed by Ollis *(*2013*)*. According to Cowan *et* al. (2005), riparian ecosystems are separated from other wetland ecosystems on the following three major features:

1. They have linear form as a consequence of their proximity to rivers and form a boundary between the terrestrial and aquatic ecosystems.
2. Energy and materials from the surrounding landscape converge and pass through riparian ecosystems. This amount is greater in terms of unit area than with any other system.
3. Riparian ecosystems are connected hydrologically to both upstream and downstream ecosystems (intermittently).

An example of the soil sampling approach is provided in Figure 5.

Figure 5 **Soil sampling undertaken at the site**

3.3 Present Ecological State (PES) Assessment for Riparian Areas

3.3.1 Present Ecological State (adapted from WET-Health, Macfarlane *et al*., 2008)

A WET-Health (Macfarlane *et al*., 2009) Level 1 Rapid Appraisal was used to assess the eco-physical health of any wetlands in the study area. Focusing on geomorphology, hydrology and vegetation, the tool examines the impacts and indicators of change within the system and its catchment by determining the deviation (in terms of structure and function) from the natural reference condition. The outcomes of the appraisal place importance on issues that should be addressed through rehabilitation, mitigation and/or prevention measures. A standardized scoring system allows for consistencies between different systems and reduces user subjectivity.

Scores are allocated according to the magnitude and extent of impact. These scores are integrated to produce an overall score for Present Ecological State (PES) of the system – *namely, natural, largely natural, moderately modified, largely modified, extensively modified,* and *critically modified.*

3.3.2 Index of Habitat Integrity (IHI)

The ecological integrity of a river is defined as its ability to support and maintain a balanced, integrated composition of physico-chemical and habitat characteristics, as well as biotic components on a temporal and spatial scale that are comparable to the natural characteristics of ecosystems of the region (Kemper, 1999). The observed or deduced condition of these criteria as compared to what it could have been under unperturbed conditions is surmised to indicate a change in the habitat integrity. The methodology is based on the qualitative assessment of a number of pre-weighted criteria which indicate the integrity of the in-stream and riparian habitats available for use by riverine biota. Tables 6, 7 & 8 provide the list of criteria and their scores, the impact category and the final scores for the IHI assessment that were used in the calculations.

Table 6 Criteria used in the assessment of the habitat integrity

Criterion	Relevance
Water abstraction	Direct impact on habitat type, abundance and size. Also implicated in flow, bed, channel and water quality characteristics. Riparian vegetation may be influenced by a decrease in the supply of water.
Flow modification	Consequence of abstraction or regulation by impoundments. Changes in temporal and spatial characteristics of flow can have an impact on habitat attributes such as an increase in duration of low flow season, resulting in low availability of certain habitat types or water at the start of the breeding, flowering or growing season.
Bed modification	Regarded as the result of increased input of sediment from the catchment or a decrease in the ability of the river to transport sediment (Gordon *et al*., 1993). Indirect indications of sedimentation are stream bank and catchment erosion. Purposeful alteration of the stream bed, e.g. the removal of rapids for navigation (Hilden & Rapport, 1993) is also included.
Channel modification	May be the result of a change in flow, which may alter channel characteristics causing a change in marginal instream and riparian habitat. Purposeful channel modification to improve drainage is also included.
Water quality modification	Originates from point and diffuse point sources. Measured directly or agricultural activities, human settlements and industrial activities may indicate the likelihood of modification. Aggravated by a decrease in the volume of water during low or no flow conditions.
Inundation	Destruction of riffle, rapid and riparian zone habitat. Obstruction to the movement of aquatic fauna and influences water quality and the movement of sediments (Gordon *et al*., 1992).
Exotic macrophytes	Alteration of habitat by obstruction of flow and may influence water quality. Dependent upon the species involved and scale of infestation.
Exotic aquatic fauna	The disturbance of the stream bottom during feeding may influence the water quality and increase turbidity. Dependent upon the species involved and their abundance.
Solid waste disposal	A direct anthropogenic impact which may alter habitat structurally. Also a general indication of the misuse and mismanagement of the river.
Indigenous vegetation removal	Impairment of the buffer the vegetation forms to the movement of sediment and other catchment runoff products into the river (Gordon *et al*., 1992). Refers to physical removal for farming, firewood and overgrazing.
Exotic vegetation encroachment	Excludes natural vegetation due to vigorous growth, causing bank instability and decreasing the buffering function of the riparian zone. Allochtonous organic matter input will also be changed. Riparian zone habitat diversity is also reduced.
Bank erosion	Decrease in bank stability will cause sedimentation and possible collapse of the river bank resulting in a loss or modification of both instream and riparian habitats. Increased erosion can be the result of natural vegetation removal, overgrazing or exotic vegetation encroachment.

Table 7 Impact classes and their associated scores

Impact category	Description	Score
None	No discernible impact, or the modification is located in such a way that it has no impact on habitat quality, diversity, size and variability.	0
Small	The modification is limited to very few localities and the impact on habitat quality, diversity, size and variability is also very small.	1-5
Moderate	The modifications are present at a small number of localities and the impact on habitat quality, diversity, size and variability is also limited.	6-10
Large	The modification is generally present with a clearly detrimental impact on habitat quality, diversity, size and variability. Large areas are, however, not influenced.	11-15
Serious	The modification is frequently present and the habitat quality, diversity, size and variability in almost the whole of the defined area is affected. Only small areas are not influenced.	16-20
Critical	The modification is present overall with a high intensity. The habitat quality, diversity, size and variability in almost the whole of the defined section are influenced detrimentally.	21-25

Table 8 Description of the IHI categories.

Category	Description	Score (% of total)
A	Unmodified, natural.	100
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.	80-99
C	Moderately modified. A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.	60-79
D	Largely modified. A large loss of natural habitat, biota and basic ecosystem functions have occurred.	40-59
E	The loss of natural habitat, biota and basic ecosystem functions are extensive.	20-39
F	Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.	0-19

3.4 Ecological Importance & Sensitivity (EIS) Assessment (Riparian)

The Ecological Importance and Sensitivity (EIS) of riparian areas is an expression of the importance of the aquatic resource for the maintenance of biological diversity and ecological functioning on a local scale to a broader scale; whilst Ecological Sensitivity (or fragility) refers to a system's ability to resist disturbance and its capability to recover from disturbance once it has occurred (Kleynhans & Louw, 2007). In this study a qualitative assessment was applied and was partially informed by the present state assessment. This assessment followed the DWA river eco-classification criteria (Module A, Kleynhans & Louw, 2007). The classification provides insights into the causes and sources of the deviation of the PES of biophysical attributes from the reference condition (Kleynhans & Louw, 2007). This further provides the information needed to derive desirable and attainable future ecological objectives for the river (Kleynhans & Louw, 2007).

Table 9 List of the EIS categories used in the assessment tool (Kleynhans & Louw, 2007)

Ecological Importance and Sensitivity Categories	General Description
Very high	Quaternaries/delineations that are considered to be unique on a national or even international level based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only a small capacity for use.
High	Quaternaries/delineations that are considered to be unique on a national scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases, may have a substantial capacity for use.
Moderate	Quaternaries/delineations that are considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually not very sensitive to flow modifications and often have a substantial capacity for use.
Low/marginal	Quaternaries/delineations that are not unique at any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have a substantial capacity for use.

Table 10 Rating scheme used for the assessment of riparian EIS (Kleynhans & Louw, 2007)

Score	Channel Type	Conservation Context			Vegetation and Habitat Integrity	Connectivity	Threat Status of Vegetation Type
0	Ephemeral Stream	Non-FEPA river	No status	None/Excluded	No natural remaining	None	No Status
1	Stream – non-perennial flow		Upstream management area	Available	Very poor	Very low	Least Threatened
2	Stream – perennial flow		Rehab FEPA		Poor	Low	Vulnerable
3	Minor river – non-perennial flow		Fish Corridor	Earmarked for conservation	Moderately modified	Moderate	Near Threatened
4	Minor river – perennial flow		Fish Support Area		Largely natural	High	Endangered
5	Major river – perennial flow	FEPA river	River FEPA	Protected	Unmodified/natural habitat	Very High	Critically Endangered

3.5 Impact Assessment

The development of a rehabilitation plan must consider the existing and potential future impacts of the site and development respectively. The specific impacts that are likely to occur have been split into the following:

i. **Pre-construction:** This may take the form of changes in the scale of the development (e.g. reduce the size of the development), location of development (e.g. find an alternative area with less impact), design (e.g. change the structural design to accommodate flows and continuity).
ii. **Construction:** This may take the form of a process change (e.g. changes in construction methods), siting (e.g. locality to sensitive areas), sequencing and phasing (e.g. construction during seasonal periods).
iii. **Operational:** This may take the form of changes in post management (e.g. change management to match unpredicted impacts), monitoring (e.g. frequent checks by an ECO), rehabilitation (e.g. if mitigation actions are not effective).

Some positive impacts of the development are possible. These are unlikely but have been provided in the discussion to guide the rehabilitation plan of what could be achieved in an ideal situation.

3.6 Water Quality Assessment

A Water quality sample were taken from a strategic location at the feeder of the wetland on the site. The location of boreholes and discharge points (e.g. soakaways and drains) were noted as potential sources of pollution. The adjacent residential area of Bruntville has grey water/effluent discharging under the N3 and onto the site. This water should be discharging into the Bruntville treatment works. During previous site visits in 2015/2016, there was no flowing water at this point. The flow is now continuous onto the proponents site.

Follow-up sampling would need to occur in the same location as the baseline assessment. The location of the sampling site can be seen in Figure 6. It must be noted that water quality can change significantly over the season and after a large rainfall event. As such, the time of the year and associated rainfall events were noted. The baseline physical, chemical and biological water quality characteristics have been provided for reference in the results.

Figure 6 **Water quality sampling sites**

4. LIMITATIONS AND ASSUMPTIONS

In order to apply generalized and often rigid scientific methods or techniques to natural, dynamic environments, a number of assumptions are made. Furthermore, a number of limitations exist when assessing such complex ecological systems. The following constraints may have affected this assessment –

- A Garmin Etrex GPS was used in the mapping of significant waypoints on-site. The accuracy of the GPS is affected by the availability of corresponding satellites and accuracy ranges from 1 to 6 m after post-processing corrections have been applied.

- A Munsell Soil Colour Chart was used to assess soil morphology. This tool requires that a dry sample of soil be assessed. However, due to in-field time constraints, wet soil samples were assessed. Wet samples would have consistently lower values than dry soils; and this is taken into consideration.

- Although the vegetation was taken into account, important species may not have been identified. If development is to extend into sensitive areas (such as buffer areas), a vegetation survey will be needed.

- The survey was undertaken during the rainfall season and while most plant species were flowering. As such, there was no limitation due to the season during which the survey was undertaken.

5. RESULTS AND DISCUSSION

5.1 Regional Context

The site is within Quaternary Catchment V20E and falls under the Thukela WMA and the uMngeni waterboard. The site is within the catchment area of the Mooi River (PES class B; Largely Natural, WRC 2011).

Rainfall in the region occurs in the summer months (mostly December to February), with a mean annual precipitation of 753 mm (observed from rainfall station 028882 W). The reference potential evaporation (ET_o) is approximately 1630 mm (A-pan equivalent, after Schulze, 2011) and the mean annual evaporation is between 1300 – 1400 mm, which exceeds the annual rainfall. This suggests a high evaporative demand and a water limited system. Summers are warm to hot and winters are cool with frequent frost days. The mean annual temperature is approximately 19 °C in summer (5.9 °C minimum and 35.5 °C maximum) and 10 °C (-5.8 °C minimum and 24.5 maximum) in the winter months. The underlying geology of the site is Natal mudstone.

Figure 7 Alien invaded upland area (abandoned vegetable garden), with the storage facilities in the background

There was much evidence of alien plant invasion within the grassland areas in proximity to the site (refer to Figure 8). The invasion was particularly high on the proposed development site and included grey poplars (*populas alba)* in the floodplain and gum trees (*eucalyptus grandis)* around the wetland areas.

Although a full vegetation survey was not undertaken, important indicator species were identified where relevant. Some of the wetland plant indicator species can be seen in Figure 8.

Figure 8 **Key wetland species identified at the MooiRiver truck stop indicating the presence of wetlands, including Typha capensis, Juncus spp. and Persicaria.**

5.2 Previous Watercourse Delineation (2015/2016)

The site consists of 11 small hydro-geomorphic (HGM) wetland types (unit area provided in Table 4). The artificial systems were included in the assessment but were digitized separately in the delineation due to their setting and nature. The artificial systems are inter-connected and share similar topography and soils. HGM units have been described in Table 2 below; HGM units of the same type were grouped together for this assessment.

Table 11 Description of HGM units

HGM Unit/s	Hydro-Geomorphic Type	Description (after Macfarlane *et al.* 2008)	Soil Characteristics (Wetland edge)	On-site images
4, 5 & 6	Hillslope Seepage	Slopes on hillsides, characterized by the colluvial movement of materials. Outflow is usually via a well defined stream channel connecting the area directly to a stream channel.	Mottle % - 7% Hue – Gley 2 to 5YR Value – 3 Chroma – 2 (Dark Reddish Brown)	
7	Isolate Hillslope Seepage	Slopes on hillsides. Water inputs mainly from sub-surface flow and outflow either very limited or through diffuse sub-surface and/or surface flow but with no direct surface water connection to a stream channel.	Mottle % - 5% Hue – Gley 2 to 2.5YR Value – 3 Chroma – 2 (Dusky Red)	

1	Floodplain	Valley-bottom areas with a well defined stream channel, gently sloped and characterized by floodplain features.	Mottle % - 6% Hue – Gley 2 to 7.5YR Value – 4 Chroma – 2 (Brown)	
2 & 3	Unchannelled Valley Bottom	Valley-bottom areas with no clearly defined stream channel. Water inputs mainly from channel entering the wetland and also from adjacent slopes.	Mottle % - 2-5% Hue – Gley 2 to 5YR Value – 4 Chroma – 2 (Dark Reddish Gray)	
1	Artificial Drainage	Formed by the presence of an outlet drain. Not historically a wetland but may function as a wetland.	Mottle % - 2-5% Hue – Gley 2 Value – 4 Chroma – 5BG (Dark Greenish Gray)	
2, 3 & 4	Artificial Sewerage	Formed by the presence of an outlet sewerage pipe. Not historically a wetland but may function as a wetland. Usually fertile but with alien species present.	Mottle % - 1% Hue – Gley 1 Value – 2.5 Chroma – 10Y (Greenish Black)	

5.3 Determination of Buffer Zones

The *Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries* (Macfarlane *et al*., 2014) was used to determine the buffer zones for any existing wetland types (HGM units) found within the project boundary. This tool informed the buffer widths recommended later in this report, which have been provided in Table 3. This results from this tool suggest that during construction (in this case, the levelling of the land in and around the old vegetable garden), a 17m buffer may be used. However, as soon as operation is initiated, a 30m buffer must be adhered to. This tool is highly sensitive to the development type, state of the wetland and type of wetland.

Table 12 Buffer widths calculated for the Mooi River truck stop (Wetland Buffer Model; Macfarlane *et al.*, 2014)

Buffer Component	Buffer width(m)
Construction Phase	*17*
Operational Phase	*30*
Final Impact Buffer Requirement	*30*

Figures 6, 7 and 8 provide a layout to indicate the sampling design, the watercourses identified on site, and a combination of buffers used to determine available expansion areas. If development occurs within the 32m buffer, a listed activity may be triggered under the NEMA 2014 EIA regulations, requiring Environmental Authorization prior to commencement of construction. The likely activities that could be triggered if development occurs over this buffer have been provided in the discussion.

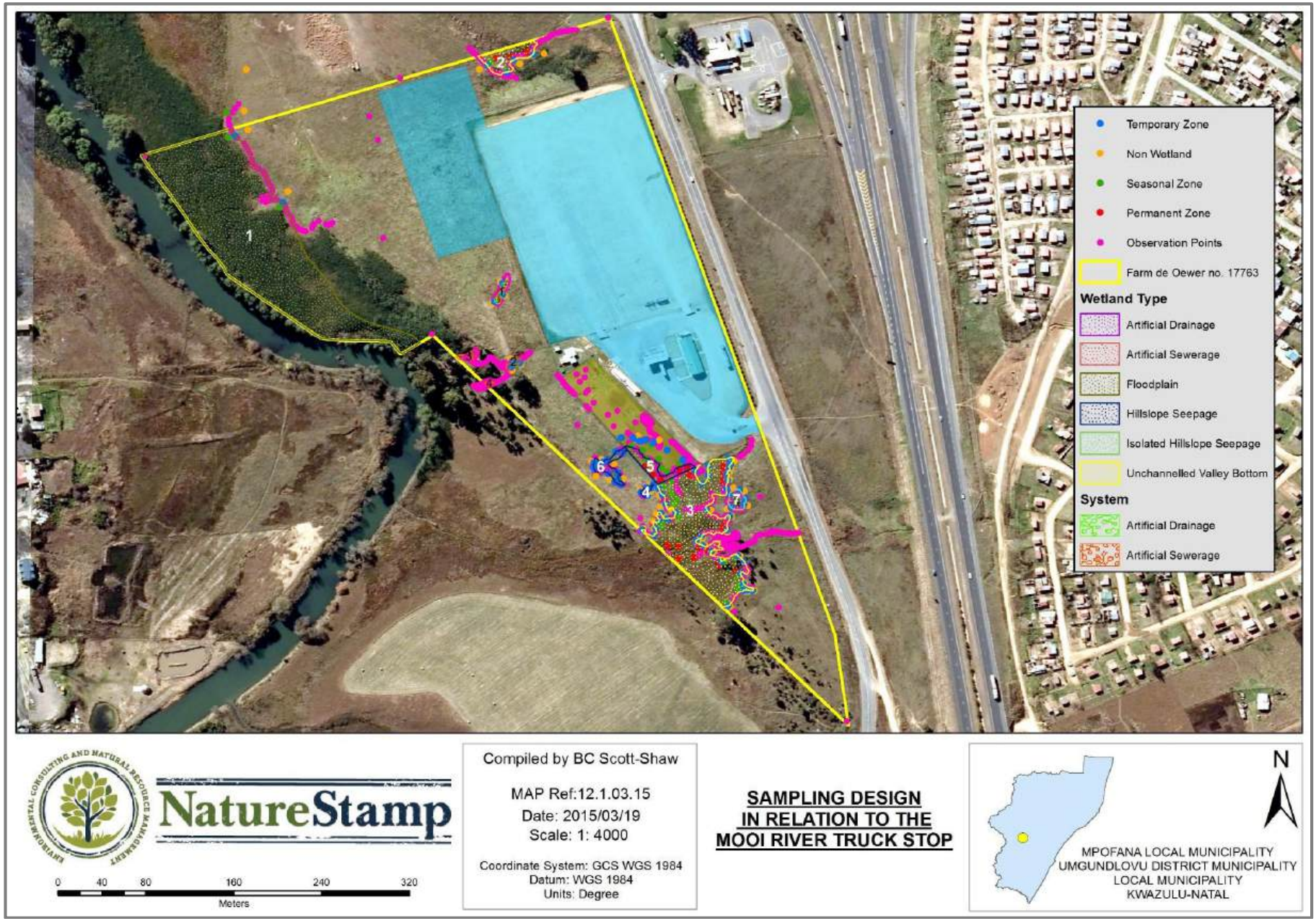


Figure 9 Sampling design undertaken during the site visit to the MooiRiver truck stop

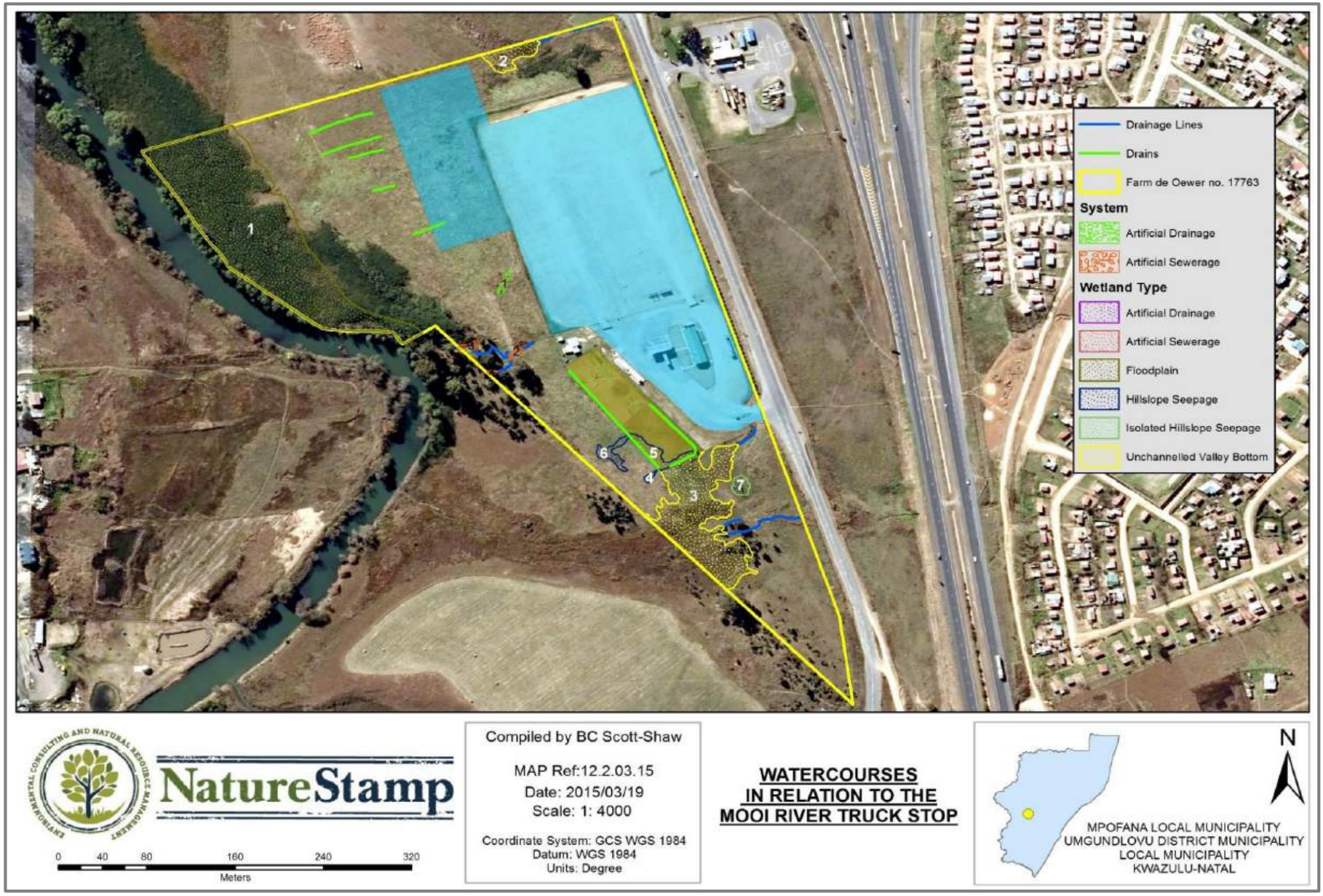


Figure 10 Watercourses identified within the plot boundary at the Mooi River truck stop (DWS Guidelines)

5.4 Revised Watercourse Delineation

A revised site assessment was undertaken on the 30th of July 2020. As shown in Figure 10, HGM units 4, 5 and 6 were formed through continual drainage of the old vegetable garden and the storm water drain located at the entrance to the site. This site has since been modified and this particular piece of land is now a picnic/green area for the truck stop users (Figure 11). As the concentration points have been reduced and improved storm water management is in practice, there is no longer a continual feed of water top these sites. Due to this artificial source of water to these system stopping, the following has occurred:

- The artificial seeps of HGM units 4, 5 and 6 no longer exist (no wetland species) even though the proponent has not removed any natural feed and has returned the land to natural grassland.
- HGM unit 3 has been reduced in size due to the removal of the artificial feed.
- HGM unit 7 has been completely modified by illegal dumping.

Figure 11 Corner of the green area where the hillslope seepage wetland was previously identified

Figure 12 Storm water drain outlet and dumping sites around the previously identified HGM unit 3 and 7

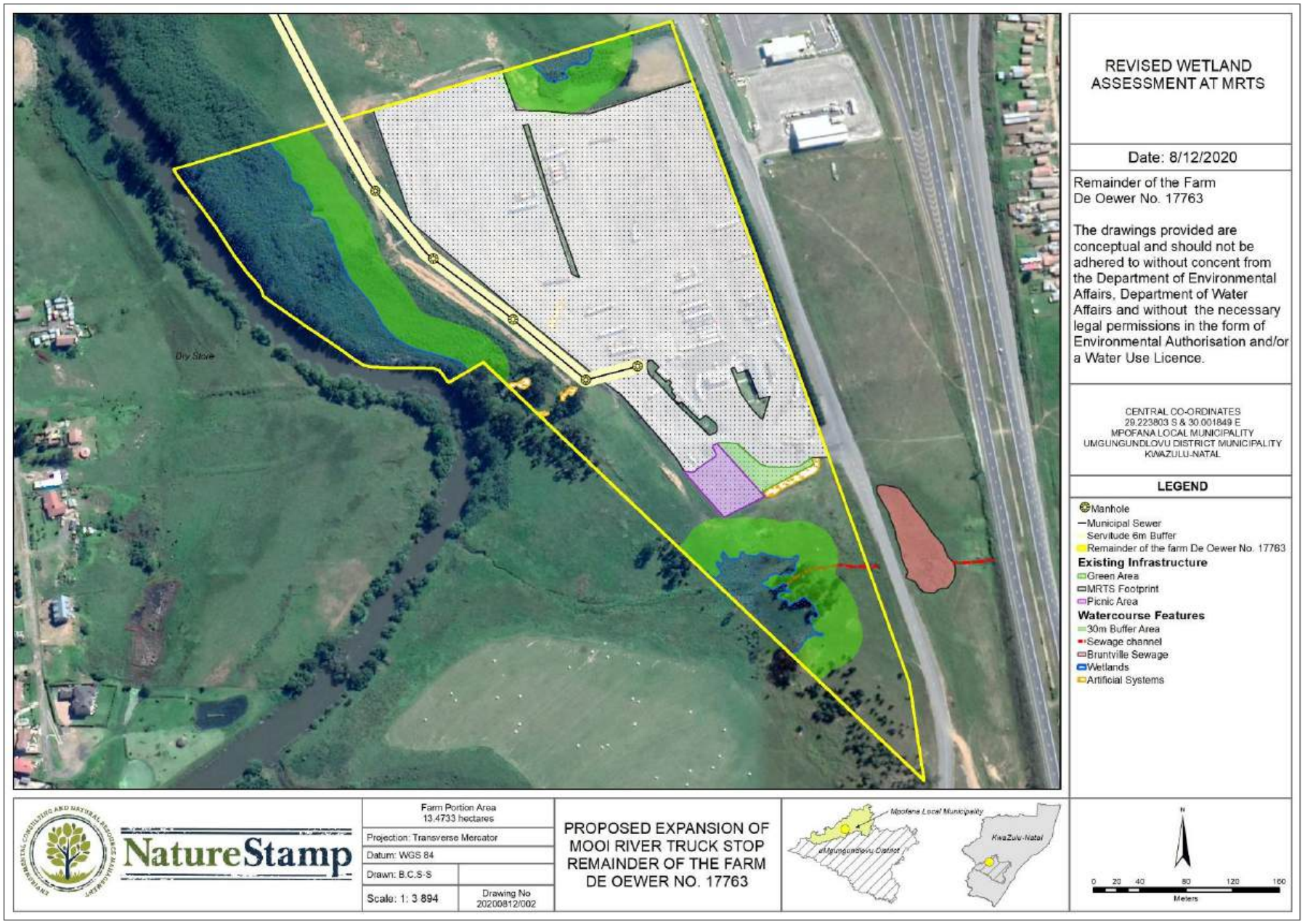


Figure 13 Revised wetland assessment at MRTS

5.5 Functional Assessment of watercourses

5.5.1 Present Ecological State (adapted from WET-Health, Macfarlane et al, 2009)

A level 1 WET-Health assessment was used in order to obtain an overview of the state of health of the wetlands in the project area. The results (Table 13) indicate that vegetation has been largely modified: "*The change in ecosystem processes and loss of natural habitat and biota is great but some remaining natural habitat features are still recognizable.*" *(WET-Health, Macfarlane et al, 2009*). This is due mostly to the presence of alien invasive species around the floodplain wetland and the valley bottom wetland where the grey poplar trees have changed the landscape.

It must be noted that this score is for the HGM units and not the surrounding vegetation, which is relatively intact. The old farmlands have recovered with well-established *Aristida junciformis*.

The hydrology has been moderately modified (PES score of C), where changes have occurred from impervious contributions off the adjacent road. This is especially true for the drainage line associated with HGM units 2 & 11. However, the majority of the hydrological contributions are fed under the road and sustain the well-established wetland system.

The geomorphology remains largely natural, partly due to the small size of the systems.

Table 13 Grouping of the HGM units for the WET-Health assessment and their associated scores

HGM Unit	Ha	Extent (%)	Hydrology		Geomorphology		Vegetation	
			Impact Score	Change Score	Impact Score	Change Score	Impact Score	Change Score
1 (FL)	1	67	4.0	0	0.6	-1	5.8	-1
2 (UVB)	1	25	2.5	0	0.0	-1	10.8	-1
3 (HS)	0	4	3.0	0	0.0	0	7.4	-1
4 (HIS)	0	1	1.3	0	0.0	-1	6.6	-1
5 (UVB)	0	3	0.2	0	0.0	0	7.3	-1
Area weighted impact scores*			**3.4**	**0.0**	**0.4**	**-1.0**	**7.1**	**-1.0**
PES Category			C	→	A	↓	E	↓

*FL: Floodplain, UVB: Unchannelled Valley Bottom, HS: Hillslope Seepage, HIS: Isolated Hillslope Seepage

5.5.2 Ecosystem Goods and Services (WET-EcoServices, Kotze et al, 2008)

The analysis of the provision of ecosystem services was undertaken by grouping each of the wetland units into a wetland type (*cf*. Table 13). Wetland types were only grouped together if they shared similar characteristics (topology, soils and vegetation) to such an extent that their ecosystem scores would most likely be the same. The results of the EcoServices assessment are as follows:

i. Hillslope Seepage Wetlands (HGM unit 4, 5 & 6) – no longer present

Hillslope seepage wetlands are generally found on slopes which are characterized by colluvial movement of materials. Water inputs are mainly from sub-surface flow (Kotze et al, 2009). Hillslope seepage wetlands are strongly associated with the following eco-services:

- Flood attenuation
- Streamflow regulation
- Erosion control
- Nitrate removal
- Toxicant removal

Current ecosystem services provided by a wetland need to be considered in light of these potential services. This shows where weaknesses have occurred in the wetland condition and its functionality. This information assists in providing recommendations for possible rehabilitation or protection measures.

The results show that the hillslope seepage wetlands are currently providing valuable services such as nitrate removal, phosphate trapping, streamflow regulation and maintenance of biodiversity (Figure 14). These systems score poorly in cultural significance, education, research and tourism, as well as erosion control for which it was predicted to score highly.

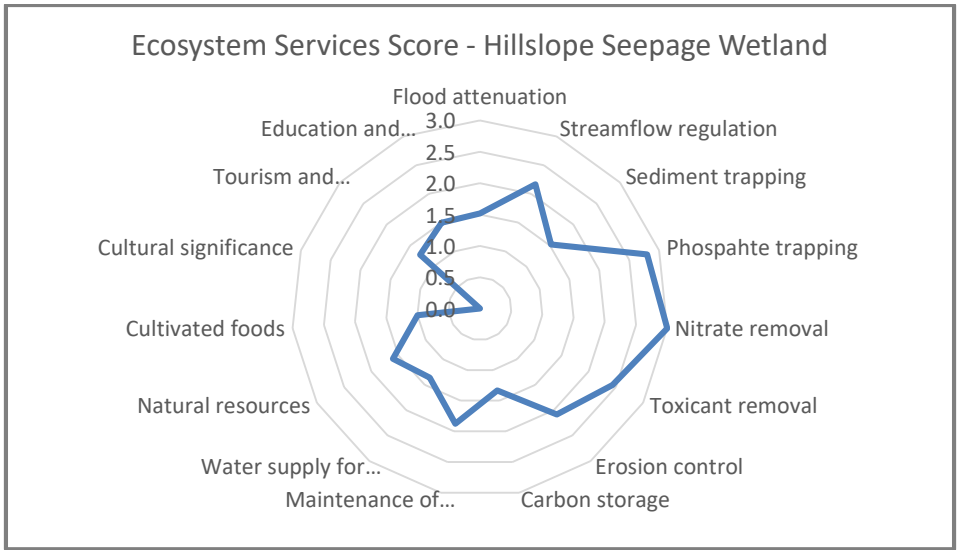


Figure 14 Current ecosystem services provided by the Hillslope Seepage Wetlands at Mooi River

ii. Un-channelled Valley Bottom Wetlands (HGM unit 2 & 3)

These systems exhibit potentially high levels of sediment deposition. The stream channel input is generally spread diffusely across the wetland even during low flows (Kotze *et al*., 2009). This has resulted in extensive areas of the wetland remaining permanently saturated and tending to have high levels of soil organic matter. This was evident during the site visit. These wetland systems are known to exhibit the following dominant eco-services:

- Streamflow regulation
- Nitrate removal
- Toxicant removal

The results indicate that the Un-channelled Valley Bottom wetlands are providing some eco-services (although limited). These include nitrate removal, phosphate trapping and streamflow regulation. The poor state of this wetland is partly due to overgrazing on the site and eroded channels supplying the system.

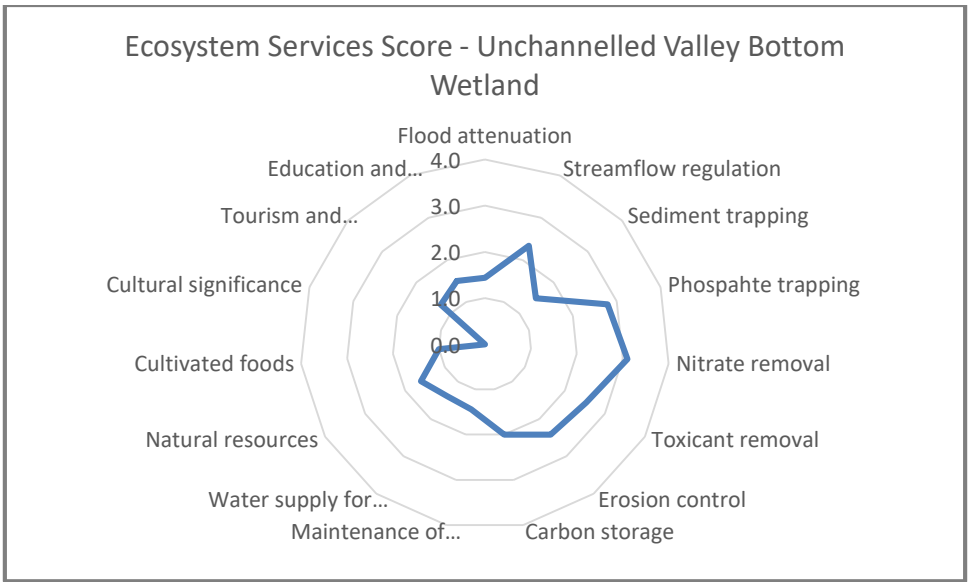


Figure 15 Current ecosystem services provided by the Un-channeled Valley Bottom Wetlands at Mooi River

iii. Floodplain Wetlands (HGM unit 1)

Along the north-western edge of the site, there is a floodplain area associated with the Mooi River. No indigenous tree species were noted along this floodplain (Figure 16). Although degraded, this wetland still provides services to the Mooi River system.

Floodplain wetlands are strongly associated with the following eco-services:

- Flood attenuation
- Erosion control
- Sediment trapping
- Phosphate removal
- Nitrate removal
- Toxicant removal

Figure 16 The floodplain (HGM unit 1), invaded with Poplar trees in Mooi River

Figure 17 shows the scores for eco-service provision of the floodplain at the site. It is clear that the floodplain is providing limited resources. Although the roughness coefficient is high (due to the replacement of grasslands with alien tree species), limited services are provided. However, flood attenuation and erosion control is dominant due to the vegetation cover. Increased roughness results in less green water being available for transpiration (due to greater evaporation from the vegetated surface).

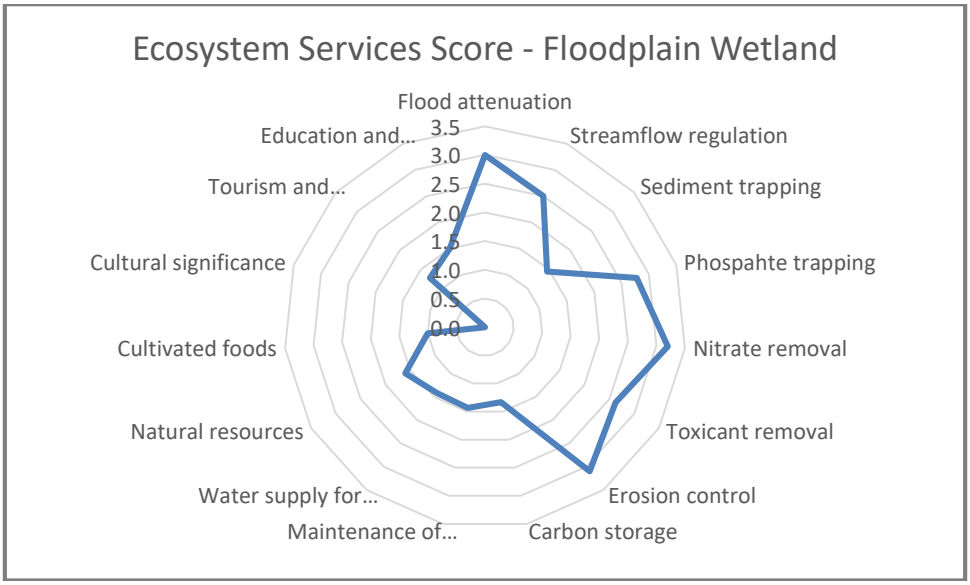


Figure 17 Current ecosystem Services provided by the Un-channeled Valley Bottom Wetlands at Mooi River

5.6 Water Quality Assessment

The water quality sampling methodology has been provided in Section 3.6. A representative sample was taken at a strategic location. Although this was not required for the assessment, it was determined that the results would provide a clear indication as to the impact of the Bruntville discharge. The aim of this assessment was to identify any impacts on the client's property. The results from the water quality assessment are provided in Table 14 and are discussed in the context of the DWS drinking water standards (SANS 241-1:2015). Parameters indicted in bold show where these standards are exceeded. As is good practice, all water discharged should not exceed the limits provided in Annexure E. Chemical, physical and some biological properties are highly variable spatially and temporally.

The results at the MRTS showed poor water quality. Manganese and Iron exceed the SANS 241 limits although these are not at dangerous levels. The Chemical Oxygen Demand (COD) and Suspended Solids exceed the limits, which have a negative impact on aquatic life. Ammonia, likely from residential washing, is in excess at this point. Furthermore, the *E. coli* and faecal coliforms are at dangerous levels. These parameters are what would be found in raw sewerage. This suggests that the discharge of water onto the client's property is made up mostly of raw sewerage, which should instead be discharged into the small (under-designed) treatment plant located in Bruntville.

Figure 18 Borehole pump and slurry treatment system at El Dorado

Table 14 Classification of drinking water assessment guide (DWAF, 1998)

	Class 0	Ideal drinking water quality
	Class I	Good quality water – suitable for use
	Class II	Marginal water quality – conditionally acceptable
	Class III	Poor water quality – unsuitable for use without treatment (potential chronic effects)
	Class IV	Dangerous water quality – totally unsuitable for use (acute effects may occur)

Table 15 Water quality results from the two watercourse and nearby borehole

Determinand	Units	Method No	SANS 241-1:2015	Results
				TR
Dissolved Arsenic	µg As/l	83A	<20	1.039
Dissolved Boron	µg B/l	83A	<1000	20
Dissolved Cadmium	µg Cd/l	83A	<5	<0.1
Hexavalent Chromium	mg Cr/l	68G	<0.05	<0.0005
Dissolved Copper	µg Cu/l	83A	<10	3.829
Dissolved Iron	µg Fe/l	83A	<300	**480**
Dissolved Mercury	µg Hg/l	83A	<5	0.167
Dissolved Manganese	µg Mn/l	83A	<100	**189**
Dissolved Lead	µg Pb/l	83A	<10	0.561
Dissolved Selenium	µg Se/l	83A	<20	5.816
Dissolved Zinc	µg Zn/l	83A	<100	27
Free Chlorine	mg Cl/L	123	<0.25	<0.1
Cyanide	µg CN/l	135	<20	<20
Chemical Oxygen Demand	mg O_2/L	3	<75	**456**
Electrical conductivity at 25°C	mS/m	2A	70 - 150	110
Fluoride	µg F/l	18G	<1000	0.23
Ammonia	mg N/L	64G	<6	**69**
Free Ammonia	mg N/L	Calc.		1.41
Saline Ammonia	mg N/L	Calc.		68
Nitrate/Nitrite	mg N/l	65Ga	<15	<0.04
Total Oil & Grease	mg/L	52	<2.5	7
pH at 25°C	pH units	1A	5.5 -9.5	7.6
Orthophosphate	mg P/L	66G	<10	6.68
Suspended solids at 105°C	mg/l	5	<25	**129**
E. coli	colonies per 100ml	32	<1000	**2 360 000**
Faecal Coliforms			<1000	**4 110 000**

6. POTENTIAL IMPACT PREDICTIONS AND DESCRIPTIONS

The site is in a visibly poor condition. The primary surrounding impacts are commercial forestry which has led to reductions in seasonal hydrological functioning. The geomorphology is in a modified state due trenching. The actual site was historically transformed for many years. However, the surrounding natural vegetation is intact around the watercourse areas.

6.1 Present Impacts

Within the Mooi River development footprint, the existing impacts on the watercourses and respective catchment areas include -

- Some erosion scars that have scoured out watercourse systems;
- Mismanaged grazing by cattle (over-grazing) - leading to changes in vegetation composition, surface wash and erosion, particularly along the wetland areas; and
- The clearance of natural habitat for various infrastructure developments – leading to the alteration of the flow regime in the watercourses and potential for soil wash.

In the broader Thukela WMA, similar impacts are present as noted for the Mooi River site. Additional existing impacts on the watercourses and respective catchment areas include -

- Infrastructure development within watercourse systems (wetland encroachment) or river banks – leading to a direct loss of wetland systems and decrease in provision of ecosystem services;

- Cattle grazing in wetlands and the riparian edge – drastic change in vegetation species composition occur in the catchment area, as well as soil erosion (cattle path erosion is prevalent in the area) and water pollution;
- Canalisation of streams and rivers – leading to change in the hydrological regime. This can be caused by bank erosion relating to the removal of vegetation, active channel construction to create more agricultural land and compaction by cattle resulting in reduced runoff and concentrated flow paths;
- Informal and formal watercourse crossings – leading to the change in hydrological regime;
- Commercial farm lands and forestry that draw water for irrigation and replace indigenous vegetation;
- Litter and solid waste disposal – direct water pollution; and
- Poor or absent sanitation – direct water pollution.

Figure 19 Existing erosion concerns on the mid-slope areas of Mooi River

6.2 Potential impacts during construction

Construction of the expansion area will result in a slight disturbance of the downslope wetland functioning (fauna, flora and hydrology) during the implementation phase. These potential impacts include –

i. Change in the land cover and roughness characteristics: by the removal of vegetation and topsoil, addition of spoil sites leading to wash, and compaction by heavy machinery resulting in increased runoff. This impact is linked to subsequent changes in the hydrological partitions and modifications to the slope and soil characteristics (changes to vegetation cover, root content and infiltration rates). Each of these are further described as:

- The potential increase in slope with the addition of spoil sites and bank construction will enhance existing erosion potential (greater energy for sediment wash);
- The reduction in vegetation cover will open some bare soil therefore reducing the surface roughness and increasing the erosive potential to the elements (wind and rain). Sheet wash, rill and gully erosion will be likely and may lead to the collapse or slumping of bank areas that would lead to burying marginal and edge instream habitat. A reduction in active root mass, which bind soil particles will also be a direct impact of this.
- A change from pervious areas to impervious areas (parking areas and shed) resulting in increased runoff and the likely transport of sediment into the river;
- An increase in compaction of the soils along the edge of the development where heavy machinery traverse (access routes and temporary platforms) will lead to an increase in the runoff.

- An increase in the turbidity of the river and wetland units will occur as a result of the sedimentation. Contaminants from spoil sites may infiltrate the river leading to a reduction in water quality. The quality of the spoil has been checked with the developers and is of good quality and from a very close location to the development. The placement of the spoil site is likely to be invaded by alien vegetation which are, by nature, excellent pioneer species.

ii. Loss of vegetation and alien invasion: clearing of grassland including some indigenous species in and around the development footprint and change in the composition and structure of the wetland and riparian vegetation. This is caused by:

- Direct removal of some indigenous species for construction clearing.
- Due to a disturbance and the removal of indigenous species, further ruderal and alien plant invasion will occur. This may also further increase the rate of erosion as discussed previously.
- The likely introduction of alien seeds in spoil obtained from nearby areas as a matrix for wind dispersed seeds.
- Certain alien plant species are known to alter the pH of the soil and groundwater in the vicinity of these plants. Furthermore, a loss in biodiversity due to the often poisonous or undesirable taste of these plants is likely.

iii. Pollution (water, air and noise): This will be as a result of:

- An increase in pollution due to air emissions from heavy machinery/vehicles, potential leaks of fuel, grease and oil from the heavy machinery/vehicles. Wash related to the above-mentioned changes during rainfall events will lead to the movement of these waste substances into the soil and the streams.
- The storage of hazardous chemicals such as fuel, ablution facilities that may leak, and any spills, such as concrete, during construction. If not properly managed, this may lead to impacts long after the construction is completed.
- As the Mooi River system is a River FEPA, water quality is of high importance. Aquatic species may be poisoned thus resulting in death (in the localised area) or movement away from the site. This may influence the ability of the aquatic species from breeding successfully as the lack of breeding species may disrupt upstream and downstream populations. Changes to Dissolved Oxygen (DO) and Total Dissolved Solids (TDS) as a result of a reduction in aquatic plants may detrimentally impact on invertebrate and vertebrate species. However, these impacts are very unlikely.
- Noise pollution by machinery and labourers may affect nearby residents and wildlife. Fauna that would otherwise cross through this system may avoid this area resulting in no dispersal of seeds and a lack in local biodiversity.
- Air pollution from the use of machinery (heavy vehicles/machines and generators) may result in a poor quality of life during this period for nearby households. Furthermore, bird populations may be negatively impacted upon.

6.3 Potential impacts during operation

Due to the fact that the expansion area is elevated and entrance platforms are existing, the majority of the impacts will be during construction. However, some impacts are likely during operation. These include -

i. Change in the land cover and roughness characteristics: by the presence of new surfaces, the expansion area structure and new bank slopes:

- The steep slopes associated with the development (new platform) may encourage bank erosion and sedimentation.
- A greater impervious area due to the new surfaces, which may increase peak flow events (due to a decreased lag time), and further scour out downstream aquatic systems while changing the sediment yield.

ii. Pollution (water, air and noise): an increase in pollution resulting from:

- The platform surface including petro-chemicals and human rubbish. More vehicles will be using this stop due to the improved infrastructure.

- The input of chemicals and non-biodegradable rubbish into the wetlands and river, either through surface runoff from the impervious surfaces, along drains or transported by the wind, will result in the deterioration of the local river water quality in vicinity of point source discharge points. Long term loss in aquatic and terrestrial biodiversity could be the major impact from these new dynamics.
- Air and noise pollution may be slightly increased with the increase in human movements;

iii. Increase in presence/abundance of invasive alien species: Disturbed areas are commonly invaded by alien invasive plant species during operation as:

- The operation of this expansion area may encourage additional invasive species due to traffic aiding seed dispersal (via being caught in tyres and grills).

6.4 Impact significance

The information obtained from the functional assessment (Scott-Shaw & Carter-Brown, 2015) were used to guide the estimation of the significance of each impact identified. The impacts identified are potential impacts, and their significance has been scored pre- and post-mitigation. The calculation of the significance for the Mooi River expansion took into account the magnitude, duration, extent and probability of the impact. The relevance to operational and construction phase has been provided in the results section. The calculation used is provided below (score out of 100):

$$Significance = (Magnitude + Duration + Extent) \times Probability$$

The identification of impacts was done on site and took into account the regional context of the site. The scoring approach has been provided in Table 16.

Table 16 Significance scoring for impacts identified at Mooi River

Probability (The likelihood of a particular impact occurring)	**Duration (The time period for which the impacts are expected to last)**
1 – very improbable	1 – very short (0-1yr)
2 – improbable	2 – short duration (2-5yr)
3 – probable	3 – medium term (5-15yr)
4 – highly probable	4 – long term (>15yr)
5 – definite	5 – permanent/the impact of the platform on the wetlands and its habitats are unknown
Extent – (size of the area of effect of the impact)	**Magnitude – (relative influence or intensity of impact)**
1 – limited to site	2 – minor (relative influence of impact is negligible and does not affect the functioning of the watercourse system)
2 – limited to local area	4 – low (the influence and intensity of the activity is low and slight changes in the functioning of watercourse systems may occur)
3 – limited to region	6 – moderate (the influence and intensity of the activity is moderate and some changes in the functioning of watercourse systems will occur)
4 – national	8 – high (the influence and intensity of the activity is high and the functioning of watercourse systems will be reduced significantly)
5 – international	10 – very high (the influence and intensity of the activity is very high and the functioning of watercourse systems will be completely transformed)

An assessment of the potential impacts of the MRTS expansion was guided by the EKZNW handbook for biodiversity impact assessments (2011). The table below lists potential impacts that are likely to be associated with the proposed development. The significance scoring provide guidance towards potential rehabilitation options that could be used in the rehabilitation plan. The significance of these impacts may be used to weight rehabilitation options relevant to the site. The focus here is more on the negative impacts associated with the construction of the expansion area and how these impacts can be minimised or mitigated.

Table 17 List of impacts and their significance for the Mooi River expansion area development

Construction Impacts	Mitigation	Probability	Duration	Extent	Magnitude	Significance
1. Change in the land cover and roughness characteristics	With	5	4	2	1	32 (moderate environmental significance)
	Without	5	4	2	4	50 (moderate environmental significance)
3. Loss of natural/indigenous vegetation and alien invasion	With	2	2	1	2	10 (low environmental significance)
	Without	3	4	1	2	21 (low environmental significance)
4. Pollution (water, air & noise)	With	2	2	1	1	8 (low environmental significance)
	Without	2	2	1	2	10 (low environmental significance)
Operational Impacts	**Mitigation**	**Probability**	**Duration**	**Extent**	**Magnitude**	**Significance**
1. Change in the land cover and roughness characteristics	With	5	4	2	1	32 (moderate environmental significance)
	Without	5	4	2	3	45 (moderate environmental significance)
3. Loss of natural/indigenous vegetation and alien invasion	With	2	2	1	2	10 (low environmental significance)
	Without	2	4	1	2	14 (low environmental significance)
4. Pollution (water, air & noise)	With	1	2	1	2	5 (low environmental significance)
	Without	2	3	1	2	12 (low environmental significance)

7. RECOMMENDED MITIGATION

The present impacts were used to set the scene and provide a baseline for which to compare the construction and operation phase impacts against. Based on the data, the following are noted mitigating actions -

7.1 Construction Phase

7.1.1 Site Establishment and Planning

- The construction area should be clearly identified including access platforms, stockpile or excavation areas, storage facilities and parking areas.
- "No Go" areas should be clearly identified for the entirety of the construction phase.
- Demarcated areas should be marked using easily visible fencing and should be properly maintained during construction.
- Signs to indicate hazardous areas or indication signs need to be placed where required.
- All demarcated areas need to be agreed upon with an ECO before construction begins.
- Work conducted in the river channel needs to be overseen by an ECO so that sediment loads are controlled (by appropriate control techniques).

7.1.2 Soil Management: (erosion and sedimentation control)

- To prevent erosion and sedimentation, construction activities should be undertaken during the dry season when flows will be substantially reduced.
- Erosion structures (such as silt traps) need to be placed around all stockpiles to prevent sediment wash.
- Topsoil (if any is removed at Mooi River, i.e. for the shed) stripped from the construction footprint must not be spoiled but stockpiled and preserved for use in rehabilitation. Top-soil and sub-soil stockpiles to be placed on opposite sides of the platform as this is where they will cause the least impact.
- Vehicles should be parked out of the floodline when not in use in order to prevent compaction of the soil profile.
- The construction camp should be located more than 100m from watercourses.
- Topsoil should be replaced in the correct order it was extracted and erosion prevention measures be put in place on areas with a steep gradient (such as geo-textiles).
- Any excess subsoil must be removed from the platform area once back filling is completed, and spoiled at an agreed spoil site.
- Stockpiles must be clearly demarcated and be kept free of weeds and compaction.

7.1.3 Loss of natural/indigenous vegetation and alien invasion

- Bank areas need to be stabilized before re-vegetation occurs. Bare areas need to be controlled by geo-textiles in order to give the vegetation a chance to establish.
- All growth forms of Category 1 weeds and invader plants shall actively be removed from all works areas, at all times;
- Areas for re-vegetation/alien clearing should be demarcated in order to prevent further disturbance. Furthermore, access platforms for machinery should avoid any of the vegetation focus areas and areas with existing natural vegetation;
- All Category 2 and 3 weeds and invader plants shall be actively removed all prior to flowering.
- all riparian and wetland areas disturbed during the construction phase must be rehabilitated and re-vegetated according to a construction phase rehabilitation plan compiled by an aquatic specialist in conjunction with a vegetation specialist; and
- Follow up assessments should be undertaken to prevent alien re-growth in alignment with time frames identified by a re-vegetation plan/vegetation specialist.
- Aquatic species assessments need to be undertaken by an aquatic specialist.

7.1.4 Pollution (water, air and noise)

- A Spill Contingency Plan for both construction and operational phases should form part of the Environmental Management Programme (EMPr). The Spill Contingency Plan should address measures to prevent and mitigate the spillage of hazardous materials, which include oil, grease and petrochemicals as well as herbicides which may be used as part of the alien clearing operation.
- All chemicals should be appropriately stored and handled. Storerooms must be more than 100m from watercourse zones and have appropriate concrete flooring and bunding.
- No washing of construction equipment and vehicles must be done on site.
- Any remnant rubbish, spoil, machinery and contaminants need to be removed from the development area.
- Vehicles or machinery may only be serviced at the existing diesel bowser and parking area to minimise impacts on watercourses.
- Appropriate ablution facilities need to be put in place with no effluent released into the soil or the river.
- Rubbish bins need to be placed on site so that no litter or food waste is left around the development.

7.2 Operational Phase

7.2.1 Pollution (water, air and noise)

- Storm water drains associated with the expansion area must be in alignment with the storm water management plan. This will reduce the risk of petro-chemical entering the watercourse.

7.2.2 Increase in invasive alien species

- Follow up assessments by the ECO, for six months post construction, should be undertaken to determine the success of the re-vegetation process.
- The success of the re-vegetation process needs to be signed off by a vegetation specialist or a qualified ECO.
- The ECO must determine if further follow-up assessments are needed.

7.2.3 Bank erosion

7.3The condition of the banks around the development need to be checked by the ECO during operation and signed off if in a controlled state where no erosion has been observed for 1 year during operation.

8. REHABILITATION PLAN

For the purpose of clarity, three areas of focus were identified.

8.1 Focus Areas

8.1.1 Sensitive expansion areas

The sensitive expansion areas are any area where the expansion comes into close contact with a watercourse. The priority is the assurance that the banks and the quality of the systems do not deteriorate during and after the construction. This is determined by reference to a baseline state compared to a monitoring process during and after construction. The objectives for the rehabilitation are:

- Ensure that the expansion area storm drains can accommodate at least the 1:2 year design peak discharge;
- Ensure the banks are properly supported with the appropriate structures;
- Removal of rubble from the watercourses;
- Management of the working development during construction;
- Minimize the construction pollution by correct storage methods, rubbish facilities, ablutions and spill management; and
- Clear rubbish from the wetland, riparian and floodplain areas.

8.1.2 Vegetation Clearing and Rehabilitation

The vegetation of the area has been identified as Mooi River Highland Grassland (Gs8: Scott-Shaw & Escott, 2011), within the grassland bioregion. It is distributed within the Mooi River Basin. Several scattered large patches are found near Underberg and Greytown and on the Helpmekaar Plateau southeast of Dundee. The altitude range is between 1 340 and 1 620 m. The grassland exists in a mainly rolling and partly broken landscape, covered in grassland dominated by short bunch grasses. *Heteropogon contortus*, *Themeda triandra* and *Tristachya leucothrix* are the dominant species in a well-managed veld state.

The rehabilitation objectives of this focus-area are described as –

- Management of the working development area during construction; and
- Alien Plant Control.

Furthermore, a vegetative screen of barrier plants is required to mitigate impacts of noise and dust of the site. It is recommended that frost resistant species be planted first to create a protective canopy for less frost resistant species mentioned that may be favored by the client. The following list is a combination of data from various sources and provides several options for suitable barrier plants -

- ***Carissa bispinosa*** is a fast-growing, medium-sized, evergreen shrub. It is obtainable from local nurseries countrywide and is cultivated extensively. Plants flower mainly from October to March and produce their edible berries from March to October. Plants should be spaced approximately a metre apart to form an impenetrable hedge-they are well armed with thorns. They can also be used as ornamental plants in an informal border. *Carissa bispinosa* should be planted in light, well-drained soil with the addition of plenty of compost. It can be lightly pruned to keep it neat. It can easily be cultivated from seed. These plants are of decorative value because of the contrast in leaves, flowers and fruit. They thrive near the coast or in gardens inland where winters are mild. They can be grown in gardens that have moderate frost, but the rate of growth is much slower in areas where winters are cold. As such, these plants need to be sheltered from the cold/frost for the first years of growth.

- ***Cassinopsis*** – spiny Cassinopsis or lemon thorn *Cassinopsis ilicifolia* is evergreen, glossy-leaved shrub 3x3m, against a fence it could span 5m. If well maintained, it makes a lovely neat hedge and the fruit of which attracts many birds. Moderate growth rate of about 70cm a year, sun or semi-shade and very well suited to Highveld gardens where it will survive those frosty nights.

- ***Dovyalis*** - Kei apples The Dovyalis family boast ferocious thorns particularly *Dovyalis caffra*. A wonderful small tree (5-8m) with edible orange-like fruit (only females bear fruit), sweetly scented flowers in spring but slow growing. It is a perfect hedge for a medium size to large garden, planted a metre apart, drought resistant and hardy but only once well established. In very cold areas it may lose many of its leaves in winter.

- ***Acacia ataxacantha*** (flame acacia) is ideal for supporting an unsightly fence. Very fast growing (exceeding 2 meters per year) against a fence and about a metre on its own, it occurs naturally in frosty areas but should be preotected from frost for its first year.

    - Feeding is most important. 2:3:2 or bonemeal on planting and every 2 months at least.
    - Water reasonably well as per each specie requirements
    - If a formal hedge is required and tree species such as Acacia or Ziziphus are used, the trees must be topped (main top growth) to encourage them to bush out from below.
    - When selecting suitable specimens at the nursery, look for bushy specimens with strong growing shoots from the bottom
    - Plant all shrubs/small trees at least 1m apart in order to create a dense hedge. In very warm, frost free climates, 2m apart depending on specie.

- ***Aloe arborescens*** is an easy and rewarding plant to grow, and is a popular garden plant in many countries. It enjoys full sun, well-drained, compost-enriched soil and can tolerate moderate frost but is sensitive to severe frost. It is fast-growing, and it will tolerate drought and neglect once established. It is grown mainly as an ornamental or as an accent plant, but is also an excellent and impenetrable hedge plant. The krantz aloe is easily propagated from a branch or stem cut off, allowed to dry for a day or so until the wound has sealed, and then planted in well-drained soil or sand. They need not be rooted in any particular place and then transplanted, but can be placed directly into their permanent place in the garden. It is important to remember not to water the cuttings too heavily; overwatering may cause them to rot. This aloe can also be grown from seed, sown in spring. Seed should take three to four weeks to germinate, and the seedlings must be protected from frost.

- ***Barleria rotundifolia*** grows fast and reaches maturity within two years. It can be propagated through seed or from cuttings. It grows easily from seed. The seed capsules/fruit should be collected as soon as they turn brown. Don't wait too long to collect the capsules otherwise they explode and the seed is harder to collect or lost. The plants require full sun to semi-shade and should be planted in sandy to loamy soil. Mixing 500 g of compost with 50 g of super-phosphate and working it into the soil will improve growth. A moderate amount of water is required and these plants do rather well in the dry season, thus it is a perfect choice for a water-wise garden. It is semi-frost-resistant and can therefore withstand a certain amount of cold weather, especially if planted in a protected area. It is advisable to prune *Barleria rotundifolia* after it has flowered.

- ***Asparagus falcatus*** can easily be grown from seed, cuttings or by means of division. The fruit is harvested from the plant when it is red and soft; this is usually during May-July. A light scrub with water should remove the fleshy part of the fruit and expose the seed. Sow the seeds in spring or summer. The seeds germinate in 2-3 weeks. Older plants can be split and separated to produce more plants. Grow this plant to hang over a pergola or a fence. It can also be planted to serve as a protective hedge. It grows well in shade, but will tolerate partial sunlight. This is a fast-growing plant and can grow up to 50 mm per day. The plant grows best in moist, well-drained humus-peat soil. It can cope with a little soil; the ideal temperature is 21°C. It can be used successfully as a container plant, but remember to repot or trim the roots as it will break the pot if left to grow too big.

Figure 20 Suggested barrier plants for the Mooi River Truck Stop expansion

8.1.3 Erosion Control Measures

The primary goal of the erosion control measures should be to stop soil loss in the micro-catchments, which has resulted in incised channels forming in parts of the plot. As identified in the impact component, an increase in bank slope from the platform should be carefully managed to prevent erosion. If not it could result in an amplification of erosion occurring during peak rain events. The lack of soil binding vegetation may lead to further losses in soil down the channels.

The objectives of this focus-area are to:

- Manage eroded areas within along the platform development, particularly near the watercourse systems;
- Place sediment traps that will prevent wash down the channels and prevent the culverts from becoming blocked;
- Plant a suitable grass that will assist in stabilizing the banks (such as Vetiver grass); and
- Consider geo-textiles to stabilize the banks of the channels and provide a suitable medium for vegetation to establish.

8.2 Rehabilitation measures / guidelines

This section provides an overview of suggested rehabilitation measures.

8.2.1 Soil Management

To ensure rehabilitation is effective, it is vital that the working area is managed correctly during the construction phase. An important part of this management will be that careful preservation and management of soil stockpiles should be implemented from the start of the platform upgrade. The following points have been provided for use with the rehabilitation actions:

- Top- and subsoil stockpiles (used for platform levelling and bank lifting) must not be stockpiled within 100m or within the 1:100 year floodplain of a water course.

- Naturally occurring vegetation removed by site clearance operations may be grubbed in with the topsoil for stockpiling.
- The topsoil shall not be buried or rendered in any other way inappropriate for rehabilitation use.
- Topsoil stripping (in widening and realignment areas) shall not occur in wet weather and during stripping and stockpiling, the topsoil shall not be subject to a compaction force greater than 1 500kg/m² and shall not be pushed for more than 50m.
- Topsoil shall also only be handled twice, once to strip and stockpile, and secondly to replace, level, shape and scarify if necessary.
- Top soil stockpiles must be protected against erosion and a record kept of all top soil quantities and should there be shortfalls of topsoil required for rehabilitation, adequate replacement material from commercial sources should be obtained as approved by the Engineer (preferably from areas identified with sourced excess topsoil).
- Equally, excess topsoil shall be landscaped and stabilized in accordance to the requirements of the Engineer and in consultation with the ECO.
- Topsoil stockpiles should not be stockpiled for longer than 6 months. If this can't be avoided, the stockpiles will need to be enriched or upgraded prior to rehabilitation. The Contractor shall consult with the Engineer with regards to matching preconstruction conditions or existing adjacent conditions.
- All stockpiles left for extended periods of time shall be stabilized using approved vegetation cover or other erosion control measures.
- Any excess subsoil must be removed from the platform fringe once back filling is completed, and spoiled at an agreed spoil site (spoil sites to be agreed between landowner, ECO and Engineer).

8.2.2 Alien Plant Management

Invasive and other noxious plants must be managed as per the requirements of the –

- Conservation of Agricultural Resources Act (Act 43 of 1983, as amended in March 2001) Regulations
- Notice No. R. 1048 of 25 May 1984, as amended by Government Notice No. R. 2687 of 6 December 1985) pertaining to weeds and invader plants control. As such, the following measures shall apply:
    - All growth forms of Category 1 weeds and invader plants shall actively be removed from all works areas, at all times; and
    - All Category 2 and 3 weeds and invader plants shall be actively removed all prior to flowering (See Appendix A for Alien Plant Removal and Control Methodology).

- The Department of Environmental Affairs (DEA) under the National Environmental Management: Biodiversity (NEMBA) Act 10 of 2004.

A set of Control guidelines for alien plant removal has been provided for the most common alien invasive species found on the site (Appendix A, WESSA, 2008).

8.2.3 Re-establishment of Vegetation Assemblage

It is important to prepare the soil for vegetation rehabilitation. Once the soil has been prepared, appropriate seeds or rescued plants should be used for the rehabilitation process. This is only relevant if the platform breaks new grassland or riparian/wetland habitats.

According to Everson *et al*. (2008): *Vetiver is a perennial grass that is used in soil and water conservation. It is a non-invasive plant as it has sterile seeds. It has a massive root system that holds soil together and when planted in hedgerows forms an effective barrier against water runoff. Vetiver should be planted early in the wet season. The roots of the plants are trimmed to about 5 cm and the shoots to 10 cm. Slips of 2-3 shoots (tillers) are planted 10-15 cm apart in a furrow about 20 cm deep with fertilizer and lime. The crown of the plant is buried 6-7 cm below the soil surface. The trimmed leaves are used to cover the base of the plants to form a mulch. Distance between vertical rows is about 2 m. The slips should be watered for the first 2 weeks after establishment.*

There are several other methods / techniques available for employment in re-establishing the site. Through understanding the site and the problems posed, options have been identified as the correct methods to

employ re-establishment. The planting methods are expanded upon below. Please note that re-vegetation planting must be undertaken in spring if possible to ensure that establishment is successful.

Table 18 Grass Species selected for the baseline Graminoid assemblage, proportions and position in the landscape

Grass species	Proportions	Kgs/hectare	Landscape position
Alloteropsis semialata	7.50%	2.25	
Bothriochloa insculpta	10%	3	
Brachiaria serrata	5%	1.5	
Eragrostis capensis	10.00%	3	
Imperata cylindrica	15.00%	4.5	Ecotone& Riparian Areas Only
Melinis nerviglumis	10.00%	3	
Melinis repens	7.50%	2.25	
Miscanthus capensis	10%	3	Ecotone& Riparian Areas Only
Monocymbium ceresiiforme	7.50%	2.25	
Setaria sphacelata	5%	1.5	Ecotone& Riparian Areas Only
Sporobolus pyramidalis	10%	3	
Themeda triandra	20.00%	6	
Tristachya leucothrix	5%	1.5	
Total	**100%**	**30**	

If the above seed mix stated is not available, the following species may be included, as they are commercially available. However, this should be avoided if possible as *Eragrotis tef* and *Chloris gayana* are alien species but have been included due to their ease of establishment and soil stabilising attributes.

- *Eragrostis tef* 3kg/ha
- *Digitaria eriantha* 6kg/ha
- *Panicum maximum* 4 kg/ha
- *Chloris gayana* 6kg/ha
- *Cynodon dactylon* 6kg/ha

In order to properly implement the re-vegetation component, the following general planting guidelines have been adopted to drive the rehabilitation process.

- Non-woody portions must be returned to either hygrophilous vegetation (sedges, bulrushes) or to graminoid assemblages which favour relevant specific habitats.
- Wherever alien woody vegetation is removed, indigenous trees can be planted back at a density equal to that of the surrounding indigenous areas (Table 6).
- Removal of existing alien species must be consistently undertaken.
- Rehabilitation of disturbed areas after the construction of the proposed expansion must be done as soon as possible after construction is completed.
- If it is necessary to import soil onto the site the material; must be checked to ensure that it is not contaminated by weeds or invasive plants.

The following species or subgroup thereof would be the ideal for the establishment of the vegetative component. Given that this class of area is relatively terrestrial we would propose that the area be hydro-seeded and the more hygrophilous species of sedge and other wetland/riparian plants will establish themselves over time in the areas where the conditions will suit their establishment.

Grasses -

- *Setaria sphacelata*
- *Andropogon appendiculatus*
- *Aristida junciformis*
- *Imperata cylindrica*

Sedges (sourced from nearby wetlands in a non-destructive manner/small quantities)-

- *Cyperus congestus*

- *Bulbostylis hispidula*
- *Cyperus sphaerospermus*

8.2.4 Hydraulic Seeding/Hydro Seeding

This method of seeding is quick and effective especially on steep, critical slopes and inaccessible areas that cannot practically be seeded by other methods. Hydro-seeding includes seed, water, fertilizer and a small amount of mulch in a slurry transported in a tank, either truck or trailer mounted and sprayed over prepared ground in a uniform layer.

Although hydraulic planting is more expensive than manual seeding and mulching, it has many benefits. With hydraulic planting, the seed blend can be distributed uniformly, the added mass increases accuracy and throw distance, especially in exposed, windy areas, while pre-soaking and water accelerates germination and enhances the chance of survival.

8.2.5 Use of Plugs

Plugs should be applied where immediate cover is required for stabilisation. Particular areas would be drainage channels and very steep banks. Plugs should be –

- Planted at 10 cm centres
- Over a pegged artificial mesh (e.g. a light polypropylene, UV stabilised mesh with about 20mm openings) in areas of very high water velocity;
- Watered immediately to enhance establishment;
- Watered regularly for the first seven days or as required to effect establishment.

In areas where steep slopes require stabilisation a requirement may arise for the soils to be stabilised through the use of Geotextiles. Ideally, vegetation is the best form of erosion control, with Geotextiles only used for temporary stabilization purposes until this can establish. In coastal areas, Geotextiles are only superior to hydro-mulching in the following situations:

1. When the growing season is short or unfavourable and plants cannot stabilize a slope quickly;
2. When surfaces are so unstable or contours so channelled that a heavy rain could result in significant and costly erosion damage.

8.2.6 Hand Seeding

Compared to hydro-mulching, manual mulching and seeding is better suited to flatter land. Like other forms of seeding it should be carried out in suitable weather conditions.

8.2.7 Geotextiles

Geotextiles (also referred to as erosion control blankets or mats) are any permeable textile material that is used to holding seed, fertilizers and/or topsoil in place, or holding disturbed soil on steep slopes and graded sites, in order to prevent erosion. Good surface preparation is critical, as the soil surface should be relatively smooth and without projections. The blanket or mat should extend beyond the edge of the area to be covered, with the top end buried in a platform at least 10cm deep by 20cm wide. The mat or blanket will need to be further secured with stakes. There must be maximum soil contact to prevent erosion underneath.

Although Geotextiles have historically been made of natural plant materials, Geotextiles are increasingly made from a synthetic polymer or a composite of natural and synthetic material. We do not support the usage of synthetic Geotextiles. Plant fibre-based Geotextiles are subject to decomposition and have a limited durability. However they may be left in place to form an organic mulch to help in establishment of vegetation. Different fibres will degrade at different rates. Coir Geotextiles degrade in 2-3 years while jute degrades in 1-2 years. Coir is therefore useful in situations where vegetation will take longer to establish, and jute is useful in low rainfall areas because it absorbs more moisture. Recommended products are BioJute™, which is produced by a company called *Maccaferri* and Geojute® which is produced by a company called Geotextiles Africa.

8.3 Rehabilitation Actions

The rehabilitation actions have been tabulated and include further information on the construction and operational phase, the responsible party and the frequency requirement of each action.

ACTION	RECOMMENDED APPROACH	RESPONSIBLE PARTY	TIMING
Pre-construction phase			
1. Soil Management	3. Anti-erosion features should be put in place prior to construction (as per the EMPr). 4. The watercourse zones should be demarcated prior to construction to prevent these areas from being unduly disturbed.	ECO	Prior to commencement of construction
2. Alien Plant Management	5. Alien plant species need to be listed to that appropriate removal techniques can be used during and after construction.	ECO	Prior to commencement of construction
3. Vegetation	6. Any important species should be identified prior to construction. This will assist in determining the rehabilitation requirements (Section 7.2.3). Disturbance of important (as identified in the vegetation assessment report) species should be avoided if possible.	ECO	Prior to commencement of construction
Construction phase			
1. Soil Management	7. To prevent erosion and sedimentation, construction activities should be undertaken during the dry season when potential flows will be substantially reduced. 8. Topsoil must be removed from the full width of the development (including working areas) and not spoiled. Top and sub-soil stockpiles to be on opposite sides of the platform. Top- and subsoil stockpiles must not be stockpiled within 100m or within the 1:100 year floodplain of a watercourse. 9. No access of vehicles should be permitted within riparian or wetland areas in order to prevent compaction of the riparian/wetland soil profile. Should access be imperative, it should be for limited periods only and should not take place during wet weather. 10. The construction camp should be located more than 100m from watercourses. 11. Topsoil should be replaced in the reverse order it was extracted and erosion prevention measures be put in place on areas with a steep gradient (such as geo-textiles)	Contractor	At all times during construction
2. Alien Plant Management	• All growth forms of Category 1 weeds and invader plants shall be actively removed from all works areas, at all times; and • All Category 2 and 3 weeds and invader plants shall be actively removed all prior to flowering (refer to Section 7.2.2 and Appendix A for more information).	ECO / Contractor	At all times during construction
3. Re-establishment of vegetation assemblage	• Re-vegetation of riparian species should follow methodology provided in Section 7.2.3. • Hydraulic seeding or plugs can be used to initiate the re-vegetation (Section 7.2.4 & 7.2.5).	ECO / Contractor	After closure of proposed expansion

4. Contamination Management	• A Spill Contingency Plan for both construction and operational phases should form part of the Environmental Management Programme (EMPr). The Spill Contingency Plan should address measures to prevent and mitigate the spillage of hazardous materials, which include oil, grease and petrochemicals as well as herbicides which may be used as part of the alien clearing operation. • All chemicals should be appropriately stored and handled. Storerooms must be more than 100m from watercourse zones and have appropriate concrete flooring and bunding. • No washing of construction equipment and vehicles must be done directly from the watercourses. Washing should be managed such that detergents do not enter the watercourse.	Contractor	At all times during construction
Operational phase			
1. Soil Management	• Any excess subsoil must be removed from the platform development once back filling is completed, and spoiled at an agreed spoil site (spoil sites to be agreed between landowner, ECO and Engineer).	Contractor	At all times during construction
2. Alien Plant Management	• Follow up assessments should be undertaken to prevent alien re-growth. Appendix A should be used for alien plant control until natural vegetation has established.	ECO	Upon rehabilitation, after closure of proposed expansion
3. Vegetation	• Re-vegetation must start as soon as possible after closure of the proposed expansion. • Follow up assessments should be undertaken to determine if the vegetation establishes and further actions as identified in Section 7.2.3.	ECO	Upon rehabilitation, after closure of proposed expansion

*Please note that any of the rehabilitation measures provided in Section 7.2 can be used to meet these actions if feasible

9. POTENTIAL EXPANSION AREAS

Through the numerous assessments, the proponent has asked NatureStamp to determine potential expansion areas which include:

- An emergency exit for truck drivers located to the northern extent of the site.
- A potential expansion of the truck stop access areas.
- Potential use of the southern tip of the site.

As the proponent wishes to convert the truck stop into a 'green' development, all of the expansion must take cognizance of areas where the wetland could be improved.

As it stands, the truck stop could expand by 3.14 ha without encroaching into buffer areas. However, this may not be the most practical use of space. The author recommends the formalization of the historically natural wetland area. This wetland is currently providing essential services to the Mooi system by remediating some of the very poor quality water entering the system. As such, it would be highly beneficial to the Mooi system if this wetland were to be expanded upon and rehabilitated. It is recommended that if expansion occurs, it does so in line with the authors approach as shown in Figure 21. The green area could be enhanced and merged into the buffer area shown in green.

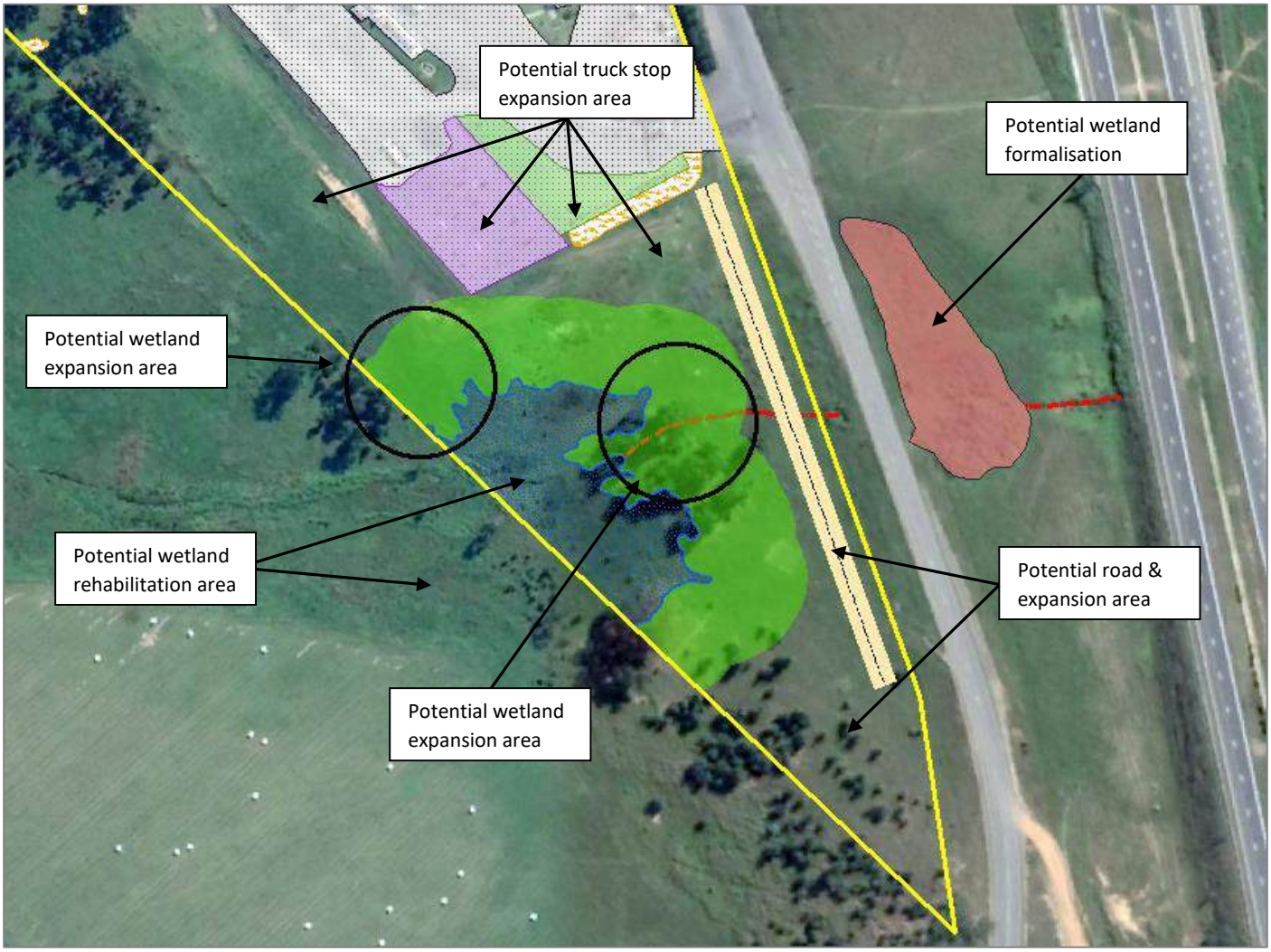


Figure 21 Recommended expansion approach

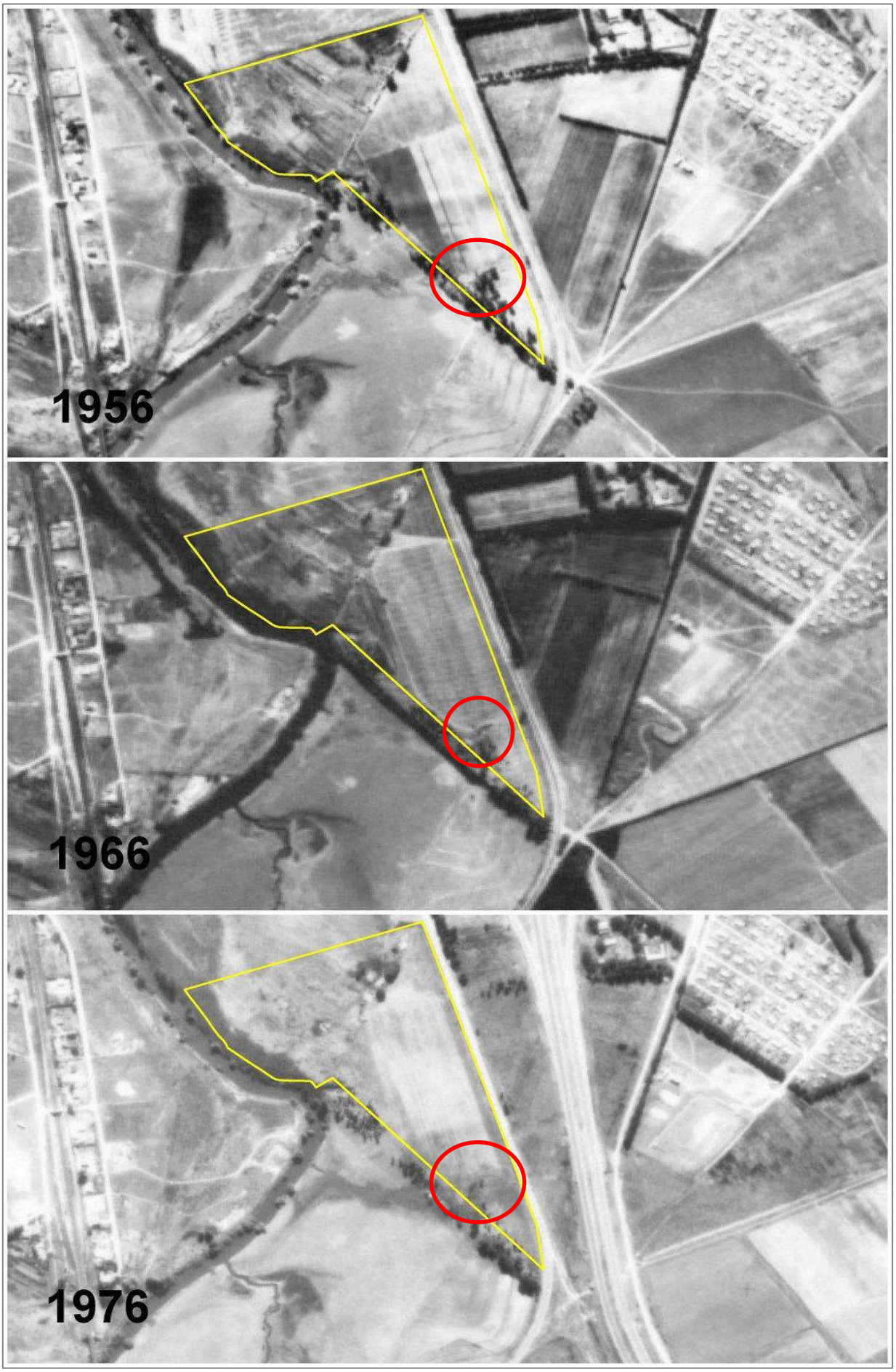


Figure 22 Historical analysis of the MRTS site

10. CONCLUSION

Given the information provided, a 30 meter buffer was applied to the wetlands. This is believed to be sufficient to prevent further degradation to the watercourses. However, the discharge of effluent into the Mooi from Bruntville is a significant concern and should be addressed.

The following guidelines should be considered.

- The removal of alien species from this site could drastically improve the services provided from the system.
- The most significant impact on the wetland is likely to be from an increase in storm water runoff (both in terms of volume and peak flows from the site) due to the hard surfacing of the proposed development. Increased storm water runoff has the potential to further incise the drainage lines, as well as damage infrastructure downstream. The Storm Water Management Plan for the site must ensure that post-development peak flow off the site equals pre-development peak flows. To this end, adequate storm water attenuation features should be incorporated in the layout design of the development, and energy dissipation structures should be fitted at all concentrated flow release points within the drainage network of the housing development. This would aid in reducing flow velocities off the hardened surfaces and towards the wetland areas. Where possible, the use of check dams, porous pavements, percolation trenches and permanent slope diversion structures to promote infiltration are encouraged; the effectiveness of infiltration measures will of course depend on geotechnical and topographical conditions.
- Vegetated open spaces should be incorporated into the layout plan to encourage infiltration and dissipate overland storm water flows.
- Dense beds of reeds (relevant to site) should be planted between storm water discharge points and the wetland to aid in the reduction of stormwater velocity into the wetland system.
- Septic tanks and soakaways, if used, should be positioned in consultation with a geotechnical engineer; the proviso being that the soil must have capacity to absorb the effluent; and retention times within the soil ensure that there is no contamination of water sources. Given the high number of water resources within and around the development, it is imperative that adequate capacity for effluent treatment is achieved within the development design.
- Considering the frequent storm events in the region during summer months, it is recommended that where possible construction takes place during winter.

It is recommended that the area shown in Figure 21 be used should expansion occur. If the wetland is rehabilitated, formalized and increased, this would adequately safeguard the freshwater systems on the site, and avoid any water-related EIA requirements.

The developers of the proposed camp must note that watercourses are protected by nine Acts and two Ordinances in KwaZulu-Natal1, which verifies that both national and provincial authorities recognize these systems as highly valuable multiple-use resources and are committed to their conservation.

[1] The Lake Areas Development Act, Act No. 39 of 1975; The National Water Act, Act No. 36 of 1998; The Mountain Catchment Areas Act, Act No. 63 of 1976; The Environmental Conservation Act, Act No. 73 of 1976; The National Environmental Management Act, Act No. 107 of 1998; The Conservation of Agricultural Resources Act, Act No. 43 of 1983; The Town Planning Ordinance 27 of 1949; The Physical Planning Act, Act No. 88 of 1967; The Forest Act, Act No. 84 of 1998; The Natal Nature Conservation Ordinance No. 15 of 1974; The KwaZulu Nature Conservation Act, Act No. 8 of 1975

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ANNEXURE A Classification structure for inland systems up to Level 4

WETLAND / AQUATIC ECOSYSTEM CONTEXT		
LEVEL 1: SYSTEM	**LEVEL 2: REGIONAL SETTING**	**LEVEL 3: LANDSCAPE UNIT**
Inland Systems	DWA Level 1 Ecoregions OR NFEPA WetVeg Groups OR Other special framework	Valley Floor
		Slope
		Plain
		Bench (Hilltop / Saddle / Shelf)

FUNCTIONAL UNIT		
LEVEL 4: HYDROGEOMORPHIC (HGM) UNIT		
HGM type	Longitudinal zonation/ Landform / Outflow drainage	Landform / Inflow drainage
A	B	C
River (Channel)	Mountain headwater stream	Active channel
		Riparian zone
	Mountain stream	Active channel
		Riparian zone
	Transitional stream	Active channel
		Riparian zone
	Upper foothill rivers	Active channel
		Riparian zone
	Lower foothill rivers	Active channel
		Riparian zone
	Lowland river	Active channel
		Riparian zone
	Rejuvenated bedrock fall	Active channel
		Riparian zone
	Rejuvenated foothill rivers	Active channel
		Riparian zone
	Upland floodplain rivers	Active channel
		Riparian zone
Channelled valley-bottom wetland	(not applicable)	(not applicable)
Unchannelled valley-bottom wetland	(not applicable)	(not applicable)
Floodplain wetland	Floodplain depression	(not applicable)
	Floodplain flat	(not applicable)
Depression	Exorheic	With channelled inflow
		Without channelled inflow
	Endorheic	With channelled inflow
		Without channelled inflow
	Dammed	With channelled inflow
		Without channelled inflow
Seep	With channelled outflow	(not applicable)
	Without channelled outflow	(not applicable)
Wetland flat	(not applicable)	(not applicable)

Note: 2nd row of Table provides the criterion for distinguishing between wetland units in each column

ANNEXURE B Wetland and soil classification field datasheet example

Sampling Sheet Summary	
Wetland	MRTS
Area (ha)	<100
Indicator	Soil and vegetation
Connectivity (level 1)	Inland
Eco region (level 2)	South Eastern Uplands
Landscape setting (level 3)	Riparian system
HGM Type (level 4A)	Endhoreic
Longitudinal zonation (level 4B)	With channel
Hydrological regime	Frequent Inundation
Soil characteristics	Hue – Gley 2 to 5YR Value – 4 Chroma – 2 (Dark Reddish Gray) Depth sampled: 0-0.5m
Comment	No change in soil characteristics

ANNEXURE C Steps for Riparian Delineation

Steps for Riparian Delineation in the field

To delineate riparian areas, use the terrain unit indicator, vegetation indicator species, soil wetness indicator, combined with

- Geomorphology of the banks; and
- Extent of riparian vegetation.

Evidence of alluvial deposits can also be used.

STEPS to delineating the riparian zone:

I. Is the site relatively undisturbed (banks have not been extensively engineered, and the site is predominantly indigenous, naturally occurring vegetation)? If yes, proceed to step II. If no, proceed to step V.

II. Starting at the edge of the channel, use the regional riparian vegetation indicator list, identify the edge of the zone of (obligate) riparian plants.

III. At this point, check:

a. If there are any hydric indicators in the soil (refer to Wetland Delineation component).
b. If you are still in a zone of unconsolidated recent alluvial sediment.

If yes for either **a** or **b**, proceed outwards from the channel to identify the edge of these zones.

Once the answer to **a** and **b** are no, follow the same steps (II and III) using preferential and/or facultative riparian plant species *(Refer to the steps 1 to 12 from the vegetation assessment section below for further detail)*.

Following completion of the above, proceed to step IV.

IV. Examine the geomorphology (shape) of the channel and banks. After moving away from the channel during steps II and III, you should be at or close to the edge of the top of the "macro-channel" bank (in the case of erosive rivers) or the edge of the active floodplain or flood zone (in the case of alluvial depositional rivers). At, or close to, this point you should see an inflection point (change in slope) between the riparian area and the upland (terrestrial) slopes. This can be taken as the edge of the riparian zone.

Using Reference Sites:

V. For sites which have been heavily disturbed (i.e. where there is almost no indigenous vegetation remaining, and/or where the banks have been heavily engineered such that it is no longer possible to identify the original morphology of the banks), then a REFERENCE site will need to be located. The Reference site will need to be close by on the same or a similar sized river system, in an area of similar topography. The Reference Site can be used to provide an indication of the likely riparian extent prior to disturbance. Once the reference site is located, proceed with step II.

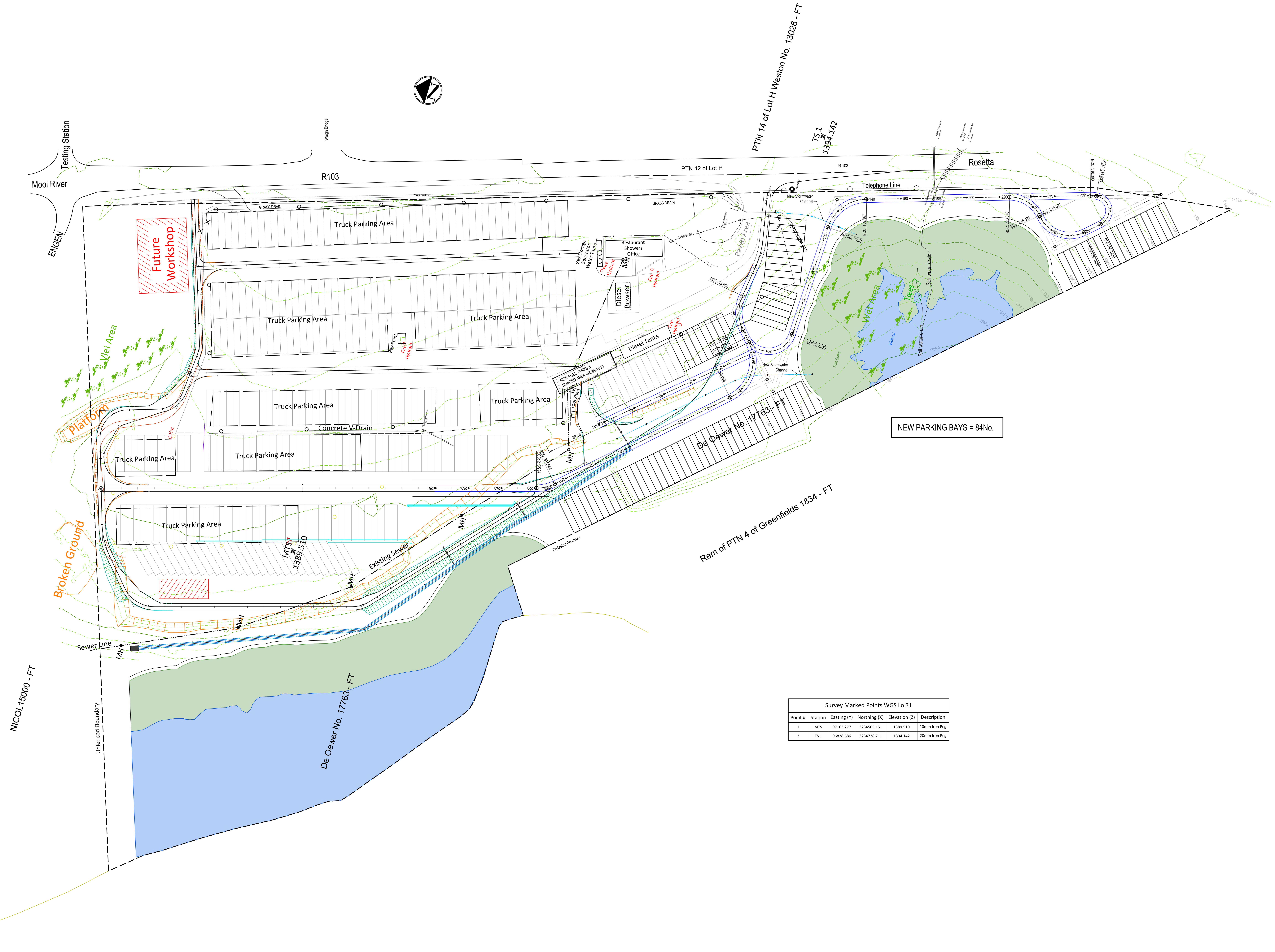
Where problems may be encountered:

On floodplains, it is important to check whether the floodplain is active (i.e. regularly flooded under the current climatic regime) or a relict floodplain (meaning that the floodplain depositional area formed due to a wetter historical climate and now is no longer regularly flooded). The type of vegetation on the floodplain surface, presence of soil wetness indicators and the presence of ox-bows and other riparian and wetland features would provide the indications of the current levels of flooding/inundation/saturation.

ANNEXURE D Surface and borehole water quality results

Methods	Determinands	Units	013017/20	013018/20
			MRTS BH 31.07.2020	MRTS WW 31.07.2020
Chemical				
83A	Dissolved Arsenic	µg As/ℓ	1.135	1.039
83A	Dissolved Boron	µg B/ℓ	152	20
83A	Dissolved Cadmium	µg Cd/ℓ	<0.1	<0.1
68G	Hexavalent Chromium	mg Cr/ℓ	0.0025	<0.0005
83A	Dissolved Copper	µg Cu/ℓ	**39**	3.829
83A	Dissolved Iron	µg Fe/ℓ	12.10	**480**
83A	Dissolved Mercury	µg Hg/ℓ	<0.15	0.167
83A	Dissolved Manganese	µg Mn/ℓ	3.041	**189**
83A	Dissolved Lead	µg Pb/ℓ	<0.29	0.561
83A	Dissolved Selenium	µg Se/ℓ	0.432	5.816
83A	Dissolved Zinc	µg Zn/ℓ	<0.1	27
123	Free Chlorine*	mg Cl_2/ℓ	<0.1	<0.1
135	Cyanide*	µg CN/ℓ	<20	<20
3	Chemical Oxygen Demand (Total)	mg O_2/ℓ	12	**456**
2A	Electrical Conductivity at 25°C	mS/m	30.7	110
18G	Fluoride	mg F/ℓ	**2.26**	0.23
64G	Ammonia	mg N/ℓ	<0.11	**69**
Calc.	Free Ammonia*	mg N/ℓ	<0.11	1.41
Calc.	Saline Ammonia*	mg N/ℓ	<0.11	68
65Ga	Nitrate/Nitrite	mg N/ℓ	0.09	<0.04
52	Total Oil & Grease*	mg/ℓ	<3	**7**
1	pH at 25°C	pH units	9.1	7.6
66G	Orthophosphate	mg P/ℓ	<0.04	6.68
5	Suspended Solids at 105°C	mg/ℓ	<4	**129**
Microbiological				
32	*E.coli*	MPN/100mℓ	<1 (Not detected)	**2360000**
32	Faecal Coliforms*	MPN/100mℓ	<1 (Not detected)	**4110000**

Appendix 2: Approved layout as per EA Amendment



Survey Marked Points WGS Lo 31					
Point #	Station	Easting (Y)	Northing (X)	Elevation (Z)	Description
1	MTS	97163.277	3234505.151	1389.510	10mm Iron Peg
2	TS 1	96828.686	3234738.711	1394.142	20mm Iron Peg

Notes

Reference Drawing

Ref Number	Description

Revision Details	By / Chk	Rev Date	Suffix
Revised As Per Client	JSM	25/7/21	B
Issued For Information	JSM	18/7/21	A

Client
Mooi River Truck Stop (Pty) Ltd

Mooi River
Old Main Road
Kwazulu-Natal 3300
Tel.: (033) 263-2673 Fax : (033) 263-2673

Approved On Behalf Of Client
By:
Signature:

HEMINGWAY AND ASSOCIATES cc
Consulting Engineers
Fuschia Grove Farm
D183 Mount West
P.O. Box 91 Mooi River 3300
Kwa-Zulu Natal
South Africa
Email: Rob.Archer@bundunet.com
Cell: +27 (83) 460-9356

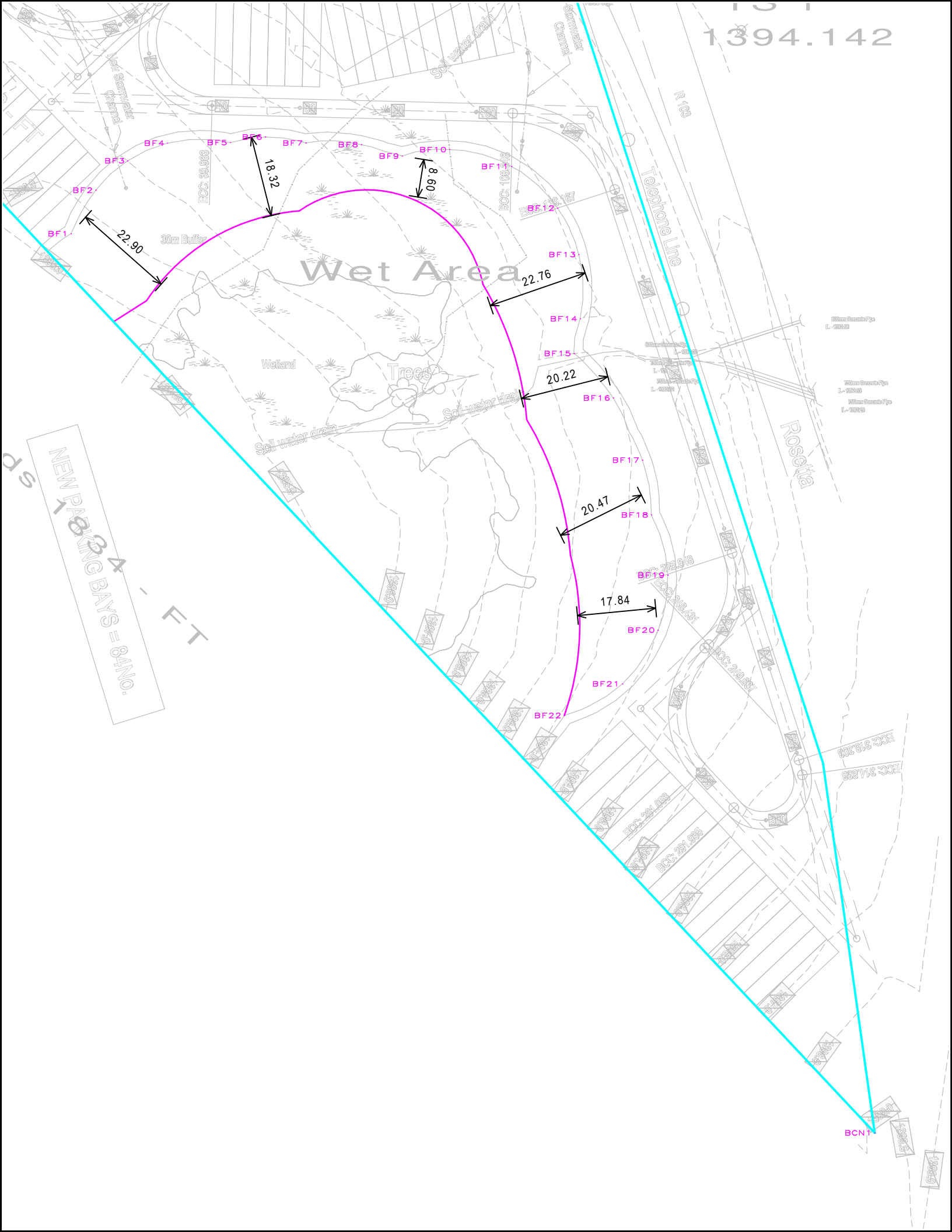
Approved On Behalf Of Hemingway And Associates
By: (Pr. No.)
Signature:
Date:

Project
Mooi River Truck Stop
Additions & Extensions

Title
Proposed Site Plan

Scale		
1:750		
Drawn: J.S.M.	Designer: J.S.M.	
Check: M.S.H.	Tech Check: M.S.H.	Date: 25-07-21
Project Number: 21052	Drawing Number: C02	Revision: B

Appendix 3: Proposed new layout


1394.142
Wet Area
Wetland
Trees
30m Buffer
Soil water drain
Soil water drain
Soil water drain
Telephone Line
Rosetta
R 103
Stormwater Channel
New Stormwater Channel
NEW PAVING BAYS = 84NO.
BF1
BF2
BF3
BF4
BF5
BF6
BF7
BF8
BF9
BF10
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BF19
BF20
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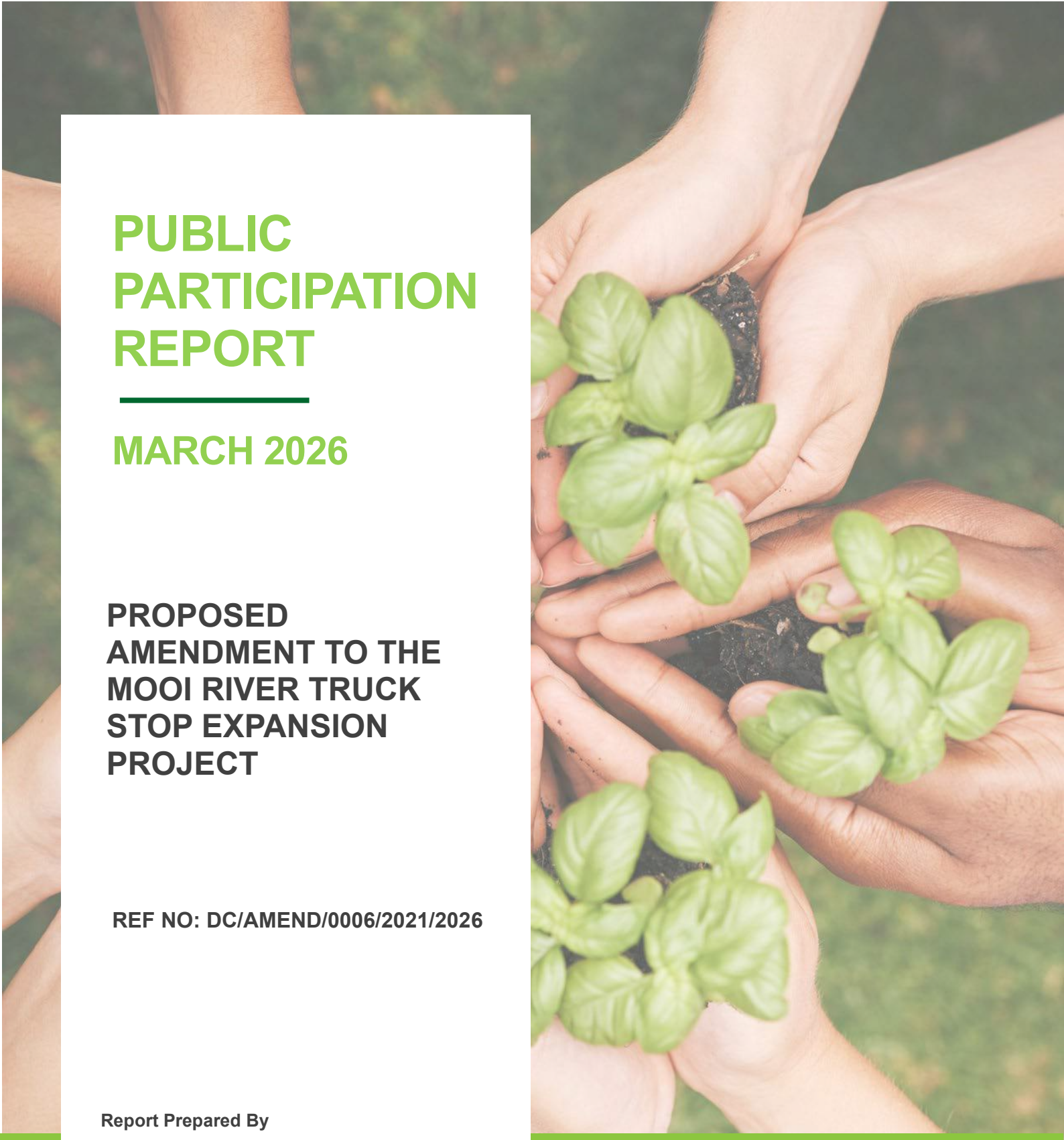
22.76
20.22
20.47
17.84
BCN1

APPENDIX G: PUBLIC PARTICIPATION REPORT



PUBLIC PARTICIPATION REPORT

MARCH 2026

PROPOSED AMENDMENT TO THE MOOI RIVER TRUCK STOP EXPANSION PROJECT

REF NO: DC/AMEND/0006/2021/2026

Report Prepared By

GREEN CHOICE CONSULTING

CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION & BACKGROUND

1.1 Introducing the Project

Green Choice Consulting (Pty) Ltd has been appointed by Mooi River Truck Stop (Pty) Ltd (hereinafter referred to as "the Applicant") to manage the environmental regulatory compliance process for the proposed amendment to the approved Mooi River Truck Stop expansion project, located off the R103, in Mooi River, KwaZulu-Natal.

Environmental Authorisation (EA) for the expansion of the Mooi River Truck Stop was granted on 17 September 2021, permitting additional fuel storage capacity and the extension of the truck parking facility. Construction associated with the authorised expansion has not yet commenced.

As part of the operational planning and detailed design for the expanded facility, it has become evident that additional manoeuvring and turning space will be required within the approved truck parking extension to safely accommodate heavy-duty vehicle movements. This is necessary to prevent congestion, maintain efficient circulation, and ensure that trucks are able to enter, park, and exit the facility without operational or safety risks.

To achieve this, the Applicant proposes the construction of two dedicated departure lanes within the authorised development footprint. These lanes will facilitate safe access into the extended parking area and provide a structured route for vehicles navigating toward the designated exit point. While these internal layout adjustments do not trigger any new listed activities in terms of the EIA Regulations, the lane alignment will result in limited clearance within the previously delineated wetland buffer, and therefore requires a Part 2 Amendment to the EA to regularise this change.

1.2 The Public Participation Process

The Public Participation Process (PPP) is designed to enable all interested and affected parties (I&APs) to voice their opinion, observations and/or comments which enables the Environmental Assessment Practitioner to evaluate all aspects of the proposed development, with the objective of improving the project by maximising its benefits, whilst minimising the potential adverse impacts.

I&APs include all interested stakeholders, specialists and relevant organs of state. The objectives of the PPP are as follows:

- To inform I&APs and key stakeholders of the proposed project;
- To notify the owners or persons in control of the land adjacent to the proposed development;
- To initiate meaningful and timeous participation of I&APs;
- To provide I&APs with an opportunity to raise concerns and issues surrounding the proposed development, as well as to share knowledge and input which will assist the practitioner to accurately assess the potential impacts of the proposed development; and
- To ensure inclusivity whereby the needs, interests and values of I&APs are considered in the decision-making process.

The PPP must adhere to the requirements of Regulation 40 and 44 of the EIA Regulations (2014, as amended). A number of key activities have been undertaken and will continue to be undertaken through the amendment process, which include the following:

- Identification of key stakeholders from the different levels of government, non-government organisations, Municipal representatives as well as neighbouring landowners.
- Advertising and the erection of site signage.
- The development of an I&AP database capturing the details of stakeholders. This database will be updated throughout the Scoping & EIR process.
- The fielding of queries from I&APs and provision of requested information.

- The documentation of all I&AP interactions.

1.3 Purpose of this Report

The purpose of this Public Participation Report is to:

- Summarise the public participation process (PPP) undertaken for the Scoping & EIR phases.
- Highlight the public participation activities that have been conducted to date.
- Synthesise the issues and concerns raised by I&APs and stakeholders to date and to address these comments.

2. PUBLIC PARTICIPATION SUMMARY

2.1 Activities Undertaken to Date

The PPP commenced in February 2026, and has been undertaken to comply with the requirements of Regulations 40–44 of the EIA Regulations (2014, as amended). The PPP entailed the undertaking of the following activities, with Table 1 providing a timeline of the activities undertaken for this application.

2.1.1 Newspaper Advertisement

In accordance with Regulation 41(2)(c) of the EIA Regulations (2014, as amended), a newspaper advertisement was placed in the Estcourt & Midlands News on the 5th of February 2026 to notify the public of the proposed project and invite Interested and Affected Parties (I&APs) to register. The advert was published in English and isiZulu.

A copy of the advertisement tear sheet is included in Appendix A.

2.1.2 Site Signage

In compliance with Regulation 41(2)(a) of the EIA Regulations, two site notices (one English and one isiZulu) was erected on the 4th of February 2026 at the entrance to the Mooi River Truck Stop. The purpose of the notice was to inform surrounding landowners, businesses, and members of the public of the proposed activity and to invite registration as I&APs.

Proof of placement of site signage is attached as Appendix B.

2.1.3 Identification of Stakeholders

Stakeholders were identified in accordance with Regulations 40 and 41, ensuring that all parties who may be affected by or hold an interest in the proposal were included. The following categories of stakeholders were identified:

- Local and district municipal representatives, including the Ward Councillor for the affected area
- Provincial authorities and relevant organs of state, including the Department of Water and Sanitation, SANRAL, and the Department of Transport.
- Neighbouring landowners and businesses
- Tenants and property owners within a 100 m notification radius.

An I&AP database was compiled and continues to be updated as additional stakeholders register or request inclusion. The database is attached as Appendix C.

2.1.4 Notification & Background Information Document

A Background Information Document (BID) was prepared to provide stakeholders with an overview of the proposed project, the amendment process, and the opportunities for participation.

The BID was distributed to all identified stakeholders and landowners within the notification area.

Proof of distribution and the BID are included in Appendix D.

2.1.5 Review of the Draft Amendment Report

The Draft Amendment Report (DAR) is currently being made available to all registered Interested and Affected Parties (I&APs), stakeholders, and commenting authorities for a 30-day review period. Notifications were issued via email, providing links to download the report as well as instructions for submitting written comments.

To ensure accessibility, electronic copies of the reports are made available on the Green Choice Consulting website (www.greenchoiceconsulting.co.za/publicparticipation). Upon request, reports may also be provided on flash drives or as hard copies delivered via courier. Translated versions could be made available on request to accommodate language preferences.

All comments received during the review periods will be documented in the Comments & Responses Table (Appendix E), and the report will be updated where necessary to address the issues raised.

Table 1: Timeline of Public Participation Activities

Date	Activity	Compliance Reference (EIA Regs 2014, as amended)
05 February 2026	Circulation of BID and notification letters to stakeholders	Reg. 40(2)(a) & (b)
05 February 2026	Newspaper advertisements published in Estcourt & Midlands News	Reg. 41(2)(c)
04 February 2026	Placement of site notice on property boundary	Reg. 41(2)(a)
05 February 2026 – 09 March 2026	Registration of I&APs and responses to initial enquiries	Reg. 42
09 March 2026	Closure of I&AP registration & BID comment period	Reg. 40(3)
19 March 2026 – 23 April 2026 (current)	Circulation of Draft Amendment Report for 30-day comment period	Reg. 3(8) & 41(2)(e)

2.1.6 Comments & Responses Table

All comments received from Interested and Affected Parties (I&APs), authorities, and other stakeholders - following the call to register as well as the the circulation of the Draft Amendment Report - have been documented and addressed in a structured Comments & Responses Table.

The Comments & Responses Table provides a transparent and auditable record of all issues raised and the manner in which they were addressed. It demonstrates compliance with the EIA Regulations, supports informed decision-making by the competent authority, reduces the potential for conflict or misunderstanding, and ensures accountability throughout the assessment process. The table also serves as a formal audit trail should any future queries or appeals arise

All correspondence received to date, including submissions from the call to register and the Draft Amendment Report review period, is included in the Comments & Responses Table attached as Appendix E, together with copies of all relevant stakeholder communication.

2.1.7 Summary of Comments Received

Following the notification of the application and the call for Interested and Affected Parties (I&APs) to register, no comments or requests for registration were received.

APPENDIX A: NEWSPAPER ADVERT

Estcourt Water Works Committee members distributing water to affected residents.

Ward 10 and 18 residents furious at having to endure prolonged water outages

Residents of Ward 10 and 18 in Estcourt have been grappling with a prolonged water outage that has lasted several weeks, with higher-lying areas experiencing disruptions for more than a month. The crisis comes at the height of summer, as temperatures soar and schools have recently re-opened, placing additional strain on affected households.

The Estcourt Water Works Committee (EWWC) has raised serious concerns over what it describes as a lack of response and communication from both Inkosi Langalibalele Local Municipality and uThukela District Municipality. According to the committee, residents have received no official updates regarding the cause of the outage, measures being taken to resolve it, or time-lines for the restoration of normal water supply.

The absence of communication, the EWWC says, has left residents frustrated and distressed, with many unsure of how long they will continue without access to a reliable water source.

Compounding the situation is the reported lack of emergency water provision from the municipality.

Residents have instead had to depend on community volunteers and local non-governmental organisations for water deliveries. The EWWC has expressed disappointment at what it describes as minimal involvement from local councillors, elected representatives, and municipal leadership during the crisis.

Emergency water distribution efforts that have taken place were largely co-ordinated by volunteers, with little to no visible participation from municipal structures. The committee argues that this reflects a broader and ongoing pattern of neglect towards Ward 10 and 18.

"While other areas receive assistance, including water tankers, these wards continue to be overlooked and under-resourced," the EWWC said in a statement.

In response to the ongoing situation, the committee has called on residents to unite and consider formal protest action to voice their dissatisfaction. With local government elections scheduled for 2029, the EWWC believes the current crisis highlights the need for accountability and improved service delivery.

The committee has indicated its willingness to work with residents to organise peaceful protests and advocate for urgent intervention to address the water shortages.

The EWWC is a grass-roots organisation focused on defending the rights of residents in Ward 10 and 18, particularly access to basic services such as water. The organisation also assists with emergency water provision when municipal support is lacking.

Estcourt's top 'Class of 2025' matric learner, Thabo Luyanda Moso, is honoured for his achievements. He is seen here (in mayoral attire) with his mother, ILM Deputy Mayor S Dladla, Speaker SW Khumalo, Miss ILM and Department of Education officials.

Municipality honours Estcourt's top matric achievers at 2025 Excellence Awards

Inkosi Langalibalele Local Municipality (ILM) honoured Estcourt's top-performing Grade 12s at the 2025 Matric Excellence Awards Ceremony, which took place on Tuesday last week.

Thabo Luyanda Moso of Vukasekusile High School was announced as the top achiever and also appointed 'Mayor for the Day'.

As an event dedicated to celebrating and acknowledging academic excellence among the 'Class of 2025', the ceremony was attended by ILM Deputy Mayor Sithabiso Dladla, uThukela District Deputy Mayor Mbuzeleni Mkhize, ILM Speaker SW Khumalo, Miss ILM Penny Shezi, parents, educators and officials from the Department of Education.

Addressing the audience, top learner Luyanda Moso encouraged the 'Class of 2026' to remain disciplined, work hard throughout the year, and prepare for their examinations well in advance.

Estcourt's top 10 matric achievers in the 'Class of 2025' were:

Luyanda Moso - Vukasekusile High School;

Mthobisi Alwande Dlamini - Estcourt Secondary School;

Wandile PraiseGod Mpembe;

Qiniso Siyabonga Mazibuko - Mpumelelo High School;

Yash Rajcoomar - Estcourt High School;

Ayabonga Olwethu Mlangeni - Estcourt Secondary School;

Nokulunga Siphesihle Mbhele - Nkangala High School;

Akhona Mduduzi Ntuli - Estcourt Secondary School;

Ayabonga Simthandile Mazibuko - Estcourt High School;

Njabulo Zwane - Hlathikhulu High School.

The top 10 will receive a certificate, a laptop and R2500 to assist with transportation costs.

In his address, Deputy Mayor Dladla said the event marked not only a celebration of academic excellence but also an historic moment, as it was the final Matric Excellence Awards Ceremony of the current municipal term of office.

"From the beginning of our term, we deliberately established the Matric Excellence Awards as a strategic programme for youth empowerment.

"We understand that the future of our municipality and province lies in the hands of educated, disciplined and motivated young people," said Dladla.

He added that the municipality has ensured that deserving learners receive registration support and bursaries to enrol at universities and colleges. Dladla also expressed his appreciation to teachers for their dedication and hard work in guiding learners to success.

Representing the Department of Education, Mr Mlambo from the uThukela District commended KwaZulu-Natal for its strong performance in the 2025 matric results, noting that the province achieved first place nationally among eight provinces.

He further highlighted that the uThukela District achieved an 86% pass rate, while Estcourt recorded an 81% pass rate.

"The 'Class of 2025' has made us proud and we wish them all the best in their future endeavours," Mlambo concluded.

ISAZISO SOMPHAKATHI SESICELO SOKUCHIBIYELA IMVUME YEZEMVELO

Kwaziswa umphakathi ngokwemigomo yoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, i-Environmental Impact Assessment Regulations, ka-2014 (njengoba uchitshiyelwe), Isigaba 28, ukuthi umphakathi uyamenywa ukuba uzibhalise njengabantu abanentshisekelo nabathintekayo kule phrojekthi elandelayo:

ISICELO SOKUCHIBIYELA I-PHROJEKTHI YOKUNWEBA ISIKHUNGO SEZIMOTO EZISINDAYO SASEMOOI RIVER ESIVELE SIVUNYELWE

Inkampani i-Green Choice Consulting (Pty) Ltd iqokwe yi-Mooi River Truck Stop (Pty) Ltd ukuba iqhube futhi iphathe inqubo yokuhambisana nemithetho yezemvelo mayelana nezichibiyelo ezihlongozwayo kuphrojekthi yokunweba i-Mooi River Truck Stop, etholakala eRemainder of Farm De Oewer 17763, eduze komgwaqo u-R103, eMooi River, KwaZulu-Natal. Isichibiyelo esihlongozwayo sihlanganisa ukwakhiwa kwemizila eyengeziwe yokuphuma ezimotweni, ezongena endaweni evikelwe yesiziba, ngenhloso yokuthuthukisa ukuphepha kwezokuthutha.

Imvume yezemvelo yokunweba i-Mooi River Truck Stop yanikezwa uMnyango WezokuThuthukiswa Kwezomnotho, Ezokuvakasha Nezemvelo KwaZulu-Natal (EDTEA) mhla zi-17 kuMandulo 2021 ngaphansi kwenombolo yesithenjwa DC22/0006/2021.

Njengoba zingekho izenzo ezintsha ezibaliwe ngaphansi koMthetho Kazwelonke Wokuphathwa Kwezemvelo (National Environmental Management Act) ezidalwa yilesi sichibiyelo, kuzolandela Inqubo Yesichibiyelo Sohlobo Lwesibili (Part 2 Amendment Process), ngokuhambisana nezigaba 28 kuya ku-32 zoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, ka-2014 (njengoba uchitshiyelwe). Amalungu omphakathi afisa ukubhalisa njengabantu abanentshisekelo nabathintekayo, noma abafuna eminye imininingwane mayelana nale phrojekthi, bayacelwa ukuba bathumele amagama abo, imininingwane yokuxhumana kanye nentshisekelo yabo kule ndaba kungakapheli izinsuku ezingama-30 kusukela kosuku lwalesi saziso, baxhumane no:

uSarah Stalberg egameni le-Green Choice Consulting (Pty) Ltd
Ucingo: 071 851 6976
I-imeyili: sarah@greenchoiceconsulting.co.za

PUBLIC NOTICE OF APPLICATION FOR AMENDMENT OF ENVIRONMENTAL AUTHORISATION

Notice is hereby given in terms of Section 28 of the Environmental Impact Assessment Regulations, 2014 (as amended) inviting members of the public to register as interested and affected parties for the following project:

PROPOSED AMENDMENT TO THE APPROVED MOOI RIVER TRUCK STOP EXPANSION PROJECT

Green Choice Consulting (Pty) Ltd has been appointed by Mooi River Truck Stop (Pty) Ltd to manage the environmental regulatory compliance process for proposed amendments to the approved Mooi River Truck Stop expansion project, located on the Remainder of Farm De Oewer 17763, off the R103, Mooi River, KwaZulu-Natal. The proposal entails the development of additional departure lanes, which will encroach into an existing wetland buffer, to allow for improved traffic safety.

Environmental Authorisation for the expansion of the Mooi River Truck Stop was granted by the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) on 17 September 2021 under Reference Number DC22/0006/2021.

As no new listed activities under the National Environmental Management Act are triggered by the amendment proposal, a Part 2 Amendment Process, as contemplated in Sections 28–32 of the EIA Regulations, 2014 (as amended), will therefore be followed. Members of the public wishing to register as interested and affected parties, or to obtain further information regarding the project, are requested to submit their name, contact details and interest in the matter within 30 days of this notification to:

Sarah Stalberg for Green Choice Consulting (Pty) Ltd
Tel: 071 851 6976
Email: sarah@greenchoiceconsulting.co.za

NOTICE TO CREDITORS IN DECEASED ESTATES

In the Estate of the Late:

Full Name: NEERSHNEE NAIDOO
Estate No.: 001026/2025
Master's Office: PIETERMARITZBURG
Date of Death: 10/01/2025
Date of Birth : 13/12/1975
Identity No. : 751213 0226 084
Last address : 86 LORNE STREET, ESTCOURT, 3310, KWAZULU-NATAL

CREDITORS and DEBTORS in the above mentioned Estate are required to lodge their claims with and to pay their debts to the undersigned within THIRTY (30) DAYS from 06th February 2026.

Dated at Estcourt on this the 28/01/2026

LOMBARD-BADENHORST INC
ATTORNEY FOR EXECUTOR
P O BOX 18
55 CANON ROGERS ROAD
ESTCOURT
3310
REF: 11N158001

PUBLIC NOTICE OF APPLICATION FOR AMENDMENT OF ENVIRONMENTAL AUTHORISATION

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Sarah Stalberg for Green Choice Consulting (Pty) Ltd
Tel: 071 851 6976
Email: sarah@greenchoiceconsulting.co.za

ISAZISO SOMPHAKATHI SESICELO SOKUCHIBIYELA IMVUME YEZEMVELO

Kwaziswa umphakathi ngokwemigomo yoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, i-Environmental Impact Assessment Regulations, ka-2014 (njengoba uchitshiyelwe), Isigaba 28, ukuthi umphakathi uyamenywa ukuba uzibhalise njengabantu abanentshisekelo nabathintekayo kule phrojekthi elandelayo:

ISICELO SOKUCHIBIYELA I-PHROJEKTHI YOKUNWEBA ISIKHUNGO SEZIMOTO EZISINDAYO SASEMOOI RIVER ESIVELE SIVUNYELWE

Inkampani i-Green Choice Consulting (Pty) Ltd iqokwe yi-Mooi River Truck Stop (Pty) Ltd ukuba iqhube futhi iphathe inqubo yokuhambisana nemithetho yezemvelo mayelana nezichibiyelo ezihlongozwayo kuphrojekthi yokunweba i-Mooi River Truck Stop, etholakala eRemainder of Farm De Oewer 17763, eduze komgwaqo u-R103, eMooi River, KwaZulu-Natal. Isichibiyelo esihlongozwayo sihlanganisa ukwakhiwa kwemizila eyengeziwe yokuphuma ezimotweni, ezongena endaweni evikelwe yesiziba, ngenhloso yokuthuthukisa ukuphepha kwezokuthutha.

Imvume yezemvelo yokunweba i-Mooi River Truck Stop yanikezwa uMnyango WezokuThuthukiswa Kwezomnotho, Ezokuvakasha Nezemvelo KwaZulu-Natal (EDTEA) mhla zi-17 kuMandulo 2021 ngaphansi kwenombolo yesithenjwa DC22/0006/2021.

Njengoba zingekho izenzo ezintsha ezibaliwe ngaphansi koMthetho Kazwelonke Wokuphathwa Kwezemvelo (National Environmental Management Act) ezidalwa yilesi sichibiyelo, kuzolandela Inqubo Yesichibiyelo Sohlobo Lwesibili (Part 2 Amendment Process), ngokuhambisana nezigaba 28 kuya ku-32 zoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, ka-2014 (njengoba uchitshiyelwe). Amalungu omphakathi afisa ukubhalisa njengabantu abanentshisekelo nabathintekayo, noma abafuna eminye imininingwane mayelana nale phrojekthi, bayacelwa ukuba bathumele amagama abo, imininingwane yokuxhumana kanye nentshisekelo yabo kule ndaba kungakapheli **izinsuku ezingama-30** kusukela kosuku lwalesi saziso, baxhumane no:

uSarah Stalberg egameni le-Green Choice Consulting (Pty) Ltd
Ucingo: 071 851 6976
I-imeyili: sarah@greenchoiceconsulting.co.za

APPENDIX B: SITE SIGNAGE

MRTS PART 2 AMENDMENT: PROOF OF SITE SIGNAGE

GREEN CHOICE CONSULTING

NOTICE OF APPLICATION FOR AMENDMENT OF ENVIRONMENTAL AUTHORISATION

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As no new listed activities under the National Environmental Management Act are triggered by the amendment proposal, a Part 2 Amendment Process, as contemplated in Sections 28–32 of the EIA Regulations, 2014 (as amended), will therefore be followed. Members of the public wishing to register as interested and affected parties, or to obtain further information regarding the project, are requested to submit their name, contact details and interest in the matter within 30 days of this notification to:

Figure 1: The project property outlined in yellow with the approved expansion area shaded in red.

Contact: Sarah Stalberg
Telephone: 071 851 6976
Email: sarah@greenchoiceconsulting.co.za
Date: 05/02/2026
Website: www.greenchoiceconsulting.co.za

GREEN CHOICE CONSULTING

ISAZISO SOMPHAKATHI SESICELO SOKUCHIBIYELA IMVUME YEZEMVELO

Kwaziswa umphakathi ngokwemigomo yoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, i-Environmental Impact Assessment Regulations, ka-2014 (njengoba uchitshiyelwe), Isigaba 28, ukuthi umphakathi uyamenywa ukuba uzibhalise njengabantu abanentshisekelo nabathintekayo kule phrojekthi elandelayo:

ISICELO SOKUCHIBIYELA I-PHROJEKTHI YOKUNWEBA ISIKHUNGO SEZIMOTO EZISINDAYO SASEMOOI RIVER ESIVELE SIVUNYELWE

Inkampani i-Green Choice Consulting (Pty) Ltd iqokwe yi-Mooi River Truck Stop (Pty) Ltd ukuba iqhube futhi iphathe inqubo yokuhambisana nemithetho yezemvelo mayelana nezichibiyelo ezihlongozwayo kuphrojekthi yokunweba i-Mooi River Truck Stop, etholakala eRemainder of Farm De Oewer 17763, eduze komgwaqo u-R103, eMooi River, KwaZulu-Natal. Isichibiyelo esihlongozwayo sihlanganisa ukwakhiwa kwemizila eyengeziwe yokuphuma ezimotweni, ezongena endaweni evikelwe yesiziba, ngenhloso yokuthuthukisa ukuphepha kwezokuthutha.

Imvume yezemvelo yokunweba i-Mooi River Truck Stop yanikezwa uMnyango WezokuThuthukiswa Kwezomnotho, Ezokuvakasha Nezemvelo KwaZulu-Natal (EDTEA) mhla zi-17 kuMandulo 2021 ngaphansi kwenombolo yesithenjwa DC22/0006/2021.

Njengoba zingekho izenzo ezintsha ezibaliwe ngaphansi koMthetho Kazwelonke Wokuphathwa Kwezemvelo (National Environmental Management Act) ezidalwa yilesi sichibiyelo, kuzolandela Inqubo Yesichibiyelo Sohlobo Lwesibili (Part 2 Amendment Process), ngokuhambisana nezigaba 28 kuya ku-32 zoMthetho Wezinhlelo Zokuhlola Umthelela Kwezemvelo, ka-2014 (njengoba uchitshiyelwe). Amalungu omphakathi afisa ukubhalisa njengabantu abanentshisekelo nabathintekayo, noma abafuna eminye imininingwane mayelana nale phrojekthi, bayacelwa ukuba bathumele amagama abo, imininingwane yokuxhumana kanye nentshisekelo yabo kule ndaba kungakapheli izinsuku ezingama-30 kusukela kosuku lwalesi saziso, baxhumane no:

Isithombe 1: Indawo yephrojekthi evezwe ngomugqa ophuzi, kanti indawo yokunweba egunyaziwe ifakwe umbala obomvu

Oxhumana naye: Sarah Stalberg
Ucingo: 071 851 6976
I-imeyili: sarah@greenchoiceconsulting.co.za
Usuku: 05/02/2026
Iwebhusayithi: www.greenchoiceconsulting.co.za

GREEN CHOICE CONSULTING

APPENDIX C: I&AP DATABASE

MRTS STAKEHOLDERS / INTERESTED AND AFFECTED PARTIES

MRTS Part 2 Amendment - I&AP Database

Category	Department / Section	Contact Person	Email
Provincial / District Authority	Dept. of Economic Development, Tourism & Environmental Affairs: Umgungundlovu District	Nombasa Kama	Nombasa.Kama@kznedtea.gov.za
Provincial / District Authority	Department of Water & Sanitation	Lindiwe Dladla	dladlal@dws.gov.za
Provincial / District Authority	Ezemvelo KZN Wildlife	IEM	iem.app@kznwildlife.com
Local Municipality	Mpofana Municipality	Walter Jobe	walter.jobe23@gmail.com
Local Municipality	Mpofana Municipality - Ward 1 Councillor	Mxolisi Mchunu	mxolisi.mchunu@mpofana.gov.za / mchunumxolisi24@gmail.com
District Municipality	Umgungundlovu District Municipality	Simphiwe Zuma	Simphiwe.Zuma@umdm.gov.za
District Municipality	Umgungundlovu District Municipality	Mandisa Khomo	mandisa.khomo@umdm.gov.za
Provincial / District Authority	DAEARD: Macro Planning	Hlamalani Mongwe	Hlamalani.Mongwe@kzndard.gov.za
Provincial / District Authority	DAFF	Karen Moodley	KarenM@daff.gov.za
Provincial / District Authority	Department of Transport	Judy Reddy	Judy.Reddy@kzntransport.gov.za
Provincial / District Authority	SANRAL	Nqobile Mabaso	MabasoN@nra.co.za
Private	Engen 1-Stop (Neighbour)	Donovan Carter	mooi1stop@futurenet.co.za
Private	Greenfields Farm (Neighbour)	Gerald Dreyer	gerald@wildcoastwagyu.co.za
Local Municipality	Mpofana Municipal Weighbridge & Licencing Centre	Paul Greyling	paul.greyling@mpofana.gov.za

APPENDIX D: BACKGROUND INFORMATION DOCUMENT & PROOF OF DISTRIBUTION

PROPOSED AMENDMENT TO THE APPROVED MOOI RIVER TRUCK STOP EXPANSION PROJECT

BACKGROUND INFORMATION DOCUMENT

EDTEA Ref: Pending

PURPOSE OF THIS DOCUMENT

This Background Information Document (BID is provided in terms of Section 28 of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended), promulgated under Section 24(5) of the National Environmental Management Act (Act 107 of 1998).

The purpose of this document is to:

- Inform the public of the proposed amendment to the approved Mooi River Truck Stop Expansion project; and
- Invite interested and affected parties (I&APs) to register and participate in the environmental amendment application process.

This document provides a brief, non-technical overview of the proposed amendment and the environmental regulatory process that will be followed.

INTRODUCTION AND PROJECT BACKGROUND

Environmental Authorisation for the expansion of the Mooi River Truck Stop was granted by the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) on 17 September 2021 under Reference Number DC22/0006/2021. The approved expansion project included increased fuel storage capacity and additional truck parking areas to accommodate growing demand along the R103 corridor.

Green Choice Consulting (Pty) Ltd has been appointed by Mooi River Truck Stop (Pty) Ltd to manage the environmental regulatory compliance process for proposed amendments to the approved expansion project. The site is located on the Remainder of Farm De Oewer 17763, off the R103 in Mooi River, within the Msunduzi Local Municipality, KwaZulu-Natal. The approximate central coordinates of the site are 29°13'30.50" S; 30°00'08.76" E. A locality map is provided in Appendix A.

DESCRIPTION OF THE PROPOSED AMENDMENT

The proposed amendment relates specifically to the operational safety of the approved expansion area.

The amendment entails the development of additional departure lanes to allow heavy vehicles to safely exit the newly approved truck parking area and re-enter the public road network. The current approved layout does not adequately accommodate the safe turning movements of trucks leaving the expansion area, which has operational and road safety implications.

The development of the additional departure lanes will result in limited encroachment into an existing wetland buffer. No new infrastructure is proposed beyond what is required to safely facilitate vehicle movement.

Without the development of the additional departure lanes, the approved expansion project would be operationally constrained and, from a safety perspective, potentially unfeasible.

The proposed amended site layout plan is provided in Appendix B.

ENVIRONMENTAL LEGAL FRAMEWORK

As no new listed or specified activities in terms of the National Environmental Management Act (Act 107 of 1998) are triggered by the proposed amendment, a Part 2 Amendment Process, as provided for in the EIA Regulations, 2014 (as amended), will be followed.

A Part 2 Amendment Process is applicable where a change to an existing Environmental Authorisation may result in a change to the nature or extent of impacts that were not previously assessed, but where the amendment does not, on its own, constitute a new listed activity.

APPROACH TO THE PART 2 AMENDMENT APPLICATION PROCESS

The amendment application is currently in the pre-application and planning phase. This phase is intended to inform the public and relevant stakeholders of the proposed amendment and to identify potential environmental impacts associated with the change.

An Amendment Report (AR) will be prepared and will include:

- An assessment of potential environmental impacts associated with the proposed amendment;
- An evaluation of alternatives, where applicable;
- Proposed mitigation and management measures;
- The findings of specialist studies undertaken;
- Details of the public participation process; and
- Any proposed changes to the approved Environmental Management Programme (EMPr).

The Draft Amendment Report (DAR) will be made available to all registered I&APs for a 30-day public comment period. Following consideration of comments received, a Final Amendment Report (FAR) will be submitted to EDTEA for review and decision-making.

All registered I&APs will be notified of the Department's decision and will be afforded an opportunity to appeal, should they wish to do so.

An overview of the Amendment Application Process is illustrated in Figure 1.

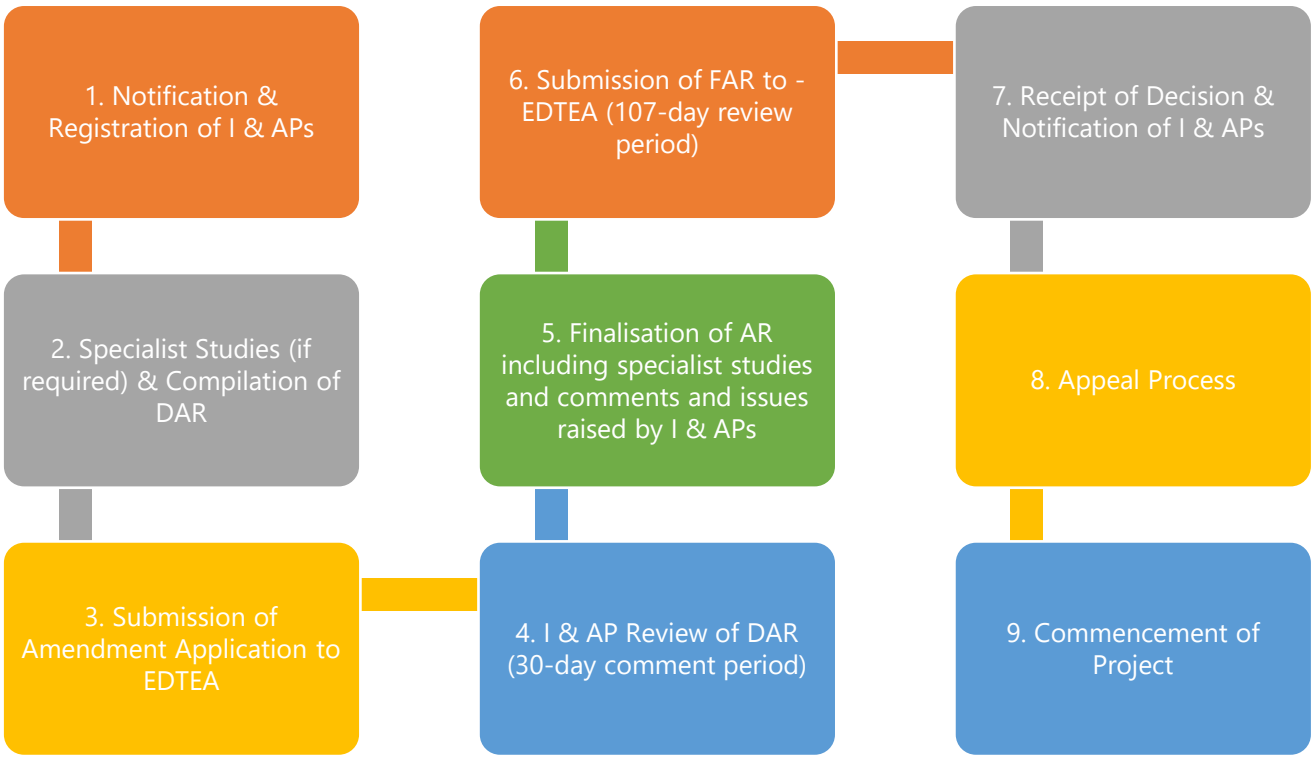


Figure 1: Amendment Application Process

POTENTIAL ENVIRONMENTAL IMPACTS

Potential environmental impacts associated with the proposed amendment may include, but are not limited to:

- Impacts on the wetland buffer area;
- Stormwater and surface water quality impacts;
- Soil disturbance, erosion and sedimentation;
- Construction-related dust and noise; and'
- Traffic and road safety considerations.

A specialist study has been commissioned to assess the potential impacts associated with the proposed departure lanes and the resulting reduction in the wetland buffer. Preliminary findings indicate that, with appropriate mitigation and rehabilitation measures, the proposed amendment is expected to have a limited impact on the wetland environment. The specialist findings will be included in the Amendment Report.

HOW CAN YOU BE INVOLVED?

The public participation process provides interested and affected parties with an opportunity to participate meaningfully in the amendment application process.

If you consider yourself to be an interested or affected party, you are encouraged to:

- Register as an I&AP by submitting your name, contact details and interest in the project;
- Submit comments, questions or concerns to the Environmental Assessment Practitioner; and
- Review project documentation and provide written comments during the public comment period.

Please note that the collection and storage of personal information by Green Choice Consulting (Pty) Ltd is subject to the Protection of Personal Information Act (Act 4 of 2013). Personal information will be used solely for purposes related to this environmental process. Should you wish to retract your registration, please inform Green Choice Consulting timeously.

CONTACT DETAILS

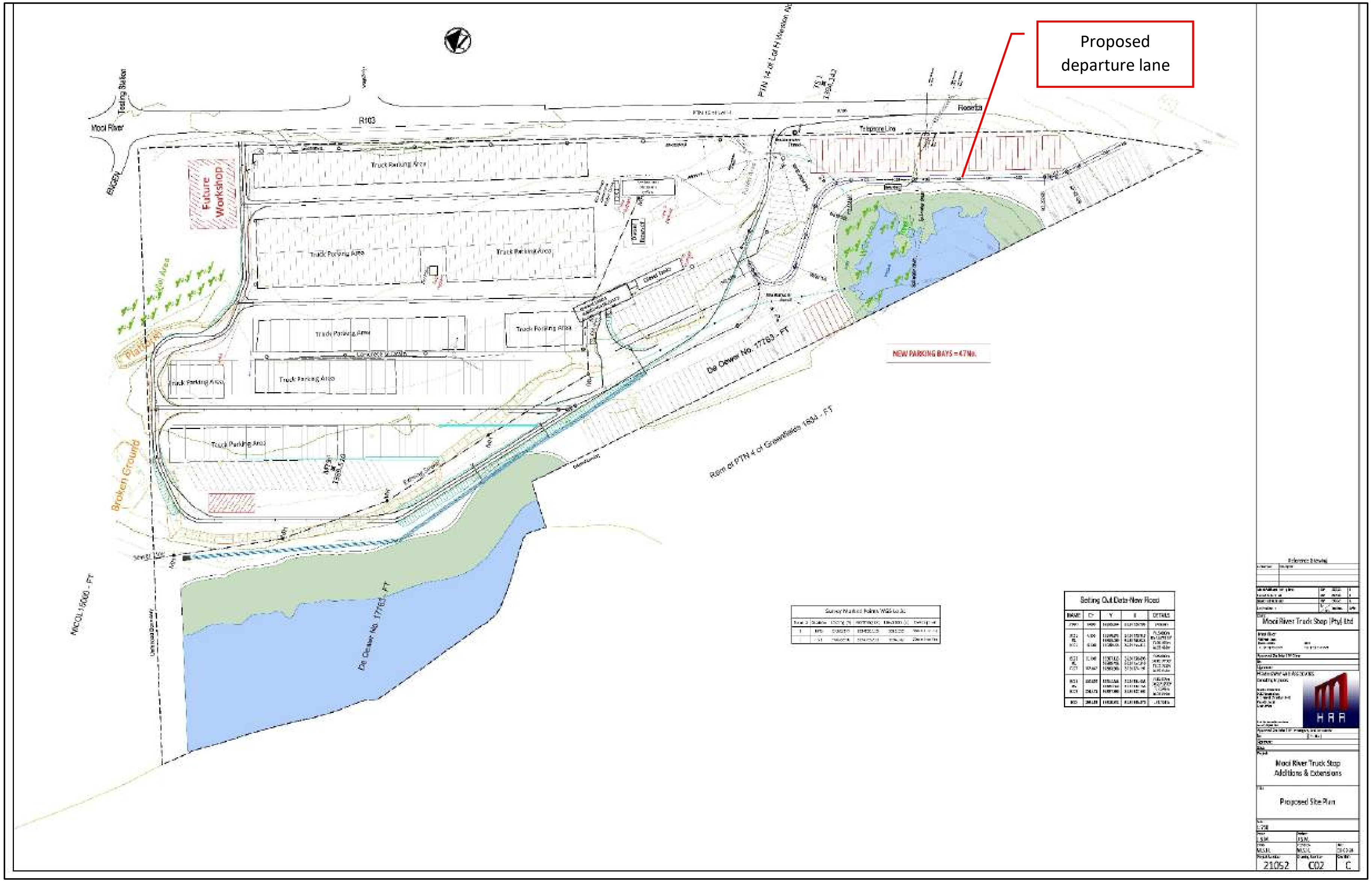
To register as an interested and affected party, or to obtain further information, please submit your name, contact details, and interest in the matter to:

Sarah Stalberg for Green Choice Consulting (Pty) Ltd
Tel: 071 851 6976
Email: sarah@greenchoiceconsulting.co.za

APPENDIX A: LOCALITY MAP

Satellite image showing the project property outlined in yellow, with the approved extension area shaded in red (Source: ©Google Earth Satellite Imagery).

APPENDIX A: SITE LAYOUT PLAN



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E: sarah@greenchoiceconsulting.co.za

From:	sarah@greenchoiceconsulting.co.za
To:	"sarah@greenchoiceconsulting.co.za"
Bcc:	"dladlal@dws.gov.za"; "iem.app@kznwildlife.com"; "walter.jobe23@gmail.com"; "mxolisi.mchunu@mpofana.gov.za"; "mchunumxolisi24@gmail.com"; "Simphiwe.Zuma@umdm.gov.za"; "mandisa.khomo@umdm.gov.za"; "Hlamalani.Mongwe@kzndard.gov.za"; "KarenM@daff.gov.za"; "Judy.Reddy@kzntransport.gov.za"; "MabasoN@nra.co.za"; "mooi1stop@futurenet.co.za"; "gerald@wildcoastwagyu.co.za"; "paul.greyling@mpofana.gov.za"
Subject:	RE: NOTIFICATION OF PROPOSED PART 2 AMENDMENT PROCESS FOR THE MOOI RIVER TRUCK STOP EXPANSION PROJECT, MOOI RIVER
Date:	Thursday, 05 February 2026 11:57:00
Attachments:	MRTS BID.pdf
Importance:	High

Dear Stakeholder/Authority

Green Choice Consulting (Pty) Ltd has been appointed by Mooi River Truck Stop (Pty) Ltd to undertake and manage the environmental regulatory compliance process for a proposed amendment to the approved Mooi River Truck Stop Expansion Project, located off the R103 in Mooi River, KwaZulu-Natal. Environmental Authorisation for the expansion of the Mooi River Truck Stop was granted by the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA) on 17 September 2021 under Reference Number DC22/0006/2021. The proposed amendment relates to the development of additional departure lanes within the approved expansion area, aimed at improving traffic safety.

Please find attached a Background Information Document (BID), which provides a brief, non-technical overview of the proposed amendment and the environmental amendment application process to be followed.

This notification is circulated for information purposes and to invite interested and affected parties (I&APs) to register and participate in the process. Should you wish to register as an I&AP, or should you have any questions or comments regarding the proposed amendment, kindly submit your name, contact details and interest in the matter to the undersigned.

We would appreciate receipt of registrations or any initial comments within 30 days of this notification.

Please do not hesitate to contact me should you require any further information.

Kind Regards,

Sarah Stalberg
Environmental Consulting
EAPASA Registered EAP (Reg. No: 2019/1841)

GREEN CHOICE CONSULTING

M: +27 71 851 6976
E: sarah@greenchoiceconsulting.co.za
www.greenchoiceconsulting.co.za

APPENDIX E: COMMENTS & RESPONSES TABLE & I&AP CORRESPONDENCE

COMMENTOR	COMMENTS	PROJECT TEAM RESPONSE
COMMENTS RECEIVED IN RESPONSE TO THE CALL TO REGISTER		
	No comments received in response to project advertising and circulation of Background Information Document to relevant stakeholders and authorities.	

APPENDIX H: EMPR

Environmental Management Programme (EMPr)

Proposed Expansion of Mooi River Truck-Stop, Farm De Oewer 17763, Mpofana Local Municipality, UMgungundlovu District, KwaZulu-Natal

DEDTEA reference: DC22/0006/2021

Compiled by

Swazi Kubheka
NatureStamp (Pty) Ltd
Tel 033 343 1352
Email swazi@naturestamp.com

Compiled for

Johan Maree
Mooi River Truck Stop (Pty) Ltd
Tel 033 263 2673
Email manager@mooirivertruckstop.co.za /
jo@wildlifeact.com

June 2021

TABLE OF CONTENTS

Acronyms

BAR	Basic Assessment Report
BID	Background Information Document
BPA	Biodiversity Priority Area
CARA	Conservation of Agricultural Resources Act (No. 43 of 1983)
CBA	Critical Biodiversity Area
DAFF	Department of Agriculture, Forestry and Fisheries
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs
DWS	Department of Water and Sanitation
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
EWT	Endangered Wildlife Trust
FEPA	Freshwater Ecosystem Priority Area
HIA	Heritage Impact Assessment
HGM	Hydrogeomorphic
IAP	Interested and Affected Party
INR	Institute of Natural Resources
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
IWULA	Integrated Water Use License Application
NEMA	National Environmental Management Act (No. 107 of 1998)
NEMWA	National Environmental Management Waste Act (No 59 of 2008)
NFEPA	National Freshwater Ecosystems Priority Areas
NSDP	National Spatial Development Perspective
NWA	National Water Act (No. 36 of 1998)
PES	Present Ecological State (referring to wetland heath)
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework

i. Details of Environmental Assessment Practitioner

GNR 326 of the National Environmental Management Act (No. 107 of 1998) and EIA Regulations (amended 2017), Appendix 4, include a number of provisions regarding the content of EMPs.

Appendix 4 states - "*An EMPr must comply with section 24N of the Act and include –*

(a) details of –

(i) the EAP who prepared the EMPr; and
(ii)the expertise of that person to prepare an EMPr, including a curriculum vitae; "

The name and details of the EAP is thus provided below. The Curriculum Vitae of the EAP can be found in Annexure B.

Name: Swazi Kubheka
Qualifications: BSc, MSc (Enviro Sci)
Professional affiliations: International Association for Impact Assessment
Experience at environmental assessments (years): 2 years
Role: Environmental Assessment Practitioner (EAP)

Swazi obtained her Master's degree, Environmental Science from the University of KwaZulu-Natal in 2018. Her research project was investigating the Incorporation of Biodiversity Recommendations into Environmental Authorisations in KZN. Swazi has planning and biodiversity conservation experience from Ezemvelo KZN Wildlife (2014-2016), under the Integrated Environmental Management (IEM) Land Use Planning Section. Swazi joined the NatureStamp team in April 2018 and is developing a specialization in environmental impact assessments, environmental management plans as well as environmental auditing, amongst other activities.

Bruce Scott-Shaw
BSc, MSc (Hydrology)
Hydrologist and GIS specialist
Bruce is a hydrologist, whose focus is broadly on hydrological perspectives of land use management and climate change. He completed his MSc under Prof. Roland Schulze in the School of Bioresources Engineering and Environmental Hydrology (BEEH) at the University of KwaZulu-Natal, South Africa. Throughout his university career he has mastered numerous models and tools relating to hydrology, soil science and GIS. Some of these include ACRU, SWAT, ArcMap, Idrisi, SEBAL, MatLab and Loggernet. He has some basic programming skills on the Java and CR Basic platforms. He has spent most of his spare time doing field work for numerous companies and researchers. Bruce has completed his PhD which focuses on rehabilitation of alien invaded riparian zones and catchments using indigenous trees. The aim is to select Working for Water (WfW) sites throughout the country and use micro-meteorological techniques to measure the water use of both the indigenous and alien tree species in the riparian areas. This research will assist in land rehabilitation and restoration in the highly sensitive riparian areas. A modelling approach has been incorporated into the research to improve the spatial resolution of the research and to work as a management tool. Bruce has worked on numerous projects for the CSIR and Ezemvelo KZN wildlife which has included micrometeorological work, EIAs and wetland mapping for KZN. Bruce has presented his research around the world, where most recently he represented South Africa at the Singapore International Water Week on water policy and implementation.

1. INTRODUCTION

1.1. Background to the project

Mooi River Truck Stop proposes to increase their diesel storage capacity next to the existing tanks by adding 333,000L (8 x 40,000L above ground tanks with bund walls). They will be adding to the existing 166,000L capacity, thus having a total of 499,000L (499m^3) storage capacity.

Further, they are proposing to extend the possible parking area footprint to its maximum, from the previously authorized size (350 parking bays). The proposed parking bays would be 120, which would result in a total 470 parking bays.

The proposed site underwent an Amendment Application (DC22/AMEND/2657/2015) in order to increase the parking bays from 250 to 350. The amendment application was authorized in February 2016, the current EIA application is now being undertaken as the proposed expansion for storage of fuel constitutes as a new activity (the expansion and related operation of facilities for the storage/handling of a dangerous good, where the capacity of such storage facility will be expanded by more than 80 cubic metres).

See the site layout in Figure 1 and Annexure B2.

Mitigation of impacts

There are four potential impacts associated with the proposed developments on Farm Paderborn, namely-

- Potential spillages (major and minor) of diesel from storage tanks and trucks
- Potential contamination of stormwater and impacts on watercourses due to increased development footprints
- Additional traffic
- Increase in fire hazard, noise and dust creation
- Potential pollution of surrounding areas if construction activities and staff are not well managed

The table below summarizes the key potential impacts and the mitigation measures put forward to render the impact insignificant and acceptable.

Detail of potential impact	Mitigation measure proposed
Potential spillage impacts	• Spills on-site must be reported to the relevant Authority if necessary (e.g. Department of Water and Sanitation, Municipality etc) and should be remediated as per the EMPr. • Diesel storage tanks must be within a completely contained, concrete lined 120% bunded area in order to contain any spills that do occur. • Any diesel spills must be cleaned up immediately. • Leaks and spillages must be promptly cleaned up by suitably qualified personnel, using the appropriate resources, and all contaminated material is disposed of appropriately. • A detailed Spill Contingency Plan has been outlined in section 6.4 and must be strictly adhered to. • All chemicals should be appropriately stored and handled. Storerooms must be more than 100m from watercourse zones and have appropriate concrete flooring and bunding. • No washing of construction equipment and vehicles must be done directly from the watercourses. Washing should be managed such that detergents do not enter the watercourse.
Potential erosion and pollution of surrounding areas if construction activities and staff are not well managed	• To prevent erosion and sedimentation, construction activities must be undertaken during the dry season when potential flows will be substantially reduced. • Topsoil must be removed from the full width of the development (including working areas) and not spoiled. Top and sub-soil stockpiles to be on opposite sides of the platform. Top- and subsoil stockpiles must not be stockpiled within 100m or within the 1:100 year floodplain of a watercourse. • No access of vehicles should be permitted within riparian or wetland areas in order to prevent compaction of the riparian/wetland soil profile. Should access be imperative, it should be for limited periods only and should not take place

	during wet weather. • The construction camp should be located more than 100m from watercourses. • Topsoil should be replaced in the reverse order it was extracted and erosion prevention measures be put in place on areas with a steep gradient (such as geo-textiles). • Site personnel must undergo appropriate training to ensure minimum disturbance of the surrounding environment, correct waste management and health and safety on site. • All construction machinery and equipment must be regularly serviced and maintained to keep noise, dust and possible leaks to a minimum, as per the requirements of the EMPr. • All waste generated on site during construction must be adequately managed. Separation and recycling of different waste materials is encouraged. • Any leftover material must be appropriately disposed of (i.e. at a permitted landfill site, recycled used by the community). • Personnel must not be allowed to trespass onto neighbouring properties. • Day to day activities by staff members must take cognizance of the need to keep disturbance to a minimum. • Re-vegetation must start as soon as possible after closure of the proposed expansion. • Follow up assessments should be undertaken to determine if the vegetation establishes and further actions as identified in Section 7.2.3 (Annexure C1).
Contamination of stormwater	• Appropriate stormwater / surface water management measures should be put in place before construction commences and maintained throughout the lifetime of the development. • An oil and grease separator, within the existing separator pit, would treat contaminated stormwater runoff before it is released into the municipal stormwater drains. • A diversion berm would be constructed to catch stormwater runoff and direct it to the oil and grease separator for treatment before being released to the municipal stormwater drain. • Ensure that the expansion area storm drains can accommodate at least the 1:2 year design peak discharge; • Ensure the banks are properly supported with the appropriate structures; • Removal of rubble from the watercourses; • Management of the working development during construction; • Minimize the construction pollution by correct storage methods, rubbish facilities, ablutions and spill management; and • Clear rubbish from the wetland, riparian and floodplain areas.
Additional traffic	• Appropriate traffic control and warning signage must be erected on all affected roads in the vicinity, if slow-moving construction traffic is deemed to be problematic. • The recommendations outlined in section 9.2 and Annexure C2 (Traffic Impact Assessment) must be adhered to.
Increase in fire hazard, noise and dust creation	• Sufficient fire extinguishers and firefighting equipment should be easily available and readily accessible in case of a fire. • All staff members should be familiar with the procedure of how to handle a fire and who to inform in case a fire does occur. • Dampening of dusty areas and spraying of construction vehicles must be applied to prevent excess dust. • During the construction phase noise must be managed according to the legislative requirements of the Noise Control Regulations in Terms of Section 25 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989). • During the operational phase, the generation of noise must be consistent with surrounding commercial and industrial facilities.

The abovementioned impacts and mitigation measures have been incorporated into the EMPr in Section 3.

1.2. Legal context of the project

In terms of the Regulation 41 of GNR 327 of the National Environmental Management Act (NEMA, No. 107 of 1998), EIA Regulations (2014, amended 2017), requiring a Basic Assessment Process, is applicable to the proposed expansion-

Activity	Number of Govt. notice	Relevance to project

Number		
12	GNR 327 NEMA, EIA Regulations 2017 Listing Notice 1	Expansion activities within 32m of a watercourse (some of the parking bays)
51	GNR 327 NEMA, EIA Regulations 2017 Listing Notice 1	Expansion/operation of infrastructure for the storage and handling, of a dangerous good (storage tanks)
19	GNR 327 NEMA, EIA Regulations 2017 Listing Notice 1	Potential impact on watercourse/buffers (some of the parking bays)
27	GNR 327 NEMA, EIA Regulations 2017 Listing Notice 1	Proposed transformation of undeveloped areas for potential expansion (approximately 1.4ha) over 1ha(some of the parking bays)
12	GNR 324 NEMA, EIA Regulations 2017 Listing Notice 3	Proposed transformation of undeveloped areas for potential expansion (approximately 1.4ha) over 300m^2 (120 parking bays: 5400m^2 in total)
14	GNR 324 NEMA, EIA Regulations 2017 Listing Notice 3	Expansion activities within 32m of a watercourse(some of the parking bays)
23	GNR 324 NEMA, EIA Regulations 2017 Listing Notice 3	Expansion infrastructure with a footprint of 10m^2 or more (120 parking bays: 5400m2 in total)

No Listed Activities under GN R 325 (Listing Notice 2) are triggered.

The proponent is required to appoint an independent EAP to conduct the EIA in application for listed activities GNR 327 and 324. Swazi Kubheka of NatureStamp (Pty) Ltd has been appointed as the EAP.

1.4Legislation pertaining to the EMPr

According to the practise of Integrated Environmental Management, the following relevant environmental legislation has been consulted in the formulation of this EMPr -

- The Constitution of the Republic of South Africa (No. 108 of 1996), including the Bill of Rights (Chapter 2, Section 24)
- National Environment Management Act (No. 107 of 1998)
- National Water Act (No. 36 of 1998)
- Water Services Act (No. 108 of 1997)
- National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004).
- Animals Protection Act (No. 71 of 1962)
- National Environmental Management: Air Quality Act (No. 39 of 2004)
- Environmental Planning Act (No. 88 of 1967)
- Soil Conservation Act (No. 76 of 1969)
- Hazardous Substances Act (No. 15 of 1973)
- Conservation of Agricultural Resources Act (No. 43 of 1983)
- Environment Conservation Act (Act No. 73 of 1989)
- Occupational Health and Safety Act (No. 85 of 1993)
- Development Facilitation Act (No. 67 of 1995)
- Planning and Development Act (No. 5 of 1998)
- National Environmental Management: Waste Act (No. 59 of 2008)
- KwaZulu-Natal Nature Conservation Ordinance (No. 15 of 1974)
- KwaZulu-Natal Provincial Growth and Development Strategy (2014)
- Health Act (No 63 of 2003)
- Animal Health Act (No. 7)
- Publication of Need and Desirability Guideline in terms of the Environmental Impact Assessment Regulations, 2010 (GNR 792 of 2012)
- uMgungundlovu Integrated Development Plan, 2014/2015
- National Spatial Development Perspective, 2006
- KwaZulu-Natal Provincial Growth and Development Strategy

All regulations framed thereunder and amendments thereto, as well as relevant Municipal bylaws, are included. Some of the Acts may change in time or are in the process of change, however, once project implementation starts, legislation and all amendments that are current at that time would apply.

2. PURPOSE OF THE EMPr

2.1.1 Objectives

This EMPr is compiled in accordance with Appendix 4 of GNR 326. The document aims to incorporate necessary environmental criteria into the project process to enable the sustainable management of the development as well as to enhance a positive environmental impact where possible and mitigate any negative impacts.

The objectives of the EMPr are as follows –

- Provide a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on site.
- Ensure that the operation of the project continues within the principles of Integrated Environmental Management.
- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project.
- Ensure that the recommendations outlined by government authorities and environmental investigations are complied with.

The proponent is reminded of Section 28 of NEMA, which places a Duty of Care directive on all parties as follows –

> *Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.*

This EMPr serves to ensure that reasonable measures are taken to prevent pollution or degradation to the environment as a result of construction and operations on the site.

2.1.2 Responsible parties

The Proponent must ensure that the Project Manager, contractor(s) and employees, as well as any other staff members, sub-contractors, suppliers and visitors, understand and adhere to the EMPr. The EMPr must be made binding on all contractors and sub-contractors operating on the site and be included within the contractual documents entered into between parties.

Note that the "Responsibility" column in the EMPr is merely a guide and does not relieve the proponent/landowners of their overall responsibility for compliance.

A copy of the EMPr must be kept on site and made available for inspection by visiting municipal officials or relevant environmental authorities. The Proponent must also record any complaints received regarding activities on site.

Prior to any operations commencing, all parties involved in the project must sign an acknowledgement that they are familiar with the requirements of the EMPr and agree to adhere to the stipulations thereof. See Annexure A for the Acknowledgment Form.

2.1.3 Monitoring and enforcement

The DEDTEA retains the right to inspect the property at any time to ensure that the EMPr and all relevant legislation are being adhered to.

The following monitoring requirements are recommended as a condition of Environmental Authorization –

Prior to commencement of construction of the expansion development, an Environmental Control Officer (ECO) must be appointed to undertake auditing during the construction phase. The details of the appointed ECO must be communicated to DEDTEA: Compliance, Enforcement and Monitoring Unit (CME)prior to construction commencement-

- Follow up assessments by the ECO, for six months post construction, should be undertaken to determine the success of the re-vegetation process.
- The success of the re-vegetation process needs to be signed off by a vegetation specialist or a qualified ECO.
- The ECO must determine if further follow-up assessments are needed.
- The condition of the banks around the development need to be checked by the ECO during operation and signed off if in a controlled state where no erosion has been observed for 1 year during operation.

3. THE ENVIRONMENTAL MANAGEMENT PROGRAMME

This section details measures that must be undertaken to ensure environmentally sustainable development. It contains information on planning, implementation, management and mitigation measures, including responsible persons for the implementation thereof.

Management / Mitigation	Responsible person	Timing
A. GENERAL		
1. In all instances the Proponent must remain in compliance with relevant local and national legislation. The supreme law of the land is "The Constitution of the Republic of South Africa" which states: "Every person shall have the right to an environment which is not detrimental to his or her health or wellbeing". Laws applicable to protection of the environment in terms of Environmental Management include but are not restricted to those listed in this EMPr.	Proponent	At all times
2. A copy of the EMPr must be kept on site at all times. The document must be made available to any authorized officials, contractors, employees or agents who undertake work on the site.	Proponent	At all times
3. All relevant parties, including the project managers, contractors and sub-contractors are to be made aware of their responsibility for compliance with the provisions for *Duty of Care and remediation of environmental damage* contained in Section 28 of the NEMA, No. 107 of 1998 – which requires the prevention of any pollution or degradation of the environment, responsibility to be accepted for preventing impacts occurring, continuing or recurring, as well as responsibility for the costs of repair of the environment.	All parties	At all times
4. The Environmental Authorization should be issued from the DEDTEA prior to any of the listed activities being undertaken.	Proponent	Before development / operation
5. The development must not be in conflict with local municipality by-laws or other legislation.	Proponent	Before development / operation
6. The configuration for the proposed development must be in alignment with the proposed site layout plan and facility illustrations seen in Annexure B2.	Proponent	Before development / operation
7. All construction and operational activities should take place within the guidelines of the EMPr.	Proponent	Before development / operation
8. The footprint of the development should not extend beyond the boundaries of the property.	Proponent	Before development / operation
9. All relevant parties, including the proponent, all project managers, contractors and sub-contractors must be aware of their responsibility for compliance with the provisions for the Duty of care and remediation of environmental damage contained in Section 28 of NEMA.	Proponent	Before development / operation
10. An Environmental Awareness Briefing must take place prior to construction to educate and inform construction workers of appropriate waste management and the impacts that litter and rubbish can have on the environment.	Proponent	At all times
B. CONSTRUCTION		
1. Site personnel must undergo environmental training to ensure minimum disturbance of the surrounding environment, correct waste management; and health and safety onsite.	Proponent, ECO	Before development /

Management / Mitigation	Responsible person	Timing
		operation
2. All construction machinery and equipment must be regularly serviced and maintained to keep noise, dust and possible leaks to a minimum, as per the requirements of the EMPr.	Contractor, Proponent	During construction
3. An appropriate number of toilets (at least 1 toilet for every 20 workers) must be provided for labourers during the Construction Phase. These must be maintained in a satisfactory condition and must be positioned a minimum of 100m away from any water resources.	Contractor, Proponent	During construction
4. All waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials is encouraged.	Contractor, Proponent	During construction
5. Any leftover material must be appropriately disposed of (i.e. at a permitted landfill site, recycled, used by the community).	Contractor, Proponent	During construction
6. Personnel must not be allowed to trespass onto neighbouring properties. Poaching or harvesting of indigenous flora / fauna is strictly forbidden.	Contractor, Proponent	During construction
7. Appropriate stormwater / surface water management measures must be put in place before construction commences and maintained throughout the lifetime of the development.	Contractor, Proponent	During construction
8. Local community members should be employed where possible.	Contractor, Proponent	During construction
9. Appropriate temporary traffic control and warning signage must be erected and implemented on all affected roads in the vicinity, if slow-moving construction traffic is deemed to be problematic.	Contractor, Proponent	During construction
10. Local community members should be employed where possible.	Contractor, Proponent	During construction
11. Appropriate temporary traffic control and warning signage must be erected and implemented on all affected roads in the vicinity, if slow-moving construction traffic is deemed to be problematic.	Contractor, Proponent	During construction
12. Dust must be controlled through the application of water to the road surfaces if necessary.	Contractor, Proponent	During construction
13. The construction solid waste must be collected in a combination of skips and waste receptacles located on-site. It would be the responsibility of the Contractor to ensure the collection of the construction solid waste. Thereafter, the solid waste material would be disposed of by the Contractor, off-site, at a registered/permitted waste disposal facility.	Contractor, Proponent	During construction
C. SPILLAGES MANAGEMENT		
1. Spills on-site must be reported to the relevant Authority if necessary (e.g. Department of Water and Sanitation, Municipality etc) and should be remediated as per the EMPr.	Proponent	At all times
2. If there is any significant spillage of chemicals, fuels etc during the construction phase and / or operational phase, it must be reported to the DWS, DEDTEA and Mpofana Municipality.	Proponent	At all times
3.Petrochemical storage tanks must be within a completely contained, concrete lined 120% bunded area in order to contain any spills that do occur.	Proponent	At all times
4. Leaks and spillages must be promptly cleaned up by suitably qualified personnel, using the appropriate resources, and all contaminated material is disposed of appropriately. The following steps can be taken: - Stop the source of the spill - Contain the spill - All significant spills must be reported to the DWS and other relevant authorities - Remove the spilled product for treatment and authorized disposal - If necessary remedial action must be taken in consultation with the DWS and the DEDTEA - The incident must be documented.	Proponent	At all times
5. Oil and grease separator exists on site, within the separator pit, to reduce possible contamination of	Proponent	At all times

Management / Mitigation	Responsible person	Timing
watercourse.		
6. A detailed Spill Contingency Plan has been outlined in section 6.4 and must be strictly adhered to.	Proponent	At all times
7. Diesel storage tanks must be within a completely contained, concrete lined 120% bunded area in order to contain any spills that do occur.	Proponent	At all times
8. Leaks and spillages must be promptly cleaned up by suitably qualified personnel, using the appropriate resources, and all contaminated material is disposed of appropriately.	Proponent	At all times
9. All chemicals should be appropriately stored and handled. Storerooms must be more than 100m from watercourse zones and have appropriate concrete flooring and bunding.	Proponent	At all times
10. No washing of construction equipment and vehicles must be done directly from the watercourses. Washing should be managed such that detergents do not enter the watercourse.	Proponent	At all times
D. CONTAMINATION OF STORMWATER		
1. Appropriate stormwater / surface water management measures should be put in place before construction commences and maintained throughout the lifetime of the development.	Proponent	At all times
2. An oil and grease separator, within the existing separator pit, would treat contaminated stormwater runoff before it is released into the municipal stormwater drains.	Proponent	At all times
3. A diversion berm would be constructed to catch stormwater runoff and direct it to the oil and grease separator for treatment before being released to the municipal stormwater drain.	Proponent	At all times
4 Ensure that the expansion area storm drains can accommodate at least the 1:2 year design peak discharge;	Proponent	At all times
Personnel must not be allowed to trespass onto neighbouring properties.	Proponent	At all times
5. Ensure the banks are properly supported with the appropriate structures;	Proponent	At all times
6. Removal of rubble from the watercourses;	Proponent	At all times
7. Management of the working development during construction;	Proponent	At all times
8. Minimize the construction pollution by correct storage methods, rubbish facilities, ablutions and spill management; and	Proponent	At all times
9. Clear rubbish from the wetland, riparian and floodplain areas.	Proponent	At all times
E. FIRE HAZARD, NOISE AND DUST MANAGEMENT		
1. Sufficient fire extinguishers and firefighting equipment must be easily available and readily accessible in case of a fire.	Proponent	At all times
2. All staff members must be familiar with the procedure of how to handle a fire and who to inform in case a fire does occur.	Proponent	At all times
3. Sufficient fire extinguishers and firefighting equipment should be easily available and readily accessible in case of a fire.	Proponent	At all times
4. Dampening of dusty areas and spraying of construction vehicles must be applied to prevent excess dust.	Proponent	At all times
5. During the construction phase noise must be managed according to the legislative requirements of the Noise Control Regulations in Terms of Section 25 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989).	Proponent	At all times
6. During the operational phase, the generation of noise must be consistent with surrounding commercial and industrial facilities.	Proponent	At all times
F. INCREASED TRAFFIC VOLUMES MANAGEMENT		
1. Clear visibility and access to existing entrance and exit points must be maintained.	Proponent	At all times
2. Signage indicating turning trucks must be installed, as guided by DOT.	Proponent	At all times
3. Speed limits and/or speed bumps must be used to reduce the speed of approaching motorists where necessary,	Proponent	At all times

Management / Mitigation	Responsible person	Timing
as guided by DOT.		
4.Appropriate traffic control and warning signage should be erected on all affected roads in the vicinity, if slow-moving construction traffic is deemed to be problematic.	Proponent	At all times
5. The recommendations outlined in section 9.2 and Annexure C2 (Traffic Impact Assessment) must be adhered to.	Proponent	At all times
G. WASTE MANAGEMENT		
1. Construction solid waste must be collected in a combination of skips and waste receptacles located on-site.	Proponent	Upon commencement of construction
2. The Construction contractors must procure the services of a suitable waste removal service provider for regular removal of waste skips.	Proponent	At all times
3. The Construction contractor must obtain proof of appropriate authorised landfills used and these records must be kept in the environmental site file by the proponent.	Proponent	At all times
4. Waste skips and waste receptacles must be located on site in a designated waste management area prior to being removed and safely disposed of.	Proponent	At all times
5. Waste skips and waste receptacles must not cause any surface and groundwater pollution, or pose any health hazards.	Proponent	At all times
6. All waste material generated must be disposed of at the nearest licensed municipal landfill site. Safe Disposal Certificates must be maintained in the Environmental Site File.	Proponent	At all times
7. Contaminated soil and other hazardous waste (unlikely) must be removed by a waste removal service provider authorised to remove and dispose of hazardous waste (e.g. Enviroserv).	Proponent	At all times
8. Waste produced during the operational phase is unlikely to increase significantly. All operational waste must continue to be collected by the local municipal waste collection services, and disposed of at nearest licensed municipal landfill site.	Proponent	At all times
H. QUERIES AND COMPLAINTS		
1. A Complaints Register must be located at the site office.	Proponent	At all times
2. Queries and complaints are to be handled by: • Documenting details of such communications; • Submitting these for inclusion into the complaints register; • Bringing issues to the immediate attention of the ECO; and • Taking remedial action as per the ECO's instructions.	Proponent, ECO	At all times
I. POTENTIAL EROSION AND POLLUTION OF SURROUNDING AREAS IF CONSTRUCTION ACTIVITIES AND STAFF ARE NOT WELL MANAGED		
1. To prevent erosion and sedimentation, construction activities must be undertaken during the dry season when potential flows will be substantially reduced.	Proponent	At all times
2. Topsoil must be removed from the full width of the development (including working areas) and not spoiled. Top and sub-soil stockpiles to be on opposite sides of the platform. Top- and subsoil stockpiles must not be stockpiled within 100m or within the 1:100 year floodplain of a watercourse.	Proponent	At all times
3. No access of vehicles should be permitted within riparian or wetland areas in order to prevent compaction of the riparian/wetland soil profile. Should access be imperative, it should be for limited periods only and should not take place during wet weather.	Proponent	At all times
4. The construction camp should be located more than 100m from watercourses.	Proponent	At all times
5. Topsoil should be replaced in the reverse order it was extracted and erosion prevention measures be put in	Proponent	At all times

Management / Mitigation	Responsible person	Timing
place on areas with a steep gradient (such as geo-textiles).		
6. Site personnel must undergo appropriate training to ensure minimum disturbance of the surrounding environment, correct waste management and health and safety on site.	Proponent	At all times
7. All construction machinery and equipment must be regularly serviced and maintained to keep noise, dust and possible leaks to a minimum, as per the requirements of the EMPr.	Proponent	At all times
8. All waste generated on site during construction must be adequately managed. Separation and recycling of different waste materials is encouraged.	Proponent	At all times
9. Any leftover material must be appropriately disposed of (i.e. at a permitted landfill site, recycled used by the community).	Proponent	At all times
10.Personnel must not be allowed to trespass onto neighbouring properties.	Proponent	At all times
11. Day to day activities by staff members must take cognizance of the need to keep disturbance to a minimum.	Proponent	At all times
12. Re-vegetation must start as soon as possible after closure of the proposed expansion.	Proponent	At all times
13. Follow up assessments should be undertaken to determine if the vegetation establishes and further actions as identified in Section 7.2.3 (Annexure C1).	Proponent	At all times
J. STAFF		
1. Unskilled labour required must be sourced from local previously disadvantaged communities where possible.	Proponent	At all times
2. There must be provision of not less than minimal wage (likely to be more) for staff, improving the per capita earnings and benefitting the broader community.	Proponent	At all times

ANNEXURE A Acknowledgment Form

Environmental Management Programme

Proposed Expansion of Mooi River Truck-Stop, Farm De Oewer 17763, Mpofana Local Municipality, UMgungundlovu District, KwaZulu-Natal

ACKNOWLEDGMENT FORM

Record of signatures providing acknowledgment of and commitment to compliance with the contents of this Environmental Management Programme.

All personnel whom sign below agree to being fully aware of their responsibility to comply with the EMPr and that failure to rectify non-compliance findings will attract penalties.

Proponent - ……..

Signed: …….. Date: …….....

Landowner – ……..

Signed: …….. Date: …….....

Project Manager – ……..

Signed: …….. Date: …….....

Contractor - ……..

Signed: …….. Date: …….....

Contractor - ……..

Signed: …….. Date: …….....

ANNEXURE B EAP CURRICULUM VITAE

Curriculum Vitae for Swazi Kubheka

PERSONAL DETAILS

Full name	Swazi Kubheka
Date of Birth	09th December 1991
Address	59 Durban Road, Scottsville, 3209
Cell	073 825 5770
Email	swazi@naturestamp.com
Marital status	Single
Language	English (Zulu, Xhosa)
Drivers License	Code B
Sports and hobbies	Netball, Nelson Mandela Marathon, Zip Lining

EDUCATION

2014 **University of KwaZulu Natal, Pietermaritzburg**
Bachelor of Science Honours, Environmental Science

2013 **University of KwaZulu Natal, Pietermaritzburg**
Bachelor of Science Degree, Environmental Science

2009 **Phendukani High School, Newcastle**
Grade 12 with exemption, Distinctions: Biology, Geography and English

COURSES

2014 **NEMA EIA Induction, Enforceable Conditions and Introduction to EMF's**
Department of Environmental Affairs Training, Durban

2014 **Wetland Assessors Training Course**
Ethekwini Municipality Training, Durban

2014 **Basic Project Management Course**
Hudisa School of Management, Durban

PROFESSIONAL AFFILIATIONS

Society of South African Geographers (SSAG)

WORK EXPERIENCE

April 2017 – present: NatureStamp Consulting
Environmental Scientist of NatureStamp (Pty) Ltd, private environmental consulting firm providing broad range of environmental solutions. Expertise in land use planning, Integrated Environmental Management (IEM) and environmental impact assessments.

April 2014 – March 2016: Ezemvelo KwaZulu Natal Wildlife
Employed as an intern which was extended to a contract, under the land use planning division. Reviewing land-use change applications (BAR's, EIA's and EMP's) and thorough understanding of environmental legislation and experience with environmental authorization processes. GIS querying biodiversity-related layers on Arcview and analysing Google Earth imagery for biodiversity related elements. Liaising with Environmental Assessment Practitioners, Municipalities and EADTEA/DMR personnel, undertaking scientific research (data analysis) and report writing.

November 2012– January 2013: Rainbow Farms (Pty)

Work experience gained at Rainbow Farms during vacation of BSc Degree. Tasks involved sustainability management and risk management. Projects assigned: Risk and Environmental Impact Assessment for a Proposed Biogas Plant and a Rainwater Harvesting Project.

2013, 2016 and 2017: University of KwaZulu-Natal (College of Agriculture, Engineering & Science)
Mentoring, Demonstrating and Tutoring Environmental Science (ENVS210) and Geography (GEOG 110 and GEOG 301)

KEY EXPERIENCE

Swazi Kubheka is an Environmental Scientist at NatureStamp and has been practising in the Environmental Assessment field for the past 4 years. She has attended various courses on the NEMA EIA process (Department of Environmental Affairs, Durban 2014), wetland assessment assessors training course (Ethekwini Municipality Training, Durban 2014) and a basic project management course (Hudisa School of Management, 2014).

Swazi completed her research (Masters in Environmental Science) in 2018, investigating the Incorporation of Biodiversity Recommendations into Environmental Authorisations in KZN. The research was funded by the National Research Foundation (NRF) through the University of KwaZulu-Natal, PMB Campus.

SPORTING ACHIEVEMENTS

Nelson Mandela Marathon (2016)

REFERENCES

Mrs Jenny Longmore	Principal Conservation Planner, Ezemvelo KZN Wildlife Tel: 033 845 1349 Email: Jenny.Longmore@kznwildlife.com
Prof Rob Slotow	Masters Supervisor, UKZN Cell: 083 681 7136 Email: Slotow@ukzn.ac.za