

**PROPOSED WILMAR VEGETABLE OIL PIPELINE RICHARDS BAY,
KWA ZULU-NATAL**

**BASIC SOCIAL IMPACT ASSESSMENT REPORT
March 2019**

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DETAILS OF PROJECT

Report Title : Social Impact Assessment for the proposed Wilmar (Pty) Ltd Vegetable Oil Pipeline, Port of Richards Bay, Kwa Zulu Natal

Author : Dr Neville Bews

DEA Reference Number :

Project Developer : Wilmar (Pty) Ltd

Environmental Consultant : Savannah Environmental (Pty) Ltd

Review Period : 23 November, 2018 – 12 March, 2018

Status of Report : Final Report

EXECUTIVE SUMMARY

INTRODUCTION

Wilmar (Pty) Ltd (Wilmar) proposes the construction of a vegetable oil pipeline from the Port of Richards Bay Harbour to the site Phase 1A within the Richards Bay Industrial Development Zone (IDZ), in the Kwa-Zulu Natal Province. In this regard, Wilmar has appointed Savannah Environmental (Pty) Ltd (Savannah) to undertake the environmental authorisation application for the project. Dr Neville Bews & Associates (NBA) has, in turn, been contracted by Savannah to undertake a basic social impact assessment for the project.

PROJECT DESCRIPTION

Wilmar (Pty) Ltd are proposing the development of a vegetable oil pipeline that will consist of 4 x 216 mm-wide pipes extending for ~2.6 km within the Port of Richard's Bay, KwaZulu-Natal Province. The proposed development will consist of four (4) pipelines to be stacked vertically in double rows, running side by side, depending on support and space restrictions, and will comprise of the following dimensions:

- Width: 216 mm
- Total Length: ~2.6 km

The pipeline will transport palm oils, soybean and sunflower oils destined for human consumption as cooking oil and processing into margarine/fats. The discharge rate will be 250 cubic meters per hour, or 220 mt per hour during offloading from the container vessel. The net discharge for all four pipelines will therefore cumulatively be ~1 000mt per hour.

Pumping through the pipeline will be controlled at the delivery and receiving ends by pumping from one ship at a time directly into tanks at the processing plant located on the IDZ property. No operational infrastructure is required between the delivery and receiving ends of the pipeline which will be a closed system.

The proposed development will include the following infrastructures:

- Carbon steel, DN 200 pipes
- Multiple duct access shafts under road / rail crossings
- Overhead steel bridges over railway lines where required
- Temporary laydown area
- Fencing
- Security Offices and

- A service track which will stretch between the north railyard within the Transnet National Port Authority property and the Richards Bay Industrial Development Zone (RBIDZ).

The construction method will consist of steel pipes supported on steel supports with the top of pipes approx. 1,8 m above ground, mounted on cast insitu concrete pad foundations (approx. 1,5 x 1,5 m and underside 1,2 m below ground). 6 No crossings under roads and rail, comprising access shafts each side (approx. 3225 x 2060 mm and underside 2800 mm below ground), with 4 No, 400 mm diameter pipe sleeves between the access shafts (pipe c/l approx. 1700 m) below road / rail surface).

No excavation of trenches and bedding material is planned as the pipe will be above ground except under roads. Where pipe crosses under roads, an access shaft will be constructed on either side of the road and 4 No, 400 mm diameter pipe sleeves will be installed between the access shafts (pipe c/l approx. 1700 m below surface). It is anticipated that High-density polyethylene pipe (HDPE) sleeves will be installed under the roads by means of horizontal directional drilling, and that a steel sleeve will be installed under the rail line by thrust boring.

No new roads are proposed to construct the pipeline, as all parts will be accessible by existing roads. A laydown area of approximately 60 m x 25 m is envisaged at an existing level, grassed and currently unused area between Newark Road and existing rail lines for the laydown of materials and equipment which will consist of:

- Steel pipes and structural steel
- TLB for excavations
- Welding machines
- Concrete delivery trucks
- Truck mounted crane and
- Track mounted piling rig.

It is envisaged that 360 direct and indirect jobs will be created over the construction period extending over ~6-9 months. Labour will not be accommodated on site and will largely be recruited locally as KZN construction contractors will be utilised during construction. During the construction period portable toilets will be provided for construction workers, while during the operational phase the only activities envisaged to take place along the pipeline are quarterly, 3 monthly, routine inspections and, if and where necessary, maintenance and repairs which should occur on an irregular basis.

In line with future plans for the Transnet Railyard North the pipeline will be routed via an overhead bridge in the region of the railyard so as to accommodate these future developments.

POLICY AND LEGISLATION FIT

Considering the nature and location of the project there is a clear policy and legislation fit at national, provincial and both district and local municipal levels. For instance the National Development Plan lists job creation as a priority and in this sense the expansion of infrastructure is likely to lead to job creation, not only at a local but also on a national level. The King Cetshwayo District Growth and Development Summit (King Cetshwayo District Municipality, 2018) indicates that the Richards Bay Port expansion project is listed amongst the provincial catalytic projects identified for the area. Although this project is not a part of the port expansion, the project does fit with development within the area.

The area in which the project is situated was rezoned from undetermined to Industrial Development Zone, Industrial 'Light' and it was noted that “[t]he areas surrounding the IDZ are highly industrialised and characterised by large-scale industrial and associated port development” (KwaZulu-Natal Department of Agriculture and Environmental Affairs, 2002). The area is also listed as ‘industrial land use harbour’ in the final uMhlathuze Spatial Development Framework (uMhlathuze Local Municipality, 2017, pp. 193-195) and Draft Land Use Scheme Regulations (Isibani Planning Consultants, 2018, p. 11 & 66).

The uMhlathuze IDP identifies the Richards Bay Industrial Zone as one of the “[v]iable economic growth developer[s]” for the municipality and lists its sustainable development goal no 8 as to;

“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (uMhlathuze Local Municipality, 2018, p. 35).

IMPACTS IDENTIFIED

Construction: Most of the impacts identified apply over the construction phase of the project and include:

- Annoyance, dust and noise
- Increase in crime
- Influx of construction workers

- Hazard exposure
- Disruption of daily living patterns
- Disruptions to social and community infrastructure
- Job creation and skills development
- Socio-economic.

Of the impacts identified none will have a significant impact on the social environment as the project is relatively small in nature and is located within an area zoned for industrial use.

Operational: In respect of the operational phase of the project the pipeline will be run as a closed system with quarterly inspections being undertaken and, when necessary, maintenance and repair activities on an irregular basis. In this regard there will be no negative social impacts associated with the project and the only positive impact would be related to the socio-economic stimulation of the area. As the pipeline is intrinsically linked to the processing plant the socio-economic impact of the pipeline would need to be considered in association with the processing plant.

No-Go alternative: The No-Go alternative will leave the status quo in place and will not enhance development planned for the Port of Richards Bay and the Richards Bay Industrial Development Zone.

Cumulative: The nature, scale and location of the project are such that it is most unlikely that the project will result in any negative cumulative impacts. On a positive basis the cumulative impacts of the pipeline would need to be considered in association with the processing plant as the pipeline cannot stand alone.

A summary of the assessment of these impacts is provided below.

FINDINGS

No obvious fatal flaws associated with the proposed development can be identified and the project will result in limited impact on the social environment. Due to the magnitude and location of the project and its limited effect on the social environment it is unlikely that any further assessment will be required. Consequently, at a social level, there should be no problem with the proposed development proceeding with environmental authorisation.

PRE AND POST MITIGATION COMPARISON OF THE IMPACTS

Construction Phase					
Environmental parameter	Issues	Rating prior to mitigation	Average	Rating post mitigation	Average
Health & social wellbeing	Annoyance, dust and noise	-16		-12	
	Increase in crime	-6		-3	
	Influx of construction workers	-24		-16	
	Hazard exposure.	-24	-17.5	-15	-11.5
			Negative Low Impact		Negative Low Impact
Quality of the living environment	Disruption of daily living patterns	-16		-12	
	Disruptions to social and community infrastructure	-16	-16	-12	-12
			Negative Low Impact		Negative Low Impact
Economic	Job creation and skills development	32		36	
	Socio-economic stimulation	36	34	38	37
			Positive Medium Impact		Positive Medium Impact
Operational Phase					
Economic	Socio-economic stimulation	52	52	56	56
			Positive Medium Impact		Positive Medium Impact
No-Go Alternative					
No-Go		-65	-65	No mitigation measures	
			Negative Medium Impact		
Cumulative Impacts					
No cumulative impacts are expected to be associated with the construction and/or the operation of the pipeline.					

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LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
BID	Background Information Document
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DM	District Municipality
EIA	Environmental Impact Assessment
HDPE	High-density polyethylene pipe
HIA	Heritage Impact Assessment
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IRP	Integrated Resource Plan
IRR	Issues Response Report
LM	Local Municipality
NEMA	National Environmental Management Act (No. 107 of 1998)
NGO	Non-Governmental Organisation
OHS	Occupational Health and Safety
PA	Per Annum (Yearly)
PGDS	Provincial Growth and Development Strategy
PPP	Public Participation Process
RBIDZ	Richards Bay Industrial Development Zone
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIPs	Strategic Integrated Projects
SMME	Small Medium and Micro Enterprises
Stats SA	Statistics South Africa
STDs	Sexually Transmitted Diseases
TLB	Tractor Loader Backhoe
ToR	Terms of Reference
WHO	World Health Organisation

QUALIFICATIONS AND EXPERIENCE OF SPECIALIST

Qualifications:

University of South Africa: B.A. (Honours) – 1984

Henley Management College, United Kingdom: The Henley Post-Graduate Certificate in Management – 1997

Rand Afrikaans University: M.A. (cum laude) – 1999

Rand Afrikaans University: D. Litt. et Phil. – 2000

Projects:

The Social Impact Assessment (SIA) for the Gautrain Rapid Rail Link; The impact assessment for the Australian – South African sports development programme; SIA for Kumba Resources, Sishen South Project; Evaluation of a Centre for Violence Against Women for The United Nations Office on Drugs and Crime; SIAs for the following Exxaro Resources Ltd.'s mines, Leeuwpan Coal Mine Delmas, Glen Douglas Dolomite Mine Henley-on-Klip, Grootegeluk Open Cast Coal Mine Lephalale; SIA for the South African National Road Agency Limited (SANRAL) on Gauteng Freeway Improvement Project; SIA for SANRAL on the N2 Wild Coast Toll Highway; Research into research outputs of the University for the University of Johannesburg; SIA for Waterfall Wedge housing and business development in Midrand Gauteng; SIA for the Environmental Management Plan for Sedibeng District Municipality; Social and Labour Plan for the Belfast Project on behalf of Exxaro Resources Ltd; SIA for the Transnet New Multi-Product Pipeline (Commercial Farmers) on behalf of Golder Associates Africa (Pty) Ltd; SIA for the Proposed Vale Moatize Power Plant Project in Mozambique on behalf of Golder Associates Africa (Pty) Ltd; SIA for Kumba Resources Ltd.'s proposed Dingleton Resettlement Project at Sishen Iron Ore Mine on behalf of Water for Africa (Pty) Ltd; SIA for Gold Fields West Wits Project for EcoPartners; SIA for the Belfast Project for Exxaro Resources Ltd; SIA for Eskom Holdings Ltd.'s Proposed Ubertas 88/11 kV Substation on behalf of KV3 Engineers (Pty) Ltd; SIA for the Mokolo and Crocodile River (West) Water Augmentation Project for the Department of Water and Sanitation on behalf of Nemaï Consulting and the Trans Caledonian Water Authority; Assisted Octagon Consulting with the SIA for Eskom's Nuclear 1 Power Plant on behalf of Arcus GIBB Engineering & Science. SIA for the 150MW Photovoltaic Power Plant and Associated Infrastructure for Italgest Energy (Pty) Ltd, on behalf of Kalahari Survey Solutions cc. SIA for Eskom Holdings Limited, Transmission Division's Neptune-Poseidon 400kV Power Line on behalf of Nemaï Consulting. Ncwabeni Off-Channel Storage Dam for

security of water supply in Umzumbe, Mpumalanga. Social Impact assessment for Eskom Holdings Limited, Transmission Division, Forskor-Merensky 275 kV ±130 km Powerline and Associated Substation Works in Limpopo Province. Social impact assessment for the proposed infilling of the Model Yacht Pond at Blue Lagoon, Stiebel Place, Durban. ABC Prieska Solar Project; Proposed 75 MWp Photovoltaic Power Plant and its associated infrastructure on a portion of the remaining extent of ERF 1 Prieska, Northern Cape. Sekoko Wayland Iron Ore, Molemole Local Municipalities in Limpopo Province. Langpan Chrome Mine, Thabazimbi, Limpopo; Jozini Nodal Expansion Implementation Project, Mpumalanga, on behalf of Nema Consulting; SIA for Glen Douglas Dolomite Burning Project, Midvaal Gauteng, on behalf of Afrimat Limited; SIA for Lyttelton Dolomite mine Dolomite Burning Project, Marble Hall Limpopo on behalf of Afrimat Limited; Tubatse Strengthening Phase 1 – Senakangwedi B Integration for Eskom Transmission on behalf of Nsovo Environmental Consulting; Department of Water and Sanitation, South Africa (2014). Environmental Impact Assessment for the Mzimvubu Water Project: Social Impact Assessment DWS Report No: P WMA 12/T30/00/5314/7. Umkhomazi Water Project Phase 1 – Raw Water Component Smithfield Dam - 14/12/16/3/3/3/94; Water Conveyance Infrastructure - 14/12/16/3/3/3/94/1; Balancing Dam - 14/12/16/3/3/3/94/2. Umkhomazi Water Project Phase 1 – Potable Water Component: 14/12/16/3/3/3/95. Expansion of Railway Loops at Arthursview; Paul; Phokeng and Rooiheuvel Sidings in the Bojanala Platinum District Municipality in the North West Province for Transnet Soc Ltd; Basic Social Impact Assessment for the Cato Ridge Crematorium in Kwazulu-Natal Province; SIA for the Kennedy Road Housing Project, Ward 25 situated on 316 Kennedy Road, Clare Hills (Erf 301, Portion 5); Eskom's Mulalo Main Transmission Substation and Power Line Integration Project, Secunda; Social Impact Assessment for the proposed 325 Mw Rondekop Wind Energy Facility, Near Sutherland, Northern Cape Province.

Regularly lecture in the Department of Sociology at the University of Johannesburg and collaborated with Prof. Henk Becker of Utrecht University, the Netherlands, in a joint lecture to present the Social Impact Assessment Masters course via video link between the Netherlands and South Africa. Presented papers on Social Impact Assessments at both national and international seminars. Published on both a national and international level.

Affiliation:

The South African Affiliation of the International Association for Impact Assessment.

Registered on the database for scientific peer review of iSimangaliso GEF project outputs.

DECLARATION OF INDEPENDENCE

I, Neville Bews, as the appointed independent specialist, in terms of the 2014 EIA Regulations, hereby declare that I:

- I act as the independent specialist in this application;
- I perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I have no vested interest in the proposed activity proceeding;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- I have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;

Basic Social Impact Assessment for the proposed Wilmar (Pty) Ltd Vegetable Oil Pipeline Port of Richards Bay, Kwa Zulu Natal

- all the particulars furnished by me in this specialist input/study are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

A handwritten signature in black ink, appearing to be 'N. Bews', written over a light blue horizontal line.

Name of Specialist: Neville Bews

Date: 12 March, 2019

1. INTRODUCTION

Wilmar (Pty) Ltd (Wilmar) proposes the construction of a vegetable oil pipeline from the Port of Richards Bay Harbour to the site Phase 1A within the Richards Bay Industrial Development Zone (IDZ), in the Kwa-Zulu Natal Province. In this regard, Wilmar has appointed Savannah Environmental (Pty) Ltd (Savannah) to undertake the environmental authorisation application for the project. Dr Neville Bews & Associates (NBA) has, in turn, been contracted by Savannah to undertake a basic social impact assessment for the project.

1.1. PURPOSE OF REPORT

The purpose of the report is to identify the social baseline conditions in which the proposed project will unfold and to acquire an understanding of the proposed project. Against this background, the primary objective is to identify the issues and concerns associated with the Vegetable Oil Pipeline and to identify, assess and propose mitigation for the likely social impacts that may occur as a result of the proposed project to inform the EIA undertaken in terms of the National Environmental Management Act (Act 107 of 1988) (as amended).

1.2. STRUCTURE OF REPORT

This specialist study is undertaken in compliance with Requirements of Appendix 6 – GN R326 EIA Regulations 2014, as amended on of 7 April 2017. **Table 1** indicates how the requirements of Appendix 6 have been fulfilled in this report.

Table 1: Report content requirements in terms of EIA Regulations

Requirements of Appendix 6 – GN R326 EIA Regulations 2014, as amended on 7 April 2017	Section of Report
1. (1) A specialist report prepared in terms of these Regulations must contain-	
(a) details of-	
(i) the specialist who prepared the report; and	Page xiii
(ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Page xv
(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.3 Page 3
(cA) an indication of the quality and age of base data used for the specialist report;	Section: 1.5.2 Page 5
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 5 Pages 29-39
(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	N/A
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1.4 Page 3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 4 & 5 Pages 24-39
(g) an identification of any areas to be avoided, including buffers;	N/A
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Figure 1, Page 7 & Figure 2, Page 10
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5 Pages 29-39
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, [including identified alternatives on the environment] or activities;	Section 5 Pages 29-39 Section 6 Pages 39-41
(k) any mitigation measures for inclusion in the EMPr;	Section 5 Pages 29-39
(l) any conditions for inclusion in the environmental authorisation;	N/A
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 5 Pages 29-39
(n) a reasoned opinion-	
(i) [as to] whether the proposed activity, activities or portions thereof should be authorised;	
(iA) regarding the acceptability of the proposed activity or activities; and	Section 6 Page 41
(ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A -No feedback has yet been received from the public participation process regarding the visual environment
(q) any other information requested by the competent authority.	N/A . No information regarding the SIA has been requested from the competent authority to date.
2) Where a government notice <i>gazetted</i> by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

1.3. TERMS OF REFERENCE

The terms of reference of the study are to:

- Conduct a review of available data, including applicable policy and legislation, Statistics SA data and various reports generated for the Proposed Wilmar Vegetable Oil Pipeline;
- Identify potential social impacts during both the construction and operational phases of the proposed project;
- Recommend appropriate optimisation measures to maximise positive impacts and mitigation measures to avoid or minimise the severity of the negative social impacts.

Issues excluded from this study and dealt with in other specialist reports are:

- The macro economic impacts associated with the project and
- The potential impacts of the project on property values.

1.4. APPROACH TO STUDY

Data was gathered by means of the following data collection and impact assessment techniques.

1.4.1. COLLECTION OF DATA

Data was gathered through:

- The project description prepared by Wilmar (Pty) Ltd.
- Statistics South Africa, Census 2011 and other relevant demographic data generated by Stats SA such as the Quarterly Labour Force Survey and Mid-year population estimates.
- Discussions with the project proponents and Environmental Impact Assessment Consultants.
- A literature review of various documents such as the relevant Municipal Integrated Development Plans (IDPs) and other specialist reports and documents.
- A broader literature scan.

1.4.2. IMPACT ASSESSMENT TECHNIQUE

The impact assessment technique applied in this assessment, which is provided by the lead environmental consultant Savannah Environment, is as follows:

- The **nature**, which includes a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 was assigned as appropriate (with 1 being low and 5 being high).
- The **duration**, wherein it is indicated whether:
 - The lifetime of the impact will be of a very short duration (0 – 1 years) – assigned a score of 1.
 - The lifetime of the impact will be of a short duration (2 – 5 years) – assigned a score of 2.
 - Medium-term (5 – 15 years) – assigned a score of 3.
 - Long term (> 15 years) – assigned a score of 4.
 - Permanent – assigned a score of 5.
- The **magnitude**, quantified on a scale from 0 – 10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability** of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale of 1 – 5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which is determined through a synthesis of the characteristics described above and can be assessed as low, medium or high.
- The **status**, which shall be described as positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The degree to which the impact can be mitigated.

- The **significance** was then calculated by combining the criteria in the following formula:

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

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area).
- 30 – 60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated).
- 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

1.5. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations apply in respect of this report.

1.5.1. ASSUMPTIONS

It is assumed that the technical information provided by the project proponent, Wilmar (Pty) Ltd, the environmental consultants Savannah Environmental, was credible and accurate at the time of compiling the report.

It is also assumed that the data provided by the various specialists, as used in this report, are credible and accurate.

1.5.2. LIMITATIONS

The demographic data used in this report was sourced from Statistics South Africa and is based on data gathered during Census 2011. This data is somewhat outdated but where possible this data is supplemented with the latest Stats SA's survey data such as the Mid-year Population Estimates and the Quarterly Labour Force Survey. The limitation of this is

that this survey data is restricted to a provincial level and does not extend down to a municipal level.

The pipeline is intrinsically linked to a processing plant which has as yet not been constructed and no information pertaining to the plant was available at the time of undertaking this study.

2. PROJECT DESCRIPTION

Wilmar (Pty) Ltd are proposing the development of a vegetable oil pipeline that will consist of 4 x 216 mm-wide pipes extending for ~2.6 km within the Port of Richard's Bay, KwaZulu-Natal Province. The proposed development will consist of four pipelines to be stacked vertically in double rows, running side by side, depending on support and space restrictions, and will comprise of the following dimensions:

- Width: 216 mm
- Total Length: ~2.6 km

The pipeline will transport palm oils, soybean and sunflower oils destined for human consumption as cooking oil and processing into margarine/fats. The discharge rate will be 250 cubic meters per hour, or 220 mt per hour during offloading from the container vessel.

Pumping through the pipeline will be controlled at the delivery and receiving ends by pumping from one ship at a time directly into tanks at the processing plant located on the IDZ property. No operational infrastructure is required between the delivery and receiving ends of the pipeline which will be a closed system.

The proposed development will include the following infrastructures:

- Carbon steel, DN 200 pipes
- Multiple duct access shafts under road crossings
- Overhead steel bridges over railway lines
- Temporary laydown area
- Fencing
- Security Offices and
- A service track which will stretch between the north railyard within the Transnet National Port Authority property and the Richards Bay Industrial Development Zone (RBIDZ).

The construction method will consist of steel pipes supported on steel supports with the top of pipes approx. 1,8 m above ground, mounted on cast insitu concrete pad foundations (approx. 1,5 x 1,5 m and underside 1,2 m below ground). Crossings under roads comprising of access shafts each side (approx. 3225 x 2060 m and underside 2800 m below ground), with 4 No, 400 mm diameter pipe sleeves between the access shafts (pipe c/l approx. 1700 m) below road. Bridge crossing over rail described under 2.1 below.

No excavation of trenches and bedding material is planned as the pipe will be above ground except under roads. Where a pipe crosses under roads, an access shaft will be constructed on either side of the road and 4 No, 400 mm diameter pipe sleeves will be installed between the access shafts (pipe c/l approx. 1700 m below surface). It is anticipated that high-density polyethylene pipe (HDPE) sleeves will be installed under the roads by means of horizontal directional drilling, and that a steel sleeve will be installed under the rail line by thrust boring.

No new roads are proposed to construct the pipeline, as all parts will be accessible by existing roads. A laydown area of approximately 60 m x 25 m is envisaged at an existing level, grassed and currently unused area between Newark Road and existing rail lines for the laydown of materials and equipment which will consist of:

- Steel pipes and structural steel
- TLB for excavations
- Welding machines
- Concrete delivery trucks
- Truck mounted crane and
- Track mounted piling rig.

It is envisaged that 360 direct and indirect jobs will be created over the construction period extending over ~6 months. Labour will not be accommodated on site and will largely be recruited locally as KZN construction contractors will be utilised during construction. During the construction period portable toilets will be provided for construction workers, while during the operational phase the only activities envisaged to take place along the pipeline are quarterly, 3 monthly, routine inspections and if and where necessary maintenance and repairs which should occur on an irregular basis.

2.1. TRANSNET'S RAILYARD NORTH AREA

Transnet has future plans for a railyard which will require the pipeline to be routed overhead for this section of the route as illustrated in **Figure 1**.



Figure 1: Pipe crossing over Transnet Planned Railway (showing revised/updated pipeline routing)

The construction method for the pipeline as routed over Transnet Railyard North will comprise of the following and is illustrated in **Figure 2**.

- **Main supports** – 3 No., shown as tower trusses at the ends of the bridge and at the step down. Per pile cap: 4 x 250 mm diameter precast concrete piles each 12 m long, raked 10 to 15 degrees perpendicular to the bridge deck.
- **Intermediate supports** – 8 No., shown as flat vertical trusses. Per pile cap: 2 x 250 mm diameter precast concrete piles each 12 m long, raked 10 to 15 degrees perpendicular to the bridge deck.

- **Construction Method**

The construction method depends largely on the selected contractor's plant and materials that are available at the time of quoting and construction.

The piles would most likely be made of precast concrete with a light cage of reinforcing steel, 250 mm diameter and 12 m to 18 m long.

The piles would be cast at a remote casting yard.

The piles would be transported by truck and offloaded at the piling rig as and when required by means of a truck-mounted crane.

The piles would be driven by percussion from a track mounted piling rig until the piles reached a pre-determined resistance, and then driven until the tops reach approximately 200 mm above ground level.

If a pile needs to be driven deeper than the length of a standard pile in order to achieve the required resistance, it might be necessary to drive a second pile on top of the first pile.

Piling process

Percussion driven piles are driven into the ground by ramming precast concrete piles with a large dropweight that is hoisted on a rig and then allowed to "hammer" the pile into the ground until it reaches a predetermined resistance such that it will support the imposed loads from the structure (dead weight plus imposed loads).

Percussion driven piles are likely to be the preferred piling option owing to the relatively soft sands in the upper strata and the relatively shallow water table, as this method of piling doesn't require auger boring or any other form of excavation.

Pile caps

For preliminary purposes, we can assume the pile caps that will support the structural steel bridge will be as per the indicative drawings, namely

Main supports: No 2 at the ends of the 12 m high bridge, plus 1 No at the end of the 5,5 m high bridge;

- 3 m wide
- 1,7 m long
- 0,7 m below ground surface
- 0,5 m above ground surface

Intermediate supports: 2 No for the 12 m high bridge, 6 No for the 5,5 m high bridge;

- 3 m wide
- 1,0 m long
- 0,7 m below ground surface
- 0,5 m above ground surface.

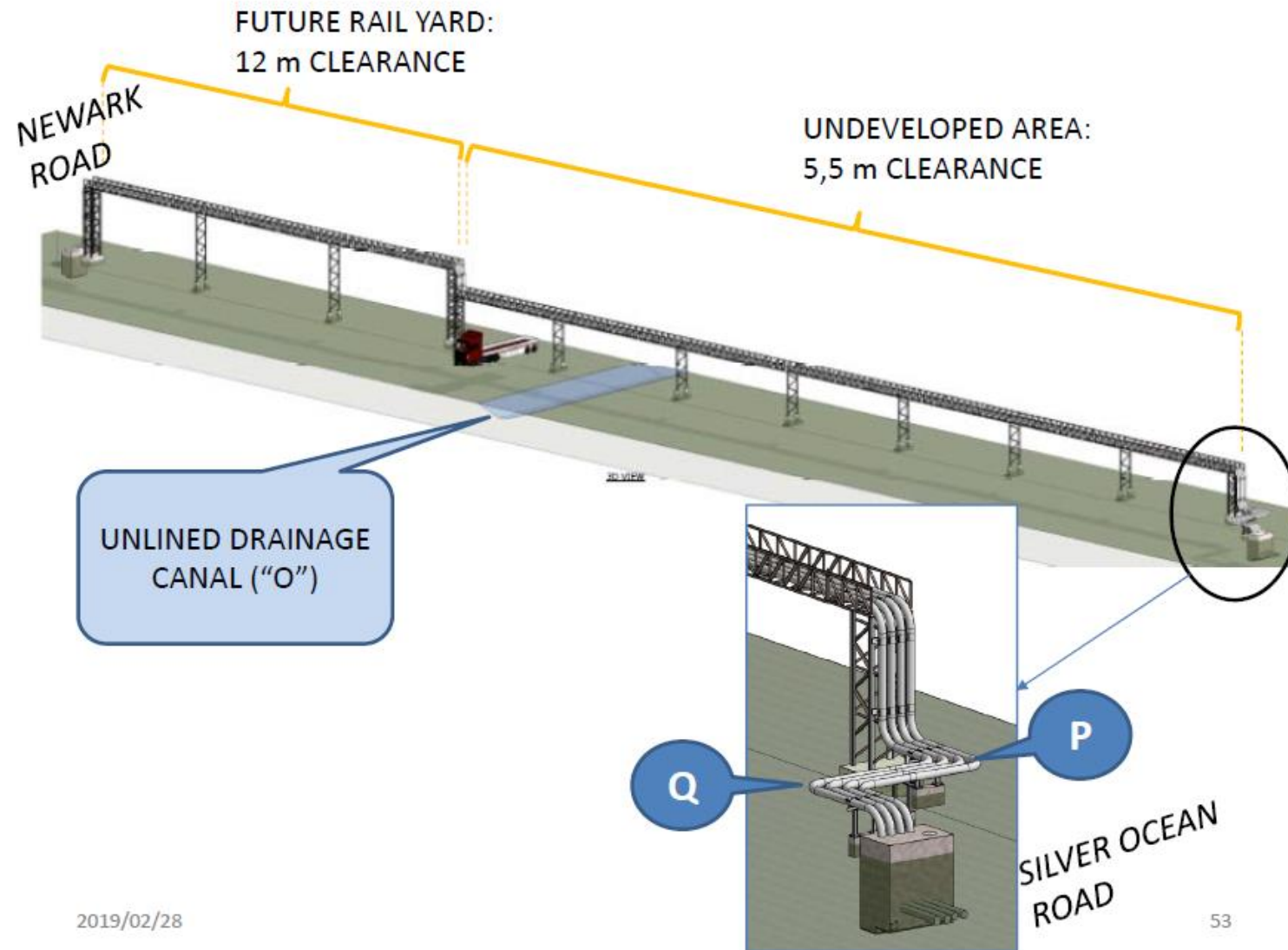


Figure 2: Steel Bridge Assembly

2.2. LOCATION

The project is situated within Ward 2 of the uMhlathuze Local Municipality or more specifically within the Port of Richards Bay in the industrial area of Alton, Richards Bay. Richards Bay falls within the uMhlathuze local and the King Cetshwayo (formally uThungulu) district municipalities within the province of KwaZulu-Natal. The location of the project in Alton is illustrated in **Figure 3**.

2.1. EIA ALTERNATIVES

The route has been specifically identified to reach the RBIDZ site from the allocated Transnet berths having taken into account future Transnet developments and no alternative routes, layout and technological alternatives were considered. The “no-go” alternative is, however, considered.

2.1.1. NO-GO ALTERNATIVE

It is mandatory to consider the “no-go” option in the EIA process. The no development alternative option assumes the site remains in its current state, i.e. there is no construction of a pipeline and the status quo would proceed.



Figure 3: Project location (showing revised/updated pipeline routing)

Legislation and policy serve to guide the authorities in undertaking and agreeing on projects that are in the interest of the country as a whole. Consequently, the fit of the project with the relevant national, provincial and municipal legislation and policy is an important consideration. In this respect the following legislation and policy is applicable to the project.

National

- Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996) as amended.
- National Environmental Management Act, 1998 (NEMA) (Act No. 107 of 1998) as amended and regulations published there under, in particular, regulations governing the environmental authorisation of listed activities.
- The National Development Plan (2030).
- The Environmental Impact Assessment and Management Strategy for South Africa.

Provincial

- KwaZulu-Natal 2035 Provincial Growth and Development Strategy.
- KwaZulu-Natal Provincial Growth and Development Plan.
- Catalytic Project List as at end Q3 2017-18.
- KwaZulu-Natal Spatial Development Framework.

District and local

- King Cetshwayo District Growth and Development Summit Report Draft 1.0.
- King Cetshwayo District Integrated Development Plan 2018/19-2021/22.
- uMhlathuze Final IDP Review 2018/2019.
- uMhlathuze Draft Land Use Scheme Regulations.
- uMhlathuze Municipality Spatial Development Framework 2017/2018-2021/2022 Final May 2017.

2.2. POLICY AND LEGISLATION FIT

Considering the nature and location of the project there is a clear policy and legislation fit at national, provincial and both district and local municipal levels. For instance the National Development Plan lists job creation as a priority and in this sense the expansion of infrastructure is likely to lead to job creation, not only at a local but also on a national level. The King Cetshwayo District Growth and Development Summit (King Cetshwayo District Municipality, 2018) indicates that the Richards Bay Port expansion project is listed amongst

the provincial catalytic projects identified for the area. Although this project is not a part of the port expansion project does fit with development within the area.

The area in which the project is situated was rezoned from undetermined to Industrial Development Zone, Industrial 'Light' and it was noted that “[t]he areas surrounding the IDZ are highly industrialised and characterised by large-scale industrial and associated port development” (KwaZulu-Natal Department of Agriculture and Environmental Affairs, 2002). The area is also listed as ‘industrial land use harbour’ in the final uMhlathuze Spatial Development Framework (uMhlathuze Local Municipality, 2017, pp. 193-195) and Draft Land Use Scheme Regulations (Isibani Planning Consultants, 2018, p. 11 & 66).

The uMhlathuze IDP identifies the Richards Bay Industrial Zone as one of the “[v]iable economic growth developer[s]” for the municipality and lists its sustainable development goal no 8 as to;

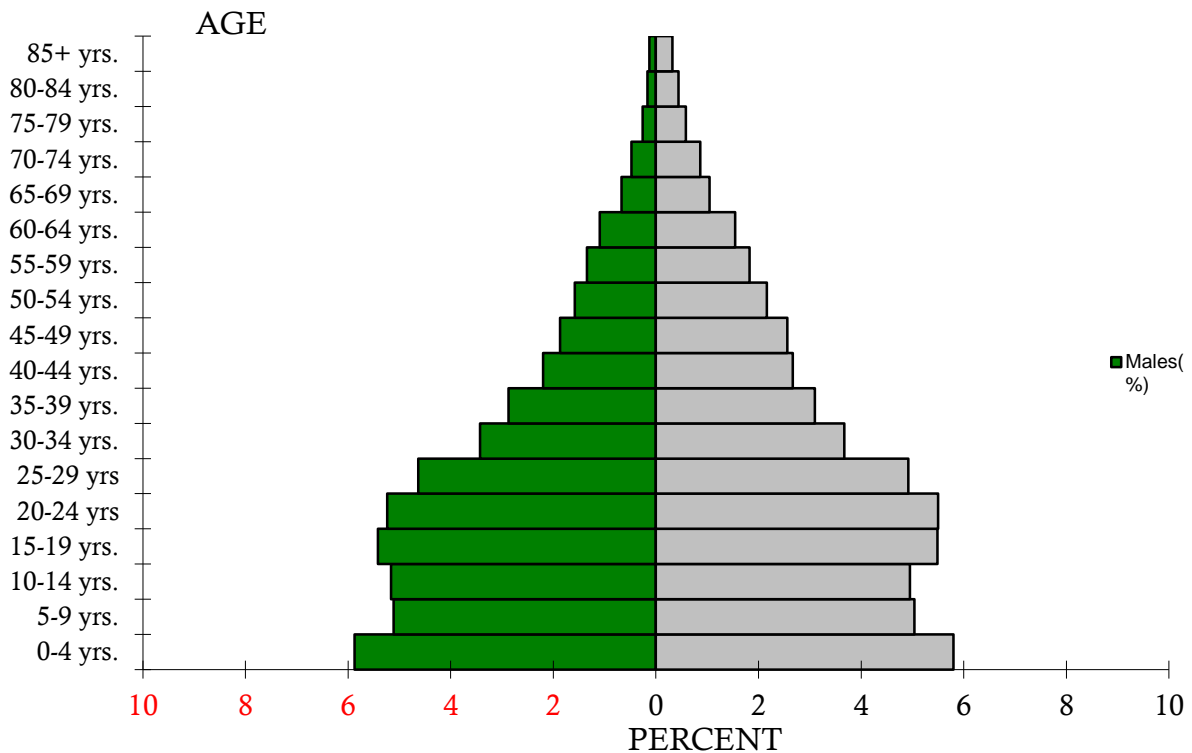
“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (uMhlathuze Local Municipality, 2018, p. 35).

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The project is located within the Alton area of Richards Bay and as such falls under the uMhlathuze (KZN282) local and Uthungulu (DC28) district municipalities within the province of KwaZulu-Natal. The demographics pertaining to these areas, as sourced from Statistics South Africa, are described below.

3.1. PROVINCIAL

KwaZulu-Natal (KZN) covers a geographical area of 94 361.32 km² and, according to Census 2011 (Statistics South Africa, 2011) had a population of 10 267 300 people living within 2 539 429 households resulting in a population density of 108.81 people per km² and a household density of 26.97 households per km². By 2018 the population of KZN was estimated to have grown to 11 384 700 people (Statistics South Africa, 2018a). With regard to age structure 31.9% of the population of KZN are below 16 years of age while 63.1% are between 15 and 64 years and 4.9% are above 64 years. The population pyramid of KZN is illustrated in **Figure 4**.



Source: (Statistics South Africa, 2011)

Figure 4: Population pyramid KwaZulu-Natal

As the Mid-year population estimates remain at a provincial level and are not projected to the district and local municipal levels, for comparative purposes, data gathered during Census 2011, will be used where appropriate notwithstanding that it is rather outdated.

On this basis and in respect of population grouping, at 86.81% the dominant population group in KwaZulu-Natal is black African people. At 77.82% isiZulu is the dominant home language spoken across the province followed by English which is spoken by 13.17% of the population.

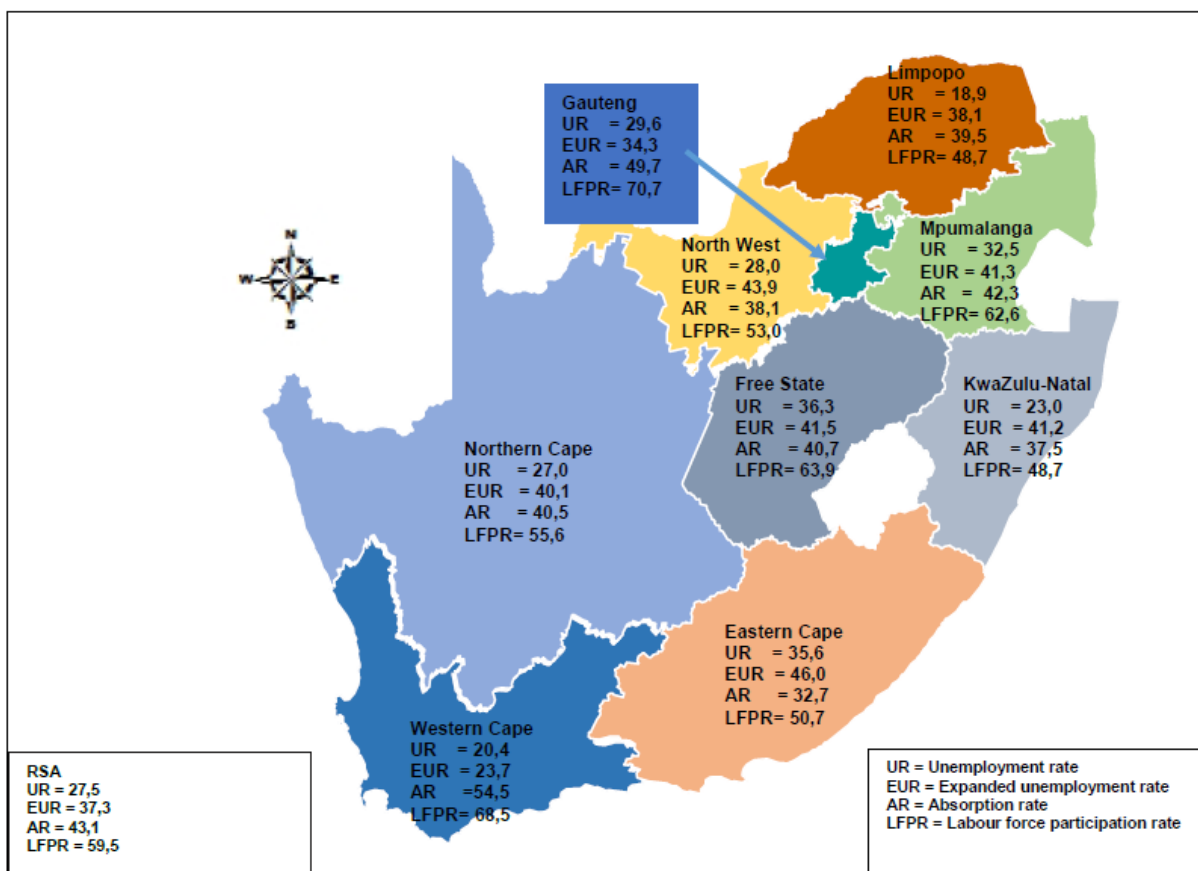
The dependency ratio of the KwaZulu-Natal, which indicates the burden placed on the population of working age, between 15 and 64 years, who support children under 15 years and people over 65 years, is 58.5. The sex ratio, which measures the proportion of males to females, is 90.5 indicating a higher number of females across the province. Between 1996 and 2001 the population growth rate of KZN was 3.23% p.a. while between 2001 and 2011 it dropped to 0.69% p.a.

In 2011 the official unemployment rate in KZN was 33% with the official unemployment rate amongst the youth, aged between 15 and 34 years, being 42.1%. By the 3rd quarter of 2018 the official unemployment rate in the province had dropped to 23%. This figure must, however, be considered with caution as the official unemployment rate is defined by Stats SA as follows;

“Unemployed persons are those (aged 15–64 years) who:

- a) Were not employed in the reference week and;*
- b) Actively looked for work or tried to start a business in the four weeks preceding the survey interview and;*
- c) Were available for work, i.e. would have been able to start work or a business in the reference week or;*
- d) Had not actively looked for work in the past four weeks but had a job or business to start at a definite date in the future and were available.”* (Statistics South Africa, 2018b, p. 17).

Considering this, in the 3rd Quarter of 2018 the unofficial employment rate in KZN stood at 41.2%. During this period the labour absorption rate was 37.5% while the labour force participation rate was 48.7%. A summary of the labour market indicators illustrated on a comparative basis across South Africa is provided in **Figure 5**.



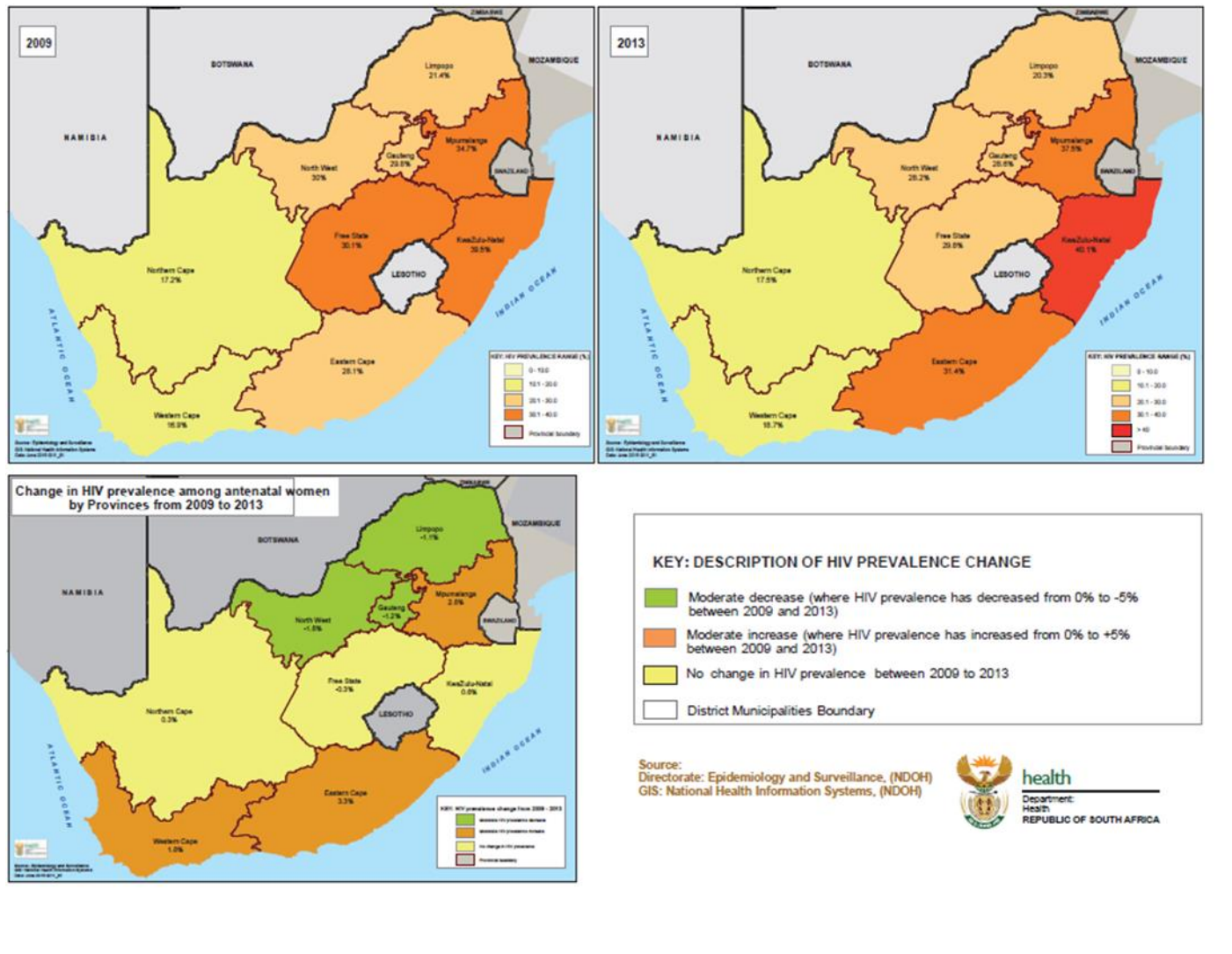
Source: (Statistics South Africa, 2018b, p. 9)

Figure 5: Labour market indicators 2nd Quarter 2018

With regard to the household dynamics in KwaZulu-Natal the average size of a household in 2011 was 4.0 with 46.6% of all households being headed by females, 71.6% of households living within formal dwelling types and 55.1% either owning or paying off their dwelling. Considering the state of household services within the province over the same time span, 40.4% had flush toilets connected to the sewerage system, 51.5% enjoyed a weekly refuse removal system, 40% had piped water delivered inside the dwelling while 77.9% used electricity for lighting purposes.

According to the 2013 National Antenatal Sentinel HIV Prevalence Survey, at 40.1%, KwaZulu-Natal has the highest HIV prevalence rate amongst antenatal women compared against the other 8 South African provinces. At 17.5%, the Northern Cape Province had the lowest HIV prevalence rate amongst antenatal women with the national prevalence rate presenting at 29.7%. HIV prevalence amongst antenatal women is illustrated, across all South African provinces, in **Figure 6**.

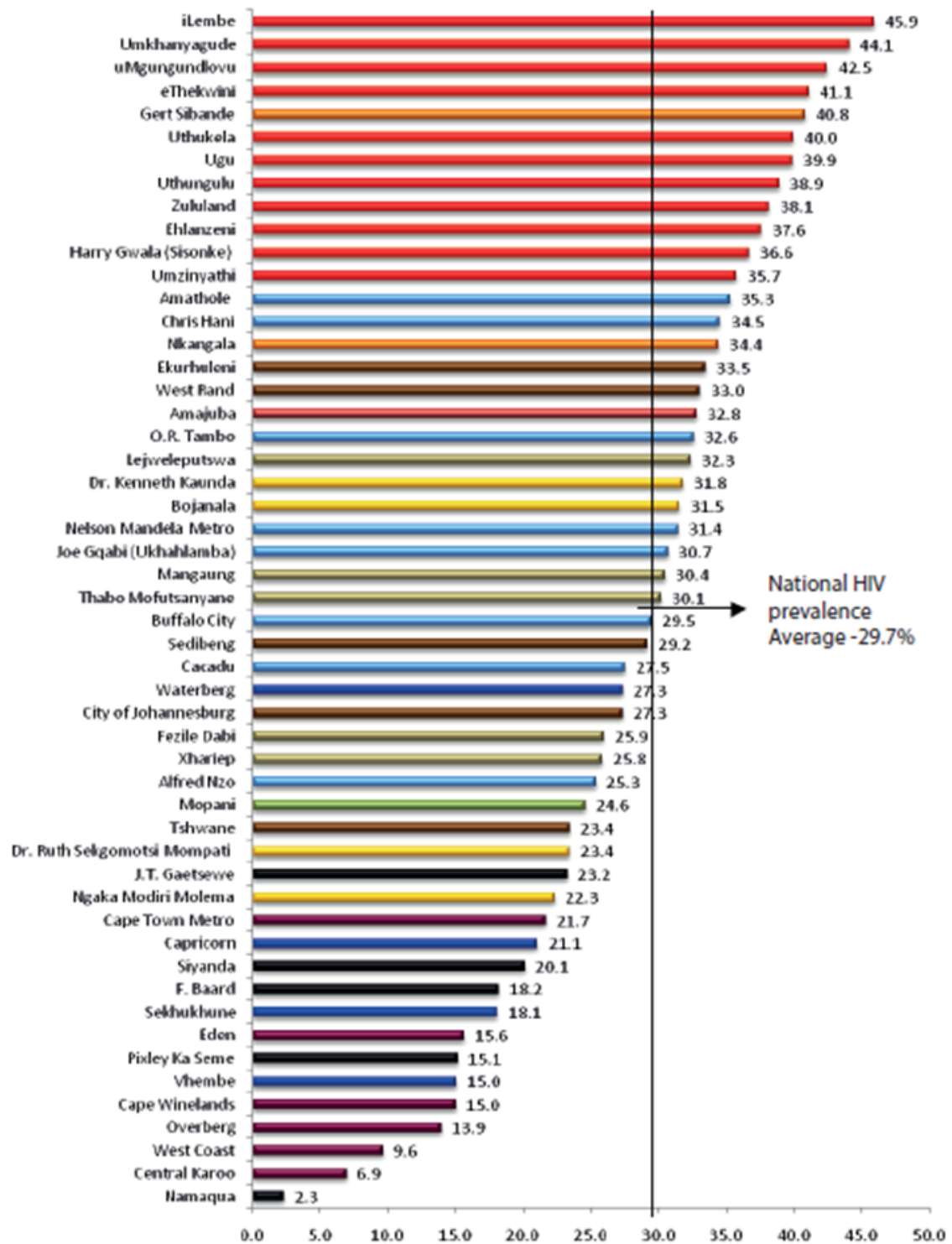
The 2013 National Antenatal Sentinel HIV Prevalence Survey extended to the district level which indicated that, at 38.9%, the uThungulu (now the King Cetshwayo) District Municipality had the 8th highest HIV prevalence level amongst antenatal women when compared to all districts across the country. In contrast the Namaqua District Municipality had the lowest level of HIV prevalence across the country at 2.3% followed by the Central Karoo District at 6.9%. Consequently, it is quite clear that the prevalence of HIV is extremely high in the area in comparison with the rest of South Africa as illustrated in **Figure 7**.



Source: (National Department of Health, 2015, p. 27)

Figure 6: HIV prevalence amongst antenatal women – South Africa 2009 – 2013

Basic Social Impact Assessment for the proposed Wilmar (Pty) Ltd Vegetable Oil Pipeline Port of Richards Bay, Kwa Zulu Natal



Source: (National Department of Health, 2015, p. 29)

Figure 7: HIV prevalence across the 52 districts – 2013

3.2. MUNICIPAL

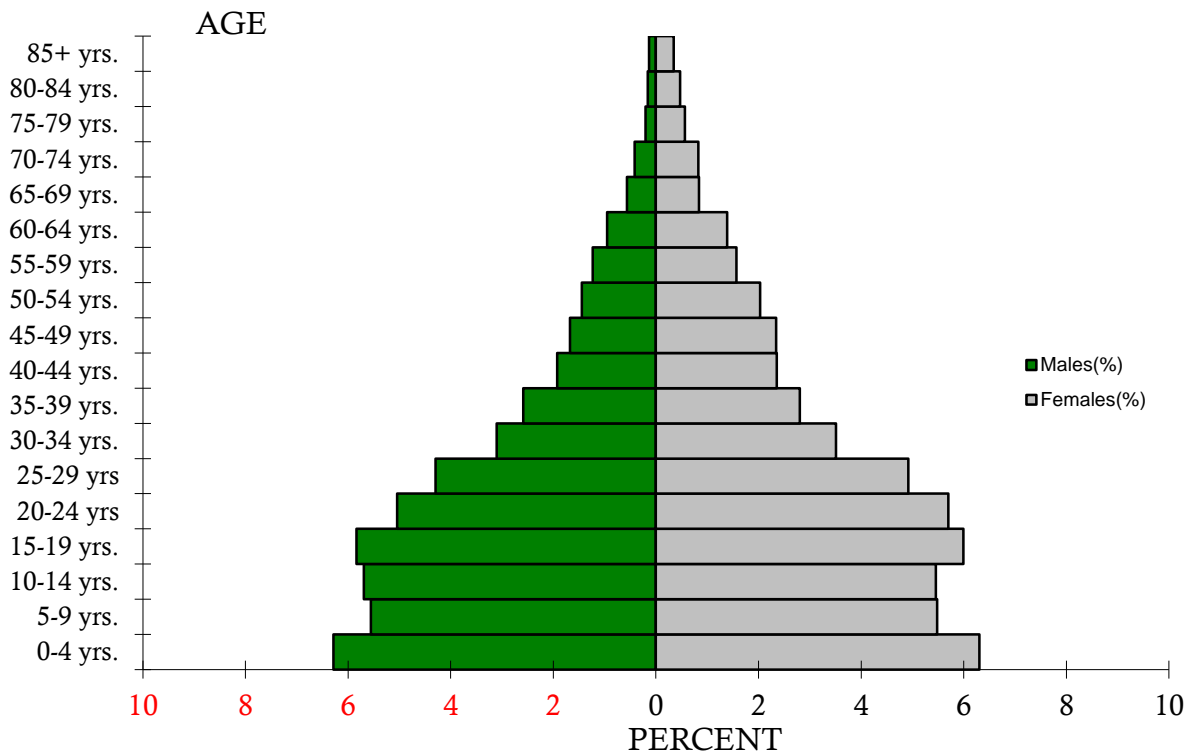
The project impacts the King Cetshwayo, formerly the uThungulu District Municipality, as well as the uMhlathuze Local Municipality. The King Cetshwayo District Municipality covers a geographical area of 8 213.39 km² and, with a population of 907 519 people living within 202 976 households, has a population density of 110.49 people per km² and a household density of 24.71 households per km². The local municipality of uMhlathuze covers a geographical area of 793.18 km² and has a population of 334 459 people living within 86 609 households. This gives the municipality a respective population and household density of 421.67/km² and 109.19/km². The whole area has a higher proportion of females to males with the dominant population group and language being black African and isiZulu. This data is compared across the province, district and local municipalities in **Table 2** while the population pyramids of the district and local municipalities are illustrated in **Figure 8** and **Figure 9**.

The principal towns in the local municipal area are Empangeni, which functions largely as a commercial and service centre, Richards Bay which has an industrial character, sSikhaleni, Port Dunford, Vulindlela, Felixton, eNseleni and Ngwelezane. The Port of Richards Bay is considered SA's premier bulk handling port built to deal with a range of bulk commodities and has the largest coal export facility in Africa.

Table 2: Geographic and demographic data

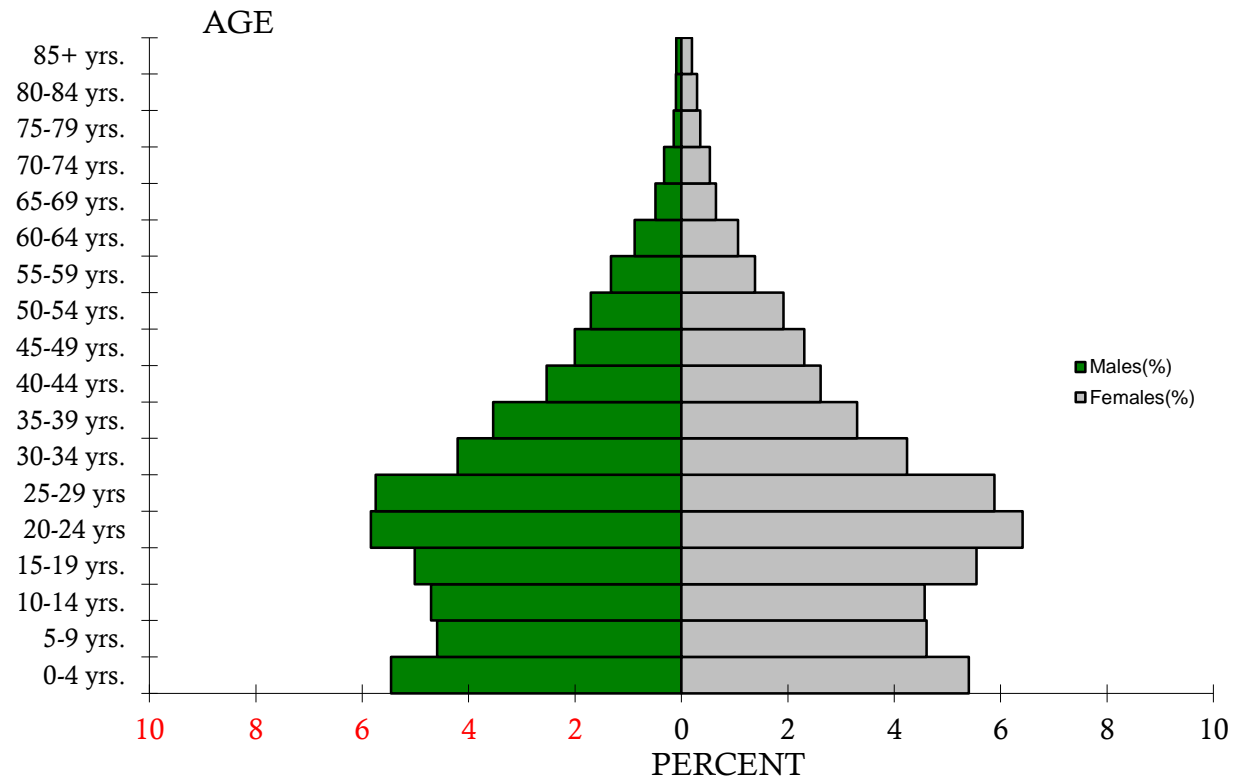
	KWAZULU-NATAL	DC28: uThungulu (King Cetshwayo) DM	KZN282: uMhlathuze LM
Geographical Area	94,361.32 km ²	8,213.39 km ²	793.18 km ²
Population	10,267,300	907,519	334,459
Households	2,539,429	202,976	89,609
Population Density	108.81/km ²	110.49/km ²	421.67/km ²
Household Density	26.91/km ²	24.71/km ²	109.19/km ²
Female	52.48%	52.90%	51.28%
Male	47.52%	47.10%	48.72%
Black African	86.81%	94.43%	87.71%
Indian/Asian	7.37%	1.61%	3.78%
White	4.18%	3.24%	7.34%
Coloured	1.38%	0.55%	0.95%
Other	0.26%	0.16%	0.51%
Home Language	isiZulu 77.82%	isiZulu 89.11%	isiZulu 81.35%
	English 13.17%	English 5.09%	English 9.66%
	isiXhosa 3.36%	Afrikaans 2.27%	Afrikaans 5.11%
	Afrikaans 1.59%	isiNdebele 1.32%	isiNdebele 1.19%

Source: (Statistics South Africa, 2011)



Source: (Statistics South Africa, 2011)

Figure 8: Population pyramid King Cetshwayo District Municipality



Source: (Statistics South Africa, 2011)

Figure 9: Population pyramid uMhlatuze Local Municipality

The dependency ratio, which indicates the burden of support for children under 16 years and people over 64 years placed on the working population aged between 15–64 years, is highest across the district at 64.7 and lowest within the local municipal area at 48.2. With regard to the sex ratio the King Cetshwayo District Municipality has a higher proportion of females to males within the population at 89.0 while, at 95.0, the uMhlathuze Local Municipality had the closest proportion of males to females although females still outnumber males within the local municipality. Between 2001 and 2011 uThungulu had the highest population growth rate compared to both the district and province with a population growth rate of 1.45%. This data is compared across the region in **Table 3**.

Table 3: Age structure, dependency ratio, sex ratio and population growth

Municipality	Age Structure						Dependency Ratio		Sex Ratio		Population Growth (% p.a.)	
	<15		15-64		65+		Per 100 (15-64)		Males per 100 females			
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
KWAZULU-NATAL	34.9%	31.9%	60.4%	63.1%	4.7%	4.9%	65.4	58.5	87.7	90.5	2.23	0.69
DC28: King Cetshwayo	38.3%	34.8%	57.3%	60.7%	4.4%	4.5%	74.5	64.7	86.1	89.0	3.00	0.24
KZN282: uMhlathuze	33.0%	29.3%	64.2%	67.5%	2.8%	3.2%	55.8	48.2	93.8	95.0	7.69	1.45

Source: (Statistics South Africa, 2011)

The unemployment rate in the area is highest across the province at 33% and lowest within the uMhlathuze LM at 23.7%. The level of unemployment in the King Cetshwayo District Municipality was 34.7% in 2011. In respect of education, at 16% the King Cetshwayo district has the highest percentage of the population aged 20 and above that has no schooling while at 7.5% the uMhlathuze LM has the lowest percentage. Accordingly the uMhlathuze has the highest percentage of the population having a matric level of education at 29.2% compared to the province at 31.1% and the district at 30.4%. Data pertaining to education as discussed above is compared across the municipalities and at the provincial levels in **Table 4**.

The average household size is smallest within the uMhlathuze LM at 3.9 compared to 4.0 and 4.5 across the province and district respectively. There is also a lower percentage of female headed households, at 40.7%, within the local municipality than there is across the province and district. In respect of dwelling types, formal types of dwelling dominate the area with the local municipality having the highest percentage at 88.3% followed by the province at 71.6% and the district at 70%. At 51.8 and 52.7 percent respectively, fewer households across the district and local municipalities either own or are paying off their dwellings than is the case across the province which has a percentage of 55.1 households either owning or paying off their dwellings. Data pertaining to household dynamics across the region is presented in **Table 5**.

Table 4: Labour market and education aged 20 +

Municipality	Labour Market				Education (age 20 +)					
	Unemployment Rate (official)		Youth Unemployment Rate (Official) 15-34 years		No Schooling		Matric		Higher Education	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
KWAZULU-NATAL	49.0%	33.0%	58.4%	42.1%	21.9%	10.7%	19.6%	31.1%	6.9%	9.0%
DC28: uThungulu/King Cetshwayo	50.3%	34.7%	59.4%	44.4%	31.6%	16.0%	16.6%	30.4%	5.8%	8.2%
KZN282: uMhlathuze	40.6%	31.0%	50.7%	40.8%	18.5%	7.5%	25.2%	39.2%	10.9%	14.0%

Source: (Statistics South Africa, 2011)

Table 5: Household dynamics

Municipality	Household dynamics									
	Households		Average household size		Female headed households		Formal dwellings		Housing owned/paying off	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
KWAZULU-NATAL	2,117,274	2,539,429	4.4	4.0	46.5%	46.6%	60.2%	71.6%	56.7%	55.1%
DC28: uThungulu/King Cetshwayo	171,480	202,976	5.0	4.57	47.3%	48.9%	52.7%	70.0%	51.5%	51.8%
KZN282: uMhlathuze	67,127	86,609	4.1	3.9	35.9%	40.7%	76.5%	88.3%	54.0%	52.7%

Source: (Statistics South Africa, 2011)

3.3. PROJECT FOOT PRINT

At a project foot print level the project is located within Alton listed as sub place 538011008 during Census 2011. Alton is an industrial area within Richards Bay and incorporates a section of the Port of Richards. The demographic data in respect of Alton as collected during Census 2011 is as follows:

Geographic area = 44.84 km²

Population = 277 people

Population density = 6.18/km²

Households = 43

Household density = 0.096/km²

Gender	People	Percentage
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Male	244	88.09%
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Female	33	11.91%
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Population group	People	Percentage
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Black African	262	94.58%
---------------	-----	--------

White	13	4.69%
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Other	1	0.36%
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Indian or Asian	1	0.36%
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First language	People	Percentage
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isiZulu	202	75.09%
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English	38	14.13%
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Afrikaans	12	4.46%
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Other	6	2.23%
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Setswana	3	1.12%
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isiXhosa	2	0.74%
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Sesotho	2	0.74%
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isiNdebele	1	0.37%
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Xitsonga	1	0.37%
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SiSwati	1	0.37%
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Sepedi	1	0.37%
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Not applicable	8	
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4. IDENTIFICATION OF POTENTIAL IMPACTS

The social impact variables considered across the project are in accordance with Vanclay's list of social impact variables clustered under the following main categories as adapted by Wong (Vanclay, 2002; Wong, 2013) and include;

1. Health and social well-being

2. Quality of the living environment (Liveability)
3. Economic
4. Cultural

These categories are not exclusive and at times tend to overlap as certain processes may have an impact within more than one category.

4.1. HEALTH AND SOCIAL WELLBEING

The health and social wellbeing impacts related to the project include.

- Annoyance, dust and noise
- Increase in crime
- Increased risk of HIV infections
- Influx of workers
- Hazard exposure.

These impacts are addressed separately below.

4.1.1. ANNOYANCE, DUST AND NOISE

Annoyance, dust and noise will be more evident during the construction phase of the project, as construction activities will result in the generation of dust and noise from construction vehicles and equipment. It is, however, unlikely that the impact of the annoyance factor along with the generation of dust and noise will be significant for two reasons.

Firstly, construction of the pipeline will be undertaken within an industrial zone and as such will be masked to some extent by other activities and heavy vehicle traffic in the area. Secondly, no access roads will need to be constructed and there is no need to excavate trenches as, apart from road and rail crossings, the pipe will remain above ground. There may be a need for surface improvement in some areas to improve drainage and stabilise the area for the safe operation of the crane truck. In this regard gravel and small plant such as a TLB will be utilised. Other equipment that will be utilised during construction consists of;

- Welding machines
- Concrete delivery trucks
- A truck mounted crane and
- Track mounted piling rig.

During the operational phase of the project a routine inspection of the pipeline will be undertaken approximately every quarter which is most unlikely to result in the generation of any annoyance, dust and/or noise. Repair and maintenance activities are likely to be limited and to occur on an irregular basis.

4.1.2. INCREASE IN CRIME

Construction activities will be undertaken during daylight hours and the workforce will be accommodated offsite thus reducing the risk of an increase in crime associated with the project. However, in 2018 there was a total of 8 308 crimes reported across the Richards Bay Precinct indicating a relatively high level of crime within the precinct (Crime Stats SA, 2018). Considering this it would be pertinent for the contractors to ensure that the appropriate security measures are in place during construction and that recruitment is undertaken in a manner to prevent job seekers from loitering in the vicinity of the construction camp/laydown area and construction activities.

4.1.3. INCREASED RISK OF HIV INFECTIONS

With an HIV prevalence rate amongst antenatal women of 38.9% the uThungulu (now the King Cetshwayo) District Municipality had the 8th highest HIV prevalence rate when compared to all districts across South Africa. Consequently, with the area having such a high HIV prevalence rate the project will not have any effect on the risk of HIV in the area and therefor will not be assessed below.

4.1.4. INFLUX OF WORKERS

It is estimated that over the construction period, which will stretch over ~6-9 months, the peak construction workforce will reach approximately 50 workers. Of these most are likely to be recruited locally. As the area is highly populated and the majority of the workforce will be locally recruited it is most unlikely that there will be an influx of workers that will have any impact on local communities.

During the operational phase of the project the workforce will comprise of 250 workers who will be accommodated off site and who will be recruited locally. Consequently, there is little likelihood of any risk associated with the influx of workers occurring during this phase of the project.

4.1.5. HAZARD EXPOSURE

After exiting Transnet servitudes in the harbour the pipeline remains above ground while on the Industrial Development Zone and Municipal properties. This limits the need for any heavy excavation equipment being used and will only require the use of TLBs, welding machines, concrete delivery, crane trucks and track mounted piling rig. In addition the area is an industrial zone and does not have a high level of public traffic. Accordingly, any exposure to hazards is most likely to be limited.

4.2. QUALITY OF THE LIVING ENVIRONMENT

The following quality of the living environment impacts are related to the project.

- Disruption of daily living patterns
- Disruptions to social and community infrastructure
- Transformation of the sense of place.

4.2.1. DISRUPTION OF DAILY LIVING PATTERNS

If there are any disruptions to daily living patterns these are likely to be minimal and restricted to the construction phase of the project. These disruptions are only likely to be associated with the delivery of materials and machinery to site and the transportation of workers to and from site.

4.2.2. DISRUPTION TO SOCIAL AND COMMUNITY INFRASTRUCTURE

With the workforce associated with the construction phase peaking at 50 people, of which most are likely to be recruited locally, it is unlikely that the construction of the project will have any significant effect on social and community infrastructure in the area. The operational phase of the project will have no effect on the disruption of social and community infrastructure at all.

4.2.3. TRANSFORMATION OF THE SENSE OF PLACE

The project is situated within an industrial zone close to the harbour and during both the construction and operational phases of the project will not transform the sense of place of the area at all. Consequently this impact will not be evaluated below.

4.3. ECONOMIC

The economic impacts related to the project include.

- Job creation and skills development
- Socio-economic stimulation

4.3.1. JOB CREATION AND SKILLS DEVELOPMENT

The project will lead to the creation of both direct and indirect job which will have a positive economic benefit within the region. In this regard there are 50 jobs associated with the construction phase of the project and 250 with the operational phase including the IDZ factory or processing plant. Many of the beneficiaries are likely to be historically disadvantaged members of the community and the project will provide opportunities to develop skills amongst these people. It is estimated that both the direct and indirect jobs that will be generated during construction are likely to amount to 360 and that the labour costs of the project will amount to R 6 million.

4.3.2. SOCIO-ECONOMIC STIMULATION

In respect of total capital expenditure the initial estimate for the pipeline is ~R 60 million while the initial site estimate is R 1.2 billion. Of this it is expected that 50% will be spent within South Africa with 20% being spent within the local municipality resulting in a positive stimulus on the local community.

4.4. CULTURAL IMPACTS

The area is an industrial zone and there are no obvious cultural impacts from a social perspective. A heritage impact assessment was undertaken to identify any heritage impacts and it was found that, *[i]t is unlikely that the proposed development will impact on any significant heritage resources. There is no heritage objection to the proposed development.*" (CTS Heritage and eThembeni Heritage Consultants, 2018) Accordingly this impact will not be assessed below.

5. IMPACT ASSESSMENT

Although not traditional to assess the impacts during the basic assessment stage it has become evident during this assessment that the social impacts associated with this project are minimal. Accordingly, it is quite unlikely that it would be necessary to undertake a full social assessment as a full assessment is most unlikely to add any value beyond what has been established through the basic assessment. Considering this it would be pertinent to then assess the impacts that have been identified and to suggest appropriate mitigation and optimisation measure in respect of these impacts.

This assessment will be undertaken below and will cover the following project phases;

- Planning and design
- Construction
- Operational and
- Decommissioning.

In addition both the no-go project alternative and the cumulative impacts associated with the project will be assessed.

5.1. PLANNING AND DESIGN PHASE

No alternatives are available as the route has been specifically identified for the pipeline to reach the Richards Bay Industrial Development Zone site from the allocated Transnet berths. Further to this it is evident that the project falls within an industrial zone and fits with legislation and key planning and policy documentation as discussed under Section 3. Applicable Policy and Legislation above.

Mitigation measures

No mitigation measures are suggested in association with the planning and design phase of the project.

5.2. CONSTRUCTION PHASE

Most of the impacts discussed above apply over the short-term to the construction phase of the project and include:

- Annoyance, dust and noise
- Increase in crime

- Influx of construction workers
- Hazard exposure
- Disruption of daily living patterns
- Disruptions to social and community infrastructure
- Job creation and skills development
- Socio-economic.

Each of these impacts is assessed below with mitigation and optimisation measures being suggested in **Table 6** to **Table 13**.

Table 6: Annoyance dust and noise

Nature: Nuisance impacts as a result of an increase in respect dust and noise		
	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Minor = 2	Minor = 2
Probability	Highly probable = 4	Probable = 3
Significance	Low (16)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ Where traffic may be disrupted ensure that a safe and effective traffic management procedure is in place to manage the flow of traffic around construction activities.
- ✓ Where necessary ensure that dust suppression measures, such as damping, are implemented to reduce dust along the construction route and in the vicinity of the laydown area in order to suppress dust generated by traffic.
- ✓ Ensure all vehicles and plant is maintained and is operated within the noise specification limits of the manufactures.
- ✓

Cumulative impacts:

It is unlikely that there will be any cumulative impacts associated with annoyance dust and noise.

Residual impacts:

It is unlikely that this impact will lead to any residual impacts.

Table 7: Increase in crime

Nature: An increase in crime associated with construction activities.

	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Minor = 1	Minor = 1
Probability	Improbable = 2	Very improbable = 1
Significance	Low (6)	Low (3)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ Ensure that construction workers are clearly identifiable. All workers should carry identification cards and wear identifiable clothing.
- ✓ Fence off the construction camp/laydown area and control access to this area.
- ✓ Appoint an independent security company to monitor the site.
- ✓ Discourage loitering within the vicinity of the construction camp/laydown area and construction sites.
- ✓ Discourage work seekers loitering within the vicinity of recruitment points, the construction camp/laydown area and construction sites.

Cumulative impacts:

It is unlikely that there will be any cumulative impacts associated with an increase in crime.

Residual impacts:

It is unlikely that this impact will lead to any residual impacts.

Table 8: Influx of construction workers

Nature: An influx of construction workers to work on the project.

	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Low = 4	Minor = 2
Probability	Highly probable = 4	Highly probable = 4
Significance	Low (24)	Low (16)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ Communicate the limitation of job opportunities created by the project through Community Leaders and Ward Councillors.

Cumulative impacts:

It is unlikely that there will be any cumulative impacts associated with the influx of construction workers.

Residual impacts:

It is unlikely that this impact will lead to any residual impacts.

Table 9: Hazard exposure

Nature: An increased hazard risk associated with the construction of the project		
	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Low = 4	Low = 3
Probability	Highly probable = 4	Probable = 3
Significance	Low (24)	Low (15)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes
Mitigation:		
<ul style="list-style-type: none"> ✓ Ensure that all construction equipment and vehicles are properly maintained at all times. ✓ Ensure that operators and drivers are properly trained and make them aware, through regular toolbox talks, of any risk they may pose to the community. In this regard place specific emphasis on the vulnerable sector of the population such as children and the elderly. ✓ Ensure that fires that may be ignited by construction staff are only lit in designated areas and that the appropriate safety precautions, such as not lighting fires in strong winds and completely extinguishing fires before leaving them unattended, are strictly adhered to. ✓ Make staff aware of the dangers and consequences of fire during regular tool box talks. 		
Cumulative impacts:		
It is unlikely that there will be any cumulative impacts associated with hazard exposure.		
Residual impacts:		
It is unlikely that this impact will lead to any residual impacts.		

Table 10: Disruption of daily living patterns

Nature: The disruption of the daily living patterns of people working and commuting in the area as associated with construction.

	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Minor = 2	Minor = 1
Probability	Probable = 3	Improbable = 2
Significance	Low (16)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ Ensure that, at all times, people have access to their places of work and that the flow of traffic around construction sites and the laydown area is effectively managed in order to limit any disruptions to the general public.

Cumulative impacts:

It is unlikely that there will be any cumulative impacts associated with the disruption of daily living patterns.

Residual impacts:

It is unlikely that this impact will lead to any residual impacts.

Table 11: Disruption to social and community infrastructure

Nature: Disruption to social and community infrastructure due to construction activities.

	Without mitigation	With mitigation
Extent	Local = 1	Local = 1
Duration	Short-term = 1	Short-term = 1
Magnitude	Minor = 2	Minor = 1
Probability	Probable = 3	Improbable = 2
Significance	Low (16)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ Regularly monitor the effect that construction is having on infrastructure and immediately report any damage that may occur to infrastructure to the appropriate authority.
- ✓ Ensure that where access is obstructed that this access is swiftly restored to an acceptable state.

Cumulative impacts:

It is unlikely that there will be any cumulative impacts associated with the disruption to social and community infrastructure.

Residual impacts:

It is unlikely that this impact will lead to any residual impacts.

Table 12: Job creation and skills development

Nature: The creation of jobs and the development of skills associated with construction.

	Without mitigation	With mitigation
Extent	Regional = 3	Regional = 3
Duration	Short-term = 1	Short-term = 1
Magnitude	Moderate = 5	Moderate = 6
Probability	Highly probable = 4	Highly probable = 4
Significance	Medium (32)	Medium (36)
Status (positive or negative)	Positive	Positive
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be enhanced?	Yes	Yes

Mitigation:

- ✓ Wherever feasible, local residents should be recruited to fill semi and unskilled jobs.
- ✓ Women should be given equal employment opportunities and encouraged to apply for positions.
- ✓ A skills transfer plan should be put in place at an early stage and workers should be given the opportunity to develop skills which they can use to secure jobs elsewhere post-construction.
- ✓ A procurement policy promoting the use of local business should, where possible, be put in place to be applied throughout the construction phase.

Cumulative impacts:

The creation of jobs and a skills development initiative is likely to have some impact in the region albeit a limited impact considering the size and duration of the project.

Residual impacts:

The development of skills could leave a positive impact if a skills development process is implemented.

Table 13: Socio-economic development

Nature: Contribution towards the regional economy		
	Without mitigation	With mitigation
Extent	Regional = 3	Regional = 3
Duration	Short-term = 1	Short-term = 1
Magnitude	Moderate = 5	Moderate = 6
Probability	Highly probable = 4	Highly probable = 4
Significance	Medium (36)	Medium (40)
Status (positive or negative)	Positive	Positive
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be optimised?	Yes	Yes
Mitigation:		
✓ A procurement policy promoting the use of local business should, where possible, be put in place to be applied throughout the construction phase.		
Cumulative impacts:		
Total capital expenditure during the construction and operational phases of the project is estimated at approximately R 60 million for the pipeline and R 1.2 billion in respect of the initial site estimate. With 50% of this expenditure being spent in South Africa there is likely to be a cumulative impact in respect of the regional, provincial and national economies.		
Residual impacts:		
The project is likely to result in a residual impact in respect of industrial development in the region and will augment the Richards Bay Industrial Development Zone.		

5.3. OPERATIONAL PHASE

The operation of the pipeline will be restricted to pumping vegetable oils such as palm, soybean and sunflower oils from container ships moored in the harbour to the processing plant in the RBIDZ. This pumping process will be controlled at each end with no operational infrastructure being required between the delivery and receiving ends of the process. The only activities associated with the operational phase of the pipeline will be a quarterly inspection and irregular maintenance and repair activities as and when necessary. Consequently the only impact associated with the operational phase of the project will be an economic impact.

In addition to this the operation of the pipeline forms part of a larger enterprise, the processing of oils for human consumption in the form of cooking oil and margarine/fats.

Consequently, the operation of the pipeline is intrinsically linked to the operation of the processing plant and therefore is evaluated below in association with the processing plant.

Table 14: Socio-economic stimulation

Nature: Contribution towards the regional economy in respect of the pipeline in association with the processing plant.

	Without mitigation	With mitigation
Extent	Regional = 3	Regional = 3
Duration	Long-term = 4	Long-term = 4
Magnitude	Moderate = 6	Moderate = 7
Probability	Highly probable = 4	Highly probable = 4
Significance	Medium (52)	Medium (56)
Status (positive or negative)	Positive	Positive
Reversibility	Yes	Yes
Irreplaceable loss of resources	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation:

- ✓ A procurement policy promoting the use of local business should, where possible, be put in place to be applied throughout the operational phase.

Cumulative impacts:

Capital expenditure in respect of the initial site estimate is estimated at R 1.2 billion. With 50% of this expenditure being spent in South Africa there is likely to be a cumulative impact in respect of the regional, provincial and national economies.

Residual impacts:

The project is likely to result in a residual impact in respect of industrial development in the region and will augment the Richards Bay Industrial Development Zone.

5.4. DECOMMISSIONING PHASE

If the project was to be completely decommissioned the major social impacts likely to be associated with this would be the loss of jobs and revenue stream that stimulated the local economy and flowed into the municipal coffers. It is estimated that the project has a lifespan of over 20. Decommissioning associated with the pipeline is likely to have an insignificant impact; however, it is more likely that decommissioning would be associated with the entire operation of the processing facility of which the pipeline would be an insignificant part.

Considering the time period to decommissioning and the lack of information regarding the large operations of which the pipeline forms part, the uncertainty of what would exactly occur and the significance of the impact in isolation it would be rather meaningless to attach

assessment criteria to decommissioning at this point. Notwithstanding this however, prior to decommissioning the following mitigation measures are suggested.

Decommissioning mitigation measures

- Ensure that a retrenchment package is in place;
- Ensure that staff have been trained in a manner that would provide them with saleable skills within the job market;
- Ensure that the site is cleared responsibly and left in a safe condition.

The no-go project option will be considered next.

5.5. ASSESSMENT OF NO-GO PROJECT ALTERNATIVE

The no-go project option would mean that the social environment is not affected as the status quo remains. On a negative front it would also mean that all the positive aspects associated with the project would not materialise. Consequently, there would be no job creation and no revenue streams into the local economy, in this sense the No-Go impact will probably be negative **High (65)** as illustrated in **Table 15**.

Table 15: No-Go alternative

Nature: The project does not proceed and the status quo remains in place.	
	Without mitigation
Extent	Regional = 3
Duration	Permanent = 5
Magnitude	Moderate = 5
Probability	Definite = 5
Significance	High (65)
Status (positive or negative)	Negative
Reversibility	Yes
Irreplaceable loss of resources	Yes
Can impacts be mitigated?	No

5.6. CUMULATIVE IMPACTS

The project is relatively small in nature with most impacts occurring during the construction phase which stretches over 6 months and in addition to this the pipeline is located within an industrial zone. Consequently no cumulative impacts are expected to be associated with the project.

5.7. IMPACT SUMMARY

The impacts as assessed above are summarised in **Table 16**.

Table 16: Pre and post mitigation comparison of the impacts

Construction Phase					
Environmental parameter	Issues	Rating prior to mitigation	Average	Rating post mitigation	Average
Health & social wellbeing	Annoyance, dust and noise	-16		-12	
	Increase in crime	-6		-3	
	Influx of construction workers	-24		-16	
	Hazard exposure.	-24	-17.5	-15	-11.5
			Negative Low Impact		Negative Low Impact
Quality of the living environment	Disruption of daily living patterns	-16		-12	
	Disruptions to social and community infrastructure	-16	-16	-12	-12
			Negative Low Impact		Negative Low Impact
Economic	Job creation and skills development	32		36	
	Socio-economic stimulation	36	34	38	37
			Positive Medium Impact		Positive Medium Impact
Operational Phase					
Economic	Socio-economic stimulation	52	52	56	56
			Positive Medium Impact		Positive Medium Impact
No-go Project Alternative					
No-go project		-65	-65	No mitigation measures	
			Negative High Impact		
Cumulative Impacts					
No cumulative impacts are expected to be associated with the construction and/or the operation of the pipeline.					

6. CONCLUSION AND RECOMMENDATIONS

The project falls within an industrial zone and is away from residential areas which will limit the social impacts associated with the project. The construction of the pipeline is a relatively minor activity stretching over a relatively short time span of ~6 months. Most social impacts are associated with the construction phase of the project and include;

- Annoyance, dust and noise
- Increase in crime
- Influx of construction workers
- Hazard exposure
- Disruption of daily living patterns
- Disruptions to social and community infrastructure
- Economic

Of these impacts all are well within acceptable levels and all can be mitigated to reduce the negative social impacts and be optimised to enhance the positive impacts.

During the operational phase of the project edible oil will be pumped through the pipeline and the pumping operation will be controlled at each end by pumping oil from container ships directly into tanks at the processing plant located on RBIDZ property. There will be no operational infrastructure along the pipeline between the delivery and receiving ends. The only operational activity associated with the pipeline is a quarterly inspection of the pipeline and when necessary maintenance and repair activities which will be undertaken on an irregular basis and should not require major operations. Over the operational phase the pipeline will be intrinsically linked to the processing plant making it difficult to assess in isolation.

Considering this, no obvious fatal flaws associated with the proposed development can be identified and the project will result in limited negative impact and some positive impact on the social environment. Due to the magnitude and location of the project and its limited effect on the social environment it is unlikely that any further assessment will be required. Consequently, at a social level, there should be no problem with the proposed development proceeding with environmental authorisation.

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