



DRAFT BASIC ASSESSMENT REPORT

For proposed expansion of a poultry breeder unit and associated facilities on Farm Paderborn 1323 near New Hanover, UMshwathi Local Municipality, uMgungundlovu District, KwaZulu-Natal

DEDTEA reference: pending



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Acronyms

BAR	Basic Assessment Report
BID	Background Information Document
BPA	Biodiversity Priority Area
BSP	Biodiversity Sector Plan
CARA	Conservation of Agricultural Resources Act (No. 43 of 1983)
CBA	Critical Biodiversity Area
CME	Compliance, Enforcement and Monitoring Unit
DAFF	Department of Agriculture, Forestry and Fisheries
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs
DOT	Department of Transport
DWS	Department of Water and Sanitation
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIR	Environmental Impact Report
EKZNW	Ezemvelo KZN Wildlife
ELU	Existing Lawful Use
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
ESP	Environmental Services Plan
EWT	Endangered Wildlife Trust
FEPA	Freshwater Ecosystem Priority Area
GA	General Authorization
GDP	Gross Domestic Product
HIA	Heritage Impact Assessment
HGM	Hydrogeomorphic
IAP	Interested and Affected Party
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
NWA	National Water Act (No. 36 of 1998)
PA	Protected Area
PES	Present Ecological State (referring to wetland health)
QC	Quaternary Catchment
SAHRIS	South African Heritage Resources Information System
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SWMP	Stormwater Management Plan
UMDM	UMgungundlovu District Municipality
WARMS	Water Authorisation and Registration Management System
WESSA	Wildlife and Environment Society of South Africa

WUL
WULA

Water Use License
Water Use License Application

Annexures

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- A2 EAP Declaration of Independence

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1. OBJECTIVES OF BASIC ASSESSMENT REPORT

This report has been prepared in accordance with **Appendix 1 of GN 326, Environmental Impact Assessment (EIA) regulation 2014, amended 2017.**

The objective of the basic assessment process is to, through a consultative process –

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternative;
- (d) through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine –
 - a. the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - b. the degree to which these impacts—
 - can be reversed;
 - may cause irreplaceable loss of resources; and
 - can be avoided, managed or mitigated; and
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –
 - a. identify and motivate a preferred site, activity and technology alternative;
 - b. identify suitable measures to avoid, manage or mitigate identified impacts; and
 - c. identify residual risks that need to be managed and monitored.

2. ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Assessment Practitioners and Specialists involved in this EIA, do so under **Section 13 of GN 326, Environmental Impact Assessment (EIA) regulation 2014, amended 2017.**

The EAP details are as follows –

Name: Susan Machpesh (nee Carter-Brown)
Qualifications: BSc, (Equine Sci); Dip Education; BSc Hon, (Enviro Sci)
Professional affiliations: International Association for Impact Assessment
Experience at environmental assessments (years): 8 years
Role: Project Support

Susan has been practising as an EAP for the past 8 years. She has conducted EIA's for a range of developments which has given her a sound knowledge and understanding of the process. Susan has attended various courses on wetland assessment (Tools for Wetland Delineation, Pretoria 2010; WET-Health; WET-EcoServices, Rhodes University 2010; WET-Health workshop, WESSA 2011). She is a member of the KZN Wetland Forum, IAIA KZN and the South African Wetland Society.

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.

The abovementioned EAPs undertake under oath the following –

- (i) the correctness of the information provided in the reports;
- (ii) the inclusion of comments and inputs from stakeholders and Interested and Affected Parties (IAPs);
- (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by IAPs.

See the Declaration of independence in Annexure A2; and Annexure A1 for CV's.

Signed: 17 September 2019

 Susan Machpesh (Project Leader)	 Swazi Kubheka (EAP)
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3. SCOPE OF PROPOSED DEVELOPMENT

3.1 Project description

Fourfeet Farming cc, wishes to expand their existing poultry breeder operation on the farm Paderborn, near New Hanover. The development would consist of 18 new houses, which would take place on 3 new sites with 6 houses per site. In total the expansion would allow for an increase of approximately 150 000 birds.

Chicken breeding entails the raising of domesticated birds for the purpose of meat and egg production.

Each new breeder site would have -

- 6 houses
- A shower block with ablutions - connected to septic tank and soakaway system
- A small office
- An egg store (excluding rearing site)
- Road infrastructure to and around each site

The farm does not fall within 5km of Protected Areas (see Annexure B5) nor 10km of World Heritage Sites. The closest neighbour is over 2km away.

Water would be obtained from 2 existing boreholes on the farm. The proponent is also considering constructing a 3 000 cubic meters reservoir at a central location for water storage. In time, rainwater harvesting from the roofs of the sheds/houses will be implemented.

See the site layout in Figure 1, Annexure B2 and detailed facility illustrations (Annexure B4).



Figure 1 Proposed poultry breeder unit expansion

In between proposed sites 1 and 2 (see Figure 1), there are four existing chicken houses. Two would be decommissioned and the other two converted into sheep feedlots. The material from the demolished chicken houses would be re-used at the proposed new sites.

Each breeder site must be 1km or more apart for biosecurity reasons, allowing any disease outbreaks (should they occur) to be contained within one site.

The power source for the operations would be ESKOM with back-up diesel generators. There are plans to install solar panels on the roofs at a later stage.

2000 tons of chicken litter would be produced per year from the 3 new sites. The chicken litter would be moved to 2 chicken litter storage sites depicted on the layout (Figure 1). This would be done annually when the houses are cleaned out. The chicken litter would be used on the proponent's sugar cane fields and pastures as fertiliser. The chicken litter storage sites are over 400m away from watercourses. There is approximately 750 hectares of cultivated lands available for the distribution of the chicken litter.

The Paderborn Farm access point is located at the end of D87 district road. Currently there are 9 trucks that deliver feed monthly. With the proposed expansion this will increase to 15 feed trucks monthly. For egg collection, there is a 3 tonne truck that collects eggs every second day; with the proposed expansion there will be an 8 tonne truck collecting eggs every second day. Cull collection will be occurring every 6 months via seven 30 tonne trucks.

3.2 Proposed activity

3.2.1 Description of the production cycle

Poultry farming is the raising of domesticated birds such as chickens for the purpose of farming meat or eggs for food. The majority of poultry farms form part of the production chain for chicken eggs or for chicken broiler meat. The proposed poultry breeder units to be expanded will be supplying RCL, a leading South African food manufacturer, with eggs.

3.2.2 Description of each site and activity

Site 1: Rearing

This site would be for rearing hatched chicks, both male and female. There will be 7 houses in total on this site (1 existing and 6 new houses). Chicks are placed in rearing houses at 1-day old at a stocking density of 8 birds/m². Female and male chicks are reared separately and they are brooded with gas heating until 3 weeks

of age and stay in rearing house for 21 weeks. This site is located on transformed pasture lands (*Panicum maximum*).



Figure 2 Proposed site 1 for rearing

Site 2: Layer 1

Six new houses are proposed for approximately 7300 female chickens per house. The layer birds start laying at 24 weeks of age and stay in production until they are 62 weeks old. Eggs are collected up to 5 times a day from the chicken houses. They are then graded and moved to an egg store. Eggs are sent to the hatchery 3 times a week.

When the flock reaches 62 weeks of age, it is depleted. All birds are collected by an external service provider who sells the cull birds into the market as meat (Cornish hens).

There is a 6 week down time in each house before the next flock is transferred in from the rearing facility. During the down time, litter is taken out of the house and moved to the chicken litter storage areas. The houses are cleaned and prepared for the next cycle.



Figure 3 Proposed site 2 for laying

This site is located on transformed lands with sugarcane plantations. There are two perennial streams which are found 200m - 340m away from the closest laying house.

Site 3: Layer 2

Six new houses are proposed for approximately 7300 female chickens per house. This site is located on transformed lands (northern portion of the farm) with sugarcane plantations and there are no watercourses in close proximity.



Figure 4 Proposed site 3 for laying

Decommissioning of existing old houses

At an old site found between new sites 1 and 2, two existing chicken houses will be decommissioned and converted into sheep feedlots.

The other two chicken houses at this site will be demolished and the material will be re-used for at the new sites (fill material, shedding etc).



Figure 5 Existing chicken houses to be demolished and converted

3.3 Location of preferred site

Physical address and farm name

Farm Paderborn 1323, near New Hanover
UMshwathi Local Municipality
uMgungundlovu District Municipality
KwaZulu-Natal.

The preferred sites are located on transformed lands on the farm where there is mixed farming taking place, including sugar cane, broiler breeders and livestock. All proposed developments are more than 200m away from any watercourses. The farm is outside of an urban area. See the locality map below and in Annexure B1.

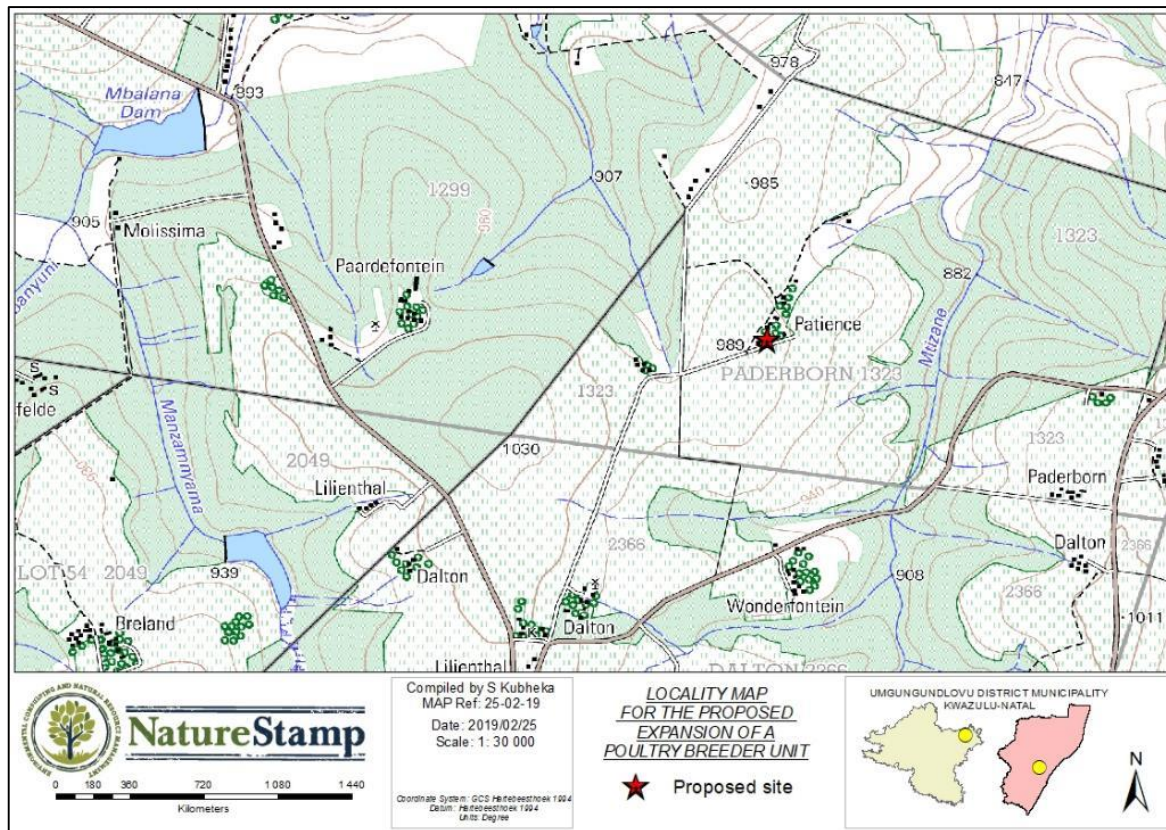


Figure 6 Locality for the proposed poultry breeder unit expansion

Central Co-ordinates

29°17'54.42 south 30°43'13.07" east.

21 digit surveyor general code

SG Key: NOFT0000000132300006

Landowner title

The owner of the land is the proponent (Ed Barry, Fourfeet Farming) who hold title deeds for the property. He also owns the property located on the north of the site where the second litter storage is located (see Figure 1).

Should the Environmental Authorization be granted, it would be in the name of the Fourfeet Farming cc - which would be responsible for development and management of the site. During this time, if any changes occur, the necessary amendments to the Environmental Authorization can be applied for.

3.4 Detailed site plan

See the Master layout in Annexure B2 and detailed Facility Illustrations (Annexure B4).

See the site photographs in Annexure E7.

4. POLICY AND LEGISLATIVE CONTEXT

There exists much legislation in South Africa that promotes protection and sound management of the natural environment. This assessment is governed by the following legislation -

Table 1 Table outlining legislation relevant to the application

Title of legislation, policy or guideline	Administering authority	Date
National Environmental Management Act (No. 107 of 1998)	Department of Agriculture and Environmental Affairs	1998
National Environmental Management: Waste Act (No. 59 of 2008)	Department of Agriculture and Environmental Affairs	2008
National Water Act, 1998 (No. 36 of 1998)	Department of Water Affairs	1998
Integrated Environmental Management (IEM)	Department of Environment and Agriculture	2002
South Africa's Constitution (No. 108 of 1996), including the Bill of Rights (Chapter 2, Section 24)	The State	1996
Hazardous Substances Act (No 15 of 1973)	Various Departments	1973
National Environmental Management: Biodiversity Act, 2004 (No.10 of 2004)	Department of Agriculture and Environmental Affairs & Ezemvelo KZN Wildlife	2004
Atmospheric Pollution Prevention (No. 45 of 1965)	Department of Agriculture and Environmental Affairs	1965
Health Act (No 63 of 2003)	Department of Health	2003
Conservation of Agricultural Resources Act, 1983 (No. 43 of 1983)	Department of Agriculture, Forestry and Fisheries	1983
Animal Health Act (No. 7)	Department of Veterinary Health	2002
Publication of Need and Desirability Guideline in terms of the Environmental Impact Assessment Regulations, 2010 (GNR 792 of 2012)	Department of Environmental Affairs	2012
National Spatial Development Perspective, 2006	The Presidency of South Africa	2006
KwaZulu-Natal Provincial Growth and Development Strategy	KZN Provincial Planning Commission	2014
UMgungundlovu District Municipality SEA	UMgungundlovu District Municipality	2013
UMgungundlovu District Municipality IDP	UMgungundlovu District Municipality	2018
UMshwathi Local Municipality SDF	UMshwathi Local Municipality	2016/17
National Heritage Resources Act	Amafa and Research Institute	1999
KwaZulu-Natal Amafa and Research Institute Act	Amafa and Research Institute	2018

4.1 National Environmental Management Act (No 107 of 1998, NEMA)

NEMA is South Africa's overarching environmental legislation and has, as its primary objective, to provide for co-operative, environmental governance by establishing: principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state, and to provide for matters connected therewith.

The principles of the Act focus on providing for people's basic needs in a socially, economically and environmentally sustainable manner. Environmental management aims to satisfy people's needs by acknowledging that all elements of the environment are linked and interrelated. Environmental responsibility and justice for harmful activities is pursued as a vital component to effective environmental management.

The activities required for the expansion of the poultry breeder units have the potential to cause detrimental impacts on the environment and hence trigger the following activity under the EIA Regulations 2014, amended 2017 –

Table 2 Listed Activities

Number of Govt. notice	Number	Description of listed activity	Relevance to project
GN 327 Listing Notice 1	40(ii)	The <u>expansion and related operation of facilities for the concentration of poultry</u> , excluding chicks younger than 20 days, where the capacity of the facility will be increased by— (i) more than 1 000 poultry where the facility is situated within an urban area; or	The additional number of birds would be 150 000 within a poultry facility situated outside an urban area.

	(ii) <u>more than 5 000 poultry per facility situated outside an urban area.</u>	Therefore, this activity would be triggered.
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Accordingly, an EIA, in the form of a Basic Assessment Report (BAR), is being undertaken in application for Environmental Authorization from the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) before commencement of the abovementioned listed activity.

The Basic Assessment process involves the following steps –

- i. Refine the plan with project team
- ii. Conduct pre-application meeting with DEDTEA officials
- iii. Get landowner consent (if required)
- iv. Conduct specialist studies (as required)
- v. Develop Interested and Affected Party (IAP) register
- vi. Conduct Public Participation Process
 - a. Circulate Background Information Document (BID) to all IAPs
 - b. Advertise in newspaper
 - c. Site notice
 - d. Public meeting
- vii. Address any issues raised; amend plan if required
- viii. Write draft Basic Assessment Report (dBAR)
- ix. Submit Application Forms to the Department and pay application fee
- x. Circulate dBAR for 30 days to all IAPs
 - a. Obtain comments...
- xi. Submit final BAR to Department within 90 days of submission of application forms
- xii. Department has 107 days to make a decision on project
- xiii. Department notifies EAP and proponent of decision
- xiv. EAP has 14 days to notify all IAPs of decision and their right to appeal the decision within 20 days.

This project is currently in the draft BAR phase, with a draft BAR being circulated to stakeholders and IAPs for a period of 30 days for comment.

4.2 National Environmental Management: Waste Act (No 59 of 2018, NEMWA)

The waste aspect of this proposed expansions was discussed at the pre-application meeting which was held on the 16th of April 2019 with the DEDTEA (see pre-application meeting minutes, Annexure C1). The waste product of the proposed activities is dry chicken litter, which would not be treated in any way (such as addition of water, chemicals etc).

The chicken litter will not be used for commercial purposes, but will be stored in compost heaps at the designated chicken litter sites before being spread as is onto cultivated lands owned by the proponent. The chicken litter storage sites are over 400m away from watercourses. The chicken litter is stored on existing gravel ground on-site.

As confirmed at the pre-application meeting chicken litter is considered general waste. This application will not require a Waste Management Licence – but storage of general waste at a facility that has the capacity to store in excess of 100m³ of general waste at any one time will require registration in terms of Category C: Norms and Standards as stipulated in National Environmental Management Waste Act 59 of 2008.

The storage will be registered with the Pollution and Waste Management Unit (DEDTEA).

4.3 National Water Act (No. 36 of 1998, NWA)

The NWA is the major legislation regarding the efficient and sustainable use of water resources. The purpose of the Act is stated in Section 2 as:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial and gender discrimination;

- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for growing demand for water use;
- Protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations;
- Promoting dam safety; and
- Managing floods and droughts.

The proponent must consider these aspects and ensure that the poultry breeder units development is in the best interest of all parties. It is therefore important to assess the likely effects that will be felt by surrounding parties, currently and in the future, as well as the impacts that will be placed on the environment.

Water would be required for the poultry breeder units operation (drinking and cleaning). It would be obtained from 2 existing boreholes that have been existing for over 60 years on site, therefore it is likely that water use activities constitute an Existing Lawful Use (ELU). Borehole 1 and 2 each produce 6 000 l/hour. Borehole water will be used in combination with rainwater harvesting (to be implemented at a later stage) from the roofs of the sheds, which would produce more water than what is required to run the operation.

The proponent is also considering constructing a 3 000 cubic meters reservoir at a central location for water storage.

The proposed 3 expansion sites sit within Quaternary Catchment (QC) site: U40C.

According to General Notice (GN 538, 2016), the General Authorization (GA) limits for this QC are as follows–

- Abstraction of surface water: 40 000 cubic metres / year @ 8l/s during December to April
- Abstraction of ground water: 275 cubic metres per ha / year
- Storage of water: 40 000 cubic metres

Section 21 of the NWA lists water use activities that require approval in the form of Existing Lawful Use, General Authorization or a Water Use License (WUL). The relevance of the water use activities to the proposed development are provided in the table below.

Table 3 Water Use activities and relevance to the site

	Water use activity	Potential relevance to project
S21 (a)	taking water from a water resource;	Abstraction of water from 2 boreholes
S21 (b)	storing water;	Storage of water in a reservoir (3 000 cubic meters) and Jojo tanks
S21 (c)	impeding or diverting the flow of water in a watercourse;	N / A
S21 (d)	engaging in a stream flow reduction activity (currently only commercial afforestation);	N / A
S21 (e)	engaging in a controlled activity - activities which impact detrimentally on a water resource (activities identified in section 37(1) or declared as such under section 38(1); namely – <ul style="list-style-type: none"> • Irrigation of any land with waste or water containing waste which is generated through an industrial activity or a waterworks; • An activity aimed at the modification of an atmospheric precipitation; • A power generation activity which alters the flow regime of a water resource; or • Intentional recharge of an aquifer with any waste of water containing waste 	N / A
S21 (f)	discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;	N / A
S21 (g)	disposing of waste in a manner which may detrimentally impact on a water resource;	N / A
S21 (h)	disposing in any manner of water which contains waste from or which has been heated in any industrial or power generation process;	N / A

S21 (i)	altering the bed, banks, course or characteristics of a watercourse;	N / A
S21 (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; an	N / A
S21 (k)	using water for recreational purposes.	N / A

The draft BAR is circulated to the Department of Water and Sanitation (DWS) for their comment.

4.4 The Constitution of South Africa

Section 24 of the Constitution of South Africa (No. 108 of 1996) states that -

“...everyone has the right ...

- a) to an environment that is not harmful to their health or well-being; and
- b) to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that ...
- c) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

This protection involves preventing pollution and promoting conservation and environmentally sustainable development. Consulting the Constitution of South Africa ensures that both people and the environment they reside in are considered in the development proposal, and can therefore be adequately protected.

The principle of Sustainable Development has been established in the Constitution of the Republic of South Africa and given effect by NEMA (1998) states that sustainable development means the integration of social, economic and environmental factors into the planning, implementation and decision-making process so as to ensure that development serves present and future generations. Sustainable development requires a cautious approach to economic development that includes the protection of biological biodiversity as well as the prevention of pollution, waste and degradation within ecosystems and the natural environment.

The fact that it is the constitutional right of every South African citizen to have a healthy environment gives strength to environmental legislative framework. It is thus extremely important to ensure that the environment is taken into consideration during the development of the commercial development, including the watercourse systems that occur on the proposed site, as these resources will be important for present and future generations in the area. These environmental aspects are considered in this report and assessed; the impacts on water quality, stormwater management, management of waste from chicken houses (chicken litter), noise, odour/fly management and potential traffic impacts.

4.5 National Heritage Resources Act (No. 25 of 1999, NHRA)

Section 38 of the South African NHRA lists various categories of development which prompts the need for a comment or decision from the Provincial Heritage Agency, Amafa KwaZulu-aNatali. The legislation requires that a developer informs Amafa when a listed development occurs and obtains written approval / comment from Amafa as required.

The Section 38 categories are as follows –

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50 m in length;
- (c) any development or other activity **which will change the character of a site** —
 - (i) **exceeding 5 000m² in extent**; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (c) the re-zoning of a site exceeding 10 000 m² in extent; or
- (d) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the

responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Given that the proposed poultry breeder expansion would exceed 5 000 m² in extent, as well as the expected change of character within the development footprint, a submission has been made to Amafa via the South African Heritage Resources Information System (SAHRIS) website.

4.6 The KwaZulu-Natal Amafa and Research Institute Act (No.05 of 2018)

In terms of Chapters 8 and 9 of the Act, the following heritage resources require approval from the Amafa KwaZulu-Natal Heritage Council before being altered in any way:

- Structures older than 60 years;
- Graves of victims of conflict;
- Traditional burial places;
- Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites;
- Heritage and Provincial Landmark sites;
- Graves of members of the Royal Family;
- Public monuments and memorials.

None of the abovementioned features are found on the proposed site.

5. GUIDELINES AND SPATIAL PLANS

5.1 National Freshwater Ecosystem Priority Areas

The National Freshwater Ecosystem Priority Areas (NFEPA, 2011) project provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supports sustainable use of water resources. Wetlands in South Africa have been mapped on a broad-scale by various stakeholders and are used in the NFEPA project to identify priority wetland ecosystem areas and ensure their protection and sustainable use. NFEPA notes that human activities need to be managed to prevent the degradation of downstream Freshwater Ecosystem Priority Areas (FEPAs) and Fish Support Areas.

5.2 EKZNW Biodiversity Planning Tool

MINSET is a function or tool used in Conservation Planning Software that is used to identify a minimum set of sites that would fulfil the aim firstly of achieving the conservation targets within a number of constraints that can be set by the user. It presents the most efficient solution to achieving conservation targets within other land use constraints. The MINSET output map shows areas that are already protected as Mandatory Reserves (totally irreplaceable) and Negotiable Reserves (most efficient for achieving targets and constraints).

5.3 Integrated Development Plan

An Integrated Development Plan (IDP) is a five-year plan which local government is required to compile to determine the development needs of the municipality. The projects within the IDP are linked to the municipality's budget. The IDP should be reviewed annually; it does not only determine the status of the identified projects for the previous year but also whether the remaining projects are still relevant and priority.

The review process in formulating an IDP incorporates public participation, which gives citizens opportunity to highlight and prioritise their development needs. The municipality encourages citizens to participate in IDP meetings to ensure that their needs are made known. Citizens can also communicate via their Ward Committees and Ward Councillors.

For this project, the UMgungundlovu District Municipality IDP (2018) was consulted (see Annexures F1).

5.4 Spatial Development Framework

A Spatial Development Framework (SDF) is a framework that seeks to guide, overall spatial distribution of current and desirable land uses within a municipality in order to give effect to the vision, goals and objectives of the municipal IDP. The aims of a SDF are to promote sustainable functional and integrated human settlements, maximise resource efficiency, and enhance regional identity and unique character of a place

For this project, the UMshwathi SDF (2016/2017) was consulted (see Annexure F2).

The SDF is a primary spatial response to the development context, needs and development vision of the municipality. It is a key land use management tool of the Municipality as it has an important role to play in guiding and managing UMshwathi Municipal decisions relating to the use, development and planning of land. It does this by:

- a) Identifying key spatial challenges facing the municipality. In so doing identify key strategies for spatial restructuring and achieving the desired outcomes for future use and development of land.
- b) Identifying areas that are not suitable for development and outlining areas that should be conserved;
- c) Providing policy guidance to direct decision making on the nature, form, scale and location of urban development;
- d) Guiding the direction of growth by outlining areas in which particular types of land use should be encouraged or discouraged and areas in which the intensity of land development could either be increased or reduced;
- e) Guiding both private and public development investment initiatives to appropriate areas for investment
- f) Guiding and informing municipal infrastructure investment;
- g) Guiding public investment, namely the provision of community facilities or any other spending of public funds;
- h) Providing a visual representation of the desired spatial form of the municipality.

5.5 Environmental Management Framework

An Environmental Management Framework (EMF) is the study of the biophysical and socio-cultural systems of a geographically defined area to reveal where specific land-uses may be best practised and to offer performance standards for maintaining appropriate use of such land.

For this project, the UMgungundlovu EMF (2017) and the EMF query tool were consulted (see Annexure F3 and F4).

6. ACTIVITY INFORMATION

6.1 General waste

During decommissioning

There will be a decommissioning phase before the new development takes place. In between proposed sites 1 and 2, two existing chicken houses will be decommissioned and converted into sheep feedlots. The other two chicken houses at this site will be demolished and the material will be re-used at the new sites (fill material, shedding etc), this will ensure minimal waste production. Non-usable waste will be disposed of at a licenced landfill site.

During construction

Approximately 10m³ of construction waste would be generated per month. It would be collected in a combination of skips and waste receptacles located on-site.

The following mitigation measures to minimise impacts would be adhered to -

- Private construction contractors must provide proof of appropriate landfills used, and these records would be kept on file by the proponent.
- Skips and waste receptacles would be located on site in designated storage / collection areas prior to being safely disposed of and would not cause any surface and groundwater pollution, or pose any health hazards.

- All waste material generated would be disposed of at the nearest licensed municipal landfill site. Safe disposal certificates would be kept on record.
- If contaminated soil or other hazardous materials required disposal (unlikely), a private waste management service provider would be contacted (e.g. Enviroserv).

During operation

Chickens that die prematurely of disease or other factors would be a significant source of disease and odours and could attract pests and vermin. A mortality pit existing onsite would be utilized for chicken mortalities, currently there are 10-12 chicken mortalities/ week and with the proposed expansion there would be approximately 40-50 mortalities/ week.

2000 tons of dry chicken litter would be produced/ year from the 3 proposed sites. The use of chicken litter as a fertiliser in agriculture is common and spreading it at the right time helps to maximise the efficient use of the valuable nutrients. The chicken litter from all poultry breeder units would be moved to two chicken litter storage sites on the farm. This would be done annually when the houses are washed/cleaned out. The chicken litter would be used on sugar cane fields and pastures as fertiliser. The chicken litter storage sites are over 400m away from watercourses.

Risks associated with the use and storage of chicken litter could be mitigated as follows-

- Chicken litter contamination of surface water would be prevented by improving construction of production, waste management and litter storage facilities (e.g. gutters, covered storage);
- Increased chicken litter storage facilities capacity would be required so that the litter could be applied to agricultural land at the correct time of year;
- There would be no storage of chicken litter near water bodies (existing storage sites are over 400m away from any water bodies)
- The moisture content of dry chicken litter would be reduced by placing it in a covered area; and
- Storage areas would be regularly checked for leakage/seepage to prevent accidental release of litter to soil/groundwater.

General waste (packaging / plastics) would be recycled or disposed of with general farm waste (landfill / buried).

6.2 Water Use

During decommissioning

There is no requirement for water.

During construction

During the construction phase, water would be obtained from 2 existing boreholes that have been existing for over 60 years on site. Borehole 1 and 2 each produce 6 000 l/hour.

The proponent is also considering constructing a 3 000 cubic meters reservoir at a central location for water storage. In time, rainwater harvesting from the roofs of the sheds/houses will be implemented.

During operation

An adequate supply of water is required for watering poultry, washing down and cleaning. Water would be sourced from ground water resources (2 existing boreholes onsite).

During operation of the 3 sites, 82kl/ day would be required, with a water pump capacity of 8kl /hour over 12 hours per/dav.

The water use requirements are as follows for the operation of the 3 sites-

Table 4 Water use requirements and availability

Water use (3 sites)	Kilolitres	Litres	Cubic metres
Per day	55	55000	55
Per month		1 650000	1 650

Per year		19800000	19 800
Availability of water	l per hour	Per day (12 hour pump)	Cubic metres / day
Bore hole 1-6 000l/hour Borehole 2- 6 000l/hour	12 000	14 4000	144
Total water available from boreholes			Cubic metres
Per day			144
Per month			4 320
Per year			51 840

The proposed 3 expansion sites sit within Quaternary Catchment (QC) site: U40C.

According to General Notice (GN 538, 2016), the General Authorization (GA) limits for this QC are as follows–

- Abstraction of surface water: 40 000 cubic metres / year @ 8l/s during December to April
- Abstraction of ground water: 275 cubic metres per ha / year
- Storage of water: 40 000 cubic metres

As seen in table 4, **19 800 cubic metres / year** is required for operation of the proposed expansion development, the Paderborn Farm extent is approximately 233 hectares. Thus the GA allocation of the site for groundwater abstraction is $275 \times 233 = 64\,075$ **cubic metres / year**, meaning the required water for the proposed expansion is below the GA limits.

Borehole water (producing approximately 144 cubic meters/day) would be used in combination with rainwater harvesting (to be implemented at a later stage) from the roofs of the sheds, which would produce more water than what is required to run the operation.

The proponent is considering constructing a 3 000 cubic meters reservoir for the storage of water. Jojo tanks would also be utilised for water storage, there would be six 10 000l Jojo tanks on each of the three sites. According to the GA limits, 40 000 cubic meters can be stored onsite therefore the storage of water required would be below the GA limits.

To ensure water is used efficiently, the following would be considered-

- Evaluate water supply and water efficiency measures (e.g. recycling, reuse, run-off reduction, storage etc.) to reduce impacts on borehole resources and community supplies;
- Minimise water used in cleaning so as to keep chicken litter as dry as possible;
- Reduce cleaning water needs by ensuring that solid waste is removed before rinsing and washing, e.g. using scrapers, brooms and vacuum cleaners;
- Use taps with automatic shutoff valves;
- Use high pressure hoses and optimised nozzles to minimise water usage;
- Use hot water or steam as this can reduce water requirements; and
- Reduce water use by preventing overflow of animal watering devices and using self-watering devices

6.3 Effluent

During decommission and construction

An appropriate number of temporary, chemical toilet facilities (at least 1 toilet for every 20 workers) would be provided for labourers during the decommissioning and construction phase. Construction toilets would be placed more than 50m from any watercourse/drainage lines. These would be maintained in a satisfactory condition and hygienic and sanitary working order and should be regularly cleaned to prevent odour and pest problems. The toilet service provider would be responsible for taking away and disposing of the toilet waste.

The EMPr and subsequent ECO monitoring would check that no form of secondary pollution would arise from the sewage from the construction toilets.

The following is applicable should small volumes of wastewater be generated during the construction phase–

- Water containing waste must not be discharged into the natural environment;
- Measures to contain the water containing waste and safely dispose must be implemented.

During operation

Process wastewater is generated as runoff from chicken housing, feeding and watering, and from waste storage and management facilities. This effluent has the potential to contaminate surface and groundwater.

Effluent (sewage and greywater) would be managed at each new site via septic tank and soakaway systems. Soakaway would be positioned more than 150m away from any watercourses, as they would be located next to the shower blocks on each of the three sites.

6.4 Stormwater Management

The increase in hard surfaces, as a result of roofing and buildings has the potential to increase peak stormwater flows. The objective of stormwater management would be to propose structural and management controls to prevent stormwater runoff from having detrimental impacts on the receiving environment.

The main source of stormwater runoff from the site would be from roofing of buildings and gravelled road surfaces. Stormwater gutters (Figure 4) must be installed on the buildings and rainwater harvested into tanks.

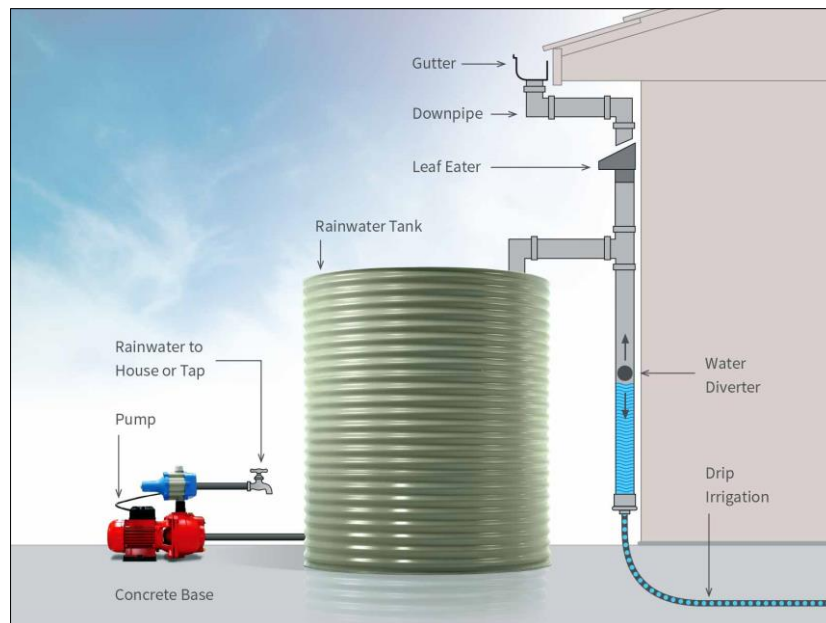


Figure 7 An example of a stormwater gutter, rainfall harvesting system

The poultry breeder would employ best practise stormwater management, as outlined below –

- Rainwater would be captured from the shed roofs and collected in JoJo tanks, when the proponent implements this at a later stage;
- Clean stormwater from the roofs/ hard surfaces would drain to stormwater grassed swales / natural drainage lines and contours and be dispersed over grassed, flat areas;
- All clean and dirty stormwater effluent would remain separate and be treated separately;
- Energy dissipating measures with regards to stormwater outflow points would be installed where necessary to prevent soil erosion;
- Construction/Operation vehicles must be continually monitored for oil and fuel leaks to prevent contamination of stormwater runoff;
- All drainage would be controlled to ensure that runoff from the project area does not culminate in off-site pollution, flooding or result in any damage to properties downstream, of any stormwater discharge points;

- Gravelled road must have appropriate drainage away from the site and into natural grasslands;
 - The gradient of the slope is low with good vegetation cover which will reduce surface runoff from the stormwater;
- All chemicals and fuels must be stored and utilized within fully bunded areas, with roofing;
- Cut-off drains must be installed where necessary, such as below steep embankments, to collect stormwater runoff and divert it to grassed areas and natural rockery; and
- Diversion berms / gutters must be installed along the edges of the cement / concrete tracks to capture stormwater runoff and direct it to grassed areas and natural rockery.

6.5 Air emission

During decommissioning

During the decommissioning phase, dust would be created due to demolition activities and heavy vehicles accessing the site. Exhaust fumes would also be emitted from heavy vehicles and machinery.

Decommissioning would be for a short period and air emissions are not considered to be of significant impact. To mitigate dust during decommissioning, the dusty surfaces would be sprayed periodically with water.

During construction

During the construction phase, dust would be created due to earth-moving and heavy vehicles accessing the site. Exhaust fumes would also be emitted from construction vehicles and machinery.

Construction would be short-lived and air emission are not considered to be of significant impact. To mitigate dust during construction, the dusty surfaces would be sprayed periodically with water.

During operation

During operation, surfaces including sheds would be hardened or grassed – allowing for minimal to no dust.

Heating systems to keep the chicks warm would either be coal fired or gas powered, there would be potential air emissions associated with this. However, there would be use of natural ventilation and lighting to reduce the need for such coal fired/gas energy.

Odour would be emitted from chicken litter storage areas and during land spreading which would potentially cause a nuisance to neighbouring properties however, this is not anticipated as the closest neighbour to the site is over 2km away and the chicken litter is dry/not moist thus emitting minimal odour.

6.6 Energy

The power source is currently and would be ESKOM, with back-up diesel generators. The maximum required energy would be 256 kva in total, 108 kva for the rearing site and 74 kva for each of the laying sites.

Cooling fans would use the Eskom power and heating systems (coal fired/gas powered) would be utilized to keep the chicks warm.

The proponent is planning to install solar panels on the roofs at a later stage to increase energy efficiency.

Other means that will be encouraged to increase energy efficiency include–

Use of natural ventilation and lighting as far as possible;

- Orientation of buildings to:
 - Optimise temperature management for sun influence; and
 - Prevailing wind direction for natural ventilation.
- Control ventilation and temperature within the houses through the use of drop-down curtains;
- Correct Eskom tariff selection to suit the development;
- Low energy lighting and heating appliances;
- Thermostatic heater controlled devices; and
- Timers to manage energy usage in peak times of operation.

6.7 Viewshed

During construction/operation

The proposed poultry breeder expansion development would be consistent with the surrounds/existing agricultural activities within the proposed and neighbouring farms. The operation of the proposed poultry breeder units should pose no abnormal visual disturbance once complete.

6.8 Traffic

During decommissioning

During the decommissioning phase, there would be no significant changes in traffic flow.

During construction

During the construction phase, there would be a slight increase in traffic due to construction vehicles accessing the site.

During operation

Currently there are 9 trucks that deliver feed monthly, with the proposed expansion these would increase to 15 feed trucks monthly during operation.

For egg collection, there is a 3 tonne truck that collects eggs every second day, with the proposed expansion there would be an 8 tonne truck collecting eggs every second day.

Cull collection would be occurring every 6 months via 7 x 30 tonne trucks.

The Farm Paderborn access point is located at the end of a D87 district road. The regional roads R33 and R614 traffic would likely be impacted upon by an increase in traffic flow.

6.9 Noise

During decommissioning

During the decommissioning phase, noise would be created due to demolition activities including heavy vehicles and machinery accessing the site.

Noise during the decommissioning phase will 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 construction

Construction would generate noise consistent with building activities. This would 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 operation

During operation the generation of noise would be consistent with surrounding agricultural land use.

There would be some noise from the heating and cooling equipment, increased delivery trucks onsite and additional chicken houses however, it is not anticipated to be significant/ above normal agricultural operation noise.

6.10 Freshwater

The 3 proposed developments sites are all located on transformed lands. There are two perennial streams located north of the proposed laying site 2, over 200m away (see Figure 8).

The 2 chicken litter storage sites are over 400m away from any watercourses.

Potential impacts that could affect water quality and the hydrological regime include-

- Pollution from the chicken litter storage sites
- Sewage from the construction toilets
- Soil erosion and compaction
- Stormwater run-off
- Water contamination through diesel, grease, oil, etc. from equipment, machinery and vehicles.

Regular inspections of the chicken litter storages sites would be required to ensure there is no soil/groundwater contamination. The of diversion drains to direct surface water runoff away from chicken litter storage areas would be considered.

The EMPr and subsequent ECO monitoring would also check that no form of secondary pollution would arise from the chicken litter sites, sewage from the construction toilets and construction vehicles.

6.11 Cultural / historical

The proposed site is on land that is transformed and agricultural in nature.

There are no signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site.

It is highly unlikely that there are any structures deemed to be of heritage value onsite.

Due to the fact that the proposed development would exceed 5 000 m² in extent, and may change the character of the site, a submission to Amafa was sent via the SAHRIS website Need and Desirability query.

6.12 Biodiversity

Using the Conservation Planning Software (C-Plan) tool in MINSET it is possible to determine the importance of biodiversity conservation of a specific location. The proposed 3 sites have been transformed due to sugarcane plantations and there is no natural land cover that remains. Therefore, no biodiversity features of any significance nor threatened and/or protected species of plants or animals.

The development footprint does not encroach on any biodiversity priority areas. See the figure below.

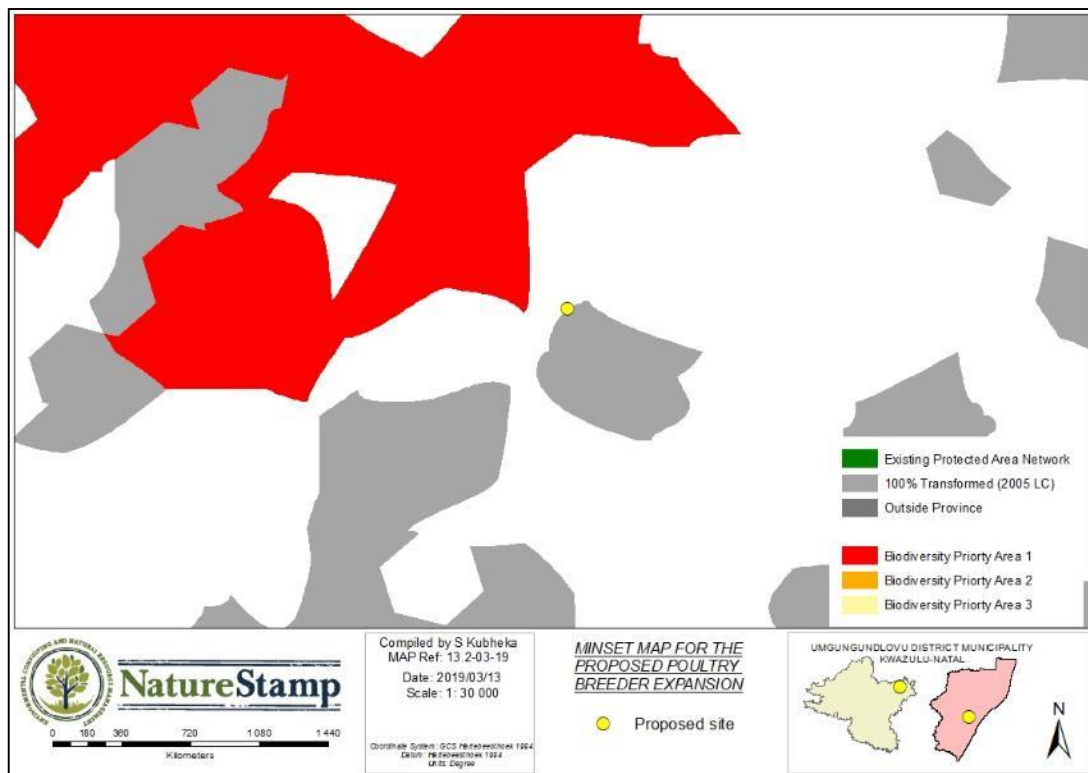


Figure 8 Minset Classification Map for the proposed poultry breeder expansion

6.13 Spatial Planning

According to the UMshwathi SDF, 77% of the agricultural land potential within UMshwathi Local Municipality is categorised as good to high potential; the Paderbom Farm is situated within an area of good potential (Figure 11).

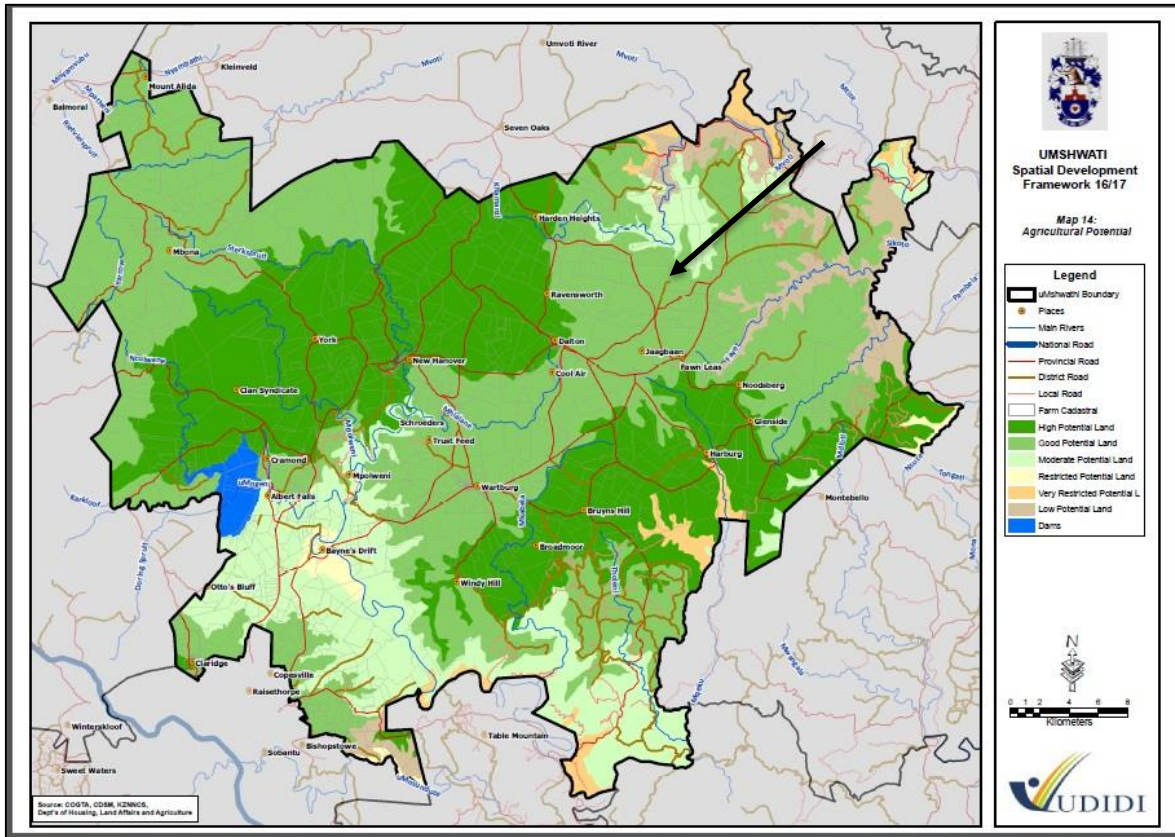


Figure 9 Agricultural potential for the proposed site

The proposed expansion activity is in line with the Municipality's goals to ensure that underutilised agricultural land within these zones is effectively utilised for sustainable agricultural production (UMshwathi SDF 2016/17). Associated interventions may include agriculture specific infrastructure, skills development, market access interventions etc. High agricultural production areas which are not located within sensitive biodiversity areas must be explored and the proposed spreading of dry chicken litter would improve productivity on the farm.

Potential sensitive areas identified by the uMgungundlovu EMF tool (output report, Annexure F4) such as wetlands/drainage lines have been considered and all the proposed development would be located on transformed land, away from any drainage lines.

Sugarcane cultivation and poultry breeding currently being practised by the proponent, contribute to the enhancement of land productivity. This is aligned with the IDP and SDF in utilizing good agricultural potential. Expanding the poultry breeder would contribute to the maximisation of this potential on Paderborn Farm.

6.14 Surrounding land use

The following land uses and/or prominent features that occur within a 500m radius of the proposed site, and how these land uses impact on / are impacted on by the proposed development are given in the table below.

Table 5 Land uses within 500m of the proposed development

Land use character			Description of impact
Natural area		NO	

Low density residential	YES	NO	Proponents farm house within the proposed farm property extent.
Medium density residential		NO	
High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	
Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room	YES		The existing sheds within the proposed sites have office rooms. Some of these will be demolished.
Military or police base/station/compound		NO	
Spoil heap or slimes dam		NO	
Quarry, sand or borrow pit		NO	
Dam or reservoir		NO	
Hospital/medical centre		NO	
School/ crèche		NO	
Tertiary education facility		NO	
Church		NO	
Old age home		NO	
Sewage treatment plant	YES		There is a septic tank and soakaway system within the proposed site.
Train station or shunting yard		NO	
Railway line		NO	
Major road (4 lanes or more)		NO	
Airport		NO	
Harbour		NO	
Sport facilities		NO	
Golf course		NO	
Polo fields		NO	
Filling station		NO	
Landfill or waste treatment site		NO	
Plantation		NO	
Agriculture	YES		The proposed site extent consists of sugarcane lands, broiler breeders and livestock. Portions of these transformed sugarcane lands will be used to construct the new rearing and laying sites.
River, stream or wetland	YES		There are 2 perennial streams on the north east portion of the site. The proposed infrastructure over 200m away from these systems.
Nature conservation area		NO	
Mountain, hill or ridge		NO	
Museum		NO	
Historical building		NO	
Protected Area		NO	
Graveyard		NO	
Archaeological site		NO	
Other land uses (describe)	YES		There are two boreholes located south of the site, where water is sourced from.

The main land use on the property extent and neighbouring properties is Agriculture: sugarcane farming as depicted on Figure 12.

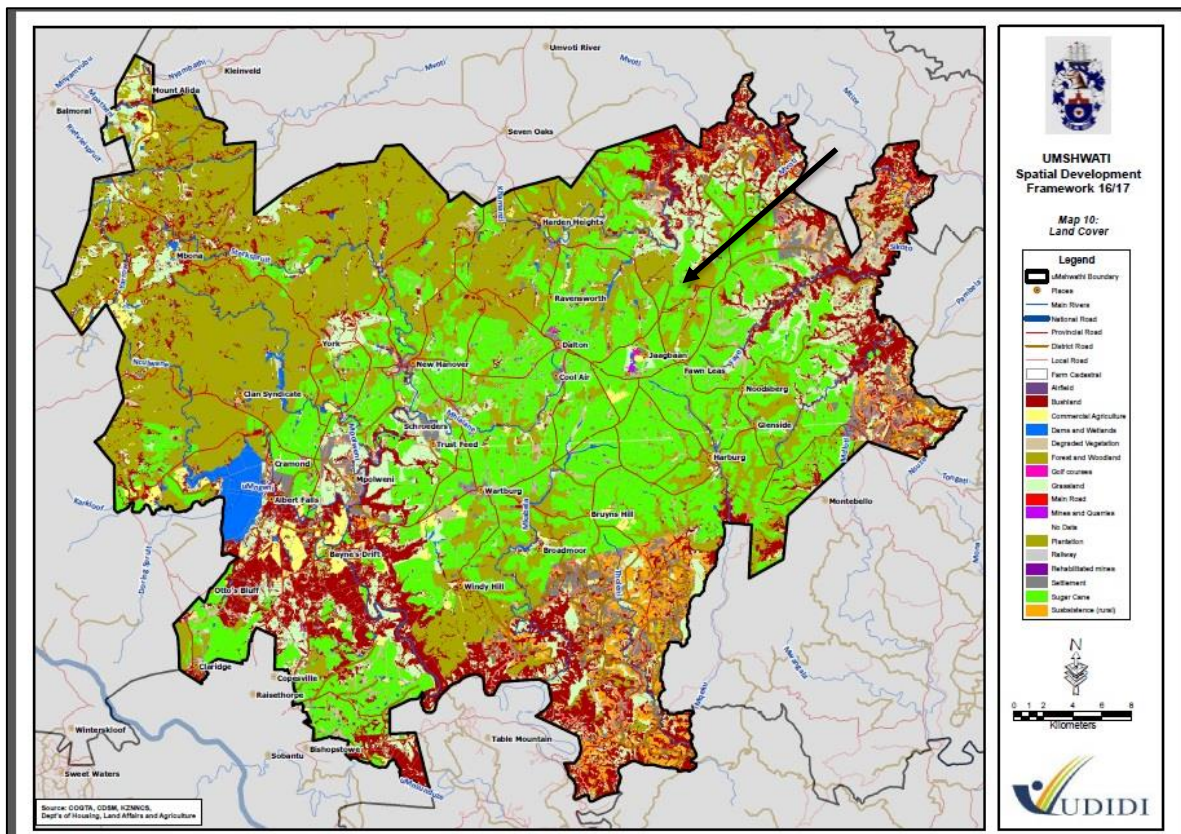


Figure 10 Land cover for the proposed site

7. CONSIDERATION OF ALTERNATIVES

“Alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity. Several alternatives are addressed below, in relation to the proposed poultry breeder expansion development.

Alternatives should be feasible and reasonable.

7.1 Alternative location

Site selection was based on the following factors-

- The proponent owns the Paderborn Farm property with the extent of approximately 233ha, where the 3 proposed sites are located.
- The proposed development is an expansion, there is an existing shed on proposed site 1 (rearing).
- Paderborn Farm has existing power and water supply.
- Use of transformed sugarcane lands rather than indigenous grasslands.
- Proposed infrastructure is over 200m away from the two perennial streams onsite.
- Centralised location for use of chicken litter on lands.
- Need for 3 sites to be more than 1km apart for biosecurity reasons

There is no other property that is available to the proponent that is relevant, feasible or reasonable to the application. Therefore, no other sites will be considered.

7.2 Alternative activity

The proponent is in the business of poultry breeding and would thus be able to efficiently manage and operate the expanded poultry breeder units. The proponent will be supplying RCL, a leading South African food manufacturer, with eggs. Therefore, the activity of poultry breeding onsite already has a secure space on the market for the proponent. The Need and Desirability for agricultural development is established (see section 8).

There is no other activity that is relevant, feasible or reasonable to the application. Therefore, no other activities will be considered.

7.3 Alternative layout

An alternative layout (see Figure 13) was considered during the initial stages of the project however it was unsuitable due to the following reasons-

- The buildings/sheds were too close together. It was requested by RCL that each site must be 1km or more apart for biosecurity reasons as depicted on Figure 13.
- Proposed site Options 1 and 2 were closer to the perennial streams onsite.
- Proposed Options 2 and 3 were further away from the water supply.



Figure 11 Alternative layout considered

The preferred layout was more suitable because of the following factors-

- The 3 proposed sites are located more than 1km apart to ensure biosecurity.
- Majority of the houses are in close proximity to existing power and water supply.
- All proposed infrastructure is over 200m away from the two perennial streams onsite.
- This layout allows centralised location for use of chicken litter on lands.



Figure 12 Preferred layout

The application will be assessing for the preferred layout.

7.4 Alternative technology

The EAP, architect and engineer (project team) have taken chicken litter pollution, sewage from construction toilets, traffic, stormwater management and noise pollution impacts into account to develop the proposed Site Plan in Annexure B2. The Green building designs, in accordance with the Green Building Council of SA standards, would be taken into consideration where possible (use of LED lighting and insulation of the chicken houses). Rainwater harvesting and use of solar panels will be implemented at a later stage to supplement the water supply from the boreholes and energy supply from ESKOM.

The project team is experienced in the construction building of agricultural housing/sheds developments. Thus, no other technology would be appropriate and will henceforth not be considered.

7.5 No-Go Alternative

Should the development not proceed, the following losses/gains would ensue –

- No further employment opportunities would be created during construction nor operation;
- Potential skills development would not take place.;
- Site would remain underutilised with a limited number of sheds;
- There will be no improvement in the provision of eggs and chickens to the poultry market;
- No potential increase in customers for surrounding businesses;
- There would be no improvement in efficiency of land use;
- Traffic on the surrounding roads would remain unchanged;
- Limited waste generation on site;
- Limited noise and dust on site; and
- Limited hydro-carbons in runoff into storm water input and local drainage network.

8. NEED AND DESIRABILITY

In this section, a motivation for the need and desirability for the proposed development is given, including the need and desirability of the activity in the context of the preferred development footprint within the approved site.

8.1 Need and desirability for the proposed development

The strategic context for informing need and desirability is best addressed and determined during the formulation of the sustainable development vision, goals and objectives of Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs). During which collaborative and participative processes play an integral part, and are given effect to, in the democratic processes at local government level (reference - GNR 891 of 2014; Guideline on Need and Desirability in terms of the Environmental Impact Assessment Regulations, 2010).

The need and desirability of development must be measured against the contents of the IDP and SDF for the area, and the sustainable development vision, goals and objectives formulated in, and the desired spatial form and pattern of land use reflected in, the area's IDP and SDF respectively.

The SDF guides the overall spatial distribution of current and desirable land uses within the municipality and provides a broad indication of where different types of development should take place within the municipal area.

According to uMgungundlovu District Municipality IDP (2018), there are six critical sectors that contribute more than 92% of the district economy: agriculture, manufacturing, wholesale and trade, finance, community service and households. Agriculture and manufacturing are the largest employers in the UMshwathi area. Current and past figures estimate temporary jobs at 55% whilst permanent jobs are estimated at 45% under agriculture and manufacturing.

Rural Service Nodes in UMshwathi are an anchor for agriculture and tourism development and these area's character is not currently maximised. In these nodes tourism is the attraction point with mainly agricultural usage (UMshwathi SDF 2016/17). Commercial agriculture and tourism (where the potential exists) are the main economic drivers, and the needs of both sectors need to be accommodated. This node should be strengthened in line with the National Spatial Development Perspective (NSDP) principle of encouraging development in competitive areas.

The proposed poultry breeder unit will produce eggs under contract for RCL Foods. This project will provide permanent and temporary jobs in an area where there is massive unemployment, these jobs would enable the improvement of the lives of the families involved. There will also be a knock on effect with feed companies having to upscale to produce the extra 6000 tons of feed the project will require a year. This will apply to all upstream service providers as well as downstream, where the hatchery would have to increase staff to cope with the extra 14 000 000 eggs it will be receiving a year, as well as broiler farms increasing capacity to handle the extra chicks. Taking all of this into account the jobs created upstream and downstream of the project would be substantial. It is evident that none of the downstream developments can take place until this project is up and running as they would require chicks, that come out of the eggs to be produced by the proposed project.

Another key benefit and need is that current employees would be in line for promotion, because more site and house supervisors would be required. The extra income they earn with these promotions would also have a positive impact directly on their families and on the surrounding communities and businesses.

Benefits that the activity will have for society in general:

- Adherence to municipal planning guidelines; development of the region consistent with the expected trends and strategic objectives of the municipality;
- Provision of eggs and chickens, an established need for the poultry market in the area;
- Provision of temporary job opportunities during the Construction Phase (for engineers, labourers etc.); and permanent jobs (farm managers and supervisors etc.);
- Potential for skills development of the local community through employment opportunities;
- Revenue for local businesses (feed companies, hatcheries);
- Potential revenue for neighbouring businesses through increased customers; and
- Use of the underutilised farm lands with a limited number of sheds.

Benefits that the activity will have for the local communities where the activity will be located:

- Approximately 50 temporary employment opportunities would be created during construction, of which all the unskilled labour required would be sourced from local previously disadvantaged communities;
- Creation of job opportunities for skilled personnel (e.g. architect, engineer, land surveyor, farm managers, office administrators etc.);
- Not less than minimal wage (likely to be more) for staff, improving the per capita earnings and benefitting the broader community.

In terms of socioeconomic aspects:

- The anticipated CAPEX value of the project upon completion equates to R84 million.
- The expected annual turnover to be generated by or as a result of the project equates to R60 million.
- 15 new skilled employment opportunities would be created during the construction phase
- 30 new unskilled employment opportunities would be created during the construction phase
- 2 new skilled employment opportunities would be created during the operational phase
- 20 new unskilled employment opportunities would be created during the operational phase
- The expected value of the additional employment opportunities created during the operational and construction phases equates to R280 000 per month.

8.2 Need and desirability for the preferred location

The proposed site is located on transformed lands where there is mixed farming including sugar cane, broiler breeders and livestock. The proposed expansion would be consistent with the surrounding agricultural land use. All the proposed infrastructure development is more than 200m away from any watercourses.

The EAP, architect and engineer (project team) have taken chicken litter pollution, sewage from construction toilets, traffic, stormwater management and noise pollution impacts into account, to inform the choice of the preferred location. No biodiversity features of any significance exist on site. It has been established that stormwater can be adequately managed on the site see section 6.4).

In summary, the proposed site is highly desirable for development due to the following reasons –

- No significant environmental constraints
- No significant access / traffic constraints
- Aligned with municipal planning
- Within existing agricultural area

9. IMPACT ASSESSMENT

9.1 Impact Assessment Methodology

The following indicators and criteria were used to describe and assess the significance of potential environmental impacts, as prescribed by the Department of Environmental Affairs (DEAT, 2002¹).

Nature of the impact	Provide a description of the impact
Development Phase	Decommissioning, Construction Phase and Operation Phase
Impact status	Positive or Negative (cost or benefit)
Duration	The extent and duration of the impact: short-term; long-term; permanent.
Certainty	The probability of the impact occurring: unlikely, likely, definite.
Reversibility	The degree to which the impact can be reversed: reversible; irreversible
Irreplaceable loss	Will the impact cause irreplaceable impact on resources: Yes; No
Possible Mitigation	The degree to which the impact can be mitigated: avoided; avoided; reduced; mitigated; not mitigated
Cumulative impacts	The potential for the impact to influence similar activities elsewhere: locally, regionally – which may result in significantly greater consequences.

¹ DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria

Environmental management and mitigation measures	Prescribe measures that would ensure the proposed activities would keep environmental impacts to a minimum.
Significance rating	<p>Very high: Includes permanent impacts which are definite, extremely harmful (severe), would take place frequently (daily) and be of national or regional significance.</p> <p>High: Would denote impacts considered likely and harmful that would have an effect on a local to regional scale. Such impacts would occur regularly (weekly) and may occur for the life of operation.</p> <p>Medium: Impacts that are unlikely yet may occur infrequently and would be considered slightly harmful to the local area. The duration of such impacts may exist between 1-10 years.</p> <p>Low: Temporary, potentially harmful impacts that are highly unlikely to occur, the influence of which would be contained to the boundaries of the study site</p> <p>Very low: Non-harmful, potentially insignificant impact specific to an activity on site that may occur 'once off'.</p>

9.2 Impacts that may result from each phase of the development

The following environmental impacts were identified and assessed for the proposed development –

Impact 1	Degradation of surface and groundwater quality pollution
Impact 2	Consumptive use of water and power
Impact 3	Increased traffic volumes
Impact 4	Employment creation
Impact 5	Odour and Flies

9.2.1 Phase one: Decommission phase

The following impacts may result from decommissioning activities:

Impact 4 Employment creation

9.2.2 Phase two Construction phase

The following impacts may result from construction activities:

Impact 2 Degradation of surface and groundwater quality
Impact 6 Increased traffic volumes
Impact 7 Employment creation

9.2.3 Phase three: Operation phase

Impact 1 Degradation of surface and groundwater quality
Impact 2 Consumptive use of water and power
Impact 3 Increased traffic volumes
Impact 4 Employment creation
Impact 5 Odour and Flies

9.3 Scoring of environmental impacts

9.3.1 Impact 1 Degradation of surface and groundwater quality

Nature of the impact	Potential water contamination from the chicken litter onsite. Sewage pollution may occur due to lack of effluent management infrastructure (septic tanks) for the development and the potential overflow of temporary, chemical toilet facilities which will be provided for labourers during the construction phase.
Development Phase	Construction Phase and Operation Phase
Impact status	Negative/Cost
Duration	The duration of the impact would be long-term/lifespan of the project
Certainty	The probability of the impact occurring is unlikely.

Reversibility	The impact can be reversible.
Irreplaceable loss	The impact might cause irreplaceable impact on the water resources.
Possible Mitigation	The chicken litter/sewage pollution can be avoided and if it occurs, it could be mitigated.
Cumulative impacts	Contamination of surface and groundwater could have impacts regionally and affect greater areas through the two perennial streams existing onsite.
Environmental management and mitigation measures	<ul style="list-style-type: none"> • The dry chicken litter must continue to be stored on the gravel ground. • There must be installation of diversion drains to direct surface water runoff away from chicken litter storage areas. • All septic tank and soakaway systems must be located outside of any watercourse buffers. • An appropriate number of temporary, chemical toilet facilities (at least 1 toilet for every 20 workers) would be provided for labourers during the construction phase. • Construction toilets must be placed more than 50m from the drainage lines. • The ablutions facilities must be maintained in hygienic and sanitary working order.
Significance rating	Medium: Impacts that are unlikely yet may occur infrequently and would be considered slightly harmful to the local area. The duration of such impacts may exist between 1-10 years.

9.3.2 Impact 2 Consumptive use of water and power

Nature of the impact	Water and electricity will be required for the construction and operation activities of the poultry breeder units. 82kl of water would be required per day for the operation. Water will be sourced from 2 existing boreholes onsite. Borehole 1 and 2 each produce 6 000 l/hour. The maximum required energy would be 256 kva in total, 108 kva for the rearing site and 74 kva for each of the laying sites. Cooling fans would use the Eskom power and heating systems (coal fired/gas powered) would be utilized to keep the chicks warm.
Development Phase	Construction Phase and Operation Phase
Impact status	Negative/Cost: The use of finite resources (water and power) is costly and extra pressure will be added to the existing borehole water sources.
Duration	The extent and duration of the impact: permanent.
Certainty	The probability of the impact occurring: definite.
Reversibility	The degree to which the impact can be reversed: reversible
Irreplaceable loss	Will the impact cause irreplaceable impact on resources: Yes, water is sourced from boreholes/natural resources and electricity is sourced from coal.
Possible Mitigation	The degree to which the impact can be mitigated: Reduced and mitigated
Cumulative impacts	The potential for the impact to influence similar activities elsewhere: locally, New Hanover/Dalton.
Environmental management and mitigation measures	<p>Water efficiency would be achieved through rainwater harvesting from the roofs of the sheds which the proponent is planning to implement at a later stage.</p> <p>Other mitigation measures that would be implemented include-</p> <ul style="list-style-type: none"> • Evaluate water supply and water efficiency measures (e.g. recycling, reuse, run-off reduction, storage etc.) to reduce impacts on borehole resources and community supplies; • Minimise water used in cleaning so as to keep chicken litter as dry as possible; • Reduce cleaning water needs by ensuring that solid waste is removed before rinsing and washing, e.g. using scrapers, brooms and vacuum cleaners; • Use taps with automatic shutoff valves; • Use high pressure hoses and optimised nozzles to minimise water usage; • Use hot water or steam as this can reduce water requirements; and • Reduce water use by preventing overflow of animal watering devices and using self-watering devices. <p>The following means to increase energy efficiency will be encouraged-</p> <p>The proponent is planning to install solar panels on the roofs to increase energy efficiency.</p> <p>Other means that will be encouraged to increase energy efficiency include-</p> <ul style="list-style-type: none"> • Use of natural ventilation and lighting as far as possible; • Orientation of buildings to: <ul style="list-style-type: none"> ◦ Optimise temperature management for sun influence; and ◦ Prevailing wind direction for natural ventilation. • Control ventilation and temperature within the houses through the use of drop-down curtains; • Correct Eskom tariff selection to suit the development;

	<ul style="list-style-type: none"> • Low energy lighting and heating appliances; • Thermostatic heater controlled devices; and • Timers to manage energy usage in peak times of operation.
Significance rating	Medium: Impacts that are unlikely yet may occur infrequently and would be considered slightly harmful to the local area. The duration of such impacts may exist between 1-10 years.

9.3.3 Impact 3 Increased traffic volumes

Nature of the impact	The Farm Paderborn access point is located at the end of a D87 district road. The regional roads R33 and R614 traffic would likely be impacted upon by an increase in traffic flow. Currently there are 9 trucks that deliver feed monthly, with the proposed expansion these will increase to 15 feed trucks monthly. For egg collection, there is a 3 tonne truck that collects eggs every second day, with the proposed expansion there will be an 8 tonne truck collecting eggs every second day. Cull collection will be occurring every 6 months via 7x30 tonne trucks.
Development Phase	Operation Phase
Impact status	Positive- <ul style="list-style-type: none"> • Increase in traffic would be associated with employment opportunities and economic improvement. Negative- <ul style="list-style-type: none"> • Potential truck congestion increase in the New Hanover/Dalton surrounds
Duration	The extent and duration of the impact: permanent.
Certainty	The probability of the impact occurring: likely.
Reversibility	The degree to which the impact can be reversed: reversible
Irreplaceable loss	Will the impact cause irreplaceable impact on resources: No
Possible Mitigation	The degree to which the impact can be mitigated: mitigated
Cumulative impacts	The potential for the impact to influence similar activities elsewhere: locally and regionally traffic congestion from the proposed site could impact the R33 located west of the site.
Environmental management and mitigation measures	<ul style="list-style-type: none"> • Maintain clear visibility and access to existing entrance and exit points. • Signage indicating turning trucks would be installed, as guided by DOT. • Speed limits and/or speed bumps would be used to reduce the speed of approaching motorists, as guided by DOT.
Significance rating	Medium: Impacts that are unlikely yet may occur infrequently and would be considered slightly harmful to the local area. The duration of such impacts may exist between 1-10 years.

9.3.4 Impact 4 Employment creation

Nature of the impact	There will be creation of temporary and permanent jobs for skilled and unskilled people. Currently hired people will get promotions to work in higher positions.
Development Phase	Decommissioning, Construction Phase and Operation Phase
Impact status	Positive/benefit
Duration	The extent and duration of the impact: short-term, long-term and permanent jobs
Certainty	The probability of the impact occurring: definite.
Reversibility	The degree to which the impact can be reversed: reversible
Irreplaceable loss	Will the impact cause irreplaceable impact on resources: No
Possible Mitigation	The degree to which the impact can be mitigated: the impact does not require mitigation
Cumulative impacts	The potential for the impact to influence similar activities elsewhere: locally and regionally – employment opportunities will be accessed by people from New Hanover/Dalton and surrounds and potentially people from other towns (e.g. Greytown). There will be new business opportunities as a result of the expansion, creating a positive knock on effect (feed companies and hatcheries).
Environmental management and mitigation measures	<ul style="list-style-type: none"> • Unskilled labour required must be sourced from local previously disadvantaged communities. • There must be a provision of not less than minimal wage (likely to be more) for staff, improving the per capita earnings and benefitting the broader community.
Significance rating	High (POSITIVE): Would denote impacts considered likely and harmful that would have an effect on a local to regional scale. Such impacts would occur regularly (weekly) and may occur for the life of operation.

9.3.5 Impact 5 Odour and Flies

Nature of the impact	Odour and fly nuisance due to chicken litter
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Development Phase	Operation Phase
Impact status	Negative
Duration	The extent and duration of the impact: long-term/lifespan of the project
Certainty	The probability of the impact occurring: likely.
Reversibility	The degree to which the impact can be reversed: reversible
Irreplaceable loss	Will the impact cause irreplaceable impact on resources: No
Possible Mitigation	The degree to which the impact can be mitigated: reduced and mitigated.
Cumulative impacts	The potential for the impact to influence similar activities elsewhere: locally/onsite
Environmental management and mitigation measures	<ul style="list-style-type: none"> • Odour and flies are not anticipated to be significant as the chicken litter is dry/not moist. • The buildings must be kept clean and well ventilated since bad odours build up when there is poor or inadequate ventilation. The closest neighbour to the site is over 2km away, it is not anticipated that odour will affect them. • Chickens eat fly larvae which significantly reduces fly populations however the fly populations must be monitored. • Sites where flies are breeding must be identified and regular cleaning of these typical fly breeding habitats must be undertaken.
Significance rating	Very low: Non-harmful, potentially insignificant impact specific to an activity on site that may occur 'once off'.

10. PUBLIC PARTICIPATION

All requirements in terms of Section 41 of the EIA Regulations (2014, amended 2017) have been undertaken.

Through the EIA process, NatureStamp makes every effort to ensure that all information in respect of the application is made available to IAPs (see IAP Register, Annexure D3). Participation by potential or registered IAPs is facilitated in such a manner that all potential or registered IAPs are given a reasonable opportunity to comment on the application, as guided by the regulations.

10.1 Notification of proposed application

Site notices

On the 16th May 2019, four (4) site notices were placed in clearly visible positions, as follows –

- The Paderborn farm site entrance;
- P278 Road turning onto the D87 Road (signage pole);
- Corner of R614 and P159 Roads (signage pole); and
- R614 Road (signage pole)

See evidence of site notices in Annexure D5.

Written notice by way of a Background Information Document (BID) to occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area; the municipality which has jurisdiction in the area; any organ of state having jurisdiction in respect of any aspect of the activity; any other party as required by the competent authority:

A Background Information Document (BID) was distributed to all IAP's on 06th May February 2019, to inform IAPs of the proposed development and encourage them to voice any concerns or issues they may have with the proposed development. BIDS were circulated by way of email.

See IAP Register and BID in Annexures D3 and D4 respectively.

Placing an advertisement in local newspaper

A newspaper advertisement was placed in The Witness on the 10th May 2019 to notify any additional members of the public that may be interested in the development.

Evidence of this can be seen in Annexure D6.

Other efforts to assist IAPs desirous of but unable to participate in the process due to illiteracy, disability, or disadvantage, included –

- The option of a public and/or stakeholder meeting to address any issues and concerns that have been raised by IAP's has been made available. To date there has not been major interest shown in the project and no public meeting has been held.

10.2 IAP comments

Two comments have been received to date in response to the BID. The commenters and their relevant departments are listed below and are reflected in the full Comments and Response table available in Annexure D2.

The draft BAR is currently being circulated to all registered IAPs for 30 days, from the 11th October to 11th November 2019 to invite further comments. Stakeholders are provided with their own hard copy or electronic (cd / Drop box) report, as requested. The public hardcopy of the report will be made available at the Dalton Library (29°20'36.34"S 30°38'24.33"E).

IAPs have been notified of every step of the proceedings and their opportunity to comment.

Comments on the draft BAR will be individually addressed and considered, with any further follow-up and changes to the project plan considered. All comments will be incorporated into the final BAR.

10.3 Summary of IAP issues

A summary of the IAP issues raised, and attendance to such, is provided in the table below.

Table 6 Summary of IAP issues raised and response

Issue	Response / attendance within project
<p><u>Department of Agriculture, Forestry and Fisheries</u> <u>Commentator: T. Sibozana</u> <u>Date: 07 May 2019</u></p> <p>This letter serves as a notice of receipt for the above document received on the 6th May 2019. Kindly note that the document will be processed within 30 days from the date of receipt, provided that all requested information is submitted to the department timeously. Should any further information be required, please do not hesitate to contact this office.</p>	<p>Noted, thank you.</p>
<p><u>Department of Agriculture, and Rural Development</u> <u>Commentator: P. Mans</u> <u>Date: 28 May 2019</u></p> <p>3. Comments on proposal</p> <p>3.1 The Department of Agriculture and Rural Development acknowledge and promotes the expansion of agricultural activities in the Province, however, this development should not be at the expense of natural agricultural resources.</p> <p>3.2 Although the background information document provides limited information about the proposed project, there are a few issues of concern that need attention.</p> <p>3.3 First, the proposed development is not clustered, especially site 3, which is located far away from the existing and the proposed</p>	<p>Noted, thank you.</p> <p>3.1 Noted, the proposed expansion is located on transformed sugarcane lands.</p> <p>3.2 Noted.</p> <p>3.3 It was requested by RCL (manufacturer that the farm will be supplying eggs to) that each site must be 1km or more apart for biosecurity reasons. Should there be a disease outbreak, the houses should not be in close proximity.</p> <p>3.4 The neighbouring farm is also owned by the proponent, chicken litter storage 2 is located further north closer to the second laying site and the neighbouring farm where, there will be use of chicken litter on lands.</p> <p>3.5 It was recommended by the DEDTEA that the Vet Services component (Department of Agriculture & Rural Development) be specifically engaged with regards to the chicken mortalities on-site. DARD has been</p>

<p>new chicken houses.</p> <p>3.4 Secondly, chicken litter storage 2 is located far and outside the boundaries of the farm.</p> <p>3.5 The department expects that the waste management plan will include the handling of dead birds as well.</p> <p>3.6 It is also expected that the basic assessment report will deal with the issues raised above as well as storm water management.</p> <p>3.7 As indicated above, there is limited information provided.</p> <p>3.8 The proposed construction of a water reservoir might require a water use licence, it is advisable to contact Department of Water and Sanitation for clarity.</p> <p>4. Concluding Statement</p> <p>4.1 Please be advised that the Provincial Department of Agriculture and Rural Development: Land Use Regulatory Unit requests a detailed draft basic assessment report addressing the issues highlighted above, including waste management and stormwater management plans.</p>	<p>contacted seeking a contact from the Vet Services component, to be included on the IAP list so they can provide comments/guidance on this draft Basic Assessment Report.</p> <p>3.6 Noted, please stormwater management recommendations on section 6.4, these will also be incorporated into the EMP to ensure they are strictly adhered to.</p> <p>3.7 Noted, further information has now been provided in this dBAR.</p> <p>3.8 Noted, comment is being sought after from the DWS. Please note the proposed reservoir was considered at the DEDTEA pre-application meeting (see minutes, Annexure C1) however it did not trigger an activity due to the capacity being below the threshold.</p>
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11. ASSUMPTIONS AND KNOWLEDGE GAPS

Assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed are as follows –

- It is assumed that all design parameters and mitigation measures proposed in the EIA report will be implemented by the Authorization Holder, should the development be authorized. The Significant Scoring of impacts is based on proposed mitigation measures being implemented.
- In the concluding statements, it is assumed that the Environmental Authorization would contain conditions proposed in the EIA report; and that all ongoing monitoring takes place. Compliance and enforcement post-authorization is critical.

12. CONCLUDING STATEMENTS

12.1 Environmental impact statement

It is important to assess an application holistically, addressing the social, economic and environmental factors influencing the project. This context for the proposed poultry breeder expansion at Farm Paderborn is summarized below -

Social considerations

The need and desirability for expanding the existing poultry breeder unit is measured against the contents of the IDP and SDF for the region which seeks a sustainable development vision, goals, objectives and the desired spatial form and pattern of land use reflected in specific areas. The benefits of affordable, environmentally-sound and socially beneficial agricultural development include:

- The design and construction of the breeder units would create opportunities for skilled and unskilled members within the agricultural sector;
- Skills development and improvement will be encouraged through the promotion of those already employed to better/skilled positions (farm managers/supervisors);
- Not less than minimal wage (likely to be more) for staff, improving the per capita earnings and benefiting the broader community (New Hanover and surrounds);
- Improved provision of a food source (cull chickens), for improved regional and national food security; and

- New business opportunities as a result of the expansion, positive knock on effect (feed companies and hatcheries).

The Sense of Place would in no way be altered as the proposed expansion would be consistent with the surrounding agricultural land use.

Economic considerations

Agriculture is the cornerstone of the UMshwathi local economy. The development of the economy should therefore be linked to the development of this sector. Beneficiation of raw agricultural produce is one of the key activities that should be focussed on. The sustainable utilization of natural resources is suggested to promote the development of agriculture as a key driver of the rural economy incorporating currently underutilized agricultural land. The proposed expansion of the poultry breeder units will improve local and national food security, while providing employment and indirect benefits to other businesses linked to the egg supply activities.

Environmental considerations

The scoring of the overall environmental impacts is medium however, the majority of potential environmental impacts identified can be reduced (likely to low-very low) with effective management and incorporation of mitigation measures into all development phases. These measures have been provided for (summarized in section 12.4 and The EMPr) and must be implemented.

12.2 Balance of Impacts

The following table reflects a summary of the positive and negative impacts and risks of the proposed activity.

Table 7 Summary of positive and negative impacts

	Positive impact	Negative impact
Expansion of poultry breeder unit	<ul style="list-style-type: none"> • Creation of job opportunities for skilled personnel (e.g. architect, engineer, land surveyor, etc.). • Provision of temporary job opportunities during the Construction Phase (for engineers, labourers etc.). • Development of permanent jobs during the operational phase (farm managers, office administrators, gardeners, domestic workers). • Potential for skills development of the local community through employment opportunities. • Revenue for local businesses supplying the contractors (i.e. construction materials). • Potential revenue for neighbouring businesses through increased customers. • Provision of eggs and chickens to the poultry market. 	<ul style="list-style-type: none"> • Potential for the site and surrounding areas to become polluted if construction activities are not properly managed (e.g. oil / fuel spills, litter from personnel on-site, etc.). • Stormwater runoff may be increased due to cleared areas, and therefore increase the erosion potential of the site. • Slow-moving construction vehicles/ operational trucks on the roads may cause traffic congestion.
No-go	<ul style="list-style-type: none"> • Potential pollution created by construction activities would not occur. • Dust and noise would not increase. • Stormwater run-off would remain unchanged. • Traffic on the surrounding roads would remain unchanged. • Neighbouring businesses would not be affected by construction activities or workers. 	<ul style="list-style-type: none"> • No further employment opportunities would be created during construction nor operation. • Potential skills development would not take place. • Site would remain underutilised with a limited number of sheds. • There will be no improvement in the provision of eggs and chickens to the poultry market.

12.3 Proposed monitoring and auditing schedule

Upon commencement of construction of the new poultry breeder expansion development, an Environmental Control Officer (ECO) should be appointed to conduct audits (based on the conditions of the Environmental Authorization and approved EMPr) of the **site monthly for the duration of the construction phase**. Audit reports

should be compiled after every visit and submitted to the DEDTEA: Compliance, Enforcement and Monitoring Unit (CME).

During operation of the poultry breeder expansion development, the ECO should continue to conduct **operational audits every 6 months for the first two years of operation**. Audit reports should be compiled after every visit and submitted to the DEDTEA: CME.

12.4 Proposed conditions of the Environmental Authorization

Considering all information gathered in the EIA process – including the project details, the site, the need and desirability, relevant environmental legislation, engineering input and comments from IAPs - the EAP makes the following recommendations that should be included as conditions of Environmental Authorization:

General

- The configuration for the proposed development must be in alignment with the proposed site layout plan and facility illustrations seen in Annexure B2 and B4.
- All construction and operational activities should take place within the guidelines of the EMPr.
- The footprint of the development should not extend beyond the boundaries of the property.

Mitigation of impacts of degradation of surface and groundwater quality due to chicken litter/sewage pollution

- The dry chicken litter must continue to be stored on gravel ground.
- There must be installation of diversion drains to direct surface water runoff away from chicken litter storage areas.
- “No Go” areas should be clearly identified for the entirety of the construction phase.
- All septic tank and soakaway systems must be located outside of any watercourse buffers.
- An appropriate number of temporary, chemical toilet facilities (at least 1 toilet for every 20 workers) would be provided for labourers during the construction phase.
- Construction toilets must be placed more than 50m from the drainage lines.
- The ablutions facilities must be maintained in hygienic and sanitary working order.

Mitigation of impacts of consumptive use of water and power

- Water supply and water efficiency measures must be considered (e.g. recycling, reuse, run-off reduction, storage etc.) to reduce impacts on borehole resources and community supplies.
- Water used in cleaning must be minimised so as to keep chicken litter as dry as possible.
- Cleaning water needs must be reduced by ensuring that solid waste is removed before rinsing and washing, e.g. using scrapers, brooms and vacuum cleaners.
- The use of taps with automatic shutoff valves must be considered.
- The use of high pressure hoses and optimised nozzles to minimise water usage must be considered.
- The use of hot water or steam must be considered as this can reduce water requirements.
- Water use must be reduced by preventing overflow of animal watering devices and using self-watering devices
- There must be use of natural ventilation and lighting as far as possible.
- Orientation of buildings must optimise temperature management for sun influence; and prevailing wind direction for natural ventilation.
- Low energy lighting and heating appliances must be considered for the offices, kitchens and shower blocks
- Thermostatic heater controlled devices and timers to manage energy must be utilised to improve energy efficiency.

Mitigation of impacts of increased traffic volumes

- Clear visibility and access to existing entrance and exit points must be maintained.
- Signage indicating turning trucks must be installed, as guided by DOT.
- Speed limits and/or speed bumps must be used to reduce the speed of approaching motorists where necessary, as guided by DOT.

Mitigation of impacts due to odour and flies

- The buildings must be kept clean and well ventilated since bad odours build up when there is poor or inadequate ventilation. The closest neighbour to the site is over 2km away, it is not anticipated that odour will affect them.
- Chickens eat fly larvae which significantly reduces fly populations however the fly populations must be monitored.
- Sites where flies are breeding must be identified and regular cleaning of these typical fly breeding habitats must be undertaken. Odour and flies are not anticipated to be significant as the chicken litter is dry/not moist.

Mitigation of impacts of employment creation

- Unskilled labour required must be sourced from local previously disadvantaged communities.
- There must be a provision of not less than minimal wage (likely to be more) for staff, improving the per capita earnings and benefitting the broader community.