Annexure M2: S24G application – Impact assessment

Activities carried out on Portion 12 of the Farm Ongegunde Vryheid No 746, Cape st Francis

Kouga Local Municipality, Sarah Baartman District Municipality

Eastern Cape

DEDEAT reference: SBROB#2021-05-21

This impact assessment has been carried out in terms of the National Environmental Management act (Act 107 of 1998) in support of a Section 24 application for environmental authorisation for activities carried out on Portion 12 of the Farm Ongegunde Vryheid No 746, Cape St Francis.

Introduction

The property (portion 12 (a portion of portion1) of the Farm Ongegunde Vryheid No. 746) was purchased by the current landowner in 1997. The farm portion is an estimated 46 ha in extent. Two dwellings were in place at the time of purchase. The northeastern dwelling (hereafter referred to as dwelling 1) consisted of 5 rooms and an outside cottage; the 5 rooms sleep 2 people per room and have been rented to guests since ownership in 1997. The outside room is not rented. A maximum of 12 guests has been permitted at the NE dwelling over the years. The southwestern dwelling (hereafter referred to as dwelling 2) has been used by the landowners as a private holiday residence.

Renovated / expanded footprints post 2021:

- Renovated / expanded footprints post 2021:
- Dwelling 1 – 390 m2 (original footprint: 265m2 – expanded by 125m2))
- Section of access road rerouted behind dwelling - 260m2
- Dwelling 2 – 105m2 (original footprint: 60m2 - expanded by 45m2)
- Road between dwellings (existing): 300 m2
- Total footprint: 1055m2

Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.

Figure 1: Old dwelling (prior to 2021) (courtesy of registered IAP, 2025 – refer to PP and CRR in Annexure)

Figure 2: Left - Dwelling 1; Right dwelling 2 (current)

Environmental authorisation for relevant tourism activity has not yet been applied for or authorised. (Activity 2 (c), Environmental Conservation Act (Act 73 of 1989); Environmental authorisation has not yet been applied for or authorisation for activities listed in terms of the listing notice (LN) 1 and LN 3 of the environmental impact assessment (EIA) regulations 2014 (as amended, 2017) promulgated in terms of the National environmental management act (act 107 of 1998) (NEMA) for tourism, and construction activities within 100 meters of the high water mark (LN1 activities – 17,19A,54; LN 3 activities 5, 12).

An application is proposed to be submitted in terms of Section 24G of the NEMA. This draft Section 24G NEMA application for environmental authorisation will be distributed to all registered and affected parties for a 30-day comment and review period. Thereafter the application and accompanying annexures (including Annexure M2 – this report) will be updated as required as submitted to the competent authority for consideration.

The impact assessment is provided in **Section A: Impacts - planning and design, construction, operational phases as well as proposed management of identified impacts and proposed mitigation measures**
The impact assessment methodology is provided in Section B: Impact Identification and Assessment Methodology

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Section A: Impacts - planning and design, construction, operational phases as well as proposed management of identified impacts and proposed mitigation measures

1 Planning and Design Phase and subsequent construction and operation

Alternative:	**Current site and re-routed access road; no go alternative**
NEMA LN Activity	**Removal vegetation; activities within 100m of HWM; tourism**
NWA water use	**Not required**
Aspect	**Site Selection**
Impact 1:	**Placement of structures and infrastructure on sensitive areas**
Nature of impact:	Direct (site) / Indirect (surrounding environment) / cumulative (in combination with existing impacts)

Description

Incorrect placement of structures can result in direct, indirect and cumulative impacts on the environment. The structures were placed on existing footprints and expanded by approximately 445m2 (away from the coastal area). The no-go refers to the status quo (previous structures with no diverted access road section)

The only site alternative considered are the existing sites. Existing development footprints were used to position the renovated buildings. The access road at dwelling 1 was re-routed behind dwelling 1. The renovated dwelling 2 does not seem to encroach any further towards the ocean; the footprint expanded towards the road. It is noted that a 10-meter boundary from rear of erf is required in title deeds, however this structure was already in place at the time of purchase in 1997.

The Total footprint is estimated at 1055m2 including renovations and decking and re-routed access road.

Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.

Impact Rating

Impact Status	Negative Impact		Negligible to negative low impact	
Impact Criteria	Baseline / no go alternative		Current development	
Spatial	Activity	1	Activity	1
Duration	Long term	5	Long term	5
Frequency	Rare	1	Rare	1
Intensity	Low	1	Low	1
Severity	Negative Low	7	Negative low	7
Consequence	Negative low	8	Negative low	8
Probability	Slight	2	Slight	2

	Impact Significance	Negative Low	10	Negative Low	10
	Mitigation	Not possible for construction; possible for maintenance and operations			
	Confidence	High			

Aspect	**Tourism activity**
Impact 2:	**Incorrect land use in sensitive areas**
NEMA LN Activity	Removal vegetation; activities within 100m of HWM; tourism
Nature of impact:	Direct (site) / Indirect (surrounding environment) / cumulative (in combination with existing impacts)

Description

Incorrect land use in sensitive areas can result in direct, indirect and cumulative impacts on the natural coastal environment and on other users of coastal area. The no-go refers to the status quo prior to renovations (existing dwellings used for personal use / tourism purposes). The renovated buildings are used for similar purposes. The impact of tourists in the area can be mitigated through implementing the recommended operational management mitigation measures to prevent unnecessary impacts of this land use in the sensitive coastal area and on other users in the area.

Comments form interested and affected parties have been considered in this assessment.

The only site alternative considered are the existing sites. Existing development footprints were used to position the renovated buildings. Dwelling 1 has been used for tourism purposes since 1997; Dwelling 2 has been used for private purposes since 1997. The surrounding dwellings in the area are used for a combination of personal residential use with some small guest houses in the area. Positive impacts result on tourists being able to stay in a pristine area and if suitable measures are in place, tourists are not expected to cause a nuisance in the area.

The Total footprint is estimated at 1055m2 including renovations and decking and re-routed access road.

Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.

The terrestrial biodiversity statement is provided in Appendix M3 of the Section 24G application report.

Impact Rating

Impact Status			Negative Impact		Negative / positive Impact	
Impact Criteria	No go alternative		Without mitigation		With mitigation	
Spatial	Site	2	Site	2	Site	2
Duration	Medium - Long term	5	Medium - Long term	5	Medium - Long term	5
Frequency	Rare	1	Rare	1	Rare	1
Intensity	Low	1	Low	1	Low	1
Severity	Medium	7	Medium	7	Medium	7
Consequence	Medium	9	Medium	9	Medium	9
Probability	Slight	2	Slight	2	Slim	1
Impact Significance	**Medium**	**11**	**Medium**	**11**	**Low**	**10**
Mitigation	Possible – a consequence of medium indicates the identified Impact requires in situ mitigation and receptor mitigation					

<table>
<tr><td></td><td><table><tr><td>Confidence</td><td>High</td></tr></table></td></tr>
<tr><td>Mitigation Measures</td><td>Planning and operations
Ensure all conditions of EA (if attained) and recommended mitigation measures are implemented.
Ensure an Environmental Management File is put in place to contain all documents / report which pertain to the relevant conditions of the planning and operational phases (e.g. EA, EMPr, permits, waste disposal certificates, audit reports etc.)
Review of legislation to be carried out prior to any future development / rezoning / land use change – the planning applications and EA application provides for public participation to allow for interested and affected parties comment on proposed land use / EA applications.
It is recommended relevant consent use application be applied for as required (tourism / relaxation of erf boundaries as required)
It is recommended that the landowner continue to rezone from agricultural to open space / reserve as per KLM land use and NEMPAA with a consent use for tourism at dwelling 1
Ensure layouts, designs and accompanying engineering drawings are approved as required;
Appoint a suitably qualified external environmental compliance auditor to ensure environmental management requirements are met and it is recommended an environmental compliance audit is carried out every two years.
Suitable budget to be assigned to environmental management requirements as required</td></tr>
<tr><td>Aspect</td><td>Clearing and Excavation activities; operational activities within 100 meters of HWM</td></tr>
<tr><td>Impact 3:</td><td>Ecological impacts of encroachment onto the Marine High-Water Mark from activity</td></tr>
<tr><td>Nature of impact:</td><td>Direct and indirect (impact on coastal area);</td></tr>
<tr><td>Description</td><td>Both dwellings are located in close proximity to the High-Water Mark; the negative ecological impacts during storm events should be minimal with recommended mitigation measures in place. .
The Total footprint is estimated at 1055m2 including renovations and decking and re-routed access road.
<u>Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.</u>
<u>The terrestrial biodiversity and aquatic reports are provided in Appendix M3 of the Section 24G application report.</u></td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negligible</td><td colspan="2">Negligible Impact</td><td colspan="2">Negligible Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go alternative</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Spatial</td><td>Site</td><td>2</td><td>Site</td><td>2</td><td>Activity</td><td>1</td></tr>
<tr><td>Duration</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td></tr>
<tr><td>Frequency</td><td>rare</td><td>1</td><td>rare</td><td>1</td><td>rare</td><td>1</td></tr>
<tr><td>Intensity</td><td>Low</td><td>1</td><td>Low</td><td>1</td><td>Low</td><td>3</td></tr>
<tr><td>Severity</td><td>Negligible</td><td>3</td><td>Negligible</td><td>3</td><td>Negligible</td><td>4</td></tr>
<tr><td>Consequence</td><td>Low</td><td>5</td><td>Low</td><td>5</td><td>Negligible</td><td>5</td></tr>
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	Probability	Slight	2	Slight	2	Slim	1
	Impact Significance	Low	**7**	Low	**7**	Negligible / Low	**6**
	Mitigation	No likely disturbance of high significance from development; possible in operations / maintenance					
	Confidence	High					

Impact 4:	**Storm surges**
Nature of impact:	Direct – impact on dwellings within 100 m of HWM

Description

Both dwellings are located in close proximity to the High-Water Mark and could potentially be vulnerable to damaging high tides during storm surges and very rough seas. The rocky shore at dwelling 2 will offer some protection; the rerouting of road behind the dwelling and placing deck in old road footprint may offer slightly more protection during storm surge events as driving on shore is prevented and decking is slightly raised.

Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.

The terrestrial biodiversity and aquatic reports are provided in Appendix M3 of the Section 24G application report.

Impact Rating

Impact Status	Negligible		Negligible Impact		Negligible Impact	
Impact Criteria	No go alternative		Without mitigation		With mitigation	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	Very short	1	Very short	1
Frequency	rare	1	rare	1	rare	1
Intensity	High	5	High	5	High	5
Severity	Medium	7	Medium	7	Medium	7
Consequence	Low	8	Low	8	Low	8
Probability	Plausible	3	Plausible	3	Plausible	3
Impact Significance	Medium	**11**	Medium	**11**	Medium	**11**
Mitigation	Difficult in this area					
Confidence	High					

Mitigation Measures

Operations and maintenance as required

- The areas surrounding the property should remain well-vegetated (with natural vegetation) to prevent erosion and slumping,
- The areas of the property near the high-water mark should be left undisturbed if possible; no disturbance beyond erf boundary
- Put in place waste management mitigation measures
- Landowner encouraged to be in close contact with South African weather Services at all times to receive early warning details of floods, storm surges, ocean conditions, high winds, droughts, potential fires etc. in the area and plan and inform expected guests accordingly
- Training of contractors; Place Rules of conduct in dwellings on the following

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Designated access roads to be used at all times; no beach driving permitted without required permit; .
Do not create footpaths; this will lead to unnecessary vegetation trampling and can lead to accelerated erosion

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<tr><td>Aspect</td><td>Site Selection and tourism activity</td></tr>
<tr><td>Impact 5:</td><td>Aquatic Ecosystems and freshwater resources</td></tr>
<tr><td>Nature of impact:</td><td>Negligible impact on freshwater ecosystems</td></tr>
<tr><td colspan="2">Description
The nearest recognised watercourse to the site is the Krom River located approximately 6 km north (in a straight line) of the two upgraded coastal dwellings at Mosterthoek and there are no small streams or wetlands within 500m of the property. There are no watercourses or wetlands mapped within 500 meters of the site in terms of the National Freshwater Ecosystem Priority Area (FEPA) map of the area. No wetland areas, minor streams or watercourses were observed near the development sites. Refer to Appendix M2-C (Aquatic compliance statement, A. Bok, 2025). The site visit confirmed that there are no nearby freshwater aquatic habitats or aquatic biota that have been or will be negatively impacted by the upgrading of the two dwellings on the property.
<u>Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.</u>
<u>The terrestrial biodiversity and aquatic reports are provided in Appendix M3 of the Section 24G application report.</u></td></tr>
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<tr><td>Impact Criteria</td><td>No go alternative</td><td></td><td>Without mitigation</td><td></td><td>With mitigation</td><td></td></tr>
<tr><td>Spatial</td><td>Activity</td><td>1</td><td>Activity</td><td>Activity</td><td>1</td><td>Activity</td></tr>
<tr><td>Duration</td><td>Very short</td><td>1</td><td>Very short</td><td>Very short</td><td>1</td><td>Very short</td></tr>
<tr><td>Frequency</td><td>rare</td><td>1</td><td>rare</td><td>rare</td><td>1</td><td>rare</td></tr>
<tr><td>Intensity</td><td>Low</td><td>1</td><td>Low</td><td>Low</td><td>1</td><td>Low</td></tr>
<tr><td>Severity</td><td>Negligible</td><td>3</td><td>Negligible</td><td>Negligible</td><td>3</td><td>Negligible</td></tr>
<tr><td>Consequence</td><td>Negligible</td><td>4</td><td>Negligible</td><td>Negligible</td><td>4</td><td>Negligible</td></tr>
<tr><td>Probability</td><td>Slim</td><td>1</td><td>Slim</td><td>Slim</td><td>1</td><td>Slim</td></tr>
<tr><td>Impact Significance</td><td>Negligible</td><td>5</td><td>Negligible</td><td>Negligible</td><td>5</td><td>Negligible</td></tr>
<tr><td>Mitigation</td><td colspan="6">Possible</td></tr>
<tr><td>Confidence</td><td colspan="6">High</td></tr>
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<tr><td>Mitigation Measures</td><td>Planning and operations

Carry out required assessments (completed)
Put in place recommended mitigation measures

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2 Construction Phase and operations as applicable and maintenance during operations as required

Alternative:	**Current dwellings and re-routed access road; no go alternative**
NEMA LN Activity	**Removal vegetation; activities within 100m of HWM; tourism**
HRA Section 38	**Permit required for any archaeological, palaeontological, heritage as required**
Aspect	**Construction and operational planning requirements**
Impact 1:	**Inadequate planning and *Non-compliance with Conditions of the Environmental Authorisations***
Nature of impact:	Direct / Indirect / cumulative as applicable
Description	Monitoring should be undertaken by an appointed ECO and should commence prior to construction of the works. This could not be carried out. Recent site visits carried out during assessment shows no evidence of contractor's materials on or surrounding the site. Caution must be carried out when developing, particularly in sensitive areas, and a review of all related legislation should be carried out prior to commencement of building. Poor environmental management planning and / or lack of budget for environmental management will result in unmitigated impacts and unnecessary economic impacts to the landowner. Without correct planning unnecessary and unmitigated impacts are likely to occur. **Plans and as-built drawings are provided in Appendix J of the Section24 G assessment application report.** **The terrestrial biodiversity and aquatic reports are provided in Appendix M3 of the Section 24G application report.**
Impact Rating	As per impacts identified for planning, construction / operational phase as applicable without / with mitigation implemented
Mitigation Measures	**Planning and Operations:** • An Environmental Control Officer (ECO) should have been appointed at the start of construction phase • An environmental compliance audit is recommended to be carried out, every second year, for the development (if an EA is attained) during operational phase and include any reporting on any maintenance activities / monitoring of the two-year period

Alternative:	**Current dwellings and re-routed access road; no go alternative**
NEMA LN Activity	**Removal vegetation; activities within 100m of HWM; tourism**
HRA Section 38	**Permit required for any archaeological, palaeontological resource that may be uncovered during construction / maintenance activities**

Aspect	**Clearing and Excavation activities can result in unnecessary damage / loss of archaeological, palaeontological, heritage resources if not managed correctly**
Impact 1:	**Loss / disturbance of / to palaeontological resources.**
Nature of impact:	Direct (loss of resource / damage to resource / collection of resource)

Description

Excavation activities can unearth archaeological / palaeontological resources and result in unnecessary disturbance if measures are not in place. A NID and screening report has been submitted to the ECPHRA . The required paleontological study (verification and assessment) has been carried out. The area under investigation lays over two formations from two different groups. The inland side of the site is underlain by the Nanaga Formation of the Algoa Group, and the seaward side is underlain by the Peninsula Formation of the Table Mountain Group. To the north the area is partially covered by aeolian (windblown) sediment. The Nanga Formation and its overlaying aeolian sands are rated as very highly sensitive, while the Peninsula Formation is ranked as highly sensitive. Both these formations have the potential to contain valuable fossil material. The lithology of the peninsula formation (Table mountain group; Nardouw supergroup) occurring on the study area (seaward side) is sandstone and the palaeoenvironment is described as Fluvial braid-plain, shallow marine. The Peninsula Formation is the main unit in the Cape Supergroup; it comprises of quartz arenites, with minor shales and conglomerates and contains sparse fossils of freshwater, estuarine, shallow marine, and coastal origin. These include eurypterid track ways and trilobite borrows (Cruziana and Skolithos ichnofacies) (Braddy & Almond 1999, Almond et al. 2009). The sediment around the house was found to consist of recent course shell gravel. The remaining property falls on the Nanaga Formation of the Algoa group (contains sparse fossils of foraminifera, rhizo-creations (root concretions) and root casts). A small cutting on the road to the house (not on the property) indicated some trace fossil and rhizoliths (very low significance) over a loosely consolidated dune. Fossils in both the peninsula and Nanaga formations are very sparsely distributed. It is very unlikely that the expansion has caused loss or damage to the palaeontological heritage of the area. Refer to Appendix M2-C (Paleontology study; D Wilken, 2025)

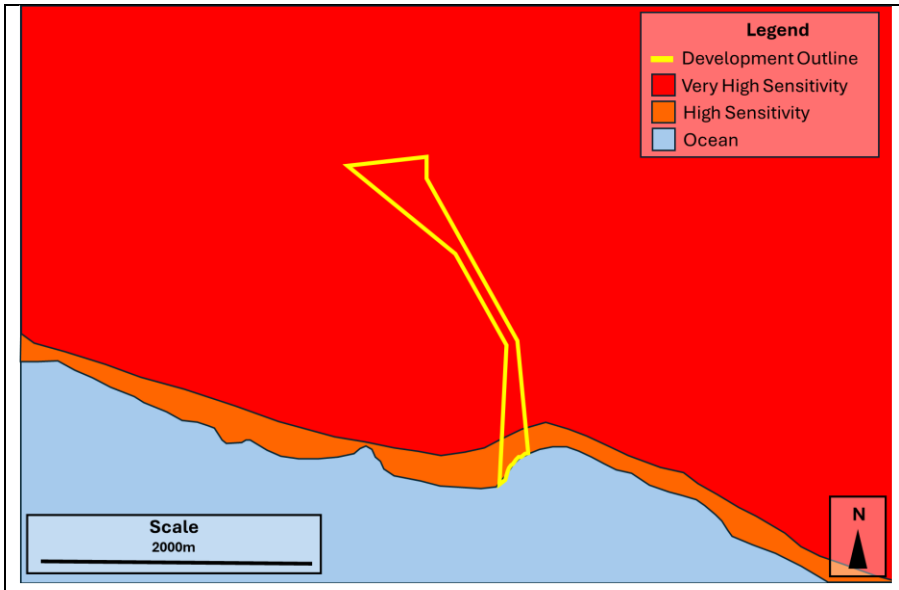

Figure 3: Palaeo-sensitivity Map. Indicating a range of fossil sensitivity underlying the study area; The Nanaga Formation and overlaying aeolian sediment in red (very high sensitivity), Peninsula Formation marked in orange (high sensitivity)

Impact Rating

Impact Status	Negligible Impact		Negative / Negligible Impact		Positive / Negligible Impact	
Impact Criteria	No go alternative		Without mitigation		With mitigation (chance find procedure and find occurs)	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	Very short	1	Very short	1
Frequency	rare	1	rare	1	rare	1
Intensity	Low	1	Low	1	Low	1
Severity	Negligible / Low negative	3	Negligible / Low negative	3	Negligible / Low positive	3
Consequence	Negligible	4	Negligible	4	Negligible	4
Probability	Slim	1	Slim	1	Slim	1
Impact Significance	**Negligible**	**5**	**Low/** Negligible	**5**	**Low /** Negligible	**5**
Mitigation	Possible					
Confidence	High					

Mitigation Measures	**Planning Team** • Notice sent to Eastern Cape Provincial Heritage Resources Authority (Completed) • Carry out required assessments (completed) **Construction and maintenance during operations** • Should important new fossil remains be found the finder should alert ECPHRA (i.e. The Eastern Cape Provincial Heritage Resources Authority. Contact details: Ms. Lungiswa Mzaza, 16 Commissioner Street, East London; lungiswam@ecphra.org.za, (081 434 3544) as soon as possible. • A professional palaeontologist to carry out appropriate action, as required, at the developer's expense. • Palaeontological mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy). • The palaeontologist concerned with mitigation work will need a valid fossil collection permit from ECPHRA and any material collected would have to be curated in an approved depository (e.g. museum or university collection). • All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g. data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies recently developed by SAHRA (2013). • These recommendations are summarised in tabular form in Appendix 1 of the palaeontological study - Chance Fossil Finds Procedure and is incorporated into the Environmental Management Programme (EMPr) for the proposed development (Refer to EMPr for Chance Fossil Finds Procedure (Adopted from the HWC Chance Fossils Finds Procedure: June 2016) • Include the above in Training of contractors and include any such findings to be reported to landowner in recommended Rules of conduct
Impact 2:	**Loss / disturbance of heritage**
NEMA LN Activity	Removal vegetation; activities within 100m of HWM; coastal property (tbc), tourism
HRA Section 38	Permit required for any disturbance to heritage resource as required
Nature of impact:	Direct (loss of resource / damage to resource)
Description The alterations has resulted in some clearing of natural vegetation elements, however it is unlikely that more than 300 m2 of natural vegetation was cleared. The entire activity has taken place within an area that was previously disturbed by the historical seaside dwelling. . Two eroded and exposed cuttings in front of both Dwelling 1 and Dwelling 2 yielded accumulations of marine shells associated with the rocky coastline. The marine shells identified include a variety of *Scutellastra* sp., most likely *Perna perna* (brown mussel), *Turbo sarmaticus* (alikrekel / ollycrock), *Oxystele sinensis* (pink-lipped topshell) and other marine shells, that could possibly be associated as being archaeological shell midden material. No other artefactual or organic, faunal, material was noted to occur in the cutting. The renovations and extensions to the two dwellings and the rerouted portion of access	

road have been completed and is currently part of a S24G application process. No further construction activities will be undertaken. No further recommendations or mitigation is required.

Impact Rating	Impact Status	Negligible		Negligible Impact		Negligible Impact	
	Impact Criteria	No go alternative		Without mitigation		With mitigation	
	Spatial	To complete					
	Duration						
	Frequency						
	Intensity						
	Severity						
	Consequence						
	Probability						
	Impact Significance						
	Mitigation	Not required					
	Confidence	High					
Mitigation Measures	**Construction Planning Team** • Notice sent to Eastern Cape Provincial Heritage Resources Authority (Completed) • Carry out required assessments (completed)						

Alternative:	**Current dwellings and re-routed access road; no go alternative**
NEMA LN Activity	**Removal vegetation; activities within 100m of HWM; coastal property (tbc), tourism**
PNCO, NEMBA, NFA	**Permits required - species of conservation concern included in NEMBA and PNCO (flora and fauna) and NFA (trees)**
NEMBA, CARA	**AIS to be removed by landowner;**
NEMWA	**Waste management hierarchy – avoid, reduce, reuse, recycle, dispose**
Aspect	**Construction activities and equipment, disturbance footprints, AIS management, operations and maintenance, tourists, vehicles**
Impact 1:	**Loss of indigenous vegetation and disturbance to fauna**
Nature of impact:	Direct; indirect (loss of vegetation, disturbance to fauna) ; cumulative (in combination with similar activities in area)
Description	

The site falls on the inland side of the littoral active zone and within 100 meters of the high-water mark of the sea. The site is one of several coastal dwellings within a relatively undeveloped landscape. Access to the site is via an unpaved track/road from the north-east, which serves several of the dwellings in the surrounding area. In terms of the DFFE screening tool and sensitivity ratings:
Terrestrial biodiversity: very high;
Flora and fauna: Medium and high sensitivity.

The national Vegetation map, 2024, shows the site falls on a transitional zone between St Francis Dune thicket and cape seashore vegetation with vegetated palaeodunes on the inland side and directly adjacent to a small sandy beach within the broader stretch of rocky shore; both vegetation types have a *least concern* status in terms of the National Biodiversity Assessment (2022). Least concern status indicates that more than 60 % of the unit remains and the ecosystem functioning is not under imminent threat by loss of natural habitat.

In terms Eastern Cape biodiversity Conservation Plan (ECBCP), 2019 the site falls within a designated Critical Biodiversity Area (CBA)1. St Francis Dune thicket is currently conserved in several local nature reserves including, *inter alia*, the Rebelsrus Private Nature Reserve, Cape Recife Nature Reserve, Sardinia Bay Nature Reserve an, Sand River Private Nature Reserve. A number of properties in the area are also noted to currently be in process of being designated as Mosterthoek Nature Reserve and the corresponding conserved area of St Francis dune thicket / cape seashore vegetation will therefore likely increase.

There are several red listed species in the surrounding area and vegetation units that are known to have limited distributions; however, none were recorded within the footprint. No specific populations of threatened species were identified within the footprint, and the affected footprint is largely disturbed or comprised of secondary vegetation. The site does not overlap with any designated Protected Area, NPAES designated area, Important Bird Area (IBA) and/or any associated buffers. The northern portion of the farm is on the western boundary of the Thula Moya Nature Reserve and the site being assessed is located on the southern section of the farm portion. The activity is thus unlikely to have any direct or indirect impact on any protected area.

The two dwellings, and rerouted portion of access road, are situated within a footprint where natural vegetation was cleared historically in order to construct the original dwellings. The remainder of the farm portion is undeveloped and in a natural/near natural state St Francis Dune Thicket, comprising a mosaic of both thicket and fynbos elements, within some alien invasion (Rooikrantz) and this area is not directly affected. While the alterations associated with the activity has resulted in some clearing of natural vegetation elements, it is unlikely that more than 300m2 of natural vegetation was cleared. The entire activity has taken place within an area that was previously disturbed by the historical seaside dwelling. The eastern deck on the eastern dwelling is situated on the previous portion of the access road which would have been significantly disturbed with only a few secondary and remnant tufts of *Drosanthemum candens, Tetragonia decumbens, Lycium tetrandrum, Gazania rigens, Arctotheca populifolia, Carpobrotus edulis, Sporobolus virginicus, Cynodon dactylon* and *Gazania rigens*, which are common in the surrounding undisturbed areas.

The new access route has been diverted behind the dwelling and appears to be across a previously cut and fill area at the rear of the dwelling which most likely consisted of secondary thicket vegetation elements including *Pterocelastrus tricuspidatus, Tarchonanthus littoralis, Zygophyllum morgsana, Cynodon dactylon, Lycium cinereum,*

Osteospermum moniliferum & Searsia glauca, which would have regenerated in the fill area after construction of the dwelling historically. It is not likely that any original natural vegetation of significance was cleared, as the area behind the dwelling is clearly historically disturbed. The deck on the western dwelling was likely constructed over a previous disturbed area that is not likely to have had any natural vegetation other than perhaps a few weed tufts.

No endemic and range restricted fauna / flora species were recorded to be present. Several species are known from the surrounding area but were not recorded on within the affected site footprint or likely affected by the proposed activity. The site falls within the general distribution range of several endemic flora species and other flora species with a highly localised distribution, some of which are Critically Endangered, Endangered, Vulnerable or Rare. Some of these flora species are also only from a single or a few populations. No Endangered or Critically Endangered flora species were confirmed to be present.

No Endangered or Critically fauna species were found to be present nor are known to be present in close proximity to the affected area or are likely to be directly affected by the proposed activity. The site falls within the general distribution range of a single faunal SCC, however none are confirmed to be present. Since the project footprint is relatively small and is also surrounded by extensive outlying areas of natural habitat, any disturbance or displacement associated with increased activity or habitat destruction as a direct result of the activity is unlikely to pose a significant negative impact faunal species and in particular the species of special concern.
Acacia cyclops (Rooikrantz) is known to proliferate in the area and was historically introduced to stabilise the mobile dune field that is situated to the north of the site. This species has not proliferated in the area directly adjacent to the site footprint but is common in the wider surrounding area where it is present as localised dense clumps as well as scattered trees.

Intactness of vegetation for the site and footprint is Very Low. Intactness of indigenous for the broader site outside of the footprint is Moderate to High. Alien invasion for the site and footprint is Low. Invasion for the broader site outside of the footprint is Low to High (localised dense clumps and scattered trees). The entire site footprint has a low sensitivity. The unaffected area surrounding the site footprint would be designated a Moderate to High sensitivity but is not affected by the activity. No-go areas are not identified but no further mechanical clearing of natural vegetation should occur on the vegetated dune behind the dwelling or within the littoral active zone.

No direct or indirect or cumulative impacts are anticipated pertaining to terrestrial biodiversity due to the existing transformation of the site above pre-existing baseline levels. Most impact have a low reversibility (removal of vegetation is permanent); Risks to Irreplaceable Biodiversity Resources is low to very low. The Site Sensitivity Verification disputes the terrestrial biodiversity very high sensitivity, as the footprint is within an existing disturbed area (dwelling and road). The specialist thus designates a low terrestrial biodiversity sensitivity fort the affected footprint. The Site Sensitivity Verification disputes the flagged medium flora ('plant') species designations, the specialist assigning a low plant species sensitivity. The Site Sensitivity Verification disputes the flagged medium fauna ('animal') species designations, the specialist assigning a low animal species sensitivity. (Pote, 2025; Appendix M3-B).

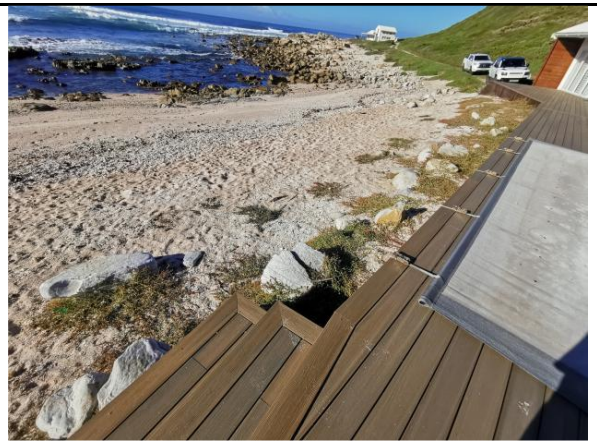

Figure 4: Front deck on edge of historically disturbed access road footprint

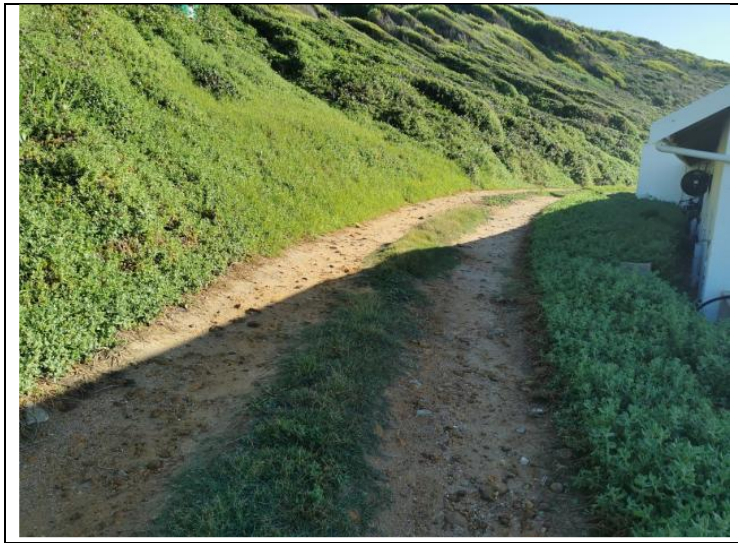

Figure 5: Rear access road within historically disturbed cut and fill area (left); Typically, weedy secondary thicket vegetation (right)

Figure 6: Front deck on edge of historically disturbed western dwelling (left prior to expansion showing lawned area; right – post renovation)

Impact Rating

Impact Status	Negligible		Negative Impact		Negative Impact	
Impact Criteria	No go alternative		without mitigation (occurred)		With mitigation (future maintenance)	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Long term	5	Long term	5	Long term	5
Frequency	rare	1	rare	1	rare	1
Intensity	Low	1	Low	1	Low	1
Severity	Low	7	Low	7	Low	7
Consequence	Low	8	Low	8	Low	8
Probability	Slight	2	Slight	2	Slim	1
Impact Significance	**Low**	**10**	**Low**	**10**	**Low**	**9**
Mitigation	Not possible for construction; impacts have taken place; possible for maintenance					
Confidence	High					

Mitigation Measures

Construction and maintenance as required

- No further mechanical clearing of natural vegetation should occur on the vegetated dune behind the dwelling or within the littoral active zone.
- Search and rescue to be carried out prior to maintenance activities required, should vegetation require clearing, and relevant permits applied for; transplant on site where feasible.

<table>
<tr><td></td><td>

Check weather reports for rainfall / wind predictions and carry out maintenance accordingly. Work should be undertaken by hand using hand tools only - spades, pickaxes etc.
Rehabilitate disturbance footprint with suitable local indigenous vegetation (e.g. Carpobrotus edulis, Osteospermum moniliferum) as required

Operations and maintenance as required

No animals are to be harmed or killed during lifetime of establishment. If any animals are seen on site, take record (photo/ video with location) where possible and keep on record; if animal is harmed or compromised in any way, provide reason. For any assistance with snake removals/relocations, identifications or bite treatment contact the Mark Marshall / African Snakebite Institute. Training of contractors; Place Rules of conduct in dwellings to state such.
No removal of indigenous vegetation. Training of contractors; Place Rules of conduct in dwellings to state such.
Keep intact indigenous vegetation in place around dwellings; any required planting to remain within erf boundary and to be of similar plants in the area (eg Carpobrotus edulis, Osteospermum moniliferum)
Removal of AIS on ongoing basis required– follow required recommendations regarding removal of rooikrans (i.e. Hand pull / Foliar spray /Spot spray / Cut stump / Frill, as required) https://www.dws.gov.za/wfw/control/#:~:text=Where%20trees%20cannot%20be%20utilised,as%20stipulated%20on%20the%20label.
Speed travelled by must be kept to a minimum and speed limits enforced

</td></tr>
<tr><td>Impact 2:</td><td>Soil disturbance</td></tr>
<tr><td>Nature of impact:</td><td>Direct (soil erosion, soil loss, damage to soil structure)</td></tr>
<tr><td>Description of impact</td><td>Mismanagement of soil leads to damage of soil structure and loss of soil; unnecessary removal of intact vegetation in the area can lead to erosion. Mismanagement of stormwater can result in soil erosion if not correctly managed.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negligible</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">Baseline / no go -</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Spatial</td><td>Activity</td><td>1</td><td>Site</td><td>2</td><td>Activity</td><td>1</td></tr>
<tr><td>Duration</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td></tr>
<tr><td>Frequency</td><td>rare</td><td>1</td><td>Regular</td><td>4</td><td>Seldom</td><td>3</td></tr>
<tr><td>Intensity</td><td>Low</td><td>1</td><td>Low – medium</td><td>2</td><td>Low</td><td>1</td></tr>
<tr><td>Severity</td><td>Negligible</td><td>3</td><td>Medium</td><td>7</td><td>Negligible</td><td>6</td></tr>
<tr><td>Consequence</td><td>Negligible</td><td>4</td><td>Medium</td><td>9</td><td>Negligible</td><td>7</td></tr>
<tr><td>Probability</td><td>Slim</td><td>1</td><td>Plausible</td><td>3</td><td>Plausible</td><td>3</td></tr>
<tr><td>Impact Significance</td><td>Negligible</td><td>5</td><td>Medium</td><td>12</td><td>Low</td><td>10</td></tr>
</table>
</td></tr>
</table>

	Mitigation	Possible
	Confidence	High

Mitigation Measures

- Operations and maintenance as required
- Topsoil should be cleared in a phased manner as per sequence of construction activities. Topsoil removed (including lawn and vegetation) must be suitably stockpiled in an area that will not be disturbed by maintenance activities for use in rehabilitation once completed. Practice 'first out, last in' for soil excavated in trenches.
- Subsoils should not be mixed with topsoil. Subsoil stockpiles must be stockpiled within boundary of the site; subsoil
- All stockpiles should be placed on flat areas and covered / wet suitably to prevent soil loss / dust generation.
- Be in close contact with South African weather Services at all times to receive early warning details of floods, storm surges, ocean conditions, high winds, droughts, potential fires etc. in the area and plan accordingly; During strong wind conditions it may be necessary to halt operations until conditions improve
- Training of contractors; Place Rules of conduct in dwellings on the following
- Designated access roads to be used at all times; no beach driving permitted without required permit; .
- Do not create footpaths; this will lead to unnecessary vegetation trampling and can lead to accelerated erosion
- Stormwater management measures, as required for the dwellings, is to be in place; ensure no erosion from stormwater outflows and mitigate as required; ensure measures implemented are confined to boundaries of the erf and do not encroach into public coastal area
- Put in place waste management mitigation measures

Impact 3: *General Waste pollution*

Nature of impact: Direct and indirect and cumulative (Sensitive coastal area, disturbance to flora and fauna; health impacts, visual impacts)

Description of impact

Waste generated needs to be carefully managed to ensure impacts on the environment are reduced.
It is unclear what precautions were taken during construction however various site visits carried out found no evidence of construction rubble on site or litter in the general area.
Typical general waste streams generated for maintenance related and operational activity
General waste: Subsoils not reused; Construction rubble; General waste items (paper, tins, plastic, metals, organic, cleared AIS);
Hazardous materials / waste: Fuels, oils, oil-based paints, turpentine and related spillages etc, sewage waste from ablution facilities

Impact Rating

Impact Status	Negative Impact		Negative Impact		Negative Impact	
Impact Criteria	No go / baseline		Without mitigation (construction no mitigation)		With mitigation (operations)	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	short	2	Very short	1
Frequency	Infrequent	2	Seldom	3	Infrequent	2

Intensity	Low	1	Low	1	Low	1
Severity	Low	4	Medium	6	Low	4
Consequence	Low	5	Medium	7	Low	5
Probability	Plausible	3	Expected	5	Slight	2
Impact Significance	Low	8	Medium	12	Low	**7**
Mitigation	Possible					
Confidence	High					

Impact 4:	***Hazardous Waste pollution***
Nature of impact:	Direct and indirect and cumulative (Sensitive coastal area, disturbance to flora and fauna; health impacts, visual impacts)
Description of impact	Hazardous materials and any hazardous waste generated during operations needs to be carefully managed to ensure impacts on the environment are minimised. It is unclear what precautions were taken during construction to manage hazardous substances; careful storage and management is required for operations. Typical hazardous materials / waste streams used / generated during maintenance related and operational activity Hazardous materials / waste: Fuels, oils, oil-based paints, turpentine and related spillages etc, sewage waste from ablution facilities

Impact Rating

Impact Status	Negligible		Negative Impact		Negative Impact	
Impact Criteria	No go / baseline		Without mitigation (construction no mitigation)		With mitigation (operations)	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	Very short	1	Very short	1
Frequency	Infrequent	2	Seldom	3	Infrequent	2
Intensity	Low	1	Low	1	Low	1
Severity	Low	4	Low	5	Low	4
Consequence	Low	5	Low	6	Low	5
Probability	Plausible	3	Plausible	3	Slight	2
Impact Significance	Low	8	Low	9	Low	7
Mitigation	Possible					
Confidence	High					

Mitigation Measures

Operations and maintenance as required

- Identify all general waste streams
- Waste management must follow waste hierarchy – avoid, reduce, reuse, recycle, dispose. Where possible wastes on-site must be reused or recycled.

<table>
<tr><td></td><td>

Provide suitable waste receptacles, ablution / toilet facilities and management, hazardous material storage, hazardous waste tool (drip trays, mixing trays, spill response kit), skip, waste removal and disposal, as required
Identify closest registered waste site
Maintain records of disposal / ablution / toilet services (ie, conservancy tank records; Service agreements etc)
Under no circumstances may solid waste be burnt or buried on site / surrounding area;
Keep area clear of all waste and ensure no littering (include in training / information to guests)
Machinery using fuels and oil (i.e. generators, compactors) to be equipped with drip trays as required
Do not leave machinery / vehicles running unnecessarily. Service machines and vehicles regularly to prevent unnecessary fumes and leaks.
Any construction / maintenance vehicles are not to be overly full so the likelihood of spillage of debris is prevented. Any loose materials transported to / from site must be covered. Surrounding area and roads should be monitored for debris and materials associated with the proposed development and cleaned up a soon as such becomes apparent.
During maintenance activities strict precautions should be taken to prevent any contamination of the environment from harmful chemicals such as dry cement, paint products, hydrocarbons, etc. Cover stockpiles of building materials like cement, sand and other powders.
Ensure cleaning materials, volatile materials and other hazardous materials (e.g. chemicals) are securely stored within a suitable sealable non-corrosive container. Ensure lids are secure to avoid unnecessary release into the environment. Store on a bunded area covered with roof and secure with lock and key.
Any spills must receive the necessary clean-up action. Appropriate arrangements to be made for appropriate collection and disposal of all cleaning materials, absorbents, and any contaminated soils.
All septic and/or conservancy tanks for domestic effluent treatment should be well-maintained and emptied on a regular basis (as required) to prevent contamination of the beach and adjacent sea, with resultant negative impacts on marine biota.
In the event of a major spill or leak of contaminants, the relevant administering authority must be immediately notified as per the notification of emergencies/incidents.
Keep record of complaints and take corrective action immediately as required and keep record of response.

</td></tr>
<tr><td>Impact 5:</td><td>Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment</td></tr>
<tr><td>Nature of impact:</td><td>Direct (fire) and indirect (visual, smoke, smog)</td></tr>
<tr><td>Description of impact</td><td>Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment. The dwelling and immediate surrounding area is comprised of thicket vegetation and low AIS infestation; the wider area has low to moderate AIS invasion in some areas. Due to location on the coastline and thicket vegetation; the site is considered to be in a low-risk area.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td>Negative</td><td>Negative Impact</td><td>Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td>No go / baseline</td><td>Without mitigation</td><td>With mitigation</td></tr>
</table>
</td></tr>
</table>

Spatial	Site	2	Site	2	Site	2
Duration	Very short	1	Very short	1	Very short	1
Frequency	Rare	1	Rare	1	Rare	1
Intensity	Medium	3	Medium	3	Medium	3
Severity	Low	5	Low	5	Low	5
Consequence	Medium	7	Medium	7	Medium	7
Probability	Plausible	3	Plausible	3	Slight	2
Impact Significance	Low	10	Low	10	Low	10
Mitigation	Possible					
Confidence	High.					

Mitigation Measures

Operations and maintenance as required

- No cigarette butts or burning substances are permitted to be released into the environment. All cigarette butts to be extinguished first and then disposed of in a waste receptacle provided.
- Fires in designated areas only; no open fires
- Fire response measures to be in place as required
- If a fire is detected it must be attended to immediately.
- Ensure emergency numbers are on hand for fire response in the area.
- Be in close contact with South African weather Services at all times to receive early warning details of floods, storm surges, ocean conditions, high winds, droughts, potential fires etc. in the area and plan accordingly

Impact 6: *Social - Noise impacts*

Nature of impact: Noise impacts disturbing residents and associated activities in the settlement

Description of impact Sources of noise during construction phase include construction personnel, vehicles and machinery used for clearing of vegetation, levelling, and excavation. Any noise generated is likely to be experienced by those close to the construction activity. Construction has been completed; noise levels associated with operations is considered short lived and negligible with mitigation measures in place.

Impact Rating

Impact Status	Negative		Negative Impact		Negative / Negligible Impact	
Impact Criteria	No go / baseline		Without mitigation		With mitigation	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	Short	2	Very short	1
Frequency	Seldom	3	Often	5	Seldom	3
Intensity	Low	1	Low	1	Low	1
Severity	Low	5	Medium	8	Low	5
Consequence	Low	6	Medium	9	Low	6

Probability	Slight	2	Plausible	3	Slight	2
Impact Significance	Low	8	Medium	12	Low	8
Mitigation	Possible					
Confidence	High.					

Impact 7:	***Social - Visual impacts / sense of place***
Nature of impact:	Visual impacts from construction activities in close proximity to residents. Sense of place impacts experienced in short term after renovations due to change in landscape of area.
Description of impact	Sources of visual impacts during construction phase include poor housekeeping and poor waste management. Construction was completed within 6 months. Receptors during this time include other people making use of the area. The site is not immediately adjacent to dwellings in the area. The dwellings were renovated and expanded on the previous footprints and no new development footprints in the area were created. The visual landscape of the areas now includes two dwellings have been expanded and renovated and modernised and this is expected to have a low negative impact on frequent user of the landscape. Light at night is recommended to be minimised to reduce cumulative light pollution in the area.

Impact Status	Negative		Negative Impact		Negative / Negligible Impact	
Impact Criteria	No go / baseline		Without mitigation		With mitigation	
Spatial	Activity	1	Activity	1	Activity	1
Duration	Very short	1	Very short	1	Very short	1
Frequency	Infrequent	2	Seldom	3	Infrequent	2
Intensity	Low	1	Low	1	Low	1
Severity	Low	4	Low	5	Low	4
Consequence	Low	5	Low	6	Low	5
Probability	Plausible	3	Expected	5	Plausible	3
Impact Significance	Low	8	Medium	11	Low	8
Mitigation	Possible					
Confidence	High.					

Mitigation Measures

Operations and maintenance as required

- No maintenance work to take place after hours, weekends, public holidays; Working hours to be restricted to daytime hours (i.e. 8am – 5pm)
- A complaints register should be kept to document complaints and the corrective action taken.
- No transport of construction machinery / materials to or from the site to take place on public holidays or weekends.
- Best practice energy saving measures are to be incorporated, with a view to keep night lighting to a minimal to reduce visual lighting impacts on the area.
- Training to contractors (as required) to include no loud music or unnecessary noise on site
- Information to guests to include no noise / loud music before 8am and after 10pm or unnecessary noise on site

<table>
<tr><td></td><td>• Put in place all recommended mitigation measures</td></tr>
<tr><td>Impact 8:</td><td>Social - Income generation</td></tr>
<tr><td>Nature of impact:</td><td>Direct (employment, sourcing of materials and associated services) and indirect (skills development and transfer of skills)</td></tr>
<tr><td>Description of impact</td><td>Construction phase would have resulted in temporary employment direct employment; 10 employment opportunities are estimated to have been created during the planning and construction phase. Income generation would have been created through the sourcing of services and materials required. Operational phase will offer passive income to the landowner and a private holiday residence, similar to baseline.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Positive</td><td colspan="2">Positive Impact</td><td colspan="2">Positive Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go / baseline</td><td colspan="2">Without mitigation (construction)</td><td colspan="2">With mitigation (operations)</td></tr>
<tr><td>Spatial</td><td>Activity</td><td>1</td><td>Activity</td><td>1</td><td>Activity</td><td>1</td></tr>
<tr><td>Duration</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td></tr>
<tr><td>Frequency</td><td>Seldom</td><td>3</td><td>Seldom</td><td>3</td><td>Seldom</td><td>3</td></tr>
<tr><td>Intensity</td><td>Low</td><td>1</td><td>Low</td><td>1</td><td>Low</td><td>1</td></tr>
<tr><td>Severity</td><td>Low</td><td>5</td><td>Low</td><td>5</td><td>Low</td><td>5</td></tr>
<tr><td>Consequence</td><td>Low</td><td>6</td><td>Low</td><td>6</td><td>Low</td><td>6</td></tr>
<tr><td>Probability</td><td>Expected</td><td>5</td><td>Expected</td><td>5</td><td>Expected</td><td>5</td></tr>
<tr><td>Impact Significance</td><td>Medium</td><td>11</td><td>Medium</td><td>11</td><td>Medium</td><td>11</td></tr>
<tr><td>Mitigation</td><td colspan="6">Possible</td></tr>
<tr><td>Confidence</td><td colspan="6">High.</td></tr>
</table>
</td></tr>
<tr><td>Mitigation Measures</td><td>Construction and maintenance as required (include in training to contractors and subcontractors)
• Use local reputable contractor
• Use local materials, where possible.
• Make use of local services where required and possible
• Do not pay any cash wages on site to minimise criminal risk to employees</td></tr>
<tr><td>Impact 9:</td><td>Freshwater for domestic consumption</td></tr>
<tr><td>Nature of impact:</td><td>Direct / Indirect / cumulative as applicable</td></tr>
<tr><td>Description of impact</td><td>Freshwater for domestic consumption is obtained from a borehole located on an adjacent property over 100m from the high-water mark. No water resources have been disturbed by this coastal development; no change in water supply has resulted due to renovation.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No-go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Spatial</td><td>Activity</td><td>1</td><td>Activity</td><td>1</td><td>Activity</td><td>1</td></tr>
<tr><td>Duration</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td><td>Very short</td><td>1</td></tr>
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	Frequency	Daily	5	Daily	5	Daily	5
	Intensity	Low	1	Low	1	Low	1
	Severity	Medium	7	Medium	7	Medium	7
	Consequence	Low	8	Low	8	Low	8
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low	9	Low	9	Low	9
	Mitigation	Possible					
	Confidence	High					
Mitigation Measures	• Ensure no wastage of water (no leaking taps, pipes etc) and responsible use						
Impact 10:	**Electricity USE**						
Nature of impact:	Direct / Indirect / cumulative as applicable						
Description of impact	Energy use includes a combination of gas and solar power. Best practice energy saving measures are to be incorporated into operations. The impact on non-renewable energy resources is considered low / negligible for the development and operations.						
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	No-go / baseline		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	Regular	4	Regular	4	Regular	4
	Intensity	Low	1	Low	1	Low	1
	Severity	Low	6	Low	6	Low	6
	Consequence	Low	7	Low	7	Low	7
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low	8	Low	8	Low	8
	Mitigation	Possible					
	Confidence	High					

Mitigation Measures	• The following measures are recommended to be incorporated into the design to reduce energy demands on the grid:
	  ○ Solar panels (incorporated)
	  ○ Energy efficient lighting
	  ○ Energy saving materials (windows, walls, roofs have been designed to reduce energy demands – refer to designs in Annexure J)
	• Best practice energy saving measures are to be incorporated into operations						

Section B: Impact Identification and Assessment Methodology

The purpose of impact assessment is to assign a qualified significance to impacts which are predicted to occur as a result of the various aspects of an activity.
The following definitions apply:

- Activity: A distinct process or task undertaken by an organisation for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organisation.
- Environmental aspect: An element of an organisations activities, products and services which can interact with the environment. The interaction of an aspect with the environment may result in an impact.
- Environmental impacts: The consequences of these aspects on environmental resources or receptors of particular value or sensitivity, for example, disturbance due to noise and health effects due to poorer air quality.
- Receptors: Comprise, but are not limited to, people or human-made systems, such as local residents, communities and social infrastructure, as well as components of the biophysical environment such as aquifers, flora and paleontology.

Aspects

Aspects associated with the proposed project are differentiated into construction and operation phases of the project. The nature of the impact is described. Once this has been undertaken the significance of the impact is determined.

Identifying significant environmental impacts

The significant environmental impacts are identified using three sources of information:

- The nature of the receiving environment (the environment includes the social, cultural and biophysical environment)
- A review and understanding of the aspects associated with the proposed project.
- All comments received from interested and affected parties during the public participation process. The issues raised will be described giving consideration to the associated activity and the aspect of that activity that is likely to result in an impact.

Nature of the impact

Impacts on the environment can lead to changes in existing conditions; the nature of the impact can be direct, indirect or cumulative.

- Direct impacts refer to changes in environmental components that result from direct cause-effect consequences of interactions between the environment and project activities. The direct impact is caused by the action and occurs at the same time and place.
- Indirect (Secondary) impacts result from cause-effect consequences of interactions between the environment and direct impacts. The indirect impact is caused by the action and occurs later in time or is further removed in distance.
- Cumulative impacts refer to the combined effect of changes to the environment caused by multiple human activities over space and time. Cumulative impact is the sum of existing conditions and the direct / indirect impacts resulting from the project. Example: A single cut in the forest is unlikely to have a detectable change, however increasing multiple cuts in the forest caused by a number of human activities is likely to decrease fauna and flora and increase soil erosion. Cumulative effects can thus be

additive or synergistic. A synergistic effect refers to when the combined effect is greater than the sum of individual effects.

Method for assessing the overall significance of impacts

The overall significance of the impact is critical for defining mitigation and monitoring strategies. The qualified significance of predicted impacts assists to determine the manner in which aspects should be managed in order to avoid or minimise the predicted impacts.

Overall significance of the impacts is determined through systematically rating the following criteria of the impacts:

- The status of the impact
- The spatial extent of the impact
- The severity of negativity or degree of positivity of the impact
  - The duration of the impact
  - The frequency of the impact
  - The intensity of the impact
- The consequence of the impact
- The probability of the impact occurring

Impact Status

A qualitative rating of positive or negative is assigned to impact status. Refer to Table 1 (methodology).

Spatial Extent

The spatial extent for each aspect, receptor and impact is defined. The geographical coverage (spatial extent) description will take account of the following factors:

- The physical extent / distribution of the aspect
- The physical extent / distribution of the receptor
- The proposed impact as a result of the aspect
- The nature of the baseline environment within the area of impact

For example, the impacts of noise are likely to be confined to a smaller geographical area than the impacts of atmospheric emissions, which may be experienced at some distance. The significance of impacts also varies spatially; noise may be significant in the immediate vicinity. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating. Refer to Table 1 (methodology).

Duration

The duration refers to the length of time that an aspect of a proposed project may cause change on the receiving environment. The receiving environment could refer to either the social or cultural or biophysical environment. The change caused may be a positive or negative change. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Frequency

The frequency of the impact occurring refers to how often the aspect results in a given impact on the receiving environment. The receiving environment could refer to either the social or cultural or biophysical environment. The impact may be positive or negative. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Intensity

The intensity refers to the magnitude of the impact experienced by the receiving environment. The environment could refer to either the social or cultural or biophysical environment. The impact experienced may be a positive or negative impact. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Severity / Degree

The severity is the sum of the intensity, duration and frequency of the impact and therefore a quantitative value ranging from 3 – 18 is assigned to the rating. If the impact is positive, the degree of positivity is determined. A qualitative description is assigned to the rating.

Consequence

A qualitative description is assigned to the rating. The consequence is the sum of the Severity (Intensity + Duration + Frequency) and Spatial Extent. Therefore, a quantitative value ranging from 4 – 24 is assigned to the rating.

Probability

In order to determine the significance of the impact, the probability of the impact occurring must first be rated. The probability refers to the likelihood that an impact will result from the aspect in question. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Overall Significance

A definition of a "significant impact" for the purposes of the study is: "An impact which, either in isolation or in combination with others, could, in the opinion of the specialist, have a material influence on the decision-making process, including the specification of mitigating measures."

A qualitative description is assigned to the rating. The significance is the sum of the Consequence and Probability. Therefore a quantitative value ranging from 5 - 30 is assigned to the rating. A value of 5, 6 or 7 represents a low significance and described as "not harmful". A value of 30 presents a Very High Significance and is described as an "environmental disaster".

Mitigation

The Mitigation ratings are described qualitatively according to the success and feasibility of the mitigation option in question. The impacts are further rated before and after mitigation / management options. Negative impacts are assessed with mitigation measures in place in order to give an overall significance rating with mitigation in place. Positive impacts are assessed with management measures in place in order to give an overall significance rating with management in place.

Confidence

The confidence of the EAP is assigned a qualitative value.

Table 1: Impact Assessment Rating methodology

Impact Status		
Rating	**Negative**	**Positive**
Description	An impact is rated negative if any degree of negative change will occur in the receiving environment as a result of any aspect of the proposed project. The environment refers to the social environment or the cultural environment or the biophysical environment.	An impact is rated positive if any degree of positive change will occur in the receiving environment as a result of any aspect of the proposed project. The environment refers to the social environment or the cultural environment or the biophysical environment. Positive impacts are to be enhanced.

	Negative impacts are to be avoided, minimised, or mitigated.					
Scale (Spatial Extent) Refers to the spatial area the aspect will impact on the environment. The impact may be positive or negative.						
Rating	**Activity specific**	**Site specific**	**Local area Specific**	**Municipal**	**Provincial / National**	**International**
Description	Impact only experienced on area where activity is located	Impact extends to the entire site of the project	Impact extends beyond site into surrounding areas	Impact extends beyond local area into municipal areas	Impact extends beyond municipal area into provincial and may extend nationally	Impact extends beyond national area
Value	1	2	3	4	5	6
Duration Refers to the length of time that the aspect may cause a change on the environment. The change may be positive or negative.						
Rating	**Very Short term**	**Short term**	**Short - Medium term**	**Medium term**	**Medium - Long term**	**Long term**
Description	1 day to 3 month	3 months to one year	One year to three years	Three years to ten years	Life of operation	Extends beyond post closure
Value	1	2	3	4	5	6
Frequency Refers to how often the aspect may impact on the environment. The impact may be positive or negative.						
Rating	**Rarely**	**Infrequent**	**Seldom**	**Regular**	**Often**	**Continuously**
Description	Could occur annually	Could occur within 6 months	Monthly	Weekly	Daily	Non stop
Value	1	2	3	4	5	6
Intensity (Magnitude / Size) Refers to the intensity of the impact experienced by the receiving environment. The impact may be positive or negative.						
Rating	**Low**	**Low to medium**	**Medium**	**Medium to High**	**High**	**Very High**
Description	Low intensity experienced only by receiving environment and / or occurs within 100 metres of activity	Low – medium intensity on receiving environment and / or occurs 100 – 500 metres of activity	Medium intensity on receiving environment and / or occurs 500 – 1000 metres of activity	Medium to high intensity on receiving environment and / or occurs within 1000 – 5000 metres of activity	High intensity on receiving environment and / or occurs within 5000 – 10 000 metres of activity	Very high intensity on receiving environment and / or within 10 000 metres or beyond of the activity
Value	1	2	3	4	5	6
Severity of negative impact Severity (Intensity + Duration + Frequency) The severity of an environmental aspect is determined by the degree of change to the baseline environment, and considers the following: The reversibility of the negative impact, The sensitivity of the receptor to the stressor, The impact duration, its permanency and whether it increases or decreases with time.						
Rating	**Negligible**	**Low Negative**	**Medium Negative**	**Medium - High Negative**	**High Negative**	**Very High Negative**
Description	There will be negligible impact as a result of the aspect	There will be a minor impact as a result of the aspect. This is easily reversible.	The aspect will result in a moderate impact. Reversibility of the impact	The aspect will result in a high impact. Reversibility of the impact possible but costly.	The aspect will result in a high impact. Reversibility of the impact difficult and costly.	The aspect will result in a severe impact. Reversibility of the impact not likely.

			easy but costly.			
Value	3	4-6	7-9	10-12	13-15	16-18
Degree of positive impact Degree (Intensity + Duration + Frequency) The severity of an environmental aspect is determined by the degree of change to the baseline environment, and considers the following: The enhancement of the positive impact, The sensitivity of the receptor to the opportunity, The impact duration, its permanency and whether it increases or decreases with time.						
Rating	**Negligible**	**Low Positive**	**Medium Positive**	**Medium High Positive**	**High Positive**	**Very High Positive**
Description	There will be negligible impact as a result of the aspect	There will be a minor impact as a result of the aspect.	The aspect will result in a moderate impact.	The aspect will result in a high impact.	The aspect will result in a high impact.	The aspect will result in a very high positive impact.
Value	3	4-6	7-9	10-12	13-15	16-18
Negative Consequence Consequence = (Severity + Spatial extent)						
Rating	**Negligible**	**Negative low**	**Negative Medium**	**Negative Medium High**	**Negative High**	**Negative Very High**
Description	Impact has insignificant consequence on receiving environment. Requires little or no mitigation.	Impact requires in situ mitigation and receptor mitigation.	Impact requires in situ mitigation and receptor mitigation	Impact requires in situ mitigation, receptor mitigation and repair or restoration.	Impact requires in situ mitigation, receptor mitigation and repair or restoration and possible compensation.	Impact is to be avoided
Value	4	5-8	9-12	13-16	17-20	20-24
Positive Consequence Consequence = (Degree + Spatial extent)						
Rating	**Negligible**	**Positive low**	**Positive Medium**	**Positive Medium High**	**Positive High**	**Positive Very High**
Description	Impact has insignificant consequence on receiving environment.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to maintain positive outcomes.	Widespread / substantial beneficial effect. No alternative ways to achieve same benefits. Management required to maintain positive outcomes.
Value	4	5-8	9-12	13-16	17-20	20-24
Probability Refers to the likelihood that an impact will result from the aspect in question. The impact may be positive or negative.						
Rating	**Slim**	**Slight**	**Plausible**	**Probable**	**Expected**	**Anticipated**
Description	0 - 9% likelihood	10 – 25 % likelihood	26 - 50% likelihood	51 - 75% likelihood	76 - 90% likelihood	91 - 100 % likelihood
Value	1	2	3	4	5	6
Negative Significance (Consequence + Probability)						
Rating	**Negligible**	**Low**	**Medium**	**Medium High**	**High**	**Very High**

Description	Not harmful	Slightly harmful	Harmful	Very Harmful	Considerably Harmful	Disaster
Value	5	6-10	11-15	16-20	21-25	26-30
Positive Significance (Consequence + Probability)						
Rating	**Negligible**	**Low**	**Medium**	**Medium High**	**High**	**Very High**
Description	Insignificant	Slightly positive	Positive	Positive but not substantial.	Substantial positive impact.	Necessity
Value	5	6-10	11-15	16-20	21-25	26-30
Mitigation of negative impact						
Rating	**None**	**Likely**	**Possible**	**Difficult**	**Unlikely**	**Not possible**
Description	Mitigation not required. Impact remains the same.	Impact can be avoided with mitigation which has proven results.	Impact can be minimised and managed with mitigation	Difficult or costly to mitigate.	Difficult and costly to mitigate	Impact cannot be mitigated
Management of positive impact						
Rating	**None**	**Likely**	**Possible**	**Difficult**	**Unlikely**	**Not possible**
Description	Management not required. Impact remains the same.	Impact can be easily enhanced with management which has proven results.	Impact can be enhanced with management	Difficult or costly to enhance but possible	Difficult and costly to enhance	Impact cannot be enhanced
Confidence Refers to the confidence level the EAP has in predicting the impact.						
Rating	**Low**	**Medium low**	**Medium**	**Medium High**	**High**	**Very High**