

Social Impact Assessment for the proposed Mthatha Quarry S102 Mining Right Expansion within the Nyandeni Local Municipality, in the Eastern Cape

Prepared for

Transkei Quarries (Pty) Ltd



On behalf of



Document Detail

Project Number:	UMH01	Authority Reference:	EC0135MR- EC00039MR/102
Report Title:	Social Impact Assessment for the proposed Mthatha Quarry S102 Mining Right Expansion within the Nyandeni Local Municipality, in the Eastern Cape Province		
Project Name:	Application For Environmental Authorisation for the Proposed Expansion of the Mining Right at Mthatha Quarry Within the O.R. Tambo District Municipality and the Nyandeni Local Municipality in the Eastern Cape Province (EC0135MR-EC00039MR/102)		
Client Name:	Transkei Quarries (Pty) Ltd		
EAP:	Niara Environmental Consultants (Pty) Ltd		

Document History

Revision	EAP/Author	Reviewed By	Date of Issue	Comments
0	Vumile Ribeiro & Anela Sotashe	Greg Coates	15 December 2025	

Copyright Information

This document contains intellectual property and proprietary information that are protected by copyright in favour of Niara Environmental Consultants (Pty) Ltd (Niara) as the consultants. The document may therefore not be reproduced, used or distributed to any third party without the prior written consent of Niara.

The document is prepared exclusively for submission to Transkei Quarries (Pty) Ltd and is subject to all confidentiality, copyright and trade secrets, rules intellectual property law and practices of South Africa.

Independence

Niara Environmental Consultants (Pty) Ltd (Niara) and its personnel explicitly disclaim any warranties, whether expressed or implied, and disavow any legal liabilities or responsibilities stemming from the utilisation of this document or its contents

by any third party or entity. It is expressly stated that Niara assumes no negligence-based liability for matters falling beyond the agreed-upon scope of work.

Declaration of Independence

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

Specialist Information

Title of Specialist Study:	Social Impact Assessment for the proposed Mthatha Quarry S102 Mining Right Expansion within the Nyandeni Local Municipality, in the Eastern Cape
Specialist Company Name:	Niara Environmental Consultants (Pty) Ltd
Specialist Name:	Vumile Ribeiro
Specialist Identity Number:	8605090831080
Specialist Qualifications:	BSoc Sc (Hons) Environmental Analysis and Management
Professional Affiliation/Registration:	• Environmental Assessment Practitioners Association of South Africa (EAPASA) • International Association of Impact Assessment South Africa (IAIASA) • Public Health Association of South Africa (PHASA) • International Association for Public Participation (IAP2) • Society of South African Geographers (SSAG) • National Association for Clean Air (NACA)
Physical Address:	Office 1 Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg, 2195
Postal Address:	Office 1 Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg, 2195
Telephone Number:	+ 27 66 526 5099
Cellphone Number:	+27 82 767 2786
E-mail:	vumile@niara.co.za

Declaration by the Specialist

I Vumile Ribeiro, as duly authorised representative of Niara Environmental Consultants (Pty) Ltd., hereby confirm my independence and declare that I:

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- 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 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;
- All the particulars furnished by me in this form 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 NEMA Act.

Signature of the Specialist:	<i>V. Ribeiro</i>
Name of Company:	Niara Environmental (Pty) Ltd
Date:	12 November 2025

Undertaking under Oath/Affirmation

I Vumile Ribeiro swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist:	V. Ribeiro
Name of Company:	Niara Environmental (Pty) Ltd
Date:	12 November 2025

Declaration of Independence

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

Specialist Information

Title of Specialist Study:	Socio-Economic Impact Assessment for the proposed Realignment of National Route 8 Section 12 (km 52.96) to Section 13 (km 11.12), including Borrow Pits and Quarry Development, Mantsopa Local Municipality, Free State Province
Specialist Company Name:	Niara Environmental Consultants (Pty) Ltd
Specialist Name:	Anela Sotashe
Specialist Identity Number:	9102181109088
Specialist Qualifications:	- BSc Hons. (Environmental Monitoring and Modelling) Unisa (In progress) - BSc (Environmental Sciences) Walter Sisulu University (2014)
Professional Affiliation/Registration:	- Environmental Assessment Practitioners Association of South Africa (EAPASA) Cand. EAP Reg. 2021/3673 - International Association for Impact Assessment – South Africa (IAIAsa Reg. 6959)

Physical Address:	Office 1 Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg, 2195
Postal Address:	Office 1 Palm Place Office Park, 22 Bram Fischer Drive, Linden, Johannesburg, 2195
Telephone Number:	+ 27 66 526 5099
Cell phone Number:	+27 64 053 3208
E-mail:	anela@niara.co.za

Declaration by the Specialist

I Anela Sotashe, as duly authorised representative of Niara Environmental Consultants (Pty) Ltd., hereby confirm my independence and declare that I:

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- 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 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;
- All the particulars furnished by me in this form 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 NEMA Act.

Signature of the Specialist:	<i>a.sotashe</i>
Name of Company:	Niara Environmental (Pty) Ltd
Date:	15 December 2025

Undertaking under Oath/Affirmation

I Anela Sotashe, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist:	<i>a.sotashe</i>
Name of Company:	Niara Environmental (Pty) Ltd
Date:	15 December 2025

Specialist Checklist

In terms of the NEMA 2014 EIA Regulations contained in GN R982 of 04 December 2014 all specialist studies must comply with Appendix 6 of the NEMA 2014 EIA Regulations (GN R982 of 04 December 2014). The table below show the requirements as indicated in this Report.

EIA REGULATIONS 2017 GNR 327, 325 and 324 Appendix 6 CONTENT OF THE SPECIALIST REPORTS	In accordance with the EIA Regulations	Cross reference in this Report
(a) details of— the specialist who prepared the report; and the expertise of that specialist to compile a specialist report including a curriculum vitae;	✓	Section 1.4
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	✓	Section iii & v
(c) an indication of the scope of, and the purpose for which, the report was prepared	✓	Section 1.2
(cA) an indication of the quality and age of Base Data used for the specialist report	✓	Section 4
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and the levels of acceptable change	✓	Section 6
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	✓	Section 6
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	✓	Section 5
(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 7
(g) an identification of any areas to be avoided, including buffers;	✓	Section 5.8
(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	✓	Section 1.1
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	✓	Section 6.3
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities	✓	Section 8
(k) any mitigation measures for inclusion in the EMPr	✓	Section 11
(l) any conditions for inclusion in the environmental authorisation;	✓	None
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	✓	Section 14
(n) a reasoned opinion— i. whether the proposed activity, activities or portions thereof should be authorised; and (iA) regarding the acceptability of the proposed activity or activities; and 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;	✓	Section 15
(o) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	✓	Section 10
(p) any other information requested by the competent authority	✓	None

Executive Summary

Introduction

Transkei Quarries (Pty) Ltd, holder of Mining Right EC30/5/1/2/2/0135MR, operates the Mthatha Quarry on a 48.75-hectare portion of the Farm Zitatele No. 39, situated in the Magisterial Division of Libode, Eastern Cape Province, approximately 5 kilometers northeast of Mthatha central. The quarry supplies high-quality aggregate and sand to meet regional construction needs.

Due to declining resources within the existing mining right area, Transkei Quarries proposes to expand operations to 86.84 hectares. This expansion will enable the operation to sustain production at a mining rate of approximately 548,728 tonnes per annum for an estimated 30 years, while also incorporating previously disturbed areas for rehabilitation.

The expansion will not alter the workforce size or infrastructure but will extend the life of mine (LoM), ensuring the continuation of employment opportunities, economic contributions, and support services already established in the region. At the same time, the expansion requires amendments to existing environmental and mining authorisations in line with South African legislation, including the Mineral and Petroleum Resources Development Act (2002), the National Environmental Management Act (1998), and the National Water Act (1998).

This Social Impact Assessment (SIA) has been prepared to:

- Establish a socio-economic baseline for the project area, including settlements such as Ngolo village and surrounding communities within Mthatha.
- Assess the potential social and economic impacts (both positive and negative) associated with the quarry expansion.
- Consider community health, safety, wellbeing, and livelihood implications of the proposed project.
- Identify opportunities to enhance benefits (e.g., local employment, skills development, enterprise support) and propose mitigation measures for potential adverse impacts (e.g., blasting, dust, water use, land disturbance).
- Ensure alignment with relevant legislation and international good practice, such as the IFC Performance Standards (PS1 and PS4).

The SIA provides a framework for integrating social considerations into decision-making for the proposed mining right amendment, with the aim of supporting socially responsible and sustainable development in the Eastern Cape.

extraction.

Methodology

The Social Impact Assessment (SIA) was undertaken in alignment with the requirements of the National Environmental Management Act (NEMA, 1998) and the Environmental Impact Assessment (EIA) Regulations (2014, as amended). The

methodology combined both qualitative and quantitative approaches to assess potential social impacts, with emphasis on inclusivity and transparency.

Key methodological steps included:

- **Stakeholder Identification and Notification:** Key stakeholders, including landowners, adjacent communities, local government authorities, and identified Interested and Affected Parties (I&APs), were notified of the application through direct correspondence, public notices, and statutory advertisements.
- **Public Participation:** Engagement activities included public meetings, information sessions, and circulation of the Draft Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) for review. Opportunities were provided for verbal and written submissions.
- **Specialist Inputs:** Findings from associated specialist studies (e.g., environmental, hydrological, and traffic assessments) were integrated to inform potential social impacts.
- **Comment and Response Documentation:** All concerns raised by I&APs were captured, categorised, and addressed in a structured Comments and Response Report (CRR).
- **Impact Identification and Analysis:** Impacts were identified across themes such as employment, health and safety, livelihoods, property, access to resources, and governance. Each impact was evaluated in terms of nature, extent, duration, intensity, probability, and significance.

This approach ensured that both community perspectives and technical findings informed the identification of risks, benefits, and mitigation measures.

Activities

The proposed project entails the expansion of an existing quarry operation, which will involve the following activities:

- **Mining Operations:** The continued extraction of mineral resources through open-pit methods, including drilling, blasting, loading, and hauling of material.
- **Processing:** Crushing, screening, and grading of extracted material for distribution to the construction sector and associated industries.
- **Support Infrastructure:** Maintenance of access roads, stormwater management systems, stockpiles, waste rock disposal, and on-site workshops.
- **Employment Creation:** Recruitment of semi-skilled and unskilled labour from surrounding communities, alongside retention of existing employees.
- **Logistics and Transport:** Increased movement of haul trucks transporting materials to markets, with potential implications for road safety, dust emissions, and traffic congestion.

- **Environmental Management:** Implementation of mitigation measures as outlined in the EMP, including dust suppression, noise control, and progressive rehabilitation.

These activities form the basis upon which potential social impacts were assessed, as they directly affect the socio-economic environment of neighbouring communities.

Key Findings and Recommendations

The SIA identified both potential positive and negative impacts associated with the proposed quarry expansion:

Positive Impacts:

- **Employment Opportunities:** Short- to medium-term job creation for local residents, particularly semi-skilled and unskilled workers, with associated income and skills development benefits.
- **Local Economic Benefits:** Support for small businesses providing goods and services to the quarry, alongside indirect contributions to municipal revenue through rates and service charges.
- **Infrastructure Support:** Maintenance of access roads and provision of basic infrastructure improvements linked to quarry operations.

Negative Impacts:

- **Nuisance Impacts:** Dust emissions, noise, and vibrations from blasting may affect community health, well-being, and property structures.
- **Safety Risks:** Increased heavy vehicle traffic poses risks for road users, particularly pedestrians and public transport users.
- **Property and Livelihood Concerns:** Blasting activities may lead to cracks in dwellings and reduced property values, while dust may affect agricultural productivity in adjacent areas.
- **Governance and Trust Deficit:** Concerns were raised about transparency, accountability, and responsiveness to community grievances, highlighting the need for improved engagement.

Recommendations:



Figure 1-1: Recommendations

Table of Contents

1	Introduction.....	1
1.1	Project Locality	3
1.2	Scope of Work.....	3
1.3	Terms of Reference.....	5
1.4	Details and Expertise of Specialist	6
2	Project Description.....	8
2.1	Operational Phase Activities and Structures	9
2.2	Closure Phase.....	9
2.3	Mine Residue Management.....	10
2.4	Mine Waste Management.....	10
3	Legislative and Policy Framework	11
4	Approach and Methodology.....	18
4.1	Definition	18
4.2	Purpose of the SIA Report.....	19
4.3	Benefits of SIA.....	19
4.4	Approach	20
5	Methodology	20
5.1	Definition of the Study Area.....	20
5.2	Approach and Data Collection Methods	22
5.3	Quantitative Technique: Desktop Review.....	22
5.4	Primary	22
5.5	Qualitative Techniques	23
5.6	Literature Review, Baseline Data Review and Analysis	23
5.7	Compilation of a Socio-Economic Baseline Profile.....	24
5.8	Social Sensitivity Map.....	24
5.9	The Zone of Influence.....	26
5.10	Land Tenure	31
5.11	Ethics.....	35
5.12	Information from the Public Consultation Process.....	35

6	Impact Assessment Methodology	35
6.1	Prioritisation of Impacts	36
6.2	Direct versus Indirect and Cumulative Effects	41
6.3	Limitations and Assumptions	43
7	Assessment of Alternatives	45
7.1	Alternative Property	46
7.2	Alternative Land Use Options	47
7.3	Mine Plan, Infrastructure Layout and Affected Land Uses	47
7.4	Technology Alternative	47
7.5	The No-Go Option	48
8	Socio-Economic Baseline	48
8.1	Eastern Cape Province	48
8.2	O.R. Tambo District Municipality	54
8.3	Nyandeni Local Municipality	60
8.4	A Comparative Summary	63
8.5	Mthatha	65
8.6	Ngolo	68
9	Socio-Economic Baseline: Primary Zones	87
9.1	Economic Activities	87
9.2	Infrastructure and Services	88
9.3	Social Services and Community Facilities	88
10	Environmental Sensitivity and Socio-Economic Implications	89
10.1	Overview of Environmental Sensitivity Context	89
10.2	Key Environmental Sensitivities Identified	91
10.3	Implications for the Socio-Economic Landscape	92
11	Stakeholder Engagement	94
11.1	Community Engagement and Key Social Issues	94
12	Impact Assessment	96
12.1	Operational Phase	98
12.2	Decommissioning Impact	106

12.3	Impacts Related to Community Health and Safety	109
12.4	Dependency on the Mine for sustaining local economy (during closure).....	109
12.5	Cumulative Impacts	110
13	Potential Social Risks	110
14	Need and Desirability	111
15	Social Management Plans	112
15.1	Rationale for Social Management Planning.....	113
15.2	Stakeholder Engagement and Communication Management Plan (SECMP)	113
15.3	Local Employment and Recruitment Management Plan (LERMP)	113
15.4	Local Procurement and Enterprise Development Plan (LPEDP).....	114
15.5	Community Health, Safety, and Security Management Plan (CHSSMP)	114
15.6	Land Access and Livelihood Restoration Plan (LALRP).....	114
15.7	Grievance Redress and Conflict Resolution Mechanism (GRM).....	115
15.8	Social Performance Monitoring and Reporting Plan (SPMRP).....	115
15.9	Mine Closure and Social Transition Plan (MCSTP)	115
15.10	. Integration and Governance	115
16	Conclusion	116
17	References	118

List of Figures

Figure 1-1: Recommendations	xiii
Figure 1-1: Regional Setting.....	5
Figure 1-2: Locality Map.....	6
Figure 1-3: Land Use Map.....	2
Figure 2-1: Mine Waste Management.....	11
Figure 5-1: Social Sensitivity – 10km Buffer.....	25
Figure 5-2: Zone of Influence	27
Figure 5-3: Land Tenure	34
Figure 8-1: Eastern Cape Province Key Statistics	50
Figure 8-2: Access to Basic Services in Eastern Cape (2022).....	53

Figure 8-3: O.R. Tambo District Municipality Key Statistics	55
Figure 8-4: Health Care Facilities Map.....	56
Figure 8-5: ORTDM Basic Services Deficiencies.....	59
Figure 8-6: Access to Basic Services in Nyandeni	63
Figure 8-7: Comparison -Province, DM and LM.....	64
Figure 8-8: Mayfair Casino and Hotel.....	69
Figure 8-9: Chief Bencil Community Hall	70
Figure 8-10: Department of Justice and Constitutional Development	72
Figure 8-11: Home Affairs Building	72
Figure 8-12: Housing.....	74
Figure 8-13: Housing in Local Village.....	75
Figure 8-14: Family Gravesite	76
Figure 8-15: Ngolo Village Road	77
Figure 8-16: Taxi on Gravel Road	78
Figure 8-17: Bridge Leading into uMthatha Town	79
Figure 8-18: Ncamedlana Primary School	80
Figure 8-19: Nyangilizwe Senior Secondary School	81
Figure 8-20: Zitatele Public Clinic.....	83
Figure 8-21: Local Spaza Shop.....	84
Figure 8-22: Potentially Affected Communities	86
Figure 9-1: Primary Zone Economic Activities	87
Figure 9-2: Community Support Infrastructure	88
Figure 10-1: Environmental Sensitivity.....	90
Figure 12-1: Description of Environmental Significance Ratings and associated range of scores.....	98
Figure 16-1: Negative Impacts of Mining.....	116

List of Tables

Table 3-1: Legislative and Policy Framework.....	13
Table 3-2: Legislative and Policy Framework Summary	15
Table 5-1: Sensitivity Description	26
Table 5-2: Social Sensitivity Analysis – Zone of Influence, Affected Communities, and Mitigation Opportunities.....	30

Table 5-3: Summary of Land Tenure in the Project Area.....	32
Table 6-1: Ranking of Evaluation Criteria.....	36
Table 6-2: Recapitulation of Impact Rating Matric.....	39

List of Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ARC	Annualised Rate Of Change
ART	Antiretroviral Drug Therapy
CO₂	Carbon Dioxide
CO	Carbon Monoxide
CBD	Central Business District
CDC	Centres For Disease Control and Prevention
cHIA	Community Health Impact Assessment
CHMP	Community Health Management Plan
CV	Curriculum Vitae
DFFE	Department Of Forestry, Fisheries and The Environment
DMRE	Department of Mineral Resources and Energy
DoH	Department Of Health
DPM	Diesel Particulate Matter
e.g	Example
EMPR	Environmental Management Programme
EAP	Environmental Assessment Practitioner
EHS	Environmental, Health and Safety
EHA	Environmental Health Areas
EIA	Environmental Impact Assessment
GBD	Global Burden Of Disease
GWMF	General Waste Management Facility
GCL	Geosynthetic Clay Layer
GPN	Good Practice Note
GHGs	Greenhouse Gases
HIA	Health Impact Assessments
HRA	Health Risk Assessment
HIV	Human Immunodeficiency Virus)
HPV	Human Papillomavirus
IDP	Integrated Development Plan

IFC	International Finance Corporation
IPIECA	International Petroleum Industry Environmental Conservation Association
KII	Key Informant Interview
MRF	Material Recovery Facility
MMR	Maternal Mortality Ratio
CH ₄	Methane
MPRDA	Mineral And Resources Development Act
MR	Mining Right
MDR-TB	Multi-Drug Resistant Tuberculosis
NEMA	National Environmental Management Act
NEM: AQA	National Environmental Management: Air Quality Act
NEM:WA	National Environmental Management: Waste Act
NHI	National Health Insurance
NHLS	National Health Laboratory Service
NO _x	Nitrogen Oxide
NCD	Non-Communicable Disease
PM;	Particulate Matter
PAC	Potentially Affected Communities
PS	Performance Standards
PHC	Primary Health Care
PPP	Public Participation Process
SADC	Southern African Development Community
SO ₂	Sulphur Dioxide
SDG	Sustainable Development Goal
TMP	Traditional Medical Practitioners
TB	Tuberculosis
WML	Waste Management Licence
WHO	World Health Organization
U5MR	Under-5 Mortality Rates
UN SDGs	United Nations Sustainable Development Goals
VOCs	Volatile Organic Compounds
YLDs	Years Lived With Disability

1 Introduction

Transkei Quarries (Pty) Ltd, the current holder of the converted Mining Right EC30/5/1/2/2/0135MR, ceded from Sunshine Enterprises (Pty) Ltd in April 2021, operates the Mthatha Quarry on a 48.75-hectare portion of the Farm Zitatele No. 39, situated in the Magisterial Division of Libode, Eastern Cape Province, South Africa. The quarry is located approximately 5 kilometers northeast of Mthatha central, with direct access from the N2 highway through the village of Ngolo. The operation is authorized under the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) to extract high-quality building materials, including various sizes of aggregate and sand, to meet regional construction demands. Due to diminishing resources within the existing mining right area, Transkei Quarries proposes to expand the mining right area to 86.84 hectares to access additional resources and extend the life of mine (LoM). This expansion will also address historical disturbances beyond the authorized area, incorporating provisions for rehabilitation where further mining is not feasible. The proposed expansion requires amendments to the existing Mining Right and Environmental Authorisation under the National Environmental Management Act, 1998 (Act No. 107 of 1998), as well as compliance with water use activities under the National Water Act, 1998 (Act No. 36 of 1998).

The Mthatha Quarry operation currently employs established infrastructure, equipment, and workforce, which will remain unchanged with the proposed expansion. The primary objective of the expansion is to extend the operational life of the quarry by accessing additional mineral resources adjacent to the existing mining right area. At the current mining rate of 548,728 tonnes per annum, the expanded resource is projected to sustain operations for an additional 30 years, ensuring continued production of high-quality aggregates and sand. The proposed expansion will increase the mining right area from 48.75 hectares to 86.84 hectares, as delineated in the accompanying spatial plans. The expansion will be undertaken in compliance with the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), requiring an amendment to the existing Mining Right and an updated Environmental Management Programme (EMP). Additionally, activities that may trigger water uses, such as water abstraction for dust suppression or potential impacts on watercourses, will be assessed and authorized under the National Water Act, 1998 (Act No. 36 of 1998), potentially through a General Authorisation as per Government Notice No. 509 of 2016 or a new Water Use Licence, depending on the risk assessment outcomes.

The operational activities at the Mthatha Quarry will continue unchanged, encompassing site preparation, mining and processing, and supporting services. Site preparation in the expansion area will involve clearing vegetation and topsoil, stockpiling topsoil for future rehabilitation, deploying mobile equipment, and establishing stormwater management and security controls to minimize environmental impacts, in line with the requirements of the National Environmental Management Act, 1998 (Act No. 107 of 1998). Mining and processing activities will include drilling and blasting, crushing and screening using both fixed and mobile plants, loading and hauling, and stockpiling of product and overburden. Blasting, conducted by an experienced contractor, will occur on average twice per month during daylight hours under suitable weather conditions, with prior notification to surrounding communities to ensure safety and compliance with health and safety

regulations. These activities will adhere to the conditions of the approved EMP and the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) to mitigate environmental and social impacts.

Supporting services at the quarry include administration offices, a weighbridge, workshops, storage facilities, and a contractor's yard for blasting equipment. Hazardous and general waste are managed in dedicated areas, with diesel stored and dispensed from a bunded facility to prevent environmental contamination, as required by the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). The operation is powered by electricity from the local grid, supplemented by diesel-powered generators as backup. Water for domestic use is sourced from the municipal supply, while water for dust suppression is abstracted from the quarry pit or an onsite borehole when the pit is dry. These water use activities will be assessed for compliance with Section 21 of the National Water Act, 1998 (Act No. 36 of 1998), ensuring proper authorisation and management to protect local water resources. Sanitation facilities are provided to meet workforce needs, with waste managed by licensed contractors to comply with environmental regulations.

The operational schedule will remain consistent with current practices, with mining activities in the quarry pit conducted Monday to Friday from 07:00 to 17:00, and processing and supporting services operating 24 hours a day across two shifts. The expansion will not alter the workforce size or infrastructure, focusing solely on extending the quarry pit to access additional resources. Historical disturbed areas beyond the current 48.75-hectare mining right boundary will be included in the expanded 86.84-hectare area, with provisions for rehabilitation where further mining is not planned, as required under the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Financial Provisioning Regulations (Government Notice No. 1147 of 2015). Rehabilitation plans will align with best practices to restore disturbed areas, ensuring long-term environmental sustainability.

The purpose of this SIA is to identify, predict, and assess the potential social and economic impacts, both beneficial and adverse, arising from the proposed mining right expansion, in order to inform decision-making and ensure that the project contributes to sustainable socio-economic development while mitigating negative social outcomes. The assessment forms part of the broader Environmental Authorisation (EA) Amendment and Mining Right Amendment processes required in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA).

This SIA has been prepared in accordance with:

- The Environmental Impact Assessment Regulations, 2014 (as amended), promulgated under NEMA, which require the identification and assessment of potential socio-economic impacts as part of the Environmental Impact Assessment (EIA) process;
- The Social Impact Assessment Framework (DEA, 2018), which outlines principles, methodologies, and good practice for integrating social considerations within environmental authorisations in South Africa;

- The Department of Mineral Resources and Energy (DMRE) Guidelines for Consultation with Communities and Interested and Affected Parties (2018), ensuring that public participation and stakeholder engagement processes adhere to principles of inclusivity, transparency, and procedural fairness;
- The National Environmental Management: Principles (Section 2 of NEMA), which emphasise equitable access to environmental resources, the protection of vulnerable groups, and the promotion of social equity and justice;
- The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), particularly Section 2(d)–(f), which aims to promote employment, advance social and economic welfare, and ensure the sustainable development of mineral resources;
- The National Water Act, 1998 (Act No. 36 of 1998), where applicable to water use authorisations, given the interlinkages between water access and community well-being; and
- International benchmarks, including the International Finance Corporation (IFC) Performance Standards (2012), particularly Performance Standard 1 (Assessment and Management of Environmental and Social Risks and Impacts) and Performance Standard 4 (Community Health, Safety, and Security), as well as the World Health Organization (WHO) Environmental Health Areas Framework (2014), which guide the assessment of health and well-being dimensions of social impact.

The assessment follows a holistic, participatory, and evidence-based approach, considering both the direct and indirect effects of the proposed project on the surrounding communities, local economy, and regional development context. It integrates socio-economic baseline data, community consultation outcomes, and cumulative impact considerations to provide a balanced understanding of the potential implications of the proposed expansion for local livelihoods, social infrastructure, and quality of life.

Ultimately, the findings of this SIA will inform mitigation, management, and enhancement measures to ensure that the project's social performance aligns with national regulatory requirements, international standards, and the broader objectives of sustainable development within the Eastern Cape province.

1.1 Project Locality

The proposed Mthatha Quarry Expansion Project, operated by Transkei Quarries (Pty) Ltd, is situated on a portion of Farm Zitatele No. 39 within the Magisterial District of Libode, under the jurisdiction of the Nyandeni Local Municipality, which falls within the O.R. Tambo District Municipality in the Eastern Cape Province of South Africa.

The quarry is located approximately 5 kilometres northeast of Mthatha Central and is accessed directly from the N2 National Route via the village of Ngolo. The coordinates for the project area are approximately 31° 33' S and 28° 48' E, as illustrated in Figure 1 below.

The project area currently encompasses a 48.75-hectare mining right area (EC30/5/1/2/2/0135MR), and Transkei Quarries proposes to expand this footprint to 86.84 ha. The expansion area is situated immediately adjacent to the existing operational site and includes portions of previously disturbed land that have been historically affected by quarry-related activities. The expansion area lies within Ward 11 of the Nyandeni Local Municipality, as delineated in the map, and forms part of a peri-urban settlement zone characterised by mixed land uses including residential homesteads, communal grazing areas, subsistence agriculture, and small-scale commercial activities.

1.1.1 Regional and Administrative Context

Administratively, the project area falls under:

- Province: Eastern Cape
- District Municipality: O.R. Tambo District Municipality
- Local Municipality: Nyandeni Local Municipality
- Ward: Ward 11

Neighbouring settlements include Ngolo, Nyandeni, and Zitatele, while Mthatha Central, the regional economic hub, lies to the southwest of the site. Major infrastructure includes the N2 National Route, which connects Mthatha to East London and Durban, and the R61 route to the south, providing access to surrounding towns such as Ngqeleni and Port St. Johns.

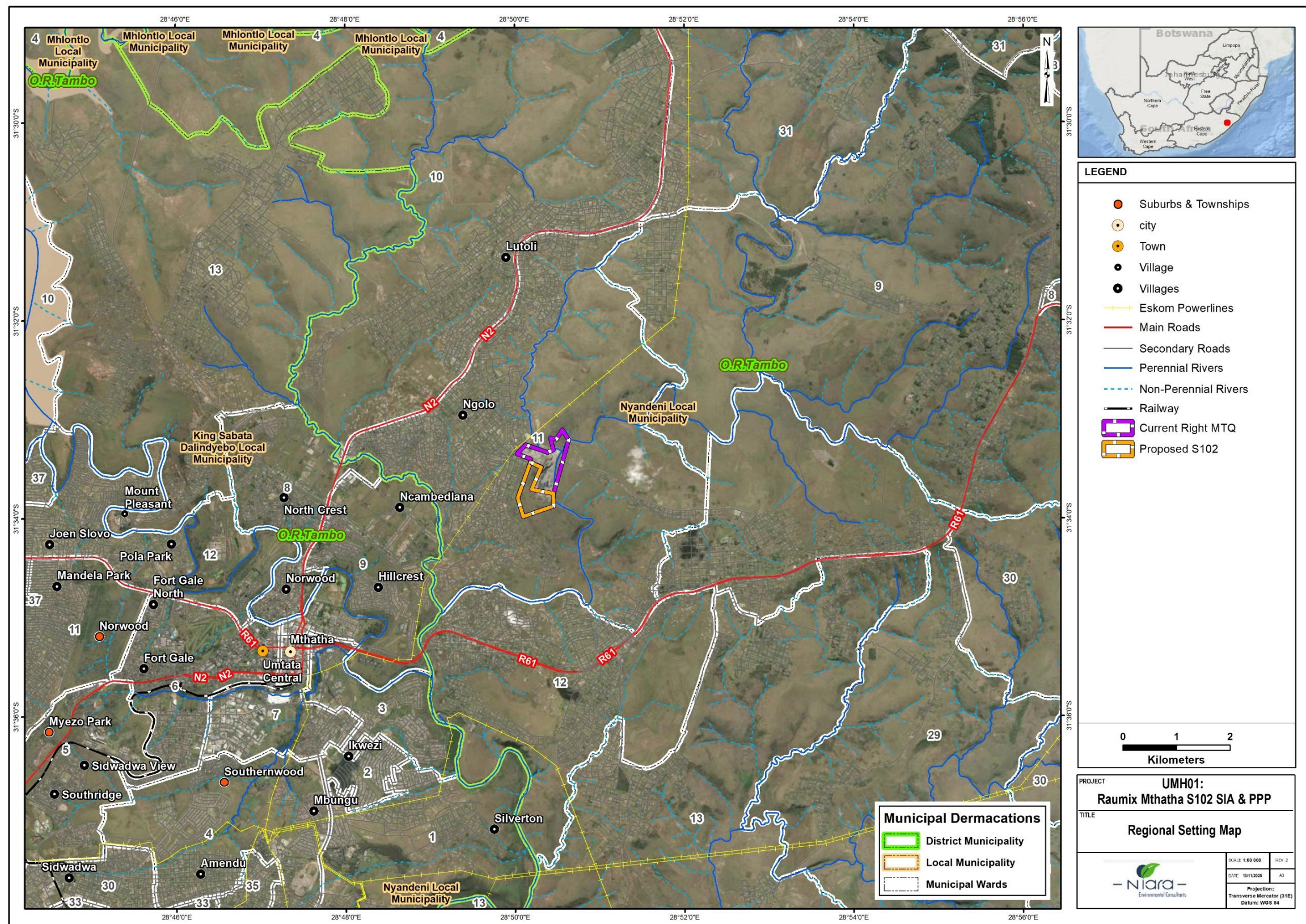


Figure 1-1: Regional Setting

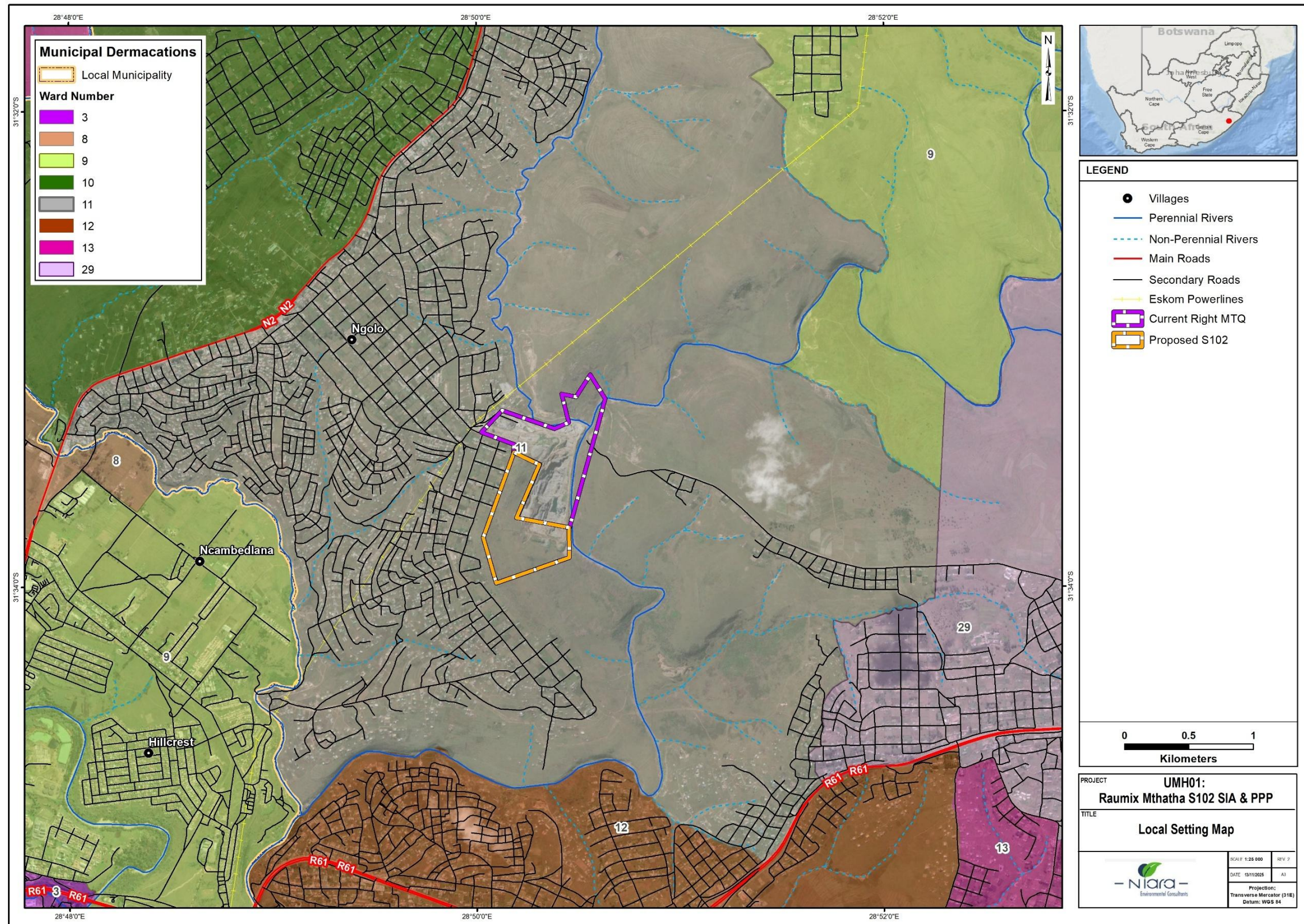


Figure 1-2: Locality Map

1.1.2 Land Use and Surrounding Features

The surrounding land use is primarily rural residential with scattered smallholdings and community institutions such as Saint Patrick's School, Kingdom Hall, and local health and education facilities within 5 - 10 km of the site. Agricultural activities, mainly subsistence farming and livestock grazing, form part of the local livelihood base.

Environmental and social receptors within proximity include:

- Ngolo Village, situated west of the quarry boundary;
- Zitatele Village, located southeast along the R61;
- Cemeteries and cultural sites, mapped within the broader area;
- Major rivers, including the Corana River, which drains the landscape toward the First Falls Dam located to the southwest; and
- Existing transport corridors (N2 and R61) that facilitate regional mobility and market access.

1.1.3 Spatial and Geographical Setting

The terrain is gently undulating, with elevation varying between 580 and 720 metres above mean sea level. Vegetation within and around the site consists largely of secondary grassland with patches of disturbed thicket, reflecting historical land clearance and ongoing anthropogenic activity. The proposed expansion area encompasses disturbed and semi-natural areas adjacent to the existing quarry pit, supporting the rationale for inclusion of these zones within the amended Mining Right for rehabilitation and future resource extraction.

The project area falls within the Mzimvubu–Tsitsikamma Water Management Area (WMA 7) and is drained by tributaries of the Corana River. The presence of surface and groundwater features in the vicinity will be further assessed under the National Water Act, 1998 (Act No. 36 of 1998) for compliance with Section 21 water uses.

The Mthatha S102 Local Setting Map (Figure 1-2) below illustrates the spatial context of the project in relation to municipal boundaries, surrounding settlements, major roads, and hydrological features.



Figure 1-3: Land Use Map

1.2 Scope of Work

The overall objective of this SIA is to identify, predict, and evaluate the potential socio-economic impacts, both beneficial and adverse, arising from the proposed expansion of the Mthatha Quarry, and to ensure that the development aligns with the principles of sustainable development as outlined in Section 2 of the NEMA. The SIA also seeks to enhance positive outcomes, mitigate negative effects, and inform decision-making to achieve equitable and socially responsible outcomes for all stakeholders.

This SIA forms an integral component of the Environmental Authorisation Amendment and Mining Right Amendment processes under the NEMA and the MPRDA. It is guided by national frameworks, including the Department of Environmental Affairs' (DEA) Social Impact Assessment Framework (2018), and international best practice standards such as the IFC Performance Standards (2012), particularly Performance Standards 1 and 4, which address environmental and social risk management and community health, safety, and security.

The purpose of the SIA is to:

Review existing stakeholder engagement records to identify issues, concerns, and priorities raised by Interested and Affected Parties (I&APs), thereby ensuring that community perspectives and local knowledge are integrated into the assessment process;

Undertake a comprehensive baseline assessment to establish the prevailing socio-economic conditions of the affected and surrounding communities. This includes profiling demographics, livelihoods, employment, income sources, access to services, property ownership, infrastructure assets, and local economic activities. The baseline will further evaluate property values, land use practices, and potential alternative land uses within the project's area of influence;

Assess the socio-economic implications of the proposed expansion, focusing on potential effects on property, livelihoods, community well-being, and local economies. This will involve determining potential financial losses associated with property devaluation, displacement of economic activities, or restricted land use, and quantifying these impacts where applicable in financial or qualitative terms;

Evaluate potential cumulative and residual impacts on socio-economic conditions of directly and indirectly affected persons, including the economic loss (in terms of net present value) associated with loss of commercial activities, employment opportunities, or access to productive land, and the extent to which the project contributes to or detracts from local and regional economic development;

Undertake a comparative analysis of land use and development alternatives, assessing their potential environmental, social, and cultural impacts. The comparison will be guided by the principles of sustainable development, taking into account the balance of environmental protection, social equity, and economic viability;

Provide an assessment of both positive and negative socio-economic impacts at the local, regional, and national levels, identifying opportunities for socio-economic upliftment through employment creation, skills development, enterprise support, and infrastructure improvement; and

Develop practical mitigation, management, and enhancement measures to minimise negative social outcomes, enhance community benefits, and ensure compliance with applicable national legislation, municipal development frameworks, and international sustainability standards.

Through this scope of work, the SIA aims to ensure that the proposed expansion of the Mthatha Quarry proceeds in a manner that promotes social inclusivity, economic resilience, and environmental stewardship, contributing to the long-term sustainable development goals of the O.R. Tambo District Municipality and the Nyandeni Local Municipality.

1.3 Terms of Reference

The terms of reference (TOR) in an SIA according to Barbour (2007:28) should indicate how and to what extent the SIA specialist should be involved for the purpose and scale of the proposed intervention. The issues raised in the scoping phase of an EIA, which cannot be effectively addressed with the currently available information, form the basis for the terms of reference of specialist studies (DEAT, 2002).

The Terms of Reference (ToR) for the SIA are to:

- To develop the baseline questionnaire to conduct interviews as a way to understand the socio-economic and background of the communities;
- Describe the socio-economic baseline information for the Project area and surrounding areas;
- Identify, describe, and assess the anticipated significance of potential socio-economic impacts that may arise due to the implementation of the Project.
- Recommend suitable mitigation measures and management actions to evade or minimise potential negative impacts, and to enhance the positive impacts associated with the Project.

The SIA provides a baseline description of the project area, specifically focussing on the communities living and working in close proximity to the area. The potential impacts of the proposed project on the social environment will be identified and assessed in terms of an assessment methodology. Mitigation measures will be proposed to enhance the positive impacts and reduce the significance of the negative impacts.

The process included the following:

- Confirmation of study area;
- Review of available secondary data;
- Social and economic baseline description of the potentially impacted areas;
- Communication with landowners of alternative sites and conducting a site visit;
- Identifying and assessing potential direct, indirect and cumulative impacts, both positive and negative;
- Reviewing other specialist studies, as impacts that are not classified as social impacts can result in social impacts;
- Identifying measures to enhance positive social impacts and mitigate negative social impacts; and
- Making a recommendation on whether the proposed Project should proceed from a social perspective.

Categories of impacts to be considered (Vanclay 2003: 84-89) include:

- Health and social wellbeing

- Death; Nutrition; Actual health and fertility; Perceived health; Mental health; Aspirations for future; Autonomy; Stigmatization; Feelings in relation to the project.
- Quality of the living environment
 - Physical quality: exposure to noise, dust, risk, odour etc.; Leisure and recreation opportunities; Aesthetic quality; Availability of housing; Quality of housing; Physical & social infrastructure; Personal safety & hazard exposure; Crime & violence.
- Economic impacts & material wellbeing
 - Workload; Standard of living; Economic prosperity and resilience; Income; Property values; Employment; Replacement cost of environmental functions; Economic dependency.
- Cultural impacts
 - Change in cultural values; Violation of culture; Experience of being culturally marginalized; Commercial exploitation of culture; Loss of local language; Loss of natural and cultural heritage.
- Family and community impacts
 - Alterations in family structure; Obligations to family/ancestors; Family violence; Social networks: interaction with others in community; Community connection: sense of belonging; Community cohesion; Social differentiation and inequity; Social tension and violence.
- Institutional, legal, political and equity impacts
 - Capacity of government agency to handle workload generated by project; Integrity of government agencies – absence of corruption and competence of agency; Legal rights; Human rights; Participation in decision making; Access to legal advice; Fairness of distribution of impacts across community.
- Gender relations
 - Woman's physical integrity: decide about own body; Personal autonomy of woman: independence in all aspects; Gendered division of labour: income, household, childbearing and rearing of children.; Access to resources & facilities; Political emancipation of woman.

This SIA Report will form an appendix to the main EIA Report.

1.4 Details and Expertise of Specialist

Vumile Ribeiro is a Senior Social Scientist and Principal Environmental Consultant with over 18 years of professional experience across South Africa and the broader African continent, including Mozambique, Sierra Leone, Liberia, Cameroon, Tanzania, Zambia, and the Democratic Republic of Congo. She is the Director of Environmental Management Services at

Niara Environmental Consultants (Pty) Ltd, where she oversees operational management, project direction, stakeholder engagement, and strategic business development.

Her core expertise lies in Social Impact Assessments (SIA), Health Impact Assessments (HIA), Community Health and Environmental Health studies, and Stakeholder Engagement, all aligned with national legislation, the IFC Performance Standards (2012), and the Equator Principles. Vumile has led and authored specialist reports on mining, energy, infrastructure, and industrial projects of national significance, consistently ensuring compliance with the National Environmental Management Act (NEMA, Act No. 107 of 1998) and associated regulations, while embedding international best practice.

Vumile is a Registered Environmental Assessment Practitioner (EAP No. 2019/1183) with the Environmental Assessment Practitioners Association of South Africa (EAPASA), a full member of the International Association for Impact Assessment South Africa (IAIASa), the Public Health Association of South Africa (PHASA), and the International Association for Public Participation (IAP2SA). These professional affiliations underscore her active contribution to advancing the disciplines of environmental and social assessment.

Her project portfolio includes large-scale mining right applications, environmental authorisations, water and waste licensing, and mine closure strategies, often focusing on the integration of social sustainability, public health, and stakeholder rights. Notable projects include Health and Social Impact Assessments for coal, iron ore, vanadium, manganese, and graphite mining ventures, as well as community health studies linked to industrial facilities, waste management sites, and energy infrastructure projects.

Vumile's approach is rooted in systems thinking, recognising the interlinkages between health, livelihoods, and environmental management. She has a demonstrated ability to design and implement stakeholder engagement processes that not only comply with regulatory requirements but also foster trust, inclusivity, and long-term community resilience.

She holds a BSocSc in Geography and Environmental Management (University of KwaZulu-Natal, 2007) and a BSocSc Honours in Environmental Analysis and Management (University of Pretoria, 2011). She is currently pursuing an MPhil in Environmental Law at the University of Pretoria, strengthening her ability to navigate the legal frameworks underpinning resource development and social rights.

Her professional strengths include:

- Designing and leading Health and Social Impact Assessments to IFC standards.
- Conducting legal compliance audits across environmental, water, air quality, and waste licences.
- Leading Social and Labour Plan (SLP) development and monitoring.
- Guiding public participation and mediation processes, particularly in complex or sensitive projects.
- Managing multi-disciplinary project teams to deliver high-quality outputs under tight regulatory timelines.

As a senior professional, Vumile Ribeiro is widely regarded for her ability to balance technical rigour with community engagement, producing assessments that are not only regulatory compliant but also socially responsive and ethically

grounded. Her work continues to contribute to shaping sustainable mining, infrastructure, and energy projects across Africa, ensuring that development is both socially just and environmentally sound.

Anela Sotashe is an Environmental Consultant at Niara Environmental Consultants (Pty) Ltd with over six years of professional experience in environmental assessment and management across both the public and private sectors. Her expertise lies in the preparation of Basic Assessment Reports (BARs), Environmental Impact Assessments (EIAs), Environmental Management Programmes (EMPrs), Integrated Water and Waste Management Plans (IWWMPs), and environmental audits in terms of the National Environmental Management Act (NEMA, Act 107 of 1998), the Mineral and Petroleum Resources Development Act (MPRDA, Act 28 of 2002), and the National Water Act (NWA, Act 36 of 1998).

Anela has developed strong competencies in stakeholder engagement, socio-economic analysis, and regulatory compliance. She has facilitated numerous public participation processes (PPPs), including consultations with government authorities, traditional councils, farming stakeholders, and community representatives. Her experience extends to compiling specialist reports, amendment reports in terms of NEMA Regulations 29 and 31, and operational planning for waste transfer stations.

For the N8 Maseru Bridge Realignment SEIA, Anela plays a key role in stakeholder engagement and socio-economic data gathering, ensuring that community voices are effectively integrated into the assessment. Her skills in engagement design, facilitation, and data interpretation support the development of a balanced and inclusive assessment that reflects both risks and opportunities for communities along the corridor.

Anela's approach is defined by precision, teamwork, and dedication to deadlines, ensuring that outputs are both technically sound and socially responsive. Her professional experience across the mining and infrastructure sectors, coupled with her ability to bridge technical assessment and community perspectives, strengthens her contribution as co-author of this SEIA report.

2 Project Description

The Mthatha Quarry project involves the extraction of high-quality aggregate and sand for regional construction demands. The proposed expansion increases the mining right area from 48.75 hectares to 86.84 hectares and aims to extend the operational life of the quarry by accessing additional resources. The project activities are divided into three main phases: construction, operational, and closure (rehabilitation). Each phase has distinct social and environmental implications, which are critical to consider within the Social Impact Assessment.

The mining activity are divided into three phases; namely the construction, operational and decommission (rehabilitation and closure) phases. These phases are briefly described below.

2.1 Operational Phase Activities and Structures

The operational phase is focused on mining and processing activities, which will continue for the projected Life of Mine (LoM) of 30 years. Key components include:

- **Extraction activities:** Drilling and blasting of rock, crushing and screening using both fixed and mobile plants, loading and hauling of mined materials. Blasting is carefully scheduled and communicated to nearby communities to ensure safety and compliance with the Mine Health and Safety Act, 1996.
- **Infrastructure:** Existing site offices, weighbridge, workshops, storage facilities, and a contractor yard for explosives remain in use.
- **Waste and hazardous material management:** Diesel stored in bunded facilities, general and hazardous waste disposed of via licensed contractors, in compliance with the National Environmental Management: Waste Act, 2008.
- **Water and sanitation:** Water for dust suppression sourced from the quarry pit or onsite borehole; domestic water supplied via municipal connections. Sanitation facilities are provided for all personnel.
- **Support services:** Ongoing maintenance of infrastructure, electricity supply from the grid, and backup diesel generators.

From a social perspective, the operational phase provides opportunities for direct and indirect employment, enterprise development for local suppliers, and potential improvements to local infrastructure. However, it also requires careful management of community safety, noise, dust, and vibration impacts.

2.2 Closure Phase

The closure phase addresses the rehabilitation and decommissioning of the quarry to ensure long-term environmental sustainability and social responsibility. Activities include:

- **Progressive rehabilitation:** Regrading and revegetation of mined-out areas, focusing on areas no longer required for operations.
- **Infrastructure decommissioning:** Removal of temporary and redundant structures, with proper disposal or recycling of materials.
- **Water management:** Ensuring safe stormwater and runoff management in former operational areas.
- **Community engagement:** Informing and involving local communities in post-closure land use planning, including potential economic or recreational use of rehabilitated land.

Social impacts during closure include reduction in employment, the need for alternative livelihood planning, and opportunities for community benefit from rehabilitated land if carefully managed.

2.3 Mine Residue Management

Mine residue management focuses on the handling and storage of overburden and waste rock generated during operations. Key considerations include:

- **Stockpiling of overburden:** Placement in designated areas outside active mining zones, with erosion and dust control measures.
- **Waste rock management:** Segregation of potentially hazardous materials, where present, and regular monitoring of residue stability.
- **Environmental safeguards:** Use of containment structures, dust suppression, and stormwater controls to prevent off-site impacts, particularly on nearby communities and watercourses.

Effective residue management is essential to reduce potential social and environmental risks, including airborne dust, visual impacts, and potential safety hazards for local residents. It also provides opportunities for progressive rehabilitation and post-mining land use planning.

2.4 Mine Waste Management

Mine waste management at the Mthatha Quarry focuses on the safe handling, storage, and monitoring of all materials removed during mining activities that are not part of the final saleable product. Effective management of mine waste is critical to mitigate potential social and environmental impacts, particularly those affecting surrounding communities.

Key aspects of mine waste management include:

Comprehensive Mine Waste Management



Figure 2-1: Mine Waste Management

Proper waste management ensures that local communities are not adversely affected by dust, water contamination, or safety risks. Additionally, it demonstrates the project's commitment to environmental stewardship and community well-being, supporting sustainable operations throughout the life of the quarry.

3 Legislative and Policy Framework

The assessment of socio-economic impacts is guided by a comprehensive set of legislative, policy, and institutional frameworks at international, national, provincial, and local levels. While there is no legislation in South Africa that specifically governs SIA, there are several statutes, policies, and guidelines that require the consideration of social issues in project planning, approval, and implementation.

The framework reflects the country's commitment to sustainable development, human rights, and social justice, while also aligning with international best practice standards such as the IFC Performance Standards, the Equator Principles, and the UN Guiding Principles on Business and Human Rights. These frameworks collectively require that social, economic, and environmental factors are integrated into decision-making, and that communities are meaningfully consulted and empowered throughout the project life cycle.

In addition, there is legislation, in the form of the NEMA detailing the type, extent and timeframes for public participation or stakeholder engagement during the EIA phase of a Project. Similarly, NEMA states that social aspects of Projects must be considered at the EIA phase (outlined below). There is also a number of other important South African legislation which informs the social content in which SIA's are compiled and which are outlined below.

To demonstrate alignment with these instruments, a Legislative and Policy Compliance Matrix has been compiled. The matrix sets out the key legislative and policy requirements relevant to the project and indicates how the project, through the Social Impact Assessment and associated management measures, intends to comply with or respond to these obligations. The Social Impact Assessment has been completed in terms of NEMA EIA Regulations, 2014 (as amended) Appendix 6: Specialist Reports. Where applicable, the Report uses references from the IFC Performance Standards.

Table 3-1 below summarises the key laws, regulations, policies, and frameworks applicable to the project. It outlines their main provisions, and explains their specific implications for both the SIA process and the implementation of the project to ensure full legal compliance and social accountability.

Table 3-1: Legislative and Policy Framework

Legislation / Policy / Guideline	Key Provisions / Requirements	Implications for the SIA	Implications for the Project
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	Promotes human dignity, equality, and fundamental human rights, including access to housing, healthcare, education, and information. Section 24 guarantees the right to an environment not harmful to health or well-being. Section 25 outlines the lawful conditions for expropriation with just and equitable compensation.	The SIA must assess the project's alignment with constitutional rights, especially community health, well-being, and property rights. It must ensure that socio-economic benefits outweigh potential infringements on rights or livelihoods.	The project must operate in a way that upholds constitutional rights, prevents environmental harm, and ensures fair and lawful engagement with property owners and communities.
National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)	Establishes environmental management principles requiring integration of social, economic, and environmental factors in decision-making. Mandates public participation and sustainable development.	The SIA must assess potential socio-economic impacts holistically, ensure inclusive participation, and apply NEMA's sustainability principles.	The project must comply with NEMA by obtaining Environmental Authorisation and demonstrating social and environmental responsibility.
Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)	Declares that mineral resources belong to all South Africans, with the State as custodian. Promotes sustainable development, social upliftment, and equitable access to benefits (Sections 2, 3 & 100). Requires EMPs and Social & Labour Plans (SLPs).	The SIA must assess social impacts from mine development, operation, and closure; evaluate SLP commitments; and align findings with principles of sustainable development.	The project must comply with the MPRDA by maintaining an approved SLP, EMP, and ensuring social development, equity, and responsible resource use.
Mining Charter (2018)	Aims to promote equitable access, transformation, skills development, and socio-economic advancement of historically disadvantaged South Africans (HDSAs).	The SIA must evaluate how project implementation contributes to transformation, local procurement, and mine community development.	The project must align with the Charter's objectives - ensuring fair employment, community benefits, and empowerment.
Comprehensive Rural Development Programme (CRDP, 2009)	Focuses on poverty alleviation, food security, and rural infrastructure development, aiming to create vibrant, equitable, and sustainable rural communities.	The SIA must assess how the project supports rural infrastructure, livelihoods, and local economic activity.	The project should contribute to rural development through job creation, local sourcing, and support of community infrastructure.
National Strategy for Sustainable Development and Action Plan (NSSD 1, 2011)	Sets strategic goals for integrated planning, efficient resource use, green economy transition, climate change response, and sustainable communities.	The SIA must analyse the project's consistency with sustainable development goals and long-term socio-economic resilience.	The project should demonstrate efficient resource use, community sustainability, and climate-conscious operational planning.
White Paper on Local Government (1998)	Defines a developmental local government framework that works with communities to create sustainable settlements and improve quality of life.	The SIA must assess how the project can complement local government's developmental mandate.	The project should cooperate with local authorities to enhance service delivery and promote social development.
Municipal Systems Act, 2000 (Act No. 32 of 2000)	Provides mechanisms for municipalities to progressively achieve social and economic upliftment of communities and ensure universal access to services.	The SIA must evaluate how the project aligns with local IDPs and supports municipal development goals.	The project must integrate with municipal planning systems and avoid burdening local infrastructure.
Extension of Security of Tenure Act, 1997 (ESTA, Act No. 62 of 1997)	Protects lawful occupiers on land from arbitrary eviction without court approval and due legal process.	The SIA must identify any lawful occupiers who may be affected and assess potential impacts on tenure security.	The project must respect lawful occupiers' rights and comply with eviction and relocation laws where applicable.
Interim Protection of Informal Land Rights Act, 1996 (IPILRA, Act No. 31 of 1996)	Provides temporary protection for individuals and communities holding informal land rights, requiring consultation and consent for development.	The SIA must ensure that traditional and customary landowners are meaningfully consulted and their consent sought where applicable.	The project must comply with both IPILRA and MPRDA requirements—consultation under MPRDA and consent under IPILRA—to uphold community rights.
Department of Mineral Resources Consultation Guidelines (2018)	Sets procedural requirements for meaningful consultation with Interested and Affected Parties (I&APs), including landowners, lawful occupiers, and host communities.	The SIA must reference stakeholder engagement in line with these guidelines to demonstrate procedural fairness.	The project must follow DMR consultation protocols and document engagement with all affected stakeholders before authorisation.

Legislation / Policy / Guideline	Key Provisions / Requirements	Implications for the SIA	Implications for the Project
National Water Act, 1998 (Act No. 36 of 1998) (NWA)	Regulates protection, use, and management of water resources; defines Section 21 water uses requiring authorisation.	The SIA must evaluate social implications of water abstraction and availability to surrounding communities.	The project must ensure equitable water use, obtain necessary authorisations, and prevent negative impacts on community water access.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA)	Provides for waste minimisation, reuse, recycling, and safe disposal to protect health and the environment.	The SIA must consider community health and environmental risks from waste handling and storage.	The project must manage waste in accordance with legislative requirements to avoid pollution and health hazards.
National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)	Protects heritage sites, graves, archaeological materials, and cultural resources (Sections 34–38).	The SIA must recognise heritage and cultural sensitivities in the social baseline and engagement process.	The project must avoid or mitigate damage to heritage resources and follow Amafa/SAHRA protocols where applicable.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Regulates emissions, air quality management, and dust control to safeguard human health.	The SIA must assess potential air quality impacts on nearby residents' health and well-being.	The project must maintain dust suppression systems and comply with emission standards.
Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) (SPLUMA)	Guides spatial planning and development consistent with municipal IDPs and SDFs.	The SIA must assess land use compatibility and policy alignment.	The project must align with the Nyandeni LM SDF and avoid conflicting with existing land uses.
National Environmental Management: Financial Provisioning Regulations (GN R. 1147 of 2015)	Requires financial provision for rehabilitation and closure of mining operations.	The SIA must consider socio-economic impacts of mine closure and rehabilitation.	The project must ensure adequate financial provision for environmental and social rehabilitation.
DEA Social Impact Assessment Framework (2018)	Provides national methodology for social impact identification, mitigation, and monitoring.	The SIA must apply the DEA framework to ensure a consistent, transparent, and participatory approach.	The project benefits from a credible, defensible SIA that meets statutory expectations.
Basic Human Rights (UN Guiding Principles on Business and Human Rights, 2011)	Establishes business responsibility to respect human rights, conduct due diligence, and provide remedies for impacts.	The SIA must evaluate human rights implications of project operations on affected communities.	The project must integrate human rights due diligence into its management systems and ensure grievance redress mechanisms.
Development Bank of Southern Africa (DBSA) Environmental and Social Safeguards Standards	Aligns with IFC, World Bank, and AfDB standards to ensure environmental and social sustainability in financed projects.	The SIA should reference DBSA safeguards where applicable, ensuring robust social risk assessment.	The project must maintain compliance with financier social safeguard requirements to ensure eligibility for development funding.
Global Environment Facility (GEF) Minimum Environmental and Social Safeguards Standards	Promotes global environmental protection and sustainable development initiatives.	The SIA may benchmark against GEF safeguards to demonstrate environmental and social responsibility.	The project should align with GEF principles on biodiversity, pollution prevention, and sustainable resource use.
Equator Principles (EP IV)	Framework for assessing and managing social and environmental risks in project finance.	The SIA must be aligned with Equator Principles to satisfy potential investor or financier requirements.	The project must adopt environmental and social management systems that meet international finance compliance.
IFC Policy on Environmental and Social Sustainability (2012)	Defines IFC's commitment to sustainable private sector development, with Performance Standards 1–8 as implementation tools.	The SIA must align with IFC PS 1 and PS 4, focusing on risk management, community health, and stakeholder engagement.	The project should adopt IFC-aligned systems for managing environmental and social risks and community impacts.
World Bank Group Environmental, Health and Safety (EHS) Guidelines	Provide technical performance indicators and good practice for pollution prevention, occupational safety, and community health.	The SIA must integrate EHS performance benchmarks for assessing health and safety risks.	The project must meet or exceed EHS standards to ensure safe, sustainable operations.
Provincial and Local Development Frameworks — Eastern Cape PDP 2030; O.R. Tambo DM IDP 2022–2027	Promote inclusive growth, job creation, infrastructure development, and sustainable land use.	The SIA must assess the project's alignment with regional development priorities and socio-economic objectives.	The project must support municipal and provincial strategies through employment, infrastructure support, and community benefits.

Table 3-2: Legislative and Policy Framework Summary

Legislation / Policy	Key Requirements	Project Compliance / Response
Constitution of the Republic of South Africa (1996)	Protects fundamental human rights (equality, housing, health, education, property). Section 24: right to a healthy environment. Section 25: property rights with fair compensation.	The SIA evaluates impacts on housing, livelihoods, health, and property rights. Mitigation measures will be aligned to protect constitutional rights and ensure that no community is unfairly disadvantaged.
National Environmental Management Act (NEMA), 1998	Requires integration of social, economic and environmental considerations in EIAs. Mandates public participation during project authorisation.	The SIA has been undertaken in terms of NEMA EIA Regulations (2014, as amended). A comprehensive public participation process is integrated into the study.
Mineral and Petroleum Resources Development Act (MPRDA), 2002	State custodianship of minerals. Requires EMPs and SLPs. Stipulates that mining promotes sustainable development and socio-economic upliftment. Sets consultation requirements.	The project will comply by preparing an EMP and SLP. The SIA contributes to identifying social risks, obligations, and opportunities that must be integrated into the SLP.
Mining Charter (2018)	Requires transformation: equitable access to resources, HDSA participation, community development, housing and living conditions, beneficiation.	The project's social mitigation measures and community development commitments will be aligned with the Mining Charter's transformation objectives./ ^f
Comprehensive Rural Development Programme (CRDP), 2009	Aims to reduce poverty, enhance food security, and promote rural infrastructure (water, electricity, education, health, sanitation).	The SIA considers CRDP priorities and will assess whether project-related social investment can be aligned to community infrastructure and livelihoods.

Legislation / Policy	Key Requirements	Project Compliance / Response
National Strategy for Sustainable Development (NSSD), 2011	Sets long-term sustainability goals: integrated planning, sustainable communities, resource efficiency, green economy, climate change response.	The SIA identifies risks and mitigation in line with sustainability objectives and will recommend strategies that strengthen resilience and local sustainability.
White Paper on Local Government (1998)	Establishes developmental local government. Requires municipalities to work with communities to create sustainable human settlements.	The SIA aligns project interventions with local government development priorities and encourages partnerships with municipalities.
Municipal Systems Act, 2000	Requires municipalities to ensure social/economic upliftment, affordable service provision, and alignment with IDPs.	The SIA has been benchmarked against the IDP of the host municipality to ensure social recommendations align with local planning frameworks.
Extension of Security of Tenure Act (ESTA), 1997	Protects tenure rights of lawful occupiers; eviction only through lawful process.	The SIA identifies potential risks to occupiers and ensures recommendations respect tenure rights, with lawful relocation only where unavoidable.
Interim Protection of Informal Land Rights Act (IPILRA), 1996	Protects customary/informal land rights. Development requires consent of communities.	The SIA process includes community consultation. Consent requirements will be acknowledged in line with IPILRA and MPRDA.
DMR Consultation Guidelines	Defines I&APs (host communities, landowners, traditional authorities, lawful occupiers, land claimants, affected stakeholders). Requires inclusive consultation.	The SIA incorporates these guidelines to ensure a transparent and inclusive stakeholder engagement process.
UN Guiding Principles on Business and Human Rights (2011)	Business must respect human rights through due diligence, consultation, and remediation.	The project's SIA applies these principles to identify potential rights impacts and recommend mitigation and grievance mechanisms.

Legislation / Policy	Key Requirements	Project Compliance / Response
DBSA Environmental and Social Safeguards Standards (2015)	Aligns with IFC/World Bank safeguards. Requires mitigation of social risks in development projects.	Should financing involve DFIs, the project will align with DBSA safeguard requirements.
Global Environmental Facility (GEF) Minimum Standards	Supports projects addressing biodiversity, climate, land, and pollution, aligned with sustainable development.	The SIA considers biodiversity, water, and climate-related social impacts, aligning with GEF sustainability priorities.
Equator Principles (2003)	Applied to project financing; ensures projects meet IFC and World Bank social/environmental standards.	The SIA aligns with IFC Performance Standards, satisfying lender requirements under Equator Principles.
IFC Performance Standards (2012)	Provides framework for managing social and environmental risks, including stakeholder engagement, labour, health, and safety.	The SIA has been prepared in alignment with IFC Performance Standards to meet international best practice.
World Bank EHS Guidelines	Technical reference for good practice on health, safety, and environment. Provides minimum performance indicators.	The SIA draws on EHS benchmarks to guide mitigation of health, safety, and environmental risks.

4 Approach and Methodology

Social impacts are those impacts that affect the level of social and socio-economic activities in a region either positively or negatively. For instance, they directly affect the socio-economic well-being of residents in an area by changing employment levels, education and skills levels, household size and income levels. A socio-economic impact assessment traces demographic and livelihood developments in the local economy. It then measures the cumulative effects of those developments and patterns. The impact region is determined by the nature of the proposal and can include the entire country, province, an individual municipality or a combination of municipalities. In this case, the impact will mostly be projected for Nyandeni Local Municipality and the Eastern Cape Province.

The SIA evaluates the human behaviour within a particular social context and how these are likely to impact on the Project. The South African society is shaped by a variety of cultures, traditions, political and religious beliefs which creates a rather complicated context within which the economy must operate. The specific historical context of South Africa also develops the perceptions of people which are often formed based on preconceived ideas rather than accurate information. Estimating the socio-economic impact of a project or development is very helpful in understanding the potential benefits of various forms of growth and changes made in the built environment.

4.1 Definition

In order to define Socio-economic Impact Assessment, it is important to understand the difference between Social Impact Assessment and Socio-economic Impact Assessment. Internationally, Social Impact Assessment (SIA) is seen as an overarching framework that embodies the evaluation of all impacts on humans and on all the ways in which people and their communities interact with their socio-cultural, economic and bio-physical environment. SIA has strong links with a wide range of specialist sub-fields involved in the assessment of areas such as: aesthetic impacts, archaeological and heritage impacts, community impacts, cultural impacts, demographic impacts, development impacts, economic and fiscal impacts, gender assessment, health impacts, indigenous rights, infrastructural impacts, institutional impacts, political impacts, poverty assessment, psychological impacts, resource issues, tourism impacts and other impacts on societies (Vanclay, 2003: 7). Social Impact Assessment variables include the economic environment (compare Vanclay, 2003: 85-89; Burdge, 2004:101; Taylor, Bryan & Goodrich, 2004: 75). Social Impact Assessments and Economic Impact Assessments are often undertaken separately, but they are complementary and sometimes overlap. The social and economic environment cannot be separated, as these environments are closely entwined.

The current practice in South Africa is similar to the international practice as described in the previous paragraph, and Social Impact Assessments generally include social as well as economic impacts. The terms Social Impact Assessment and Socio-economic Impact Assessment are often confused and refer to the same assessment in many instances. The University of Wisconsin defines Socio-economic Impact Assessment as an examination of how a proposed development will change the lives of current and future residents of a community. The Australian Government Department of the Environment and Heritage (2005:5) states that Socio-economic Impact Assessment is a useful tool to help understand the potential range of

impacts of a proposed change, and the likely responses of those impacted on if the change occurs. The International Association for Impact Assessment (2003) defines Social Impact Assessment as including the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programmes, plans, projects) and any social change processes invoked by these interventions. The primary purpose of SIA is to bring about a more sustainable and equitable biophysical and human environment.

From an international perspective, Socio-economic Impact Assessment falls under the umbrella of Social Impact Assessment. A Social Impact Assessment will look at the social environment in more depth than a Socio-economic Impact Assessment. For South African purposes, the two terms are generally used as one and the same. Social and economic impacts should be integrated in order to provide a comprehensive and cost-effective outcome and avoid duplication. For the purpose of this Report the term Socio-economic Impact Assessment will be used.

4.2 Purpose of the SIA Report

The primary purpose of a SIA is to determine and analyse the likely impacts of a proposed development or event on a specific group of people or a community's way of life, character and social cohesion. This is done by assessing and analysing the probable socio-economic impacts before the development takes place. The aim is for the developer or proponent to realize and optimize the project's benefits and implement mitigation measures that would minimize the possible negative socio-economic impacts of the proposed development.

The purpose of the SIA study is to

- Assess the social impacts of the Project including any impacts on local infrastructure and services;
- Recommend mitigation measures to minimise adverse impacts and maximise benefits of the Project; and
- Facilitate the consideration of alternatives.

4.3 Benefits of SIA

Considering potential social impacts of proposed developments have numerous benefits. The benefits of assessing social impacts are (Bezuidenhout, 2013):

- It enriches the decision-making process by potentially resulting in a different, better-informed decision than the one that would otherwise have been made.
- Decision-making criteria are applied consistently.
- A more holistic view of developments and their impacts are obtained.
- Provision of mitigation measures for negative social impacts, which are included as conditions for issuing an authorisation, and thereby ultimately enforced.

- Enhancement of positive social impacts that a development may have.
- Promotion of transparency and accountability in all applications for new developments.
- Social learning by developers, planners, decision-makers and the community, resulting in successful implementation of projects.
- Contributing to sustainability because development is more successful and sustainable if it has the “buy-in” of the communities that are affected by it –a “social licence to operate”.

4.4 Approach

Socio-economic Impact Assessments are directly related to decision-making (Branch et al., 1984:6). Probable undesirable social and economic effects of development need to be identified before they occur in order to make recommendations for mitigation (Interorganizational committee, 2004: 94). According to Henry (1990:93) SEIA intends to minimise negative impacts due to mismatches between people and projects by indicating the social and economic impact of projects prior to implementation, by facilitating project modification and mitigation through public input or by incorporating social values and priorities such as social equity. SEIA that involves the community minimizes local resistance to projects and therefore reduce disruption; they increase project success, and they prevent major planning disasters and associated costs (Burdge, 2004:248).

5 Methodology

The SIA used both quantitative and qualitative data collection techniques. In terms of the quantitative data, data from Statistics SA was used to understand the local social circumstances of the area. In terms of the qualitative method interviews were conducted to understand the affected communities’ perceptions, how they view themselves and the environment around them.

5.1 Definition of the Study Area

According to the IFC (2003), the study area for an impact assessment can be defined as the area that is likely to experience impacts arising from or exert influence on, the project or activity being assessed. Defining the study area is used to determine a project’s area of influence and responsibilities. It also provides guidance on the area to be monitored, and managed, and assists with defining stakeholders, and the tools needed to gather data for identifying project impacts.

Socio-economic impacts can usually be divided into three broad categories, namely:

- Physical intrusion, which refers to Project infrastructure and Project-related activities’ material presence in an area. These could lead to changes in, for example, land ownership, noise, dust, and changes in the visual landscape. Such changes typically extend to land uses within a few kilometres from the Project site;

- Economic pull occurs when a Project exerts changes and impacts on job creation, in-migration of workers and job-seekers, multiplier effects in the local and regional economy – all of which can lead to an increased risk of social pathologies and community conflict. These impacts can typically be expected in settlements and towns closest to the Project; and
- Indirect or induced impacts that are by-products or ripple-effects of the impacts in the foregoing two categories. These include increased pressure on local services and resources (as a result of population influx), multiplier effects in the local and regional economy (as a result of the creation of new jobs, and Project-related expenditure), macro-economic benefits of the Project as well as benefits derived from corporate social investment by the Project proponent.

Accordingly, three concentric study areas were defined for the purposes of this study, which correspond to the three categories of impacts listed above. The definition of the zones of influence was also, to some extent, influenced by what socio-economic data is available – these being at national, provincial, district, local municipal and ward level.

The three zones of influence are as follows:

- Primary Zone of Influence (also referred to as the site-specific study area): The area likely to experience social impacts associated with the physical intrusion by Project infrastructure and Project-related activities. This study area is defined as the extent of the farm portions on which the Project footprint is located, the immediately adjacent farm portions and the communities adjacent to the current project area;
- The Secondary Zone of Influence (also referred to as local study area): The area likely to experience impacts related to the “economic pull” exerted by the Project. The secondary study area was defined as the Nyandeni Local Municipality, which encompasses the primary study area. This area is defined as the affected local municipality in which the Project is located.
- The Tertiary Zone of Influence (also referred to as the regional study area): The area likely to experience indirect or induced impacts of the Project. The tertiary zone area was defined as the Eastern Cape Province as well as the O.R. Tambo District Municipality, which encompass both the primary and secondary study areas.

Three study areas were defined: The primary study area, the secondary study area and the regional study area. The primary study area was defined as the properties that fall within the Mining Right boundary.

The methodology followed in undertaking the Social Impact Assessment (SIA) for the proposed Mthatha Quarry Mining Right expansion was designed to systematically identify, evaluate, and mitigate potential socio-economic impacts on the surrounding communities. The approach combined quantitative and qualitative techniques, primary and secondary data collection, and literature review to ensure a comprehensive understanding of the socio-economic environment and potential project effects. The methodology followed in undertaking the study included the following:

5.2 Approach and Data Collection Methods

The SIA approach was guided by international best practice, including the International Finance Corporation (IFC) Performance Standards, and national legislative requirements under the Mineral and Petroleum Resources Development Act (2002) and the National Environmental Management Act (1998). The approach focused on three key elements:

- Identification of key social and economic receptors in the primary, secondary, and tertiary zones of influence.
- Assessment of the direct, indirect, and cumulative impacts of the proposed mining activities on livelihoods, infrastructure, and social well-being.
- Engagement with stakeholders to gather insights, validate findings, and inform the management of potential social impacts.

Data collection employed a combination of primary, secondary, and desktop review techniques to ensure a robust and triangulated analysis.

5.3 Quantitative Technique: Desktop Review

A desktop review was conducted to obtain baseline socio-economic, demographic, and infrastructural information for the study area. This included:

- Examination of municipal records, Integrated Development Plans (IDPs), census data, and socio-economic reports from Statistics South Africa (Stats SA).
- Analysis of existing infrastructure, service delivery, employment patterns, and development initiatives within the Nyandeni Local Municipality and the O.R. Tambo District Municipality.
- Review of previously conducted Environmental Impact Assessments, Social Impact Assessments, and other relevant studies in the region.

The desktop review provided a framework for understanding the broader social and economic context and informed the identification of key areas requiring primary data collection.

5.4 Primary

Primary data collection involved direct engagement with affected communities and key stakeholders to ensure local perspectives were captured. Methods included:

- **Structured interviews** with municipal officials, traditional leaders, and project representatives.
- **Community surveys** with residents in Ngolo, Zitatele, and adjacent settlements to assess socio-economic conditions, perceptions of the quarry, and local development priorities.
- **Field observations** of infrastructure, housing, service provision, and economic activities within the primary and secondary zones of influence.

These activities provided critical insights into the immediate socio-economic environment and helped identify potential social impacts associated with quarry operations.

5.5 Qualitative Techniques

Qualitative techniques complemented quantitative data and were used to explore community perceptions, experiences, and expectations regarding the project. Techniques included:

- **Focus group discussions** with youth, women, and community elders to explore social dynamics, employment opportunities, and potential grievances.
- **Key informant interviews** with local business owners, school representatives, and health practitioners to identify community priorities and potential project benefits or risks.
- **Participatory mapping exercises** to understand community use of land, resource access, and areas of cultural significance.

Qualitative techniques allowed for a nuanced understanding of social impacts that may not be evident through statistical analysis alone.

5.6 Literature Review, Baseline Data Review and Analysis

A comprehensive literature review was undertaken to contextualize findings and ensure alignment with current socio-economic research and regulatory requirements. This included:

- Academic and policy literature on mining impacts, local economic development, and social infrastructure in rural Eastern Cape contexts.
- Review of census data and municipal reports to establish baseline socio-economic indicators, including population demographics, employment, income levels, education, and health services.

- Analysis of previous mining and quarrying studies in the region to identify cumulative impacts and lessons learned.

This step ensured the SIA was evidence-based and that the baseline profile accurately reflected the socio-economic conditions of the study area.

5.7 Compilation of a Socio-Economic Baseline Profile

The socio-economic baseline profile was compiled by integrating data from desktop reviews, primary and secondary data collection, qualitative research, and literature review. Key elements included:

- **Demographics:** population size, growth, age distribution, household composition, and migration patterns.
- **Economic activities:** employment levels, income sources, main industries, and livelihoods.
- **Education and skills:** school enrolment, literacy rates, and skills gaps.
- **Health and social services:** access to clinics, hospitals, water, sanitation, and housing conditions.
- **Infrastructure and public services:** roads, electricity, communication networks, and community facilities.
- **Community perceptions and priorities:** attitudes towards the quarry, expectations of social and economic benefits, and concerns regarding potential impacts.

This integrated baseline provides the foundation for assessing potential impacts, identifying mitigation measures, and formulating management and monitoring strategies to address socio-economic effects associated with the proposed mining right expansion.

5.8 Social Sensitivity Map

Satellite imagery from Google Earth were used to identify preliminary social sensitive areas, the sensitivity is assessed within 10km radius. These areas were then marked according to their sensitivity, i.e., low, medium or high. It is generally accepted that the social sensitivity of certain activities will decrease the further away these activities are located from the Project site.

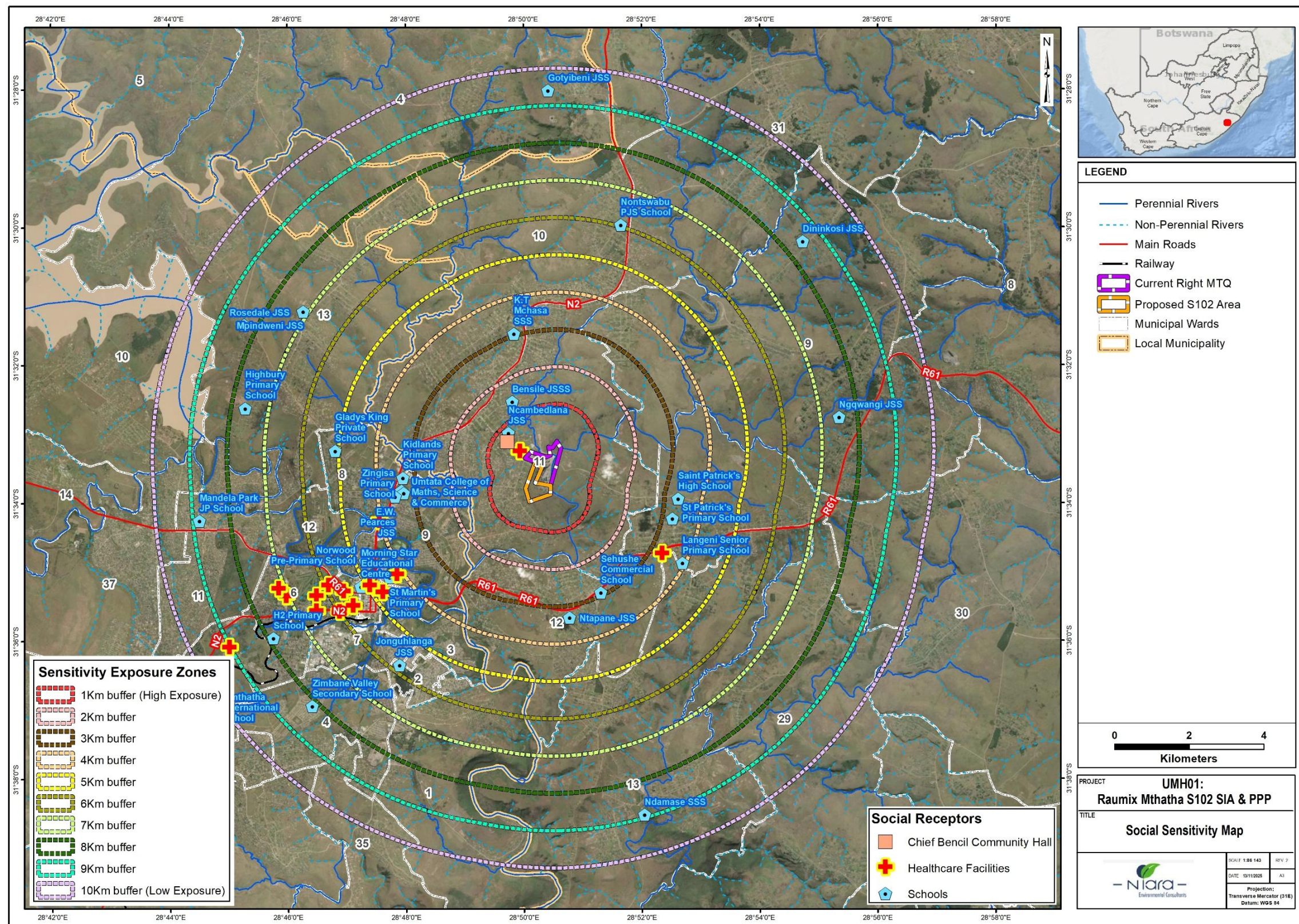


Figure 5-1: Social Sensitivity – 10km Buffer

5.9 The Zone of Influence

The Zone of Influence (Zol) represents the geographic area in which the proposed Transkei Quarries expansion is likely to generate direct, indirect, and cumulative social impacts. Delineation of the Zol is based on the spatial footprint of the project, accessibility along key transport routes, and the location of surrounding settlements and social facilities. The Zol has been categorised into three concentric bands radiating from the project site, as illustrated in Figure 5-2.

The following criteria was applied to determine preliminary (desktop based) social sensitive receptors:

Table 5-1: Sensitivity Description

Sensitivity	Description
High	Any of the following socio-economic activities within a 2 km radius from the Project site: - Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; - Heavy industrial and/or commercial with high economic value in terms of employment; and - Areas with high agricultural potential. It is expected that there would be a marginal to no buffer between these activities and the Project.
Medium	Any of the following socio-economic activities within a 5 km radius from the Project site: - Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; - Heavy industrial and/or commercial with high economic value in terms of employment; and - Areas with high agricultural potential. It is expected that most activities within the 5 km radius would be buffered somewhat by activities taking place within the 2 km radius.
Low	Any of the following socio-economic activities within a 10 km radius from the Project site: “Greenfields” areas (areas not currently occupied by any infrastructure); - Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; - Heavy industrial and/or commercial with high economic value in terms of employment; and - Areas with low agricultural potential. It is expected that these activities would be buffered by activities taking place in both the 5 km and 2 km radius.

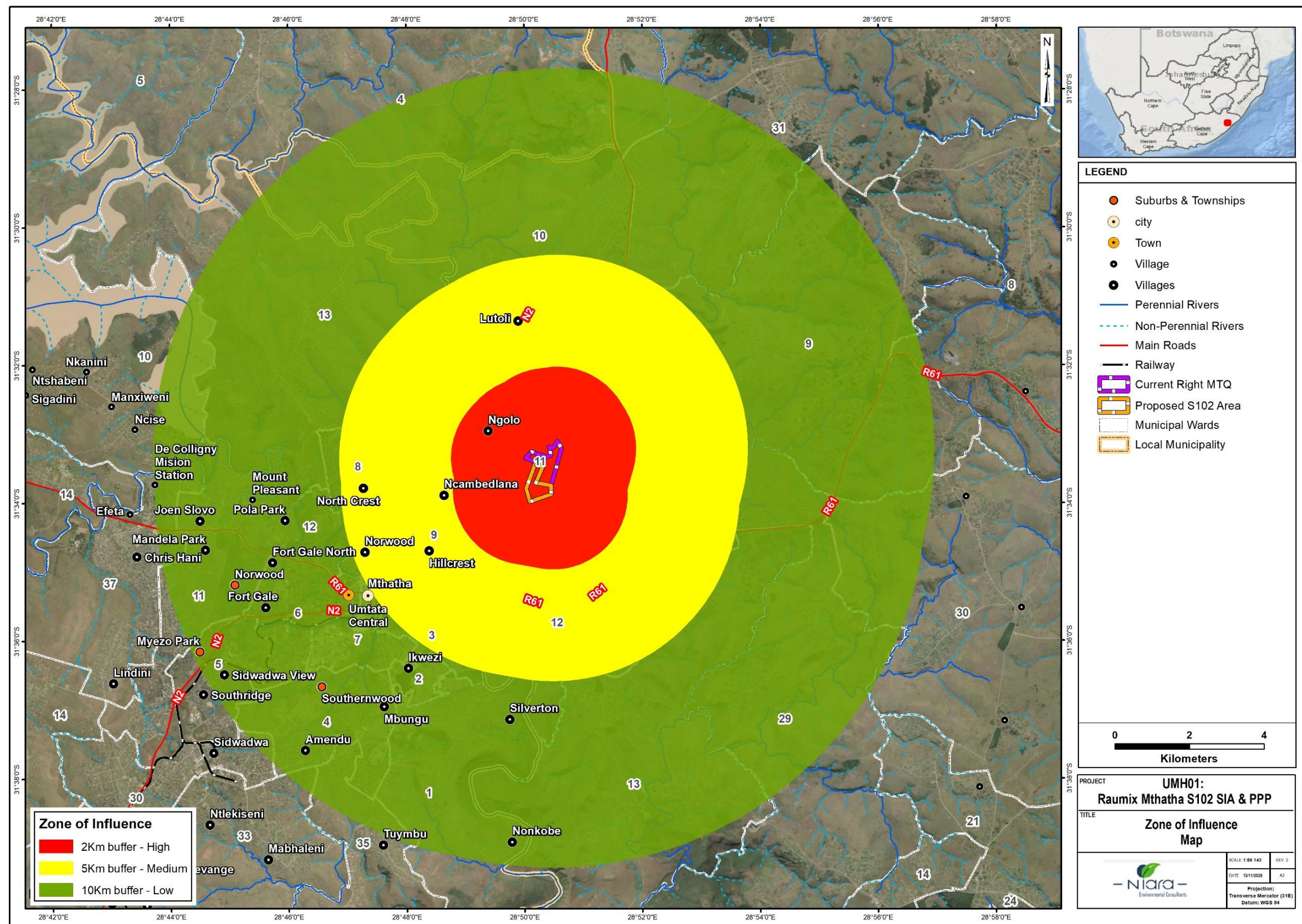


Figure 5-2: Zone of Influence

5.9.1 High Influence Zone (0–2 km radius)

The High Influence Zone encompasses communities and facilities within 2 km of the proposed project footprint. Settlements such as Ngolo, Ntaboduli, and parts of Ntabeni fall within this zone. Given their proximity, households in this zone are likely to experience the most direct impacts, including:

- Noise, dust, and blasting effects from quarrying operations.
- Increased traffic volumes from heavy vehicles along secondary access routes.
- Changes in land use and livelihoods, particularly for households relying on small-scale agriculture or grazing.
- Access to employment opportunities, with residents in closest proximity often prioritised in recruitment processes.

Social infrastructure within this band includes the Ngolo Community Hall, which also serves as a focal point for local governance meetings and community events. The hall, previously sponsored by Transkei Quarries, is an important physical and symbolic link between the company and the host community.

5.9.2 Medium Influence Zone (2–5 km radius)

The Medium Influence Zone extends from 2 to 5 km around the project site and includes settlements such as Ntabeni, Ntaboduli, Sibangweni, and Nabulele. Facilities within this zone include several primary and secondary schools and local churches, which play central roles in community cohesion and youth development.

In this zone, the project's impacts will be less physical and more socio-economic in nature, including:

- Indirect employment and procurement opportunities, especially for local service providers.
- Pressure on education and healthcare facilities if in-migration occurs due to job-seeking.
- Perceptions of benefit-sharing and equity, with communities in this zone often questioning whether benefits are fairly distributed compared to those in closer proximity.

5.9.3 Wider Influence Zone (5–10 km radius)

The Wider Influence Zone covers a radius of 5 to 10 km, capturing towns and villages such as Zitulele, Silverton, Qokolweni, and parts of Mthatha's peri-urban edge. The map highlights a concentration of schools (junior and secondary), clinics, and administrative nodes within this zone. Key facilities include St Patrick's School, Lower Didisana Secondary School, and Walter Sisulu University-linked institutions in Mthatha, which act as major centres of learning and youth congregation.

Communities in this band are less exposed to direct physical impacts, but they will be affected through:

- Cumulative road safety risks from increased quarry-related traffic along the N2 and R61 corridors.

- Regional economic linkages, with Mthatha serving as the commercial and service hub where employees and contractors access goods, financial services, and tertiary healthcare.
- Social perceptions of fairness and inclusion, as surrounding communities may expect to share in employment and development benefits.

5.9.4 Cumulative Considerations

The Zol also interacts with regional service delivery deficits typical of O.R. Tambo District, including intermittent water supply, poor road infrastructure, and over-stretched social facilities. These conditions amplify potential project impacts. For instance, the influx of workers may strain already limited water and sanitation facilities, while increased heavy vehicle traffic could exacerbate existing road maintenance backlogs.

The delineation of the Zol highlights the importance of tailoring impact mitigation and benefit-sharing strategies across scales:

- High Influence Zone: Prioritise dust, noise, blasting management, safety measures, and targeted local hiring.
- Medium Influence Zone: Engage proactively on equitable benefit distribution, youth employment, and school/clinic support.
- Wider Influence Zone: Integrate road safety interventions, regional procurement, and collaboration with institutions in Mthatha.

The Zol framework underscores that while the most intense impacts will be experienced locally in Ngolo and immediate neighbours, broader social and economic effects will ripple across the wider district, requiring a multi-scalar engagement and mitigation approach consistent with IFC Performance Standard 1.

Table 5-2: Social Sensitivity Analysis – Zone of Influence, Affected Communities, and Mitigation Opportunities

Zone of Influence	Settlements / Communities	Key Facilities	Likely Impacts	Mitigation / Opportunities
High Influence (0–2 km)	Ngolo, Ntaboduli, Ntabeni (closest villages)	Ngolo Community Hall, local churches, small-scale grazing fields	• Direct exposure to dust, noise, and blasting • Heavy vehicle traffic and safety risks • Land use disruption (fields/grazing) • Highest expectations for jobs and benefits	• Dust and noise suppression • Strict blasting management • Road safety measures • Prioritised local employment• Partnership to maintain Community Hall
Medium Influence (2–5 km)	Sibangweni, Nabulele, Mideni, Ntaboduli outskirts	Several primary and secondary schools, churches	• Indirect employment opportunities• Strain on schools/clinics if in-migration occurs • Perceptions of unequal benefit distribution	• Youth skills training • Transparent communication on hiring/procurement • Social investment in schools/healthcare support
Wider Influence (5–10 km)	Zitulele, Silvertown, Qokolweni, peri-urban Mthatha areas	St Patrick's School, Lower Didisana Secondary, Zitulele Hospital, Walter Sisulu University-linked institutions	• Cumulative traffic impacts along N2 and R61 • Economic linkages through Mthatha retail/services • Regional perceptions of benefit inclusion	• Road safety campaigns • Local procurement strategy • Collaboration with WSU, clinics, schools for outreach/skills support

5.10 Land Tenure

Land tenure in the project area reflects a complex mix of historical land allocations, communal tenure systems, and formal farm portions. Understanding these arrangements is essential for assessing the rights, access, and potential vulnerabilities of host communities in the context of the proposed Transkei Quarries expansion. Figure 7-5 illustrates the parent farms and cadastral boundaries relevant to the project site.

Refer to Figure 5-3. The project footprint (outlined in blue for the current Area 102 MTQ and pink for the proposed Area 102 MTQ) falls predominantly within Zitatele 39, a large farm portion covering much of the immediate surroundings of Ngolo. This area is characterised by communal settlement patterns, with scattered homesteads, grazing lands, and subsistence farming.

The wider area is bordered by several distinct parent farms, including:

- Farm 191 to the west, adjacent to the N2 corridor and settlement of Sibangweni.
- Farm 65 (Mazangwe 201) to the south-east, along the R61 corridor, including peri-urban settlements such as Langeli.
- Farm 98, located further south-east, also intersecting with the R61 corridor.
- Corana 188 to the east, encompassing large tracts of land with dispersed settlements and agricultural activity.
- Sibangweni 38 to the north and north-west, including the settlement of Sibangweni and key local institutions such as schools and churches.

These overlapping cadastral areas demonstrate the fragmented mosaic of landholdings in the region, where cadastral demarcations intersect with customary tenure systems administered by traditional authorities.

5.10.1 Tenure Arrangements and Use

Most of the land in this zone, including Zitatele 39, is under communal tenure, held in trust by the state but administered through traditional leadership structures. This arrangement typically allows households access to residential sites, arable land, and communal grazing areas but limits the ability to transfer or formally collateralise land. As Marais (2011) and Cousins (2016) argue, communal tenure both provides social security for rural households and creates challenges for large-scale development, where questions of consent, benefit-sharing, and land-use trade-offs arise.

Within the cadastral units, land use is primarily:

- Residential clusters of homesteads, following traditional settlement patterns.
- Agricultural use, particularly subsistence cropping and livestock grazing.

- Community facilities, such as schools, churches, and the Ngolo Community Hall.

The proposed quarry expansion therefore intersects with livelihood spaces that are both socially and economically significant to the local population.

5.10.2 Implications for the Project

The land tenure context has several implications for the Transkei Quarries expansion project:

- Stakeholder Engagement: Meaningful consultation must involve traditional leaders, ward councillors, and local households, given the communal tenure system.
- Consent and Legitimacy: Access to land for quarry expansion must be negotiated not only with formal cadastral custodians but also with local communities who hold de facto usage rights.
- Livelihood Impacts: Because communal lands provide grazing and cultivation areas, any land-take could disrupt household food security and local economies.
- Benefit-Sharing: Projects in communal tenure areas often heighten expectations of compensation, social investments, and local hiring, making transparent processes essential.
- Conflict Sensitivity: Overlapping claims (e.g., between farm portions and traditional allocations) may generate disputes if not carefully managed.

5.10.3 Alignment with Policy

South Africa's land tenure system in former homeland areas remains governed by the Interim Protection of Informal Land Rights Act (IPILRA), 1996 (Act No. 31 of 1996). This Act requires that no person may be deprived of informal rights to land without their consent. For the project, compliance with IPILRA is therefore mandatory, alongside adherence to the principles of Free, Prior and Informed Consent (FPIC) as articulated in international best practice (IFC Performance Standard 7).

Table 5-3: Summary of Land Tenure in the Project Area

Farm Portion / Parent Area	Tenure Type	Primary Land Uses	Communities / Settlements	Relevance to Project
Zitatele 39 (Project footprint)	Communal tenure under traditional authority	• Homesteads (clustered) • Subsistence farming (maize, vegetables) • Grazing areas • Community facilities (schools, hall)	Ngolo, Nabulele, Ntabeni	Core project area; direct land-take for quarry expansion; high livelihood and settlement impacts
Farm 191 (West, near N2)	Communal / hybrid tenure	• Mixed settlements • Grazing land	Sibangweni	Adjacent to haulage routes (N2); possible dust/traffic exposure

Farm Portion / Parent Area	Tenure Type	Primary Land Uses	Communities / Settlements	Relevance to Project
Farm 65 (Mazangwe 201) (South-East, near R61)	Communal tenure	• Rural homesteads • Small-scale farming	Langeli, parts of Mdeni	Indirectly affected by R61 traffic and service infrastructure
Farm 98 (South-East)	Communal tenure	• Grazing land • Sparse homesteads	Villages south of R61	Peripheral influence; mainly road/traffic impacts
Corana 188 (East)	Communal tenure under traditional structures	• Large settlements • Subsistence farming • Grazing	Corana, Dimninkosi	Medium influence zone; potential dust/traffic effects
Sibangweni 38 (North/North-West)	Communal tenure	• Dense homesteads • Schools and churches • Subsistence agriculture	Sibangweni, Kingdeni	Medium influence zone; stakeholder community with expectations of benefits

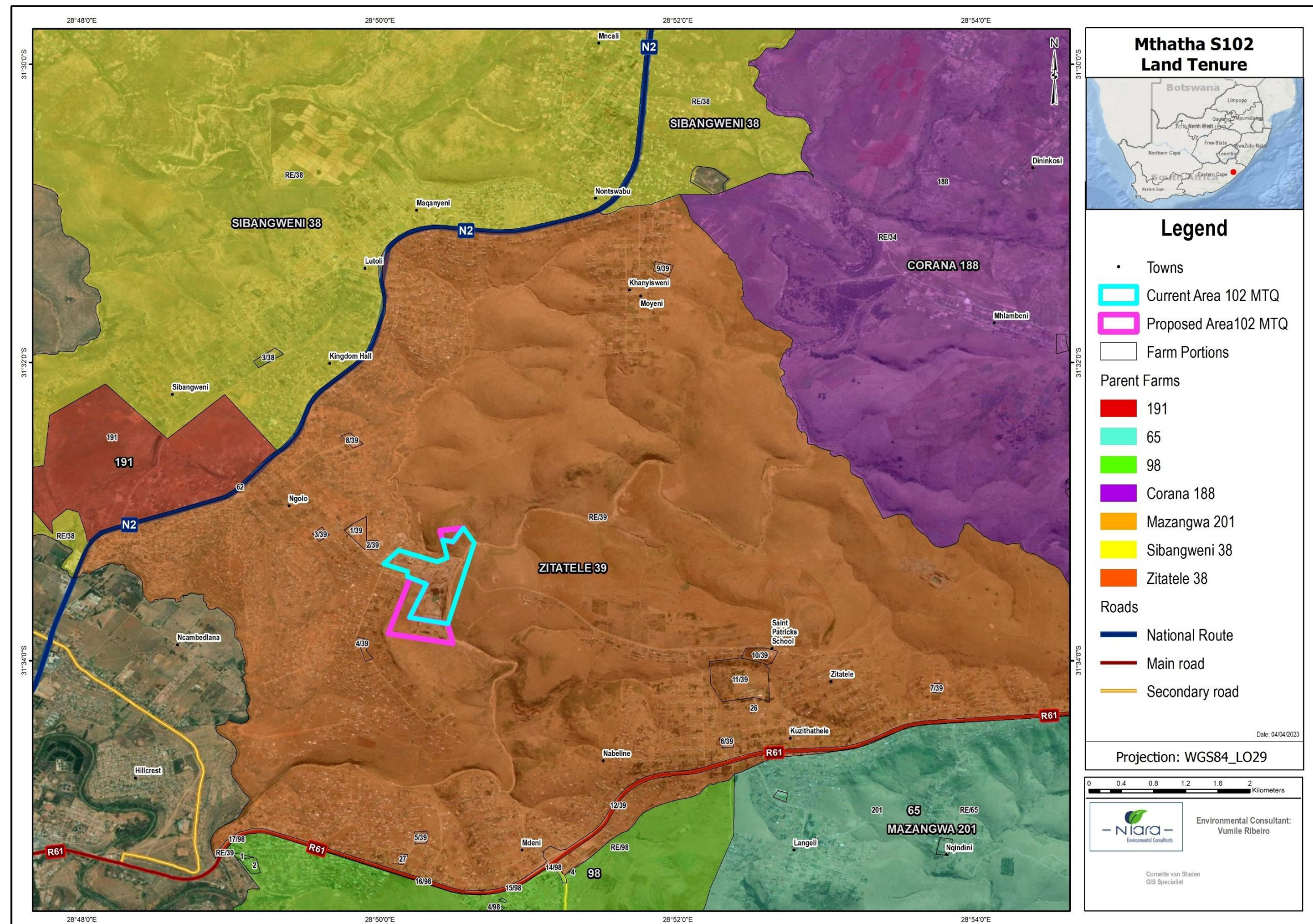


Figure 5-3: Land Tenure

5.11 Ethics

Human beings are the objects of study in the social sciences brings unique ethical problems to the fore. Every individual has the right to privacy, which is their individual right to decide when, where, to whom, and to what extent his or her attitudes, beliefs and behaviour will be revealed (Strydom, 2002). Every person interviewed for the purposes of this study/ Report has been assured that although the information disclosed will be used to inform the study, their names and credentials will not be disclosed without their permission. Therefore, to protect those consulted and to maintain confidentiality, the people interviewed for this report will not be named in the report. Records of the interviews have been kept. This is in line with international as well as national research practices such as the ESOMAR and SAMRA codes of conduct.

5.12 Information from the Public Consultation Process

Stakeholder consultation was undertaken for obtain comments, questions and concerns related to the social aspects of the Project. In addition, comments received from I&APs during the public participation process that were pertinent to the SIA appear in the EIA Comments and Responses Report. Stakeholder comments have been considered in the assessment of impacts and the development of mitigation measures. The relevance of this data lies in the fact that the public participation process serves as a stage where stakeholders air their concerns and perceptions about the Project. This allows for the early identification and confirmation and assessment of social impacts. The Comment and Response Report (CRR) compiled as part of the public consultation process will be reviewed as part of the data collection process. Since public consultation is an on-going process, this Report will be updated after Draft EIA phase, to include and capture any social related concerns.

Additional stakeholder engagements were undertaken on 02 December 2025.

6 Impact Assessment Methodology

The impact significance rating process serves two purposes: firstly, it helps to highlight the critical impacts requiring consideration in the management and approval process; secondly, it shows the primary impact characteristics, as defined above, used to evaluate impact significance.

Five factors need to be considered when assessing the significance of community health impacts, namely:

- Relationship of the impact to temporal scales (duration) - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
- Relationship of the impact to spatial scales - the spatial scale defines the physical extent of the impact.

- The severity of the impact - the severity/beneficial scale is used to scientifically evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system (for ecological impacts) or a particular affected party.
- The severity of impacts can be evaluated with and without mitigation to demonstrate how serious the impact is when it is not allayed. The word 'mitigation' means not just 'compensation', but includes concepts of containment and remedy. For beneficial impacts, optimisation means anything that can enhance the benefits. However, mitigation or optimisation must be practical, technically feasible and economically viable.
- The likelihood of the impact occurring - the likelihood of impacts taking place as a result of Project actions differs between potential impacts. There is no doubt that some impacts would occur (e.g., loss of vegetation), but other impacts are not as likely to occur (e.g., vehicle accident), and may or may not result from the proposed development. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.

Each criterion is ranked with scores assigned as presented in Table 6-1 to determine the overall significance of an activity. The criterion is then considered in two categories, viz. effect of the activity and the likelihood of the impact. The total scores recorded for the consequence and likelihood are then read off the matrix presented in Table 6-2 to determine the overall significance of the impact. The overall significance is either negative or positive.

The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of a social nature in particular need to reflect the values of the affected society.

6.1 Prioritisation of Impacts

The evaluation of the impacts, as described above is used to prioritise which impacts require mitigation measures.

Negative impacts that are ranked as being of **"VERY HIGH"** and **"HIGH"** significance will need to be investigated further to determine how the impact can be minimised or what alternative activities or mitigation measures can be implemented. These impacts may also assist decision makers i.e., numerous HIGH negative impacts may bring about a negative decision.

For impacts identified as having a negative impact of **"MODERATE"** significance, it is standard practice to investigate alternate activities and/or mitigation measures. The most effective and practical mitigations measures will then be proposed.

For impacts ranked as **"LOW"** significance, no investigations or alternatives will be considered. Possible management measures should be investigated to ensure that the impacts remain of low significance.

Table 6-1: Ranking of Evaluation Criteria

Magnitude		Quantitative Score
The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it has a significant, moderate or insignificant		
(VL) Very Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.	1
(L) Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected significantly.	2
(M) Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.	3
(H) High	Function or process of the affected environment is disturbed to the extent where it temporarily ceases.	4
(VH) Very High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	5
Extent		
Classification of the physical and spatial aspect of the impact		
(F) Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.	1
(S) Site	The impact could affect the whole, or a significant portion of the site.	2
(R) Regional	The impact could affect the area including the neighbouring Farms, the transport routes and the adjoining towns.	3
(N) National	The impact could have an effect that expands throughout the country (South Africa).	4
(I) International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.	5
Reversibility		
This describes the degree to which the impact can be managed following mitigation. The classes are rated as follows:		
Reversible	Can be avoided, managed or mitigated in such a way that natural processes are not affected and returned to natural state	1
Recoverable	Can be avoided, managed or mitigated to the degree that functions and processes continue in a modified way)	3
Irreversible	Irreversible impact (may cause irreplaceable loss of resources). Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	5
Duration		
The lifetime of the impact, that is measure in relation to the lifetime of the proposed development.		
(S) Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.	1
(SM) Short - Medium Term	The impact will be relevant through to the end of a construction phase.	2

Magnitude		Quantitative Score
(M) Medium	The impact will last up to the end of the development phases, where after it will be entirely negated.	3
(L) Long Term	The impact will continue or last for the entire operational lifetime (i.e. exceed 20years) of the development, but will be mitigated by direct human action or by natural processes thereafter.	4
(P) Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact is transient.	5
Probability		
This describes the likelihood of the impact actually occurring. The impact may occur for any length of time during the life cycle of the activity. The classes are rated as follows:		
(I) Improbable	The possibility of the Impact occurring is none, due to the circumstances or design. The chance of this Impact occurring is zero (0%)	1
(P) Possible	The possibility of the Impact occurring is very low, due either to the circumstances or design. The chance of this Impact occurring is defined as 25% or less	2
(L) Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of Impact occurring is defined as 50%	3
(H) Highly Likely	It is most likely that the Impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75 %.	4
(D) Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100 %.	5
Weighting Factor		
Subjective score assigned by Impact Assessor to give the relative importance of a particular environmental component based on project knowledge and previous experience. Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance		
(L) Low		1
(LM) Low - Medium		2
(M) Medium		3
(MH) Medium - High		4
(H) High		5
Mitigation Measures and Mitigation Efficiency		
Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures		
Mitigation measures were recommended to enhance benefits and minimise negative impacts and address the following:		

Magnitude		Quantitative Score
<u>Mitigation objectives:</u> what level of mitigation must be aimed at: For each identified impact, the specialist must provide mitigation objectives (tolerance limits) which would result in measurable reduction in impact. Where limited knowledge or expertise exists on such tolerance limits, the specialist must make “educated guesses” based on professional experience;		
<u>Recommended mitigation measures:</u> For each impact the specialist must recommend practicable mitigation actions that can measurably affect the significance rating. The specialist must also identify management actions, which could enhance the condition of the environment. Where no mitigation is considered feasible, this must be stated and reasons provided;		
<u>Effectiveness of mitigation measures:</u> The specialist must provide quantifiable standards (performance criteria) for reviewing or tracking the effectiveness of the proposed mitigation actions, where possible; and		
<u>Recommended monitoring and evaluation programme:</u> The specialist is required to recommend an appropriate monitoring and review programme, which can track the efficacy of the mitigation objectives. Each environmental impact is to be assessed before and after mitigation measures have been implemented.		
The management objectives, design standards, etc., which, if achieved, can eliminate, minimise or enhance potential impacts or benefits. National standards or criteria are examples, which can be stated as mitigation objectives.		
Negligible	The impact will be mitigated to the point where it is of limited importance	<=20
Low	The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels	<=40
Moderate	Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw	<=60
High	The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.	>60

Table 6-2: Recapitulation of Impact Rating Matric

Magnitude	Weight
Very Low	1
Low	2
Medium	3
High	4

Very High	5
-----------	---

Extent	Weight
Footprint	1
Site	2
Regional	3
National	4
International	5

Reversibility	Weight
Reversible	1
Recoverable	3
Irreversible	5

Duration	Weight
Short term	1
Short-Medium term	2
Medium term	3
Long term	4
Permanent	5

Probability	Weight
Improbable	1
Possible	2
Likely	3
Highly Likely	4
Definite	5

Significance	Weight
Negligible	≤ 20
Low	≤ 40
Moderate	≤ 60
High	> 60

6.2 Direct versus Indirect and Cumulative Effects

The assessment of social impacts requires a clear distinction between direct, indirect, and cumulative effects. Understanding these relationships is essential to effectively manage and mitigate potential impacts associated with the proposed Mthatha Quarry Mining Right expansion.

6.2.1 Direct Effects

Direct effects are those that occur as an immediate result of project activities. For the Mthatha Quarry expansion, direct social impacts include:

- **Employment and livelihoods:** The creation or loss of jobs for local residents, particularly within the immediate quarry site and supporting services.
- **Local infrastructure use:** Increased traffic and wear on access roads, impacts on community water use for quarry-related activities, and use of electricity for operational purposes.

- **Service provision pressures:** Potential strain on health care, schooling, and sanitation services due to temporary or permanent increases in workforce and ancillary population.
- **Noise, dust, and safety:** Immediate community-level concerns associated with blasting, material handling, and transportation within the primary zone of influence.

6.2.2 Indirect Effects

Indirect effects occur as a consequence of direct impacts and may be less immediately apparent but still significant. These include:

- **Economic stimulation:** Increased local economic activity due to wages spent in surrounding towns, supporting small businesses and service providers.
- **Migration patterns:** Influx of workers or suppliers to the area may indirectly alter community demographics, housing demand, and local service requirements.
- **Social dynamics:** Changes in community cohesion, potential for conflict over employment opportunities, and adjustments to traditional land use patterns.
- **Health outcomes:** Secondary effects of dust, vibration, and traffic on residents' long-term health and quality of life.

6.2.3 Cumulative Effects

Cumulative effects result from the combination of the proposed project's impacts with those of other existing, planned, or reasonably foreseeable projects in the study area. In the context of Mthatha Quarry, cumulative socio-economic effects may include:

- **Regional employment shifts:** Aggregate effects of multiple quarrying or mining operations in the Eastern Cape on local labor markets.
- **Infrastructure pressure:** Combined stress on roads, electricity, water, and health facilities due to overlapping industrial and community demands.
- **Environmental and health load:** Amplified dust, noise, and water quality impacts resulting from cumulative operations within the secondary and tertiary zones of influence.
- **Socio-cultural change:** Long-term cumulative effects on local culture, community cohesion, and traditional practices due to industrial expansion and urbanization trends.

6.2.4 Considerations for the SIA

- Direct impacts are assessed primarily within the primary zone of influence, whereas indirect effects are more pronounced in the secondary zone. Cumulative effects are evaluated across the tertiary zone, considering both spatial and temporal dimensions.
- The assessment framework considers magnitude, duration, reversibility, and significance of each impact type, ensuring a comprehensive understanding of both short-term and long-term consequences.
- Mitigation measures and management strategies are formulated to minimize adverse direct and indirect effects, and to manage cumulative impacts in coordination with other regional initiatives and municipal planning priorities.

6.3 Limitations and Assumptions

While every effort has been made to ensure the accuracy, completeness, and reliability of the information presented in this SIA, certain limitations were encountered during the study. These limitations are typical of social baseline and impact assessments undertaken in dynamic and data-scarce environments and should be considered when interpreting the findings and conclusions of this Report.

Secondary socio-economic data were primarily obtained from the Stats SA Census (2022), Community Survey (2016), and municipal Integrated Development Plans (IDPs). While these provide useful contextual information, they may not fully reflect current local demographic and economic conditions, particularly given the time elapsed since their publication.

Limited project-specific quantitative data (such as current employment figures, procurement spend, and revenue distribution) were available at the time of reporting, as these are often considered commercially sensitive. Where data were not provided, reasonable assumptions were made based on comparable quarry operations and local economic conditions.

Some site-specific socio-economic indicators (such as household income levels, informal employment rates, and land ownership dynamics) were inferred from community consultations and available municipal statistics rather than comprehensive field surveys.

The assessment reflects conditions as observed and recorded during the 2025 baseline period. Given the evolving nature of socio-economic dynamics, the results may not fully capture future changes in population movement, employment trends, or policy shifts that occur after the study period.

The impact assessment represents a snapshot in time and may require updating if significant changes occur in project design, legislation, or the regional economic context.

The SIA focused primarily on communities within the project area of influence (PAI), which includes Ngolo Village, Zitatele, and surrounding peri-urban areas within a 10 km radius of the quarry. Wider regional effects on the O.R. Tambo District were considered at a macro level.

Listed below is a breakdown of generalised SIA related assumptions and limitations:

6.3.1 Assumptions

The assumptions made for this SIA include:

- The SIA assumes that the project description and operational parameters provided by the proponent are accurate and represent the final design for the proposed quarry expansion. Any significant changes to the project footprint, mining rate, or infrastructure layout may alter the magnitude and extent of the identified social impacts.
- It is assumed that the proposed expansion area (86.84 ha) will be limited to the boundaries illustrated in the spatial layout plan and that no additional land acquisition beyond this extent will occur.
- The workforce composition (number of employees, skill levels, and source of labour) is assumed to remain consistent with current operations, as the proponent has indicated that no major increase in personnel or camp establishment is anticipated.
- No resettlement, physical displacement, or large-scale land acquisition is expected, given the nature and location of the proposed expansion adjacent to existing operations.
- The SIA assumes that the data obtained from secondary sources (such as municipal IDPs, Stats SA, and the Eastern Cape Provincial Development Plan) remain valid for planning and impact assessment purposes.
- It is assumed that stakeholder engagement outcomes accurately represent community views and priorities. While not all individuals or institutions could be consulted, it is assumed that the sample of participants is sufficiently representative of the affected population.
- .

6.3.2 Limitations

Limitations associated with an SIA include:

- **Data Gaps:** SIAs may encounter limitations due to data gaps, inconsistencies, or inaccuracies in available information. This can affect the reliability and comprehensiveness of the assessment, particularly in areas with limited data availability or poor data quality.
- **Complexity of Social Systems:** Social systems are complex and dynamic, making it challenging to predict and quantify all potential social impacts accurately. SIAs may struggle to capture the full range of interactions, feedback loops, and unintended consequences within social systems.
- **Subjectivity:** SIAs involve subjective judgments and interpretations of social conditions, priorities, and values. Different stakeholders may have conflicting perspectives on the significance of certain impacts or the appropriateness of mitigation measures, leading to uncertainty and disagreement.

- **Temporal Dynamics:** Social impacts may unfold over extended time frames, with effects manifesting differently across various stages of project development and operation. SIAs may overlook long-term or delayed impacts and fail to adequately account for temporal dynamics in social change.
- **Context Sensitivity:** SIAs must be sensitive to the contextual factors that shape social conditions, including cultural norms, historical legacies, institutional frameworks, and power dynamics. Failure to consider these contextual factors can result in incomplete or biased assessments of social impacts.
- **Interdisciplinary Challenges:** SIAs require collaboration across diverse disciplines, including sociology, anthropology, economics, and environmental studies. Interdisciplinary challenges, such as differences in terminology, methodologies, and epistemological frameworks, can complicate the integration of social and environmental considerations.
- **Uncertainty and Risk:** SIAs inherently involve uncertainty and risk, particularly regarding the prediction of future social impacts and the effectiveness of mitigation measures. It's essential to acknowledge and communicate these uncertainties transparently to decision-makers and stakeholders.

Recognising these assumptions and limitations is critical for conducting robust and rigorous social impact assessments that inform decision-making, promote social justice, and mitigate adverse effects on affected communities. Transparency, stakeholder engagement, and ongoing reflection are key to addressing these challenges and improving the quality and effectiveness of SIAs over time.

7 Assessment of Alternatives

In accordance with the requirements outlined in Appendix 2 of the EIA Regulations 2014, as amended, a consideration of reasonable and feasible alternatives, including site and technology alternatives and the “do-nothing” alternative must be undertaken. Each alternative is to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio-economy. When no feasible and/or reasonable alternatives can be identified and investigated in terms of a comparative assessment during the Scoping Phase, the EIA Report will then not contain a section with alternatives.

The EIA Regulations 2014, as amended, define alternatives as the different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

- The property on which or location where it is proposed to undertake the activity;
- The type of activity to be undertaken;
- The design or layout of the activity;
- The technology to be used in the activity;

- The operational aspects of the activity; and
- The option of not implementing the activity.

Limited alternatives may exist for the project may exist for the Proposed Project. The most feasible of these alternatives have been considered for this DBAR and are discussed in greater detail below.

The Department of Environmental Affairs (DEA) EIA guidelines necessitate the consideration of various development alternatives as part of the EIA process. The consideration of project alternatives is a key requirement of an EIA as it provides a basis for choice for the competent authority and I&APs. In the NEMA EIA Regulations, alternatives in relation to a proposed activity are defined as “different means of meeting the general purpose and requirements of the activity, which may include alternatives to the –

property on which or location where it is proposed to undertake the activity;

- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity; and
- operational aspects of the activity.

Alternatives that are considered must be reasonable and feasible and should have the potential to reduce negative impacts that may occur due to the proposed Project. Alternatives are considered as a means of reaching the same need and purpose as the proposed Project in a way that minimises the impacts and maximises the benefits. The anticipated environmental impacts which these alternatives may pose have been discussed below.

7.1 Alternative Property

In considering alternatives to the proposed expansion, the existing Mthatha Quarry property was assessed in terms of its capacity to accommodate additional mining activities. The current quarry footprint, including the proposed 86.84-hectare expansion area, was identified as the most feasible option due to:

- Proximity to existing infrastructure, reducing the need for new roads, power, and water connections.
- Availability of mineral resources within the adjacent parcels, enabling a logical continuation of operations.
- Minimization of displacement or disruption to local communities compared to alternative properties.

Alternative properties were not deemed feasible as they either lacked sufficient resource volumes, were located further from transport routes, or would create higher social and environmental risks.

7.2 Alternative Land Use Options

Alternative land uses for the expansion area were considered to assess potential social, economic, and environmental trade-offs. Options included:

- **Agricultural use:** The land currently supports limited subsistence farming; however, resource potential is low, and conversion to commercial agriculture would require significant investment.
- **Residential development:** While housing could address local accommodation needs, the location is less suited due to proximity to quarry operations, noise, dust, and vibration impacts.
- **Conservation or recreational use:** Setting aside the area for natural habitat or public recreation would conserve biodiversity but would forgo significant economic and employment opportunities associated with quarrying.

After evaluation, continuation and expansion of mining operations were considered the most viable option, balancing socio-economic benefits and manageable social impacts.

7.3 Mine Plan, Infrastructure Layout and Affected Land Uses

The proposed mining expansion will follow the existing mine plan, which includes:

- **Quarry pit expansion:** The pit will extend into adjacent resource zones, incorporating historically disturbed areas for rehabilitation where mining is not feasible.
- **Infrastructure layout:** Existing infrastructure such as workshops, administration offices, weighbridges, and stockpiling areas will remain largely unchanged. Minimal additional structures may be required to support operational efficiency.
- **Affected land uses:** The expansion primarily affects undeveloped land adjacent to the current quarry, with minor impacts on communal agricultural land. No residential relocations are anticipated.

All activities will comply with applicable environmental and social regulations and affected land uses will be mitigated through rehabilitation and community engagement strategies.

7.4 Technology Alternative

Technology alternatives were assessed to ensure efficient, safe, and socially responsible operations. Considerations included:

- **Mobile versus fixed crushing and screening plants:** Mobile plants allow flexibility and reduce land disturbance, while fixed plants provide operational efficiency. A combination of both will be used.
- **Dust and water management systems:** Implementation of dust suppression systems and controlled water abstraction reduces potential health impacts on nearby communities.
- **Blasting techniques:** Modern blasting methods minimize vibration, noise, and dust emissions, addressing community concerns while maintaining operational efficiency.

The selected technology alternatives prioritize community health and safety, operational efficiency, and compliance with legislative requirements.

7.5 The No-Go Option

The no-go scenario involves not expanding the quarry and maintaining operations solely within the existing 48.75-hectare mining right area. Implications include:

- **Economic impact:** Limited mineral extraction would reduce the potential for employment, local procurement, and economic growth within the municipality.
- **Social impact:** Reduced opportunities for skills development and community benefits under the Employment and Social Labour Plan (SLP).
- **Environmental benefit:** Avoidance of new land disturbance, reduced dust and noise emissions, and minimal impact on surrounding communities.

While the no-go option would avoid additional social and environmental impacts, it would constrain the quarry's long-term viability and socio-economic contribution to the region.

8 Socio-Economic Baseline

8.1 Eastern Cape Province

This Section provides a detailed socio-economic baseline of the Eastern Cape Province, which sets the broader regional context for the proposed project. The analysis draws primarily on official data from Statistics South Africa (Stats SA), the Eastern Cape Socio-Economic Review and Outlook (SERO 2024), Quantec datasets, and other publicly available provincial planning documents. It describes the province's demographic, social, and economic profile to inform the assessment of potential project-related impacts. The Eastern Cape Province is characterised by a mix of urban centres and predominantly

rural settlements. It has a diverse population and a strong reliance on both formal and informal economic activities. Key provincial socio-economic indicators include:

- Population distribution skewed towards rural areas, with significant pressure on basic services in remote communities.
- A largely agrarian economy in rural zones, with mining and manufacturing concentrated in urban hubs.
- Infrastructure development uneven, with urban centres exhibiting better access to education, healthcare, and transport networks.

Eastern Cape Province Key Statistics

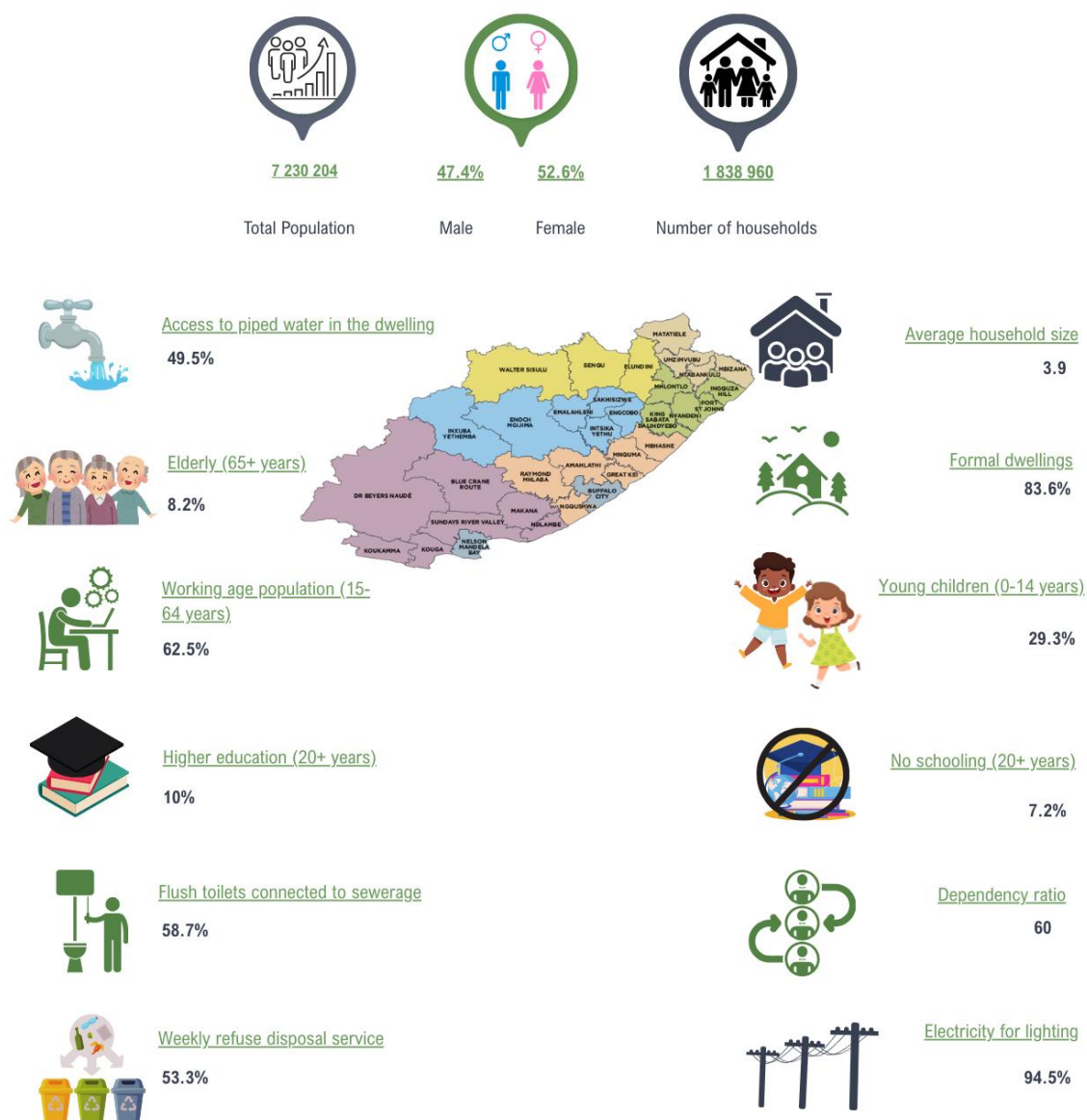


Figure 8-1: Eastern Cape Province Key Statistics

8.1.1 Demographic Profile

The Eastern Cape is South Africa's third most populous province, with an estimated 7.09 million people in 2025 (Stats SA, 2025a). Census 2022 recorded 1,838,960 households in the province, with an average household size of 3.9 persons (Stats

SA, 2024a). More than half (51.9%) of households are female-headed, reflecting historical labour migration patterns and the centrality of women in household management.

The province is linguistically and culturally homogenous: isiXhosa is the dominant home language, spoken by approximately 82% of residents, followed by Afrikaans (10.6%) and English (3.3%) (Stats SA, 2024a). Settlement patterns reveal a mix of urban centres (such as Gqeberha, East London, and Mthatha) and vast rural areas, particularly in OR Tambo, Alfred Nzo, and Joe Gqabi districts.

8.1.2 Human Development and Health

Life expectancy in the Eastern Cape is lower than the national average, estimated at 61–62 years for males and 67–68 years for females for the period 2021–2026, compared to 64.5 and 70.9 years nationally (Stats SA, 2025a). The HIV prevalence rate is among the highest in the country, contributing to a significant burden on the provincial health system.

The province faces challenges in maternal and child health. Infant and under-five mortality rates remain higher than the national average, linked to limited access to quality healthcare, malnutrition, and water and sanitation backlogs (Eastern Cape Provincial Treasury, 2024). Health services are unevenly distributed, with urban centres better served than rural districts, where clinics and hospitals often face staff shortages and inadequate infrastructure.

8.1.3 Education

Educational attainment in the province reflects historical backlogs but shows gradual improvement. Census 2022 data indicate that among persons aged 20 years and older, 10% have post-school qualifications, 27% have completed secondary school, and 37% have some secondary education (Stats SA, 2024a).

School attendance among persons aged 5–24 years is 77%, which is relatively high. However, the quality of education outcomes is uneven. The province's National Senior Certificate (NSC) pass rate has improved in recent years, from below 70% in 2020 to above 75% in 2023 (Eastern Cape Provincial Treasury, 2024). Rural schools continue to struggle with infrastructure, learner-teacher ratios, and access to resources.

8.1.4 Labour Market

The Eastern Cape has one of the weakest labour markets in South Africa. The official unemployment rate stood at 39.5% in Q2 2025, while the expanded definition of unemployment reached 47.6% (Stats SA, 2025b). Youth unemployment (ages 15–34) is particularly severe, recorded at 55.3%.

The province also has one of the lowest labour force participation rates (50.4%), reflecting discouraged work seekers and a structurally weak economy. Social grants remain a critical source of household income, with high dependency ratios evident in rural districts (Eastern Cape Provincial Treasury, 2024).

8.1.5 Economic Structure

The Eastern Cape contributed R537.4 billion to South Africa's GDP in 2023, representing 7.7% of national output (Stats SA, 2023). The provincial economy grew by 0.8% in 2023, slightly above the national average of 0.7%.

The economic structure is dominated by the tertiary sector ($\approx 82\%$ of Gross Value Added), particularly government and community services ($\approx 23\%$), trade ($\approx 16\%$), and finance and real estate ($\approx 15\%$). The secondary sector ($\approx 16\%$) is led by manufacturing, with the automotive industry in Nelson Mandela Bay forming a strategic hub for both domestic and export markets. The primary sector ($\approx 2\%$) is small but includes commercial agriculture, forestry, and fishing (Eastern Cape Provincial Treasury, 2025).

Despite this diversification, the provincial economy is underdeveloped relative to its population size, and poverty remains widespread, especially in rural areas.

8.1.6 Poverty and Inequality

The Eastern Cape is one of South Africa's poorest provinces. Using the Upper-Bound Poverty Line (UBPL), the SERO (2024) indicates that more than half of the population lives below the poverty line, though headcounts declined slightly between 2022 and 2023.

The Gini coefficient for the province remains high, reflecting persistent inequality. The reliance on social grants is significant, with pensions, child support, and disability grants providing the main source of income for many households. Poverty is spatially concentrated in rural districts, while urban centres exhibit greater income diversity but also visible informal settlements.

8.1.7 Housing and Living Conditions

Housing conditions have improved over the last decade. Census 2022 data show that 83.6% of households live in formal dwellings, 11.7% in traditional dwellings, and 4.4% in informal structures (Stats SA, 2024a). Around 31.6% of households occupy government-subsidised RDP houses.

8.1.8 Basic Services

Access to services is uneven. Provincial figures from Census 2022 reveal:

- Water: 67.1% of households have piped water inside dwellings or yards, while 19.5% still lack access to piped water. Notably, 59.2% of households reported water interruptions in the preceding year (Stats SA, 2024c).
- Sanitation: 58.7% of households use flush toilets, while 20.7% rely on ventilated improved pit latrines (VIPs), and about 3% have no toilet facilities (Stats SA, 2024a).
- Energy: 94.5% of households use electricity for lighting, but only 65% use electricity for cooking. Alternative fuels include gas (25.3%) and wood (6.2%) (Stats SA, 2024d).

- Refuse: 53.9% of households benefit from weekly refuse removal by municipalities, while the rest rely on own dumps, communal sites, or have no disposal system (Stats SA, 2024a).

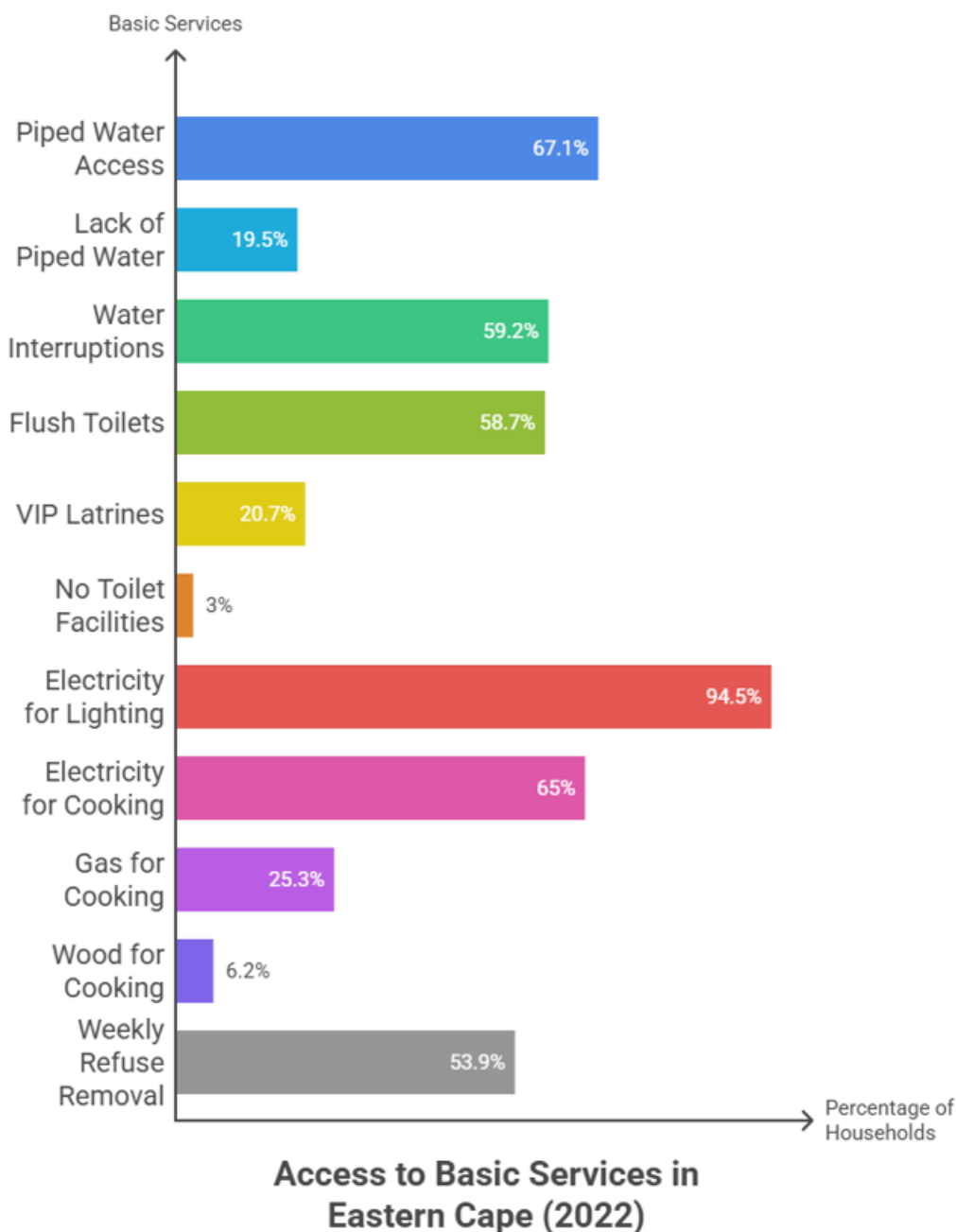


Figure 8-2: Access to Basic Services in Eastern Cape (2022)

The Eastern Cape's socio-economic profile presents both risks and opportunities for projects in the province. Exceptionally high unemployment, particularly among youth, underscores the potential significance of local job creation and procurement. At the same time, poverty, service backlogs, and widespread reliance on grants highlight vulnerabilities that may amplify expectations from affected communities (Stats SA, 2025b; Eastern Cape Provincial Treasury, 2024).

Service delivery constraints in water, sanitation, and refuse management are critical considerations for project planning, as construction or operational demands could place additional strain on fragile infrastructure. The prominence of female-headed households necessitates gender-sensitive engagement approaches and inclusive benefit-sharing mechanisms. Finally, lower life expectancy and high disease burdens indicate a need to integrate robust health and safety provisions, consistent with IFC Performance Standards and WHO environmental health guidelines, into project design and mitigation measures.

8.2 O.R. Tambo District Municipality

This Section provides a socio-economic profile of the O.R. Tambo District Municipality (ORTDM) in the Eastern Cape Province. ORTDM is one of the most densely populated and socio-economically challenged districts in South Africa. It comprises five local municipalities: King Sabata Dalindyebo (seat: Mthatha), Nyandeni, Ngquza Hill, Port St Johns, and Mhlontlo. The district is predominantly rural, with scattered villages and traditional settlements, although Mthatha functions as the administrative and commercial hub. The baseline draws on official data from Statistics South Africa (Stats SA), the ORTDM Integrated Development Plan (IDP 2024/25), and provincial socio-economic reviews.

8.2.1 Demographic Profile

According to Census 2022, ORTDM has a population of 1,501,702 people, housed in 313,536 households, with an average household size of 4.8 persons, significantly higher than the provincial average of 3.9 (Stats SA, 2024b). The district accounts for over 20% of the Eastern Cape's total population, making it the most populous district in the province.

The settlement pattern is predominantly rural: approximately 21.5% of households live in traditional dwellings, compared to 11.7% provincially (Stats SA, 2024b). The high dependency ratio reflects large households and persistent reliance on remittances and grants.

8.2.2 Human Development and Health

ORTDM exhibits some of the lowest human development indicators in South Africa. The infant and under-five mortality rates are higher than provincial averages, linked to poor access to health services, malnutrition, and HIV/AIDS prevalence. Although Mthatha hosts Nelson Mandela Academic Hospital—a major referral and teaching hospital—many rural communities rely on poorly resourced clinics and district hospitals with frequent staff shortages.

Life expectancy data is not published at district level, but provincial estimates (61–62 years for males and 67–68 years for females) suggest comparable or lower levels in ORTDM due to widespread poverty and limited access to healthcare (Stats SA, 2025a).

OR Tambo District Key Statistics

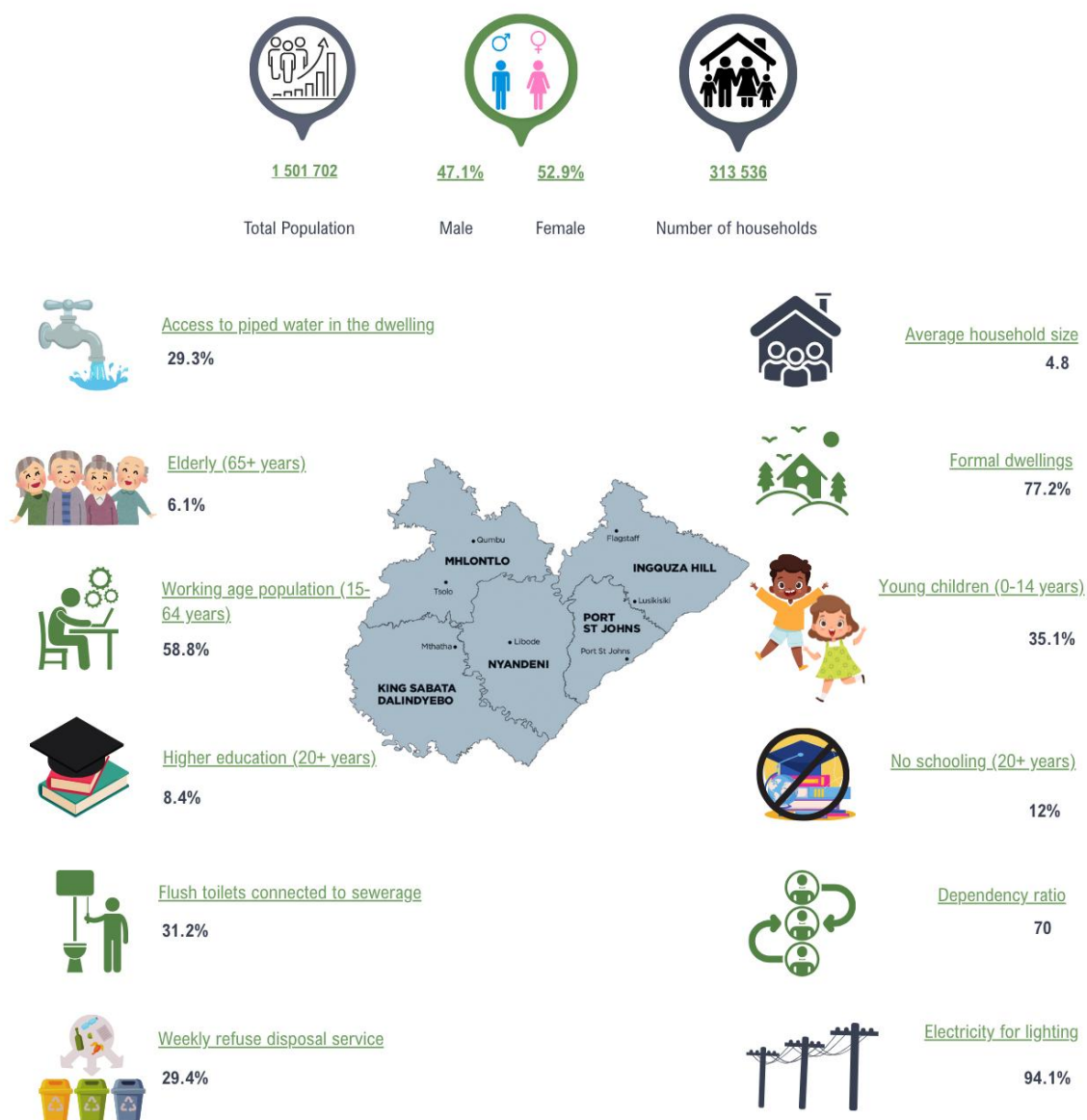


Figure 8-3: O.R. Tambo District Municipality Key Statistics

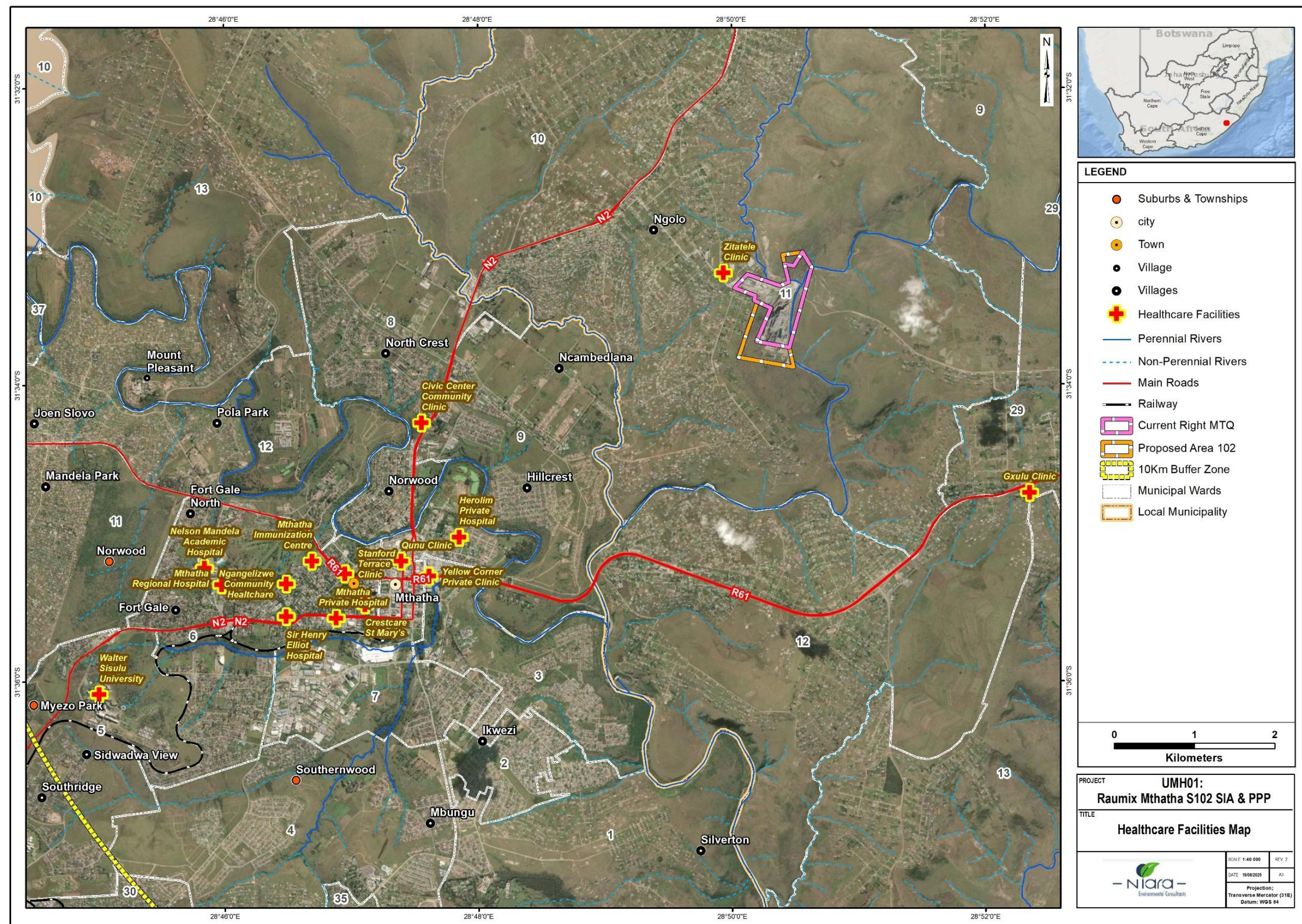


Figure 8-4: Health Care Facilities Map

8.2.3 Education

Educational attainment levels are low across the district. While provincial data show 10% of persons aged 20+ have post-school qualifications, ORTDM reports lower levels, with a large proportion of adults having only partial secondary education (ORTDM IDP, 2024/25).

School attendance among 5–24 year-olds is high, but outcomes are weak. Matric pass rates in the district lag behind the provincial average, with challenges including inadequate infrastructure, underqualified teachers, and long travel distances for rural learners. These education gaps contribute directly to the district's structural unemployment crisis.

8.2.4 Labour Market

Unemployment in ORTDM is among the highest in the country. While the Eastern Cape recorded an official unemployment rate of 39.5% in Q2 2025 (Stats SA, 2025b), local estimates from the IDP suggest that unemployment in the district exceeds 40%, with youth unemployment substantially higher.

The district's economy is unable to absorb its youthful labour force. As a result, social grants (child support, disability, and old-age pensions) are the primary income source for a large share of households. This reliance on grants, together with labour migration, creates socio-economic vulnerability but also underscores the significance of potential project-related employment opportunities.

8.2.5 Economic Structure

The district economy is heavily dominated by the tertiary sector, particularly community and government services, trade, and small-scale informal activities (ORTDM IDP, 2024/25). Unlike other parts of the Eastern Cape, industrial and manufacturing activities are negligible.

Agriculture contributes to livelihoods in rural villages but remains largely subsistence-based, with pockets of smallholder farming and livestock rearing. Fishing and eco-tourism provide supplementary income along the Wild Coast, especially in Port St Johns and Nyandeni, but are underdeveloped. The local economy's heavy dependence on government services and transfers underscores structural vulnerability and limited resilience.

8.2.6 Poverty and Inequality

ORTDM is one of the poorest districts in South Africa. Census 2022 and the district IDP highlight that more than half of households live below the poverty line. The Gini coefficient is estimated at 0.60, reflecting severe inequality (Eastern Cape Provincial Treasury, 2024).

Grant dependency is high: old-age pensions and child support grants are the most common household income sources. Informal sector activities (street trading, taxi operations, small-scale farming) provide supplementary income but remain insecure and poorly remunerated.

8.2.7 Housing and Living Conditions

Housing patterns reflect the rural character of the district. While the provincial share of households in formal dwellings is 83.6%, in ORTDM this figure is significantly lower, with 21.5% of households in traditional dwellings and less than 80% in formal housing (Stats SA, 2024b). Informal dwellings account for less than 1% of households.

This settlement pattern poses challenges for service delivery, with many communities dispersed across difficult terrain. Household sizes are large (average 4.8), reinforcing dependency burdens.

8.2.8 Basic Services

Access to basic services in ORTDM lags behind provincial averages:

- **Water:** Many households rely on communal standpipes. Fewer than half have piped water inside dwellings or yards, compared with 67.1% provincially. Service reliability is a major concern, with frequent interruptions reported (Stats SA, 2024c).
- **Sanitation:** Access to flush toilets is below the provincial average of 58.7%. A large proportion of households depend on pit latrines (ventilated or unventilated), and open defecation is still reported in remote areas (Stats SA, 2024a).
- **Energy:** While electricity access for lighting is high (>90%), affordability limits use for cooking, with many households relying on wood and paraffin.
- **Refuse:** Less than half of households receive weekly refuse removal. Most rely on own dumps or community disposal sites (Stats SA, 2024a).

ORTDM Basic Services Deficiencies



Figure 8-5: ORTDM Basic Services Deficiencies

The socio-economic conditions of ORTDM are characterised by high poverty, inequality, and unemployment, coupled with large household sizes and heavy reliance on social grants. This creates heightened expectations for any project to generate employment, procurement, and community development opportunities (ORTDM, 2024/25).

Service delivery backlogs, particularly in water, sanitation, and refuse removal, may be exacerbated by project construction and operations if not properly managed. The prevalence of traditional dwellings and scattered rural settlements increases sensitivity to land-use changes, heritage impacts (such as grave relocations), and access issues.

The district's demographic and socio-economic profile underscores the importance of:

- Local employment and skills transfer strategies;
- Gender-sensitive engagement, given the high share of female-headed households;
- Integration of health safeguards, due to lower-than-average health outcomes; and
- Mitigation of service-use conflicts, to ensure the project does not intensify existing infrastructure deficits.

8.3 Nyandeni Local Municipality

Nyandeni Local Municipality is situated in the O.R. Tambo District Municipality within the Eastern Cape Province of South Africa. The municipal area comprises a predominantly rural landscape, characterised by dispersed settlements, subsistence agriculture, and a reliance on communal land tenure systems. The municipality covers approximately 2,550 km² and includes around 32 wards, making it one of the larger local municipalities in the district (Nyandeni Municipality IDP, 2023). Despite its expansive geographical coverage, settlement density remains relatively high, with households clustered in village formations and peri-urban areas closer to towns such as Libode and Ngqeleni.

This Section provides a socio-economic profile of the Nyandeni Local Municipality (NLM), located within the O.R. Tambo District Municipality of the Eastern Cape Province. Nyandeni is a largely rural municipality characterised by traditional settlement patterns, widespread poverty, and significant service delivery challenges. Its two main administrative centres are Libode and Ngqeleni, with dispersed villages across the coastal and inland areas. The baseline draws on official data from Statistics South Africa (Stats SA), the Nyandeni Integrated Development Plan (IDP 2024/25), and provincial socio-economic reviews.

8.3.1 Demographic Profile

Nyandeni is one of the most populous local municipalities in the O.R. Tambo District. According to Census 2022, the municipality had a population of approximately 332,000 people across ~75,000 households, with an average household size of 4.4 (Stats SA, 2024b; Nyandeni IDP, 2024/25).

The municipality is overwhelmingly rural. Settlement is dominated by traditional villages under customary land tenure, with a high proportion of households in traditional dwellings. Female-headed households are common, reflecting broader demographic patterns in the province. IsiXhosa is the dominant home language, spoken by more than 95% of residents.

8.3.2 Human Development and Health

Human development indicators in Nyandeni are among the lowest in the district. The municipality is characterised by high levels of poverty, food insecurity, and malnutrition, which directly affect health outcomes. The HIV/AIDS burden is significant, mirroring provincial trends, and maternal and child health challenges persist.

Access to health facilities is uneven. While clinics are spread across villages, many are under-resourced. Residents requiring specialised care travel to Nelson Mandela Academic Hospital in Mthatha, outside Nyandeni.

Life expectancy at municipal level is not separately published, but district and provincial estimates (61–62 years for males, 67–68 years for females) suggest Nyandeni is at or below these averages due to poverty and service deficits (Stats SA, 2025a).

8.3.3 Education

Education levels in Nyandeni are low. Most adults have incomplete secondary education, with only a small proportion attaining tertiary qualifications (Nyandeni IDP, 2024/25). School attendance among children and youth is relatively high, but outcomes are poor, reflected in weak matric pass rates compared to district and provincial averages.

Challenges include under-resourced schools, long travel distances in rural areas, and inadequate infrastructure. The municipality has a very limited tertiary education footprint, contributing to skills out-migration.

8.3.4 Labour Market

Unemployment in Nyandeni is extremely high. While provincial unemployment was 39.5% in Q2 2025 (Stats SA, 2025b), Nyandeni consistently records rates above 45%, with youth unemployment exceeding 60% (Nyandeni IDP, 2024/25).

The municipality's economy is unable to absorb its youthful population. Employment is concentrated in the public sector (education, health, municipal services), subsistence agriculture, and the informal sector (trading, taxis, small shops). Social grants are the main source of household income, with pensions and child support grants particularly important.

8.3.5 Economic Structure

Nyandeni's economy is small, underdeveloped, and grant-dependent. The community services sector (government employment, health, and education) dominates the local economy. Small-scale agriculture (livestock, maize, vegetables) is widely practised but remains largely subsistence-based.

The municipality also has eco-tourism potential, particularly along the Wild Coast, with scenic coastal areas around Coffee Bay and Hluleka Nature Reserve. However, this potential is constrained by poor infrastructure, limited investment, and inadequate marketing. There is little industrial or manufacturing activity.

8.3.6 Poverty and Inequality

Nyandeni is among the poorest municipalities in South Africa. Poverty rates are well above provincial averages, with more than 70% of households estimated to live below the upper-bound poverty line (Nyandeni IDP, 2024/25).

The Gini coefficient, estimated around 0.61, reflects high inequality even within a predominantly poor population. Income is highly reliant on government transfers; for many households, grants are the only source of cash income. This entrenched poverty underpins the vulnerability of local communities to socio-economic shocks.

8.3.7 Housing and Living Conditions

Housing conditions reflect the dominance of traditional settlement patterns. Census 2022 data show that while a significant portion of households live in formal dwellings, a large share are in traditional dwellings, exceeding the provincial average of 11.7% (Stats SA, 2024b). Informal dwellings are less common than in urban areas but present in growing peri-urban settlements.

Household sizes are large, averaging 4.4 people, and many households are multigenerational. Overcrowding is evident in areas close to schools, clinics, and administrative centres.

8.3.8 Cultural and Social Dynamics

Nyandeni is deeply rooted in Xhosa cultural traditions, with family grave sites, initiation schools, and community halls serving as critical spaces of identity and social cohesion. Cultural and religious practices remain central to community life, shaping values, decision-making, and responses to development interventions. The presence of communal institutions, such as traditional leadership under the AmaMpondo royal house, plays a pivotal role in governance and land allocation.

Community cohesion is a defining feature of the municipality. The prevalence of close-knit housing clusters, family-based land ownership, and reliance on communal decision-making processes reflect a strong sense of belonging and social capital. At the same time, challenges such as limited amenities, crime, and safety concerns necessitate further investment in community development and welfare.

8.3.9 Basic Services

Access to services in Nyandeni is below provincial averages:

- **Water:** Many households rely on communal standpipes. Fewer than half have access to piped water inside their dwelling or yard. Service interruptions are common, especially in rural areas (Stats SA, 2024c).
- **Sanitation:** Pit latrines dominate. Access to flush toilets is far below the provincial figure of 58.7%. Open defecation is still reported in remote villages (Stats SA, 2024a).
- **Energy:** Electricity access for lighting is relatively high (>90%), but many households rely on wood and paraffin for cooking, due to affordability issues (Stats SA, 2024d).
- **Refuse:** Municipal waste collection coverage is limited, with most households relying on own dumps or community disposal sites.

Access to Basic Services in Nyandeni

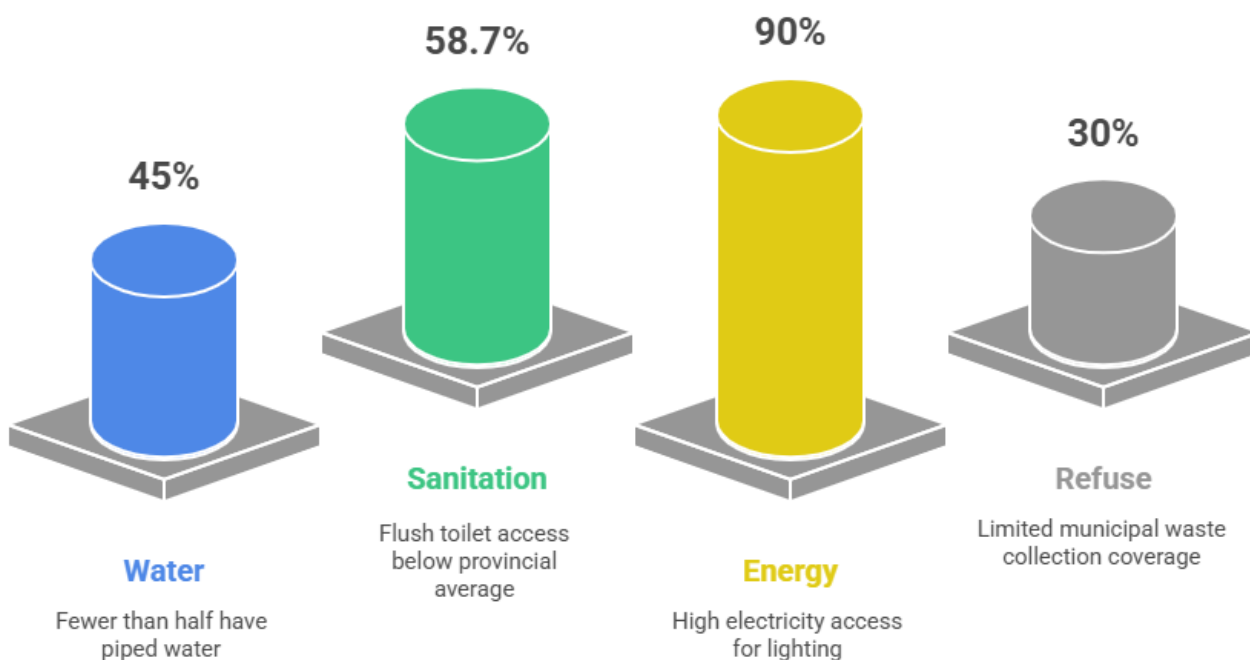


Figure 8-6: Access to Basic Services in Nyandeni

The socio-economic profile of Nyandeni underscores the vulnerability of communities and the significant expectations for project benefits. The extremely high unemployment and poverty levels mean that even short-term construction jobs or procurement opportunities will be highly valued but could also create risks of conflict or unmet expectations.

Service delivery backlogs in water, sanitation, and refuse management raise concerns that project activities could further strain municipal infrastructure if not carefully mitigated. The prevalence of traditional dwellings and customary land tenure arrangements highlight the importance of sensitive stakeholder engagement, particularly with traditional authorities.

Given the high proportion of female-headed households and large multigenerational homes, gender-sensitive engagement and livelihood support measures will be essential. Finally, health vulnerabilities and poor education outcomes emphasise the need for the project to adopt robust health, safety, and skills-transfer initiatives in alignment with IFC Performance Standards and WHO guidelines.

8.4 A Comparative Summary

The comparative analysis highlights that Nyandeni Local Municipality consistently lags behind both the Eastern Cape Province and O.R. Tambo District averages across almost all socio-economic indicators.

- Unemployment: While the Eastern Cape already has the highest unemployment nationally (39.5% official; 55.3% youth), Nyandeni is worse off, with unemployment exceeding 45% and youth unemployment above 60%. This

underscores extreme vulnerability and the strong likelihood of heightened expectations for local employment opportunities linked to the project.

- **Housing:** Nyandeni has a lower proportion of formal dwellings (<75%) and a higher prevalence of traditional dwellings (>20%), compared with provincial averages (83.6% and 11.7% respectively). This reflects its rural and traditional settlement character.
- **Water and Sanitation:** Access to piped water inside dwellings/yard (<45%) and flush toilets (<45%) is significantly below both provincial and district levels. Service interruptions are frequent, intensifying household vulnerability.
- **Energy:** While electricity for lighting (>90%) is broadly in line with provincial levels, affordability constraints mean that many households rely on wood and paraffin for cooking, unlike the provincial average where 65% cook with electricity.
- **Refuse Removal:** Less than 40% of Nyandeni households receive weekly refuse removal, compared to over half of households provincially. This highlights weak municipal service provision and environmental health risks.

Overall, Nyandeni exhibits a more severe socio-economic and service delivery deficit than the already-deprived district and province in which it sits. These conditions heighten the importance of the project's social performance, particularly in relation to job creation, local procurement, health safeguards, and community engagement with traditional authorities.

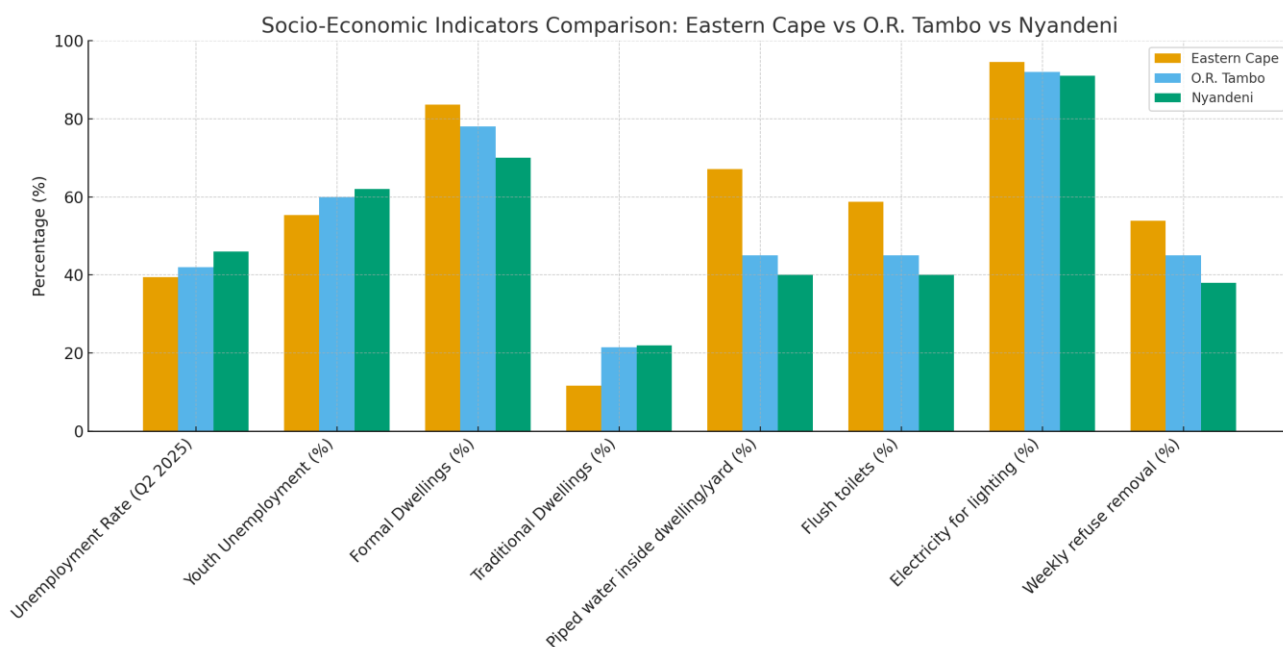


Figure 8-7: Comparison -Province, DM and LM

8.5 Mthatha

Mthatha is the administrative and service hub of the former Transkei, situated on the N2 and R61 corridors and functioning as the regional centre for the Nyandeni LM within O.R. Tambo District. National corridors (N2 north–south; R61 east–west) and planned upgrades and tenders around the Mthatha ring road and N2 improvements from Mthatha to Nqadu reinforce the town's gateway role for surrounding rural settlements and coastal nodes.

8.5.1 Demographics

Mthatha is the principal service hub for northeastern Eastern Cape, positioned on the N2 (north–south) and R61 (east–west) corridors. Ongoing and planned SANRAL works on the N2 around Mthatha (e.g., improvement of N2 Section 19X, Mthatha–Nqadu, and upgrade packages toward Viedgesville) sustain the city's regional-gateway role for goods, commuters, and public services.

South Africa's Census 2022 does not publish the same depth of indicators for every main place (town) as it does for municipalities. For Mthatha (main place), the most recent openly accessible town-level population baseline is Census 2011 (population ≈96,114, ≈29,593 households). Use these as the last official town-level counts and avoid unverified web estimates.

8.5.2 Economy and Employment

Mthatha's economy is tertiary-sector heavy (public administration, education, health, retail). Private retail investment has recently strengthened: after a 2024 ownership change and a R210-million revamp, Mall of Mthatha (ex-BT Ngebs City) reported +9.7% 2024 turnover (y/y) with double-digit footfall growth, indicating robust consumer activity and a stabilising CBD retail anchor.

At the same time, business operating conditions are stressed by crime and service unreliability. Local business forums and media report that power dips/outages and crime are “killing our businesses,” while the municipality publicly issued planned outage notices to replace ageing substation equipment in 2025. Retail has expanded notably, the BT Ngebs City regional mall (2015) catalysed private investment; in 2024–2025 the centre was acquired, rebranded as Mall of Mthatha, and is undergoing a major upgrade, with owners reporting stronger turnover and footfall (double-digit traffic growth; ~9.7% turnover uplift in 2024 vs 2023). These upgrades (including solar and security systems) are pitched as precinct-level improvements that can stabilise the CBD's retail gravity.

8.5.3 Critical Urban Services and Infrastructure

8.5.3.1 Water Security and Quality

Mthatha has faced recurrent supply interruptions from both planned work and criminal damage to water assets. In July 2025, theft and vandalism at a pump station near Mthatha caused ~R20 million damage and cut supply to large areas. The district also communicates planned shutdowns for upgrade tie-ins (e.g., public notices for Fortgale and other suburbs). Parallel bulk

augmentation is in delivery, the Highbury 50 Ml/d WTW (Mthatha North) forms part of a Presidential Intervention bulk scheme for the Mthatha area.

Water quality and sanitation risks are well-documented along the Mthatha River/Dam system: peer-reviewed and grey-literature studies identify illegal dumping hotspots and deteriorated river quality; a 2019 incident saw raw sewage dumped into Mthatha Dam, prompting criminal investigation and official condemnation. These legacies elevate environmental-health risks downstream of the CBD and in low-lying settlements.

8.5.3.2 Electricity

Mthatha experiences planned interruptions for maintenance and periodic unplanned outages; the municipality issued formal 2025 notices and, in some cases, disconnected chronic defaulters. Load-shedding schedules remain a system-wide national risk even when temporarily suspended. For construction phasing and 24/7 operations, plan for backup power and surge protection.

8.5.3.3 Transport and Air Connectivity

SANRAL's Eastern Cape programme has active and pipeline projects affecting the Mthatha catchment (N2 Wild Coast system; Mthatha-adjacent sections; contractor development roadshows). Mthatha Airport remains operational after 2024 flight-procedure reviews and the lifting of instrument-procedure suspensions; navigation procedure updates in 2024 temporarily disrupted flights, then were resolved with ATNS.

Mthatha Airport experienced 2024 instrument-procedure suspensions during an ATNS compliance review, with procedures progressively reinstated later in 2024; occasional weather-related cancellations still occur. Logistics requiring reliable air access should plan contingencies.

8.5.4 Social Services and Human Development

8.5.4.1 Health Platform

Mthatha anchors tertiary and regional referral care through Nelson Mandela Academic Hospital (NMAH) and Mthatha Regional Hospital, linked to Walter Sisulu University (WSU). NMAH's published clinical research notes a ~3 million people catchment, underscoring high demand on specialist services in the city.

8.5.4.2 Higher Education and Student Footprint

WSU's Mthatha campuses influence local rentals, transport and retail. In April–June 2025, student protests and a fatal shooting on/near the Mthatha campus drew national intervention and official statements, highlighting tensions around campus safety, residence management and policing, issues that spill into the CBD and public transport nodes.

8.5.5 Safety, social pathologies and stability

Mthatha has endured episodic taxi-related violence and extortion rackets affecting businesses:

Taxi unrest (May 2024): Major routes (N2, R61) were blockaded; SANDF assisted SAPS; NATJOINTS reported arrests of alleged instigators. Such events disrupted voting logistics and city mobility.

Extortion and violent crime (2024–2025): Multiple reports describe protection-fee demands on businesses and construction, with police operations targeting syndicates (including a June 2025 shoot-out on the R61 near Mthatha). Civil society organised marches against crime and extortion in 2024.

Street-trading enforcement (2025): Municipal by-law operations removed hawkers from restricted CBD streets and prosecuted traders for sleeping on premises, triggering protests and claims of livelihood loss. Expect sensitivity around informal-economy regulation during construction.

While SAPS publishes quarterly stats mainly at station/district resolution, regional reporting consistently lists Mthatha station among top contact-crime hotspots in the province, with sexual-offence loads also high in OR Tambo; interpret as a city-level risk environment for staff, contractors and community partners.

8.5.6 Housing, settlements and disaster risk

Mthatha's footprint includes older townships and informal/flood-exposed settlements along the Mthatha River. In June 2025, extreme floods centred on Mthatha caused large-scale loss of life and damage; official provincial statements put the death toll above 100 as recoveries progressed. The event exposed drainage, settlement siting, and waste-choking of waterways as key urban-risk multipliers.

8.5.7 Environmental quality

Beyond flood debris loads, studies over the last decade identify chronic waste mismanagement and illegal dumping along the Mthatha River as persistent stressors on water quality and amenity, with knock-on health implications in dense and low-lying neighbourhoods that use riverbanks for access or recreation.

- Community expectations & livelihoods: Retail resilience coexists with high vulnerability among informal traders and youth jobseekers. Ensure transparent local-labour processes, small-supplier support, and grievance access close to the CBD.
- Security and logistics: Build contingencies for taxi-related disruptions, targeted extortion of contractors, and ad-hoc road closures; align with SAPS/CPF and project logistics plans (N2/R61 exposure).
- Water, sanitation and waste: Pre-construction water-use planning (storage, off-peak filling, leak detection) and site sanitation are essential; avoid any activities that could worsen river/dam pollution; integrate solid-waste controls (litter nets, skip contracts) throughout works.
- Disaster risk: Treat flood-line and drainage constraints as design-critical. Avoid low-lying laydown areas; include stormwater controls and emergency egress; coordinate with municipal DRM on early-warning triggers.

- Worker/community safety: Given crime and GBV context, design safe transport, shift-end escorts for night work, lighting, and psychosocial reporting channels; adopt zero-tolerance contractor codes for extortion payments.
- Stakeholder relations: Student-related volatility and informal-trader enforcement cycles can spill into the CBD. The Quarry must maintain lines to WSU, ward councillors, trader associations, taxi leadership and SAPS.

8.5.8 Infrastructure and Basic Services

Water & sanitation. O.R. Tambo DM is the water services authority. Mthatha has faced repeated planned interruptions (upgrades; flood damage at pump stations) and unplanned outages linked to theft/sabotage and storm impacts. In July 2025 theft at the Mdoni pump station near Mthatha caused damage costed at approximately R20 million and left areas dry; the district regularly posts planned outage notices for Mthatha during upgrade works. Legacy issues around sewage spills and river/dam pollution (including the well-publicised 2019 dumping incident at Mthatha Dam) and studies documenting illegal dumping along the Mthatha River point to persistent sanitation and waste-management risks.

With regards to solid waste & cleanliness, 2025 reporting highlighted waste-management controversies and operational shortfalls affecting the district and city, with overflow sites, contractor disputes and strike-related disruptions. Clogged drains and littered channels are flagged in recent literature as flood-risk multipliers in Mthatha's low-lying suburbs.

8.6 Ngolo

This section focuses on the socio-economic conditions within Mthatha city and its surrounding wards, highlighting key demographic trends, economic activities, infrastructure, and public services. The analysis is based on available secondary data from Statistics South Africa, municipal reports, and observations from site visits.

8.6.1 Economic Activities

Economic activity in Mthatha city is dominated by commerce, retail, services, and hospitality, with formal employment concentrated in offices, shops, and tourism-related facilities. Rural wards rely primarily on subsistence farming, small-scale trading, and informal services. Mining and quarrying activities, such as those associated with the Mthatha Quarry, contribute to local livelihoods and infrastructure development.



Figure 8-8: Mayfair Casino and Hotel

The image of Mayfair Casino and the adjacent Mayfair Hotel highlights the presence of hospitality and entertainment infrastructure within the town of uMthatha. These facilities indicate investment in leisure, tourism, and business accommodation, which contribute to the local economy and support urban development. (Chapter 8)

- **Economic contribution:** The casino and hotel provide direct employment opportunities in hospitality, security, administration, and entertainment services, while also supporting indirect jobs through supply chains and local vendors.
- **Tourism and business:** The hotel offers accommodation for visitors, including business travelers and tourists, enhancing the town's capacity to host events and stimulate economic activity.
- **Social and recreational role:** The casino provides entertainment services for residents and visitors, reflecting aspects of urban lifestyle and leisure in the town.
- **Urban infrastructure integration:** The presence of these facilities within the town center indicates an integrated urban economy where commercial, leisure, and service sectors co-exist and support one another.

This image demonstrates that uMthatha hosts formal hospitality and entertainment infrastructure, contributing to local economic development, employment, and social activity. These facilities are indicative of a socio-economic baseline where residents and visitors have access to leisure, accommodation, and recreational services, enhancing both the urban profile and economic resilience of the town.

8.6.2 Infrastructure and Services

Urban areas such as Mthatha city have formal roads, electricity, water supply, and telecommunications infrastructure. Public services include schools, government offices, hospitals, and police stations. Surrounding wards experience variable levels of service delivery, with challenges related to road access, water provision, and electricity.

8.6.3 Social Services and Facilities

The availability and condition of social services and community facilities are important indicators of social well-being and resilience in rural and peri-urban areas. Facilities such as schools, healthcare points, administrative centres, and community halls provide essential platforms for education, health, governance, and social cohesion. Their presence, accessibility, and state of maintenance directly influence the quality of life of host communities and shape the way in which development projects are perceived (World Bank, 2010).

In the context of Ngolo and the surrounding host communities, social infrastructure is limited, and existing facilities frequently operate under significant strain due to high demand, inadequate resources, and weak maintenance systems. Assessing the current stock of social services and facilities is therefore critical to understanding community vulnerabilities and potential areas of impact or opportunity associated with the proposed Transkei Quarries expansion.

Key social facilities include primary and secondary schools, government administrative buildings, and healthcare points.



Figure 8-9: Chief Bencil Community Hall

Figure 8-9 above shows a community hall located within the host community of Ngolo. The signage indicates that the facility was originally sponsored by Transkei Quarries, suggesting a precedent of corporate social investment by the company in the area. Community halls are critical social assets in rural South Africa, serving as multifunctional nodes for civic participation, governance meetings, cultural ceremonies, youth activities, and emergency relief distribution (Putnam, 2000; World Bank, 2010).

The hall is fitted with a JoJo tank, which reflects some provision for water security and basic hygiene — an essential requirement for public gatherings in a context where municipal water services are often unreliable. However, the surrounding conditions raise important questions about sustainability and upkeep: the fence appears dilapidated, the grounds overgrown, and there is visible neglect in routine maintenance. This aligns with findings by Marais (2013), who notes that infrastructure delivered through donations in rural and peri-urban areas often deteriorates when long-term management and funding frameworks are absent.

From a social impact perspective, the presence of the hall highlights both opportunity and risk for the Transkei Quarries expansion project. On one hand, it evidences a history of engagement and tangible contribution to community infrastructure, which can support social licence to operate and strengthen perceptions of corporate responsibility. On the other hand, if facilities are perceived as poorly maintained or abandoned, it can fuel community disillusionment and reinforce narratives of extractive industries “giving once-off gifts” without ensuring durability or meaningful integration into local development systems (Hilson, 2012).

Accessibility also matters. The hall is located along a gravel road, which may be difficult to navigate during heavy rains, limiting its usability for vulnerable groups such as the elderly, women, and people with disabilities. In this sense, the hall reflects broader rural infrastructure challenges in O.R. Tambo District, where weak roads and under-serviced community assets exacerbate social exclusion (ECSECC, 2024).

For the Transkei Quarries project, the hall demonstrates that community expectations are not only about new infrastructure, but about ensuring that past contributions remain functional, inclusive, and accessible. Engagement strategies should therefore extend beyond “hard infrastructure” provision to include:

- Maintenance partnerships with local municipalities or community committees,
- Capacity-building for community members to manage and program the facility, and
- Integration of the hall into project activities, such as stakeholder engagement sessions, skills training, or health and safety awareness campaigns.

Such approaches align with IFC Performance Standard 1, which emphasises the importance of ensuring that social investments are sustainable, inclusive, and directly responsive to identified community needs.

8.6.4 Basic Needs and Infrastructure

8.6.4.1 Public Services: Government Services

Government services are provided through facilities such as the Home Affairs Building and the Department of Justice and Constitutional Development, which support civil administration for the surrounding communities.



Figure 8-10: Department of Justice and Constitutional Development



Figure 8-11: Home Affairs Building

The images of the Home Affairs Building and the Department of Justice and Constitutional Development in uMthatha highlight the presence of key government services accessible to the local community. Both buildings appear structurally sound but would benefit from ongoing maintenance to ensure they remain functional and presentable for public use. Their existence within the village underscores the availability of essential administrative and legal services locally, reducing the need for residents to travel long distances for such functions.

- **Service provision:** These facilities provide critical services, including identity documentation, civil registration, and access to justice, which are fundamental for socio-economic participation and legal recognition of rights.

- **Accessibility:** The buildings are located within the community, allowing residents convenient access to government services, which is important for vulnerable groups such as the elderly, unemployed, or those without private transport.
- **Maintenance needs:** While structurally adequate, both facilities require regular upkeep to ensure continued efficiency, safety, and a welcoming environment for the public.

The presence of these government facilities in uMthatha demonstrates an established institutional presence that supports socio-economic stability and governance. Ensuring that they are properly maintained contributes to effective public service delivery and strengthens community trust in local institutions.

8.6.4.2 Housing

Housing conditions are a key indicator of social well-being and quality of life in any community. They reflect levels of income, access to resources, land tenure arrangements, and the ability of households to meet basic needs such as shelter, water, sanitation, and energy. In the context of the study area, housing varies in quality and permanence, ranging from traditional structures to formal dwellings. Assessing housing conditions provides valuable insight into socio-economic vulnerabilities, infrastructure needs, and the overall resilience of communities. This information is crucial in understanding how development activities may affect household stability and long-term settlement patterns.



Figure 8-12: Housing

The image depicts a cluster of closely situated brick houses, suggesting a tightly knit community where households reside in close proximity to one another. Most of the dwellings are fenced, and there are also visibly open sites that have been demarcated with fencing, which indicates individual ownership and the potential for future development or extensions. The use of brick as a primary building material reflects a level of permanence and relative economic stability compared to traditional or temporary structures. The presence of fencing not only marks ownership but also provides security and a sense of privacy, which are important social considerations. Such housing patterns are indicative of semi-formal or formalised settlements where land tenure is relatively secure, and where households invest in durable housing infrastructure. These conditions highlight both social cohesion and a degree of upward socio-economic mobility within the community.



Figure 8-13: Housing in Local Village

The image of Ngolo Village showcases the general quality and layout of residential structures within the community. Most houses are constructed from bricks and feature tin roofs that appear to have been waterproofed, indicating ongoing household investment in maintaining and improving living conditions. The presence of large yards around these homes is typical of peri-urban and semi-rural settlements, providing space for household activities such as gardening, outdoor storage, or small-scale livestock keeping.

- **Construction quality:** Brick walls and waterproofed tin roofs reflect a moderate level of permanence and resilience against local climatic conditions.
- **Yard size and land use:** Spacious yards suggest opportunities for domestic agriculture or recreational space, contributing to household food security and quality of life.
- **Local commerce:** A local business is visible within the settlement, highlighting the integration of residential and commercial functions, which supports local employment and access to goods and services.
- **Utilities:** Power lines running through the village indicate grid connectivity, which facilitates household energy needs, supports small enterprises, and contributes to socio-economic development.

Reflected here, is a community with relatively stable housing infrastructure, adequate space for household activities, and basic service provision. The combination of durable building materials, electricity access, and proximity to local businesses indicates a moderate socio-economic baseline, with residents benefiting from both residential and economic resources within the village environment.

8.6.4.3 Cultural and Religious Aspects

Cultural and religious aspects form an integral part of community life, shaping social identity, practices, and intergenerational values. They are often expressed through physical sites, such as family graveyards, churches, temples, and other sacred spaces, which serve as both spiritual anchors and markers of heritage. Within the study area, these aspects provide insight into how communities relate to their land, traditions, and collective memory. Recognising and assessing these features is essential, as they represent not only spiritual significance but also a source of social cohesion and cultural continuity.



Figure 8-14: Family Gravesite

The image illustrates a small family grave site, comprising no more than two to three headstones adjacent to a garden, and enclosed by fencing. Such graves are deeply significant in the South African context, as they are not only sites of memory and mourning but also carry spiritual and ancestral importance, often regarded as points of ongoing connection between the living and the dead (Ngubane, 2004). The presence of fencing suggests an effort to protect and demarcate the space, highlighting the value placed on safeguarding heritage in a domestic or community setting.

Family graves situated within or near residential areas reflect customary practices of maintaining close proximity to ancestors, which reinforces identity, belonging, and intergenerational continuity (Munnik et al., 2010). The integration of

burial sites into everyday spaces also underlines the overlap between cultural landscapes and lived environments. The location of these graves, particularly when adjacent to homesteads or agricultural plots, underscores the significance of land as both a productive and spiritual resource (Ntuli, 2012).

Grave sites play a role in community stability, as their presence may influence how households perceive security of tenure, heritage preservation, and intergenerational inheritance. Any development in such areas would therefore need to consider the sensitive management of graves to avoid cultural disruption, emotional distress, or perceived disrespect, which could lead to community resistance and social conflict (Human Rights Watch, 2019).

8.6.4.4 Livelihoods and Economic Activity

Livelihoods and economic activity are central to the socio-economic well-being of communities, shaping income generation, employment opportunities, and overall quality of life. Assessing the primary sources of livelihood, local businesses, and informal economic practices within the local municipality provides insight into community resilience, dependency on local resources, and potential vulnerabilities. Understanding the economic landscape is essential for evaluating how proposed industrial or mining developments may influence job creation, local enterprises, and broader socio-economic dynamics.

8.6.4.5 Roads and Transportation

Roads and transportation infrastructure form a crucial part of community life, as they determine access to essential services, economic opportunities, and social interactions. Reliable transportation networks enhance mobility, reduce isolation, and support local livelihoods by linking communities to markets, schools, clinics, and workplaces. In rural and peri-urban contexts, the condition of roads and the availability of affordable public transport are often critical factors influencing social well-being and development outcomes.



Figure 8-15: Ngolo Village Road

The road in Ngolo Village reflects a functional transport infrastructure that supports mobility within the community. The surface is formal and well-maintained, with no visible potholes, although the absence of painted lines suggests limited road

marking and possibly a lower classification in terms of traffic management. Road signs are present, indicating efforts to ensure public safety and guide local traffic.

- The road connects residents to essential services, local businesses, and surrounding areas, enhancing accessibility.
- Visible power lines alongside the road suggest integration of transport and utility infrastructure, which is typical in semi-urban settlements.
- The condition of the road likely facilitates small-scale commerce, public transport, and pedestrian movement, although unmarked lanes may present minor safety challenges.

Overall, this image demonstrates that the village benefits from functional transport infrastructure that supports mobility and access, although there is room for further enhancement through road markings and formalized traffic control measures.



Figure 8-16: Taxi on Gravel Road

The image depicts a local taxi traveling on a gravel road, with community members visibly attempting to stop it for transport. This scenario underscores the reliance of local communities on taxis as the primary mode of public transportation. The use of an unpaved gravel road highlights infrastructural limitations, which can lead to challenges such as vehicle damage, dust emissions, and restricted accessibility during adverse weather conditions. The visible interaction between the residents and the taxi reflects both the high demand for affordable, shared transport and the absence of formal transport systems in the area. From a social perspective, such reliance on informal transportation networks illustrates both resilience and

vulnerability: while taxis provide vital mobility, the poor road conditions and lack of alternatives may hinder reliable access to schools, healthcare, and employment opportunities, thereby affecting overall community well-being.



Figure 8-17: Bridge Leading into uMthatha Town

The image of the bridge leading into the town area of uMthatha illustrates a key transport and connectivity asset within the community. The bridge is well-developed, reflecting investment in durable infrastructure that facilitates movement of people, goods, and services between residential areas and the urban core. Its location provides direct access to shops, a busy taxi rank, and high-rise buildings, indicating a vibrant town center with commercial, administrative, and social activity.

- **Commercial activity:** The presence of shops along the bridge route highlights local economic activity, suggesting opportunities for trade, employment, and service provision to residents and commuters.
- **Public transport:** The visible taxi rank indicates high reliance on minibus taxis for mobility, which is a common and critical mode of transport in South African towns. This supports connectivity between surrounding villages and the urban center.
- **Urban development:** High-rise buildings signal concentrated commercial and administrative services, reflecting an established urban economy that attracts both residents and businesses.
- **Infrastructure quality:** The bridge itself appears well-constructed and maintained, which reduces transport bottlenecks, enhances safety, and ensures reliability of access to the town center.

This image demonstrates that the town of uMthatha benefits from functional and well-maintained transport infrastructure, supporting urban connectivity, economic activity, and social interaction. The combination of the bridge, taxi rank, and commercial buildings reflects a socio-economic baseline where residents have access to essential services and opportunities within a relatively well-developed urban environment.

8.6.4.6 Education and Health

8.6.4.6.1 Ncamedlana Primary School

Education and health are central pillars of community development and well-being. Access to quality education equips children with knowledge and skills that shape future opportunities, while reliable health services ensure physical and mental well-being across all age groups. In many communities, schools and health facilities not only provide essential services but also function as social hubs that strengthen cohesion and resilience. However, the condition of such facilities often reflects broader socio-economic realities, where resource constraints may impact the quality of infrastructure, accessibility, and the long-term prospects of community members.



Figure 8-18: Ncamedlana Primary School

The image shows Ncamedlana Primary School, with young children visible in the playground. While the school provides a vital space for early learning and social development, several infrastructural challenges are evident. The playground equipment appears worn out, suggesting limited investment in recreational resources that are essential for child development and physical activity. Although the fencing is adequate in offering a measure of safety, the overgrown grass reflects maintenance challenges that may compromise both the aesthetics and usability of outdoor spaces. The presence of children playing, despite these limitations, highlights the role of schools as central, positive spaces in community life. However, the condition of the facilities suggests broader systemic issues relating to resource allocation, where schools may struggle to maintain infrastructure at standards conducive to holistic learning and development. In turn, this can influence educational outcomes, child well-being, and long-term opportunities for community upliftment.

8.6.4.6.2 Nyangilizwe Senior Secondary School

Nyangilizwe Senior Secondary School is a public secondary education institution located within the broader Transkei region of the Eastern Cape. The school serves learners from surrounding rural communities and provides education from Grade 8 to Grade 12. As with many rural schools in the region, it plays a critical role in access to secondary education for learners who would otherwise need to travel long distances to attend school.

The school is an important social asset within the local community. It contributes to human capital development by providing formal education and skills development opportunities to youth in an area characterised by high levels of unemployment and limited economic activity. The school also provides indirect employment opportunities through teaching, administrative, and support staff positions, thereby contributing to household incomes within the community.



Figure 8-19: Nyangilizwe Senior Secondary School

Nyangilizwe Senior Secondary School is understood to operate under typical rural school conditions, which may include:

- Basic classroom infrastructure, some of which may be aging or in need of maintenance
- Limited access to specialised facilities such as science laboratories, libraries, and information technology resources
- Dependence on government-provided services such as the National School Nutrition Programme
- Variable access to reliable water and sanitation infrastructure, consistent with rural service delivery challenges in the region

Learners attending Nyangilizwe Senior Secondary School typically walk to school or rely on informal or scholar transport from nearby villages. Road conditions and traffic safety are therefore important considerations, particularly in relation to increased heavy vehicle movement associated with mining activities. Poor road safety can affect punctuality, attendance, and learner well-being.

As a sensitive social receptor, the school may be affected by the following mining-related aspects:

- Increased dust levels, which could impact learner health and the learning environment
- Noise from blasting or heavy machinery, potentially disrupting teaching and learning
- Increased traffic volumes on access roads used by learners
- Community perceptions regarding safety and long-term environmental impacts

Nyangilizwe Senior Secondary School is a key stakeholder and social receptor within the project's area of influence. Its proximity to the proposed mining activities necessitates careful consideration during impact assessment, particularly with respect to health, safety, traffic, noise, dust, and potential social investment opportunities.

8.6.4.6.3 Zitatele public clinic

Zitatele Clinic is a public primary healthcare facility serving communities within the broader Transkei region in the Eastern Cape. The clinic provides essential primary healthcare services to surrounding rural settlements (including Moyeni, Maqanjani, Sibangweni, Nkanini, Ntilini, Ziphunzana, Emasimini, Ebhora-bhora and Ngolo communities) and plays a critical role in ensuring access to basic health services in an area characterised by limited healthcare infrastructure and long travel distances to larger hospitals.

The clinic is a key component of the local health system, offering services such as primary medical consultations, maternal and child healthcare, immunisations, chronic disease management, and basic emergency care. Given the socio-economic conditions of the area, including high unemployment and poverty levels, the clinic is an essential support structure for vulnerable groups, including children, the elderly, and individuals with chronic illnesses.

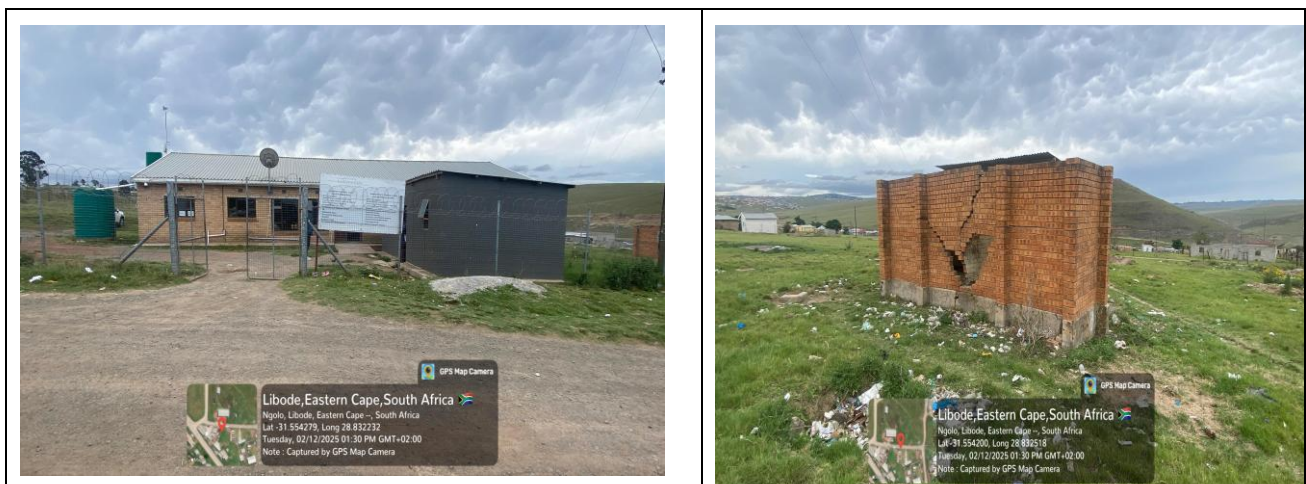




Figure 8-20: Zitatele Public Clinic

Zitatele Clinic typically operates under rural healthcare constraints, which may include:

- Limited consultation rooms and medical equipment
- High patient-to-staff ratios
- Dependence on reliable access roads for patient transport, medical supplies, and emergency referrals
- Sensitivity to disruptions in water supply, electricity, and waste management services
- Any external activities that affect infrastructure, service reliability, or environmental quality in the surrounding area could directly influence the clinic's ability to function effectively.

Any external activities that affect infrastructure, service reliability, or environmental quality in the surrounding area could directly influence the clinic's ability to function effectively.

Community members primarily access Zitatele Clinic on foot, via private vehicles, or through informal transport services. Emergency cases often require referral to larger healthcare facilities, making road conditions and travel times critical. Increased heavy vehicle traffic associated with mining operations may affect access, safety, and response times, particularly for vulnerable patients.

8.6.4.7 Livelihoods and Economic Activity

Livelihoods and economic activity are central to sustaining households and shaping community resilience. In rural and peri-urban areas, income-generating opportunities often arise from informal trade, small-scale retail, agriculture, and services, which collectively contribute to local economic stability. The diversity and accessibility of these activities determine not only household income but also social well-being, food security, and opportunities for upward mobility. In many cases, local

entrepreneurship fills service gaps where larger businesses or formal industries are absent, reflecting both necessity and innovation within communities.



Figure 8-21: Local Spaza Shop

The image depicts a local spaza shop built adjacent to a residential house, illustrating the close link between livelihoods and domestic life. This form of enterprise reflects an important survival and income strategy, as such shops provide both direct employment for the owner or household and an essential service to the surrounding community. The colourful exterior and clear signage make the shop highly visible, enhancing its accessibility and competitiveness. Its location next to a house suggests ownership in most cases, though it may also present rental opportunities that generate secondary income. Spaza shops are often critical nodes in community economies, providing everyday goods within walking distance, reducing travel costs, and fostering local circulation of money. Beyond the economic role, these enterprises often serve as informal gathering points, reinforcing social interactions and networks within the neighbourhood.

8.6.4.8 Community Safety and Welfare

Community safety and welfare encompass the measures, services, and infrastructure that support the protection, security, and well-being of residents within a locality. In rural and peri-urban areas such as those surrounding the Mthatha Quarry, safety is influenced by a combination of formal structures, such as policing, fire services, and municipal regulations and informal community networks that provide mutual assistance and social oversight. Key concerns often include traffic and

road safety, crime prevention, fire hazards, and the management of environmental risks such as flooding or unsafe infrastructure.

The welfare of the community extends beyond physical safety to include access to social services, support for vulnerable groups, and initiatives that promote overall quality of life. Programs addressing youth engagement, healthcare access, and recreational opportunities contribute to social cohesion and reduce risks associated with crime, neglect, and social instability. Community welfare initiatives also include awareness campaigns, local governance participation, and grievance mechanisms that allow residents to raise concerns and seek redress effectively. The combination of these formal and informal systems shapes the overall resilience and security of the population, providing a foundation for sustainable development in the area.

8.6.4.9 Amenities

Amenities refer to the infrastructure, facilities, and services that support the daily lives of residents and enhance the social and economic functioning of a community. These include, but are not limited to, educational institutions, healthcare facilities, recreational spaces, markets, utilities, and communication services. The presence, accessibility, and quality of amenities directly influence living standards, economic opportunity, and community well-being.

In the context of the Mthatha Quarry's surrounding communities, amenities vary in coverage and quality. Urban centres such as Mthatha provide formal amenities including municipal water and electricity, schools, clinics, and commercial services, while rural villages may experience limited access to basic services or rely on communal facilities. The availability of reliable transport, clean water, electricity, and healthcare support both daily life and long-term socio-economic development. Investment in and maintenance of amenities not only improve the quality of life but also support economic participation, reduce vulnerability, and contribute to equitable development within affected communities.

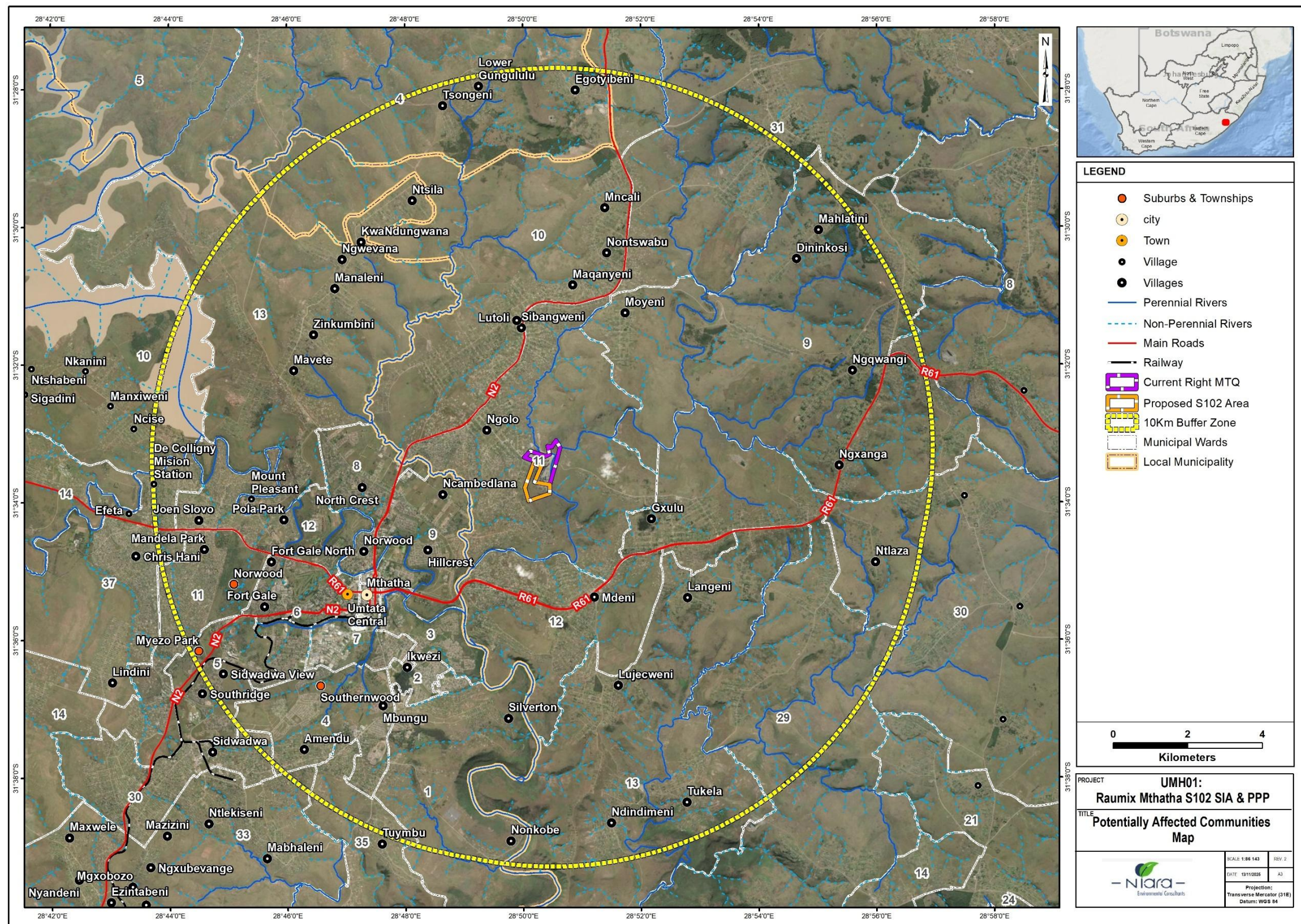


Figure 8-22: Potentially Affected Communities

9 Socio-Economic Baseline: Primary Zones

The Primary Zone of Influence includes densely and sparsely populated wards surrounding the Mthatha Quarry. Population distribution is characterized by a mix of urban settlements in Mthatha city and dispersed rural settlements in Ngolo, Zitatele, and other adjacent areas. Household sizes vary, and the primary livelihoods include informal trading, subsistence farming, small-scale commerce, and employment in nearby urban centres or mining operations.

9.1 Economic Activities

The Primary Zone of Influence exhibits a combination of urban and rural economic activities. Key contributors to local livelihoods include:

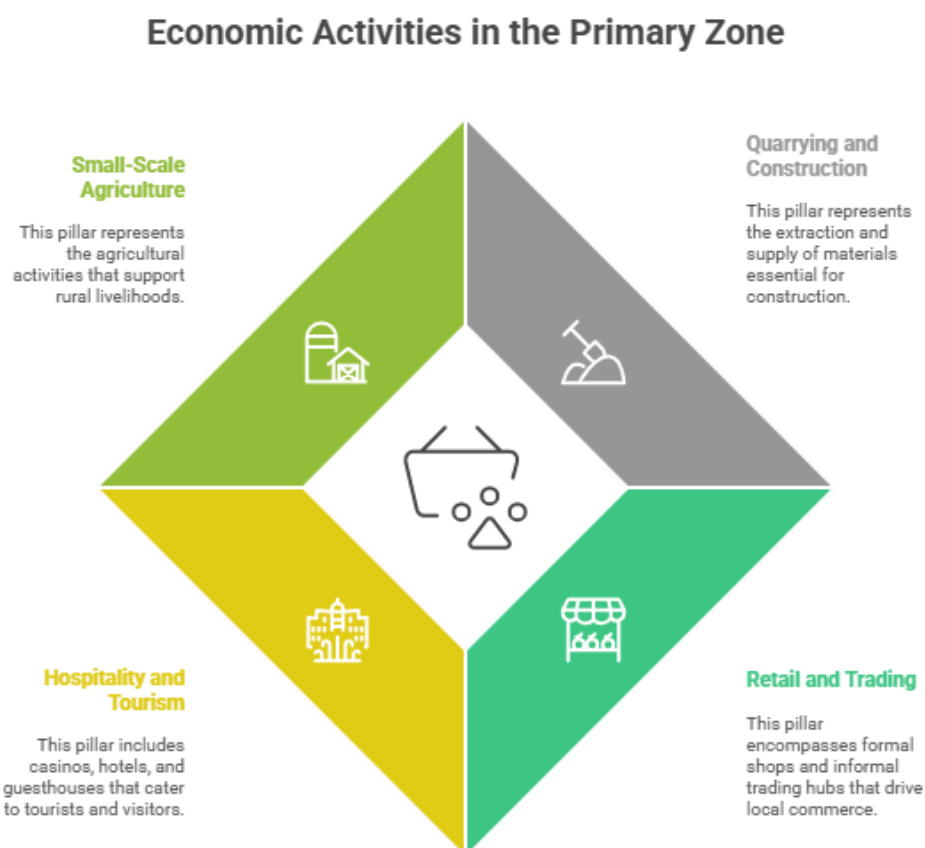


Figure 9-1: Primary Zone Economic Activities

9.2 Infrastructure and Services

Urban areas within the Primary Zone of Influence, such as Mthatha city, are equipped with formal roads, electricity, water, and telecommunications networks. Rural wards experience limited infrastructure but have access to local roads and community facilities. Public service provision includes schools, government offices, and access to healthcare facilities, though quality and coverage vary.

9.3 Social Services and Community Facilities

The Primary Zone of Influence relies heavily on public service infrastructure to support local communities. Facilities include:



Figure 9-2: Community Support Infrastructure

10 Environmental Sensitivity and Socio-Economic Implications

10.1 Overview of Environmental Sensitivity Context

The environmental sensitivity mapping for the Mthatha Quarry (Area 102 MTQ) and its proposed expansion area was undertaken to identify key ecological, hydrological, and land-use features that may influence both environmental management and local socio-economic conditions.

As illustrated in Figure 10-1: Environmental Sensitivity Map, the quarry is located within Ward 11 of the Nyandeni Local Municipality (O.R. Tambo District Municipality), immediately east of Ngolo Village and approximately 5 km northeast of Mthatha. The site lies along the N2 corridor between Mthatha and Libode, in a peri-urban setting characterised by scattered settlements, communal land tenure, and small-scale agricultural use.

The environmental sensitivity mapping identifies a range of environmental features and constraints surrounding the project footprint, including:

- Perennial and non-perennial rivers traversing the landscape;
- Wetlands and seepage areas associated with local drainage systems;
- Quaternary catchment boundaries influencing surface water flow and water availability; and
- Residential settlements and village clusters (Ngolo, Gxulu, Ncambedlana) in close proximity to the existing and proposed quarry footprint.

These features collectively define the environmental and social landscape in which the project operates, shaping both regulatory obligations and community exposure to environmental change.

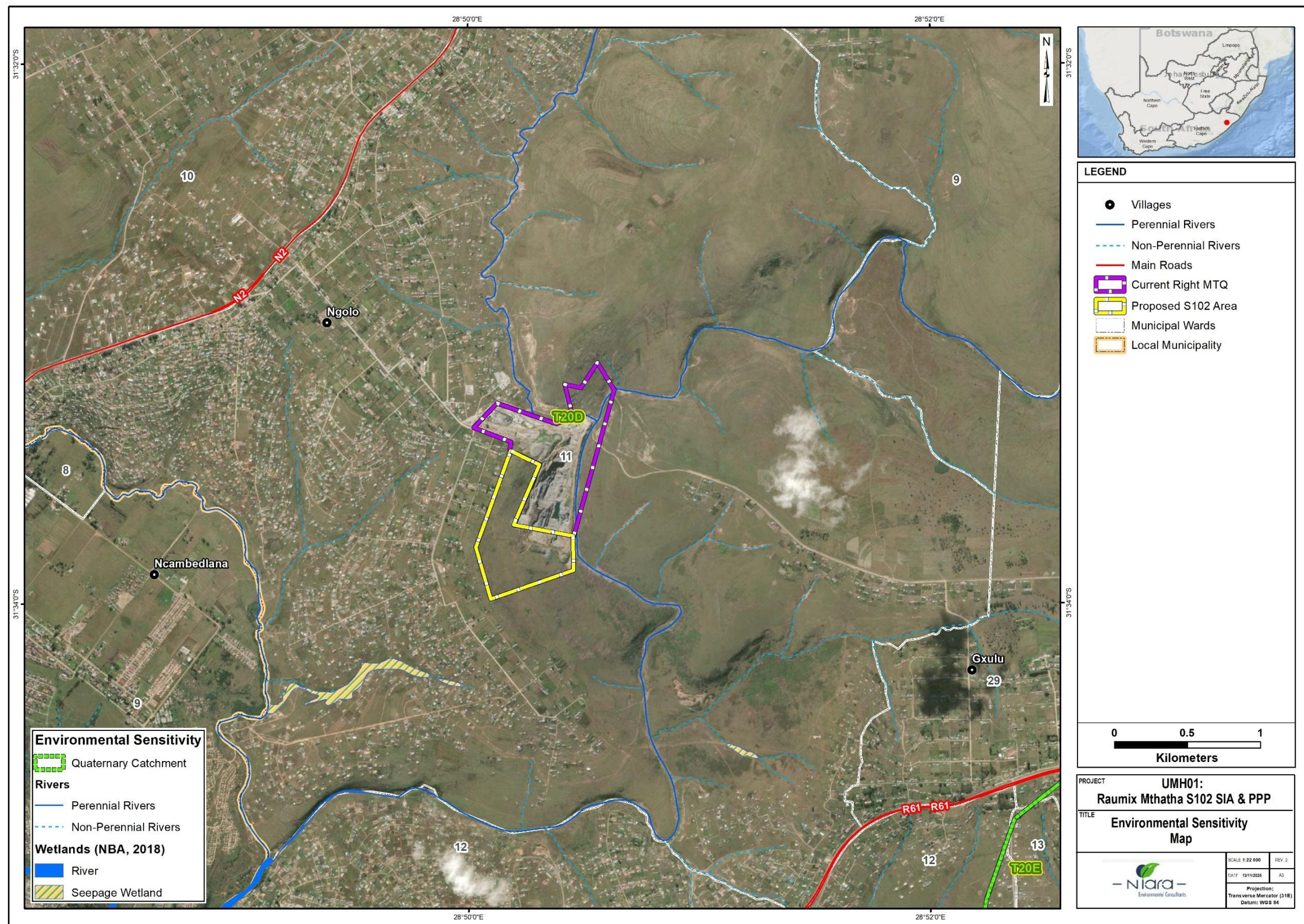


Figure 10-1: Environmental Sensitivity

10.2 Key Environmental Sensitivities Identified

10.2.1 Hydrological Sensitivity

The site is situated at the confluence of the Kangisa and Corana Rivers. The rivers are flush with the boundary of the quarry; therefore, drainage will occur via overland sheet flow towards these rivers. The Corana River is a tributary of the Mthatha River, which ultimately flows in a south-eastern direction into the Indian Ocean in an estuary located near Coffee Bay, Eastern Cape. The Mthatha Quarry is located approximately 54 km from the outflow of the Mthatha River.

The site is predominantly located in HRU2 and HRU3. HRU1 characterises the Corana River section upstream of the quarry, which will contribute to a flooding event of the river section to the east of the site. The sub-catchments relate well to desktop-delineated drainage lines for the project area. Drainage from the site is towards the north via the Kangisa River and east via the Corana River, which drains towards the Mthatha River.

From a social standpoint, the following implications are noted:

- Any contamination of surface water through sedimentation, fuel spills, or runoff may affect communities relying on the Corana and Mthatha Rivers for daily needs.
- Given that the upstream Corana River section contributes to flooding, poor stormwater management could increase downstream flood hazards, affecting settlements and agricultural land.
- River systems provide critical ecosystem services such as water purification and habitat for aquatic biodiversity which indirectly support local livelihoods and food security.
- Effective drainage control, maintenance of natural flow patterns, and establishment of protective buffer zones are essential to safeguard community water quality, prevent flooding, and uphold the community's environmental rights under the Constitution and NEMA principles

10.2.2 Geohydrology

The site is situated in an area underlain by predominantly argillaceous rocks (shale, carbonaceous shale, claystone, mudstone, and siltstone) of the Drakensberg Group, which form part of the Karoo Sequence (Smart, et al., 1997). The aquifer can be referred to as being primarily intergranular and fractured with yields of approximately 0.5 to 2.0 l/s (Smart, et al., 1997). Groundwater is typically encountered:

- Along fractures associated with dolerite dykes;
- Fractures concentrated at curved portions of dolerite sheets;
- Recharge at saturated alluvium to underlying fractures and weathered zones.

Social implications include blasting, fuel storage, or improper waste handling can lead to contamination of groundwater sources, posing health risks to communities using boreholes or wells. Regular groundwater monitoring, protection of

recharge zones, and transparent communication with communities regarding water quality results are vital to maintaining trust and preventing resource-use conflicts.

10.2.3 Biodiversity and Land Use Sensitivity

The proposed expansion area overlaps with Mthatha Moist Grassland, classified as Endangered, and includes seep wetlands in the southern portion of the site. These ecosystems provide essential ecological and social functions.

From a social viewpoint, the grassland and wetland areas often support communal grazing, wild plant harvesting, and cultural practices. Loss of these ecosystems could affect livestock productivity, foraging areas, and traditional resource use. Local communities often attach cultural or spiritual significance to natural features such as wetlands and rivers. Disturbance or degradation of these landscapes may lead to social tension or perceptions of environmental injustice.

10.2.4 Air Quality and Noise

The operations most likely influence on air quality is from dust emissions and carbon emissions from fuel burning machinery. The sources of dust and noise from the operation are often the same being, drilling and blasting, loading and hauling, processing and despatch. The operation has an environmental monitoring network that includes dust fallout, boundary sound levels and blasting (air and ground vibrations).

Social implications include dust emissions from blasting, hauling, and processing can affect respiratory health, particularly among vulnerable groups such as children and the elderly. Noise and vibration can cause nuisance, stress, and disruption to community routines, particularly for nearby. Continued implementation of the environmental monitoring network, community reporting of exceedances, and prompt corrective actions are critical for maintaining social acceptability. Regular communication of monitoring results to local stakeholders can also strengthen transparency.

10.2.5 Heritage Impact Assessment:

A total of three grave sites were recorded during the survey with each grave clearly demarcated with packed stones, cement bases and even walling. A memorial structure made of cement to commemorate the death of at least eleven mine workers was also noted. No dates are included on the memorial itself. As far as could be established it would seem that the memorial is not older than 60 years and does not contain any human remains.

Social implications include disturbance or relocation of graves can cause emotional distress and may be seen as a violation of cultural norms and ancestral respect.

10.3 Implications for the Socio-Economic Landscape

10.3.1 Human-Environment Interdependence

Communities within Nyandeni Local Municipality maintain a close dependence on their natural environment for water, fuel, food, and grazing. Environmental degradation, even of a moderate scale, can translate directly into socio-economic stress.

In the Mthatha–Ngolo–Gxulu area, where alternative livelihood options are limited, this dependence is particularly pronounced.

The environmental sensitivity of the landscape therefore amplifies the potential social risk intensity associated with the quarry expansion, particularly in relation to water use, dust deposition, and land access.

10.3.2 Social Equity and Environmental Justice

Environmental sensitivity has a strong link to issues of environmental justice in rural South Africa. Many households in the project area already experience inequitable access to services and infrastructure. Should quarry operations exacerbate environmental pressures, such as reduced air quality or water contamination, these impacts will likely disproportionately affect poorer and more vulnerable households.

Ensuring environmental equity will require inclusive monitoring and participatory management mechanisms that enable local communities to report concerns and participate in environmental stewardship.

10.3.3 Infrastructure and Safety Considerations

Given the location of settlements along transport routes, particularly near the R61 and N2, increased quarry-related haulage traffic could heighten risks of road accidents, particularly for pedestrians and schoolchildren. Poor road infrastructure and limited signage in rural areas compound this vulnerability.

Proactive safety interventions, such as improved road maintenance, traffic management, and awareness campaigns, will be essential to safeguard community mobility and maintain positive social relations.

10.3.4 Integration of Environmental and Social Planning

The identified environmental sensitivities underscore the importance of integrating social and biophysical management measures. Dust suppression, water management, and progressive rehabilitation are not merely environmental obligations; they are also social protection mechanisms that uphold community health, sustain local livelihoods, and prevent conflict over shared resources.

Collaboration with the Nyandeni Local Municipality, local councillors, and traditional leaders will be vital to aligning mitigation efforts with municipal development objectives and maintaining transparent communication regarding environmental performance.

The environmental sensitivity of the Mthatha Quarry expansion area highlights a landscape that is both ecologically and socially interconnected. While the immediate footprint is highly modified, surrounding areas retain important ecological and community value linked to water, grazing, and settlement patterns.

From a socio-economic perspective, the sensitivity mapping reinforces the need for a precautionary and inclusive management approach that recognises community dependency on the natural environment. Integrating environmental

mitigation with social development planning will ensure that the project not only avoids harm but actively supports the resilience and sustainability of the local communities within the Nyandeni Local Municipality.

11 Stakeholder Engagement

11.1 Community Engagement and Key Social Issues

Frequent meetings have been held between representatives of the Ngolo Community and Transkei Quarries since 2021, forming part of the ongoing stakeholder engagement process associated with the quarry operations and subsequent expansion. These meetings aimed to address community concerns, discuss benefit-sharing mechanisms, and review existing commitments between the quarry and the Ngolo community.

11.1.1 Key Issues Raised by the Community:

- The community acknowledged previous voluntary financial contributions by the quarry (referred to as “discretionary expenditure”) used for social support such as funerals, food parcels, bursaries, youth events, and assistance to the elderly. However, the community requested transparency on the budget and its allocation, noting confusion between discretionary funds and the Trust Fund identified as rental payments due to the Ngolo Community via Rural Development and Land Affairs. Clarification and accountability regarding these funds were requested.
- The community emphasized the need for prioritizing local employment, both skilled and unskilled, and highlighted perceived imbalances in current employment ratios. They requested a formal Employment Strategy that ensures equitable hiring, rotation of workers, and sustainable job creation.
- A previous commitment to employ 10 youth members on a rotational basis (three months each) was proposed to be replaced by 6 permanent youth positions to promote skills development and work experience.
- The community further requested training opportunities in mining-related disciplines (e.g., blasting, mechanical engineering, accounting, and environmental management) through partnerships with SETA-accredited programs.
- The community expressed the need for a Youth Employment Plan and an SMME Development Strategy that would allow local entrepreneurs to supply goods and services to the quarry (e.g., vehicle hire, plant hire, and material supply). They requested clarity on how small businesses can qualify and be listed in the quarry’s supplier database.
- Several young community members indicated interest in initiating local businesses and requested guidance and potential support from the quarry for such initiatives. The community sought inclusion in future project planning to ensure alignment with local development needs.

- Lack of proof of adequate consultation during permit application processes to the Department of Mineral Resources and Energy (DMRE).
- The need for transparency regarding trust fund management and beneficiaries.
- Allegations of mismanagement and internal conflict linked to the handling of trust and discretionary funds.
- Unfulfilled commitments, such as a R40,000 annual contribution to a local school and maintenance of the existing community hall and clinic facilities.
- The need for all future meetings to be held at the Ngolo Community Hall under municipal facilitation for improved transparency and accountability.

Summary of Most Recent Community Engagement Outcomes- 02 December 2025

Community engagement meetings were conducted on 02 December 2025 as part of the Social Impact Assessment process for the proposed Transkei Quarry Mining Right Extension. The engagements provided an opportunity for affected community members to raise concerns and identify issues related to existing quarry operations and the proposed extension.

The primary issues raised by community members are summarised as follows:

- Blasting-related impacts were identified as the main concern. Community members reported cracking of residential structures, increased noise levels, and dust pollution, which they attribute to blasting and quarry operations.
- Land use impacts, including the use of the proposed mining extension area as grazing land, were raised. Some community members also indicated the presence of family graves within the affected area, expressing concern about potential disturbance.
- Water and sanitation challenges were highlighted, with residents indicating reliance on pit latrines, rainwater harvesting, and JoJo tanks. Concerns were raised regarding the adequacy and reliability of water supply.
- The local clinic was reported to have no reliable water supply and limited infrastructure. Community members further indicated that the clinic lacks basic equipment and furniture and reportedly borrows chairs from the community hall.
- Electricity supply interruptions were reported, with outages lasting approximately two to three days at a time.
- Road infrastructure conditions were raised as a significant concern. Community members reported numerous potholes and noted that sections of the road constructed using concrete slabs have exposed steel reinforcement, which damages vehicle tyres.
- Socio-economic vulnerability was highlighted, with some households indicating reliance on social grants as their primary source of income.

In addition to concerns, community members expressed expectations and aspirations related to the proposed project, including:

- Employment opportunities and local job creation
- Skills development and training initiatives
- Improvement of road and transport infrastructure
- Improved access to water and sanitation services
- Support to local healthcare facilities

Overall, the engagement process highlighted that blasting, noise, and dust pollution are the dominant community concerns, alongside existing service delivery challenges related to water, sanitation, healthcare, electricity supply, and road infrastructure. These issues are considered critical in assessing potential social impacts and identifying appropriate mitigation and enhancement measures for the proposed mining right extension.

12 Impact Assessment

Socio-economic impacts have to be identified and assessed so that it can be understood and communicated to the impacted communities and decision makers. Unlike biological and physical impacts, socio-economic impacts are to a large extent based on and responsive to people's perceptions and therefore the intensity and significance could change over time as new perceptions are formed (e.g., people might oppose a housing development during the EIA process but once the housing development is constructed and assimilated into the baseline, people don't notice it anymore and their animosity is reduced).

Determining socio-economic impacts is a challenging process because the elements that combine to form an impact are generally multi-dimensional and interrelated. The linkages between project-induced changes are also complex and mutually reinforcing, e.g., employment creation can be an important Project benefit, but at the same time it could also contribute so social conflict or excessive in-migration. Socio-economic impacts also have the potential to spread further to other (sometimes unrelated) areas, e.g., project-induced in migration could place pressure on local services (i.e., the Project itself did not create the impact but caused a by-product that caused an impact). This is what Vanclay (2002) refers to as change processes.

The assessment of socio-economic impacts was categorised as per the following change processes:

- Demographic processes: changes and impacts related to the composition of local communities;
- Economic processes: changes and impacts on the way in which the local people make a living and the economic activities in the society;
- Geographical processes: changes and impacts on land use patterns;

- Institutional and Legal processes: changes and impacts that affect the efficiency and effectiveness of local authorities; and
- Socio-cultural processes: changes and impacts that affect the culture of the local society, i.e., the way that people live together.

The discussion of each impact is structured as follows:

- Description of the expected change(s) to the baseline profile and resultant impact(s);
- Description of mitigation or augmentation measures to minimise or avoid negative impacts and enhance positive ones; and
- A table presenting the rating of an impact, summarising the recommended mitigation/augmentation measures, repeating the rating exercise after the application of mitigation/augmentation to determine the effectiveness thereof.

Where findings from other specialist studies are applicable, these have been included, particularly where such findings may contribute to the identified social impacts.

It is expected that the Project will result in social changes which may positively and negatively affect communities within the study area. In terms of the social changes that have been assessed, the following social impacts have been identified:

- **Employment and Livelihood Opportunities:** The expansion of the quarry is expected to create direct employment opportunities for skilled and semi-skilled workers, as well as indirect employment in supporting sectors such as transport, retail, and hospitality. This can improve household incomes and enhance local livelihoods.
- **Infrastructure and Service Provision:** The Project may contribute to improvements in local infrastructure, such as roads, water supply, and electricity, benefiting both the workforce and the surrounding communities. Conversely, increased pressure on existing infrastructure and public services may occur if population inflows or increased activity are not managed effectively.
- **Health and Safety Impacts:** Quarry operations, particularly blasting, dust, and noise, may pose potential health and safety risks to nearby residents. Community concerns around air quality, noise vibrations, and access to clean water will need to be monitored and mitigated to reduce negative impacts.
- **Community Cohesion and Social Dynamics:** Changes in population dynamics due to employment opportunities, migration of workers, or changes in local land use may influence community cohesion, cultural practices, and social networks.

- **Economic Inequality:** While the Project may generate income and development benefits, there is potential for uneven distribution of economic gains, which may exacerbate existing inequalities if local communities are not prioritised in employment and skills development initiatives.

Report that will be accessible to a non-specialist audience and meet the requirements of the proponent, as well as international best practice. For this reason, predicted impacts have been categorised within the project phase (construction, operation and decommissioning) it is likely to originate, recognising that many impacts will span over more than one project phase.

A recapitulation table of the description of the environmental significance ratings and associated range of scores is presented below for the reader's ease of reference whilst going through this Section.

Figure 12-1: Description of Environmental Significance Ratings and associated range of scores

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

12.1 Operational Phase

12.1.1 Local Business Stimulation

	Impact Rating Without Mitigation
Extent (Footprint, Site, Local, Regional, National)	Local (2)
Duration (Short term, Medium term, Long term)	Medium term (2)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Probability (Definite, Possible, Unlikely)	Possible (4)
Reversibility (Reversible, Recoverable, Irreversible)	Recoverable (3)
Calculated Significance Rating (Low, Medium, High)	44 (Moderate)
Impact Status: (positive or negative)	Positive
	Impact Rating With Mitigation

Extent (Footprint, Site, Local, Regional, National)	Site (2)
Duration (Short term, Medium term, Long term)	Medium term (2)
Magnitude (Major, Moderate, Minor)	Moderate (1)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	Recoverable (3)
Calculated Significance Rating (Low, Medium, High)	24 (Low)
Residual impacts	
Increased demand for local goods/services (food, accommodation, transport).	
Mitigation measures	
- Source supplies locally where feasible. - Promote local subcontracting and supplier registration. - Support local catering and transport businesses.	

12.1.2 Influx of Job Seekers

	Impact Rating Without Mitigation
Extent (Local, Regional, National, International)	Regional (3)
Duration (Short term, Medium term, Long term)	Medium term (3)
Magnitude (Major, Moderate, Minor)	Major (3)
Probability (Definite, Possible, Unlikely)	Definite (3)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Calculated Significance Rating (Low, Medium, High)	36 (Low)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, National, International)	Regional (2)
Duration (Short term, Medium term, Long term)	Medium term (2)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	18 (Negligible)
Residual impacts	
- Influx of outside workers leading to strain on services and social tensions. - Increased pressure on local services (healthcare, housing, water, sanitation). - Potential social conflicts between locals and migrant workers. - Increased risk of communicable diseases or social nuisances.	
Mitigation measures	
Manage recruitment locally; no on-site "walk-ins."	

	Impact Rating Without Mitigation
- Contractor camps must be controlled and registered. - Regular community liaison and security coordination. - Promote health and awareness programs for workers.	

12.1.3 Land Acquisition and Displacement

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (4)
Magnitude (Major, Moderate, Minor)	Major (4)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Calculated Significance Rating (Low, Medium, High)	42 (Moderate)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (2)
Duration (Short term, Medium term, Long term)	Long term (3)
Magnitude (Major, Moderate, Minor)	Major (3)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Probability (Definite, Possible, Unlikely)	Possible (2)
Calculated Significance Rating (Low, Medium, High)	25 (Low)
Residual impacts	
Temporary or permanent loss of land for road reserve and borrow pits.	
Mitigation measures	
- Fair and transparent compensation through formal processes. - Provide advance notice and livelihood restoration. - Limit footprint and avoid productive land where possible.	

12.1.4 Cultural/Heritage Resources

	Impact Rating Without Mitigation
Extent (Site, Local, Regional, International)	Site (2)
Duration (Short term, Medium term, Long term)	Short term (4)
Magnitude (Major, Moderate, Minor)	Major (4)
Probability (Definite, Possible, Unlikely)	Possible (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (2)
Calculated Significance Rating (Low, Medium, High)	26 (Low)
Impact Status: (positive or negative)	Negative

	Impact Rating With Mitigation
Extent (Site, Local, Regional, International)	Site (1)
Duration (Short term, Medium term, Long term)	Short term (2)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (3)
Calculated Significance Rating (Low, Medium, High)	24 (Low)
Residual impacts	
Potential disturbance of graves or heritage sites during excavation.	
Mitigation measures	
- A pre-construction heritage walkdown must be undertaken to identify, verify, and record any heritage resources within the project footprint prior to commencement of site works. - A stop-work procedure must be implemented and enforced in the event that artefacts or potential heritage materials are discovered during construction. - The relevant heritage authority (e.g., SAHRA) must be notified immediately if artefacts are found, and engagement should take place to determine whether relocation or protection measures are required. - A minimum buffer zone of 20 metres must be maintained around identified heritage sites to prevent accidental disturbance or damage. - The Environmental Control Officer (ECO) or another designated person/entity must be assigned formal responsibility for overseeing the protection of all heritage resources and will be held accountable for any damage occurring within these zones. - Known heritage sites must be clearly demarcated and isolated, for example by fencing, and all construction personnel must be informed that these are strict no-go areas, except when accompanied by the ECO or their appointed representative. - Where vegetation poses a threat to heritage structures (e.g., tree roots dislodging stone walls), removal or trimming may be undertaken only with prior approval from SAHRA. Such interventions must be supervised by a qualified heritage official as part of the execution team.	

12.1.5 Nuisance (noise, dust, vibration)

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Medium term (2)
Magnitude (Major, Moderate, Minor)	Moderate (3)
Probability (Definite, Possible, Unlikely)	Possible (4)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	44 (Moderate)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Site, Local, Regional, International)	Site (2)

	Impact Rating Without Mitigation
Duration (Short term, Medium term, Long term)	Short term (2)
Magnitude (Major, Moderate, Minor)	Minor (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (3)
Calculated Significance Rating (Low, Medium, High)	27 (Low)
Residual impacts - Dust emissions may affect air quality and cause health issues for workers and nearby residents. - Noise from blasting, excavation, and machinery can disturb local communities and wildlife. - Potential reduction in quality of life for adjacent communities.	
Mitigation measures - Implement dust suppression measures (water spraying, covering loads, stabilizing stockpiles). - Maintain equipment to reduce noise emissions; use noise barriers where appropriate. - Schedule high-noise activities during daytime hours to reduce disturbance. - Monitor air quality and noise levels, and engage with affected communities. - Provide PPE for workers (dust masks, hearing protection)	

12.1.6 Employment & Economic Upliftment

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (5)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	3
Calculated Significance Rating (Low, Medium, High)	39 (Low)
Impact Status: (positive or negative)	Positive
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Site (2)
Duration (Short term, Medium term, Long term)	Long term (4)
Magnitude (Major, Moderate, Minor)	Major (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	22 (Low)
Residual impacts - Direct job creation for skilled, semi-skilled, and unskilled labour from the local community. - Indirect economic benefits through local procurement of goods and services. - Increased household income can stimulate local businesses.	

	Impact Rating Without Mitigation
- If local hiring is insufficient, economic benefits may bypass the community. - Short-term jobs may not translate into sustainable long-term economic upliftment.	
Mitigation measures	
- Prioritize local employment and provide skills development programs. - Develop supplier development programs to support local businesses. - Partner with local government or NGOs to create sustainable livelihood initiatives. - Track economic contributions to the community to ensure benefits are realized.	

12.1.7 Community Health & Safety

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	National (4)
Duration (Short term, Medium term, Long term)	Long term (4)
Magnitude (Major, Moderate, Minor)	Major (3)
Probability (Definite, Possible, Unlikely)	Possible (4)
Reversibility (Reversible, Recoverable, Irreversible)	Recoverable (3)
Calculated Significance Rating (Low, Medium, High)	42 (Moderate)
Impact Status: (positive or negative)	Positive
	Impact Rating With Mitigation
Extent (Local, Regional, International)	National (2)
Duration (Short term, Medium term, Long term)	Long term (3)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Reversibility (Reversible, Recoverable, Irreversible)	Recoverable (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	20 (Negligible)
Residual impacts	
- Increased risk of accidents related to quarry operations and heavy vehicles. - Dust and noise can affect respiratory health and cause stress or hearing damage. - Potential increase in communicable diseases due to workforce influx. - Health and safety programs for workers and local communities will improve awareness.	
Mitigation measures	
- Implement a Community Health and Safety Plan. - Maintain strict site access controls and safety signage. - Regularly monitor dust, air quality, and noise levels.	

	Impact Rating Without Mitigation
- Provide PPE to workers and enforce occupational health standards. - Educate the community on potential hazards and safe practices.	

12.1.8 Livelihood Disruption

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Regional (4)
Duration (Short term, Medium term, Long term)	Long term (3)
Magnitude (Major, Moderate, Minor)	Major (3)
Probability (Definite, Possible, Unlikely)	Definite (4)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Calculated Significance Rating (Low, Medium, High)	52 (Moderate)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (2)
Magnitude (Major, Moderate, Minor)	Minor (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	20 (Low)
Residual impacts	
- Loss of agricultural land or grazing areas, affecting subsistence farmers. - Reduced access to natural resources (e.g., water, firewood, medicinal plants)	
Mitigation measures	
- Engage in participatory land-use planning with local community members. - Monitor the effectiveness of livelihood support programs and adjust as needed.	

12.1.9 Community Relations

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Long term (3)
Magnitude (Major, Moderate, Minor)	Moderate (3)
Probability (Definite, Possible, Unlikely)	Possible (4)
Reversibility (Reversible, Recoverable, Irreversible)	Irreversible (3)
Calculated Significance Rating (Low, Medium, High)	48 (Moderate)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Site (2)
Duration (Short term, Medium term, Long term)	Long term (2)
Magnitude (Major, Moderate, Minor)	Moderate (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	20 (Low)
Residual impacts - Social tension or grievances. - Strengthened relationships through proactive engagement and transparent communication. - Opportunities for community participation in monitoring and decision-making. - Miscommunication or unaddressed grievances could lead to distrust or conflict. - Perceived inequities in benefits distribution may cause social tension.	
Mitigation measures - Implement a Community Engagement Plan with regular meetings and feedback mechanisms. - Establish a grievance redress system to address concerns promptly. - Maintain open communication about project progress, benefits, and impacts. - Include community representatives in monitoring programs to increase transparency.	

12.1.10 Land Value Changes

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Long term (5)
Magnitude (Major, Moderate, Minor)	Major (2)
Probability (Definite, Possible, Unlikely)	Unlikely (3)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	39 (Low)
Impact Status: (positive or negative)	Positive
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Locality (2)
Duration (Short term, Medium term, Long term)	Long term (5)
Magnitude (Major, Moderate, Minor)	Major (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Possible (2)
Calculated Significance Rating (Low, Medium, High)	24 (Low)
Residual impacts Proximity to quarry operations (noise, dust, visual impact) may reduce residential property values.	

	Impact Rating Without Mitigation
Mitigation measures - Implement dust, noise, and visual impact mitigation measures to maintain the quality of surrounding land. - Ensure adequate buffer zones between quarry operations and residential areas. - Engage with local landowners to discuss compensation or land-use agreements if property is affected. - Monitor land-use changes and update community on potential impacts and benefits. - Promote community development initiatives that enhance local land and property values (e.g., infrastructure improvements).	

12.1.11 Community Severance

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Medium term (3)
Magnitude (Major, Moderate, Minor)	Moderate (3)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	36 (Low)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (2)
Duration (Short term, Medium term, Long term)	Short term (2)
Magnitude (Major, Moderate, Minor)	Minor (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	18 (Negligible)
Residual impacts - Social disruption, particularly for vulnerable groups (elderly, children). - Increased travel time and potential safety risks due to heavy vehicle traffic.	
Mitigation measures - Ensure continuous access to essential services (schools, clinics, markets) during all project phases. - Monitor and adjust mitigation measures based on community feedback and observed impacts.	

12.2 Decommissioning Impact

12.2.1 Loss of employment

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (4)

	Impact Rating Without Mitigation
Duration (Short term, Medium term, Long term)	Long term (4)
Magnitude (Major, Moderate, Minor)	Moderate (4)
Probability (Definite, Possible, Unlikely)	Possible (4)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	60 (High)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Short term (3)
Magnitude (Major, Moderate, Minor)	Minor (3)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (3)
Calculated Significance Rating (Low, Medium, High)	33 (Low)
Residual impacts - Loss of employment when operations cease. - Temporary or permanent loss of employment for workers during project closure or downsizing. - Reduction in household income, potentially affecting local businesses and livelihoods. - Social stress and potential migration if alternative employment is unavailable.	
Mitigation measures - Develop a Workforce Transition Plan for employees approaching project closure. - Offer retraining, skills development, and redeployment opportunities. - Provide advance notice of layoffs and support with job search or alternative livelihood options. - Encourage local economic initiatives to absorb displaced workers.	

12.2.2 Site Rehabilitation

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Medium term (3)
Magnitude (Major, Moderate, Minor)	Moderate (3)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	36 (Low)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (4)
Duration (Short term, Medium term, Long term)	Short term (3)

	Impact Rating Without Mitigation
Magnitude (Major, Moderate, Minor)	Minor (4)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (3)
Calculated Significance Rating (Low, Medium, High)	42 (Moderate)
Residual impacts - Restored land can be used for agriculture, grazing, or community development. - Reduction of long-term visual, dust, and safety impacts. - Costs and delays in rehabilitation can impact community trust and local expectations.	
Mitigation measures - Implement a Site Rehabilitation Plan aligned with best practice guidelines. - Engage the community in identifying preferred post-quarry land uses. - Monitor rehabilitation success and adjust interventions as needed. - Ensure progressive rehabilitation during operations to minimize final closure impacts.	

12.2.3 Residual Land Use Conflicts

	Impact Rating Without Mitigation
Extent (Local, Regional, International)	Local (3)
Duration (Short term, Medium term, Long term)	Medium term (3)
Magnitude (Major, Moderate, Minor)	Moderate (3)
Probability (Definite, Possible, Unlikely)	Possible (3)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Calculated Significance Rating (Low, Medium, High)	36 (Low)
Impact Status: (positive or negative)	Negative
	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (2)
Duration (Short term, Medium term, Long term)	Short term (2)
Magnitude (Major, Moderate, Minor)	Minor (2)
Reversibility (Reversible, Recoverable, Irreversible)	Reversible (3)
Probability (Definite, Possible, Unlikely)	Definite (2)
Calculated Significance Rating (Low, Medium, High)	18 (Negligible)
Residual impacts Disputes may arise over post-rehabilitation land allocation or land-use priorities among community members and stakeholders.	
Mitigation measures - Monitor land use conflicts and establish a grievance mechanism for timely resolution. - Plan rehabilitation with community input to support compatible land uses.	

12.3 Impacts Related to Community Health and Safety

12.3.1 For Community

Community health and safety risks could include:

- **Air Quality and Dust Exposure:** Dust generated from blasting, crushing, and transportation may contribute to respiratory illnesses such as asthma, bronchitis, or other chronic conditions if not effectively managed.
- **Noise and Vibration:** Blasting and continuous quarrying activities may cause noise and vibration disturbances, potentially affecting mental well-being, sleep quality, and in some cases structural damage to nearby dwellings.
- **Traffic and Road Safety:** Increased movement of heavy vehicles transporting materials could raise the risk of accidents, injuries, and congestion along local roads used by community members.

12.3.2 For Workers

Worker's health and safety risks could include:

- **Occupational Hazards:** Exposure to blasting, machinery, and quarrying processes may lead to physical injuries, hearing loss, or musculoskeletal issues without proper protective measures.
- **Dust and Chemical Exposure:** Inhalation of dust and potential contact with hazardous materials may increase the risk of respiratory diseases, skin conditions, or long-term health complications.
- **Fatigue and Mental Stress:** Long working hours, high-risk tasks, and pressure to meet production targets may contribute to fatigue, reduced alertness, and mental health concerns such as stress or anxiety.

12.4 Dependency on the Mine for sustaining local economy (during closure)

The mine may become a central driver of the local economy during its operational lifespan, creating a strong dependency among households and small businesses. While this dependence can generate short-term benefits through employment, procurement opportunities, and local spending, it can also result in economic vulnerability during closure. Once operations cease, communities may face loss of income, unemployment, and business decline if alternative economic activities are not established. This underscores the importance of planning for mine closure and economic transition strategies, such as skills development, enterprise support, and community-driven diversification initiatives, to ensure long-term sustainability beyond the life of the mine.

12.5 Cumulative Impacts¹

Cumulative impacts are contextual and encompass a broad spectrum of impacts at different spatial and temporal scales (IFC, 2013) –i.e., cumulative impacts can result from individually minor but collectively significant activities taking place over a period of time (Dutta, et al., 2012). These are not new types of impacts but recognition that impacts from individual projects and activities can combine together in time and space.

From a social perspective, some of the most significant cumulative impacts relate to the following aspects:

- **Population Dynamics and Social Cohesion:** In-migration of workers and job seekers may place strain on existing services and infrastructure, while also altering local demographics. This can influence social cohesion, leading to potential tension between long-term residents and newcomers.
- **Pressure on Public Services and Infrastructure:** Increased demand for housing, health care, education, water, and sanitation services may exceed the capacity of local municipalities, creating service backlogs and negatively affecting community well-being.
- **Economic Dependence and Livelihood Vulnerability:** Heavy reliance on mining activities for jobs and income can leave communities vulnerable to economic downturns and mine closure, exacerbating cycles of poverty and unemployment in the long term.

13 Potential Social Risks

The objective of this section is to identify any aspects of the receiving socio-economic environment that would represent significant risks to the Transkei Quarries.

These may constitute constraints that would have to be accommodated during the Project design phase, or concerns and disputes that would require appropriate management and mitigation. Social risk is linked to a Project's stakeholders and can either be a risk to a Project as a result of the impact on stakeholders or stakeholders' impact on the Project. In most cases a risk can be financial, delay or reputational.

- **Financial:** A financial risk can result in the expansion being financially unfeasible due to costs.
- **Delay:** could result in a delay to a Project at any stage.
- **Reputational:** could cause damage to a company's reputation, which could result in delays or have financial implications.

The potential social risks, which the proposed EMPr Consolidation might be exposed to are listed below:

- **Community Expectations:** Communities surrounding often resort to unrest and protests whenever dissatisfied with the Applicant. Unrest and protest often lead to destruction of property and infrastructure, as well as loss of work hours and business and reputational risks for Transkei Quarries. Community expectations regarding the Project are most frequently related to employment. When such hopes are not met with interventions or addressed with appropriated communication it may lead to potential stakeholder opposition and public mobilisation against the project.
- **Employment:** Local residents will be dissatisfied if access to the finite construction phase jobs and the provision of associated services is perceived to be biased and preferential. Residents of the Zol may be expecting to additional benefit from the potential employment opportunities created by the establishment of the proposed Project.
- **Supply Chain, Capacity and Opportunities:** The Project operations are expected to bring increased opportunities and capabilities within the local supply chain, both through direct contracts with the project and indirect procurement opportunities to meet growing local demand for goods and services. To enhance the participation of locally based businesses in the Project's supply chain, Transkei Quarry's Management must ensure the implementation of the SLP to support the promotion of education and skills uplift among local communities within their zone of influence, including the implementation of on-the-job training

14 Need and Desirability

The proposed expansion of the Mthatha Quarry Mining Right, held by Transkei Quarries (Pty) Ltd under Mining Right Reference EC30/5/1/2/2/0135MR, is motivated by the need to sustain an existing, legally authorised mining operation that is nearing resource depletion. The current operation is governed by the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) and supports local socio-economic development through the supply of high-quality building materials and the creation of employment opportunities.

At present, the quarry holds mining rights over 48.75 hectares on a portion of Farm Zitatele No. 39 in the Magisterial District of Libode, Eastern Cape Province. Within this area, the remaining economically viable resource is expected to be depleted within less than two years. Additional viable mineral reserves have been identified directly adjacent to the existing mining right boundary. The proposed expansion would increase the total mining right area to approximately 86.84 hectares and extend the life of the mine by an estimated 30 years.

14.1.1 Need for the Expansion

The expansion of the mining right is required to:

- Access additional mineral reserves to sustain quarry operations over a long-term period.

- Avoid premature closure of the operation, which would result in loss of employment, local economic contraction, and reduced material availability.
- Formalise historically disturbed areas for either rehabilitation or potential further mining, ensuring full regulatory compliance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

14.1.2 Desirability of the Expansion

The desirability of the proposed expansion is underpinned by the following considerations:

- **Contribution to Regional Development:** The Mthatha Quarry supplies building materials essential for infrastructure and housing projects aligned with local and district Integrated Development Plans (IDPs). Sourcing these materials from outside the region would introduce higher transportation costs and logistical delays, negatively impacting public and private development initiatives.
- **Employment and Local Economic Impact:** The operation directly employs 52 permanent staff members and supports a range of local contractors and service providers. The continuation of the operation ensures the preservation of these jobs and the broader economic value chain linked to quarry activities.
- **Community Upliftment:** Transkei Quarries (Pty) Ltd has approved Social and Labour Plan (SLP) commitments, in line with the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), which include community development projects, skills training, and infrastructure investments. These benefits are directly tied to the operational lifespan of the quarry.
- **Responsible Resource Utilisation:** The expansion aligns with the sustainable development principles articulated in Section 24 of the Constitution of the Republic of South Africa, 1996 and the National Environmental Management Act, 1998 (Act No. 107 of 1998). It promotes the efficient and regulated use of mineral resources while maintaining environmental accountability through rehabilitation and environmental management measures.

15 Social Management Plans

Social Management Plans (SMPs) are structured frameworks developed to manage, monitor, and mitigate the social impacts of quarry operations on surrounding and host communities. For the proposed quarry expansion, the SMPs provide a coordinated approach to addressing social risks, promoting positive community outcomes, and ensuring compliance with national legislation and international good practice standards.

The SMPs outlined in this section are designed to ensure that all social commitments identified through the SIA are effectively implemented, monitored, and reported. They also support transparent community engagement, equitable access to opportunities, and alignment with the MPRDA, NEMA, and IFC Performance Standards (2012).

These plans collectively strengthen social governance, community trust, and accountability across the quarry operation, ensuring that social performance is consistent, auditable, and responsive to local context.

15.1 Rationale for Social Management Planning

Although the quarry expansion constitutes an extension of an existing operation rather than a new mining development, it provides an opportunity to enhance the project's overall approach to social management. Historically, different quarry phases may have operated with varying social commitments, engagement processes, and monitoring mechanisms.

The consolidation and update of these commitments through the SMP framework aim to:

- Eliminate duplication and inconsistencies between previous plans and conditions;
- Align social and environmental management practices under a unified system;
- Improve transparency and accessibility of social performance information; and
- Ensure that all social obligations remain auditable and traceable under the consolidated Environmental Management Programme (EMPr).

Effective social management planning is essential to maintain the quarry's social licence to operate, prevent community conflict, and ensure compliance with DMRE, DFFE, and IFC requirements.

15.2 Stakeholder Engagement and Communication Management Plan (SECMP)

The Stakeholder Engagement and Communication Management Plan (SECMP) provide the structure for ongoing, meaningful engagement with Interested and Affected Parties (I&APs) throughout the quarry expansion lifecycle. It ensures that all stakeholders local communities, traditional leaders, municipal authorities, and regulators—receive timely, accessible, and accurate information.

The plan includes maintaining an updated stakeholder register, ensuring communication in local languages, and clarifying the purpose and scope of the expansion. Engagement activities must comply with Regulation 41 of the NEMA EIA Regulations (2014, as amended), the DMRE Social and Labour Plan (SLP) Guideline (2010), and IFC Performance Standard 1 on stakeholder engagement.

15.3 Local Employment and Recruitment Management Plan (LERMP)

The Local Employment and Recruitment Management Plan (LERMP) promote fair and transparent employment practices while prioritising opportunities for residents from host and surrounding communities. The plan supports:

- Establishment of a local job seekers' database;
- Collaboration with nearby TVET colleges or skills centres for capacity development; and

- Regular reporting of employment demographics to relevant authorities.

The LERMP aligns with the Employment Equity Act (No. 55 of 1998), MPRDA Section 102, and IFC Performance Standard 2 on labour and working conditions.

15.4 Local Procurement and Enterprise Development Plan (LPEDP)

The Local Procurement and Enterprise Development Plan (LPEDP) seek to maximise local economic participation in the quarry's supply chain. The plan promotes procurement from local suppliers and small, medium, and micro enterprises (SMMEs), with specific support for historically disadvantaged entrepreneurs.

Key measures include:

- Establishment of a local supplier register;
- Capacity-building workshops for potential suppliers; and
- A target of sourcing at least 30% of non-specialised goods and services locally.

This plan is guided by the Broad-Based Black Economic Empowerment Act (No. 53 of 2003), MPRDA Section 46(c), and IFC Performance Standard 7 relating to inclusive development of vulnerable and marginalised groups.

15.5 Community Health, Safety, and Security Management Plan (CHSSMP)

The Community Health, Safety, and Security Management Plan (CHSSMP) consolidate all measures to prevent or mitigate health and safety risks to surrounding communities. It addresses potential quarry-related impacts such as dust emissions, noise and vibration, blasting safety, heavy vehicle movement, and community emergency preparedness.

Actions include regular environmental monitoring at sensitive receptors, coordination with local clinics, and training for security personnel on respectful community conduct. The plan aligns with IFC Performance Standard 4, the Mine Health and Safety Act (No. 29 of 1996), and the National Environmental Management: Air Quality Act (No. 39 of 2004).

15.6 Land Access and Livelihood Restoration Plan (LALRP)

The Land Access and Livelihood Restoration Plan (LALRP) ensures that any land access requirements for the quarry expansion such as infrastructure upgrades or rehabilitation activities are negotiated fairly and transparently. It outlines procedures for landowner engagement, compensation (where applicable), and restoration of land use capability after disturbance.

The plan is guided by MPRDA Section 54, IFC Performance Standard 5 on land acquisition and resettlement, and NEMA Section 2(4)(r) promoting equitable access to natural resources.

15.7 Grievance Redress and Conflict Resolution Mechanism (GRM)

The Grievance Redress Mechanism (GRM) provides a transparent, accessible process for communities to raise concerns or lodge complaints related to quarry operations. The system includes multiple channels such as a toll-free number, email, WhatsApp line, and suggestion boxes at local contact points.

All grievances must be acknowledged within 48 hours and resolved within 14 days, with clear feedback provided to complainants. The GRM complies with IFC Performance Standard 1 and the DMRE SLP Implementation Guideline (2020).

15.8 Social Performance Monitoring and Reporting Plan (SPMRP)

The Social Performance Monitoring and Reporting Plan (SPMRP) provides the framework for tracking and reporting progress on social performance. It establishes key performance indicators (KPIs), roles, and review frequencies.

Quarterly internal reviews and annual public reports will document implementation outcomes, verified through independent audits during EMPr performance assessments. This ensures compliance with NEMA Section 24N and the DMRE Guideline for Monitoring and Auditing of EMPs (2019).

15.9 Mine Closure and Social Transition Plan (MCSTP)

The Mine Closure and Social Transition Plan (MCSTP) address the long-term socio-economic implications of quarry closure. It focuses on workforce transition, community resilience, and sustainable post-mining land use. Initiatives include retraining of affected employees, promotion of local enterprise diversification, and alignment of closure objectives with Municipal IDPs and LED strategies.

This plan aligns with the DMRE Mine Closure Guideline (2021) and IFC Performance Standards 1 and 5.

15.10 . Integration and Governance

All SMPs described above will be implemented under the consolidated EMPr and integrated into the quarry's Environmental and Social Management System (ESMS). The Community Liaison Officer (CLO), Environmental Manager, and Social Performance Coordinator will be jointly responsible for implementation, supported by contractors and local municipal representatives.

Regular monitoring, transparent reporting, and adaptive management will ensure that social performance remains aligned with both regulatory requirements and community expectations. The integration of these plans guarantees a unified, auditable framework that upholds responsible quarrying, strengthens stakeholder trust, and supports sustainable development in the host area.

16 Conclusion

In summary, the Project has the potential to bring about several, positive impacts/ changes. These are briefly listed below:

- **Economic Growth:** The approval/ authorisation of the Project can stimulate economic growth in the province. The Project will provide direct employment opportunities for the host communities within the mining industry and can also create jobs in related industries such as transportation, construction, and manufacturing.
- **Revenue Generation:** The affected Local and District Municipalities may benefit from taxes, royalties, and fees paid the Applicant. This revenue can in turn be used to fund public services, infrastructure projects, and community development initiatives.
- **Infrastructure Development:** Mining operations very often lead to the development or improvement of local infrastructure, including roads, utilities, and transportation networks. The Mine has the potential to do the same.
- **Skills Development and Training:** Through their SLP, it is anticipated that the Mine will provide training programs and skills development opportunities for local residents, which will enhance employability even after the mine closes.

The proposed Project also has the potential to bring about negative changes, namely:

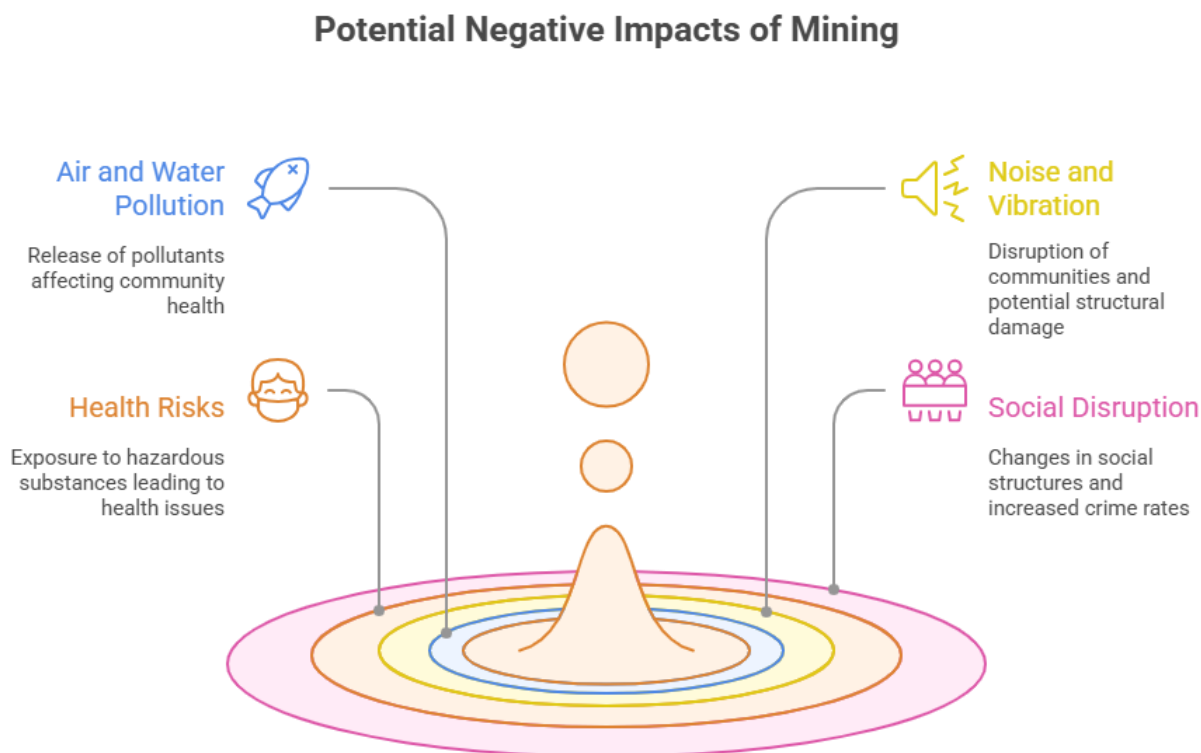


Figure 16-1: Negative Impacts of Mining

The Mine need to establish a monitoring framework to track the actual impacts of their mining operation over time. Regular reporting to stakeholders, including the host communities, government, and the Competent Authorities, is essential.

The findings of this SIA indicate the proposed resuscitation of the Mine has positive and negative potential impacts which range in significance. The construction of the infrastructure and the operation of the Mine has positive impacts are mainly due to creation of employment opportunities, boosting of the local economy due to increased disposal income and contribution to the revenue for the affected Local Municipalities. Negative impacts may be experienced due to potential loss of agricultural land, disturbance of cultural/spiritual and religious sites, increased pressure on municipal infrastructure, increased social pathologies linked to influx of job workers and work seekers, increased nuisance factors and changed sense of place.

In light of the SIA findings the following recommendations should be considered:

- It is recommended that the mitigation and management measures as contained in this SIA report be actively pursued and incorporated in the EMP where applicable; and
- Regular internal and external monitoring should be undertaken to ensure compliance with the Environmental and Social Management Plan.

In conclusion, while the proposed Project presents opportunities for socio-economic development such as local employment, skills transfer, and potential infrastructure improvements, it also introduces notable social risks that require careful management. These include potential pressures on community health and safety, disruptions to livelihoods, and risks of social inequality if benefits are not equitably distributed. Addressing these proactively through transparent engagement, participatory planning, and targeted mitigation measures will be critical to ensuring that the Project strengthens rather than destabilises the social fabric of the affected communities.

Ultimately, the sustainability of the Project will depend on balancing economic imperatives with social responsibility. By fostering trust with stakeholders, prioritising community well-being, and committing to long-term social investment beyond the life of the mine, the Project can contribute to positive and lasting social outcomes while minimising adverse impacts.

17 References

- Marais, L. (2013). "The impact of mining on local communities: A review of infrastructure sustainability." *Journal of the South African Institute of Mining and Metallurgy*.
- Putnam, R. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- World Bank (2010). *Social Sustainability and Inclusive Development*. Washington DC.
- Hilson, G. (2012). *Corporate Social Responsibility in the Extractive Industries*. Routledge.
- ECSECC (2024). *Eastern Cape Socio-Economic Review and Outlook*. East London: ECSECC.
- International Finance Corporation (IFC). *Performance Standards on Environmental and Social Sustainability*.
- Retail & investment: Bizcommunity (2025) "A new era for Mall of Mthatha..."; PropertyWheel (2025) "Mall of Mthatha excels under new ownership"; BusinessTech (2025) "New R1bn...".
- Water outages & bulk works: Daily Dispatch (2025) pump-station theft; OR Tambo DM notices (2025) & Fortgate shutdown; ORTDM Highbury 50 Ml/d WTW tender docs (2025).
- Water quality & waste: ResearchGate/Mendeley (2023–2025) studies on Mthatha River illegal dumping; Daily Dispatch / TimesLIVE / Sowetan (2019) Mthatha Dam sewage incident; historic State-of-Rivers report.
- Transport/airport: Tourism Update (2024) & Airspace Africa (2024) on ATNS suspensions; AlgoaFM (2024) reinstatement; SANRAL tender notices (N2).
- Health services: NMAH clinical research (2024); facility profiles.
- WSU/student unrest: Government statement (2025); Cape Times (2025).
- Crime, extortion, taxi violence: EWN (2024), HeraldLive (2024), Government/NATJOINTS (2024); SundayWorld/News24/The Star (2024–2025); Daily Dispatch (2025); IOL (2024).
- Floods (June 2025): AP/Reuters coverage; Provincial Office of the Premier and updates on fatalities.
- Town-level baseline (historic): Census 2011 (Mthatha main place).
- Eastern Cape Provincial Treasury (2024). *Socio-Economic Review and Outlook (SERO) 2024*. Bisho: Eastern Cape Government.
- Eastern Cape Provincial Treasury (2025). *Economic Review of the Eastern Cape: First Quarter 2025*. Bisho: Eastern Cape Government.
- Statistics South Africa (2023). *Provincial Gross Domestic Product, 2023 (P0441.2)*. Pretoria: Stats SA.
- Statistics South Africa (2024a). *Census 2022 Provincial Profile: Eastern Cape*. Pretoria: Stats SA.

- Statistics South Africa (2024c). Census 2022: Water Supply and Service Reliability. Pretoria: Stats SA.
- Statistics South Africa (2024d). Census 2022: Energy Use by Households. Pretoria: Stats SA.
- Statistics South Africa (2025a). Mid-Year Population Estimates 2025. Pretoria: Stats SA.
- Statistics South Africa (2025b). Quarterly Labour Force Survey, Quarter 2 2025. Pretoria: Stats SA.
- Babbie, E. (2014). *The Practice of Social Research*. 14th ed. Belmont: Wadsworth Cengage Learning.
- Chris Hani District Municipality (CHDM). (2022). *Integrated Development Plan (IDP) 2022–2027*. Chris Hani District Municipality, South Africa.
- Coetzee, H., Winde, F. and Wade, P. (2006). An assessment of sources, pathways, mechanisms and risks of current and potential future pollution of water and sediments in gold-mining areas of the Wonderfontein spruit catchment. WRC Report No. 1214/1/06. Pretoria: Water Research Commission.
- Department of Environmental Affairs. 1998. *National Environmental Management Act, 107 of 1998*. Pretoria: Government Printer.
- Department of Environmental Affairs. 2014. *Environmental Impact Assessment Regulations, 2014 (as amended)*. Pretoria: Government Gazette.
- Department of Health (DoH). (2017). *National Health Insurance for South Africa: Towards Universal Health Coverage*. Pretoria: Department of Health.
- Department of Mineral Resources and Energy (DMRE). (2019). *Guideline for the Compilation of a Social and Labour Plan*. Pretoria: DMRE.
- Department of Mineral Resources and Energy. 2002. *Mineral and Petroleum Resources Development Act, 28 of 2002*. Pretoria: Government Printer.
- Department of Water Affairs. 1998. *National Water Act, 36 of 1998*. Pretoria: Government Printer.
- Eastern Cape Department of Cooperative Governance and Traditional Affairs (EC-COGTA). (2021). *Nyandeni Local Municipality Annual Report 2020/2021*. Bisho: EC-COGTA.
- Eastern Cape Socio-Economic Consultative Council (ECSECC). (2021). *Municipal Socio-Economic Profile: Nyandeni Local Municipality*. ECSECC, Eastern Cape.
- Esteves, A.M. and Vanclay, F. (2009). Social development needs analysis as a tool for SIA to guide corporate–community investment: Applications in the minerals industry. *Environmental Impact Assessment Review*, 29(2), pp.137–145.
- International Association for Impact Assessment (IAIA). (2015). *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects*. Fargo, USA: IAIA.
-

International Finance Corporation (IFC). (2012). *Performance Standards on Environmental and Social Sustainability*. Washington, DC: IFC.

National Planning Commission (NPC). (2012). *National Development Plan 2030: Our Future – Make it Work*. Pretoria: The Presidency.

Nyandeni Local Municipality (NLM). (2022). *Integrated Development Plan (IDP) Review 2022/2023*. Libode: Nyandeni Local Municipality.

Nyandeni Local Municipality. 2023. *Integrated Development Plan 2023/2024*. Mthatha: Nyandeni Local Municipality.

South African Government (Stats SA). (2012). *Census 2011 Municipal Report – Eastern Cape*. Report No. 03-01-50. Pretoria: Statistics South Africa.

South African Government. (1998). *National Environmental Management Act (NEMA)*, No. 107 of 1998. Pretoria: Government Printer.

South African Government. (2002). *Mineral and Petroleum Resources Development Act (MPRDA)*, No. 28 of 2002. Pretoria: Government Printer.

Statistics South Africa (Stats SA). (2022). *General Household Survey 2021*. Pretoria: Statistics South Africa.

Statistics South Africa (Stats SA). (2022). *Mid-Year Population Estimates 2022*. Pretoria: Statistics South Africa.

Statistics South Africa. 2022. *Census 2022: Socio-Economic Indicators for Eastern Cape Province*. Pretoria: Stats SA.

Transkei Quarries (Pty) Ltd. 2025. *Final Scoping Report for the Mthatha Quarry Expansion Project*. Mthatha: Transkei Quarries.

Vanclay, F. (2003). International principles for social impact assessment. *Impact Assessment and Project Appraisal*, 21(1), pp.5–11.

World Bank. (2018). *Environmental and Social Framework: Setting Environmental and Social Standards for Investment Project Financing*. Washington, DC: World Bank.

World Health Organization (WHO). (2010). *Health Impact Assessment: Main Concepts and Suggested Approach*. Geneva: WHO.