

NMBM Seaview Low Income Housing Development Final Scoping Report

Report Prepared for

Nelson Mandela Bay Municipality



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Report Prepared by

 **srk** consulting

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NMBM Seaview Low Income Housing Development

Final Scoping report

Nelson Mandela Bay Municipality

Nelson Mandela Bay Municipality

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Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (South Africa) (Pty) Ltd (SRK) by Nelson Mandela Bay Municipality (NMBM). The opinions in this Report are provided in response to a specific request from NMBM to do so. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

List of Abbreviations

AIA	Archaeological Impact Assessment
BID	Background Information Document
BLMC	Biodiversity Land Management Classes
CBA	Critical Biodiversity Areas
DAFF	Department of Agriculture, Forestry and Fisheries
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECBCP	Eastern Cape Biodiversity Conservation Plan
ECPHRA	Eastern Cape Provincial Heritage Resources Authority
EIA	Environmental Impact Assessment
FSR	Final Scoping Report
HIA	Heritage Impact Assessment
IAPs	Interested and Affected Parties
PIA	Palaeontological Impact Assessment
NEMA	National Environmental Management Act
NMBM	Nelson Mandela Bay Municipality
PoSE	Plan of Study for EIA
PPP	Public Participation Process
SDEA	Social Development Education and Awareness
TIA	Traffic Impact Assessment
ToR	Terms of Reference
+ve	Positive
-ve	Negative

Glossary of Terms

Critical Biodiversity Areas	Areas that are considered irreplaceable or important and necessary in terms of meeting targets for biodiversity pattern and process.
Environment	The external circumstances, conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Impact Assessment (EIA)	A study of the environmental consequences of a proposed course of action.
Indigenous vegetation	Vegetation consisting of indigenous plant species occurring naturally in an area, regardless the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.
Interested and Affected Party	Any person, group of persons or organisation interested in or affected by an activity, and any Organ of State that may have jurisdiction over any aspect covered by the activity.
Plan of Study for EIA	A document which forms part of a Scoping Report and sets out how an Environmental Impact Assessment must be conducted.

Registered Interested and Affected Party (IAP)	An Interested and Affected Party whose name is recorded in the register opened for the application / project.
Scoping	A procedure to consult with stakeholders to determine issues and concerns and for determining the extent of and approach to an EIA, used to focus the EIA.
Scoping Report	A written report describing the issues identified to date for inclusion in an EIA.

1 Background and Introduction

The Nelson Mandela Bay Municipality (NMBM) proposes to construct a low income housing development and associated facilities in Seaview, Port Elizabeth. The project includes the construction of approximately 400 to 1000 residential units (depending on the development option) and associated infrastructure to provide housing and facilities primarily to cater for the communities currently living in Zweledinga and New Rest informal settlements in Seaview. Non-forested portions of five properties in the area, namely erf 590, 238, 240, farm 28 portion 10 and 28 portion 1, making up two development options, are proposed for development.

SRK Consulting (SRK) has been appointed by the NMBM, as the independent consultants, to conduct the Environmental Impact Assessment (EIA) in terms of NEMA, as amended, and the EIA Regulations, 2010, for the proposed Seaview Housing Development, within the NMBM (see Site Locality Plan, Figure 1-1 below).

1.1 Background of the project

In terms of the National Environmental Management Act 107 of 1998 (NEMA), as amended, and the Environmental Impact Assessment (EIA) Regulations, 2010, an environmental assessment process must be undertaken for certain listed activities. The main activity associated with the proposed development is listed under GNR 545 of 18 June 2010 and as such requires a full Scoping and Environmental Impact Assessment (S&EIA). Two previous environmental authorisations (neither of which are currently valid) and an environmental impact assessment are relevant to the proposed development sites and services infrastructure. For completeness, a brief overview of these is provided below.

An environmental authorisation was issued to the NMBM under the Environmental Conservation Act (Act 73 of 1989), for the proposed development of erf 590, Clarendon Marine, for low income housing. This authorisation however lapsed prior to commencement of the development, and subsequent attempts to renew authorisation were suspended due to limitations on development posed by the National Forest Act.

An application for rezoning and subdivision of portion 1 of Farm 28, Seaview, in support of the development of a middle / high income residential development had also been lodged by CEN, an environmental consulting firm, on behalf of a private developer in 2009 (DEDEAT ref ECm1/387/M/09-17). While it is understood that the EIA process was suspended by the developer prior to obtaining authorisation, various specialist studies were completed in the process and where applicable the findings of these will be used to inform the current EIA process, with updates as required. The layout currently proposed for this site (Development Option 2) is also based on the development footprint proposed and assessed as part of the previous EIA process.

Environmental authorisation for the proposed Seaview bulk water supply project was issued by DEDEAT to the NMBM in 2009 (DEDEAT ref ECm1/386/1k/09-47). The development was however not pursued at the time and the authorisation subsequently lapsed. An application for the development, which is intended to provide water supply to the broader Seaview and Kini Bay area (including the proposed development) is therefore currently under way. It is therefore understood that authorisation of the proposed housing development may be dependent on authorisation of the above-mentioned water supply project, and water supply has therefore not been included in the scope of this assessment.

In December 2013 an application to commence the current EIA process (covering two layout options over a total of five sites) was submitted to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) (see Appendix A). A reference number was issued by DEDEAT on

13 February 2014. The project has subsequently gone through several unforeseen delays relating to planning, and on 20 November 2015 DEDEAT agreed to a final six-month extension for submission of a Draft Scoping Report.

The Scoping Study includes a Public Participation Process (PPP), aimed at identifying issues and concerns of Interested and Affected Parties (IAP's). The objective of the Scoping Study is to identify those issues and concerns that must be investigated in more detail, and which will be reported in a subsequent Environmental Impact Report (EIR).

1.2 Applicant Details

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1.3 Environmental Assessment Practitioner Details

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1.3.1 SRK Profile and Expertise of Relevant Environmental Assessment Practitioners (EAP's)

SRK is a South African founded international organisation of professionals providing a comprehensive range of consulting services, expert advice and solutions to the natural resource industry, public sector and other niche sectors. SRK provides focused advice and solutions requiring specialised services, mainly in the fields of the environment and development, exploration, mining, water, rail and civil-geotechnics. Established in 1974, the SRK Group employs over 1500 people operating from about 40 established practices in Africa, Asia, Australasia, Europe, North and South America. SRK is registered as a member of the Consulting Engineers South Africa (CESA) and has a formal quality management system that is ISO9001 certified.

Project Manager: Nicola Rump, MSc, EAPSA

Nicola Rump is a Principal Environmental Scientist and has been involved in environmental management for the past 8 years working on South African and international projects including EIAs and ISO 14001 auditing for a variety of activities. Her experience includes Basic Assessments, Environmental Impact Assessments, Environmental Management Plans, Environmental Auditing and Stakeholder Engagement.

Project coordinator: Tanya Speyers, BSc Hons.

Tanya is an Environmental Scientist with 3 years' experience in Basic Assessments, Environmental Impact Assessments, Water Use Licence Applications and Environmental Control Officer Work.

Project Director and Internal Reviewer: Rob Gardiner, MSc, MBA, Pr Sci Nat

Rob Gardiner is the Principal Environmental Scientist and head of SRK's Environmental Department in Port Elizabeth. He has more than 20 years environmental consulting experience covering a broad range of projects, including Environmental Impact Assessments (EIA), Environmental Management Systems (EMS), Environmental Management Programmes (EMPr), and environmental auditing. His experience in the development, manufacturing, mining and public sectors has been gained in projects within South Africa, Lesotho, Botswana, Angola, Zimbabwe.

Box 1: Environmental Assessment Practitioner expertise

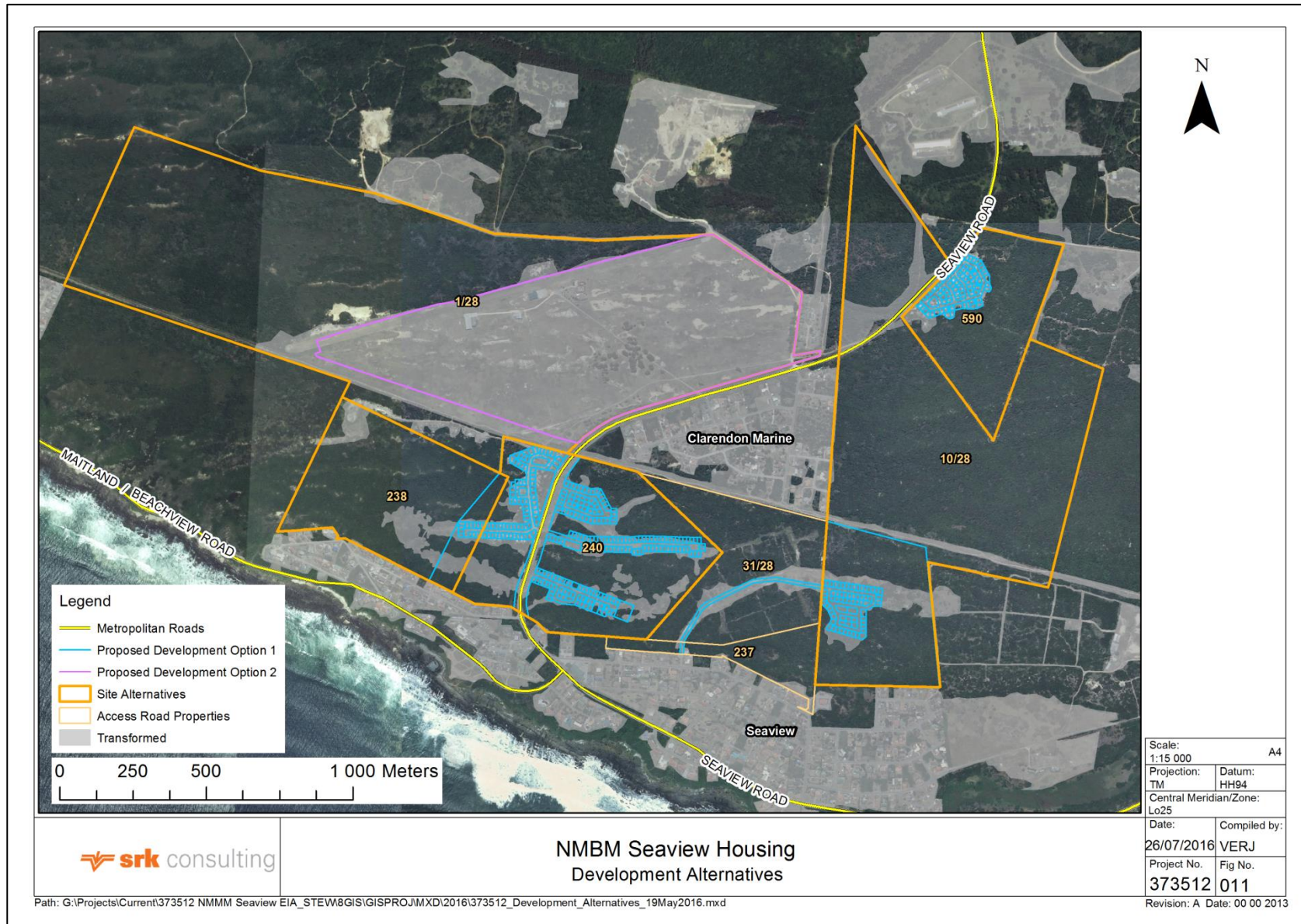


Figure 1-1: Locality of the proposed development for layout options 1 and 2

1.4 Statement of SRK Independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK's fee for conducting this EIA process is based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the Report(s) or the EIA process.

As required by the legislation, SRK has completed and submitted a declaration of interest, as part of the EIA application form. A copy of this is included in Appendix A of this report and the qualifications and experience of the individual practitioners responsible for this project are detailed above.

1.5 Assessment of the Scoping report

Before proceeding to the EIA phase, the Scoping Report and Plan of Study for EIA are assessed by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT).

In the spirit of cooperative governance, DEDEAT will consult with other relevant organs of state before making a decision. These organs of state could include:

- Department of Agriculture, Forestry and Fisheries (DAFF);
- Department of Water Affairs and Sanitation (DWS); and
- Eastern Cape Provincial Heritage Resources Authority (ECPHRA).

SRK has distributed Background Information Documents (BIDs) to all the organs of state listed above, and will also give them an opportunity to comment on this report.

1.6 Legal requirements pertaining to the Proposed Project

The environmental legislation which is applicable to the authorisation of the proposed project is summarised in this Section.

1.6.1 National Environmental Management Act (Act No. 107 of 1998) (NEMA)

NEMA provides for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of the State, as well as to provide for matters connected therewith. Section 2 of NEMA establishes a set of principles that apply to the activities of all organs of state that may significantly affect the environment. These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and
- Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

Section 28(1) states that:

“Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring.”

If such degradation/pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. These measures may include:

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

Legal requirements for this project

The NMBM has a responsibility to ensure that the proposed housing development construction activities and the EIA process conform to the principles of NEMA. The proponent is obliged to take action to prevent pollution or degradation of the environment in terms of Section 28 of NEMA.

1.6.2 NEMA EIA regulations

2010 EIA Regulations

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities that may not commence without an environmental authorisation or existing activities in respect of which an application for environmental authorisation is required. In this context, EIA Regulations contained in four General Notices in terms of NEMA (GN R 543, 544, 545 and 546) came into force on 18 June 2010.

GN R 543 lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment process or a Scoping and EIA process is required to obtain environmental authorisation. GN R 544 lists activities that require Basic Assessment, while GN R 545 lists activities that require Scoping and EIA. The regulations for both alternative processes stipulate that:

Public participation must be undertaken at various stages of the assessment process;

- The assessment must be conducted by an independent Environmental Assessment Practitioner;
- The relevant authorities respond to applications and submissions within stipulated time frames; and
- Decisions taken by the authorities can be appealed by the proponent or any other interested and affected party.

2014 EIA Regulations

The 2014 revision of the EIA regulations came into effect on 8 December 2014. Although the project's application for environmental authorisation was made under the 2010 EIA regulations and therefore remains subject to the procedural requirements thereof, the assessment is also required to

take into account all relevant equivalent or additional listed activities in terms of the 2014 EIA regulations.

GN R982 of the EIA Regulations lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment (BA) process or a S&EIR process is required to obtain EA. Listing Notice 1(GNR 983) lists activities that require a BA process, while Listing Notice 2 (GNR 984) lists activities that require S&EIR. Listing Notice 3 (GNR 985) lists activities in certain sensitive geographic areas that require a BA process.

The activities triggered by the proposed Seaview development are listed in Table 1-1 below.

Table 1-1: Listed activities potentially triggered by the proposed development

2010/2014 Listed activities	Description
<p>GNR 544 Item 9: The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water - (vii) with an internal diameter of 0,36 metres or more; or (viii) with a peak throughput of 120 litres per second or more, excluding where: a. such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or b. where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.</p>	<p>In order to provide for the proposed development, the installation of bulk stormwater, water and sewerage infrastructure may be required. These pipelines may potentially exceed the diameter threshold of 0.36 meters and may occur within 32 metres from a watercourse</p>
<p>GNR 983 Item 9: The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or (b) where such development will occur within an urban area.</p>	
<p>GNR 544 Item 37: The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water where: (a) the facility or infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more—excluding where such expansion: (i) relates to transportation of water, sewage or storm water within a road reserve; or (ii) where such expansion will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.</p>	<p>As part of the proposed development, the expansion of existing facilities or infrastructure by more than 1000 m in length or in throughput capacity by 10% or more might be required for the bulk transportation of water, sewage or storm water.</p>
<p>GNR 983 Item 45: The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure-</p> <p>(i) has an internal diameter of 0,36 metres or more; or (ii) has a peak throughput of 120 litres per second or more; and (a) where the facility or infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more; excluding where such expansion- (aa) relates to transportation of water or storm water within a road reserve; or (bb) will occur within an urban area.</p>	
<p>GNR 545 Item 15: Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; except where such physical alteration takes place for: (i) linear</p>	<p>The development will entail the transformation of undeveloped land exceeding 20 ha to residential use, and is outside the Seaview urban development area</p>

development activities; or (ii) agriculture or afforestation where activity 16 in this Schedule will apply.	
GNR 984 Item 15: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	
GNR 546 Item 12: The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.	The development may involve clearing of 300 square metres or more of vegetation where 75% constitutes indigenous vegetation and which may occur within a critically endangered or endangered ecosystem or within critical biodiversity areas.
GNR 985 Item 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (a) In Eastern Cape: ii. Within critical biodiversity areas identified in bioregional plans	
GNR 546 Item 13: The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in (c) In Eastern Cape: ii. Outside urban areas, the following: Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;	Clearing of one hectare of vegetation where 75% constitutes indigenous vegetation within 5 km of the Island Nature Reserve.
GNR 983 Item 24: The development of- (i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding- (a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or (b) roads where the entire road falls within an urban area.	Road widths within and providing access to the development will be between 10m and 12 m.

Legal requirements for this project

The proposed new low income housing development includes the listed activities as described above. As such, the proponent is obliged to conduct an Environmental Impact Assessment for the proposed activity in accordance with the procedure stipulated in GN R 545.

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

The protection and management of South Africa's heritage resources is controlled by the National Heritage Resources Act 25 of 1999. The enforcing authority for this act is the South African Heritage Resources Agency (SAHRA). In terms of the Act, historically important features such as graves, trees, archaeological artefacts/sites and fossil beds are protected. Similarly, culturally significant symbols, spaces and landscapes are also afforded protection. In terms of Section 38 of the National Heritage Resources Act, SAHRA can call for a Heritage Impact Assessment (HIA) where certain categories of development are proposed. The Act also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is deemed adequate, a separate HIA is not required.

The Act requires that:

“...any person who intends to undertake a development categorised as the ... or any development or other activity which will change the character of a site exceeding 5 000 m² in extent or involving three or more existing erven or subdivisions thereof must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development...”

Legal requirements for this project

ECPHRA has been notified of the proposed housing project as per the requirement of the National Resources Heritage Act. A phase 1 Archaeological impact Assessment (AIA) has been conducted for Portion 1 of Farm 28, however the rest of the erven will require a Phase 1 AIA and all erven will require a Phase 1 PIA or exemption letter where this is applicable.

1.6.4 National Forests Act: (Act No. 84 of 1998) (NFA)

The NFA promotes the sustainable use and development of forests, and provides special measures for the protection of certain forests and trees. Section 3(3) of the National Forest Act (NFA) sets out principles to guide sustainable forest management. The principles of the Act in Section 3 include that *“...natural forests may not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits”*. This prescribes that no development affecting forests may be allowed unless “exceptional circumstances” can be proven.

In terms of Section 7 of the National Forests Act:

- 1) No person may –
 - a) Cut, disturb, damage or destroy any indigenous tree in a natural forest; or
 - b) Possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any tree, or any forest product derived from a tree contemplated in paragraph (a), except in terms of –
 - i) A licence issued under subsection (4) or section 23; or
 - ii) An exemption from the provisions of this subsection published by the Minister in the Gazette on the advice of the Council.

The definition of “natural forest” in the NFA is as follows (Section 2(1)): *‘A natural forest means a group of indigenous trees whose crowns are largely contiguous or which have been declared by the Minister to be a natural forest under section 7(2)’*

Thus in terms of the NFA, all indigenous forests are protected and no trees may be cut, damaged or removed without a licence from DAFF (or a delegated authority). If not satisfied that proper consideration has been given to the protection of a forest, DAFF has the legal right to refuse a licence, even if authorisation for development has been granted by another sphere of government.

Legal requirements for this project

A forest survey will be undertaken to confirm the boundaries of the forest areas on the proposed alternative sites as per the Department of Agriculture, Forestry and Fisheries (DAFF) request. Forest identified during the survey is protected in terms of the National Forests Act and will require authorisation from DAFF to destroy.

1.6.5 Notice of the List of Protected Tree Species under the National Forests Act, 1998 (GN R 716, 7 September 2012)

Government Notice 716 provides a schedule listing all protected tree species in South Africa. In terms of section 15 (1) of the National Forests Act, 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. The published list includes white milkwood (*Sideroxylon inerme*), which is found on the site. In order to destroy or remove protected species, a permit must first be obtained from DAFF.

Legal requirements for this project

Milkwood and any other protected species as listed in GN R 716, will require permits from DAFF before removal, damage or destruction.

1.6.6 National Water Act (Act No. 36 of 1998) (NWA)

The National Water Act 36 of 1998 provides for the promotion of efficient, sustainable and beneficial use of water in the public interest; for the facilitation of social and economic development; for the protection of aquatic and associated ecosystems and their biological diversity; and for the reduction and prevention of pollution and degradation of water resources. The Act also provides for emergency situations where pollution of water resources occurs. Section 21 of the Act describes activities that will require prior permitting before these activities may be implemented, including any changes to the river course and banks, changes to water flows and the discharge of water containing waste.

Legal requirements for this project

The development may include activities that are listed under section 21 in which case Water Use Licence Applications (WULAs) will be required.

1.7 Approach to the Scoping Study

The approach taken in this study is guided by the principles of Integrated Environmental Management (IEM) as described in the IEM guidelines published by the Department of environmental Affairs and Tourism in 1992 (now known as the Department of Environmental Affairs). The approach is therefore guided by the principles of transparency which are aimed at encouraging decision-making. The underpinning principles of IEM are:

- Informed decision making;
- Accountability for information on which decisions are made;
- A broad interpretation of the term "environment";
- Consultation with IAPs;
- Due consideration of feasible alternatives;
- An attempt to mitigate negative impacts and enhance positive impacts associated with the proposed project;
- An attempt to ensure that the social costs of the development proposals are outweighed by the social benefits;
- Regard for individual rights and obligations;

- Compliance with these principles during all stages of the planning, implementation, and decommissioning of the proposed development or activity; and
- Opportunities for public and specialist input in the decision-making process.

The study has also been guided by the requirements of the EIA Regulations set out in terms of the National Environmental Management Act (NEMA).

The EIA process consists of two phases, as depicted in Figure 1-2 below. The overall aim of the Scoping Phase is to determine whether there are environmental issues and impacts that require further investigation in the detailed EIA. More specifically, the objectives of the Scoping Phase for this EIA are to:

- Develop a common understanding of the proposed project with the authorities and IAPs;
- Identify stakeholders and notify them of the proposed activity and processes;
- Provide stakeholders with the opportunity to participate in the process and identify issues and concerns associated with the proposed activity;
- Identify potential environmental impacts that will require further study in the impact assessment phase of the EIA process; and
- Develop terms of reference for any studies that will be conducted in the impact assessment phase.

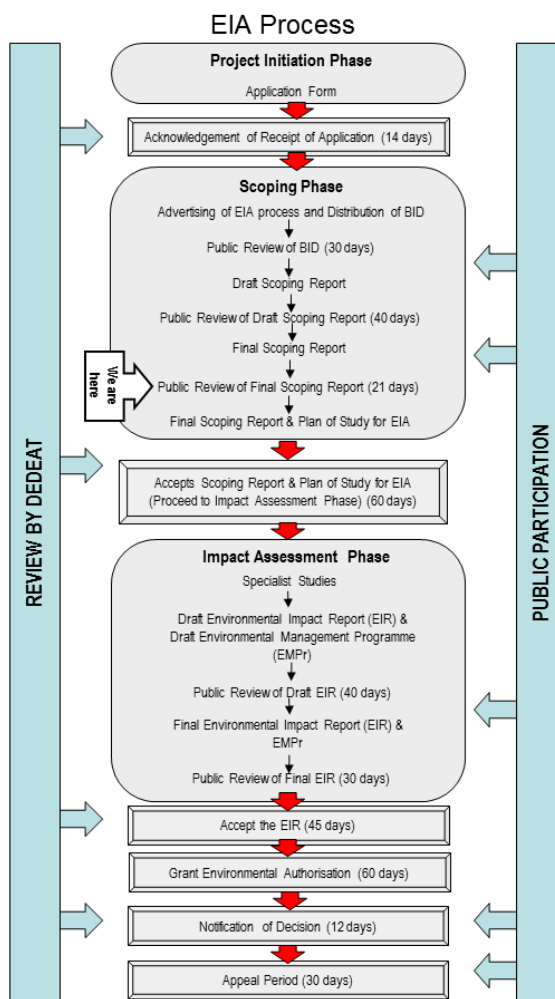


Figure 1-2: EIA Process

1.8 Purpose of the Final Scoping Report

The principal objectives of the Scoping Phase in accordance with the regulatory requirements are to:

- Describe the nature of the proposed project;
- Enable preliminary identification and assessment of potential environmental issues or impacts to be addressed in the subsequent EIA phase;
- Define the legal, policy and planning context for the proposed project;
- Describe important biophysical and socio-economic characteristics of the affected environment;
- Undertake a public participation process that provides opportunities for all Interested and Affected Parties (IAPs) to be involved;
- Identify feasible alternatives that must be assessed in the EIA phase; and
- Define the Plan of Study (PoS) for the EIA phase.

The Final Scoping Report (FSR) will form the basis of the Terms of Reference (ToR) for specialist studies, and it is therefore important that all issues and potential impacts that may be associated with the proposed development be identified and recorded.

1.9 Assumptions and Limitations

The following assumptions have been made during the Scoping Study and in the compilation of this document:

- That the development is intended to primarily cater for existing residents of informal settlements in Zweledinga and New Rest, with capacity to cater for future growth of those communities where possible, and at the most may include residents from small communities surrounding Seaview;
- While the potential housing yield of Farm 28/1 based on developable space exceeds the current requirement, current plans are to develop this property only to the extent that is justifiable based on the need and desirability of the development as outlined in Section 2.1;
- That, due to the cost of preparing detailed designs and plans, such detailed design/ planning information would only be developed in the event of environmental authorisation being granted. As such, it is anticipated that, as is typically the case in an EIA process, the EIA will assess broad land uses;
- Although provision for a waste transfer station (to service the broader area) is included in layout option 2, sufficient detail regarding this facility to allow for assessment as part of this EIA is not currently available.

Notwithstanding these assumptions, it is our view that this Final Scoping Report provides a good description of the potential issues associated with the proposed development, and a reasonable Plan of Study for EIA.

1.10 Structure of this report

This report is divided into eight chapters:

Chapter 1 Background and Introduction

Introduces the Scoping Study, and the legal context, for the proposed low income housing development.

Chapter 2 Description of Development Proposal

Describes the various components of, and the motivation for, the proposed low income housing development.

Chapter 3 Nature of the Affected Environment

Provides an overview of the affected biophysical and socio-economic environment in the project area.

Chapter 4 The Public Participation Process

Describes the Public Participation Process (PPP) followed, and the issues & concerns that have been raised by Interested and Affected Parties (IAP's).

Chapter 5 Identification of Potential Impacts

Describes the potential positive and negative environmental impacts of the proposed low income housing development.

Chapter 6 Draft Plan of Study for EIA

Provides a plan on how SRK proposes to address the identified potential impacts in the EIA phase.

Chapter 7 The Way Forward

Describes the next steps in the scoping process.

Chapter 8 References



2 Description of the development proposal

2.1 Motivation for Proposed Activity

Housing and service delivery is also a key challenge facing the Nelson Mandela Bay Municipality (NMBM). According to the NMBM's Built Environmental Performance Plan (2015/16) the NMBM has a housing backlog of 72,411 units (49,000 backyard shacks and 23,411 in informal areas) and identified the provision of quality housing and the structured upgrading of informal settlements as one of their main objectives. Their aim is to upgrade and eliminate all informal settlements by 2018, and provide basic sanitation to all communities in the NMBM by 2016. The proposed provision of housing for residents of informal settlements in the Seaview area is also listed as one of the priority projects for Ward 40 in the IDP.

The NMBM has identified five potential sites to provide housing for the informal settlements of Zweledinga and New Rest which are located to the north and north-west of Seaview. The Municipality is focused on the provision of sustainable integrated human settlements, which means the provision of housing must be accompanied by the provision of other services and amenities required to improve the socio-economic conditions of the residents of that area (i.e. access to community facilities such as educational, entertainment, cultural, health, sports and welfare services). Therefore, the focus of this project is on creating an integrated sustainable settlement which reflects the vision of new initiatives in the NMBM.

2.2 Detailed description of the proposed project

The Nelson Mandela Bay Municipality (NMBM) proposes to develop low income residential units and associated infrastructure in Seaview. Two development options are provided, option 1 entailing development of approximately 400 units on non-forested patches on erf 590, 238 and 240 as well as portion 10 of farm 28, Seaview, and option 2 involving development of up to approximately 1000 units on portion 1 of farm 28. The development will provide formal housing for the residents of Zweledinga and New Rest informal settlements located on erven 590 238 and 240. The NMBM proposes to undertake the development on municipal and state-owned land (farms 590,238,240 and 10/28 – Development Option 1) and in the instance that this is not feasible to consider development on alternative land parcels (Development Option 2) (Refer to Figure 1-1 for details of the affected properties). These options are further discussed in Section 2.3.2. Two options for on-site sanitation are also proposed for the development. Access to the developable area of farm 28/10 is proposed via the access track through erf 237 and farm 28/31, connecting onto Aliwal road in Clarendon Marine.

Table 2-1: Farm name and property portions comprising the study area

Farm Number	Property portion	Landowner	Size (ha) – transformed area	Size (ha) – development footprint	Layout option #
Erf 590, Clarendon Marine (Location of Zweledinga settlement)	N/A	NMBM	3.964	3.271	1
Erf 238, Clarendon Marine	N/A	NMBM	4.481	0.43	1
Erf 240, Clarendon Marine (Location of New Rest settlement)	N/A	NMBM	18.031	13.545	1

Farm Number	Property portion	Landowner	Size (ha) – transformed area	Size (ha) – development footprint	Layout option #
Farm 28, Seaview	Portion 10	NMBM	11.365	3.578	1
Farm 28, Seaview	Portion1	Stu Davidson	75.279	66.11	2
Farm 28, Seaview	Portion 31	James Shamley	2.87	0.74	1 (access road)
Erf 237	N/A	NMBM	0.546	0.048	1 (access road)

Various site alternatives for the development proposal were identified during an initial pre-screening exercise in 2010, based on current land use, presence of natural forest, proximity to the current informal settlements and presence of degraded / transformed land. Of these sites, five were selected based on land ownership (municipal) and landowner support, for further assessment.

The landowners of the privately owned properties had all been consulted by the NMBM regarding their willingness to sell their properties for the purpose of the proposed development, and indicated in-principle support to proceed with an EIA with their property as a site alternative.

Using the five sites proposed, two development options were identified. The combined development of erven 590,240 and 238 and Portion 10 of Farm 28, is proposed as Development Option 1. These properties are largely municipally owned however the development is too large to be accommodated on one property alone (as a result of limited developable areas due to forest on the properties) and will therefore require the development of non-forested areas on each of these properties. This will result in a yield that slightly exceeds the latest demand estimates (as per the NMBM's 2014 Social Development Education and Administration survey) but could not accommodate future expansion of these communities. Development Option 2 can accommodate the entire development (and will allow for future expansion) on Portion 1 of Farm 28, however this will require the municipality to purchase the land, which will increase the development cost of the project.

2.2.1 Housing and associated land uses

Qualifying beneficiaries will receive a fully state subsidised formal structure (Free basic house/RDP) of 45 m². Beneficiaries will depend entirely on being housed by the state without any expectation of making financial contributions towards the house/services/ transfer/ registration costs for the property to be received. Houses will be typical RDP structures on a minimum erf size of 250 m² to accommodate the sanitation services on each erf. The houses will consist of one shower and sink per dwelling (no bath). Various internal layouts are possible for the RDP houses. One of these layouts is illustrated in Figure 2-1. General specifications of standard RDP houses as proposed for the development) are:

- Fully State Subsidised Housing – for beneficiaries earning up to R3,500 per month;
- Each unit >40 m², and costing approximately R160,000 each to build;
- Beneficiaries will depend entirely on being housed by the state without any expectation of making financial contributions towards the house/services/ transfer/ registration costs for the property to be received; and
- Units will be free standing.

The proposed development will include areas zoned as public open space (both parks and natural/ indigenous vegetation), as well as community zoning to make provision for uses such as a crèche or church. Special Purpose zoning would be a zoning for an integrated use such as a community facility or a waste transfer station etc.

Details of the two development options are provided in Section 2.3.2

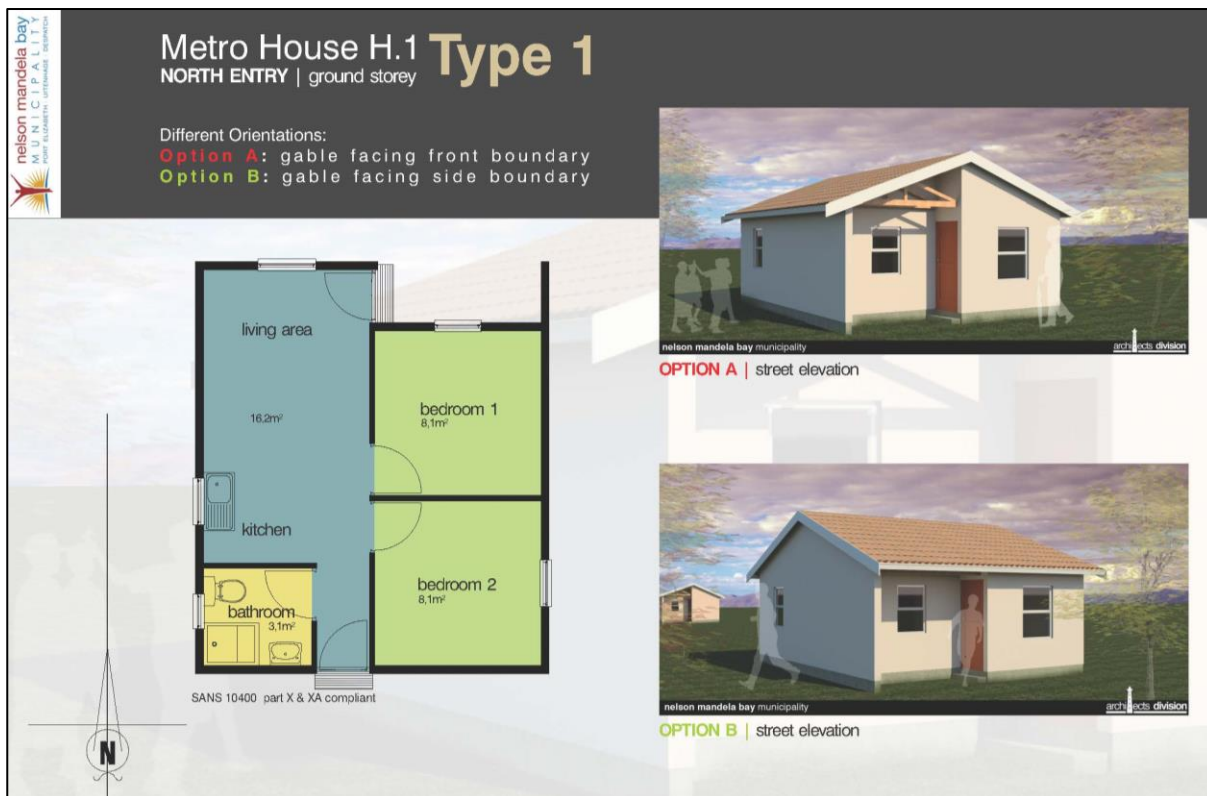


Figure 2-1: Typical example of a free standing single storey RDP house

2.2.2 Bulk Services

A bulk services report addressing the items below will be compiled and submitted as part of the EIR. Letters from the relevant NMBM services departments regarding the capacity for provision of bulk services are included under Appendix J.

Water

The development will connect onto the proposed Seaview bulk water supply scheme, which is intended to augment water supply for the broader area. Refer to Appendix J for the NMBM letter confirming the capacity of the proposed supply scheme to service this development. Application for environmental authorisation for this project is currently in progress separately to this EIA process, a DEDEAT reference number for which will be provided once this is available. The NMBM has confirmed that no other water supply options are available for the area.

Alignments for the required connections to bulk water supply infrastructure have not yet been determined, and will depend on biophysical constraints such as topography and forest.

Sanitation

No wastewater treatment works currently exists in the Seaview area, and existing communities make use of on-site sanitation. For the formal developments this largely consists of septic tanks, and for Zweledinga this mostly comprises home-built pit latrines, the majority of which are unhealthy and physically unsafe. The community have dug these toilets due to a lack of any other alternative services. Water is supplied to a few standpipes located throughout the informal settlement. In New Rest communal chemical toilets are provided and are serviced by a Municipal appointed service provider. The community have expressed dissatisfaction with this service. Connection onto existing bulk sanitation services therefore is not possible and due to space and topographic limitations, sanitation options to service the proposed development are limited. While numerous options in this

regard were investigated, the conclusion was reached that on-site sanitation was the only viable option. Makhetha Development Consultants (MDC) were appointed by the NMBM to assess options in this regard, and the resultant recommendation was for on-site Low Volume Flush Toilets with leach pits. MDC's report detailing this study (which included soil percolation testing) is provided in Appendix I. The acceptability of this option from a groundwater contamination perspective will be investigated as part of this EIA (see terms of reference for specialist study in Section 6.4.6). Alternatives relating to sanitation are discussed in Section 2.3.3

Electricity

Off grid PV systems have been installed by the NMBM on the individual informal structures in Seaview. This system provides lighting and cell phone charging facilities to the informal homes. With the development of formal housing, electricity will be supplied from the Seaview sub-station by means of an overhead power line, and the housing design will include the NMBM standard specifications for low cost housing such as solar geysers. Due to load growth in the Seaview area the Nelson Mandela Bay Municipality will upgrade the line to a 22kV underground cable which will be sufficient to supply the power requirements for Seaview, including the proposed development. Where possible other energy saving technologies (such as solar street lighting) will be installed. Refer to appendix J for comment from the NMBM Department of Electricity and Energy.

Waste

Solid waste generated by individual households in operational phase will be collected as per the NMBM's waste collection schedule. A new waste transfer station for the area will be required and provision for this is made in layout option 2. Due to space limitations, this provision is not currently available in layout option 1. Refer to Appendix J for comment from the NMBM Public Health Directorate.

2.2.3 Access

Access to all the sites except Portion 10 of Farm 28 will be off Seaview road. It is proposed that portion 10 be accessed via Aliwal Road in Seaview. A 12 m road reserve will need to be constructed to connect the development with Aliwal road. This new access route will follow the footprint of the transformed area (See layout in Appendix G). The preliminary layouts proposed allow for 12 m wide road reserves within the residential areas, to allow for access by municipal service vehicles such as waste removal.

2.2.4 Relocation Process

The relocations will be undertaken by the municipality's housing unit, the Social Development Education and Administration (SDEA) sub-directorate. If space is limited as with Development Option 1, the relocation will be done in-situ in a phased manner. The details of the NMBM's standard relocation procedure have been included in Appendix K.

2.3 Project Alternatives

2.3.1 Location alternatives

Alternative locations for the housing for the New Rest and Zweledinga residents were considered in other parts of the metropolitan area. Settlements to address housing backlogs have been proposed at St Albans (since found to be undevelopable), Witteklip, Kuyga and Rocklands (NMBM Spatial Development Framework, 2015). However, apart from the environmental authorisations required to make two of these sites developable, they have been proposed to accommodate beneficiaries in those areas, and significant expansion of the proposals would be required to accommodate the resident of New Rest and Zweledinga. Another area where housing could potentially be provided is

within the Zanemvula Project, located in the Chatty Valley, which is a major Municipal and National Department of Human Settlements project to address current housing backlogs and the relocation of people residing below flood lines in the metropolitan area. Other alternatives may include Khayamnandi or Motherwell Extensions 29, 30 and 31, however, this area is more than 20 km from the existing settlements of New Rest and Zweledinga. Therefore, due to the high daily transportation costs for the current residents of New Rest and Zweledinga to reside in the Chatty Valley and travel to work in the greater Seaview area, such resettlement is not deemed viable for such a community from a socio-economic perspective.

2.3.2 Site alternatives

Various site alternatives in the Seaview area were identified during an initial pre-screening exercise in 2010 based on current land use, presence of natural forest, proximity to the current informal settlements and presence of degraded / transformed land. Of these sites, five were selected for further assessment through the EIA process, based on two site alternatives as discussed below. The layout designs for these development options are preliminary and still subject to the outcomes of specialist studies, public participation, and detailed engineering designs, and at this stage are intended to provide an indication of the potential development capacity of the properties.

Development Option 1 – four sites combined

As the majority of land falls within the DAFF forestry layer, development is likely to be constrained to the transformed areas as shown in Figure 3-6. Option 1 therefore proposes the utilisation of the disturbed areas on Erf 590, Erf 238, Erf 240 and portion 10 of Farm 28 for the development of formal housing in order to meet the required number houses. It is therefore proposed that the development be split between these properties. The proposed land uses for each of the erven, as per the preliminary layouts provided in Figure 2-2 - Figure 2-4 are described briefly in the tables below.

Table 2-2: Erf 238 and Erf 240 proposed land uses

Zoning	Land Use	No of Erven	Area in m ²	% Allocation
Residential	Subsidised Housing	270	73,327	17.03
Special purposes/community	All Purposes	2	8,118	1.89
Public Open Space (Active)	Park	5	6,273	1.46
Public Open Space (Passive)	Natural Land	3	290,721	67.54
Transportation 1	Roads (12 m wide)		52,012	14.01
Total		280	430,451	100

Table 2-3: Erf 590 proposed land use

Zoning	Land Use	No of Erven	Area in m ²	% Allocation
Residential	Subsidised Housing	76	20,206	9.91
Special purposes/community	All Purposes	1	846	0.41
Public Open Space (Active)	Park	5	1,891	0.93
Public Open Space (Passive)	Natural Land	1	171,173	83.96
Transportation 1	Roads (12 m wide)		9,766	4.79
Total		83	203,882	100

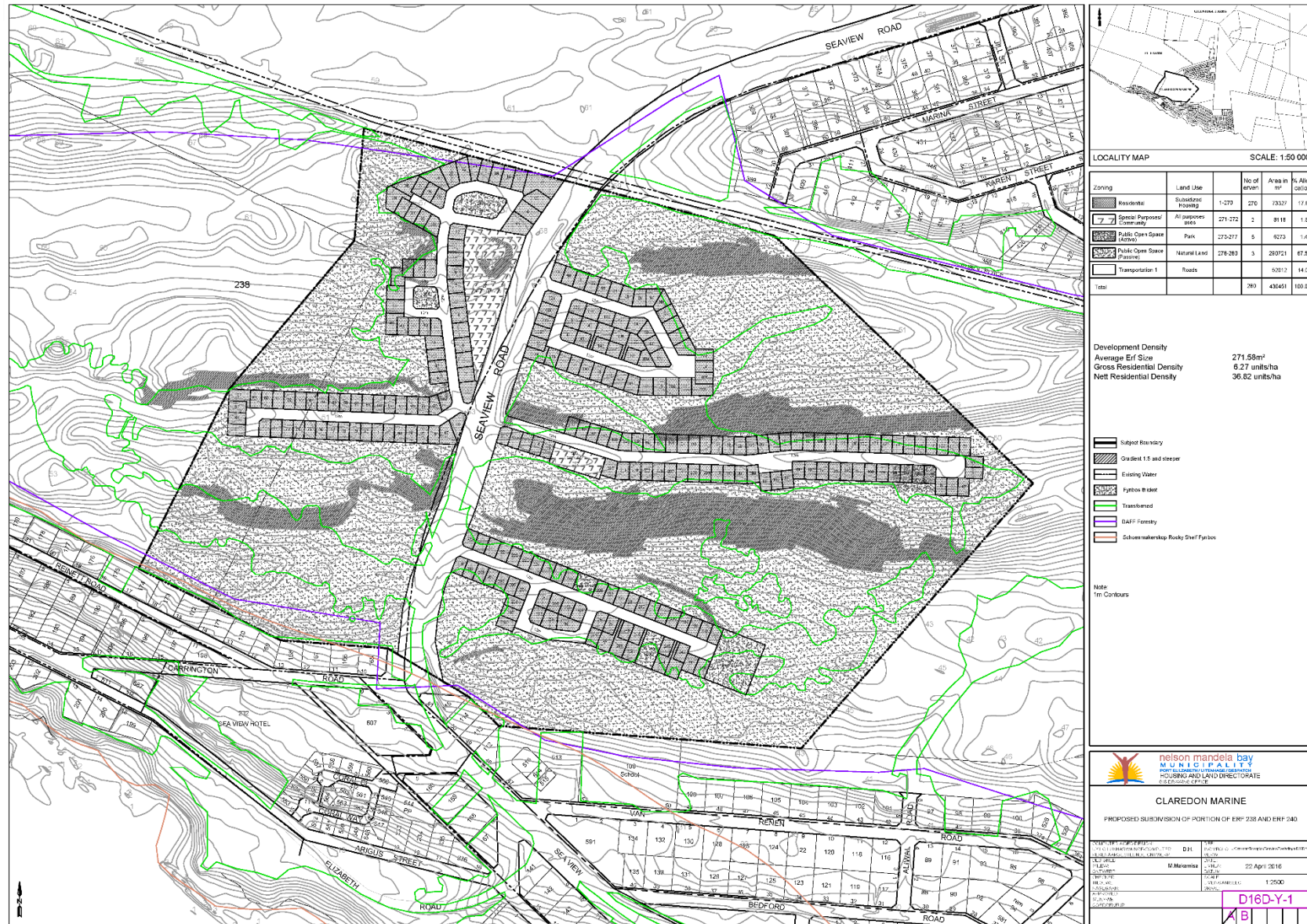


Figure 2-2: Preliminary proposed development layout for erf 238 and 240, Clarendon Marine

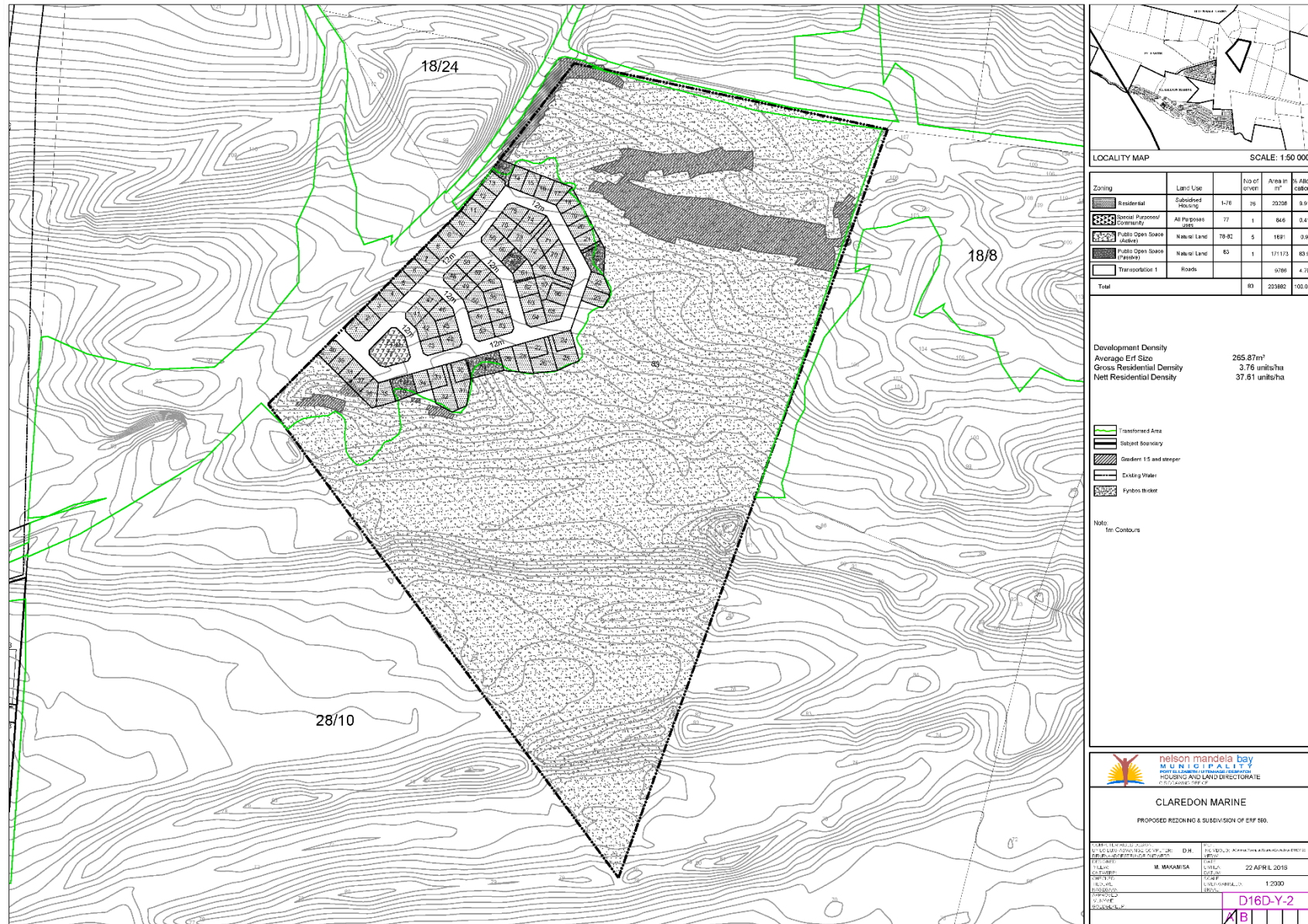


Figure 2-3: Preliminary proposed development layout for erf 590, Clarendon Marine

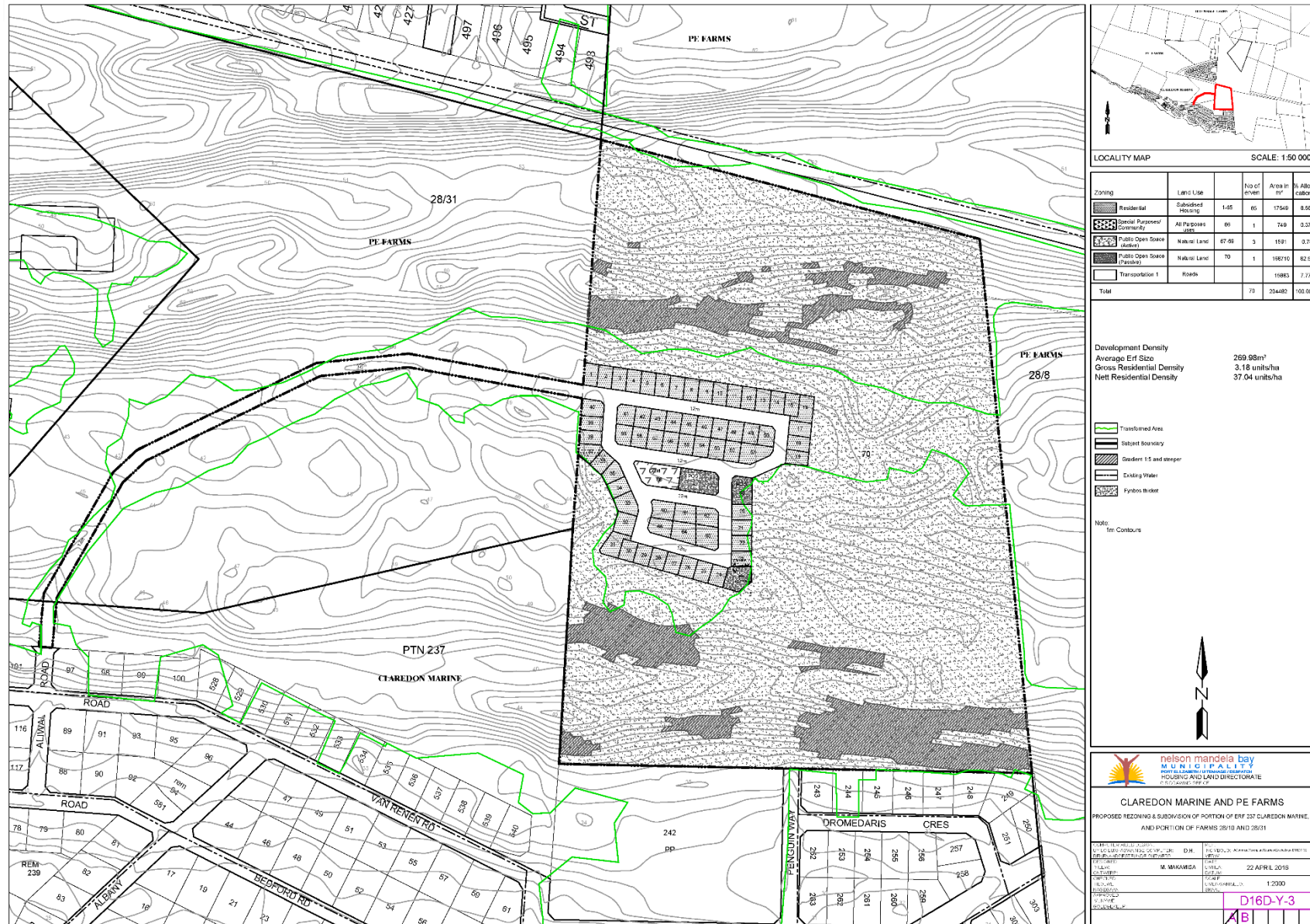


Figure 2-4: Preliminary proposed development layout for Farm 28 portion 10, Seaview

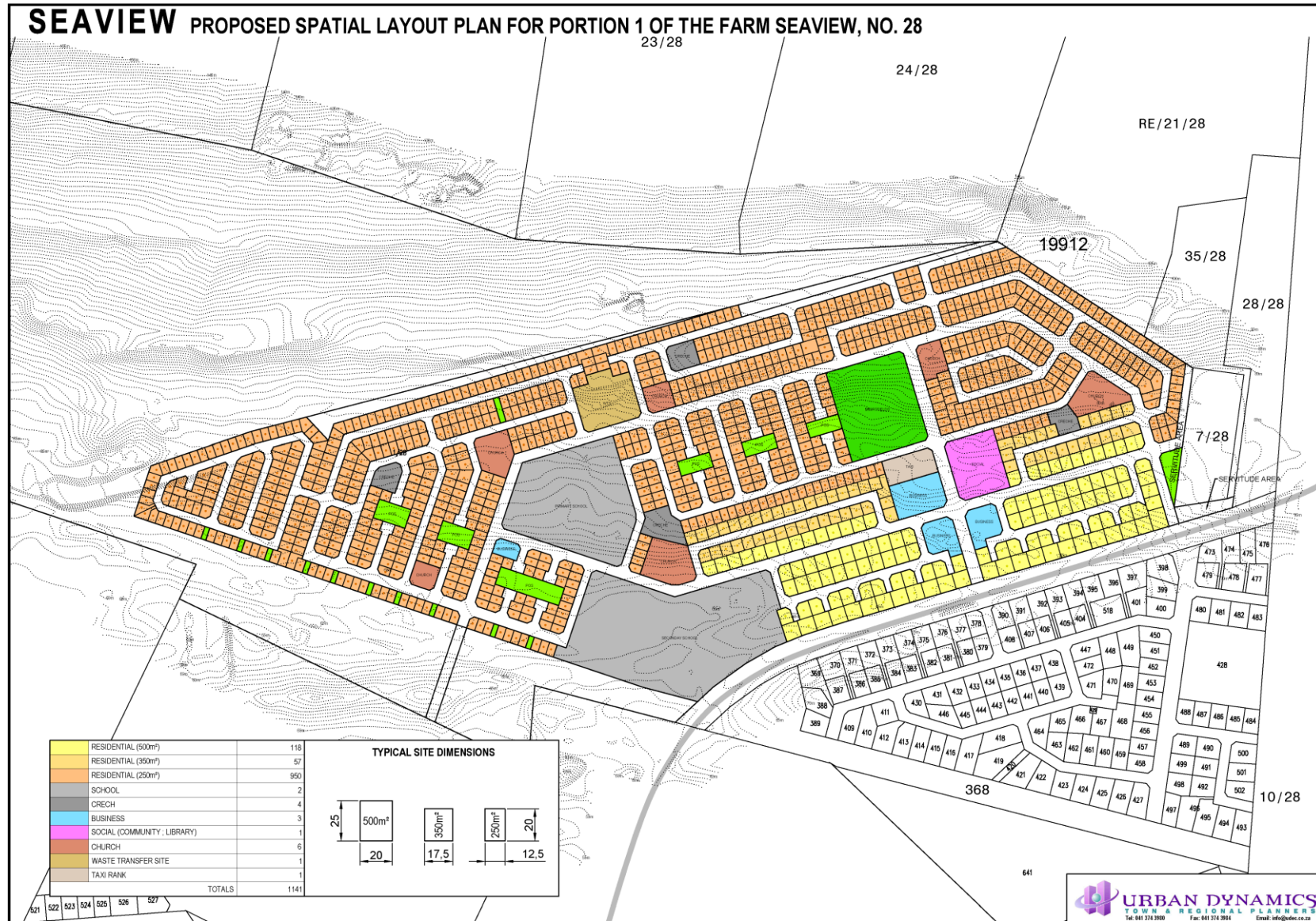


Figure 2-5: Preliminary proposed development layout for Farm 28 portion 1, Seaview (development option 2)

Table 2-4: Portion 10 of Farm 28 proposed land use

Zoning	Land Use	No of Erven	Area in m ²	% Allocation
Residential	Subsidised Housing	1-65	17,549	8.58
Special purposes/community	All Purposes	66	749	0.37
Public Open Space Active)	Park	67-69	1,591	0.78
Public Open Space (Passive)	Natural Land	70	16,870	82.5
Transportation 1	Roads (12 m wide)		15,883	7.77
Total		70	204,482	100

Development Option 2 – Farm 28 portion 1

The second option under consideration is the purchase of Portion 1 of Farm 28 which contains approximately 75 ha of previously transformed land to the east of the property. The transformed area will be sufficient to contain the entire development, and provide capacity for future expansion to accommodate community growth. A preliminary layout for the proposed development of this site is based on the footprint area assessed and proposed for residential development through the EIA previously conducted on the site (CEN, 2012), and is provided in Figure 2-5. Based on that previous EIA, indications are that this portion of the site is suitable for residential development from a biophysical perspective. However there are cost implications as the property is privately owned.

Based on the 250 m² minimum erf size to accommodate on-site sanitation via leach pits, preliminary indications are that the developable area of the property could yield up to 950 single residential (RDP) sites, as well as a number of larger sites for partially subsidised and bonded housing. Community facilities such as schools, churches, crèches, a sports field, community hall, library, a waste transfer site, and various public open spaces could also be accommodated in the layout. This development yield exceeds the current housing requirement from the New Rest and Zweledinga communities and would allow for future population growth which could be accommodated via future phases of the development as and when the need arises (the initial phase being to develop housing and facilities to meet the current need only).

This development option would also free up the areas on erf 590, 238 and 240 currently inhabited by the beneficiary communities, and management of the resultant open space would be required to prevent future in-migration to these areas. Plans in this regard would be developed in consultation with the local communities, and could potentially include socio-economic development opportunities.

2.3.3 Sanitation alternatives

Makhetha Development Consultants (MDC) was appointed by the NMBM to investigate feasible sanitation alternatives for both development options 1 and 2. A Full Water Borne Sanitation, Ventilated Improved Toilets (VIP) Toilets and Low Volume Flush Toilets (LVFT) with various methods of waste disposal were considered (Refer to Appendix I for the full sanitation report). A summary of these technology alternatives that were considered during this sanitation investigation is given in Table 2-5.

Table 2-5: Comparison of various sanitation alternatives considered (Source: MDC, 2016)

Sanitation Option	Advantages	Disadvantages
Full borne sanitation	Well known and well understood	Requires sewerage reticulation – maintenance
	Very old and known technology	Flushes with 9 to 10 litres of water per flush (consumption)
	Experience in installing and	No infrastructure to connect to

Sanitation Option	Advantages	Disadvantages
	managing the system	
		Needs full or package treatment plant – maintenance and operation
		Permission to build treatment plant already denied
		Remoteness will impact on maintenance and operations
VIP Toilets	No water required	Cannot normally be installed in the house
	Established and known technology	Need extensive user education with repeated intervention
	Very low unit maintenance	Subject to abuse due to ease of “dumping” rubbish into the pit
		Difficult to de-sludge without appropriate equipment
Low Volume Flush Toilets	Use less water than conventional sewerage to flush – 1.5 to 3 litres	Relatively new technology in South Africa
	Can be installed in the house	Need change of attitude and willingness to try new things
	Designed to flush effectively whether from a cistern or pour	Need shallow sewers if communal septic tanks are used
	Can be connected to communal septic tank or individual leach pits	Limited suppliers – competitive tendering limited
	Tested extensively by WRC	
	Tried and tested elsewhere from the 1980's (Two installed in the house in Lesotho since 1987 – still working well)	

Based on the comparison above, MDC concluded that Low Volume Flush Toilets (LVFTs) would be the only viable option for on-site sanitation.

Soil percolation tests were also undertaken as part of the investigation, the results of which showed that the minimum requirements for on-site percolation would be exceeded. Based on this, as well as the comparison of technologies summarised above, MDC concluded that individual soak pits (on each property) will function well in the area.

An investigation was conducted for the provision of a package plant in a previous EIA conducted for Portion 1 of Erf 28 and is considered as an alternative option to the LVFT's for development option 2.

The two alternatives for the provision of sanitary services on Portion 1 of Farm 28, are discussed in the sub-sections below. Either a package Wastewater Treatment Plant (as per the previous development proposal for this site) or Low Volume Flush Toilets with leach pits as proposed by MDC, are proposed. The latter option is under consideration for Development Option 1.

Sanitation Option 1- Low Volume Flush Toilets with leach pits

LVFTs use significantly less water (1-3 L per flush) than a full-flush toilet. All pipework shall comprise 100 mm diameter pipes up to distances of 35 m. Longer distances will be treated individually and designs based on slopes etc. The minimum erf size required would be 250 m² to ensure adequate separation from the individual leach pits. A schematic layout of the design is provided in Figure 2-6.

Low Volume Flush Toilets will be drained to a leach pit located on each property. Special modifications will be made to the leach pit to accommodate additional water from the sink and the shower and will comprise dual pits (See Figure 2-7). 100 mm diameter on site drains will be connected to each dual leach pit. This is deemed to be possible due to the sandy nature of the soil and possible higher percolation rates. The ground water levels that may be influenced by the proximity of the sea will have to be checked before design is finalised.

The advantages of the system are that the pits are easy to construct, there is no sewerage system, and there will be longer desludging periods than septic tanks due to leaching. The disadvantages are that there will be many individual tanks to be handled at desludging time, the contents are dryer than those of septic tanks, and separate handling of sillage is recommended unless the percolation rates are very high.

Community institutions will be provided with low volume flush toilets connecting, depending on size of institution, to either a small septic tank discharging to a soak pit or to a conventional septic tank discharging to a French drain (see Figure 2-8).

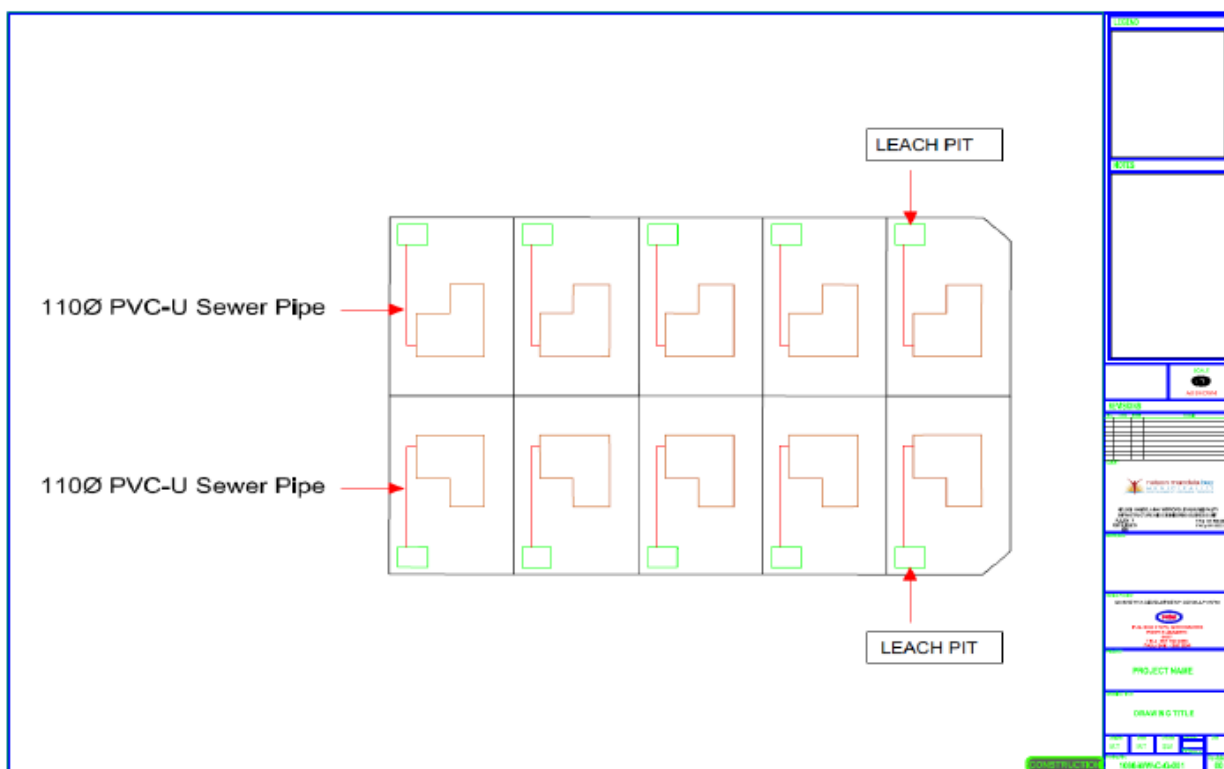


Figure 2-6: Schematic layout of Low Volume Flush toilets connected to leach pits (Source: MDC 2016)

Sanitation Option 2 - Package plant

Effluent from Portion 1 of Farm 28 could be treated in an on-site package plant. Refer to Appendix G for the process flow diagram of the proposed package plant. The EIA previously conducted (CEN 2012) for the property included a proposed wastewater treatment package plant consisting of a closed wastewater treatment system apart from the maturation channel/reed beds that would be used for tertiary treatment. This would be located on a section of the property to the west of the proposed development layout.

Components of the package plant include:

- Head of Works (Scree, flow measurement);
- Reactor;

- Clarifier;
- Chlorination;
- Sludge Lagoons; and
- Reed beds.

An updated review of the sizing requirements and most viable technological option in this regard, taking the changes to the type and number of housing units proposed for the site (mid-upper income low density units to higher density free basic housing) has not yet been conducted. Further detail on this will be provided in future reports as part of this EIA.

The plant development is separated into two phases to optimise the process and cost of the total plant.

Phase 1:

Phase 1 is a conventional wastewater treatment works, with a Head of works, single aerobic-anoxic reactor, Secondary Settling Tank (SST), Return Activate sludge (RAS), recycle from the SST to the aerobic-anoxic reactor and chlorine disinfection.

The sewerage gravitates or is pumped to the Head of Works comprising a manual screen, rag catchers, grit channels and an ultrasonic flow meter with a data logger. The manual screen and rag catchers remove large objects as well as floating and suspended material. The screenings are placed in a closed lid container, and once a week taken to a registered waste disposal site. Two grit channels are installed downstream of the screens to separate the inorganic material/detritus from the less dense suspended organic solids. The grit channel is cleaned on a daily basis, and the grit disposed of in the same basin as the rags.

Effluent then flows to the aerobic-anoxic reactor, which consists of a single basin reactor for aerobic nitrification and anoxic denitrification. The effluent is then pumped to the secondary settling pump. Scum is drawn off the reactor surface and gravitated to the sludge-drying lagoon. From the secondary settling tank the effluent flows to the disinfection tank.

The Return Activated Sludge (RAS) is returned to the aerobic-anoxic reactor. A constant draw off of sludge from the reactor to the lagoons is not possible as a result of the relatively small flow required. Sludge will be wasted from scum box in clarifier and scum draw off on reactor which is then gravitated to the sludge-drying lagoon. In the chlorination disinfection tank pill chlorination takes place. The treated effluent then flows into a polishing pond/reedbed downstream of the works where final effluent is allowed to dissipate naturally into the underlying sandy formation.

These lagoons are designed for a three months cycle. They will be operated as sludge lagoons for this period with a maximum water depth of one meter. Supernatant will be returned to the reactor with a supernatant return pump. The lagoon is equipped with a sloped floor and has a 150 mm layer (of selected sand) on top of the concrete floor. The sand will assist in draining the water from the sludge. The wastage of sludge will be conducted in three daily intervals: Morning, Midday and in the Afternoon. The amount wasted will be according to predetermined water level points marked inside the clarifier.

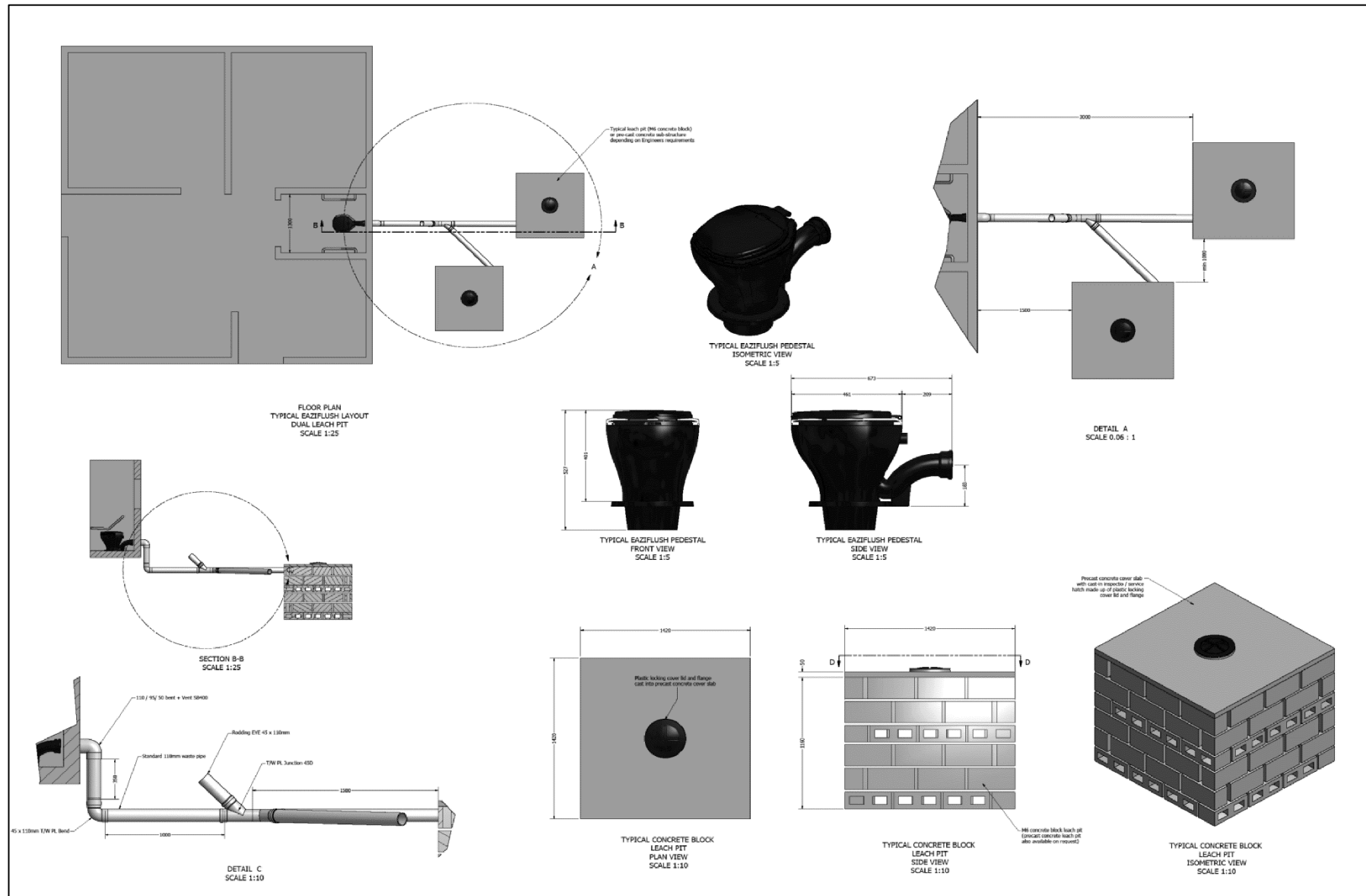


Figure 2-7: Proposed sanitation design for individual houses connected to dual leach pits (Makhetha 2016)

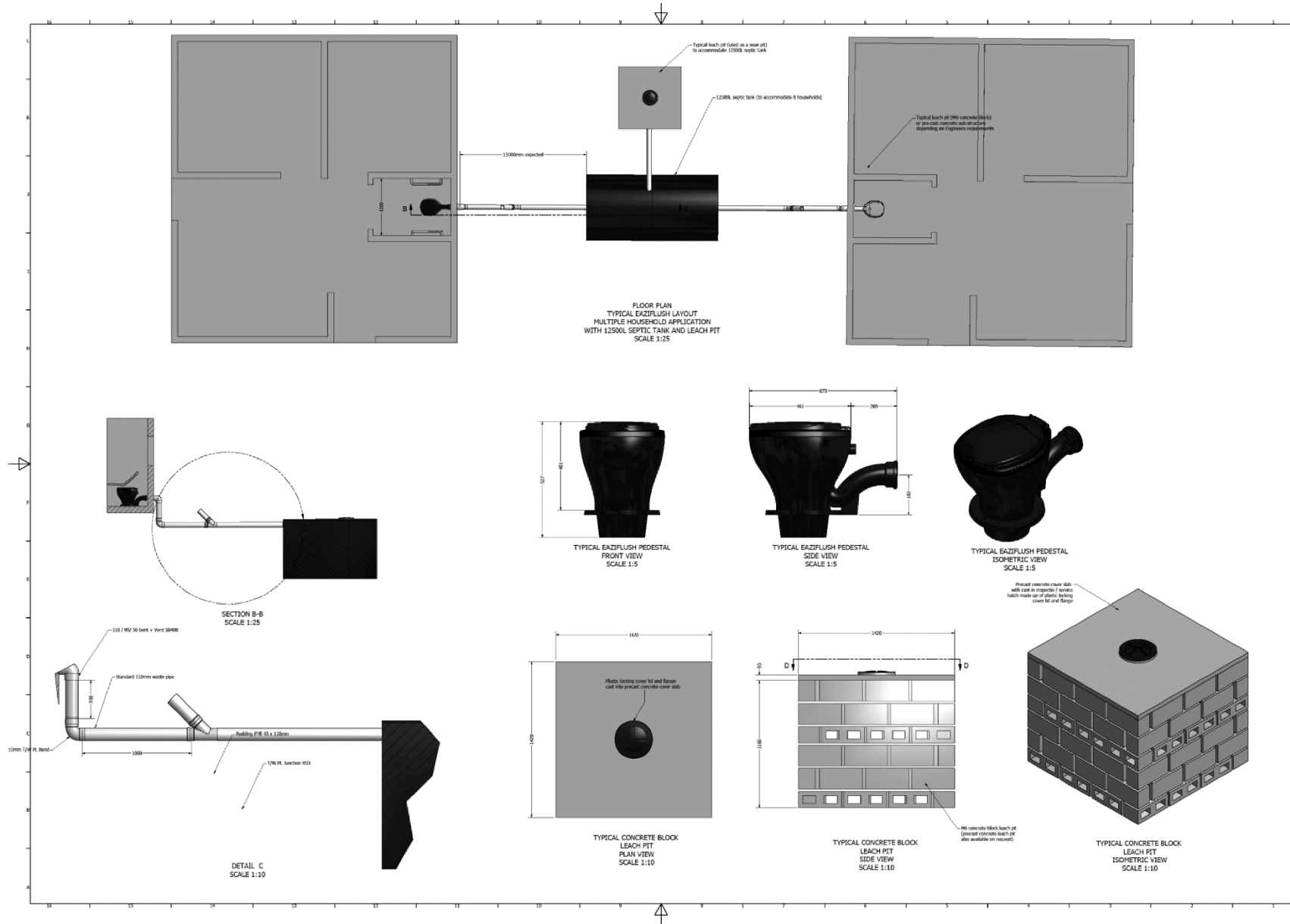


Figure 2-8: Proposed sanitation design for institutional buildings (leach pit with septic tank) (Makhetha 2016)

Phase 2:

Phase 2 is a Modified Ludzack-Ettinger, with a Head of works, anoxic reactor, aerobic reactor, a recycle, and secondary settling tank, RAS-recycle and chlorine disinfection. The sewage gravitates from the Head of Works into the anoxic reactor (previously the sludge drying beds in phase 1). From the anoxic reactor the sewage flows to the aerobic reactor where aeration and nitrification takes place. The internal a---recycle (3---5 ADWF) is from the aerobic--- to the anoxic reactor, and takes place through a mixer. The effluent is then pumped from the aerobic reactor to the SST. Scum is drawn off the surface of the reactor and gravitated to the Volute dehydrator (or as an alternative option the sludge drying beds). The Volute Dehydrator is a compact, low maintenance, high performance sludge dewatering system for small to medium sewerage treatment plants. The rest of the process follows the process described in phase 1.

The system is designed to have a sludge age varying from 15 days to 25 days.



3 Description of the Affected Environment

This chapter provides a description of the natural and socio-economic environments that could potentially be impacted by the proposed Seaview Housing Development

3.1 Geology & Topography

The Uitenhage Group comprises the underlying geology in the proposed development site (Rust, 1988). Cenozoic deposits, probably representing deposited marine sediment, occur in certain sections (Vorster, 2003).

Soils on site can generally be described as coastal sands and sandy soils. This group accommodates, primarily, the coastal sands and sandy soils of the Algoa and St Francis Bay areas. The greater part of this area is composed of dunes and is generally unsuitable for use as agricultural land.

The terrain is undulating with low dune development, these extending southwest to northeast in line with the prevailing winds (Jacobsen, 2008).

3.2 Hydrology

According to Jacobsen's 2008 study on Portion 1 of Farm 28, no surface water was evident with the exception of some depressions in the grassland area and the site is unlikely to retain water for any length of time. The site is drained by surface flow in a southerly direction towards the Indian Ocean, approximately 1.2 km south of the site (SBA, 2011). The closest surface freshwater feature is a large wetland situated approximately 1.85 km south-east of the site.

No wetlands or surface water features are visible or have been noted during site visits to the remaining properties. An aquatic ecologist will be commissioned to undertake a survey of the sites to determine the presence of any surface water features.

3.3 Current land use

Portion 1 of Farm 28 is zoned for agricultural purposes (Agriculture Zone 1). Approximately 76 ha in the eastern portion of the site has been cleared and is mostly used as pasture for horses. Existing structures include an informal landing strip and two hangers, a single dwelling for the owner and a store. The remainder of the site (66 ha) is unutilised and consists largely of fynbos-thicket vegetation with alien infestation in places.

Erven 238 and 240 are largely undeveloped and covered by forest. A small portion of land has been transformed largely due to the presence of the New Rest informal Settlement which stretches over both properties. Erf 590 similarly is largely covered by forest apart from the Zweledinga informal settlement which is situated in the western corner of the site.

Portion 10 of Farm 28 is currently undeveloped with a transformed area of approximately 11 ha. The property is dominated by thicket and fynbos.

The surrounding area is largely undeveloped, the main exceptions being the nearby Seaview and Clarendon Marine residential areas. The Island Forest Nature Reserve and Seaview Game Park (protected areas) are situated to the west and east of erf 590 respectively. Evidence of historical and possibly current quarrying activities is present north of Farm 28/1.

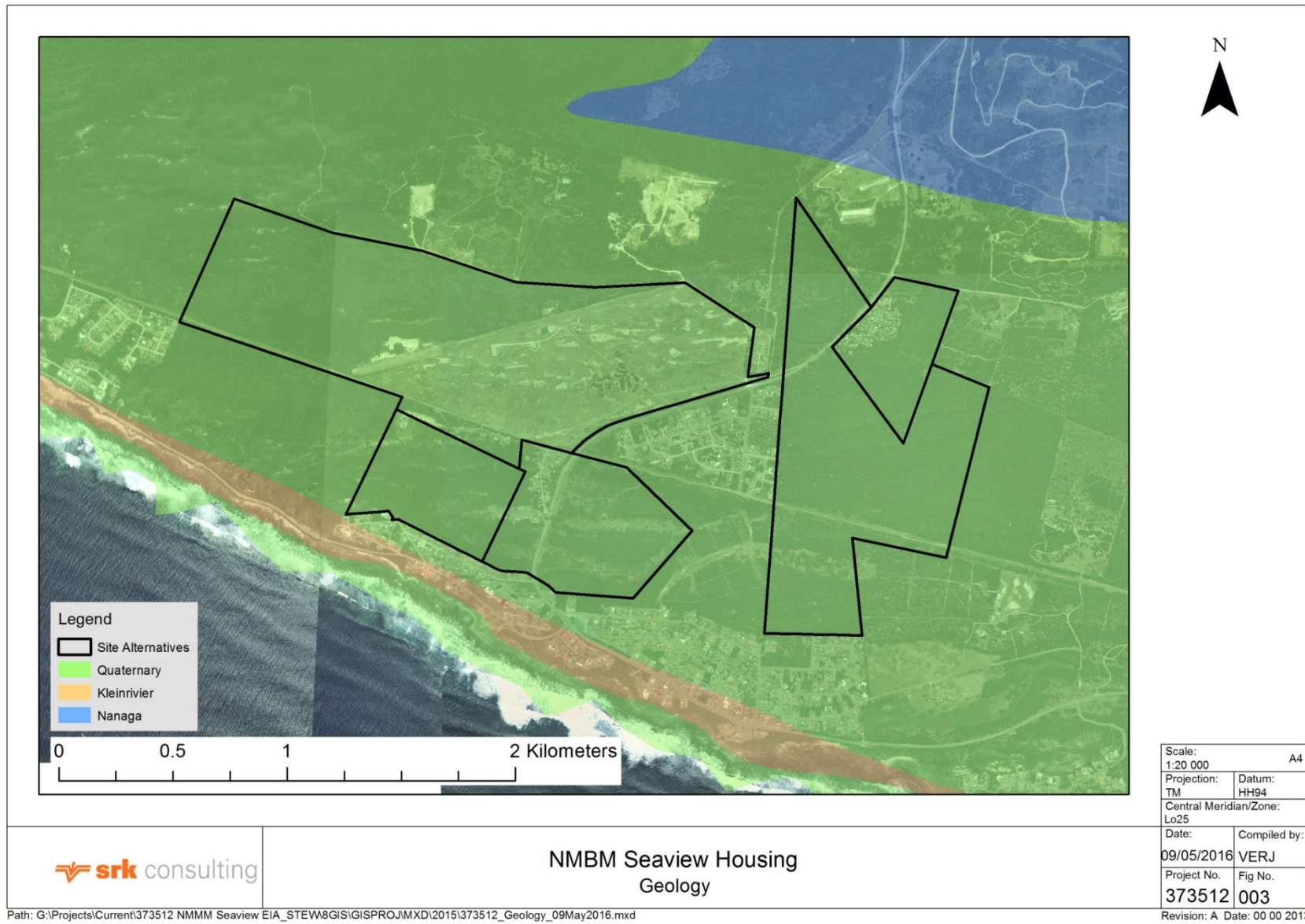


Figure 3-1: Geology of the study area

3.4 Heritage

No visible archaeological sites were found on Portion 1 of Farm 28. Half the property is covered by impenetrable coastal dune vegetation and the other half is covered by kikuyu grass. Sites and/or material may be exposed during development. No heritage assessment has been conducted for the remaining sites. Specialists will be appointed to undertake archaeological and palaeontological assessments to determine whether any heritage resources are present on the proposed sites.

3.5 Vegetation of the study area

3.5.1 National Vegetation Context

Mucina and Rutherford

Mucina and Rutherford (2006) have developed the National Vegetation map as part of a South African National Biodiversity Institute (SANBI) funded project: "It was compiled in order to provide floristically based vegetation units of South Africa, Lesotho and Swaziland at a greater level of detail than had been available before." The map was developed using a wealth of data from several contributors and has allowed for the best national vegetation map to date, the last being that of Acocks developed over 50 years ago. This is a Regional scale mapping tool presented at 1:250 000 and supplies a general idea of vegetation types in the area which forms the base of finer scale bioregional plans such as STEP. This SANBI Vegmap project has two main aims:

- "to determine the variation in and units of southern African vegetation based on the analysis and synthesis of data from vegetation studies throughout the region, and
- "to compile a vegetation map. The map was to accurately reflect the distribution and variation on the vegetation and indicate the relationship of the vegetation with the environment. For this reason the collective expertise of vegetation scientists from universities and state departments were harnessed to make this project as comprehensive as possible."

Mucina and Rutherford (2006) define the following vegetation types that occur within the identified sites and from which source these descriptions are derived:

Algoa Dune Strandveld

Algoa Dune Strandveld occurs in a narrow coastal strip from the Tsitsikamma River to the Sundays River Mouth in the Eastern Cape. Vegetation consists of tall dense thickets on dunes dominated by stunted trees shrubs, and lianas. The conservation status is least threatened with a target of 20% in the Final Conservation Assessment and Plan for the NMBM (2010). About 4% is statutorily conserved in various reserves. More than 10% has been transformed by cultivation, urban development and road building.

Southern Coastal Forest

Southern Coastal Forest is found on the coastal plains between Alexandria and Van Stadens River canyon and on coastal dunes of the Eastern Cape. This vegetation type is generally characterised by low forests dominated by *Celtis Africana*, *Sideroxylon inerme*, *Mimusops caffra*, and *Dovyalis rotundiflora*. The eastern regions have well developed low-tree and shrub as well as herb layers. This vegetation type is classified as Least Threatened with a target of 40% in the Final Conservation Assessment and Plan for the NMBM (2010).

Subtropical Thicket Ecosystem Project (STEP)

The Subtropical thicket Ecosystem Project (STEP) aims to identify priority areas that would ensure the long-term conservation of the subtropical thicket biome and to ensure that the conservation of

this biome is considered in the policies and practices of the private and public sector that are responsible for land-use planning and the management of natural resources in the region (Pierce et al. 2005). STEP (Figure 3-3) identifies four vegetation types in this region.

Sardinia Bay Forest Thicket

The thicket clumps present are typical of Algoa Dune Thicket; the matrix is a forest characterized by Cape ash (*Ekebergia capensis*) and coral trees (*Erythrina caffra*). The conservation status is listed as Vulnerable in the Final Conservation Assessment and Plan for the NMBM (2010).

Bushy Park Indian Ocean Forest

Forest, mostly short (< 10 m tall) (see above) growing on old dune soils; yellowwood (*Afrocarpus falcatus*) locally common and coral tree (*Erythrina caffra*) is typically present; smaller trees and shrubs often spiny. This vegetation type is listed as Critically Endangered in the Final Conservation Assessment and Plan for the NMBM (2010).

Algoa Dune Thicket

Milkwood (*Sideroxylon inerme*) and candlewood (*Pterocelastrus tricuspidatus*) trees are dominant while waxberry (*Morella cordifolia*) shrubs are abundant and the rare succulent, *Cotyledon adscendens* is characteristic. Algoa Dune Thicket is categorised as Vulnerable in the Final Conservation Assessment and Plan for the NMBM (2010).

Alexandria Secondary Mosaic

A mosaic of relict forest patches (Alexandria Indian Ocean), thicket and grassland.

DAFF forest mapping

DAFF has developed maps showing areas it considers to contain natural forest (and therefore be protected in terms of the National Forest Act). These areas do not necessarily exclude transformed areas and are mapped at a relatively high level, however are used as a screening tool to indicate the possible presence of forest based on historical distribution. The DAFF forest layer, indicating currently transformed areas relative to the project sites are shown on Figure 3-6, which indicates forest to be prevalent over much of the proposed development area.

This does not necessarily correspond with the vegetation classifications provided via the other more fine-scale vegetation mapping tools consulted (e.g. the NMBM bioregional plan), which shows much of the erven in the southern part of the development area to be dominated by fynbos thicket mosaic rather than forest.

3.5.2 Nelson Mandela Bay Municipality Bioregional Plan

The northern section of Erf 590 is vegetated with Bushy Park Indian Ocean Forest (a solid forest type as opposed to a mosaic, which is classified as critically endangered, and deemed by DAFF to be protected in terms of the National Forests Act, 1998) and the remainder with Sardinia Bay Forest Thicket (a thicket-forest mosaic, which is classified as vulnerable, but potentially also protected in terms of the National Forests Act, 1998).

The northern sections of Farm 28 portion 1 and 10 consist of Sardinia Bay Forest Thicket. The endangered St Francis Dune Fynbos Thicket Mosaic dominates the south of these properties making these areas potentially undevelopable. Erf 240 is also vegetated by St Francis Dune Fynbos Thicket mosaic as is Erf 238 which also touches on the endangered Schoenmakerskop Rocky Shelf Fynbos (Refer to Figure 3-4).

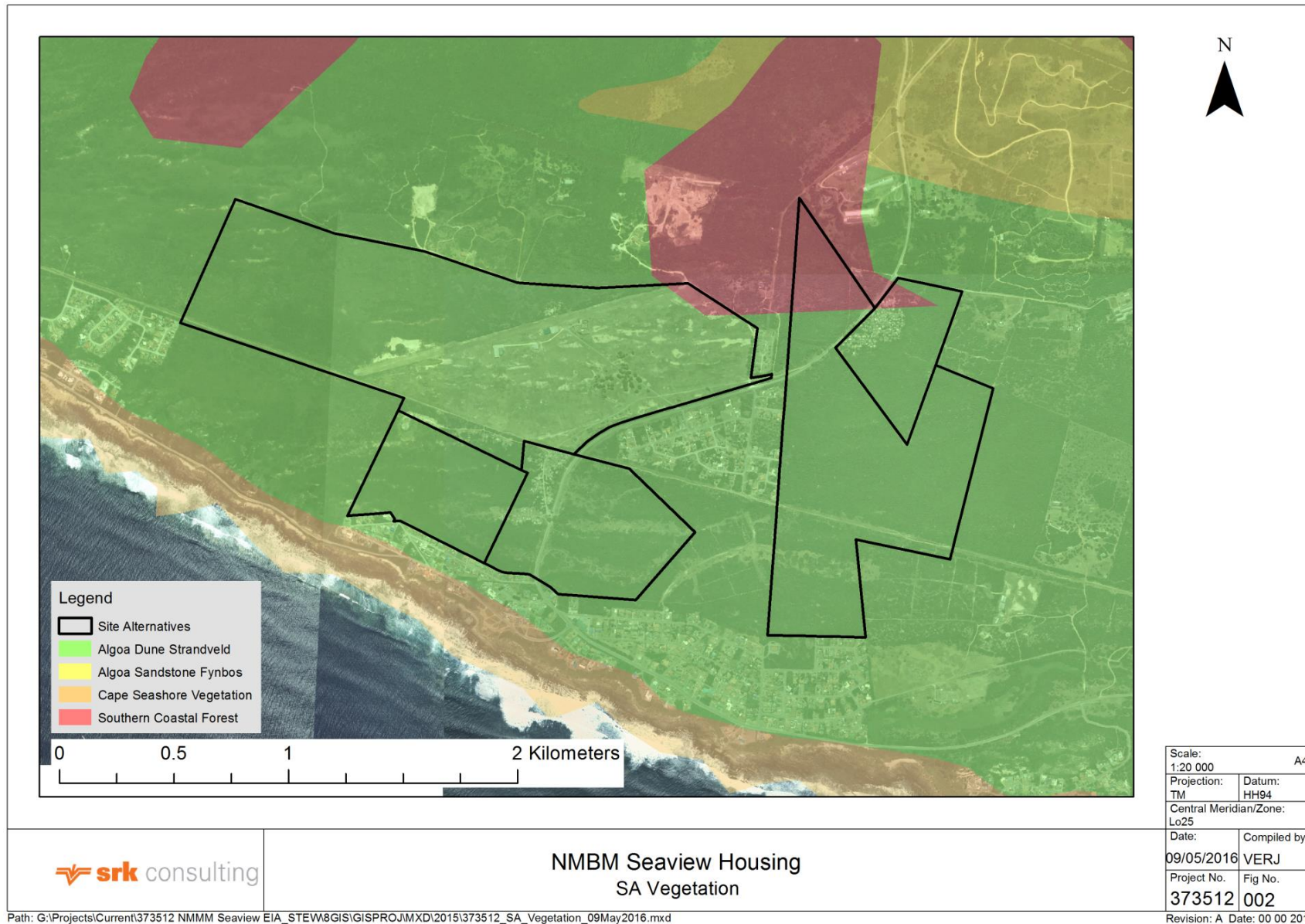


Figure 3-2: Vegetation of the study area (Mucina and Rutherford)

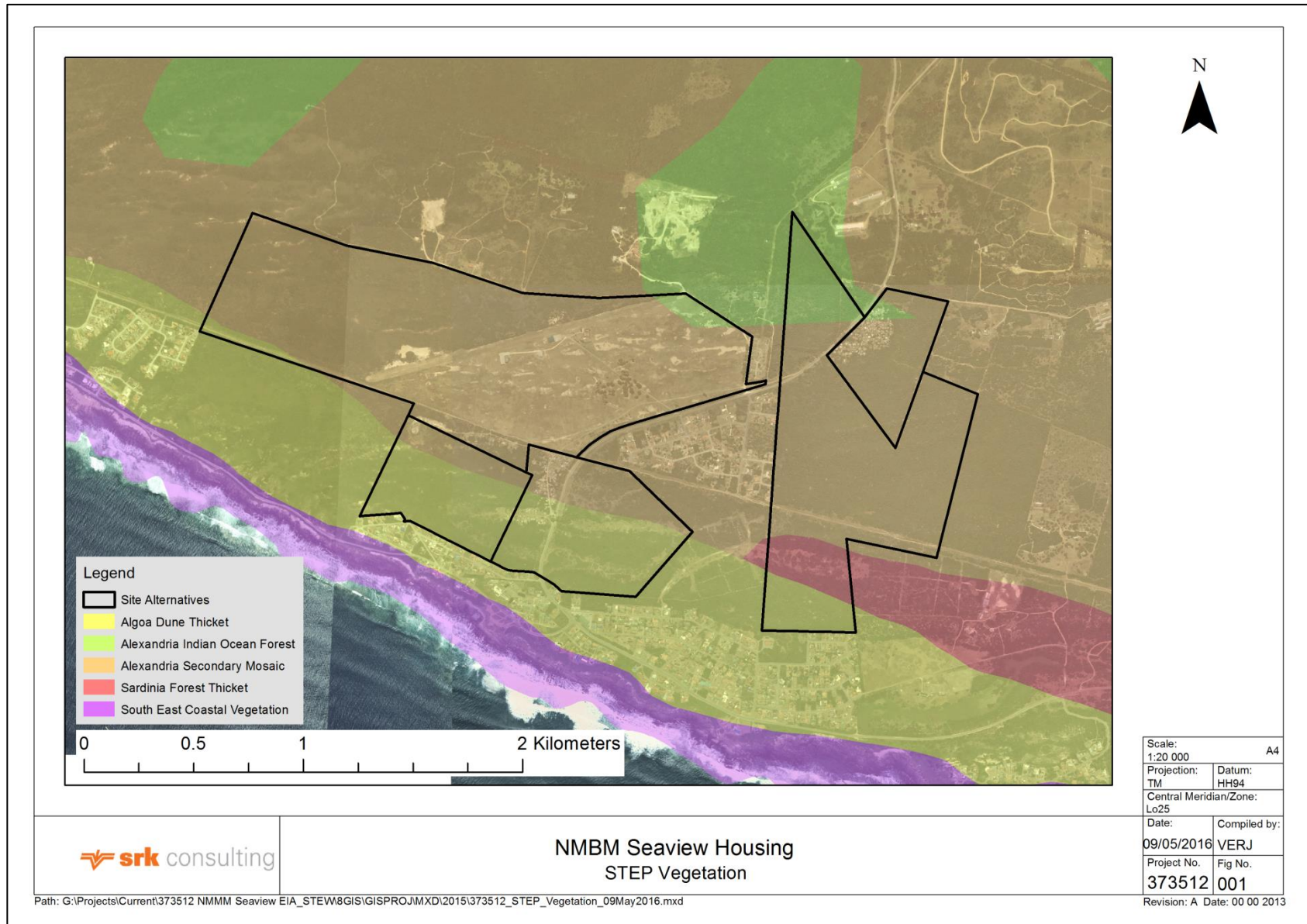


Figure 3-3: Vegetation of the study area (STEP)

Sardinia Bay Forest Thicket

Indian Ocean Forest (typically <3.5m tall) is dominated by thicket clumps typical of Algoa Dune Thicket. The matrix is forest characterized by Cape ash (*Ekebergia capensis*) and coral trees (*Erythrina caffra*) and is present on aeolian sand.

St Francis Dune Fynbos Thicket

This vegetation type is typically found on sands of marine origin and consists of clumps of Algoa Dune Thicket, with dwarf cape beech (*Rapanea gilliana*), within a matrix of fynbos typically confined to shallower soils. Typical fynbos species include *Agathosma apiculata*, *Carpobrotus deliciosus*, *Carpobrotus edulis*, *Chrysanthemoides monilifera*, *Diospyros lycioides*, *Erica chloroloma*, *Metalasia aurea*, *Metalasia muricata*, *Morella quercifolia*, *Osteospermum imbricatum*, *Passerina falcifolia*, *Passerina obtusifolia*, *Rhus crenata* and *Syncarpha argentea*. The dune thicket is found in deeper, moister sands and typical species include *Carissa bispinosa*, *Cassine tetragona*, *Chrysanthemoides monilifera*, *Euclea natalensis*, *Rhus laevigatum*, *Rhus longispina* and *Scutia myrtina*.

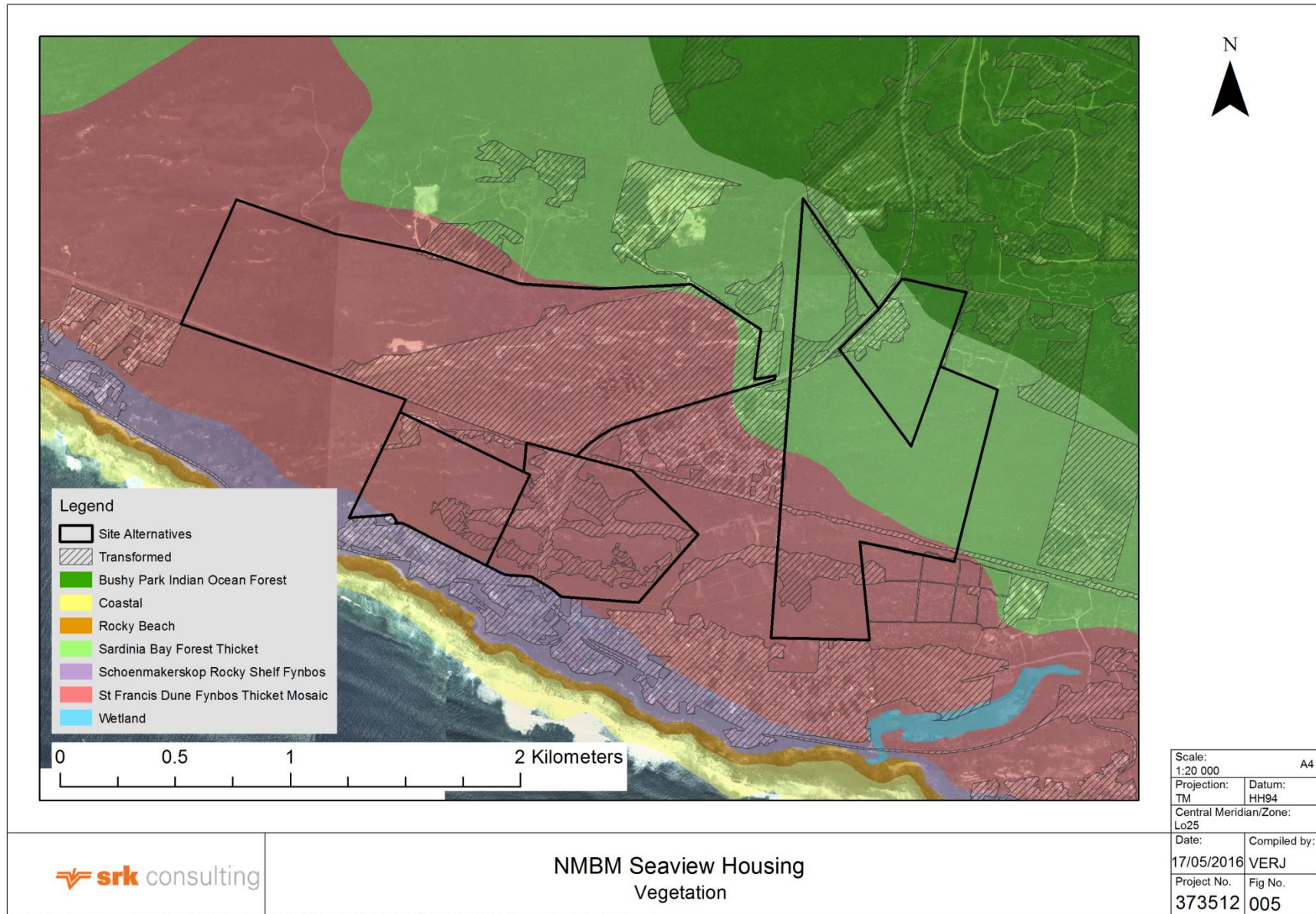
Schoenmakerskop Rocky Shelf Fynbos

Stunted and wind-pruned Thicket clumps, of Algoa Dune Thicket with dwarf cape beech (*Rapanea gilliana*), within a matrix of fynbos typically with buchu (*Agathosma stenopetala*) and ericas (*Erica chloroloma*) present. *Brunsvigia striata* is also typical. The vegetation type is present on dune sand underlain by cross-bedded white quartzitic sandstone.

Bushy Park Indian Ocean Forest

Vegetation is up to 3m tall. Yellowwood (*Afrocarpus falcatus*) is locally common, within a matrix of thicket lumps typical of Algoa Dune Thicket (Milkwood (*Sideroxylon inerme*) and candlewood (*Pterocelastrus tricuspidatus*) trees are dominant, Waxberry (*Morella cordifolia*) are abundant. Smaller trees and shrubs are often spiny. Present on moderately fertile aeolianite/calcareous sandstone/sand on south facing slopes.

Permits are required for the removal of species that are protected under the Eastern Province Nature and Environmental Conservation Ordinance of 1974 (NECO) and the National Forests Act No. 84 of 1998 (NFA).



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NMBM Seaview Housing
Vegetation

Figure 3-4: NMBM Vegetation of the study area

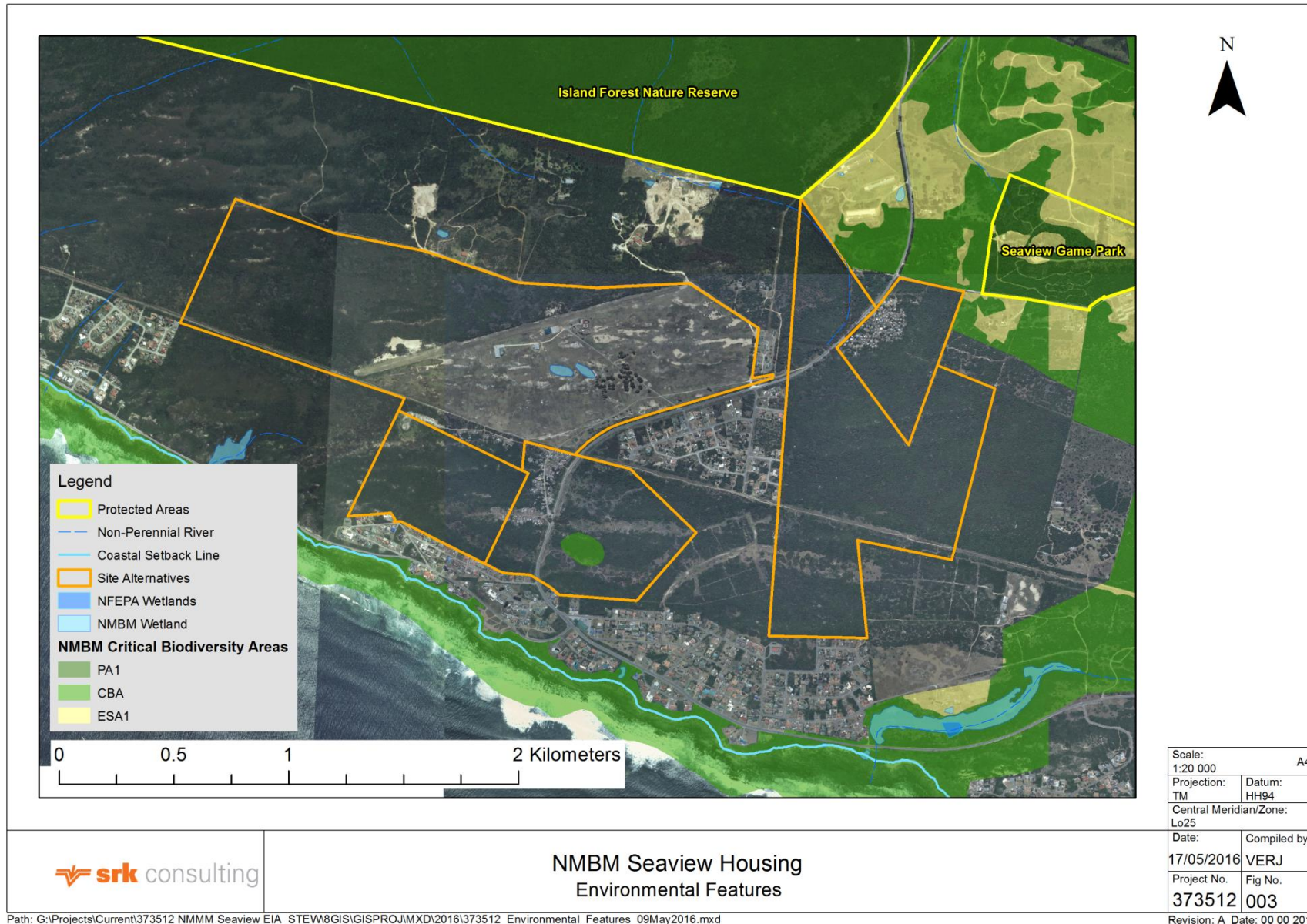


Figure 3-5: Sensitivity map of the study area

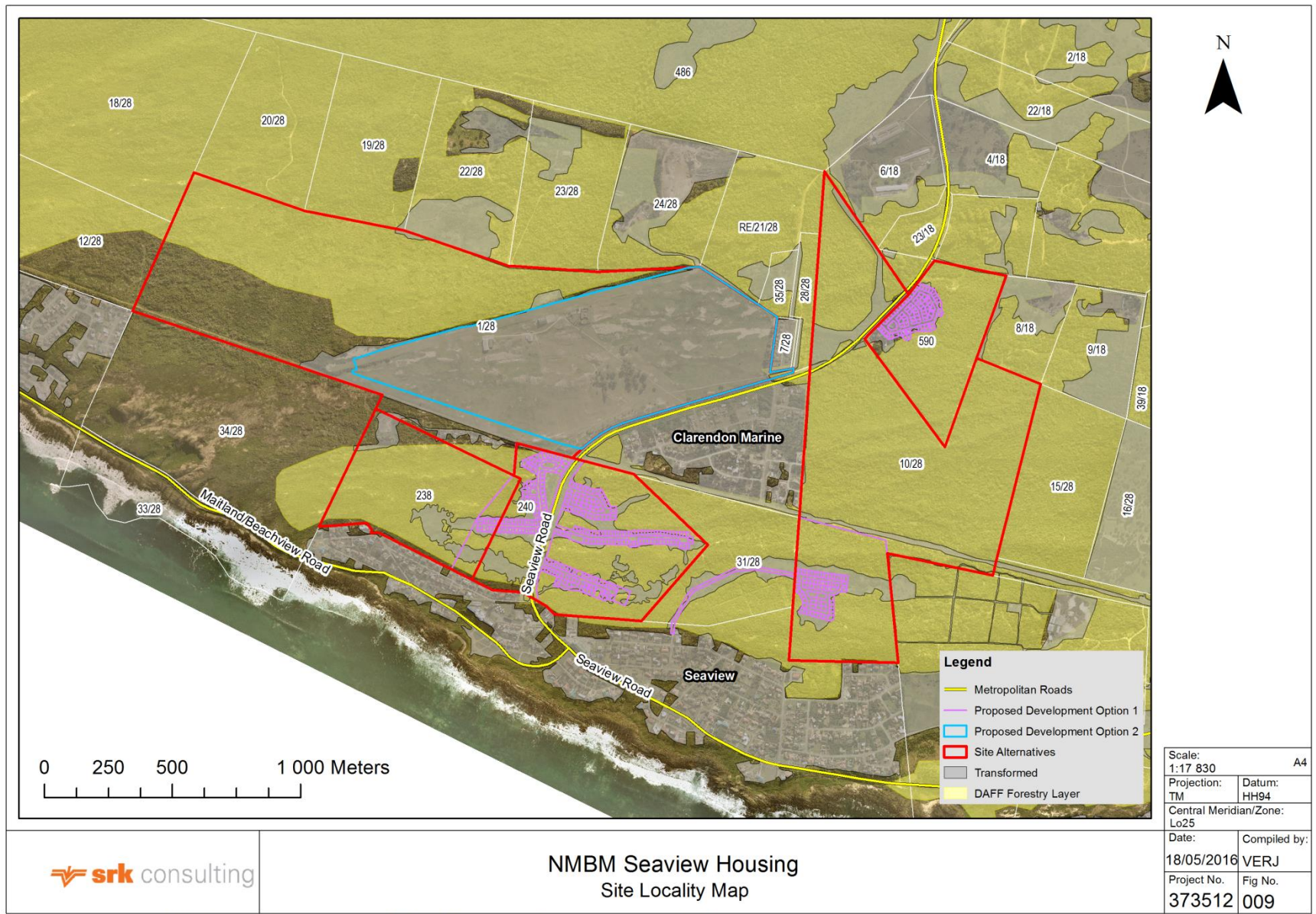


Figure 3-6: Transformed areas and Forestry layer

Table 3-1: SSC recorded on Erf 240 (CEN 2013)

Species	Red List of South African Plants version 2013.1	Conservation of Agricultural Resources Act 43 of 1983	Eastern Cape Environmental Conservation Act of 2003	Eastern Province Nature and Environmental Conservation Ordinance of 1974	National Forests Act No. 84 of 1998
<i>Boophone disticha</i> (L.f.) Herb.	Declining		Schedule 5: Protected	Schedule 4 Protected	
<i>Apium graveolens</i> L	NE	Not declared			
<i>Carissa bispinosa</i> (L.) Desf. ex Brenan	LC		Schedule 5: Protected	Schedule 4 Protected	
<i>Cynanchum ellipticum</i> (Harv.) R.A.Dyer	LC		Schedule 5: Protected	Schedule 4 Protected	
<i>Cynanchum natalitium</i> Schltr.	LC		Schedule 5: Protected	Schedule 4 Protected	
<i>Aloe africana</i> Mill.	LC		Schedule 5: Protected	Schedule 4 Protected	
<i>Mystroxydon aethiopicum</i> (Thunb.) Loes.	LC		Schedule 5: Protected		
<i>Euclea racemosa</i> Murray	LC		Schedule 5: Protected		
<i>Euphorbia kraussiana</i> Bernh.	LC		Schedule 5: Protected		
<i>Pelargonium alchemilloides</i> (L.) L'Hér.			Schedule 5: Protected	Schedule 4 Protected	
<i>Pelargonium capitatum</i> (L.) L'Hér.			Schedule 5: Protected	Schedule 4 Protected	
<i>Chasmanthe aethiopica</i> (L.) N.E.Br.			Schedule 5: Protected	Schedule 4 Protected	
<i>Carpobrotus deliciosus</i> (L.Bolus) L.Bolus			Schedule 5: Protected	Schedule 4 Protected	
<i>Mesemb sp.</i>			Schedule 5: Protected	Schedule 4 Protected	
<i>Mesembryanthemum aitonis</i> Jacq.			Schedule 5: Protected	Schedule 4 Protected	
<i>Elegia microcarpa</i> (Kunth) Moline & H.P.Linder			Schedule 5: Protected	Schedule 4 Protected	
<i>Zanthoxylum capense</i> (Thunb.) Harv.			Schedule 5: Protected		
<i>Sideroxylon inerme</i> L. subsp. inerme			Schedule 5: Protected		Protected

3.6 Fauna

An assessment of flora and vertebrate fauna was conducted by Mr N.H.G. Jacobsen on portion 1 of Farm 28 over the period 6-17 September 2008, the findings of which are summarised below. It is anticipated that these findings would be similar for the alternative properties, as approximately 50% of Portion 1 of Farm 28 is still covered in natural vegetation.

The presence of four mammal species including Bushbuck *Tragelaphus scriptus*, Scrub Hare *Lepus saxatilis*, Common Molerat *Cryptomys hottentotus* and Striped Mouse *Rhabdomys pumilio* were confirmed and a further 18 species are likely to occur .

None of the bird or mammal species recorded are rare or threatened (Friedman and Daly, 2004), although 3 species are data deficient (*Crocidura flavescens*, *Suncus infinitissimus*, and *Amblysomus hottentotus*). None of the reptiles or amphibians expected to occur on site are listed in the Red Data Books – Reptiles and Amphibians (Branch 1988, Minter, Burger, Harrison, Braack, Bishop & Kloepfer, 2004).

Table 3-2: List of mammals recorded or likely to occur on Portion 1 of Farm 28

Species	Common name	Recorded on site	Red Data Book
<i>Crocidura flavescens</i>	Greater Musk Shrew		DD ¹
<i>Suncus infinitissimus</i>	Least Dwarf Shrew		DD
<i>Amblysomus hottentotus</i>	Hottentot Golden Mole		DD
<i>Chlorotalpa duthieae</i>	Duthie-s Golden Mole		
<i>Microchiroptera spp.</i>	Insectivorous bats		
<i>Ictonyx striatus</i>	Striped Polecat		
<i>Genetta tigrina</i>	Large-spotted Genet		
<i>Galarella pulverulenta</i>	Cape Grey Mongoose		
<i>Caracal caracal</i>	Caracal		
<i>Lepus saxatilis</i>	Scrub Hare	x	
<i>Hystrix austro-africanus</i>	Porcupine		
<i>Cape Mole Rat</i>	<i>Georychus capensis</i>		
<i>Cryptomys hottentotus</i>	Common Molerat	x	
<i>Rhabdomys pumilio</i>	Striped Mouse	x	
<i>Otomys irroratus</i>	Vlei Rat		
<i>Dendromus mesomelas</i>	Brant's Climbing Mouse		
<i>Mastomys natalensis</i>	Natal Multimammate Mouse		
<i>Mus minutoides</i>	Pygmy Mouse		
<i>Saccostomus campestris</i>	Pouched Mouse		
<i>Tragelaphus scriptus</i>	Bushbuck	x	
<i>Raphicerus melanotis</i>	Cape Graysbok		
<i>Sylvicapra grimmia</i>	Grey Duiker		

A total of 29 reptile and four amphibian species are predicted to occur, the latter with one exception requiring shallow pools of water to breed in. It is anticipated that such pools may be seasonally available in depressions in the grassland area.

Table 3-3 List of herpetofauna likely to occur on Portion 1 of Farm 28

Species	Common name	Recorded on site	Red Data Book
<i>Chersina angulata</i>	Angulate Tortoise		
<i>Afrogecko porphyreus</i>	Marbled Leaf-toed Gecko		

¹ Categorized as data deficient (DD) by the IUCN

<i>Pachydactylus maculatus</i>	Spotted Thick-toed Gecko		
<i>Pachydactylus geitje</i>	Ocellated Leaf-toed Gecko		
<i>Acontias meleagris orientalis</i>	Cape Legless Skink		
<i>Scelotes anguineus</i>	Algoa Dwarf Burrowing Skink		
<i>Scelotes caffer</i>	Cape Dwarf Burrowing skink		
<i>Trachylepis capensis</i>	Cape Skink		
<i>Trachylepis homalocephala</i>	Red-sided Skink		
<i>Pedioplanis lineo-ocellata pulchella</i>	Spotted Sand Lizard		
<i>Gerrhosaurus flavigularis</i>	Yellow-throated Plated Lizard		
<i>Tetradactylus africanus fitzsimonsi</i>	FitzSimon' Long-tailed Seps		
<i>Tetradactylus seps</i>	Short-legged Seps		
<i>Varanus albigularis</i>	Veld Monitor		
<i>Rhinotyphlops lalandei</i>	Delalande's Blind Snake		
<i>Leptotyphlops nigricans</i>	Black Thread Snake		
<i>Aparallactus capensis</i>	Cape Centipede-eater		
<i>Lamprophis capensis</i>	Brown House Snake		
<i>Lamprophis olivaceus</i>	Olive House Snake		
<i>Duberria lutrix</i>	Common Slug-eater		
<i>Pseudaspis cana</i>	Molesnake		
<i>Prosymna sundevallii</i>	Sundevall's Shovel-snout		
<i>Psammophylax rhombeatus</i>	Spotted Skaapsteker		
<i>Dasypeltis scabra</i>	Common Egg-eater		
<i>Dispholidus typus</i>	Boomslang		
<i>Homoroselaps lacteus</i>	Spotted Harlequin Snake		
<i>Naja nivea</i>	Cape Cobra		
<i>Causus rhombeatus</i>	Common Night Adder		
<i>Bitis arietans</i>	Puff Adder		
<i>Bufo rangeri</i>	Raucous Toad		
<i>Breviceps adspersus</i>	Bushveld Rain Frog		
<i>Cacosternum boettgeri</i>	Common Caco		
<i>Tomopterna delalandei</i>	Cape Sand Frog		

An ecological study was conducted by Jacobsen (2008) for Portion 1 of Farm 28. According to the findings of the report a total of 24 bird species were recorded and an additional 43 species could be expected to occur (See Table 3-4).

Table 3-4: List of species recorded or likely to occur on Portion 1 of Farm 28

Species	Common name	Recorded on site	Red Data Book
<i>Ardea melanocephala</i>	Black-headed Heron		
<i>Bubulcus ibis</i>	Cattle Egret		
<i>Ciconia ciconia</i>	White Stork		

<i>Buteo buteo</i>	Steppe Buzzard		
<i>Elanus caeruleus</i>	Black-shouldered Kite		
<i>Milvus parasitus</i>	Yellow-billed Kite		
<i>Pternistes afer</i>	Red-necked Spurfowl	x	
<i>Sarothrura elegans</i>	Buff-spotted Flufftail		
<i>Columba guinea</i>	Rock Pigeon	x	
<i>Streptopelia semitorquata</i>	Red-eyed Dove		
<i>Streptopelia capicola</i>	Cape Turtle Dove	x	
<i>Streptopelia senegalensis</i>	Laughing Dove		
<i>Vanellus coronatus</i>	Crowned Plover	x	
<i>Burhinus capensis</i>	Spotted Dikkop		
<i>Cuculus solitarius</i>	Red-chested Cuckoo		
<i>Chrysococcyx klaas</i>	Klaas's Cuckoo		
<i>Centropus burchelli</i>	Burchell's Coucal		
<i>Bubo africanus</i>	Spotted Eagle Owl		
<i>Tyto alba</i>	Barn Owl		
<i>Caprimulgus pectoralis</i>	Fiery-necked Nightjar		
<i>Apus spp.</i>	Swifts		
<i>Colius indicus</i>	Red-faced Mousebird	x	
<i>Colius striatus</i>	Speckled Mousebird	x	
<i>Merops apiaster</i>	European Bee-eater		
<i>Upupa epops</i>	Hoopoe	x	
<i>Mirafra Africana</i>	Rufous-naped Lark	x	
<i>Calandrella cinerea</i>	Red-capped Lark		
<i>Hirundo cucullata</i>	Greater Striped Swallow		
<i>Hirundo rustica</i>	Barn Swallow		
<i>Psalidoprocne holomelas</i>	Black Saw-wing Swallow		
<i>Corvus albus</i>	Pied Crow		
<i>Pycnonotus capensis</i>	Cape Bulbul	x	
<i>Andropadus importunus</i>	Sombre Bulbul	x	
<i>Dicrurus adsimilis</i>	Fork-tailed Drongo	x	
<i>Turdus olivaceus</i>	Southern Olive Thrush		
<i>Cossypha caffra</i>	Cape Robin	x	
<i>Erythropygia coryphaeus</i>	Karoo Robin		
<i>Apalis thoracica</i>	Bar-throated Apalis	x	
<i>Cisticola juncidis</i>	Fan-tailed Cisticola	x	
<i>Cisticola fulvicapilla</i>	Neddicky		
<i>Cisticola aberrans</i>	Lazy Cisticola	x	
<i>Prinia maculosa</i>	Spotted Prinia	x	
<i>Sigelus silens</i>	Fiscal Flycatcher		
<i>Zosterops pallidus</i>	Cape White-eye	x	

<i>Anthus cinnamomeus</i>	Grassveld Pipit	x	
<i>Macronyx capensis</i>	Orange-throated Longclaw	x	
<i>Motacilla capensis</i>	Cape Wagtail	x	
<i>Lanius collaris</i>	Fiscal Shrike	x	
<i>Laniarius ferrugineus</i>	Southern Boubou	x	
<i>Telephorus zeylonus</i>	Bokmakierie		
<i>Dryoscopus cubla</i>	Puffback		
<i>Sturnus vulgaris</i>	European Starling		
<i>Spreo bicolor</i>	Pied Starling		
<i>Nectarinia amethystina</i>	Black Sunbird		
<i>Nectarinia chalybea</i>	Lesser Double-collared Sunbird	x	
<i>Passer domesticus</i>	House Sparrow		
<i>Passer melanurus</i>	Cape Sparrow		
<i>Passer griseus</i>	Grey-headed Sparrow		
<i>Ploceus capensis</i>	Cape Weaver		
<i>Vidua macroura</i>	Pin-tailed Whydah		
<i>Lagonosticta rubricata</i>	Blue-billed Firefinch		
<i>Estrilda melanotis</i>	Swee Waxbill		
<i>Estrilda astrild</i>	Common Waxbill		
<i>Serinus flaviventris</i>	Yellow Canary		
<i>Serinus sulphuratus</i>	Bully Canary		
<i>Serinus canicollis</i>	Cape Canary	x	
<i>Serinus gularis</i>	Streaky-headed Canary		

3.6.1 The Eastern Cape Biodiversity Conservation Plan

The Eastern Cape Biodiversity Conservation Plan (ECBCP) is responsible for mapping areas that are priorities for conservation in the province, as well as assigning land use categories to the existing land depending on the state that it is in (Berliner et al. 2007).

Critical Biodiversity Areas (CBAs) are defined by Berliner et al. (2007) as: “CBAs are terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning”. These areas are classified as natural to near-natural landscapes. In addition to the CBA’s the ECBCP also defines Other Natural Areas (ONA) as well as Transformed Areas.

Biodiversity Land Management Classes (BLMCs) are also used in the plan: “Each BLMC sets out the desired ecological state that an area should be kept in to ensure biodiversity persistence. For example, BLMC 1 refers to areas which are critical for biodiversity persistence and ecosystem functioning, and which should be kept in as natural a condition as possible”. Table 3-5 shows how the BLMCs relate to the CBAs

Table 3-5: Terrestrial Critical biodiversity Areas and Biodiversity Land Management Classes as described by the Eastern Cape Biodiversity Conservation Plan

CBA map category	Code	BLMC		Recommended land use objective
Protected areas	PA 1	BLMC 1	Natural Landscapes	Maintain biodiversity in as natural state as possible. Manage for no biodiversity loss.
	PA 2			
Terrestrial CBA 1 (not degraded)	T1			
Terrestrial CBA 1 (degraded)	T1	BLMC 2	Near-natural landscapes	Maintain biodiversity in near natural state with minimal loss of ecosystem integrity. No transformation of natural
Terrestrial CBA 2	T2			
	C1			
	C2			
Other natural areas	ONA T3	BLMC 3	Functional landscapes	Manage for sustainable development, keeping natural habitat intact in wetlands (including wetland buffers) and riparian zones. Environmental authorisations should support ecosystem integrity.
	ONA			
Transformed areas	TF	BLMC 4	Transformed landscapes	Manage for sustainable development.

3.7 Socio-economic profile

The Seaview area falls within Ward 40 of the NMBM, which is largely peri-urban and includes Witteklip, Van Stadens, St Albans, Greenbushes, Rocklands and Hunters Retreat.

The combined communities of New Rest and Zweledinga consist of 643 people, in 345 households. The population of both settlements is not expanding, if the data is compared to the data collected by the ISN two years ago (2011) and by the Municipality in 2007 (NMMU 2013).

Table 3-6: Population dynamics in Zweledinga and New Rest (NMMU 2013)

	Zweledinga	New Rest	Total
Adult male	94	111	205
Adult female	104	94	198
Children	117	123	240
Total population	315	328	643
Number of households	169	176	345
Number of shacks	130	160	290


The majority of residents of the Seaview informal settlements obtain livelihoods for themselves and their families through a combination of part-time or casual employment, income-generating activities and state grants. Those who are in formal, full-time employment are almost all employed locally – as domestic workers, cashiers, packers and cleaners at local retail businesses, gardeners or labourers and as private security or in government employment (The Island reserve, cleaning companies with municipal tenders etc.). Some residents obtain casual employment (one or two days per week) in the above jobs.

Combined employment status for both settlements indicates 56% employed (using broad definition of employment including self-employment) and 44% unemployed.

There are three stand taps in each settlement. Municipal water is free and is extensively wasted as the taps are often malfunctioning, dripping or left open or vandalised. There is no water capture.

There are 45 pit latrines in Zweledinga, and 37 in New Rest, dug by residents themselves. Many residents go into the forest; while our survey did not measure this, the CORC survey indicated that between 38% and 56% of residents 'use the bush' to relieve themselves.

New Rest and Zweledinga are plagued by the health problems common to poor communities in South Africa: tuberculosis, HIV/AIDS, high blood pressure and diabetes. Residents complain that the mobile clinic does not come regularly (once per month rather than once per week).



4 Public Participation

The Public Participation Process (PPP) forms a key component of the EIA process. The objectives of the PPP are outlined below, followed by a summary of the approach taken, and the issues raised thus far.

4.1 Objectives and Approach

The overall aim of the PPP is to ensure that all Interested and Affected Parties (IAPs) have adequate opportunities to provide input into the process. More specifically, the objectives of the PPP are as follows:

- Identify IAPs and notify them of the proposed project and of the EIA process;
- Provide an opportunity for IAPs to raise issues and concerns; and
- Provide an opportunity for IAPs to review the Scoping Report prior to its finalisation.

4.2 Public Participation Activities

The Public Participation Process that was undertaken to solicit public opinion regarding the proposed activity has included the following activities so far:

- Advertisement of the proposed development in “The Herald” newspaper on 5 March 2014 (see Appendix B);
- Distribution of the Background Information Document (BID) commencing on 6 March 2014 to identified Interested and Affected Parties (IAPs), stakeholders and neighbouring residents. A copy of the BID is attached in Appendix C, and the list of notified parties is given in Appendix D;
- Collation of public and IAP comments on the BID and advert, including responses to these issues (see comments and responses in Table 4-2)
- Inclusion of original correspondence from IAPs (Appendix E) in the Draft Scoping Report;
- Preparation of a Draft Scoping Report including a Plan of Study for EIA;
- Distribution of the Draft Scoping Report to public venues, and making it available on SRK’s website, for review by IAPs for a 40 day comment period, and submission to relevant authorities; and
- Distribution of the Executive Summary to all IAPs registered for this process.
- Placement of on-site posters, advertising the EIA process;
- Collation of public and IAP comments on the DSR, and incorporation of these into the Final Scoping Report (this report);
- Distribution of the FSR to public venues, and making it available on SRK’s website, for review by IAPs for a 21 day comment period; and
- Informing the new ward councillor of the project.

The following activities that must still be conducted as part of the Scoping process:

- Consultation with recipient communities² via a public meeting;
- Submission of the FSR to DEDEAT for approval of the Plan of Study for EIA and a decision regarding authorisation to proceed to the Impact Assessment phase of the EIA.
- Collation of public and IAP comments on the FSR, and incorporation of these into the Draft Environmental Impact Report (DEIR).

4.2.1 Availability of Final Scoping Report

The Executive Summary of this FSR has been distributed to registered IAPs. A printed copy of this report will be available for public review at the Walmer Library (Main Road, Walmer, Port Elizabeth).

The report can also be accessed as an electronic copy on SRK Consulting's webpage via the 'Public Documents' link: <http://www.srk.co.za/en/page/za-public-documents>

Comments on the Final Scoping Report must reach SRK by **17h00 on 16 September 2016**. Any comments received will be integrated into the Draft Environmental Impact report.

4.2.2 Registered IAPs and issues raised

A list of commenting IAPs, relevant authorities and stakeholders is included in Table 4-1, along with the reference number assigned to each comment sheet submitted by that particular IAP (where relevant). These reference numbers correspond with those in the comments and responses table (Table 4-2).

A complete list of all notified and registered IAPs, relevant authorities and stakeholders appear in Appendix D, while copies of the original numbered correspondence received from IAPs are included as Appendix E.

Table 4-1: Commenting Authorities, Stakeholders & IAPs

Name & Surname	Organisation	Comment ref no
N Gerber	DEDEAT	63
N Quvile	DAFF	40
M Bloem	DWS	68
N Littleton	Surrounding landowner	30; 59
DM Davis	Surrounding landowner	13
Johannes Family Trust (Theo Johannes)	Surrounding landowner	31
Hannes Nel	Surrounding landowner	11
ACB Gouws	Surrounding landowner	3
VE Renegcas	Surrounding landowner	1
R Hirstle	Surrounding landowner	4
SF van Greunen	Surrounding landowner	26
H & M Kleinhaus	Surrounding landowner	38
DS Visser	Surrounding landowner	21; 62
KP Cloete	Surrounding landowner	37
AB Carstens	Surrounding landowner	46

² While as part of the planning phase of the proposed development the NMBM has previously consulted with the recipient communities and has obtained in-principle support for the provision of housing and services, SRK is of the understanding that consultation regarding the specific details of the development proposal is ongoing. This will be completed during the scoping phase of the EIA.

Name & Surname	Organisation	Comment ref no
C Fehrsen	Surrounding landowner	35; 64
AR Topliss	Surrounding landowner	20; 58
E Gerber	Surrounding landowner	34; 57
R Ferreira	Surrounding landowner	36
C Nelson	Surrounding landowner	14
AC Visagie	Surrounding landowner	7
J De Swart	Surrounding landowner	8
A Brown	Surrounding landowner	27
CM Tunley	Surrounding landowner	32
R Halgreen	Surrounding landowner	25
Estate late J Faustino	Surrounding landowner	41
D.O. Eales	Surrounding landowner	17
Sonia Keown (Seaview Guest Farm Trust)	Surrounding landowner	10
JH Pearson	Surrounding landowner	44
Mr ECJ Webb & Mrs J Ellis	Surrounding landowner	52; 55
JAB Dos Dantos	Surrounding landowner	51
Jerome Kotze	Kini Bay Village Association	23
Mzukisi Sijovu	Local Resident	54
Mary Smith	Local Resident	54
Nonthuthuzelo Steven	Local Resident	54
Nosipho Gqoboza	Local Resident	54
Nomfusi Daweti	Local Resident	54
Thobeka Mlonyeni	Local Resident	54
Ncediswa Goeda	Local Resident	54
Thembinkosi Jerry	Local Resident	54
Ntombekhaya Futuse	Local Resident	54
Brenda Lizo	Local Resident	54
Jane Manisa	Local Resident	54
Sindiswa Mengo	Local Resident	54
Gavin Smit	Local Resident	24
Errol & Janice Howard	Local Resident	18
Bertus & Barbara de Jager	Local Resident	15; 16
HS du Plessis	Local Resident	12; 53
JJ van Rooyen	Local Resident	9
Keith & Wendy Lyons	Local Resident	28
Earnest Haze	Local Resident	29
EK Pienaar	Local Resident	33
Rene Spalding	Local Resident	42
L Denny	Local Resident	43; 60
EL Merrick	Local Resident	45; 61
EM Bosman	Local Resident	47

Name & Surname	Organisation	Comment ref no
Errol Terblanche	Local Resident	48
Chris Bosch	Local Resident	55
Cheryl van Eekelen	Local Resident	65
Edward Hill	Local Resident	66
Vicky Knoetze	Erstwhile Ward 40 councillor	22
Lloyd Edwards	Dendrological Society	2
Janice Gibb	Seaview Predator Park	19
Warren Leonard	Warren Maintenance	50
Gary Sean Davis	Van Niekerk Fisheries	49
Darryl Nortje	Newco Technologies	39
Paul de Villiers	Seaview Residents Association	67
Jason Grobbelaar	Ward 40 councillor (as of Aug 2016)	-

Table 4-2: Comments and Responses Table on BID

Commentator & comment no.	Issues raised	Response (SRK unless otherwise specified)
Comments relating to the process		
HS Du Plessis (53)	SRK must comply with erecting notice boards 100m from affected residents and adverts in The Herald or Die Burger.	Newspaper advertisements have been placed – refer to Section 4.2 for details. On-site posters will be placed during the scoping process, indicating the availability of the draft report.
M Njovu, M Smit, N Steven, N Grobler, N Daweti, M Thobeka, N Goeda, T Jerry, N Futuse, B Lizo, J Manisa, S Mengo (54)	Lack of consultation with residents of informal settlements.	While communication regarding the specifics of the proposed development has not been held with the recipient communities as part of the EIA process. It is SRK's understanding that the NMBM has engaged with the beneficiaries regarding the proposed project over the last few years and that in-principle support has been confirmed. It is also noted that the project is in response to pressure from these communities for formal housing and services. Further community consultation will be undertaken during the public review period.
Comments relating to design		
G & V Rengecas (1); JP van Speyk (5); HS du Plessis (12); A Carstens (46); ECJ Webb & J Ellis (52)	Considering the number of residents in New Rest and Zwelidinga areas, the need for 600 units is overestimated.	The original proposal was for approximately 600 units to allow for future growth of these communities. Due to space limitations however, this number has been reduced to approximately 400 units for Development Option 1. Development Option 2 will allow for additional units to accommodate future growth.
R Hirstle (4)	Will there be a green boundary between existing residences and the proposed development?	The proposed layout options, as depicted in Appendix G, are all designed to ensure existing forest is not impacted on.
JP van Speyk (5)	A permanent solution of one proper and serviced development to accommodate all must be found.	Within the environmental constraints of each of the sites, this is what is proposed. Development Option 2 allows for a consolidated development to accommodate all recipients.

G & V Rengecas (1); R Hirstle (4); A Topliss (20); GS Davis (49)	Design will allow for informal settlements to be developed. How will future additions of shacks to these houses be monitored?	NMBM - the design will not allow for informal settlements to be developed but rather the development of low income residential areas to accommodate beneficiaries from the informal settlements. The addition of structures without an approved building plan is illegal, however the NMBM recognises that controlling this in communities such as these can be problematic. It is recognized that the clearing of vegetation and installation of basic services infrastructure in the area may attract additional dwellings that are not part of the formal relocation process. The NMBM proposes to manage the risk through site inspections to monitor and address any illegal dwellings, as well as establishing a team of community representatives as whistle blowers in this regard.
JP van Speyk (5); HS du Plessis (12)	Solar lights and geysers and container ablutions would be eco-friendly	The design allows for on-site ablutions for each property. Detail regarding use of solar energy has not yet been confirmed.
JD Gibb (19)	Sandy soil is mostly undulating and soft which makes it expensive to build on.	Slope has been taken into account in the preliminary layout, and excessively steep areas have been avoided.
A Topliss (20)	A buffer zone of non-residential buildings should be put into the plans e.g. school, church, playground etc	Special Purposes areas for land-uses such as these are included in the preliminary layout (see Appendix G)
A Topliss (20)	Erf 240 is not large enough.	The development proposal for option 1 is to include transformed areas on erf 238, 240, 590 and 28/10, to meet the housing requirement.
A Topliss (20)	According to The Herald (10/03/14) the RDP houses will be off the grid. What will be used for cooking and heating?	That article was based on a previous development proposal. The current proposal is for the houses to be connected to the NMBM electricity grid.
A Topliss (20)	What will happen to the existing shacks?	The existing shacks will demolished and the material recycled or disposed of.
ECJ Webb & J Ellis (52)	The three properties, owned by the NMBM and shown on the locality map, can be utilised without acquiring additional ground.	Due to the presence of protected forest on these sites, the developable area is largely limited to previously transformed areas. Erf 590 and 28/10 do not provide sufficient developable space given the requirements of the proposed layout, which includes larger erven to allow for on-site sanitation. Consequently Development Option 1 includes development of transformed areas on erf 238, 240, 590 and 28/10.
G & V Rengecas (1); A Topliss (20)	The combination of Erf 10/28 and Erf 590 should provide sufficient land to accommodate the residents.	
C L Neilson (14)	Erf 590 should be selected as it already has residents residing there.	
M Njovu, M Smit, N Steven, N Grobler, N Daweti, M Thobeka, N Goeda, T Jerry, N Futuse, B Lizo, J Manisa, S Mengo (54)	Residents of informal settlements do not want to be relocated.	Agreed. The need for providing formal housing in the Seaview area is so that residents in the existing informal settlements are not relocated.
Comments relating to the environment		
G & V Rengecas (1); ECJ Webb & J Ellis (52)	General concern of impact of development on environment.	Biophysical impacts on the environment will be assessed in the impact assessment phase – see proposed Plan of Study for EIA in Section 6.
G & V Rengecas (1); H Ferreira (36); R Spalding (42)	The area protected 'green belt' / commonage and may not be developed.	The development proposal is primarily limited to already transformed areas and will avoid forest and CBAs – refer to Figure 3-5 & Figure 3-6.

S Keown (10); B de Jager (15); B de Jager (16); JD Gibb (19); TH Johannes (31); D Nortje (39); N Quvile (40)	Area is protected coastal forest / bush / thicket and conservation area.	
JW Kotze (23); GB Smit (24)	Within the 1km coastal zone – refer to NMBM's Coastal Management Programme.	The proposed development is outside the coastal setback line (see Figure 3-5)
GB Smit (24)	Development will impact coastal dune system.	
N Littleton (30)	Concern regarding integrity of Baviaans Island Reserve.	Ecological impacts will be assessed in the EIA, however it is noted that the development is to cater for residents already living in informal settlements in the area, and as such is likely to indirectly reduce impacts on protected areas.
G & V Rengecas (1); JP van Speyk (5); H Terblanche (6); A Topliss (20); K & W Lyons (28); N Littleton (30); C Fehrsen (35); H Ferreira (36); R Spalding (42); W Leonard (50)	There are indigenous trees and plants such as coastal fynbos and Milkwoods on the proposed land. How will the indigenous flora be protected?	The proposed layout is largely restricted to transformed areas (see Figure 3-6). Where required, the necessary permits will be obtained for destruction of protected flora.
G & V Rengecas (1); H Terblanche (6); A Topliss (20); K & W Lyons (28); H Ferreira (36); R Spalding (42); W Leonard (50)	There are many animals and birds in the area which will be displaced by the development. How will the indigenous fauna be protected?	Ecological impacts will be assessed in the EIA and measures to mitigate impacts will be proposed. The ToR for the ecological study are provided in Section 6.4.4
A Carstens (46)	Seaview houses a sensitive butterfly colony similar to those in the Alexandria forests.	
C Bosch (55)	Wildlife will be hunted as food source.	
N Quvile (40)	DAFF's position remains that natural forests may not be destroyed save in exceptional circumstances. Residential housing does not qualify as an exceptional circumstance. Suitable alternative land must be sourced.	Noted. The current development proposal is limited to previously transformed areas, which do not contain forest.
N Quvile (40)	The area between the airport and Maitland River is among the five largest forest complexes in the country and is threatened by increasing fragmentation. Natural forest is the rarest terrestrial biome and must receive strict protection.	
N Quvile (40)	Any approval would be in contradiction with Section 3 of the National Forests Act. DAFF is acting on various approvals of such developments granted after April 1999.	

N Quvile (40)	A botanist experienced in identifying natural forest must be appointed to map forest pockets on the proposed site.	Noted. Forest mapping will be included in the EIA to ground-truth the aerial imagery – see ToR in Section 6.4.1.
Comments relating to social impacts		
A Topliss (20); C Bosch (55)	Presence of informal residents has led to increase in illegal drug and alcohol sales and prostitution.	The development proposal is to formalise these settlements. As such, we do not expect this to materially affect the occurrence of social ills such as (but not limited to) selling of drugs or prostitution.
Comments relating to the economy		
R Spalding (42)	Will the residents of the development pay rates and taxes?	The residents will be subject to the NMBM's standard policy for rates and taxes.
G & V Rengecas (1); JP Swart (8); DM Davis (13); A Topliss (20); DS Visser (21); K & W Lyons (28); N Littleton (30); D Tunley (32); EK Pienaar (33); E Gerber (34); C Fehrsen (35); R Spalding (42); L Denny (43); A Carstens (46); C Bosch (55)	Development will lead to depreciation of property values in area. House rentals will be affected. Resale will be problematic. Reduced rates and taxes for NMBM.	The development proposal is to accommodate residents already living in informal settlements in the area. Increased negative socio-economic impacts on surrounding areas relative to the current situation are therefore considered to be unlikely.
G & V Rengecas (1); DM Davis (13); B de Jager (15); B de Jager (16); E & J Howard (18); A Brown (27); K & W Lyons (28); E Haze (29); N Littleton (30); KP Cloete (37); D Nortje (39); A Carstens (46); GS Davis (49); W Leonard (50); ECJ Webb & J Ellis (52); C Bosch (55)	Lack of employment opportunities in the area.	
R Spalding (42)	Development will deter investment in area.	
G & V Rengecas (1)	What impact will the development have on the upscale hotel proposed to replace the old Seaview Hotel?	
JP Swart (8); N Littleton (30);	Home security will need to be upgraded at cost of owner.	

JP Swart (8); C L Neilson (14); B de Jager (15); B de Jager (16); JD Gibb (19); D Nortje (39)	Development will affect tourism. December rental will be lost.	
G & V Rengecas (1); H Terblanche (6); JP Swart (8); DS Visser (21); K & W Lyons (28); D Tunley (32); C Fehrsen (35); EM Bosman (47); GS Davis (49); W Leonard (50); ECJ Webb & J Ellis (52); C Bosch (55)	Danger of escalation of crime. No police station.	
Comments relating to safety concerns		
JP van Speyk (5) HS du Plessis (12); DM Davis (13)	Danger of high fire risk. Refuse dumped and set alight without tending to fire.	The provision of formal houses to existing residents is likely to reduce the risk of fires typically associated with informal housing. The development will include electrical connections which would reduce the use of fire for cooking and heating. Waste management for the develop will be subject to the NMBM;s waste collection policy.
JP van Speyk (5)	No pavements, verges or streetlights along tar road to Seaview. Pedestrians must walk on the road facing traffic.	Safety impacts will be assessed as part of the EIA and mitigation measures proposed to manage these impacts.
JP van Speyk (5)	Pedestrian and road traffic from Greenbushes to and from Seaview Spar Complex can be heavy and dangerous.	
EK Pienaar (33); D Nortje (39); L Denny (43); EM Bosman (47)	Service delivery protest and riots will affect all residents. Risk of damage to property, roads and burning of tyres.	As the proposal is to provide housing and services to these residents, it is anticipated that service delivery protests will cease.
Comments relating to health concerns		
H Terblanche (6)	Health risk – livestock	It is unclear what this concern relates to
HS du Plessis (12)	Residents should in the interim be provided with bucket system and refuse containers until housing can be provided.	Noted.
N Littleton (30); KP Cloete (37)	Use of septic tanks for large population with poor herd immunity in confined area on sloped sand dune will lead to frequent outbreaks of communicable diseases. Soak-aways can cause contaminated water flowing to lower areas.	The sanitation solutions proposed are discussed in Section 2.2.2, and potential impacts on groundwater will be assessed as part of the EIA (see ToR in Section 6.4.6).

Comments relating to pollution		
C Fehrsen (35); C Bosch (55)	Stray animals will tear refuse bags and spread communicable diseases.	The development proposal will be subject to waste management as per the NMBM's integrated waste management plan. Waste management impacts will be assessed as part of the EIA.
G & V Rengecas (1); H Terblanche (6) HS du Plessis (12); A Topliss (20); EK Pienaar (33)	Lack of pride in the environment, illegal dumping and littering will be prevalent. No refuse collection point or refuse bins in area.	
H Terblanche (6) A Topliss (20); Pienaar (33)	Burning of refuse and rubble leads to air pollution being spread due to prevailing winds.	
JP Swart (8)	General pollution concerns	
G & V Rengecas (1); JP Swart (8); A Topliss (20); EK Pienaar (33); E Gerber (34); C Fehrsen (35)	Danger of increased noise pollution.	Noise impacts relating to construction will be assessed as part of the EIA. During operation, increased noise relative to the current situation is considered to be unlikely.
C Fehrsen (35)	Smoke from fires for household cooking and cleaning will hover over Seaview Village.	The development will include electrical connection, therefore the use of fire for cooking and lighting will be reduced.
Comments relating to infrastructure		
G & V Rengecas (1); E & J Howard (18); K & W Lyons (28); E Haze (29)	Lack of sufficient schools in the area.	The proposed layout includes provision for community facilities as per the relevant planning requirements
K & W Lyons (28)	Lack of medical facilities in area.	
E & J Howard (18)	Lack of recreational amenities in area.	
E & J Howard (18); K & W Lyons (28); N Littleton (30); R Spalding (42)	Road system unable to support additional traffic.	It is anticipated that the recipient's current arrangements with regard to transport will remain, and additional traffic is therefore not expected. The on-site sanitation proposed will only require occasional emptying.
G & V Rengecas (1); A Brown (27); K & W Lyons (28); E Haze (29); N Littleton (30); KP Cloete (37); A Carstens (46); ECJ Webb & J Ellis (52)	Lack of public transport in the area. How will people commute to work and school?	
KP Cloete (37)	Damage to roads by addition traffic and tanker trucks used to empty septic tanks.	
JW Kotze (23)	Lack of funds for maintenance of provincial and municipal roads.	

G & V Rengecas (1); R Hirstle (4); JP van Speyk (5) DM Davis (13); E & J Howard (18); K & W Lyons (28); E Haze (29); N Littleton (30); KP Cloete (37); GS Davis (49); W Leonard (50)	Is the existing infrastructure adequate to support the proposed development? Will existing infrastructure be upgraded to accommodate the increased pressure?	The development will largely connect onto existing services and will make use of on-site sanitation. Water supply will be via a proposed scheme for the greater area.
G & V Rengecas (1); R Hirstle (4); JP van Speyk (5) DM Davis (13); E & J Howard (18); JW Kotze (23); GB Smit (24); K & W Lyons (28); E Haze (29); N Littleton (30); H Ferreira (36); GS Davis (49); W Leonard (50)	No sewerage system / waste management infrastructure in area. Existing properties use septic tanks with French drains.	On-site sanitation is proposed as described in Section 2.2.2.
H Terblanche (6)	Higher elevation of Erf 238 in comparison to existing property below – sewerage.	
H Ferreira (36)	Where will NMBM be getting the funds for the provision of necessary services?	As the project as listed as a priority action in the NMBM IDP (2015), it is assumed the funds will be allocated from the budget for housing provision and service delivery.
Comments relating to visual impact		
B de Jager (15); B de Jager (16); D Nortje (39)	Can those who receive these houses maintain them in keeping with the aesthetics of the area?	This is a universal issue with subsidised housing and is outside the scope of this project to assess. It is noted though that the proposed development may be an aesthetic improvement on the current informal settlement.
Comments relating to suggested alternatives		
JP van Speyk (5); HS du Plessis (12)	The combination of Erf 240 and 28/31 should be selected as it already has a police station, school site zoning, two entrances and is close to shopping amenities.	The sites included in this application were chosen based on a number of factors including ownership (government owned or willingness of the landowner to sell), location relative to the existing informal housing, and available transformed areas for development. Assessment of additional alternatives does not form part of this application.
TH Johannes (31)	Erf 1/20 has already been disturbed and should be selected for the housing development.	
K & W Lyons (28)	Alternate land is available where alien vegetation occurs.	
N Littleton (30); KP Cloete (37); R Spalding (42); W Leonard (50)	Housing development should be built in Greenbushes.	Many of the recipients are employed in the Seaview area and relocating them elsewhere would result in a significant increase in their commuting time and expenses.
R Spalding (42)	Housing development should be built in Missionvale.	

N Quvile (40)	DAFF requests the outcome of the investigation of alternative land portions such as Portions 1 and 10 of Farm 28.	These portions are included in the application and their suitability will be assessed via the EIA.
Comments of a general nature		
DM Davis (13)	Two previous EIAs were refused and were for high income housing. What has changed?	We are not able to comment on unspecified EIA's.
G & V Rengecas (1)	The residents of New Rest and Zwelindinga are claiming squatters' rights and have no land claim which needs to be accommodated.	The housing recipients will be subject to the NMBM's policy and procedures in this regard.
G & V Rengecas (1); R Spalding (42)	More people are moving into New Rest and Zwelindinga since the development became known. What controls are in place to guard against influx of unemployed people hoping to get housing?	Houses are allocated to beneficiaries according to the NMBM's housing policy. It is generally agreed that the provision of housing is a relatively insignificant contributing factor, whereas job opportunities are a more significant driver, for the influx of people to an area. .
KP Cloete (37)	The development is not suitable for an upmarket coastal village.	The development is in line with government policy in support of integrated residential development, as well as the principle of housing people close to their places of work.

Table 4-3: Comments and Responses Table on DSR

Commentator & comment no.	Issues raised	Response (SRK unless otherwise specified)
Comments relating to the process		
C van Eekelen (65)	Lack of consultation all round.	Several opportunities are provided throughout the process to comment as per the EIA regulations. Refer to Figure 1-2 and Section 4.2.
E Hill (66)	Lack of consultation as only information received has been via printed media.	
A Merrick (61)	How can this development be approved if it was denied to prior developers wanting to erect upmarket houses and complexes?	It is unclear which particular project(s) is / are being referred to, however it is noted that each environmental authorisation process is considered separately on its own merits and therefore cannot be assumed to have any bearing on the authorisation prospects for the current proposal.
DEDEAT (63)	It is contradictory that it is stated that a separate application is underway for the Seaview Bulk Water Supply and the indication that water supply has not been included in the scope of this assessment even though it is mentioned that authorisation may be dependent on authorisation of the water supply project.	The NMBM confirmed that the proposed Seaview Bulk Water Supply project, for which the Basic Assessment is currently in the pre-application stage, is planned to supply the Seaview housing project (see letter in Appendix J). The NMBM has also confirmed that no other options for water supply are available for the project. Based on the screening work conducted in the pre-application phase of that assessment, and to a lesser extent the lapsed environmental authorization for an earlier design of the same bulk water supply project, SRK is of the view that environmentally acceptable alternatives have been identified and that bulk water supply via these pipelines is environmentally feasible.
DEDEAT (63)	The process flow diagram does not indicate a PPP for the FEIR. An acceptable timeframe for the Department is 30 days.	Noted and amended to include a 30 day comment period.

DEDEAT (63)	Page 49 of the DSR indicates a 14-day comment period which is in contradiction with Figure 1-2 whereby a 21 day comment period is indicated. The Department requires a minimum period of 21 days for commenting on the FSR.	Noted and amended in the FSR. A 21 day comment period will be provided on the FSR.
DEDEAT (63)	No formal PPP has been conducted by SRK with the residents of New Rest and Zwelendinga. Such must be conducted throughout the remainder of the assessment process.	<p>Consultation with the affected communities will be undertaken as part of the EIA process during the public review period of the FSR, and reported in the DEIR. This consultation will be facilitated by a Community Liaison Officer, who the NMBM is in the process of appointing.</p> <p>In addition to this, outside of the EIA process, it is noted that the NMBM has engaged with the beneficiaries regarding the proposed project over the last few years. It is also noted that the project is in response to pressure from these communities for formal housing and services.</p>
DEDEAT (63)	The proposal for rehabilitation plans for the areas currently occupied by the informal settlements should option 2 be the preferred option to be authorised, must be included in the FSR and Plan of Study for the EIR	Should Option 2 be authorised, all existing shacks and infrastructure will be removed from these settlement areas as residents are relocated. The Terms of Reference for the Ecological Study makes provision for the preparation of recommendations for rehabilitation of existing development footprints in the event of Option 1 not being authorised (see Section 6.4.4 of the FSR).
DEDEAT(63)	The Plan of Study for the EIR must include a Bulk Services Report addressing water sewerage, stormwater management, waste management, electricity supply etc.	Compilation of a bulk services report addressing the aspects mentioned is in progress and a copy of the report will be provided as part of the EIR. Letters confirming capacity from the various municipal departments are included in Appendix J.
DEDEAT (63)	Public open space management, as well as management of community facilities including the provision of schools, a clinic and community centre is also to be included in the plan of study.	<p>The management of public open spaces and community facilities will be reported on in the EIR and measures will be captured in the EMPr, based on municipal policies and standards for the management of public open spaces and community facilities. The Plan of Study for EIA includes provision of a management plan for public open space.</p> <p>[NMBM] Provision and maintenance of schools and community facilities is not within the NMBM's mandate, however provision has been made in the layout for such facilities, which would be developed and maintained by the relevant provincial department. The NMBM will however at all times endeavour to secure the timeous development of community facilities.</p>

DWS (68)	The following development activities may trigger a water use authorisation: <ul style="list-style-type: none"> • Upgrade of existing bulk water services; • Installation of new sanitation services; • Installation of 22 kV underground cabling; • Construction of a 12 m road reserve to connect the development with Aliwal Road; and • Any other associated infrastructure or structures that forms part of the development. 	The requirement for Water Use License applications (WULAs) will be confirmed during the wetland and aquatic ecology specialist study (see ToR in Section 6.4.5 of the FSR), and the relevant WULs will be secured prior to any development taking place.
DWS (68)	List provided of all information that should be submitted as part of the water use application.	Should WULAs be required, this information will be included in the applications.
Comments relating to design		
A Topliss (58)	Is the Applicant aware of the double storied fireproof houses being built in Pretoria? They are R100,000 cheaper than the present RDP houses.	[NMBM] The NMBM is not aware of such products but are continuously seeking alternative solutions to provide housing alternatives that are acceptable to beneficiary communities. The comment is noted and will be investigated.
Comments relating to the environment		
N Littleton (59)	With the exception of site 28, all proposed sites are covered with endangered and protected vegetation An objection has already been lodged with DAFF. They would be concerned about the integrity of the Baviaans Island Reserve	DAFF has been notified and been provided with the opportunity to comment (see list of IAPs in Table 4.1). A forest survey is proposed (see ToR in Section 6.3.1 of the FSR) to ensure that the housing layout avoids forest areas. SRK have to date not identified potential risks to the Island Nature Reserve that would occur over and above those that already exist, due to the proposed development. Nevertheless, the ecological specialist will be required to assess reasonably foreseeable risks, assess their significance, and recommend management measures.
C Fehrsen (64)	Damage to the Coastal Forest Belt, the current affected areas where damaged by the proposed recipients themselves.	The development is planned to take place on portions of land where the forest has been transformed by previous activities. Refer to Figure 3.6 which shows the transformed areas.
Comments relating to social impacts		
N Littleton (59)	Indigent and unemployed population will bring in many social evils not currently in the area. Is the city prepared to ensure that the Seaview Police Station will be adequately staffed?	The development proposal is to accommodate residents already living in informal settlements in the area. Increased negative socio-economic impacts on surrounding areas relative to the current situation are therefore considered to be unlikely, but will be assessed through a socio-economic study (see draft ToR in Section 6.4.7 of the FSR). It is also noted that social evils cannot necessarily be categorically linked to indigent communities.
C Fehrsen (64)	Presence of shebeens with new housing.	[NMBM] The establishments of all liquor outlets, including taverns are highly regulated in terms of the Liquor Act, as well as the NMBM Liquor Outlet Policy and will apply to the proposed development.

C Fehrsen (64)	Additional dwellings will be erected resulting in an unplanned increase in population. Building directorate cannot enforce building law in such areas.	<p>[NMBM] Building plans will have to be submitted and approved in terms of Section 7 of the Building Standards Act prior to commencement of construction on site. These designs will have to comply with SANS 10400 as well as SANS 204.</p> <p>The Building Inspectorate will have to commence the project, and once completed issue an occupation certificate prior to the building being handed over to the owner's, in terms of Section 14 of the Act..</p>
Comments relating to the economy		
E Gerber (57) N Littleton (59) L Denny (60) D Visser (62) C Fehrsen (64)	Proposed project will have a negative impact on house market values as the area will be undesirable. Will the government have funds available to pay the shortfall? What options are available as recourse should values decrease as a direct proven result?	Potential impacts on surrounding property values and security will be assessed via a socio-economic study as part of the EIA (see ToR in Section 6.4.7).
N Littleton (59) A Merrick (61)	Where are all the residents going to find employment?	[NMBM] There is currently no documented and empirical evidence of lower-income residential developments negatively impact on surrounding property values. Research in this regard has recently started, but the associated reports and findings are not available to the NMBM at this stage. The NMBM is not obligated to provide reimbursement for depreciation in property value.
N Littleton (59)	Extra funds will have to be spent on private security costs.	<p>The proposed project is aimed at the improvement of the living conditions and quality of life of residents living in existing informal settlements and is not intended as a destination area for people living in other parts of the city. It will at most accommodate some of the other smaller settlements in the immediate surrounds of Seaview/ Clarendon Marine.</p> <p>Social surveys conducted in the two informal settlements in Seaview have shown that an average of approximately 55% of the residents are employed within 14km of their place of residence. These results will be reviewed as part of the current EIA.</p> <p>There is no empirical evidence that the formalisation of informal settlements contributes to increases in crime and consequential increases in private expenditure on security. The beneficiary community are already living in the area.</p>
Comments relating to safety concerns		
E Gerber (57)	Danger of residents rioting.	As the proposal is to provide housing and services to these residents, it is anticipated that service delivery protests will be reduced.
L Denny (60)	Danger of protestors sealing off all access routes. Saying that the proposed project will solve the protesting issue is naïve.	

E Gerber (57) A Merrick (61) D Visser (62)	Crime in the area has increased to a dangerous level and the proposed project will exacerbate it.	Crime is linked to broader socio-economic problems that are difficult to assess or mitigate within the scope of the EIA. As the development proposal is to provide formal housing and services for informal residents in the area, an increase in crime is not expected to result specifically as a result of the provision of houses. This potential impact will be investigated as part of the proposed socio-economic study (see ToR in Section 6.4.7).
Comments relating to health concerns		
N Littleton (59)	A septic tank system for a large population with poor herd immunity on a confined area on a sloped sand dune is going to cause major community health issues.	The sanitation solutions proposed are discussed in Section 2.2.2, and potential impacts on groundwater will be assessed as part of the EIA through a groundwater specialists study (see ToR in Section 6.4.6), which will confirm whether the proposed sanitation option (leach pits / septic tanks) will be acceptable from a water quality perspective. It is our assumption is that providing the DWS's on-site sanitation protocols are adhered to, which would be the subject of the proposed groundwater study, that secondary impacts on community health from this source would be addressed.
E Hill (66)	With the properties footprint being small and the proposed location of the tanks to be in a similar position on each plot, the ground area will become saturated and a mess. No mention is made of the emptying of the tanks and who bears the responsibility and cost.	
DWS (68)	The expected impact(s) cause by existing and proposed septic tank French drain system for sanitation purposes will be cumulative and long term on both the surface and groundwater. The soil percolation assessment / geotechnical report must be developed to provide accurate impacts caused by such infrastructure on the water source. The chances of pollution of water resources will be higher if this system is utilised.	
DWS (68)	The Department does not support the proposed sanitation system of a septic tank, leaching into the ground, but rather the alternative of a package plant system.	
L Denny (60)	The proposed development will cause sand and dust to come across to suburb.	
L Denny (60)	Are there legal remedies should health and stress issues occur as a result of any factor relating to the housing development e.g. dust, sewerage, noise pollution?	Potential impacts relating to the concerns mentioned will be assessed as part of the EIR (see Sections 5.6, 5.9 & 5.10 of the FSR), and mitigation measures will be provided, which may become conditions of any authorization provided for the project. The relevant municipal bylaws will also apply to the proposed development.
DWS (68)	Integrated waste management must be dealt with in accordance with the NEM:WA (59 of 2008)	Waste impacts will be assessed as part of the EIR (see Section 5.8 of the FSR). The NMBM's integrated waste management plan will apply. Input has also been received from the NMBM's Waste Management department regarding waste removal (see Appendix J).
Comments relating to pollution		
E Gerber (57) L Denny (60) C Fehrsen (64)	Proposed project will lead to increased noise pollution, disturbance of the peace and tranquillity.	Noise impacts relating to construction will be assessed as part of the EIA. During operation, the relevant NMBM noise control bylaws will apply.

C Fehrsen (64)	Hovering smoke in the air through burning of tyres, wood for heating purposes (coastal forest belt will supply such needs).	The development will include electrical connections which would reduce the use of fire for cooking and heating, and it is therefore anticipated that impacts relating to burning of wood and tyres will decrease, and it is not proposed that these specific impacts will be assessed in the EIA.
C van Eekelen (65)	Increase of rubbish and health issues due to presence of taxi ranks.	The development proposal will be subject to waste management as per the NMBM's integrated waste management plan. Waste management impacts will be assessed as part of the EIR (see Section 5.8 of the FSR). Sanitation solutions proposed are discussed in Section 2.2.2.
DWS (68)	The report states that there is a possibility of wetlands present and/or close to the development areas and activities such as contaminated run-off, waste water from construction activities, sedimentation etc. may lead to pollution of these water bodies.	A wetland/aquatic specialist study is proposed to determine the presence of any water courses on or close to the site, and assess potential impacts in this regard (see ToR for the study in Section 6.4.5 of the FSR). Mitigation measures will be included in the DEIR to manage the potential pollution impacts of the development.
DWS (68)	Any oil or grease (including petroleum products) spillage on site, must be properly managed to prevent any contamination of water resources. An emergency response protocol must be developed to ensure that such spillages are immediately attended to and the site properly rehabilitated.	Mitigation measures for the management and prevention of spills will be included in the DEIR, and potential impacts resulting from spills will be assessed.
Comments relating to infrastructure		
DEDEAT (63)	The provision of bulk services must be proven (capacity vs demand, as well as plans for augmentation or expansion) and cannot be part of any "Assumptions and Limitations".	Supporting letters confirming capacity from the relevant NMBM departments are provided in Appendix J. Those that are not currently available will be provided in the DEIR
DEDEAT (63)	Further alternatives for sewage treatment as proposed should option 2 be the preferred site for the development must be included in the FSR. The leach pits and their impact with a high density residential low-cost housing development have not been suitably explained.	The option of a package plant is discussed as an alternative for development option 2 under Section 2.3.3. Impacts relating to the proposed leach pits will be assessed as part of the EIR, taking into account the findings of the groundwater specialist study (Section 6.4.5 of the FSR).
DWS (68)	All details of sewer infrastructure such as sewer lines, sewer manholes and connections as well as any sewer pump stations must be properly investigated and assessed to assist in decision on the type of sewer infrastructure suitable.	The Plan of Study for the EIA includes the development of a bulk services report, which will cover the infrastructure requirements. Note that as the proposed development includes on-site wastewater treatment, connection to bulk sewer infrastructure will not be required.
DEDEAT (63)	Could the NMBM not confirm that solar geysers will be provided for each unit as well as a rainwater tank with sufficient capacity, and with the required plumbing to supply each unit with water for flushing toilets etc. in order to begin reducing the impacts on services of such low cost housing projects?	[NMBM] solar geysers are standard design inclusions on NMBM low cost housing projects
E Gerber (57)	Everyone has to travel to where they want to be, so the concept of people staying close to their workplace is not appropriate.	Disagree. It makes sense from a town planning, socio- economic, and environmental sustainability perspective to locate people close to their work places.

A Merrick (61)	The proposed entrance to the development cannot handle the amount of traffic in and out of the development, as well as noise factor.	It is unclear as to which development option this refers to. Four entrances to Development option 1 are proposed. It is proposed that a traffic impact assessment will be undertaken as part of the EIA (see ToR in Section 6.4.8 of the FSR).
N Littleton (59) L Denny (60)	The Seaview road connecting it to the N2 will need to be upgraded and broadened to cope with extra traffic.	It is proposed that impacts on traffic will be assessed by a specialist as part of the EIA (see ToR in Section 6.4.8 of the FSR).
C Fehrsen (64) C van Eekelen (65)	Existing road infrastructure of Seaview Village does not suit heavy vehicles such as refuse removal, busses, human waste removal trucks and cannot cope with additional traffic.	The proposed road design will be sized to accommodate the required waste removal and public transport vehicles. This will be confirmed in the traffic impact assessment (see ToR in Section 6.4.8 of the FSR).
N Littleton (59)	Probable that unexpected influx of residents will overwhelm the infrastructure and social structures.	Houses are allocated to beneficiaries according to the NMBM's housing policy. It is generally agreed that the provision of housing is a relatively insignificant contributing factor, whereas job opportunities are a more significant driver, for the influx of people to an area. Impacts relating to potential influx will be assessed as part of the socio-economic assessment in the EIA (see ToR in Section 6.4.7 of the FSR).
C van Eekelen (65)	Suburb are all without street lights and visibility will be poor.	Street lighting will be provided as per the NMBM's standard for housing developments.
N Littleton (59)	An urban powerline will have to be created as Seaview is still reliant on a farm line, creating frequent power outages.	Power supply for the proposed development will be via a connection as described in Section 2.2.2 of the FSR (see letter confirming this in Appendix J).
N Littleton (59)	Increased water supply will have to be required with more piping being laid down from the current reservoir. Possible a larger reservoir will need to be created.	It is proposed that water supply to the development will be supplied via the proposed Seaview Bulk Water Supply project, as described in Section 2.2.2 of the FSR (see letter confirming this in Appendix J).
N Littleton (59)	Proposed project will require an exclusive sewerage line with pump stations to be erected.	On site sanitation is proposed as described in Section 2.3.3.
C van Eekelen (65)	Mention of solar panels, however an increase in residents in the low income housing development leads to cable theft as well as illegal electricity connections.	Electrical connection will be provided as discussed in Section 2.2.2. (see letter confirming this in Appendix J).
Comments relating to visual impact		
L Denny (60)	I object to option 2 as it will destroy the view from my back deck and therefore affect the property values	Potential impacts on property values that may result from visual impacts will be assessed as part of the socio-economic study in the EIA (see ToR in Section 6.4.7 of the FSR).
Comments relating to suggested alternatives		
E Gerber (57) L Denny (60)	The residents should be relocated to an area where the peace and safety of local rate paying residents will not be interrupted.	[NMBM] The relevant municipal bylaws and other public safety measures will apply, as they do to any development. As the housing recipients already reside in informal settlements in the area and as the proposed development entails improvement of living conditions of existing informal settlement, this impact is considered to be unlikely, but will be assessed as part of the socio-economic study as part of the EIA (see ToR in Section 6.4.7 of the FSR).

<p>A Topliss (58)</p>	<p>The Beachview Resort is unused and has sufficient infrastructure, dwellings and cleared vegetation. This would be the ideal location to place rdp houses. The applicant should utilise what it already has and save time and money.</p> <p>Should the Applicant choose not to use the Beachview Resort on permanent basis, it should be used on a temporary basis to house residents while their shacks are being demolished and removed, giving greater control over the process.</p>	<p>[NMBM] Utilisation of the Beachview resort is currently under legal review and at this stage cannot be considered as an alternative within the project implementation timeframes.</p>
<p>N Littleton (59)</p>	<p>Most logical, cost-effective and practical solution is to build the housing estate in Greenbushes.</p>	<p>The need for providing formal housing in the Seaview area is so that residents in the existing informal settlements are not relocated elsewhere.</p>
<p>Comments of a general nature</p>		
<p>DEDEAT (63))</p>	<p>Comment regarding resettlement planning will be required from the NMBM.</p>	<p>The NMBM's standard relocation procedure will be followed (see Appendix K) and will be communicated to the affected communities beforehand via the channels set up for this purpose.</p>



5 Identification of Potential Impacts

The identification of potential impacts of the proposed activity is based on the following factors:

- The legal requirements;
- The nature of the proposed activity;
- The nature of the receiving environment; and
- Issues raised during the public participation process.

Considering the factors listed above, the following environmental impacts were identified which could potentially result from the proposed housing development:

- Impacts on heritage resources;
- Terrestrial ecological impacts;
- Socio-economic impacts;
- Impacts on aquatic environments;
- Impacts on traffic safety and flow;
- Waste management impacts;
- Visual impacts;
- Impacts on groundwater quality;
- Stormwater and erosion impacts;
- Fire safety risks; and
- Construction related impacts.

The above listed impacts and their relevance to the proposed project area are described in more detail in the sections below.

5.1 Impacts on heritage resources

Damage or destruction to archaeological resources on the site may occur due to earthworks and excavations during construction.

Impacts relating to archaeological and palaeontological resources will be assessed via the specialist studies included in the Plan of Study. The recommendations of the specialists, will be included in the EMPr for construction (included as part of the EIR), outlining the procedure to be followed in the event of heritage remains being uncovered.

5.2 Terrestrial ecological impacts

Indigenous vegetation will need to be cleared in order to prepare the site for installation of services infrastructure and construction of houses and other associated structures, resulting in loss of habitat and possibly species of special concern. This is however largely limited to previously transformed areas, but as Development Option 1 entails pockets of development between patches of forest and / or other indigenous vegetation, impacts on connectivity and movement of fauna between patches may result.

Edge effects on the bordering vegetation and habitat resulting from disturbance, littering, alien invasive vegetation, and hunting or bush cutting, are could also potentially result from this

development option, both during construction and operation, and may displace and disturb local fauna. Clearing and disturbance of the soil during construction may also promote the growth and spread of invasive alien vegetation on the site.

Preliminary development layouts (Appendix G) have accommodated the forested areas so that development is proposed within existing transformed areas and the destruction of forest is thereby minimised. In instances where destruction of forest or trees has been agreed to by DAFF (in what they deem to be 'exceptional' circumstances) permit applications in this regard will be submitted to the department. Permits for destruction of other protected plant species may also be required from DEDEAT.

Noise, habitat destruction and the resultant habitat fragmentation as a result of construction activities may displace and disturb local fauna. Clearing and disturbance of the soil during construction will also promote the growth and spread of invasive alien vegetation on the site. During operation there is a risk that fauna may be subjected to hunting practices by the residents. It is proposed that ecological impacts are assessed through an ecological impact assessment, and recommendations to decrease negative impacts will be included in the EMPr.

5.3 Socio-economic impacts

The proposed project will impact positively on the current housing problem experienced in the Nelson Mandela Metropolitan area. Provision of formal housing as well as services will improve the standard of living of the beneficiaries currently living in the informal settlements of Zweledinga and New Rest. Construction of the housing development will also result in short term employment for semi-skilled workers.

Concern has been raised by surrounding communities regarding potential negative impacts on property values, influx and social ills such as crime and noise disturbance that may result from the proposed development.

It is proposed that socio-economic impacts are assessed through a specialist study, and management measures recommended to increase the positive socio-economic benefits and decrease the negative impacts will be included in the EMPr.

5.4 Impacts on traffic safety and flow

As the development proposal for Development Option 1 consists of pockets of development along and on both sides of Seaview road, it is anticipated that movement of pedestrians between the various sites may result in traffic safety impacts and that specific management measures will be required to manage this.

As most of the housing beneficiaries will not own cars and will rely on public transport (as per the current situation, as they are already resident in the Seaview area), changes in traffic flow are not expected. In the event that Portion 10 of Farm 28 is developed however, the access road will join up with Aliwal Road, increasing the volume of traffic usually experienced along this road. Pedestrian traffic in these areas could also be expected to increase. Development Option 2 would result in a single intersection and entrance /exit road along Seaview Road, which is expected to be preferable in terms of traffic safety impacts.

It is proposed that impacts on traffic flow and safety are assessed through a traffic impact assessment, and recommendations to decrease negative impacts will be included in the EMPr, and where appropriate incorporated into the road designs.

5.5 Impacts on aquatic environments

Due to the undulating nature of the terrain, it is possible that wetlands may be present within and close to the development area. Contaminated runoff or wastewater from construction activities (e.g. cement wastewater, fuel spills etc.) and sedimentation may lead to pollution of any water resources present in site. Stormwater runoff from the housing development that is polluted with litter or other contaminants may lead to pollution of downstream water resources. Levelling of the site and changes to the stormwater regime of the area may also lead to changes to the hydrology of any wetlands.

A specialist assessment is proposed to identify and delineate any riparian and wetland areas on and within 500 m of any of the development areas.

5.6 Impacts on groundwater

Although soil percolation tests are believed to have confirmed the suitability of such infrastructure, seepage of leachate from the leach pits and septic tanks proposed for sanitation could potentially result in impacts on groundwater quality, which is understood to be an existing concern in the area (due to septic tanks).

A specialist assessment is therefore proposed to confirm compliance with DWS's minimum standards in this regard.

5.7 Stormwater and erosion impacts

Vegetation clearing and disturbance of soils during construction will leave them vulnerable to erosion by water and wind. This could lead to increased sediment load in stormwater runoff, potentially clogging the receiving stormwater infrastructure. Loss of topsoil and erosion will also limit the potential for vegetation growth in these areas, leading to further erosion.

Impacts in this regard will be assessed by the EAP, and standard mitigation measures to manage erosion and stormwater will be included in the EMPr for both construction and operation.

5.8 Waste management Impacts

Lack of adequate waste management during construction could result in spread of litter, illegal dumping, contamination of soil and water resources, and increased prevalence of scavengers at the site.

Currently no waste collection service is provided to the residents of Zweledinga and New Rest although an informal waste transfer station is located in Seaview. During operation, waste generated by the residences/businesses and facilities proposed on the site could result in similar impacts as those mentioned above for construction if not adequately managed. Waste entering the stormwater system may also result in blockages and downstream contamination. Waste collection services will need to be provided for residents in order to manage the impacts during operation.

Impacts relating to waste management will be assessed by the EAP and mitigation measures will be provided in the EMPr to manage waste related impacts on the site and surrounding area during construction and operation.

5.9 Visual impacts

Portions of Erf 590, 240 and 238 are currently occupied by informal houses which border the Seaview Road. As the proposed development (Option 1) will take place in transformed /previously occupied areas which are visible from the Seaview Road it is anticipated that the construction of

formal houses (or in the case of Development Option 2, management of these areas to prevent additional in-migration) will have a positive visual impact. The forested areas that will remain on the site are also expected to provide some degree of visual shielding. The development will however be provided with lighting which may be perceived negatively by residents of Seaview who are situated at a lower elevation than the proposed development sites.

During construction, dust resulting from vegetation clearing and earthworks may also be visible from a distance. It is proposed that visual impacts are assessed by the EAP and managed through standard mitigation measures provided in the EMPr.

5.10 Impacts related to construction

Additional impacts during the construction phase could potentially relate to the following:

- Sanitation and water supply;
- Nuisance dust impacts;
- Noise impacts;
- Safety and security;
- Chemical pollution of soils and stormwater due to spills or leaks
- Damage to other infrastructure (e.g.. underground cables and pipelines);
- Veld fires and fire management;
- Waste management; and
- Interruption to services supply.

The potential impacts above will be assessed by the EAP and should be minimised by standard well-managed construction procedures. However, specific mitigation measures for construction related impacts will be included in the EMPr in order to alleviate the effects of the identified impacts.

5.11 Fire safety risks

As the development will entail the clearing and development of areas vegetated by indigenous forest, which is largely fire resistant, the risk of veld fires in the area is unlikely to be high. This is further supported by the fact that the proposed houses will be electrified and wood or paraffin will therefore not be the main energy source.

This impact will be assessed by the EAP and management recommendations to control spread of fires will be included in the EMPr.

6 Draft Plan of Study for EIA

6.1 Specialist Studies

The following specialist studies are proposed in order to investigate the potential environmental impacts associated with the proposed development:

- Updated Forestry Survey (for Development Option 1);
- Archaeological Impact Assessment;
- Palaeontological Impact Assessment;
- Ecological Impact Assessment;
- Wetland and aquatic ecology Impact Assessment;
- Groundwater Impact Assessment;
- Socio-economic Impact Assessment; and
- Traffic Impact Assessment.

It is noted that a number of specialist studies have already been conducted for some of the sites under consideration (notably but limited to Farm 28/1 as part of the previous EIA process for this site). Where appropriate, the findings of these studies will be used, and updated as required.

6.2 Additional information

The following information will also be included as part of the DEIR, and where relevant will inform the impact assessment and mitigation measures required:

- Bulk Services Engineering report; and
- Public Open Space Management Plan

6.3 Impact Rating Methodology

The assessment of impacts will be based on the professional judgement of specialists at SRK Consulting, fieldwork, and desk-top analysis. The significance of potential impacts that may result from the proposed development will be determined in order to assist the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) in making a decision.

The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequences are presented in Table 6-1 below.

Table 6-1: Criteria used to determine the Consequence of the Impact

Rating	Definition of Rating	Score
A. Extent– the area over which the impact will be experienced		
None		0
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
B. Intensity– the magnitude of the impact in relation to the sensitivity of the receiving environment		

None		0
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered	3
C. Duration– the time frame for which the impact will be experienced		
None		0
Short-term	Up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

The combined score of these three criteria corresponds to a **Consequence Rating**, as follows:

Table 6-2: Method used to determine the Consequence Score

Combined Score (A+B+C)	0 – 2	3 – 4	5	6	7	8 – 9
Consequence Rating	Not significant	Very low	Low	Medium	High	Very high

Once the consequence has been derived, the probability of the impact occurring will be considered using the probability classifications presented in Table 6-3.

Table 6-3: Probability Classification

Probability– the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall **significance** of impacts will be determined by considering consequence and probability using the rating system prescribed in the table below.

Table 6-4: Impact Significance Ratings

Significance Rating	Possible Impact Combinations		
	Consequence	&	Probability
Insignificant	Very Low	&	Improbable
	Very Low	&	Possible
Very Low	Very Low	&	Probable
	Very Low	&	Definite
	Low	&	Improbable
	Low	&	Possible
Low	Low	&	Probable
	Low	&	Definite
	Medium	&	Improbable
	Medium	&	Possible
Medium	Medium	&	Probable

Significance Rating	Possible Impact Combinations		
	Consequence		Probability
	Medium	&	Definite
	High	&	Improbable
	High	&	Possible
High	High	&	Probable
	High	&	Definite
	Very High	&	Improbable
	Very High	&	Possible
Very High	Very High	&	Probable
	Very High	&	Definite

Finally, the impacts will also be considered in terms of their status (positive or negative impact) and the confidence in the ascribed impact significance rating. The system for considering impact status and confidence (in assessment) is laid out in the table below.

Table 6-5: Impact status and confidence classification

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a 'benefit')
	– ve (negative – a 'cost')
Confidence of assessment	
The degree of confidence in predictions based on available information, SRK's judgment and/or specialist knowledge.	Low
	Medium
	High

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings ascribed below:

- **Insignificant:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity/development.
- **Very Low:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity/development.
- **Low:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- **Medium:** the potential impact should influence the decision regarding the proposed activity/development.
- **High:** the potential impact will affect the decision regarding the proposed activity/development.
- **Very High:** The proposed activity should only be approved under special circumstances.

Practicable mitigation measures will be recommended and impacts will be rated in the prescribed way both with and without the assumed effective implementation of mitigation measures. Mitigation measures will be classified as either:

- Essential: must be implemented and are non-negotiable; or
- Optional: must be shown to have been considered and sound reasons provided by the proponent, if not implemented.

6.4 Draft Terms of Reference for Specialist Studies

The proposed Terms of Reference for each of the identified specialist studies are provided in this section

6.4.1 Forest Survey

- Ground truth the transformed areas/forest edge on all erven as captured in the preliminary site layouts;
- Compile a list of dominant forest tree species observed;
- Provide a map indicating the extent of the ground truthed forest;
- Demarcate the location of protected species listed in terms of the National Forest Act (NFA);
- Recommend mitigation measures to manage impacts.

6.4.2 Archaeological Impact Assessment

- Conduct a literature review of known archaeological resources within the area with a view to determining which of these resources are likely to occur within the development footprint;
- Comment on potential impacts on these resources resulting from the development; and
- Make recommendations regarding the mitigation of any damage to the archaeological resources identified; or that may be identified during the construction phase.

6.4.3 Palaeontological Impact Assessment

- Conduct a literature review of known palaeontological resources within the area with a view to determining which of these resources are likely to occur within the development footprint;
- Comment on potential impacts on these resources resulting from the development; and
- Make recommendations regarding the mitigation of any damage to any palaeontological resources identified; or that may be identified during the construction phase.

6.4.4 Ecological Impact Assessment

- Review previous ecological studies and provide updates as required;
- Describe the biodiversity in the vicinity of the study area in terms of:
 - Vegetation types/ habitats, including their ecosystem threat status;
 - Ecological processes;
 - Critical Biodiversity Areas and Critical Ecosystem Support Areas in terms of the relevant systematic biodiversity plans, especially the Nelson Mandela Bay Municipality Final Bioregional Plan (SRK Consulting, 2014); and
 - Flora and fauna species of special concern (including Red List status, species that are protected in terms of legislation, and the endemism status of species) and threatened or protected fauna (if necessary).
- Assess the condition of the vegetation in the study area;
- Assess risks on surrounding sensitive habitats or protected areas (such as the Island Nature Reserve);
- Identify No-Go/ Non-development areas in terms of significant terrestrial biodiversity features (vegetation types, species and ecological processes);
- Provide recommendations for rehabilitation of currently occupied areas (should development option 2 be authorised); and
- Provide recommendations for possible measures to mitigate ecological impacts.

6.4.5 Wetland and Aquatic Ecology Impact Assessment

- Identify and delineate any riparian and wetland areas on and within 500 m of any of the development areas;
- Assess the Present Ecological State (PES) of any wetland identified;
- Comment on potential impacts on water resources resulting from the development; and
- Make recommendations regarding the mitigation of any potential damage to wetlands.

6.4.6 Groundwater impact Assessment

- Conduct a desktop assessment of the geology and hydrogeology within a radius of approximately 1 km of the proposed Site. This will include an assessment of the geological, hydrogeological and topographical maps; and the National Groundwater Archives (NGA) – a database of the Department of Water and Sanitation (DWS);
- Undertake a hydrocensus of boreholes at properties neighbouring the current proposed sites. The hydrocensus will be limited to identifying existing boreholes and recording any available information of this borehole, including its position, depth, water level, water pH and conductivity. Existing potential contamination sources will also be recorded;
- Drilling of boreholes in order to establish the thickness of the unsaturated zone, the materials constituting the unsaturated zone, and the depth to groundwater table within the area. It is proposed that ten boreholes be drilled, spaced out approximately 500 m from each other across the proposed sites, in areas that are accessible to a drilling rig. An average depth of 10 m bgl is proposed. Should the water level not be reached by 10 m bgl, then the borehole will be stopped, the soils logged, and the borehole backfilled;
- Sieve Analysis on selected samples from the boreholes to determine the specific soil types below the surface; and
- Report on the results of the investigation.

6.4.7 Socio-economic impact assessment

- Describe the baseline socio-economic conditions of Seaview
- Review and update the baseline socio-economic condition assessment previously undertaken of the communities of Zweledinga and New Rest;
- Review the available literature and assess the potential impacts of the development proposal on socio-economic conditions including:
 - Provision of housing and amenities for beneficiary communities;
 - The effect on property value of communities neighbouring the proposed development;
 - The projected effect on security, crime, noise / disturbance and social ills in adjacent neighbourhoods;
 - Estimate the job creation potential of the proposed development, and
 - Comment on the appropriateness of the location of the development in light of the social and economic differences of the area, as well as policy and other relevant considerations.

- Address comments raised by IAPs from surrounding areas relating to the above, including visual impacts (resulting in impacts on property values), influx, social ills, crime, safety.
- Make recommendations regarding enhancement and mitigation measures for identified impacts

6.4.8 Traffic impact assessment

- Determine the spatial scope of the assessment (the "zone of influence") using professional judgement and industry norms;
- Establish baseline traffic volumes on roads that may be affected by the proposed development;
- Estimate the additional traffic volumes from the proposed development (including peak volumes);
- Evaluate the adequacy of the existing roads to accommodate increased traffic volumes and types resulting from the proposed development. Such evaluation to include all intersections within the surrounding roads, and comment on existing and proposed road design; and
- Make recommendations and provide advice to the team regarding appropriate management of the traffic flows and safety measures that may be required, and how best to incorporate these into the proposed development.

6.5 Impacts to be addressed by the EAP

It is proposed that the following potential impacts will be assessed by the EAP and addressed via standard mitigation measures:

- Construction impacts of a general nature;
- Waste management impacts;
- Impacts relating to fire;
- Visual impacts during construction;
- Stormwater and erosion impacts.

6.6 Programme of Activities

The key activities and the provisional timetable required to achieve the objectives of the Environmental Impact Assessment study are summarised in Table 6-6 below.

Table 6-6: Estimated target dates for key activities in the EIA process

Stage / Activity	Target Dates	
	Start	End
Distribution of the Final Scoping Report for public comment and submission to DEDEAT	26 August 2016	16 September 2016
DEDEAT approval of Plan of Study for EIA (potentially including recommendations)	16 September 2016	28 October 2016
Conduct Specialist Studies and Compile Draft EIR	26 August 2016	19 December 2016
Public Comment Period for Draft EIR (40 days)	6 January 2017	15 February 2017

Stage / Activity	Target Dates	
	Start	End
Prepare Final EIR	15 February 2017	27 February 2017
Public Comment Period for Final EIR (30 days)	27 February 2017	29 March 2017
Submit Final EIR to DEDEAT for a decision	29 March 2017	

6.7 Public Participation Process

The registered Interested and Affected Parties (IAPs) will be kept up to date on the progress by being notified of the availability of reports for comment. A public meeting to present the findings of the FSR will be held with the affected beneficiary communities, and an open day (open to all members of the public) will also be held later in the EIA process.

7 Way Forward

The public participation process so far has given IAPs the opportunity to assist with identification of issues and potential impacts.

The Executive Summary of this FSR has been distributed to registered IAPs. A printed copy of this report will be available for public review at Walmer Public Library (Main Road, Walmer). The report can also be accessed as an electronic copy on SRK Consulting's webpage via the 'Public Documents' link <http://www.srk.co.za/en/page/za-public-documents>

Written comment on this FSR should be sent by **17h00** on **16 September 2016** to:

Wanda Marais

SRK Consulting

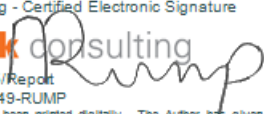
PO Box 21842, Port Elizabeth, 6000

Email: wmarais@srk.co.za

Fax: (041) 509 4850

The Final Scoping Report (this report) has been submitted to the other relevant authorities, for comment, and to DEDEAT for approval.

Prepared by

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Rob Gardiner
 Partner, Principal Environmental Scientist

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

8 References

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Nelson Mandela Metropolitan Municipality 2015. *Metropolitan Spatial Development Framework*

SRK Consulting 2010. *Final Conservation Assessment and Plan for the Nelson Mandela Bay Municipality*

Appendices

Appendix A: EIA Application Form and Declaration of Interest

Appendix B: Newspaper Notice

Appendix C: Background Information Document

Appendix D: IAP Register

Appendix E: IAP Correspondence on BID

Appendix F: Site Photographs

Appendix G: Site Map & Design Drawings

Appendix H: Title Deeds

Appendix I: Sanitation Report (Option 1)

Appendix J: NMBM Confirmation of Services

Appendix K: NMBM Relocation Procedure

SRK Report Distribution Record

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