



DRAFT AMENDMENT REPORT

October 2023

Report Prepared By



GREEN CHOICE
CONSULTING

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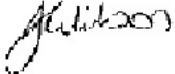
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ABBREVIATIONS AND ACRONYMS

DEDTEA	Department of Economic Development, Tourism & Environmental Affairs
DWAF	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
EMPr	Environmental Management Programme
HEC-MHS	Hydrologic Engineering Centre-Hydrologic Modelling System
I & AP	Interested & Affected Party
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NWA	National Water Act (Act No. 36 of 1998)
OHS	Occupational Health & Safety Act (Act No. 85 of 1993)
PPP	Public Participation Process
SWAT	Soil & Water Assessment Tool
WULA	Water Use Licence Application



EXECUTIVE SUMMARY

The Woodburn Shopping Centre, located at 15 Woodhouse Road in the Scottsville area of Pietermaritzburg, KwaZulu-Natal, is a commercial retail facility containing various retail stores and fast food outlets. It comprises an area of approximately 2 hectares and was developed to provide a decentralised shopping experience to the surrounding Scottsville and Pelham communities. Shanbar Property Development cc obtained Environmental Authorisation for the development of the Woodburn Shopping Centre on the 26th of February 2015, with an amendment to the Environmental Authorisation subsequently granted on the 26th of January 2016.

Shanbar Property Development cc on behalf of the Natal Rugby Union (the Applicant and Landowner) proposes to extend the Woodburn Shopping Centre by a further 3.5 hectares to accommodate additional retail space, parking bays and a new “drive-thru” fast food restaurant. The proposed project will require the existing rugby stadium with seating stand (owned by the Natal Rugby Union) to be demolished, although the existing practise fields will remain in place.

A Part 1 and Part 2 amendment process will be followed in terms of the National Environmental Management Act (Act 107 of 1998) and the Environmental Impact Assessment Regulations (2014, as amended) to comply with the environmental legislative requirements for the proposed development, for which Green Choice Consulting have been appointed. Additionally, a Water Use Licence Application is currently in progress in terms of the National Water Act (Act 36 of 1998).

The project will be advantageous due to the following:

- It will accommodate the increased population growth of the area,
- It is anticipated that the proposed project will provide approximately 500 job opportunities during the construction phase, and approximately 300 job opportunities once the proposed extension is operational,
- Due to the increased demand for business opportunities within the Scottsville area, the Applicant has been approached by large brands for rental space,
- The property location is central and easily accessed, and
- The existing Woodburn Shopping Centre is currently trading at an exceptional rate. Therefore, the Applicant foresees further growth for all stakeholders.

The potential impacts associated with the proposed shopping centre extension project are likely to be similar, if not identical to those identified during the initial investigations for the development of the Woodburn Shopping Centre. Since the site is fully developed, environmental and biodiversity impacts are anticipated to be negligible in significance. Nuisance impacts including noise, dust generation and traffic congestion during construction are typical of commercial developments located within residential areas, whilst concerns regarding safety and security during the operational phase of the development due to increased vehicular and pedestrian traffic are valid. However, should mitigation measures recommended in this report as well as by the various specialists be implemented, these impacts are anticipated to be of relatively low significance.



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1. INTRODUCTION

1.1 Project Background

The Woodburn Shopping Centre, located at 15 Woodhouse Road in the Scottsville area of Pietermaritzburg, KwaZulu-Natal, is a commercial retail facility containing various retail stores and fast food outlets. It comprises an area of approximately 2 hectares and was developed to provide a decentralised shopping experience to the surrounding Scottsville and Pelham communities. Shanbar Property Development cc obtained Environmental Authorisation for the development of the Woodburn Shopping Centre on the 26th of February 2015, with an amendment to the Environmental Authorisation subsequently granted on the 26th of January 2016 (refer to Appendix A).

Shanbar Property Development cc, on behalf of the KwaZulu-Natal Rugby Union who is both the Applicant and landowner, proposes to extend the Woodburn Shopping Centre. The proposed extension would result in a change in the previously approved project scope and therefore requires a formal amendment as no new listed activities in terms of the Environmental Impact Assessment (EIA) Regulations 2014 (as amended – hereon referred to as the “EIA Regulations”) would be triggered by the project proposal. This was agreed to following a pre-application meeting with the Department of Economic Development, Tourism & Environmental Affairs (DEDTEA) on the 18th of August 2022. The approved minutes of the pre-application are attached as Appendix B.

Since January 2016 when the final amendment to the Environmental Authorisation was granted, the greater property, owned by the Natal Rugby Union has been consolidated. As a result, the property description has changed to what was originally authorised. Additionally, the Applicant applying for the proposed Authorisation Amendment for the proposed shopping centre extension is the Natal Ruby Union, and not Shanbar Property Development cc as originally authorised. These administrative changes will also require amendment to the current Environmental Authorisation.

Green Choice Consulting have been appointed by Shanbar Property Development cc on behalf of the Natal Rugby Union (the Applicant and landowner) to undertake and manage the Part 1 and 2 process for the proposed extension of the Woodburn Shopping Centre. The Part 1 Amendment application will address the change in the property name from Portion 5 of Erf 4346 as was originally authorised, to the current property description of Erf 10278 of Pietermaritzburg. Additionally, the Part 1 amendment will address the need to transfer the holder of current environmental authorisation to the KwaZulu-Natal Rugby Union. The Part 2 Amendment application will address the change to the current layout of the Woodburn Shopping Centre being the extension activity.

1.2 Legislative Requirements

In accordance with the National Environmental Management Act (Act 107 of 1998) and the EIA Regulations 2014 (as amended), a Part 1 and Part 2 Amendment process will be followed for the proposed extension of the Woodburn Shopping Centre.



1.2.1 Part 1 Amendment

According to Regulation 29 of the EIA Regulations:

“An environmental authorisation may be amended by following the process prescribed in this Part if the amendment –

- (a) Will not change the scope of a valid environmental authorisation, nor increase the level or nature of the impact, which impact was initially assessed and considered when application was made for an environmental authorisation; or*
- (b) Relates to the change of ownership or transfer of rights and obligations”.*

The Part 1 amendment application will be submitted to DEDTEA, following completion of the Draft Amendment Report review period.

1.2.2 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.*



This report has been compiled in accordance with the required Part 2 amendment process as described in Regulation 32 of the EIA Regulations. The objective of this report is to provide details pertaining to the significance and impacts of the proposed change to the project description. These details are required in order for interested and affected parties to provide comment on the proposed change in the project description and associated impacts, and for the competent authority to be able to reach an informed decision in this regard.

1.2.3 Water Use Authorisation

Section 21 of the National Water Act (Act 36 of 1998, NWA) requires any activity occurring within a watercourse, within the 1:100 year flood line of any watercourse and/or within 500m of the boundary of any wetland to be registered and licenced. The Foxhillspruit Canal runs directly along the western boundary of the site, which flows into the Msunduzi River. Although a Water Use Licence application (WULA) was not required for the development of the existing Woodburn Shopping Centre, discussions with the Department of Water and Sanitation are currently underway to determine the need for any authorisations required in terms of the NWA, specifically for the following water uses:

- Section 21(c): Impeding or diverting the flow of water in a watercourse.
- Section 21(i): Altering the beds, banks, course or characteristics of a watercourse.
- Section 21(f): Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.

Sewage from the shopping centre is currently directed to the Darvill Wastewater Treatment Works, and the additional load from the extension will be linked into the same system and disposed of at Darvill. Volumes of expected load will be confirmed during the WULA process and included in the final WULA submission. Potable and sewage pipelines will be extended from the existing shopping centre to the next portion of the shopping centre. These will be tied into existing services. No new pump stations will be required for the proposed extension.

The WULA is currently in the pre-application phase to confirm the licenses applicable for the proposed development. The WULA process is managed by Joleen Wilson, an independent Environmental Assessment Practitioner.

1.2.4 Project Location

The Woodburn Shopping Centre and proposed extension site is located on Erf 10278, 15 Woodhouse Road in the Scottsville area of Pietermaritzburg. The project site is currently owned by the Natal Rugby Union. A description of the site's location is provided in Table 1, and the site's location and proposed development footprint is depicted in Figure 1.



Table 1: Locality Details

Application Area (Ha)	The Woodburn Shopping Centre comprises an area of approximately 2 hectares in extent, with the proposed extension to comprise an area of approximately 3.5 hectares.
Local Municipality	Msunduzi Municipality
District Municipality	Umgungundlovu District
Distance and direction from nearest town	The Pietermaritzburg central business district is located approximately 1.5km north of the site.
21 Digit Surveyor General Code for the site relating to the proposed amendment activities	NOFT02580000434600005



Figure 1: The Woodburn Shopping Centre shaded in orange, with the proposed extension development footprint shaded in blue.

Locality maps depicting the site's location are attached as Appendix C.



2. PROPOSED AMENDMENTS

2.1 Amendment Activity

The approved Environmental Authorisation and subsequent amendment is for *“the development of a 6500m² shopping centre development situated on Portion 5 of Erf 4346, which is located on the corner of Woodhouse Road and Alan Paton Drive within the Msunduzi Local Municipality, Umgungundlovu District...”*.

The proposed amendments are described in Table 2.

Table 2: Description of proposed amendments

Authorised Activity	Proposed Amendment	Process
The holder of the current Environmental Authorisation is Shanbar Property Development cc.	The Natal Rugby Union will be the holder of the Environmental Authorisation (the Applicant).	Part 1 Amendment Application form has been submitted to the DEDTEA.
The property description currently authorised is Portion 5 of Erf 4346.	Due to recent property consolidations, the property description has changed to Erf 10278.	Part 1 Amendment Application form has been submitted to the DEDTEA.
The approved Environmental Authorisation is for the development of a 6500m ² shopping centre development.	The intention is to extend the existing Woodburn Shopping Centre by an additional 35 000m ² (3.5Ha).	Part 2 Amendment Submission of this Part 2 Amendment Report to the DEDTEA for review.

The proposed Woodburn Shopping Centre extension project will entail:

- The extension of the Woodburn Shopping Centre by a further 3.5 hectares to include additional retail stores, parking bays, and a new “drive-thru” restaurant. The building will comprise two levels as per the existing shopping centre to accommodate an underground parking facility.
- An extension of the existing outdoor parking lot to accommodate an additional 375 parking bays.
- The demolishing of an existing seating stand/recreational building and rugby field currently owned by the KwaZulu-Natal Natal Rugby Union. The practice fields will remain in place.

The proposed site layout plan is attached as Appendix D.

2.2 Motivation for the Amendment

The need and desirability for the proposed extension of the Woodburn Shopping Centre are as follows:



- To accommodate the increased population growth of the area. This phase of the development will provide a pleasant, safe and convenient shopping experience.
- It is anticipated that the proposed project will provide approximately 500 job opportunities during the construction phase, and approximately 300 job opportunities once the proposed extension is operational.
- Due to the increased demand for business opportunities within the Scottsville area, the Applicant has been approached by large brands for rental space.
- The property location is central and easily accessed.
- The existing Woodburn Shopping Centre is currently trading at an exceptional rate. Therefore, the Applicant foresees further growth for all stakeholders.



3. PUBLIC PARTICIPATION

The public participation process (PPP) aims to ensure that all relevant interested and affected parties (I&APs) are consulted, involved in the project with their opinions taken into account, and a record of engagement included in the reports submitted to the relevant authorities. The process aims to ensure that all stakeholders are given an opportunity to provide input into the project as part of a transparent process which allows for a robust and comprehensive environmental study. As such, the purpose of PPP is to:

- Provide an opportunity for I&APs to obtain clear, accurate and comprehensible information about a proposed activity, alternatives or the authority's decision, and the environmental impacts thereof;
- Provide I&APs with an opportunity to voice their opinions, issues and concerns regarding a proposed activity, alternatives or decision;
- Provide I&APs with the opportunity to suggest measures of avoiding, reducing or mitigating negative impacts associated with a proposed activity, and enhancing positive impacts;
- Enable the Applicant to incorporate the needs, preferences, and values of I&APs into the activity where possible/practical;
- Provide opportunities to avoid and resolve disputes and reconcile conflicting interests;
- Enhance transparency and accountability in decision making;

The PPP for this proposed project has been undertaken in accordance with the requirements of the National Environmental Management Act (Act 107 of 1998, NEMA), and its EIA Regulations, in line with the principles of Integrated Environmental Management (IEM).

3.1 Identification of Interested and Affected Parties

An I&AP database was compiled by identifying the relevant stakeholders and Organs of State that would be notified of the proposed project. The I&AP database includes landowners, regulatory authorities, and other specialist groups. The I&AP database will be updated throughout the duration of the amendment process as and when additional I&APs respond to the various notifications published. The following key stakeholders and Organs of State were notified of the proposed project:

- Msunduzi Municipality – Environmental Management Unit
- Msunduzi Municipality Ward 33 Councillor
- Umgungundlovu District Municipality
- KZN Department of Water & Sanitation
- KZN Department of Transport
- Ezemvelo KZN Wildlife
- Duzi-uMngeni Conservation Trust (DUCT)

The full I&AP database is attached in Appendix E(1).



3.2 Notification of I&APs

The PPP commenced on the 27th of January 2023 whereby notification letters were prepared and sent via email as a call to register to identified stakeholders, Organs of State and landowners (where contact details were available). This includes notification of the current tenants of the Woodburn Shopping Centre. Businesses and residences located within a 100m radius of the Woodburn Shopping Centre, where no contact information could be obtained potential interested and affected parties were notified of the project via letter drop on the 27th of January 2023. A Background Information Document was provided to all registered interested and affected parties.

The notification letter for the call to register, Background Information Document as well as proof of notification are attached as Appendix E(2).

3.3 Site Notices

On the 27th of January 2023, two A2-sized English notices were placed in the vicinity of the Woodburn Shopping Centre – one in the advertising area in the Woodburn Shopping Centre, and one at the entrance of the Woodburn Rugby stadium (refer to Figure 2).



Figure 2: Location of the site notices placed within and surrounding the Woodburn Shopping Centre

A copy of the site notice with the proof of placement are attached as Appendix E3.



3.4 Newspaper Advertisement

An English newspaper advert was placed in the Maritzburg Sun on Wednesday the 25th of January 2023 as a notification of the proposed project and call to register for members of the general public. The Maritzburg Sun has a wide reach within the project area.

Proof of advertisement publication is attached as Appendix E(4).

3.5 Comments & Responses

Comments raised by registered I&APs during the Amendment process will be collated and addressed in a transparent manner, with responses provided in a Comments & Responses Report. The Comments & Responses report will be updated throughout the Amendment process as comments are received.

The Comments & Responses Report is attached as Appendix E(5).



4. SPECIALIST STUDIES

The following section provides a summary of the findings of the various specialist studies commissioned for the proposed Woodburn Shopping Centre extension project.

4.1 Watercourse Assessment

A Watercourse Assessment was undertaken by Dr. Bruce Scott-Shaw of Naturestamp (Pty) Ltd to identify any wetlands within a 500m radius of the proposed development site; to assess the condition of any identified wetlands and the adjacent riverine environment; and to assess the functional importance of any wetlands identified within and near the proposed development footprint.

The assessment of the adjacent riverine environments was undertaken by using the rapid/qualitative index of the Habitat Integrity Tool as well as the Department of Water Affairs & Forestry (DWAF) Riverine EIS Tool. Wetland health was assessed by utilising the Level 1 WET-Health Tool as well as the DWAF Wetland EIS Tool. An impact assessment was undertaken to investigate, evaluate and assess the impacts of the proposed development of the surrounding riparian environment, with a compilation of buffers recommended to minimise the identified impacts.

The riparian areas of importance include the riparian habitat associated with the Msunduzi River, the Msunduzi River itself as well as the Foxhillspruit Canal which runs along the western boundary of the property. The banks of the Msunduzi River are dominated by sedge species which are predominantly alien invasives, with veld present on the floodplain portion of the bank. Both the Msunduzi River and Foxhillspruit Canal are classified as highly modified systems. It is important to note that the historical floodplain of the Foxhillspruit Canal is not classified as a floodplain wetland, but is located within the 1:100 year floodline. The site has been historically transformed and terraced for the development of the rugby stadium and practice fields, and although the fields do flood under severe rainfall conditions, they do not show floodplain wetland characteristics such as alluvial soils.

The key impact associated with the proposed development identified by the specialist which may alter the condition of the Foxhillspruit Canal and Msunduzi River is the potential contamination of the riverine systems as a result of construction and operational activities, as well as increased stormwater discharge. Following an impact assessment, the specialist determined that the proposed development would have some impact on the aforementioned riverine systems, however the significance of those impacts will be low. Impacts associated with climate change were considered and include:

- An increase in extreme weather events causing flooding and damage to Municipal infrastructure.
- Potential contamination of watercourses due to greater volumes of runoff, which may lead to disease outbreaks impacting human health.
- Proliferation of alien invasive plants due to changing environmental conditions.



- A reduction in water availability due to the fact that alien invasive plants utilise more freshwater than indigenous plants. Watercourses may also become choked by alien invasive vegetation.

The findings of the Watercourse Assessment are summarised as follows:

- No watercourses or wetlands were identified within the project property boundary, however two systems were identified within 500m of the proposed development, namely the Foxhillspruit Canal and the Msunduzi River.
- Both the Foxhillspruit Canal and the Msunduzi River are classified as heavily modified.
- The floodplain associated with the Foxhillspruit Canal and the Msunduzi River is located within 500m of the proposed site, however the proposed development falls outside of this extent.
- Due to the fact that no wetland areas will be lost as a result of the proposed development, no offsets are required.

The Watercourse Assessment is attached as Appendix F(1).

4.2 Flood Assessment & Stormwater Management Plan

Dr. Bruce Scott-Shaw of Naturestamp (Pty) Ltd was appointed to undertake a Flood Assessment for the proposed Woodburn Shopping Centre extension project. The scope of work included the undertaking of a hydraulic analysis and compilation of a report illustrating the 1:50 and 1:100 year flood lines with recommended mitigation measures associated with the hydraulic analysis. Additionally, the hydrological analysis aided in determining the stormwater management requirements for the proposed development.

The method followed to conduct the flood line analysis and stormwater management plan entailed the following:

- Desktop study.
- A site visit to determine the status quo of the riverine systems.
- Delineation of the critical contributing catchment area using the watershed delineation tool, as well as the HEC-HMS and SWAT models.
- Design flood and storm determination.

Results of the Flood Assessment indicated that most of the proposed development property lies outside of the 1:100 year flood line. However, some of the lower lying areas of the property such as the rugby fields and some parking areas are located within the 1:100 year flood line. However, the flood risk in these areas is low due to flood attenuation by the landscape and the general flow direction. The specialist encourages the establishment of vegetated areas to promote infiltration, as well as promotes strict adherence to best practice guidelines, spill management and erosion control throughout construction and operation of the proposed development. Although the flood risk has been determined as low, the specialist recommends that the risk should be managed through appropriate storm water management and general maintenance of the proposed development. The 1:50 and 1:100 flood



lines are illustrated in Figure 3, with the 1:50 flood line area depicted by the blue and white dashed area, and the 1:100 flood line depicted as the solid blue area.

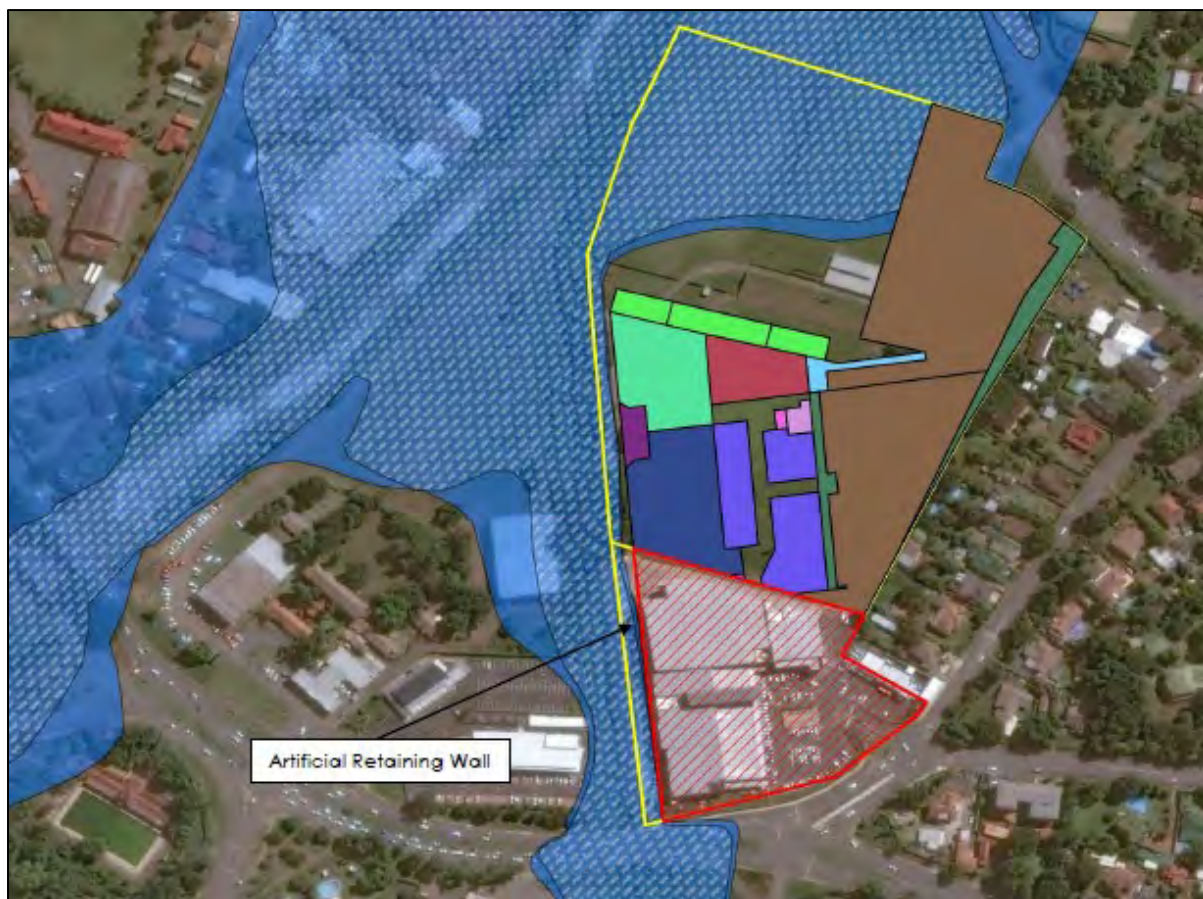


Figure 3: 1:50 and 1:100 year flood lines (Source: Naturestamp (Pty) Ltd).

The anticipated stormwater volumes were calculated for the contributing catchment of the Woodburg extension site as well as for the sub-catchments and are presented in Table 3.

Table 3: Calculated Peak Runoff for the Pre- and Post- Development State for a 1:50 Year Return Period

RP	State	Area (m ²)	Peak Runoff (m ³ .s ⁻¹)	Discharge Depth (mm)	Attenuation Required (m ³)
50 years	Pre-development	18 573	0.29	436	383
	Post-development	18 573	0.72	679	

As can be seen in the above table, it was calculated that 383m³ of stormwater attenuation is required for the minor sub-catchments. As a result, the following stormwater management structures and considerations were recommended:



- Access roads will have open drains which are recessed into the ground, with dimensions as used for typical road drains i.e. one meter in width and recessed below the level of the culvert or kerb by approximately 0.3 meters.
- Cut-off drains must be placed strategically and increased in high slope areas.
- All rooves must have gutters and downpipes.
- The installation of storage tanks, such as JoJo tanks, are encouraged to further attenuate peak rainfall events and to allow for water recycling on site.
- Cut-off drains as per the design recommendations must be installed to facilitate the control of surface water runoff from the roads.
- The lower lying areas within the property should be used to place the primary attenuation structure, with the use of a 400mm diameter pipe.

All stormwater management structures have been designed by RFJ & Associate Engineers, and a diagram of the proposed infrastructure has been included in the report.

The findings and recommendations of the Flood Assessment and Stormwater Management Plan is summarised as follows:

- The nearby watercourses are in a modified condition due to significant historical modification. The surrounding areas should be vegetated to attenuate potential flooding of the property, as well as to improve the aesthetics of the area.
- A portion of the proposed parking area is located within the 1:00 year floodline, but are of low risk.
- There is no catchment area outside of the expansion footprint, as flow is already directed into drains.
- Strict adherence to best practice guidelines, spill management and erosion control must be implemented throughout operation of the proposed shopping centre extension.
- Regular maintenance of culverts, drains, and gutters must be undertaken.
- Clean stormwater will be attenuated and discharged at strategic points into the Foxhillspruit canal to the pre-development state.
- Dirty stormwater will be isolated on site via sumps and separators which will be connected to Municipal infrastructure and subsequently discharged.
- The risk of the proposed development is low assuming that there is adherence to mitigation measures provided in the report. The risk, albeit low, must be managed through appropriate stormwater management and general maintenance.

The Flood Assessment & Stormwater Management Plan is attached as Appendix F(2).

4.3 Geotechnical Study

Shardesh Sewlal Engineers were appointed to undertake a geotechnical investigation for the proposed Woodburn Shopping Centre extension project. The objectives of the study were to determine the soil and rock profile across the proposed development footprint and evaluate its engineering properties and influence on the design of the foundations; establish depth to bedrock; evaluate the workability of the site materials with regards to their excavatability and compatibility; and to assess groundwater conditions.



The geotechnical investigation comprised the following activities:

- Site walk-over to establish the overall condition of the proposed site as well as to identify any geological and surface drainage features.
- Excavation of eight (8) test pits using a Tractor Loader Backhoe (TLB), which were profiled in accordance with the South African Guidelines for Soil and Rock Logging.
- Eight (8) dynamic cone penetrometer tests were conducted adjacent to the abovementioned test pits.

The 1:250 000 Geological Map No. 2930 (issued by the Department of Mines and Mineral Affairs) was consulted to determine the overall geological characteristics of the site, which was described to be underlain by Ecca Group Pietermaritzburg Formation soils and rock consisting of dark grey Shale, Siltstone and subordinate Sandstone. The site is not located within a geologically unstable area. Following test pit excavations and cone penetrometer testing, it was determined that the site is indeed underlain by highly weathered, thinly laminated, loosely jointed, weathered, highly fractured, very soft rock to soft rock Shale. The depth of the weathered Shale varied across the proposed development property. Alluvium was encountered to the full depth of the pits along the north western boundary of the site, whilst strong groundwater seepage was encountered in the test pits indicating a perched water table.

Following the geotechnical investigation, the engineers determined that the proposed Woodburn Shopping Centre is feasible, should guidelines provided in their report be strictly adhered to. Piled foundations are recommended for supporting the proposed extension, with the piles drilled to virtual refusal into the Shale bedrock. The engineers warned against the use of soak pits on site due to the perched water table.

The Geotechnical Study is attached as Appendix F(3).

4.4 Traffic Impact Assessment

Jinyela (Pty) Ltd were appointed to undertake a Traffic Impact Assessment for the proposed shopping centre extension project. The assessment objectives were to:

- Determine the volume of additional traffic that will be generated by the proposed development.
- Analyse the impact of the additional traffic on the surrounding road network.
- Propose road network improvements to mitigate any congestion and road safety issues that may arise as a result of the proposed development (if required).
- Propose recommendations on access requirements.

The Woodburn Shopping Centre currently has one access point located on Woodhouse Road which will be retained as is during the proposed shopping centre expansion project. Two new access points will be constructed on Boshoff Street as a component of the proposed expansion project. The first will be constructed immediately west of the Boshoff Street and Woodhouse Road intersection, which will be a full directional access that leads to the shopping centre's parking area.



The second new access point will be constructed further west along Boshoff Street and will be restricted to left-in and left-out movements only. This access point will primarily provide access to the shopping centre for delivery vehicles and will also allow easy access to the rugby training fields.

The proposed internal circulation for the proposed extension allows for easy movement of vehicles and pedestrians across the shopping centre extension area, as well as between the existing shopping centre and the proposed new extension. Two new public transport laybys will be constructed on Boshoff Street outside the new access intersection, and new sidewalks will be constructed that will link the new public transport laybys to the new section of the shopping centre.

Following site visits to conduct traffic counts, trip growth and generation calculations and SIDRA analysis, the following conclusions and recommendations were provided by the traffic engineers:

- The peak hours on the surrounding road network occurs on Fridays from 16h00 to 17h00, and Saturdays from 12h00 to 13h00.
- The area in the vicinity of the proposed development is considered to be a low growth area, therefore a 3% per annum growth rate compounded annually was considered reasonable for the assessment.
- It is anticipated that as a result of the two new proposed access points, some of the existing traffic will redistribute to the new access points, particularly vehicles entering the study area from Boshoff Street and Surrey Road.
- The results of the assessment showed that no upgrades to the surrounding road network will be required to handle the anticipated increased traffic volumes that will be generated by the proposed development.
- It is anticipated that the proposed development will not cause the road safety conditions on the surrounding road network to deteriorate.

The Traffic Impact Assessment is attached as Appendix F(4).



5. IMPACT ASSESSMENT METHODOLOGY

This section identifies, describes, and assesses the primary impacts associated with the proposed amendment. All socio-economic, biological and physical impacts have been considered, as per the various specialist reports that were compiled for the proposed amendment, for the construction and operational phases of the proposed development. It is not anticipated that the proposed development will be decommissioned in future, therefore impacts associated with the proposed development have not been assessed. It must be noted that the precautionary principle has been applied to the impact assessment, and thus although the impacts presented may not occur, they have been assessed to ensure that all potential impacts have been accounted for.

5.1 Identification of Impacts

Potential environmental impacts associated with the proposed amendments were identified. Impacts were identified and assessed with specific focus on the planned amendments and include:

- Dust generation
- Soil erosion and increased stormwater runoff
- Waste generation
- Disturbance of surface geology
- Visual impacts
- Noise impacts
- Traffic impacts
- Job creation

Without appropriate mitigation measures and continual environmental management, some of the identified impacts may potentially become cumulative, affecting areas outside of their originally identified zone of impact.

5.2 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.
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.



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

$$S = (E+D+M) \times P$$

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

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	The impact is of little importance, but may require limited mitigation.
21 – 40 points	Medium	The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
41 – 60 points	High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire project proposal unacceptable.
>60 points	Very High	The impact is significant with recovery not possible following mitigation. The impact presents a fatal flaw.

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. These criteria are described in Table 6 below:



Table 6: Additional Assessment Criteria Considered

Criteria Description	Description
Reversibility of Impact	
The extent to which the impacts are reversible	Yes The impact is reversible within two years following construction
	No The impact is reversible within 2 to 10 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.



6. IMPACT ASSESSMENT

The objective of this section is to provide independently and scientifically sound information on the potential impacts identified during this Part 2 Amendment Process. 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 Section 4 of this report. The impact assessment is aimed at determining the potential impacts associated with the proposed development and the prescription of mitigation measures to reduce the significance of the identified impacts.

Impacts with a no significance or a low significance rating are considered to have no influence on the decision to proceed with the proposed project. Impacts with a moderate significance will influence the decision unless they can be effectively mitigated to a low significance, whereas impacts with a high significance despite the implementation of mitigation measures would influence the decision to proceed with the proposed project. The impacts discussed in this section were identified by the Project Team, including specialists. The potential impacts identified and elaborated on this chapter have been presented as follows:

- Impacts on the biophysical environment; and
- Social impacts

For the purposes of this project, this assessment will only focus on the impacts that are likely to occur during the planning, construction, and operational phases of the project.

6.1 Impacts Likely to Occur During the Design & Planning Phase

The anticipated activities and impacts that may result during the planning and design phase of the proposed project are provided in Table 7. Note that recommended mitigation measures are provided.



Table 7: Impacts Associated with the Planning & Design Phase

Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
		Duration	Significance Rating		Duration	Significance Rating
Incorrect site Layout	<ul style="list-style-type: none"> • Damage to neighbouring properties. • Removal of vegetation. communities due to incorrect site layout. • Destabilisation of slopes/banks. 	Duration	1	<ul style="list-style-type: none"> • Ensure efficient communication during project planning and inception meeting between all stakeholders involved in the project. • The freshwater ecosystem buffer zone should be clearly demarcated prior to the commencement of any activities on site. • Vehicle access to the site should be via existing roads and access routes. • The construction area must be clearly identified including stockpile or excavation areas, storage facilities and parking areas. • "No-go" areas should be clearly identified for the entirety of the construction phase of the project. • Demarcated areas should be marked using easily visible fencing/barriers and must be maintained throughout the construction phase. • Signage indicating hazardous areas/dangerous activities must be erected where required. • All demarcated areas need to be agreed upon with an Environmental Control Officer (ECO) prior to the commencement of construction. • Storm water management structures in line with a storm water management plan must be included in the design and construction of all infrastructure. 	Duration	1
		Extent	1		Extent	1
		Magnitude	1		Magnitude	1
		Probability	1		Probability	1
		Significance Rating	-3 (Negligible)		Significance Rating	-3 (Negligible)
		Reversibility	Y		Reversibility	Y
		Loss of Resources			Loss of Resources	
	Low		Low			



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
Damage to flora and fauna during initial investigations	<ul style="list-style-type: none"> • Vehicular access to the site will be required during specialist investigations. • Increase in vehicular and foot traffic leading to vegetation loss and soil compaction. • Collateral damage to flora and fauna in areas surrounding the site. 	Duration	1	<ul style="list-style-type: none"> • Surveyors and engineers must be educated on minimising damage to vegetation/surrounding properties during their initial investigations. • Roads and paths must be clearly marked and maintained. • The development footprint must be kept to a minimum. 	Duration	1
		Extent	2		Extent	2
		Magnitude	1		Magnitude	1
		Probability	3		Probability	1
		Significance Rating	-12 (Low)		Significance Rating	-4 (Negligible)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low
Risk of not informing all I & APs of proposed development	<ul style="list-style-type: none"> • Neighbours are not aware of the proposed development. 	Duration	1	<ul style="list-style-type: none"> • At this phase of the project, all I & APs must be identified and informed of the proposed project, as well as any changes throughout the Amendment process. 	Duration	1
		Extent	2		Extent	2
		Magnitude	2		Magnitude	1
		Probability	2		Probability	1
		Significance Rating	-10 (Negligible)		Significance Rating	-4 (Negligible)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



6.2 Impacts Likely to Occur During the Construction Phase

Due to the fact that the proposed site is already transformed and developed, impacts associated with the construction phase of the project are anticipated to be more social in nature, such as:

- Traffic congestion;
- Noise;
- Visual;
- Dust generation;
- Waste generation;
- Security and safety;
- Hygiene and health; and
- Generation of employment opportunities.

Physical environmental impacts associated with the construction phase of the project may include:

- Soil disturbance and compaction;
- Decreased water quality of the Foxhillspruit canal; and
- Soil and groundwater contamination.

A detailed Environmental Management Programme (EMPr) has been developed for the construction phase of the project, and is attached as Appendix G. This EMPr will require approval from the DEDTEA.

The anticipated activities and impacts that may result during the construction phase of the project are provided in Table 8. Note that recommended mitigation measures are provided.



Table 8: Impacts Associated with the Construction Phase

Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
		Duration	Significance Rating		Duration	Significance Rating
Clearance of vegetated areas for construction of the shopping centre extension	<p>Soil Disturbance, Compaction & Erosion</p> <ul style="list-style-type: none"> • Increase in exposed surfaces and subsequent potential for decreased soil particle cohesion and soil binding capacity, increasing the potential for soil erosion and sedimentation. • Erosion and loss of topsoil. • Soil compaction resulting in reduced water infiltration and increased surface runoff, combined with the artificial creation of preferential flow paths due to construction activities, will result in increased volumes of flow into the Foxhillspruit canal. • Decreased habitat for insects, birds and small mammals. 	Duration	2	<ul style="list-style-type: none"> • Vegetation clearance must be undertaken piecemeal on a “as needed” basis. The entire construction area must not be stripped of vegetation prior to the commencement of construction activities. • Ideally, construction activities should commence during the dry season when flows will be substantially reduced. • The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation of the Foxhillspruit canal. • Topsoil stripped from the construction footprint must not be spoiled but stockpiled and preserved for use in rehabilitation. • Erosion measures on cut or fill slopes must be established to prevent the concentration of storm water. • Berms, sandbags and/or hessian sheets must be used to contain all sediment, whilst energy dissipators must be constructed at all outflow points to prevent erosion. • Vehicles may not be parked within the floodline areas when not in use to prevent soil compaction. • Topsoil should be replaced in the order it was extracted and erosion measures put in place (such as geotextiles) on areas with a steep gradient. 	Duration	1
		Extent	2		Extent	2
		Magnitude	4		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-24 (Medium)		Significance Rating	-12 (Low)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
				<ul style="list-style-type: none"> Any excess subsoil must be removed from the site once backfilling is completed and spoiled at an agreed spoil site. Stockpiles must be clearly demarcated, maintained free of weeds, and remain uncompacted. 		
Clearance and stockpiling of topsoil	Spread of Alien Invasives <ul style="list-style-type: none"> Alien invasive plants can colonise stockpiles and spoil sites given their easily dispersed seed. 	Duration	2	<ul style="list-style-type: none"> An alien invasive control plan must be implemented to eradicate alien plant infestation. All disturbed areas must be monitored for colonisation of alien invasive vegetation. Areas cleared of alien invasive plants must be rehabilitated with indigenous plant species. Bank areas need to be stabilised prior to re-vegetation occurring. Bare areas need to be controlled by geotextiles to give natural vegetation a chance to establish. All growth forms of Category 1 weeds and invader plants must actively be removed from all work areas. Areas for re-vegetation/alien clearing should be demarcated to prevent further disturbance. All Category 2 and 3 weeds and invader plants must be actively removed prior to flowering. Should the riparian area be disturbed during the construction phase, it must be rehabilitated and re-vegetated. These activities must be overseen by an ECO and wetland specialist. 	Duration	1
		Extent	2		Extent	2
		Magnitude	4		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-24 (Medium)		Significance Rating	-12 (Low)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
				<ul style="list-style-type: none"> Follow up assessments should be undertaken to prevent alien regrowth in alignment with timeframes recommended by an appropriate vegetation specialist/landscaper. 		
All construction activities	<p>Decrease in Water Quality</p> <ul style="list-style-type: none"> Reduction in the water quality of the Foxhillspruit canal and Msunduzi River due to hazardous good spillages such as oils and fuels used in equipment and construction vehicles. 	Duration	1	<ul style="list-style-type: none"> All hazardous goods are to be stored under lock and key in a designated materials storage area. Fuels and any other hazardous liquids are to be stored in an appropriately sized bund. Relevant spill kits are to be maintained on site. A spill contingency plan for the construction and operational phases of the project 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 oils, grease, petrochemicals, as well as herbicides which may be used for alien invasive clearing. Washing of construction vehicles on site is prohibited. Any remnant waste, spoil, broken equipment/machinery and contaminants needs to be removed off site. Vehicles may not be refuelled on site. 	Duration	1
		Extent	3		Extent	2
		Magnitude	3		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-21 (Medium)		Significance Rating	-10 (Negligible)
		Reversibility	Y		Reversibility	
		Loss of Resources	Medium		Loss of Resources	
All construction activities	<p>Decrease in Soil & Groundwater Quality</p>	Duration	1	<ul style="list-style-type: none"> All handling of potentially hazardous materials, maintenance and storage of equipment and vehicles must be undertaken on an impermeable surface. If 	Duration	1
		Extent	2		Extent	1
		Magnitude	4		Magnitude	2
		Probability	3		Probability	2



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
	<ul style="list-style-type: none"> Soil and groundwater contamination due to the inappropriate storage and handling of dangerous goods on site such as fuels, chemicals, concrete, oils and paints. 	Significance Rating	-21 (Medium)	<p>this is not practical, the use of drip trays is essential. Drip trays are to be cleaned regularly, and not be allowed to overflow.</p> <ul style="list-style-type: none"> Hazardous storage areas must be bunded with an impermeable liner to protect soil and groundwater in the event of spillage. Storage areas containing hazardous materials must be kept under lock and key and clearly sign posted. Staff handling hazardous materials must be aware of the toxicity of the materials and their subsequent impact should spillage occur. Safety measures must be followed. Hazardous material storage areas must be roofed and bunded If small volumes of concrete are to be mixed manually, mixing is to be undertaken on a hard surface preferably covered in plastic sheeting to ensure that concrete runoff may be contained. If large volumes of concrete are to be generated, the mixing area must be underlain by an impermeable material that is sufficient to contain spills. All concrete waste is to be collected and removed from the site for disposal at a permitted landfill site. Accidental spillages must be cleaned up immediately and all contaminated material disposed appropriately. A spill kit must be maintained on site at all times, and must be stored in a location that is easily accessible to staff. 	Significance Rating	-8 (Negligible)
		Reversibility	Y		Reversibility	
		Loss of Resources	Medium		Loss of Resources	



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
		Duration	Significance Rating		Duration	Significance Rating
				<ul style="list-style-type: none"> Equipment, machinery and vehicles are to be maintained in good working order to prevent leaks. Runoff from the construction site must not discharge into adjacent properties or the Foxhillspruit canal. 		
Construction vehicle movement within and surrounding the study area.	Traffic Congestion <ul style="list-style-type: none"> Construction activities will result in the transportation of various materials by road. This will result in increased vehicular movement within the study area. 	Duration	2	<ul style="list-style-type: none"> Existing access routes must be utilised during construction. Construction vehicles should attempt to use the main roads outside peak traffic periods where practical. This will aid in alleviating traffic congestion during the construction phase of the project. All access points, roads and turning areas must be agreed by the engineer and ECO prior to the commencement of construction. The parking of construction vehicles along pedestrian pavements is strictly prohibited. 	Duration	2
		Extent	3		Extent	3
		Magnitude	4		Magnitude	3
		Probability	5		Probability	5
		Significance Rating	-45 (High)		Significance Rating	-40 (Medium)
		Reversibility	N		Reversibility	N
		Loss of Resources	Low		Loss of Resources	Low
Excavation, operation of equipment and movement of construction vehicles.	Noise <ul style="list-style-type: none"> Ambient noise levels will increase in the study area due to construction vehicles frequenting the site, the operation of equipment and machinery, as well as a noise workforce. Increased noise levels will impact neighbouring properties. 	Duration	2	<ul style="list-style-type: none"> Construction vehicles are to be well maintained at all times during the construction phase of the project. Equipment fitted with noise reduction measures must be used as per operating instructions, and regularly maintained. Construction activities are to be restricted to normal construction working hours (07h00 – 17h00) to minimise the effects of noise pollution on the neighbouring properties. Residents of neighbouring properties must be notified of extremely noisy activities at least 24 hours in advance. 	Duration	2
		Extent	3		Extent	3
		Magnitude	4		Magnitude	3
		Probability	5		Probability	5
		Significance Rating	-45 (High)		Significance Rating	-40 (Medium)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low
	Visual Impact	Duration	2		Duration	2



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
All construction activities	<ul style="list-style-type: none"> Construction activities will alter the visual character of the area, particularly if housekeeping on site is poor. 	Extent	1	<ul style="list-style-type: none"> Screening measures, such as the erection of shade cloth, must be implemented to shield residents of neighbouring properties from construction activities. Under no circumstances may rubble and other construction solid waste be dumped on road verges and/or pavements outside the site's boundaries or in neighbouring properties. The site must be kept as neat and tidy as possible at all times. Littering on site is strictly prohibited. An adequate number of covered waste receptacles must be provided to discourage littering. Storage facilities and other temporary structures on site should be located in such a way that they have as little visual impact on local residents and businesses as possible. 	Extent	1
		Magnitude	3		Magnitude	2
		Probability	5		Probability	5
		Significance Rating	-35 (Medium)		Significance Rating	-25 (Medium)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low
Vegetation clearing, excavation, vehicular movement.	<p>Dust</p> <ul style="list-style-type: none"> Construction activities may generate dust particularly as the existing rugby field will be stripped of its grass. Construction vehicles accessing the site via the existing gravel road may generate dust. Air emissions from construction vehicles as well as machinery on 	Duration	2	<ul style="list-style-type: none"> Areas that have been stripped of vegetation must be dampened periodically to avoid the generation of excessive dust. All soil stockpiles must be dampened and/or covered with tarpaulin to prevent the generation of dust. No burning of waste on site is permitted. All waste must be stored at a designated storage point from where it can be removed and disposed accordingly. The Contractor must make alternative arrangements (other than fires) for 	Duration	2
		Extent	2		Extent	1
		Magnitude	3		Magnitude	2
		Probability	5		Probability	4
		Significance Rating	-35 (Medium)		Significance Rating	-20 (Low)
		Reversibility	Y		Reversibility	Y
Loss of Resources	Low	Loss of Resources	Low			



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
	site may have an impact on neighbouring residents.			cooking and/or heating requirements. LPG cookers may be used, provided that all safety regulations are followed. <ul style="list-style-type: none"> Vegetation must only be stripped on an "as needed" basis. The time that stripped areas remain exposed must be kept to a minimum at all times. Vehicles on site should not be kept idling to prevent the excess generation of exhaust fumes. All machinery and equipment used during construction must be maintained regularly and kept in good working condition. 		
Littering by construction workers	Waste Generation <ul style="list-style-type: none"> Blocking of drains and stormwater management measures. Burying of indigenous vegetation reducing biodiversity. Ingestion by birds and other small mammals. Poor housekeeping which will have a visual impact on the neighbouring residents. 	Duration	2	<ul style="list-style-type: none"> A register of all waste removed from the construction site must be compiled and maintained at the site office. The register must categorise the waste removed from site (i.e. general, hazardous, construction, rubble), and indicate which landfill site disposal took place. Proof of waste collection must be maintained at the site office. A designated waste storage area must be located on site for the collection and storage of construction and domestic waste. The waste storage area must be barricaded and located under a shelter. An adequate number of waste bins must be provided on site for the collection of refuse. 	Duration	2
		Extent	2		Extent	2
		Magnitude	3		Magnitude	2
		Probability	3		Probability	2
		Significance Rating	-21 (Medium)		Significance Rating	-12 (Low)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
				<ul style="list-style-type: none"> Bins must be lined for the effective control and disposal of waste. Waste receptacles must be covered overnight. The excavation and use of rubbish pits on site is prohibited. The burning of waste on site is prohibited. Staff are to ensure that any loose litter encountered on site is collected and appropriately disposed on a daily basis. The Contractor is to train all staff on appropriate waste management, as well as the impacts of littering. No waste generated on site is to be dumped on adjacent road verges, roads or public places during construction. 		
All construction activities	<p>Safety & Security</p> <ul style="list-style-type: none"> Increased risk to the health and safety of the public and employees during construction. Potential safety risk to neighbouring properties due to increased foot traffic in the study area. 	Duration	2	<ul style="list-style-type: none"> Ensure that all signage of any potential safety risks that may be present are clearly marked and cordoned off from the general public. Site employees are restricted from entering any property other than the project property itself. Vandalism to adjacent properties is considered an offence and is strictly prohibited. Access to the site must be restricted to construction staff and personnel involved with the project only. Access control is strongly recommended. Access to the site for the general public is strictly prohibited, unless accompanied by the resident engineer. 	Duration	2
		Extent	1		Extent	1
		Magnitude	4		Magnitude	3
		Probability	3		Probability	2
		Significance Rating	-21 (Medium)		Significance Rating	-18 (Low)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
				<ul style="list-style-type: none"> The Contractor is to provide all construction staff with the appropriate personal protective equipment. A sign board with emergency contact details should be erected at the entrance to the construction site. Emergency medical provisions must be maintained on site at the site camp. Firefighting equipment is to be maintained on site at all times in accordance with the Occupational Health and Safety Act (OHS Act, Act 85 of 1993). Employees are to be managed in strict accordance with the OHS Act. Stockpiles must be stable and well secured to avoid collapse and possible injury to staff. Flammable materials should be stored as far as possible from adjacent residential areas. Obstruction to drivers' line of sight as a result of stockpiles must be avoided, especially at intersections and on corners. 		
All construction activities	Health & Hygiene <ul style="list-style-type: none"> Unhygienic conditions may arise on site during construction due to mismanaged temporary ablution facilities, as well as lack of appropriate eating areas. 	Duration	2	<ul style="list-style-type: none"> A designated eating area for staff must be located on site. All meals are to be taken at this designated area. Potable water must be available at all times at various points within the construction site. An adequate number of chemical toilets must be provided for staff. One toilet should be provided per 15 staff. 	Duration	2
		Extent	1		Extent	1
		Magnitude	2		Magnitude	1
		Probability	3		Probability	1
		Significance Rating	-15 (Low)		Significance Rating	-4 (Negligible)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	N/A		Loss of Resources	N/A



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
				<ul style="list-style-type: none"> Chemical toilets must be placed at least 50m away from the Foxhillspruit canal. Chemical toilets must be placed outside areas susceptible to standing or flowing water. The chemical toilets must be maintained in a clean and orderly state, and are to be regularly pumped to prevent odour and pest problems. Contractors must ensure that no spillages occur when chemical toilets are cleaned and pumped. The construction of long drop toilets is prohibited. Under no circumstances may open areas or the surrounding bush be utilised as a toilet facility. 		
All construction activities	<p>Heritage Impact</p> <ul style="list-style-type: none"> Damage to unearthed heritage resources during construction. 	Duration	2	<ul style="list-style-type: none"> Should any archaeological objects be disturbed, exposed or uncovered during the bulk earthworks, all construction activities must cease and the findings reported by the Contractor to AMAFA KZN without delay. 	Duration	2
		Extent	1		Extent	1
		Magnitude	3		Magnitude	2
		Probability	2		Probability	1
		Significance Rating	-12 (Low)		Significance Rating	-5 (Negligible)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low
Employment of Contractor and construction staff	<p>Job Creation</p> <ul style="list-style-type: none"> The construction phase of the project will provide approximately 500 employment opportunities for members of the local community. 	Duration	2	<ul style="list-style-type: none"> Local contractors and labourers should as far as possible be given priority to ensure that the benefits derived from the construction phase of the project are received by the local community surrounding the proposed development. 	Duration	No mitigation required
		Extent	4		Extent	
		Magnitude	4		Magnitude	
		Probability	5		Probability	
		Significance Rating	+50 (High – Positive)		Significance Rating	



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
(Positive impact)	<ul style="list-style-type: none"> The proposed development will result in the creation of job opportunities for construction contractors, as well as for construction materials suppliers. 	Reversibility	N		Reversibility	
		Loss of Resources	N/A		Loss of Resources	



6.3 Impacts Likely to Occur During the Operational Phase

Impacts associated with the operation of the proposed Woodburn Shopping Centre extension are typical of most commercial activities, including:

- Change in land use and visual impact;
- Increased traffic congestion;
- Noise;
- Waste generation;
- Decrease in surface water quality;
- Increased flooding potential;
- Impact on biodiversity;
- Safety and security; and
- Job creation

A detailed Environmental Management Programme (EMPr) has been developed for the operational phase of the project, and is attached as Appendix G. This EMPr will require approval from the DEDTEA.

The anticipated activities and impacts that may result during the operational phase of the proposed project are provided in Table 9. Note that recommended mitigation measures are provided.



Table 9: Impacts Associated with the Operational Phase

Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
		Duration	Significance Rating		Duration	Significance Rating
Operation of shopping centre	Land Use Change & Visual Impact <ul style="list-style-type: none"> The proposed development will result in a change in land use with the loss of the existing Woodburn rugby stadium. The proposed development will result in a permanent alteration to the visual landscape once construction is completed. 	Duration	4	<ul style="list-style-type: none"> Shrub, tree and creeper planting may be utilised to screen and soften the visual impact of the development. A landscape architect should assist with the selection and placement of vegetation for the proposed development. All plant species utilised for landscaping purposes within the proposed development must be indigenous. Outdoor lighting, where required, should be as unobtrusive as possible and fitted with reflectors to avoid light spillage. Low-level bollard and bulkhead type lighting should be considered for parking areas, paths and steps. 	Duration	4
		Extent	2		Extent	2
		Magnitude	3		Magnitude	2
		Probability	5		Probability	5
		Significance Rating	-45 (High)		Significance Rating	-40 (Medium)
		Reversibility	N		Reversibility	N
		Loss of Resources	Low		Loss of Resources	Low
Vehicular movement in and out of the shopping centre	Traffic Congestion <ul style="list-style-type: none"> The proposed development will attract additional shoppers to Woodburn Square, thus potentially increasing traffic congestion in the area. 	Duration	4	<ul style="list-style-type: none"> The design recommendations as specified in the Traffic Impact Assessment must be implemented. 	Duration	4
		Extent	2		Extent	2
		Magnitude	3		Magnitude	1
		Probability	5		Probability	4
		Significance Rating	-45 (High)		Significance Rating	-32 (Medium)
		Reversibility	N		Reversibility	N
		Loss of Resources	N/A		Loss of Resources	N/A
Patrons visiting the shopping centre, vehicular movement, movement of	Noise <ul style="list-style-type: none"> Due to the fact that the proposed development is an extension of an existing activity of the same nature, noise levels are not 	Duration	4	<ul style="list-style-type: none"> The appropriate landscaping within the proposed development and along the property boundary adjacent to neighbouring properties would aid in reducing noise levels. Generators and any other high noise emitting equipment are to be maintained 	Duration	4
		Extent	2		Extent	2
		Magnitude	2		Magnitude	1
		Probability	2		Probability	2
		Significance Rating	-16 (Low)		Significance Rating	-14 (Low)
		Reversibility			Reversibility	
		Loss of Resources			Loss of Resources	



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
delivery vehicles	anticipated to exceed current noise levels.	Loss of Resources		in the basement of the shopping centre to avoid disruption to surrounding residents.	Loss of Resources	
Operation of retail stores and food court	Waste Generation <ul style="list-style-type: none"> Daily operations of the proposed shopping centre extension will generate domestic general waste. Littering by patrons, impacting neighbouring residents. 	Duration	4	<ul style="list-style-type: none"> An appropriate number of waste bins must be provided in regular and frequent intervals within the shopping centre for patrons to dispose of their waste. This is most pertinent for the operation of the food court and new "drive-thru" restaurant. Waste separation and recycling is encouraged, recycling bins must be provided if this is to be implemented. Domestic waste must be collected by the Local Municipality/appropriately licenced waste services provider on a weekly basis. An outside waste storage area must be established for the storage of waste prior to collection. The area is to be fenced off and covered to prevent rain ingress. Illegal dumping along road verges and on neighbouring properties is strictly forbidden. The erection of signage encouraging patrons to appropriately dispose of their waste is encouraged. 	Duration	4
		Extent	1		Extent	1
		Magnitude	2		Magnitude	1
		Probability	5		Probability	3
		Significance Rating	-35 (Medium)		Significance Rating	-18 (Low)
		Reversibility	Y		Reversibility	
		Loss of Resources	N/A		Loss of Resources	
Water and sanitation	Surface Water Quality <ul style="list-style-type: none"> Poor storm water management may result in the deterioration of water quality of the Foxhillspruit Canal. 	Duration	4	<ul style="list-style-type: none"> All wastewater and sewerage must enter the Municipal sewer system for treatment at a local, permitted treatment plant. Under no circumstances may wastewater (except storm water) be discharged into the Foxhillspruit canal). 	Duration	4
		Extent	3		Extent	3
		Magnitude	4		Magnitude	2
		Probability	4		Probability	3
		Significance Rating	-44 (High)		Significance Rating	-27 (Medium)
		Reversibility	Y		Reversibility	Y



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation	
		Loss of Resources	Low	<ul style="list-style-type: none"> All mitigation measures and stormwater management designs proposed in the Stormwater Management Plan must be strictly adhered to. 	Loss of Resources	Low
Operation of the shopping centre during large rainfall events	Flooding <ul style="list-style-type: none"> The proposed development will generate an increase in hard standing areas such as roads, parking bays, rooves etc. This will result in an increase in the volumes of storm water during rainfall events, which may lead to localised flooding. 	Duration	4	<ul style="list-style-type: none"> The implementation of measures to attenuate peak flood discharge on site is recommended, such as the use of on-site water detention, grass-line swales, storm water infiltration systems, undulation, landscaping, or a combination of the above. The condition of the banks around the development needs to be assessed by an ECO and signed off if in a controlled state where no erosion has been observed for one (1) year during operation. The recommendations provided in floodline assessment and stormwater management plan must be adhered to. 	Duration	4
		Extent	3		Extent	3
		Magnitude	4		Magnitude	3
		Probability	4		Probability	3
		Significance Rating	-44 (High)		Significance Rating	-30 (Medium)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low
Operation of the shopping centre	Reduction in Biodiversity <ul style="list-style-type: none"> The proposed project property is already developed and is currently utilised as a rugby stadium. However, the presence of manicured lawns, sparse grass and trees along the road will be a refuge for birds, insects and small mammals, which may be impacted as a result of the proposed development. Due to the lack of 	Duration	4	<ul style="list-style-type: none"> Indigenous vegetation found within the riparian zone of the Foxhillspruit canal is to be conserved. Indigenous riparian vegetation may not be cleared. A landscape architect must be appointed to plant and maintain indigenous vegetation within the proposed development. Existing trees located within the property boundary should be kept as part of the landscaping of the development as far as practical. 	Duration	4
		Extent	1		Extent	1
		Magnitude	2		Magnitude	1
		Probability	3		Probability	2
		Significance Rating	-21 (Medium)		Significance Rating	-12 (Low)
		Reversibility	Y		Reversibility	Y
		Loss of Resources	Low		Loss of Resources	Low



Activity	Impact	Significance Rating Prior to Mitigation		Proposed Mitigation	Significance Rating After Mitigation		
	natural vegetation within the project property, it is not anticipated that fauna found within the project property is of high species diversity or abundance.			<ul style="list-style-type: none"> Follow up assessments by an ECO, for six months post-construction should be undertaken to determine the success of re-vegetation. The ECO should determine whether additional follow up assessments are required. The installation of owl and/or bat boxes is encouraged. 			
Increased foot traffic and people movement	Safety and security The proposed development will attract additional vehicular and foot traffic to the area, which may pose a security risk to the shopping centre as well as neighbouring residents.	Duration	4	<ul style="list-style-type: none"> Manned entrance points will be implemented to monitor access to the shopping centre. The number of security personnel will be increased within the property. A security wall will be constructed along the boundary of the property. 	Duration	4	
		Extent	2		Extent	2	
		Magnitude	3		Magnitude	2	
		Probability	4		Probability	2	
		Significance Rating	-36 (Medium)		Significance Rating	-16 (Low)	
		Reversibility	N		Reversibility	N	
		Loss of Resources	N/A		Loss of Resources	N/A	
Operation of the shopping centre (Positive impact)	Job Creation <ul style="list-style-type: none"> The operation of the proposed shopping centre extension will create approximately 300 employment opportunities. The operation of the proposed shopping centre extension will boost the micro-economy in the Scottsville area. 	Duration	4	<ul style="list-style-type: none"> Encourage business opportunities and employment from local areas. 	Duration	No mitigation required	
		Extent	4		Extent		
		Magnitude	4		Magnitude		
		Probability	5		Probability		
		Significance Rating	+60 (Very High) Positive Impact		Significance Rating		
		Reversibility	N/A		Reversibility		N/A
		Loss of Resources	N/A		Loss of Resources		N/A



7. ADVANTAGES & DISADVANTAGES OF THE PROPOSED AMENDMENT

The advantages of extending the Woodburn Shopping Centre are typical of those associated with general commercial activities such as:

- Provision of additional retail and dining facilities to the surrounding communities.
- Generation of a substantial number of employment opportunities both during the construction and operational phases of the project.
- Income generating opportunities for materials suppliers, shop fitters, contractors etc.
- Increased localised investment into the area.

The disadvantages of extending the Woodburn Shopping Centre mostly relate to social disturbances and nuisances for neighbouring residents, particularly those residing along Woodhouse Road during construction as well as during the operation of the shopping centre. The extension of the shopping centre will replace the neighbouring residents' current view of the rugby stadium with a large building and parking lot. Residents have expressed their concerns regarding security issues due to anticipated increased pedestrian movement in the area, as well as nuisance concerns such as noise, traffic congestion and poor waste management.

By increasing the size of the shopping centre and thus acquiring more land, the Developer understands the need to implement control measures to manage security and nuisance impacts. To this end, the Developer will establish manned boom accesses at the proposed new entrance off Boshoff Street and ensure that enough security personnel are stationed at the shopping centre to control patron behaviour as much as practical. The Developer is confident that the establishment of these measures will ensure a safe shopping environment for patrons, whilst ensuring that neighbouring residents feel safe. The Developer is also willing to work with residents to ensure that appropriate landscaping is undertaken to soften their view and provide shaded areas, as well as to assist residents with communal clean ups in the area to address issues associated with littering.

With regards to concerns regarding traffic congestion, the proposed construction of two new access points along Boshoff Street should distribute much of the current traffic utilising Woodhouse Road to the new entrances. One of the new entrances is strictly for delivery vehicles, ensuring that these vehicles refrain from using Woodhouse Road to gain access to the shopping centre. The proposed construction of the two new public transport laybys will also assist in diverting taxis and buses from stopping on Woodhouse Road to drop off and pick up passengers.



8. CONCLUSIONS AND RECOMMENDATIONS

It is the EAP's opinion that the proposed amendments i.e. the extension of the Woodburn Shopping Centre, will not result in significant environmental or social impacts should the recommended mitigation measure be adopted during planning, construction and operation of the shopping centre. It is believed that the impacts associated with the proposed amendment are similar, if not identical to the impacts identified during the original investigations for the Woodburn Shopping Centre. Mitigation measures described in various specialist studies, EMPr and the additional recommendations suggested in this report are believed to be adequate to manage the identified potential impacts.

Based on the results of the various specialist studies and the outcome of the impact assessment provided in this report, it is the EAP's opinion that there is no reason as to why the proposed amendments should not be granted by the Competent Authority (KZN DEDTEA).



APPENDIX A: ENVIRONMENTAL AUTHORISATION & AMENDMENT



APPENDIX B: PRE-APPLICATION MEETING MINUTES



APPENDIX C: LOCALITY MAPS



APPENDIX D: PROPOSED SITE LAYOUT PLAN



APPENDIX E: PUBLIC PARTICIPATION PROCESS

APPENDIX E(1): I&AP DATABASE

APPENDIX E(2): NOTIFICATION LETTER, BID & PROOF OF NOTIFICATION

APPENDIX E(3): SITE NOTICE & PROOF OF PLACEMENT

APPENDIX E(4): PROOF OF NEWSPAPER ADVERT PUBLICATION

APPENDIX E(5): COMMENTS & RESPONSES REPORT



APPENDIX E(1): I&AP DATABASE



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APPENDIX E(5): COMMENTS & RESPONSES REPORT



APPENDIX F: SPECIALIST STUDIES

APPENDIX F(1): WATERCOURSE ASSESSMENT

APPENDIX F(2): FLOOD ASSESSMENT & STORMWATER MANAGEMENT PLAN

APPENDIX F(3): GEOTECHNICAL STUDY

APPENDIX F(4): TRAFFIC IMPACT ASSESSMENT



APPENDIX F(1): WATERCOURSE ASSESSMENT



APPENDIX F(2): FLOOD ASSESSMENT & STORMWATER MANAGEMENT PLAN



APPENDIX F(3): GEOTECHNICAL STUDY



APPENDIX F(4): TRAFFIC IMPACT ASSESSMENT



APPENDIX G: ENVIRONMENTAL MANAGEMENT PROGRAMME

