+

Western Cape Government
Environmental Affairs and Development Planning

FORM NO. BAR10/2019

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

NOVEMBER 2019

(For official use only)	
Post-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

PROPOSED UPGRADE OF OAKHURST BRIDGE AND ASSOCIATED INFRASTRUCTURE, AND PROPOSED CHANGES TO THE ORIGINALLY APPROVED DEVELOPMENT LAYOUT OF THE OAKHURST LIFESTYLE ESTATE AS WELL AS THE ADDITION OF RE OF 8343 AND A PORTION OF ERF 2958, HOUTBAY, WESTERN CAPE.. THE TOTAL AMENDED FOOTPRINT IS APPROXIMATELY 7.72HA

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.

4. All applicable sections of this BAR must be completed.

5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za/eadp to check for the latest version of this BAR.

7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.

9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.

10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.

13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link https://screening.environment.gov.za/screeningtool to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: REGION 1 and REGION 2 **(Region 1: City of Cape Town, West Coast District) (Region 2: Cape Winelands District & Overberg District)**	**GEORGE OFFICE: REGION 3** **(Central Karoo District & Garden Route District)**
BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372	BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a

	linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): o Watercourses / Rivers / Wetlands o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable); o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): o Ridges; o Cultural and historical features/landscapes; o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**.

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape

NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ **(**tick) or a **x** (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			**✓ (Tick) or x (cross)**
Appendix A:	**Maps**		
	Appendix A1:	**Locality Map**	✓
	Appendix A2:	**Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning**	N/A
	Appendix A3:	**Map with the GPS co-ordinates for linear activities**	N/A
Appendix B:	**Appendix B1:**	**Site development plan(s)**	✓
	Appendix B2	**A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;**	✓
Appendix C:	**Photographs (*included throughout reports)***		-
Appendix D:	**Biodiversity overlay map**		✓
Appendix E:	**Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.**		
	Appendix E1:	**Final comment/ROD from HWC**	✓
	Appendix E2:	**Copy of comment from Cape Nature**	**X**
	Appendix E3:	**Final Comment from the DWS**	**X**
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	**X**
	Appendix E5:	**Comment from the DAFF**	**X**
	Appendix E6:	**Comment from WCG: Transport and Public Works**	**X**
	Appendix E7:	**Comment from WCG: DoA**	**X**

	Appendix E8:	**Comment from WCG: DHS**	**X**
	Appendix E9:	**Comment from WCG: DoH**	**X**
	Appendix E10:	**Comment from DEA&DP: Pollution Management**	**X**
	Appendix E11:	**Comment from DEA&DP: Waste Management**	**X**
	Appendix E12:	**Comment from DEA&DP: Biodiversity**	**X**
	Appendix E13:	**Comment from DEA&DP: Air Quality**	**X**
	Appendix E14:	**Comment from DEA&DP: Coastal Management**	**X**
	Appendix E15:	**Comment from the local authority**	**X**
	Appendix E16:	**Confirmation of all services (water, electricity, sewage, solid waste management)**	**X**
	Appendix E17:	**Comment from the District Municipality**	**X**
	Appendix E18:	**Copy of an exemption notice**	**X**
	Appendix E19	**Pre-approval for the reclamation of land**	**X**
	Appendix E20:	**Proof of agreement/TOR of the specialist studies conducted.**	**X**
	Appendix E21:	**Proof of land use rights**	✓
	Appendix E22:	**Proof of public participation agreement for linear activities**	**X**
Appendix F:	**Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required. [*public participation for the Pre-Application Phase will be included in the Post-Application DBAR Phase]***		✓
Appendix G:	**Specialist Report(s)**		✓
	Appendix G1.1	**Botanical Compliance Statement**	✓
	Appendix G1.2	**Botanical Impact Assessment: 2008 (Dr. David McDonald) and Specialist Input on Botanical Aspects: 2010**	✓
	Appendix G2.1	**Freshwater Assessment Report**	✓

	Appendix G2.2	**Aquatic Confirmation Buffer**	✓
	Appendix G2.3	**Initial Freshwater Assessment: 2008 (Dr Gale)**	✓
	Appendix G2.4	**Review of Initial Freshwater Assessment: 2010 (Ms Toni Belcher), Updated Freshwater Assessment Opinion: 2014 (Ms Toni Belcher), and Freshwater Specialist Clarification of River Buffer Width and Treatment of Sewer Line within Buffer: 2015 (Ms Toni Belcher)**	✓
	Appendix G2.5	**Botanical Statement of Bulk Sewer Services**	✓
	Appendix G2.6	**Maintenance Management Plan (Ms Toni Belcher)**	✓
	Appendix G3.1	***Herpetofauna Impact Assessment: 2022 (The Biodiversity Company)***	✓
	Appendix G3.2	**Western Leopard Toad Impact Assessment: 2009 (The Nature Conservation Corporation – NCC), Additional Input on Western Leopard Toad: 2011 (NCC), Western Leopard Toad Habitat Assessment: 2014 (NCC).**	✓
	Appendix G4.1	**Updated Visual Impact Assessment: 2022 (Ms Megan Anderson)**	✓
	Appendix G4.2	**Initial Visual Impact Assessment: 2011, and Visual Specialist Opinion on Preferred Layout: 2014 (Ms Megan Anderson)**	✓
	Appendix G5.1	**Notice of Intent to Develop (NID): 2022 (Ms Louise van Riet)**	✓
	Appendix G5.2	**Response from Heritage Western Cape (HWC)**	✓
	Appendix G5.3	**Initial Heritage Impact Assessment: 2005 (Mr Henry Aikman) and Specialist Opinion on Preferred Layout: 2014 (Mr Henry Aikman)**	✓
	Appendix G6.1	**Updated Traffic Impact Assessment (TIA): 2022**	✓

	Appendix G6.2	**Initial Traffic Impact Assessment, Review of Traffic Impact Assessment: 2011 (Kantley and Templer), Traffic Impact Statement: 2012 (ITS Engineers), and Traffic Engineering Opinion and Investigation: 2014 (ITS Engineers)**	✓
	Appendix G7.1	**Updated Engineering Services Report: 2022 (Eckon Engineers)**	✓
	Appendix G7.2	**Initial Engineering Services Report: 2014 (Eckon Engineers)**	✓
	Appendix G8.1	**Updated Stormwater Management Plan: 2022 (Graeme McGill Consulting)**	✓
	Appendix G8.2	**Stormwater Management Plan: 2014 (Graeme McGill Consulting)**	✓
	Appendix G9.1	**Updated Electrical Services Report: 2022 (MAC Consulting Engineers)**	✓
	Appendix G9.2	**Initial Electrical Services Report: 2005 (MAC Consulting Engineers)**	✓
	Appendix G10	**Landscape Plan**	✓
Appendix H:	**EMPr**		✓
Appendix I:	**Appendix I1:**	**DEA Screening Tool Report**	✓
	Appendix I2:	**Site Sensitivity Verification Report (SSVR)**	✓
Appendix J:	**The impact and risk assessment for each alternative (*incorporated in DBAR*)**		N/A
Appendix K:	**Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline (*incorporated in DBAR*)**		N/A
Appendix…..	**Any other attachments must be included as subsequent appendices**		✓
Appendix L:	**Existing EA Approvals**		✓
Appendix M:	**Zoning Map**		✓
Appendix N:	**CV**		✓

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	**CAPE TOWN OFFICE:**		~~GEORGE OFFICE:~~
	REGION 1 **(City of Cape Town, West Coast District**	~~REGION 2~~ ~~(Cape Winelands District & Overberg District)~~	~~REGION 3~~ ~~(Central Karoo District & Garden Route District)~~

Duplicate this section where there is more than one Proponent Name of Applicant/Proponent:	Oakhurst Lifestyle Estate (Pty) Ltd	
Name of contact person for Applicant/Proponent (if other):	Mr. Ian Raubenheimer	
Company/ Trading name/State Department/Organ of State:	Oakhurst Lifestyle Estate	
Company Registration Number:		
Postal address:	Postnet Suite 33	
	Private Bag X31, Knysna	Postal code: 6570
Telephone:	N/A	Cell: 082 900 3636
E-mail:	ianraubenheimer@gmail.com	Fax: N/A
Company of EAP:	Sillito Environmental Consulting (Pty) Ltd	
EAP name:	Chantel Muller	
Postal address:	Suite 401, Tokai on Main, 2 Burchell Street, Tokai	
	Cape Town	Postal code: 7966
Telephone:	021 712 5060	Cell: 071 313 4193
E-mail:	chantel@environmentalconsultants.co.za	Fax: N/A
Qualifications:	BA Social Dynamics MPhil. Environmental Management 11 years' experience in the Environmental Management field	
EAPASA registration no:	2019/1362	
Duplicate this section where there is more than one landowner Name of landowner:	B. I. Scher	
Name of contact person for landowner (if other):	Peter Blanckenberg	
Postal address:	2nd Floor, Tannery park, 21 Belmont Road, Rondebosch	
	Cape Town	Postal code: 7700
Telephone:	021 689 9762	Cell:
E-mail:	peter@bbinc.co.za	Fax: 021 689 8137
Name of Person in control of the land:	M. H. Derman	
Name of contact person for person in control of the land:	Peter Blanckenberg	
Postal address:	2nd Floor, Tannery park, 21 Belmont Road, Rondebosch	
	Cape Town	Postal code: 7700
Telephone:	021 689 9762	Cell:
E-mail:	peter@bbinc.co.za	Fax: 021 689 8137
Name of Person in control of the land:	A. Doorman	
Name of contact person for person in control of the land:	Peter Blanckenberg	
	2nd Floor, Tannery park, 21 Belmont Road, Rondebosch	

Postal address:		
	Cape Town	Postal code: 7700
Telephone:	021 689 9762	Cell:
E-mail:	peter@bbinc.co.za	Fax: 021 689 8137

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall:	City of Cape Town	
Contact person:	Lungelo Mbandazayo (Municipal Manager) Regional Head Environmental & Heritage Region (South): Andy Greenwood	
Postal address:	Private Bag X9181, Cape Town (Municipal Manager)	
Telephone	Municipal Manager: 021 400 1313	Mr. Greenwood: 021 444 2604
E-mail:	Andrew.Greenwood@capetown.gov.za lungelo.mbandazayo@capetown.gov.za / City.manager@capetown.gov.za	

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INLCUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	~~New~~		**Expansion (Upgrade)**	✓
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.				
Parts of the site have been previously developed (i.e., the existing bridge).					
3.	**For Linear activities or developments**				
~~3.1.~~	~~Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:~~				
~~3.2.~~	~~Development footprint of the proposed development for all alternatives.~~				~~m²~~
~~3.3.~~	~~Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.~~				
~~3.4.~~	~~Indicate how access to the proposed routes will be obtained for all alternatives.~~				
~~3.5.~~	~~SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives~~				
~~3.6.~~	~~**Starting point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~‘~~	~~“~~	
	~~Longitude (E)~~	~~º~~	~~‘~~	~~“~~	
	~~**Middle point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~‘~~	~~“~~	
	~~Longitude (E)~~	~~º~~	~~‘~~	~~“~~	
	~~**End point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~‘~~	~~“~~	
	~~Longitude (E)~~	~~º~~	~~‘~~	~~“~~	
~~**Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.**~~					
4.	**Other developments**				
4.1.	Property size(s) of all proposed site(s):				788 438 m²

4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):	~30 m^2
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:	~ 7 720 m^2
	PROPOSED	
	APPROVED LAYOUT The development will cover +- 21ha (the remaining +-57ha being "rural" designation for conservation (a portion of which is currently being managed by SANParks, with the remainder also proposed for SANParks management once the development has been established. Approximately 5ha of the 21ha development footprint comprises of private open space including river buffers	~210 000 m^2
	PROPOSED LAYOUT The proposed amendments pertains to a section of RE of Erf 2224, RE of Erf 8343 and a portion of Erf 2958. The proposed amendment comprises a change to the development layout and the addition of RE of 8343 and a portion of Erf 2958. The total amended footprint is approximately 7.72ha.	~287 200m^2
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).	

The applicant, Oakhurst Lifestyle Estate (Pty) Ltd, proposes to establish and operate a retirement residential accommodation facility for individuals/families in the age group of 50 years and older. The proposed site is located within Ward 74 of the City of Cape Town Metropolitan, at the following GPS coordinates: 34°1'19.47"S; 18°22'42.67"E. Please refer to **Figure 1** below to view the locality of the site.

The Applicant was initially granted Environmental Authorisation in October 2015, which was appealed during the legislated appeals period. The Appeal EA was granted on 19 September 2016 (EA Ref: E12/2/4/1-A5/235-2058/10

A non-substantive amendment application was applied for in 2021 to (i) change the name of the holder from B I Scher and M H Derman to Oakhurst Lifestyle Estate (Pty) Ltd, and (ii) extend the validity of the EA. The Amended EA was granted on 21 of October 2021 (Amended EA Ref: 14/3/1/1/A6/36/0535/21

PROPOSED BRIDGE UPGRADE

Part of the establishment of the retirement residential accommodation includes the upgrade of an existing bridge on Remainder of Erf 2224, Hout Bay. The existing structure crosses the Bokkemanskloof watercourse and associated delineated wetland (**Figure 1**).

Please see the table below detailing the dimensions of the existing bridge and proposed bridge:

Table 1. Dimensions of the existing and proposed bridge structure and associated infrastructure

Structure and Associated Infrastructure Description	Length	Width	Height	Area (m^2)
Existing structure	**8.12m**	**3.65m**	**2.5m**	**~30m^2**
Proposed expansion and associated infrastructure	**10m**	**5.5m**	**3.19m**	**~55m^2**
Proposed approach roads located within the delineated wetland buffer	**121m**	**5.5m**	**N/A**	**~665m^2**

The following building quantities are proposed for the upgrade of the bridge and associate infrastructure:

1. **Bridge quantities**
   - 1.1. Excavation: ~300m^3
   - 1.2. Backfill: ~100m^3
   - 1.3. Concrete: ~85m^3

2. **Road and bulk earthworks**
   - 2.1. Topsoil strip to spoil: ~500m^3
   - 2.2. Fill: ~1 750m^3
   - 2.3. Imported layer work: ~350m^3

The proposed construction methodology for the proposed upgrade of the Oakhurst bridge will comprise the following:

- The existing bridge structure will be decommissioned.
- There is limited vegetation within the watercourse that is to be cleared due to the presence of the existing bridge structure (i.e. transformed condition of the site). Only necessary clearing and grubbing of the site for access and construction of the works will be undertaken.
- Heavy machinery (e.g. TLB) will be used to excavate the soil. This will be at the position of the abutments. Bedding material will then be compacted into this excavation, rebar, and formwork will be placed on this bedding material in preparation for the concrete base slab to be cast.
- Ready-mixed concrete will be brought to the site and used to cast the base slab to attach to these piles.
- Formwork will then be used to form the shape of the abutments and ready-mixed concrete will be poured to form these abutments.
- Wing walls downstream and upstream on either side of the Bokkemanskloof river. Compacted backfill will be placed between the walls;
- Once the abutments have been cast there will be no further major works within the watercourse.
- The contractor will then install staging for the deck and place the deck rebar.
- Ready-mixed concrete will be brought to the site again and used to cast the bridge deck.
- Wing walls will also be cast, and selected material will then be used to backfill behind the wing walls. This material will then also be used to form the shape of each approach.
- Erosion mitigation measures, including but not limited to gabion baskets, will be constructed for additional protection at the crossing point where/if required.

Finally, rehabilitation / re-vegetation of all areas affected by the upgrade and construction activities will be undertaken using intensive, indigenous grass sod planting or hydroseeding with a suitable indigenous grass seed mix, characteristic of the Peninsula Granite Fynbos vegetation type (i.e., vegetation type pertinent to the proposed site).

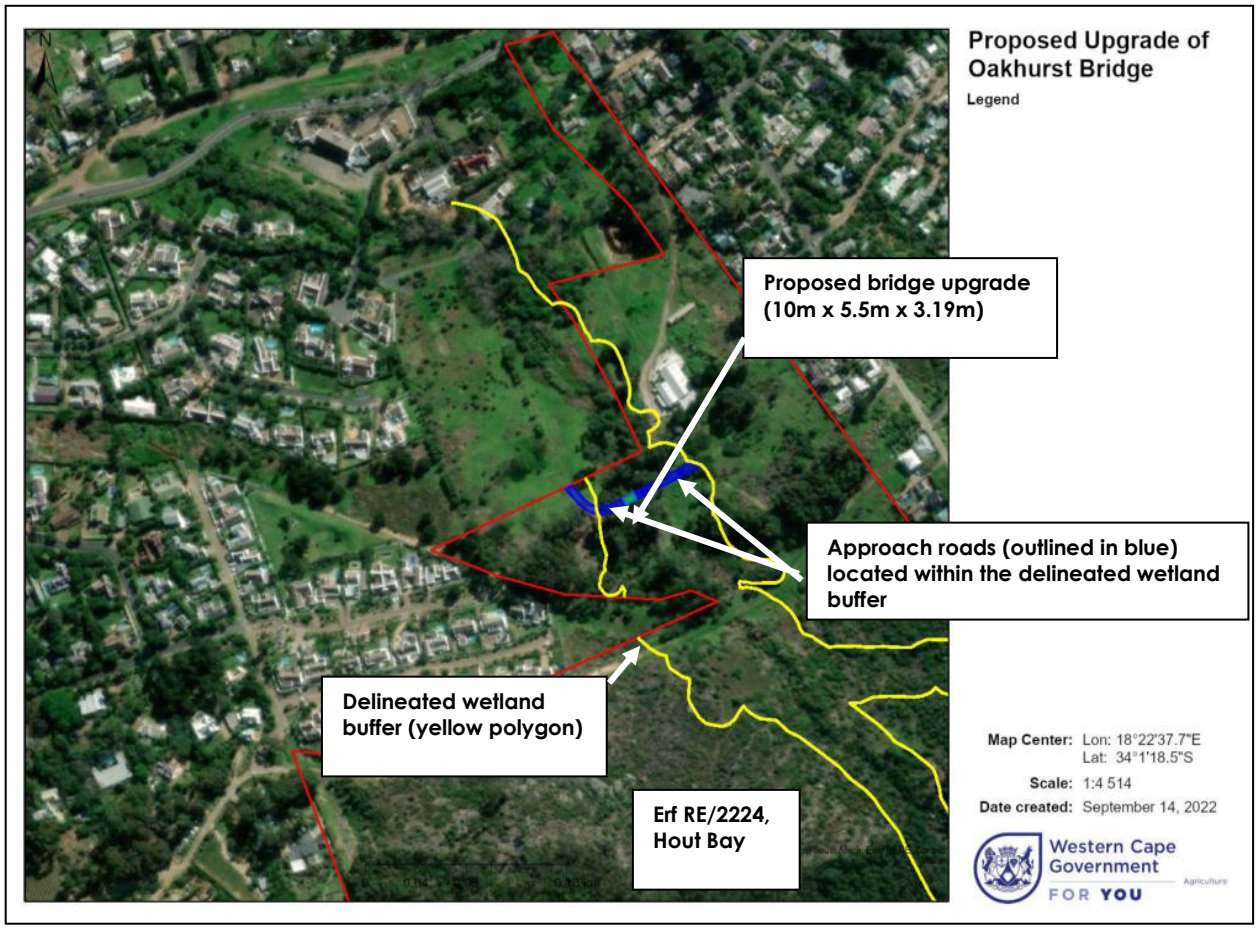

Figure 1: Location of Erf RE/2224, Hout Bay, City of Cape Town (Source: Cape Farm Mapper, 2022).

PROPOSED AMDENMENTS TO ENVIRONMENTAL AUTHORISATION

In addition to the proposed bridge upgrade, The Applicant proposes amendments to change the development layout and to include an additional portion (Erf 2958).

As per the Amended EA (14/3/1/1/A6/36/0535/21), the currently authorised project description is as follows:

The total site area is approximately 78.15 hectares in extent. The development was to comprise full title residential properties, open space components, private roads, and bulk services infrastructure serving the development. The number of properties and extent of each land use envisaged for the authorized development were:

- 65 single residential erven (± 7.64 hectares)
- 1 special residential erf comprising 8 units (± 0.25 hectares)
- 2 rural erven (± 3.20 hectares)
- Private open space / Ecological Buffers / Riparian Corridors (± 5.10 hectares)
- Private roads (± 1.16 hectares)
- Undetermined land portion (future high-level road reserve ± 1. 84 hectares)

The residential erven were to range in size but will all exceed the minimum allowable extent of 650m^2. The remaining area of the site comprises:

- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

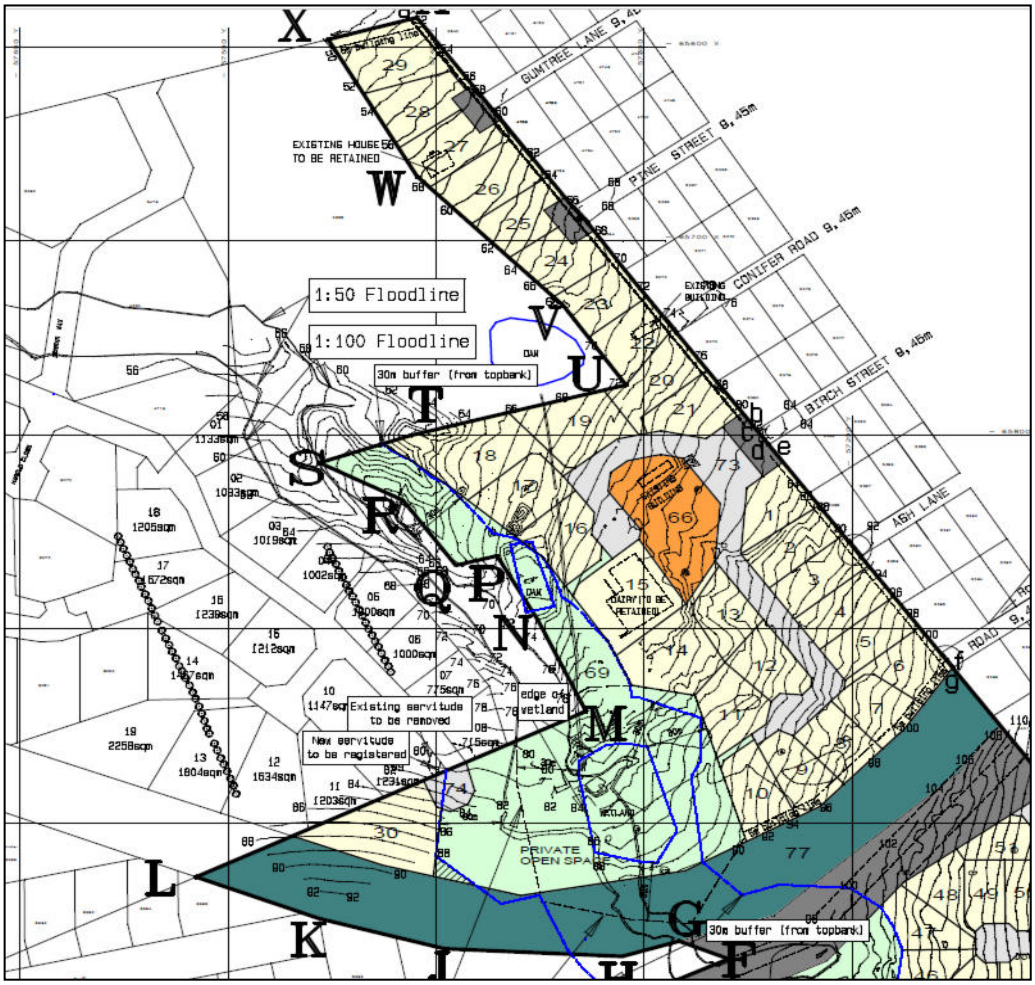

Figure 3: Authorised site development plan as per the amended Environmental Authorisation

Proposed Amendment

The Applicant proposes changing the approved Site Layout Plan and the inclusion of Erf 2958. Housing opportunities will range from dwelling-houses and apartment for independent functioning residents, to care units for assisted living and residents in need of full-time frail care.

The proposed amendment will comprise:

- 74 Dwelling houses: ranging from two-to-three bedrooms (~0.64ha)
- 8 very low-density single dwelling houses (~13ha)
- 20 two-bedroom and 4 one-bedroom apartments (conventional housing component) (~1.21ha)
- One centralized care centre comprised of 28 suites/rooms (~0.12m^2).
    - The care centre will also accommodate a reception/waiting area, lobby and lift, consulting/examining room, matron's office, administrative office, assisted shower and bath bathrooms, dining hall, kitchen, staff room and ablutions, storerooms (various), laundry, and basement parking.
- The existing "Old Dairy" building will be renovated and converted into a clubhouse facility comprised of recreation activities (including billiards, card games, gymnasium, yoga studio, sauna, lounge, function dining areas, outside dining terrace, and dressing rooms & ablutions) and offices for management functions. A swimming pool is proposed north of the clubhouse building whereas a bowling green and associated terraced seating are also proposed.
- Private roads (~1.16ha)
- Formal walkways along internal roads
- Four stormwater attenuation ponds and an existing dam will serve as stormwater attenuation and retention functions. This will also be landscaped with indigenous vegetation endemic to the area to promote biodiversity.
- Bokkemanskloof River and associated delineated wetland (~1.81ha)
- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

The estate will be developed in phases (see **Figure 5** below). Phase A will include the development of the clubhouse and associated recreational facilities, apartment blocks, and the stormwater attenuation ponds. The remaining phases (B and C to the north, and E to F to the south) will include the remaining residential dwellings as well as the assisted living and frail care unit. At this stage there are no details available regarding the timing of phases B-F since the development of these phases will be dictated by sale of the units.

Bulk Sewer Connection

The bulk sewage connection is required to service the southern section of the RE of Erf 2224.
An Applicability Checklist was submitted to the DEA&DP on 5 December 2022.
The scope of this Applicability Checklist was to determine:

- The feasibility of the three potential sewage bulk connection alternatives to service the southern portion of RE of Erf 2224 and for DEA&DP to advise on their preferred alternative.
- Whether the proposed sewage pipeline triggers any additional listed activities.
- Whether information regarding the bulk sewage connection constitutes "significant" information which should undergo a public participation process.

Refer to Applicability Checklist and associated correspondence included in Appendix I3 as well as Botanical Statement relating to the sewer line in included in Appendix G2.5.

Figure 4. Amended Site Development Plan

Figure 5: Site development plan showing the different phases

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.																				
Access to the site during the construction phase be obtained via Left-In-Left-Out access from Hout Bay Main Road, which has been approved by the City of Cape Town.																					
4.6.	SG Digit code(s) of the proposed site(s) for all alternatives: RE/2224	C	0	1	6	0	0	2	4	0	0	0	0	2	2	2	4	0	0	0	0	0
	RE/8343	C	0	1	6	0	0	2	4	0	0	0	0	8	3	4	3	0	0	0	0	0
	Erf 2958	C	0	1	6	0	0	2	4	0	0	0	0	2	9	5	8	0	0	0	0	0
4.7.	Coordinates of the proposed site(s) for all alternatives:																				
	Latitude (S)							34°					01‘					19.47“			
	Longitude (E)							18°					22‘					42.67“			

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	~~YES~~	**NO**

2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (“ICMA”). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	~~YES~~	**NO**
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (“NHRA”). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	~~YES~~	**NO**
The National Water Act, 1998 (Act No. 36 of 1998) (“NWA”). If yes, attach a copy of the comment from the DWS as Appendix E3.	**YES**	~~NO~~
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (“NEM:AQA”). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	~~YES~~	**NO**
The National Environmental Management Waste Act (Act No. 59 of 2008) (“NEM:WA”)	~~YES~~	**NO**
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 (“NEMBA”).	~~YES~~	**NO**
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (“NEMPAA”).	~~YES~~	**NO**
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	~~YES~~	**NO**

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.

- Spatial Planning Land Use Management Act 16 of 2013
- The National Environmental Management Act, Act 107 of 1998, as amended.
  - The proposed upgrade to the existing bridge will take place according to the conditions set out in the NEMA, whereby environmental authorization is required.
- EIA regulations in terms of Chapter 5 of the NEMA, 1998. Regulations R982, R983, R984 and R985 of December 2014.

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

- Western Cape Spatial Development Framework (PSDF), 2009
- City of Cape Town Municipal Spatial Development Framework (MSDF) 2018
- City of Cape Town Social Development Strategy

- City of Cape Town Economic Growth Strategy
- City of Cape Town Municipal Planning By-Law 2015
- City of Cape Town Transit Orientated Development Strategy
- DEA Integrated Environmental Management Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations.

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

Guideline Document, EIA Regulations, Implementation of Sections 21, 22 and 26 of the Environment Conservation Act, 1998	These guidelines were used to guide the EAP to ensure all the requirements with regards to the consideration of alternatives, public participation, and procedures to assess the need and desirability were assessed and inquired. These guidelines were considered during the Draft BAR and preparation of this report.
DEA Integrated Environmental Management Guideline Series, Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 2006	
DEA Integrated Environmental Management Guideline Series, Guideline 4: Public Participation in support of the Environmental Impact Assessment Regulations, 2006	
DEA Integrated Environmental Management Guideline Series, Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006	
DEA Companion to the NEMA EIA Regulations of 2010	
DEA Integrated Environmental Management Guideline Series, Guideline 5: Companion to the Environmental Impact Assessment Regulations, 2012	
DEA&DP Guideline Document: Guideline on Alternatives, March 2013	
DEA&DP Guideline Document: Guideline on Public Participation, March 2013	
DEA&DP Guideline Document: Guideline on Need and Desirability, March 2013	
DEA&DP Guideline for determining the scope of specialist involvement in the EIA process, June 2005	
DEA&DP Guideline for the review of specialist input in the EIA process, June 2005	

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

The table below indicates the level of sensitivity of each of the themes identified in the National Web-based Screening Tool Report:

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme			X	
Defence Theme			X	

Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

As per the Western Cape Biodiversity Spatial Plan (WCBSP) the management guideline determines the ecological state or condition in which a parcel of land or freshwater feature should be maintained. The management objectives are determined for a range of variety of land uses i.e., Protected Areas, Critical Biodiversity Areas as well as Ecological Support Areas. The site is located within the Peninsula Granite Fynbos, a critically endangered vegetation type. The site is not located within a CBA or ESA. Specialist studies were undertaken for the previously authorized Oakhurst Residential Development (Original EA: E12/2/4/1-A5/235-2058/10; Amendment EA Ref: 14/3/1/1/A6/36/0535/21).

A Botanical Compliance Statement, Updated Freshwater Assessment Opinion, and a Herpetofauna Assessment was conducted.

As per the Botanical Assessment (Appendix G1): the proposed development footprint was classified as highly degraded/transformed and does not contain any important plant species or habitats. Moreover, vegetation within the footprint does not represent any original vegetation or habitat characteristic of the vegetation type associated with the site (viz - Cape Peninsula Granite Fynbos). The site also has low-to-very low restoration potential. The Botanical Specialist concluded that the proposed upgrade to the existing bridge and the proposed amendments are supported from a botanical perspective should proposed mitigation measures be implemented.

As per the Freshwater Assessment (Appendix G2): the Present Ecological State (PES) of the delineated wetland was categorized as a moderately/largely-to-largely modified condition (based on the degree of loss of natural habitats and basic ecosystem functions). The Ecological Importance and Sensitivity (EIS) of the valley bottom and seep wetlands were classified as Moderate and Moderate/High, respectively, whereby the valley bottom wetland (associated with the Bokkemanskloof River) provides more valuable ecosystem services (relative to flood attenuation, flow regulation, and water quality improvement) compared with the seep wetland. The seep wetland does, however, provide habitat for biodiversity (including the Western Leopard Toad, Cape River Frog, and Gray's Stream Frog). Based on the Aquatic Confirmation Statement (Appendix G2.2), subject to the implementation of proposed mitigation measures, the delineated wetland buffer (measured from the delineated edge of the wetland edge) is 15m. As per the Freshwater Report, the design of the bridge does not alter the channel shape, alignment or depth and does not impede low or high flows within the Bokkemanskloof watercourse. The design of the bridge is therefore supported by the Freshwater Specialist. Based on the Freshwater Assessment, the potential risks of the proposed development to the Bokkemanskloof River and the associated wetland habitats are considered to be low. A Maintenance Management Plan (MMP) has also been drafted (Appendix G2.3) to guide maintenance in the river and wetland areas.

As per the Herpetofauna Assessment (Appendix G3): The site was found to be moderate to heavily transformed from its original condition. However, some basic ecological functionality and habitats still remain which can support various herpetofauna. No amphibian species of conservational concern (SCC) were recorded on the site or in adjacent wetlands as identified by NCC in 2014 (Appendix G3.2). Amphibians and one reptile recorded during the site visit are classified as Least Concern (IUCN, 2017 / SARCA, 2014).

Due to the (i) cryptic nature of some amphibians, (ii) single-season and seasonal timing of the survey, and (iii) historic recordings of certain amphibians (during previous assessment – Appendix G3.2), it is plausible that some species may be present and/or utilize parts of the site for brief periods during the year. It must be noted that the assessed site is the entire extent of the site. Mitigation measures were proposed by the specialist which must be implemented.

As per the NID response (Appendix G4): A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape (HWC). As per the response from HWC (Appendix G4), "since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials,

archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization". It must be noted that the project area assessed for the NID was the entire extent of Erf 2224.

The following themes, for which protocols were legislated on the 20th of March 2020, have been identified in the **Screening Tool Report** (attached as **Appendix I2**):

Site sensitivity themes as identified by the DEA Screening Tool (**Appendix I1**).

No	Theme	DEA Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation
1	Agriculture Theme	High Sensitivity	Disagree	Insignificant Sensitivity	This proposal is for the upgrade of an existing bridge, located within the Bokkemanskloof River. As per the CoCT Municipal Planning Amendment By-Law, 2016, the site is zoned as Single Residential Zoning 1: Conventional Housing (SR1) and therefore, is not zoned/designated for agricultural use (i.e. zoned as Agriculture). Moreover, agricultural activities within close proximity to watercourses have been reported to negatively impact the hydrogeochemical and biological features of such watercourses. For example, the release of nutrients into watercourses may result in eutrophication – negatively impacting the hydrogeochemical aspects of watercourses, as well as the growth and survival of fauna and flora[1,2]. Given the above, it is envisaged that agricultural activities on this site is not deemed to be ideal in terms of the zoning and environmental impacts.
2	Animal Species Theme	Medium Sensitivity	Agree	Medium Sensitivity	The DEA Screening Tool classified the proposed site for bridge upgrade as "Medium" Sensitivity based on *Amietophrynus pantherinus* and *Conocephalus peringueyi* (Peringuey's Meadow Katydid). A Western Leopard Toad (*Amietophrynus pantherinus*) habitat assessment was previously conducted by NCC in 2014. According to the findings of this study, Western Leopard Toads were present in certain areas of the site. As per the report, the site is extensively transformed from its natural state being directly modified by surrounding developments as well as alien invasive plant species encroachment (namely Port Jackson - *Acacia saligna*, *Lantana camara,* and *Eucalyptus* spp.). Direct impacts are typically associated with changes in land cover (resulting in the loss of natural areas) and edge effects, whereas indirect impacts are associated with the generation of waste and its management

[1] Withers, P.J., Neal, C., Jarvie, H.P. and Doody, D.G., 2014. Agriculture and eutrophication: where do we go from here?. *Sustainability*, 6(9), pp.5853-5875.
[2] Mader, A.E., Eslamian, S., Turton, A. R. 2020. Biological Remediation Using Wetland Systems: A Hydro-Geochemical Perspective. Nova Publishers.

					by surrounding developments (McDonald *et al*., 2020)[3]. Edge effects have diverse impacts on biodiversity and ecological functioning (Razafindratsima *et al*., 2018)[4], which may have contributed to the level of disturbance identified by NCC during their study. The presence of the previously constructed bridge also contributes to a disturbance factor. Such effects contribute to a disturbance factor, which is likely to have previously impacted wild animals within the study area. Therefore, based on the presence of Western Leopard Toads in 2014, it is envisaged that the site will have a 'Medium' Animal Species theme sensitivity. A herpetology assessment, addressing the presence of Western Leopard Toads, was conducted and has been appended as **Appendix G3**.
3	Aquatic Biodiversity Theme	Very High Sensitivity	Disagree	High Sensitivity	A wetland delineation and confirmation of wetland buffer was undertaken in 2021. The proposed upgrade of the bridge (and associated infrastructure) will be located within this buffer (**Figure 1**). A Western Leopard Toad (*Amietophrynus pantherinus*) habitat assessment was previously conducted by NCC in 2014. According to the findings of this study, Western Leopard Toads were present in certain areas of the site. As per the report, the site is extensively transformed from its natural state being directly modified by surrounding developments as well as alien invasive plant species encroachment (namely Port Jackson - *Acacia saligna*, *Lantana camara,* and *Eucalyptus* spp.). Direct impacts are typically associated with changes in land cover (resulting in the loss of natural areas) and edge effects, whereas indirect impacts are associated with the generation of waste and its management by surrounding developments (McDonald *et al*., 2020)[5]. Edge effects have diverse impacts on biodiversity and ecological functioning (Razafindratsima *et al*., 2018)[6], which may have contributed to the level of disturbance identified by NCC during their study. The presence of the previously constructed bridge also contributes to a disturbance factor. Such effects contribute to a disturbance factor, which is likely to have previously impacted wild animals within the study area. Therefore, based on the presence of Western Leopard Toads in 2014,

[3] McDonald, R.I., Mansur, A.V., Ascensão, F., Crossman, K., Elmqvist, T., Gonzalez, A., Güneralp, B., Haase, D., Hamann, M., Hillel, O. and Huang, K., 2020. Research gaps in knowledge of the impact of urban growth on biodiversity. *Nature Sustainability*, 3(1), pp.16-24.

[4] Razafindratsima, O.H., Brown, K.A., Carvalho, F., Johnson, S.E., Wright, P.C. and Dunham, A.E., 2018. Edge effects on components of diversity and above-ground biomass in a tropical rainforest. *Journal of Applied Ecology*, 55(2), pp.977-985.

[5] McDonald, R.I., Mansur, A.V., Ascensão, F., Crossman, K., Elmqvist, T., Gonzalez, A., Güneralp, B., Haase, D., Hamann, M., Hillel, O. and Huang, K., 2020. Research gaps in knowledge of the impact of urban growth on biodiversity. *Nature Sustainability*, 3(1), pp.16-24.

[6] Razafindratsima, O.H., Brown, K.A., Carvalho, F., Johnson, S.E., Wright, P.C. and Dunham, A.E., 2018. Edge effects on components of diversity and above-ground biomass in a tropical rainforest. *Journal of Applied Ecology*, 55(2), pp.977-985.

					it is envisaged that the site will have a 'Medium' Animal Species Theme sensitivity. A herpetology assessment, addressing the presence of Western Leopard Toads, was conducted and has been appended as Appendix G4. A Freshwater Assessment was previously undertaken by Dr Barbara Gale of Aqua Catch cc in April 2008, updated by Ms. Toni Belcher in 2010 with addendums in 2014, a wetland delineation was carried out by The Biodiversity Company in 2021, and a Letter of Confirmation of the delineated wetland buffer was compiled by Ms. Toni Belcher in 2021. As per the Freshwater Assessment, the upper to middle reaches of the Bokkemanskloof River were considered to have a good instream condition whereas the riparian zones were considered to be moderately impacted. The ecological importance and sensitivity of the river were considered to be moderate to high. The Freshwater Impact Assessment was updated and has been appended as **Appendix G2.1**.
4	Archaeological and Cultural Heritage Theme	Very High Sensitivity	Disagree	Very Low Sensitivity	The proposed area for upgrade has been previously transformed (i.e., a previously constructed bridge). A Heritage Impact Assessment was conducted in June 2005. Based on the heritage report, the concrete bridge was not of any heritage significance. In accordance with the relevant legislation, HWC assessed the report and made recommendations in their "Record of Decision" dated 22 January 2008 which supported the findings of the specialist heritage assessment. As per the SAHRIS Paleosensitivity Map, the site is located within a low paleontological sensitive area (https://sahris.sahra.org.za/map/palaeo). According to Section 38(1) of the National Heritage Resources Act, NHRA (Act No. 25 of 1999), a Heritage Impact Assessment is required when: - the construction of a road that exceeds 300m in length - construction of a bridge exceeds 50m in length - any development exceeding 5 000m^2 in extent. Therefore, based on the factors highlighted above, it is envisaged that the proposed site for the bridge upgrade will have a very low sensitivity. Mitigation measures (e.g., Chance Find Protocol) will be proposed and included as a condition in the EMPr. Moreover, a NID was re-submitted for the entire site (i.e. Erf 2224) whereby the HWC stated that no further actions are required (Appendix E1).
5	Civil Aviation Theme	Medium Sensitivity	Disagree	Insignificant Sensitivity	The Civil Aviation Theme was rated as having a "Medium" sensitivity due to the site being located within 5km of an air traffic control or navigation site and between 15

					and 35km from a civil aviation radar and major civil aviation aerodrome. However, the previously constructed bridge is an existing structure and thus, an existing impact that is not expected to significantly change based on the type of application (i.e., upgrade of an existing bridge). The proposed upgrade of the existing structure would have similar impacts and thus, it is envisaged that the site will have an 'insignificant' Civil Aviation Theme sensitivity rating.
6	Defence Theme	Medium Sensitivity	Disagree	Insignificant Sensitivity	The Defence theme was rated as having a "Medium" sensitivity due to the proximity of the site to a military and defence site. However, the previously constructed bridge is an existing structure. The proposed upgrade of the existing structure would have similar impacts and thus, it is envisaged that the site will have an 'insignificant' Defence Theme sensitivity rating and is unlikely to impact any defence-related aspects.
7	Plant Species Theme	Low Sensitivity	Disagree	Very Low Sensitivity	The site is located within the Peninsula Granite Fynbos, a critically endangered vegetation type. The site is not located within a CBA or ESA. Specialist studies were conducted for the previously authorised Oakhurst Residential Development (Original EA: E12/2/4/1-A5/235-2058/10; Amendment EA Ref: 14/3/1/1/A6/36/0535/21). It must be noted that this proposal is for the upgrade to an existing bridge structure, previously constructed within the Bokkemanskloof River. According to the previous botanical assessment, no plant species of conservational concern (SCC) were recorded on Erf RE/2224 except for a single *Leucospermum conocarpodendron* individual located approximately 415m south of the proposed site for the bridge upgrade. As per the Botanical Specialist, little natural vegetation is present on Erf RE/2224 whereby the habitat has been degraded by mechanical disturbances, soil and rubble stockpiling, long term grazing by livestock, alien invasive plant species encroachment, and eutrophication in some areas. Based on the findings of the Botanical Compliance Statement, no plant SCC were present within the development footprint. Please note that a Freshwater Study was conducted and commented on vegetation present within the watercourse and associated with the location of the proposed bridge to be upgraded. The Botanical Specialists rated the plant species theme sensitivity as " Low" **(Appendix G1)**.
8	Terrestrial Biodiversity Theme	Very High Sensitivity	Disagree	High	The proposed site for the bridge upgrade was classified as "Very High" based on the site being located within a critically endangered ecosystem (i.e., Peninsula Granite Fynbos). However, the previously constructed bridge is an existing structure whereby the proposed upgrade of the

					bridge is expected to have similar impacts. According to the previous botanical assessment, no plant species of conservational concern (SCC) were recorded on Erf RE/2224 except for a single *Leucospermum conocarpodendron* individual located approximately 415m south of the proposed site for the bridge upgrade. As per the Botanical Specialist, little natural vegetation is present on Erf RE/2224 whereby the habitat has been degraded by mechanical disturbances, soil and rubble stockpiling, long term grazing by livestock, alien invasive plant species encroachment, and eutrophication in some areas. The DEA Screening Tool classified the proposed site for bridge upgrade as "Medium" Animal Species Sensitivity based on the likely occurrence of *Amietophrynus pantherinus* and *Conocephalus peringueyi* (Peringuey's Meadow Katydid) in the area. A Western Leopard Toad (*Amietophrynus pantherinus*) habitat assessment was previously conducted by NCC in 2014. According to the findings of this study, Western Leopard Toads were present in certain areas. As per the report, the site is extensively transformed from its natural state being directly modified by surrounding developments and the alien invasive plant species encroachment (namely Port Jackson - *Acacia saligna*, *Lantana camara,* and *Eucalyptus* spp.). Direct impacts are typically associated with developments resulting in land cover changes (and consequent loss of natural areas) and edge effects, whereas indirect impacts include impacts associated with the generation of waste and its management by surrounding developments (McDonald *et al*., 2020)[7]. Edge effects have diverse impacts on biodiversity and ecological functioning (Razafindratsima *et al*., 2018)[8], which may have contributed to the level of disturbance identified by NCC during their study. The presence of the previously constructed bridge also contributes to a disturbance factor. Such effects contribute to a disturbance factor, which is likely to have previously impacted wild animals within the study area. A Freshwater Assessment was previously undertaken by Dr Barbara Gale of Aqua Catch cc in April 2008, updated by Ms. Toni Belcher in 2010 with addendums in 2014, a wetland delineation was carried out by The Biodiversity Company in 2021, and a Letter of Confirmation of the delineated wetland buffer was compiled by Ms. Toni Belcher in 2021. As per the Freshwater

[7] McDonald, R.I., Mansur, A.V., Ascensão, F., Crossman, K., Elmqvist, T., Gonzalez, A., Güneralp, B., Haase, D., Hamann, M., Hillel, O. and Huang, K., 2020. Research gaps in knowledge of the impact of urban growth on biodiversity. *Nature Sustainability*, 3(1), pp.16-24.

[8] Razafindratsima, O.H., Brown, K.A., Carvalho, F., Johnson, S.E., Wright, P.C. and Dunham, A.E., 2018. Edge effects on components of diversity and above-ground biomass in a tropical rainforest. *Journal of Applied Ecology*, 55(2), pp.977-985.

					Assessment, the upper to middle reaches of the Bokkemanskloof River is deemed to be in a good condition instream whereas the riparian zones were considered to be moderately impacted. The ecological importance and sensitivity of the river were considered to be moderate to high. A Freshwater Impact Assessment and Herpetology Assessment were conducted.

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed development to which the applicable listed activity relates.
Activity 19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;	The proposed upgrade of the existing bridge will include the excavation of more than 300m^3 of material and depositing of more than 1750m^3 material for associated infrastructure (within the wetland buffer area). Therefore, it is envisaged that this activity will be triggered.
Activity 31	The decommissioning of existing facilities, structures or infrastructure for— (v) any activity regardless the time the activity was commenced with, where such activity: (a) is similarly listed to an activity in (i)[,] or (ii)[, or (iii)] above; and (b) is still in operation or development is still in progress	The existing bridge structure (to be upgraded) will be decommissioned. Therefore, it is envisaged that this activity will be triggered.
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.
Activity 4	The development of a road wider than 4 metres with a reserve less than 13,5 metres. **i. Western Cape** iii. Inside urban areas: (aa) Areas zoned for conservation use;	The proposed site for the upgrade of the bridge is located within the Peninsula Granite Fynbos, a critically endangered vegetation type. Associated infrastructure includes the construction of approach roads [121m (length) x 5.5m (width)]. Therefore, it is envisaged that this activity will be triggered.
Activity 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. **i. Western Cape** i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;	The proposed upgrade of the existing bridge and development of associated infrastructure will result in the clearance of more than 300m^2 vegetation within the Peninsula Granite Fynbos, a critically endangered vegetation type.

Note:

- The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Category A**	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant **Listed Activity(ies)**	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

For an amendment to an Environmental Authorisation to be considered, the listed activity(ies) in the valid Environmental Authorisation must be similarly listed in the latest NEMA EIA Regulations. These **similarly listed activities** in terms of the latest NEMA EIA Regulations, 2014 (as amended) are applicable to the project:

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed project to which the applicable listed activity relates.
9	*The development of infrastructure exceeding 1 000 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 railway line reserve; or* *(b) where such development will occur within an urban area.*	The proposed development requires the installation of associated infrastructure for water, sewage and stormwater. The development will also entail the construction of residential dwellings. The infrastructure and dwellings will exceed a total of 100m^2 in extent. The infrastructure and dwellings may in some areas be located within 32m of a watercourse. Proposed stormwater infrastructure (e.g. attenuation ponds) be be located within 32m of a watercourse. The development site is situated hard up against the urban edge to the south, with only the eastern edge of the development bounded by residential development. The development site may therefore not be considered to fall within an "urban area" as defined by the EIA Regulations. It is possible (although highly unlikely based on botanical specialist findings) that the development will entail the clearance of between 1ha and 20ha of indigenous vegetation.
10	*The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes –* *(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 the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or* *(b) where such development will occur within an urban area.*	
12	*The development of –* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or* *(ii) infrastructure or structures with a physical*	

	footprint of 100 square metres or more; where such development occurs— *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;* *excluding—* *(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;* *(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;* *(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;* *(dd) where such development occurs within an urban area;* *(ee) where such development occurs within existing roads, road reserves or railway line reserves; or* *(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.*	
27	*The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except 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.*	
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed project to which the applicable listed activity relates.
14	*The development of –* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more;* *where such development occurs –* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour* *Western Cape –* *Outside urban areas:* *(aa) A protected area identified in terms of NEMPAA, excluding conservancies;* *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) World Heritage Sites;* *(dd) Sensitive areas as identified in an*	The proposed amended development will require the clearance of more than 300m^2 of indigenous vegetation present within a Critically Endangered vegetation type, namely the Peninsula Granite Fynbos.

	environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; *(ee) Sites or areas listed in terms of an international convention;* *(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(gg) Core areas in biosphere reserves; or (hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.*	
Activity No(s):	Provide the relevant **Scoping and EIR Activity(ies)** as set out in **Listing Notice 2**	Describe the portion of the proposed project to which the applicable listed activity relates.
N/A		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.

The applicant, Oakhurst Lifestyle Estate (Pty) Ltd, proposes to establish and operate a retirement residential accommodation facility for individuals/families in the age group of 50 years and older.

The Applicant was initially granted Environmental Authorisation in October 2015, which was appealed during the legislated appeals period. The Appeal EA was granted on 19 September 2016 (EA Ref: **E12/2/4/1-A5/235-2058/10**)

A non-substantive amendment application was applied for in 2021 to (i) change the name of the holder from B I Scher and M H Derman to Oakhurst Lifestyle Estate (Pty) Ltd, and (ii) extend the validity of the EA. The Amended EA was granted on 21 of October 2021 (Amended EA Ref: **14/3/1/1/A6/36/0535/21B**)

PROPOSED BRIDGE UPGRADE

Part of the establishment of the retirement residential accommodation includes the upgrade of an existing bridge on Remainder of Erf 2224, Hout Bay. The existing structure crosses the Bokkemanskloof watercourse and associated delineated wetland (Figure 1). Please see the table below detailing the dimensions of the existing bridge and proposed bridge:

Table 2. Dimensions of the preferred alternative (proposed bridge structure and associated infrastructure)

Preferred alternative: Structure and Associated Infrastructure Description	Length	Width	Height	Area (m^2)
Proposed expansion and associated infrastructure	**10m**	**5.5m**	**3.19m**	**~55m^2**
Proposed approach roads located within the delineated wetland buffer	**121m**	**5.5m**	**N/A**	**~665m^2**

The following building quantities are proposed for the upgrade of the bridge and associate infrastructure:

2. Bridge quantities

2.4. Excavation: ~300m^3
2.5. Backfill: ~100m^3
2.6. Concrete: ~85m^3

3. Road and bulk earthworks

3.1. Topsoil strip to spoil: ~500m^3
3.2. Fill: ~1 750m^3
3.3. Imported layer work: ~350m^3

The proposed construction methodology for the proposed upgrade of the Oakhurst bridge will comprise of the following:

- The existing bridge structure will be decommissioned.
- There is limited vegetation within the watercourse that is to be cleared due to the presence of the existing bridge structure. Only necessary clearing and grubbing of the site for access and construction of the works will be undertaken.

- Heavy machinery (e.g. TLB) will be used to excavate the soil. This will be at the position of the abutments. Bedding material will then be compacted into this excavation, rebar, and formwork will be placed on this bedding material in preparation for the concrete base slab to be cast.
- Ready-mixed concrete will be brought to the site and used to cast the base slab to attach to these piles.
- Formwork will then be used to form the shape of the abutments and ready-mixed concrete will be poured to form these abutments.
- Wing walls downstream and upstream on either side of the Bokkemanskloof river. Compacted backfill will be placed between the walls;
- Once the abutments have been cast there will be no further major works within the watercourse.
- The contractor will then install staging for the deck and place the deck rebar.
- Ready-mixed concrete will be brought to the site again and used to cast the bridge deck.
- Wing walls will also be cast, and selected material will then be used to backfill behind the wing walls. This material will then also be used to form the shape of each approach.
- Erosion mitigation measures, including but not limited to gabion baskets, will be constructed for additional protection at the crossing point where/if required.

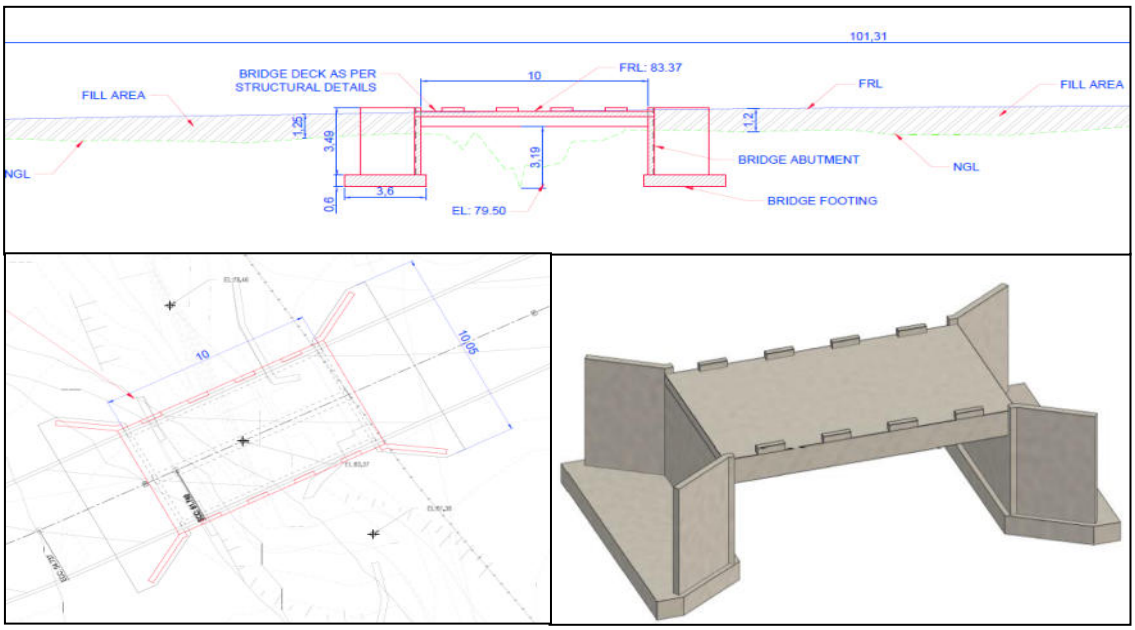

Figure 2. Proposed bridge structure (preferred alternative). Source: Ekcon Engineers and Project Managers, 2022 (**Appendices B1**).

Finally, rehabilitation / re-vegetation of all areas affected by the upgrade and construction activities will be undertaken using intensive, indigenous grass sod planting or hydroseeding with a suitable indigenous grass seed mix, characteristic of the Peninsula Granite Fynbos vegetation type (i.e., vegetation type pertinent to the proposed site).

PROPOSED AMDENMENTS TO ENVIRONMENTAL AUTHORISATION

In addition to the proposed bridge upgrade, The Applicant proposes amendments to change the development layout and to include an additional portion (Erf 2958).

As per the Amended EA (14/3/1/1/A6/36/0535/21), the currently authorised project description is as follows:
The total site area is approximately 78.15 hectares in extent. The development was to comprise full title residential properties, open space components, private roads, and bulk services infrastructure serving the development. The number of properties and extent of each land use envisaged for the authorized development were:

- 65 single residential erven (± 7.64 hectares)
- 1 special residential erf comprising 8 units (± 0.25 hectares)
- 2 rural erven (± 3.20 hectares)
- Private open space / Ecological Buffers / Riparian Corridors (± 5.10 hectares)
- Private roads (± 1.16 hectares)
- Undetermined land portion (future high-level road reserve ± 1. 84 hectares)

The residential erven were to range in size but will all exceed the minimum allowable extent of 650m^2. The remaining area of the site comprises:

- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

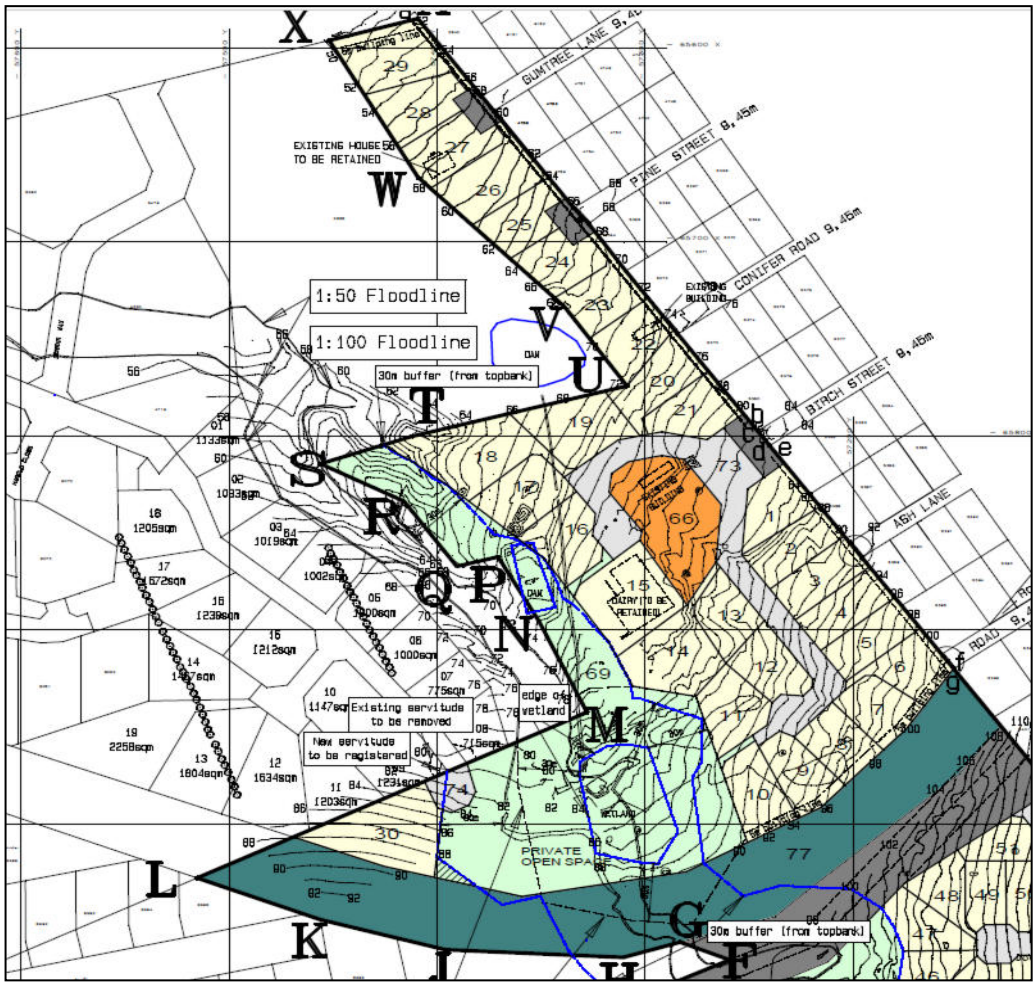

Figure 3: Authorised site development plan as per the amended Environmental Authorisation

Proposed Amendment

The Applicant proposes changing the approved Site Layout Plan and the inclusion of Erf 2958. Housing opportunities will range from dwelling-houses and apartment for independent functioning residents, to care units for assisted living and residents in need of full-time frail care.

The proposed amendment will comprise:

- 74 Dwelling houses: ranging from two-to-three bedrooms (~0.64ha)
- 8 very low-density single dwelling houses (~13ha)
- 20 two-bedroom and 4 one-bedroom apartments (conventional housing component) (~1.21ha)
- One centralized care centre comprised of 28 suites/rooms (~0.12m^2).
    - The care centre will also accommodate a reception/waiting area, lobby and lift, consulting/examining room, matron's office, administrative office, assisted shower and bath bathrooms, dining hall, kitchen, staff room and ablutions, storerooms (various), laundry, and basement parking.
- The existing "Old Dairy" building will be renovated and converted into a clubhouse facility comprised of recreation activities (including billiards, card games, gymnasium, yoga studio, sauna, lounge, function dining areas, outside dining terrace, and dressing rooms & ablutions) and offices for management functions. A swimming pool is proposed north of the clubhouse building whereas a bowling green and associated terraced seating are also proposed.
- Private roads (~1.16ha)
- Formal walkways along internal roads
- Four stormwater attenuation ponds and an existing dam will serve as stormwater attenuation and

retention functions. This will also be landscaped with indigenous vegetation endemic to the area to promote biodiversity.
- Bokkemanskloof River and associated delineated wetland (~1.81ha)
- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

The estate will be developed in phases (see **Figure 5** below). Phase A will include the development of the clubhouse and associated recreational facilities, apartment blocks, and the stormwater attenuation ponds. The remaining phases (B and C to the north, and E to F to the south) will include the remaining residential dwellings as well as the assisted living and frail care unit. At this stage there are no details available regarding the timing of phases B-F since the development of these phases will be dictated by sale of the units.

Bulk Sewer Connection

The bulk sewage connection is required to service the southern section of the RE of Erf 2224.
An Applicability Checklist was submitted to the DEA&DP on 5 December 2022.
The scope of this Applicability Checklist was to determine:
- The feasibility of the three potential sewage bulk connection alternatives to service the southern portion of RE of Erf 2224 and for DEA&DP to advise on their preferred alternative.
- Whether the proposed sewage pipeline triggers any additional listed activities.
- Whether information regarding the bulk sewage connection constitutes "significant" information which should undergo a public participation process.

Refer to Applicability Checklist and associated correspondence included in Appendix I3 as well as Botanical Statement relating to the sewer line in included in Appendix G2.5.

Figure 4. Amended Site Development Plan

Figure 5: Site development plan showing the different

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The site is zoned as Single Residential 1 (SR1) (**Appendix M**). This proposal is for the upgrade of an existing bridge.

3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.

An Environmental Authorisation (E12/2/4/1-A5/235-2058/10) was granted on the 4th of January 2016. This EA was for the proposed residential development on Portion 8343 and RE of Erf 2224, Hout Bay.

The total site area is approximately 78.15 hectares in extent. The development will comprise full title residential properties, open space components, private roads, and bulk services infrastructure serving the development. The number of properties and extent of each land use envisaged for the authorised development were:

- 65 single residential erven (± 7.64 hectares)
- 1 special residential erf comprising 8 units (± 0.25 hectares)
- 2 rural erven (± 3.20 hectares)
- Private open space / Ecological Buffers / Riparian Corridors (± 5.10 hectares)
- Private roads, cul-de-sac turn-around facility for fire trucks and emergency vehicles (± 1.16 hectares)
- Undetermined land portion (future high-level road reserve ± 1. 84 hectares)

The residential erven will range in size but will all exceed the minimum allowable extent of 650m^2. The remaining area of the site comprises:

- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

This EA was appealed and as such, the new date of issue for the EA was the 19th of September 2016. The EA was valid for five (5) years whereby the validity of the EA would have expired on the 19th of September 2021.

A Part 1 Environmental Authorisation Amendment Application Process was submitted (and approved) to (1)

change the name of the holder of an EA (**EIA Reference: E12/2/4/1-A5/235-2058/10**) from B I Scher and M H Derman to Oakhurst Lifestyle Estate (Pty) Ltd, and (2) extend the validity of the EA. The Amended EA (**Ref 14/3/1/1/A6/36/0535/21**) was granted and issued on the 21st of October 2021.

Initially the proposed amendments were part of a separate Part 2 Amendment Application. However, DEADP changed their opinion on the applicability of a Part 2 Amendment in this case, and instructed the Applicant to withdraw the Part 2 Amendment application and include the proposed amendments in this revised Basic Assessment.

There will be no development proposal conflicts in terms of the existing approvals.

Please refer to Appendix L for proof of approvals.

4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.

The Western Cape PSDF (2014) details numerous objectives and associated policies that aim to promote sustainable development relative to environmental, social, and economic aspects (i.e. the three pillars of sustainable development). One of the PSDF principles is to ensure quality, sustainable development that serves the broader community. Moreover, another guiding principle of the PSDF is the improvement of access to facilities, recreation, as well as safe and efficient modes of transport whereby accessibility is defined as the convenient and dignified access to private and public spaces for people with impaired mobility. Another objective involves the promotion of compact mixed-use and integrated settlements. The proposed development will provide opportunities for economic growth (via the creation of employment and skills development opportunities) strengthening the urban space economy. The Town Planner advises that the proposed development is located within the approved urban edge of the City of Cape Town and is flanked by residential smallholdings, estates and suburbs on the north, east and west whilst Table Mountain National Park (TMNP) lies to the south.

4.2	The Integrated Development Plan of the local municipality.

The proposed development is in line with the City of Cape Town's Integrated Development Plan. As per the CoCT IDP, the CoCT population comprises over 3.74 million people with approximately 1.07 million households. The population is projected to increase to approximately 4.42 million by 2030. Environmental challenges impacting the CoCT include the need to adapt to climate change (especially the impacts of the recent, severe drought experienced in the Western Cape), conservation of ecosystem services and function, as well as the depletion of resources. Various environmental aspects, associated with the proposed upgrade of the existing bridge, have been considered relative to retaining ecosystem services and functions associated with the Bokkemanskloof watercourse and delineated wetland. The proposed development will also provide access across the Bokkemanskloof watercourse for the larger Oakhurst Development which will increase the number of households and will contribute to the housing of the predicted increase in the metropolitan's population.

4.3.	The Spatial Development Framework of the local municipality.

The MSDF locates the site within the Incremental Growth and Consolidation Area (IGC) where the City is committed to servicing existing communities and where new development will be subject to infrastructure capacity. The proposed development will have major socio-economic benefits within the context of the Hout Bay area by developing a residential estate for residents older than 50 years. The proposed amendment will provide a range of housing options relative to the resident's stage of life whereby care facilities or independent living will be available. This presents a niche in the market as such housing opportunities are not currently available in the retirement market segment in Hout Bay. Employment and skills development opportunities will be created during the construction and operational phases of the development. The proposed development also conforms to the Southern District Integrated Development Framework by small-scale, low impact subdivision and promoting densification, retaining and enhancing the existing tree coverage. The development also supports the Council's Densification policy by implementing small-scale densification in areas where the infrastructure can support it.

4.4.	The Environmental Management Framework applicable to the area.

According to the EMF contained in the City of Cape Town's Spatial Development Framework, the site of the proposed development falls within a hydrological zone that has been identified for management as follows:
The City's EMF requires that the Hout Bay river system (amongst others) should be retained and protected from source to sea, with measures to include providing further detention pond facilities, de-canalizing rivers, and introducing natural vegetation to filter contaminants.

The EMF further requires that where development proposals require EIA in these identified hydrological zones, an EMP that aligns with the City's specifications should be compiled and implemented. Additionally, a stormwater analysis was required to determine the extent and scale of activities that are or are not permitted. A Stormwater Management Plan (Appendix G8.1) was compiled.

The City's EMF also lists the Table Mountain National Park as a Conservation and Biodiversity Priority Zone. With

the site situated adjacent to the TMNP, the management measures recommended for such a zone should apply to a development proposal on this site.

For example, the EMF requires that "opportunities to permit low impact sustainable development which contributes to a net increase in the protection of biodiversity and the establishment of functional biodiversity nodes and corridors", should be identified. With the implementation of buffer zones around the Bokkemanskloof River and its tributaries across the site, and the implementation of specialist-recommended river rehabilitation measures, the development proposal provides a net benefit in terms of protection of conservation-worthy vegetation and freshwater resources.

The site does not fall within an area identified as a Cultural and Recreational Resources Zone in the EMF, or within an identified Natural Economic Resources Zone. As such, management measures for such zones do not apply to the development proposal.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.

The Post-Application reports for the proposed amendments and the proposed bridge upgrades were submitted for comment. No comments were received from CapeNature. DEADP did request that a River Maintenance Management Plan be compiled for the project, which was also included in the latest versions of the report that have been circulated for comment. No further comments with respect to biodiversity have been received.

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.

As per the Western Cape Biodiversity Spatial Plan (WCBSP) the management guideline determines the ecological state or condition in which a parcel of land or freshwater feature should be maintained. The management objectives are determined for a range of land uses i.e. Protected Areas, Critical Biodiversity Areas as well as Ecological Support Areas. As per **Figure 3**, there are no PA, CBA or ESA areas located within the development site (i.e. the site is not located within a CBA or ESA). The proposed site is highly disturbed/ transformed with limited indigenous vegetation remaining. Therefore, it is envisaged that the proposed development will have an insignificant impact on biodiversity should the proposed mitigation measures in this report and the EMPr (**Appendix H**) be implemented.

7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.

N/A. The site is located approximately 3.7km east of the coastline.

8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.

The Screening Tool Report prepared for the Part 2 Amendment Application was appended to the Revised Application and is attached as Appendix I.

9.	Explain how the proposed development will optimise vacant land available within an urban area.

N/A. This proposal is for the upgrade of an existing bridge and is thus a transformed site.

10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.

The proposed upgrade of an existing bridge and the larger Oakhurst Development is guided by the Economic Growth Strategy Policy. The proposed upgrade of the existing bridge will provide safe, reliable, and efficient access across the Bokkemanskloof River and associated wetland – reducing the need (and associated negative impacts) to cross the river at another (non-formalized) point. The proposed residential development will provide housing and assisted living facilities for the elderly on land that is currently not in use.

11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).

The availability of services have been confirmed in the Engineering Services and Electrical Services Reports.

12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.

The needs and desirability of any proposal should be contextualized in the framework of sustainable development, namely within the context of the three pillars of sustainable development (*viz* - environmental, economic, and social pillars). These were explored relative to the proposed upgrade of the existing bridge and the proposed amendments.

Environmental:
The construction of structures, such as bridges and weirs, across watercourses, may alter the hydrological and physicochemical properties of the watercourse[9]. The proposed upgrade of the existing bridge will reduce the (i) frequency and degree of workers entering the Bokkemanskloof River to repair the existing bridge, and (ii) promote the hydrological functioning of the river based on the design features (Table 1) of the proposed structure (**Appendix B1**). Alien invasive plant species negatively impact hydrology, nutrient cycling, fire intensity, and compete with indigenous vegetation for water, food, space, and light resources. This proposal includes the removal of alien vegetation which will be a positive impact. Due to the age of the existing bridge, should the bridge deteriorate to the point where the structure collapses into the Bokkemanskloof River, negative impacts associated with such an event would include (i) potential flooding, (ii) creating a physical barrier restricting the movement of fauna and flora (i.e. mode of seed dispersal), and (iii) impacting personnel attempting to cross the watercourse (potentially impacting other sections of the watercourse). This highlights the need to upgrade the existing bridge from an environmental perspective.

The proposed change in the layout and addition of a section of Erf 2958 will increase the conservation of biodiversity and habitats through the maintenance of buffers and the implementation of mitigation measures proposed by the specialists. Due to the location of the site relative to the backdrop of Table Mountain, the proposed nature-based development will promote symbiosis between nature and residents residing on the property.

Economic:
To meet the demands of the developing area, this existing bridge would require substantial maintenance or repair to continue fulfilling the intended service and proposed service (i.e. increase in traffic across the Bokkemanskloof River amid the authorised Oakhurst Development). Moreover, ageing concrete bridges typically exhibit symptoms of deterioration prior to reaching the end of their designed service life[10]. The proposed upgrade will reduce the frequency and degree of repairs/maintenance required, reducing the short- and long-term financial cost associated with maintaining the structural integrity of the bridge.

The proposed development of a residential estate for residents older than 50 years will provide a range of housing options relative to the resident's stage of life whereby care facilities or independent living will be available. This presents a niche in the market as such housing opportunities are not currently available in the retirement market segment in Hout Bay.

Social:
Based on the expected increase in vehicle loads and traffic volume (amid the previously authorised Oakhurst Development), which will need to cross the Bokkemanskloof River, the proposed upgrade of the existing bridge will be a positive impact. This is attributed to the proposed bridge providing a more safe, reliable and efficient crossing point compared with the existing bridge (*please refer to Table 1 for comparison in structure dimensions*). This will enable more vehicles and pedestrians to safely cross the Bokkemanskloof River at the same time, promoting and regulating traffic flow.

The proposed change in the layout will provide residents with active and passive recreation, improving their overall mental and physical health and well-being. This will also enable residents to socialize with other residents of a similar age.

Older citizens form part of the vulnerable proportion of the community relative to being targets of crime. The proposed change in the layout will enhance the provision of adequate security to residents and their property. This change in layout adopts the Crime Prevention Through Environmental Design ("CPTED") principles in the planning of the development project. The Oakhurst Lifestyle Estate will therefore be operated as a private security estate with the implementation of the City of Cape Town's Gated Development Policy.

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. ~~Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.~~

[9] Gautam, M.R., Watanabe, K. and Ohno, H., 2004. Effect of bridge construction on floodplain hydrology—assessment by using monitored data and artificial neural network models. *Journal of Hydrology*, 292(1-4), pp.182-197.
[10] Yang, J., 2021. Strengthening reinforced concrete structures with FRP composites. Chalmers Tekniska Hogskola (Sweden).

N/A

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

The Public Participation Plan (PPP) involved the notification of all potential and registered I&APs of the availability of the Pre-Application DBAR for comment. At the same time, notification was given to all potential and registered I&APs of the availability of the Pre Application Draft Part 2 Amendment Impact Assessment Report. Notification was distributed on 15 September 2022 and included the placement of site notices and the distribution of notification letters, as well as email notification. PPP was conducted for both projects from 16 September 2022 to 18 October 2022. The Post-Application DBAR for the proposed bridge upgrade was made available for comment from 13 May 2024 to 13 June 2024 to all registered interested and affected parties. Notification of the availability of the report was circulated to I&APs on 13 May 2024. Due to the DEADP's request that relevant portions of the Maintenance Management Plan be included in the DBAR and relevant Appendices, this report was subjected to another 30 days of PPP, from 20 August to 23 September 2024. At the same time, the Post-Application Draft Part 2 Amendment Impact Assessment Report was distributed for public participation over the same period. Notification for both applications were distributed on 20 August 2024. During this PPP phase, DEADP informed the Applicant that they have changed their decision on the applicability of a Part 2 Amendment process for the proposed amendments, and that the Part 2 Amendment Application should be withdrawn. The proposed amendments should then be included in this revised DBAR, which will be subjected to 30 days of PPP. This revised Basic Assessment report has been made available for comment from XX to XX, and notification was distributed on XX. Please note that due to the Protection of Personal Information Act (POPIA), Act No. 4 of 2013, correspondence containing contact details of the relevant I&APs will not be included in the PPP documentation. All relevant correspondence have been recorded in the Comments and Response Report, which is included as Appendix F5.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

Please note that due to the Protection of Personal Information Act (POPIA), Act No. 4 of 2013, contact details were blanked to protect the information of authorities. Please note that email addresses have been blanked in accordance with the POPIA (https://www.gov.za/sites/default/files/gcis_document/201409/370672611act4of2013protectionofpersonalinforcorrect.pdf).

State Department:	Name:
Department of Environmental Affairs and Development Planning: Development management (Region 1)	Zaahir Toefy
Department of Environmental Affairs and Development Planning: (Region 1)	Rondine Isaacs (case officer)
Department of Environmental Affairs and Development Planning: (Region 1)	Taryn Dreyer
Department of Environmental Affairs and Development Planning: Waste Management	Eddie Hanekom, Alet van Staden, and August Hoon
Department of Environmental Affairs and Development Planning: Air Quality Management	Joy Leaner
Department of Environmental Affairs and Development Planning: Pollution and Chemicals Management	Wilna Kloppers
Department of Transport and Public Works Directorate: Road Planning	Devlin Fortuin
Department of Water Affairs and Sanitation	Warren Dreyer, Derril Daniels, M. Noqhamza, and R Singo
City of Cape Town – Water & Sanitation Department	Franz von Moltke
City of Cape Town – Water & Sanitation Directorate: Water & Waste	Chanee Johnstone and Brian February
City of Cape Town – Water & Sanitation	Michael John Webster (Director: Water &

	Sanitation Department)
City of Cape Town - Environmental Management	Janet Bodenstein
City of Cape Town – Environmental Resource Management	Andrew Greenwood
City of Cape Town – Environmental & Heritage Management	Rashaad Samaai
City Cape Town – Area Manager Specialised Environmental Health Air Quality Management Unit	Wendy Kloppers
City Cape Town – City Health Specialised Environmental Health Air Quality Management Unit	Fundiswa Sandi
City of Cape Town – Electricity Generation & Distribution	Susan Nel
City of Cape Town – Development Management	Yunus Hugo
City of Cape Town – Mechanical Engineering Specialised Health Services	Peter Gossman
City of Cape Town – Metropolitan Municipality	Lungelo Mbandazayo (Municipal Manager)
Ward 43 Councillor	Bennett Payiya
CapeNature-Land Use Advice	Ismat Adams
Heritage Western Cape	Waseefa Dhansay
Eskom	John Geeringh

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

All relevant State Departments and Organs of State were consulted during the Post-Application Phase.

5. if any of the State Departments and Organs of State did not respond, indicate which.

Department of Water and Sanitation CapeNature Eskom

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

State Departments and Organs of State were consulted during the Post-Application Phase. Comments and Responses can be found in the Comments and Responses Report in Appendix F. In summary: **COMMENTS ON THE POST-APPLICATION DRAFT PART 2 AMENDMENT IMPACT ASSESSMENT REPORT** **Surrounding landowners/residents** 67 surrounding landowners/residents provided the same comments regarding the use of Hout Bay Main Road to access the construction site during the construction phase, the route to get to the construction site from the access point, as well as issues regarding noise during the construction phase. The I&APs also noted that the report is very large, and many of the specialist reports are out of date. The Applicant has not determined the exact point of access along Hout Bay Main Road, but has committed to ensuring the access point is safe for road users. The Applicant also commits to ensuring that the access route to the construction site of the bridge will not infringe on the 5m development setback line of the neighbouring properties along Blue Valley Avenue. Many of the specialist reports have been updated as the scope of the project changed. Since these updated specialist studies still refer to the original and/or previous studies, these reports have been included to ensure that I&APs have access to all the relevant information. The Specialist reports have also been summarised in this report. **Department of Environmental Affairs and Development Planning** DEADP changed its opinion regarding the applicability of a Part 2 Amendment Process for the proposed amendments, and outlined the way forward. In addition, some shortcomings of the EMPr was identified and DEADP requested confirmation of services from the City of Cape Town. This revised DBAR has been compiled as per the way forward outlined by DEADP. The shortcomings the EMPr has been addressed and confirmation of the availability of services will be included in the final BAR

SANParks
SANParks states that they do not have any direct interest in the proposed amendments, but notes that the report states that "the remaining section of RE of Erf 2224 will remain as per the current amended EA", and asked for confirmation that regarding the size of the areas that will be managed by SANParks.

The Applicant confirms that the relevant section of the current Amended EA will remain applicable and will be implemented as per the area sizes described in the Amended EA. The relevant areas have also been identified in the maps of this report.

City of Cape Town
The DBAR was circulated to various departments at the City of Cape Town. Comments were received from Air Quality Management and Catchment Management only. These Departments confirmed that they are satisfied with the responses to the comments raised during the first Public Participation Process, and that the proposal complies with the Management of Urban Stormwater Impacts Policy of 2009 and the Floodplain and River Corridor Management Policy of 2009.

COMMENTS ON SECOND CIRCULATION OF THE POST-APPLICATION DBAR FOR THE PROPOSED BRIDGE UPGRADE
Surrounding landowners/residents
67 surrounding landowners/residents raised objections regarding the use of Left-In-Left-Out access to the proposed construction site, as well as the proposed route to get to the construction site. The I&APs main concerns were the noise and vibrations generated by construction vehicles during the construction phase and the potential damage it can cause to their properties and their general wellbeing.

The Applicant has not determined the exact point of access along Hout Bay Main Road, but has committed to ensuring the access point is safe for road users. The Applicant also commits to ensuring that the access route to the construction site of the bridge will not infringe on the 5m development setback line of the neighbouring properties along Blue Valley Avenue.

COMMENTS ON FIRST CIRCULATION OF THE POST-APPLICATION DBAR FOR THE PROPOSED BRIDGE UPGRADE
Surrounding landowners/residents
15 surrounding landowners/residents raised an objection to the use of Birch Road or any of the other small roads along Blue Valley Avenue to access the site. The landowners identified the impact of noise that construction vehicles accessing the site will have on the quiet neighbourhood. They also note that Borch Road and Blue Valley Avenue is not suitable for heavy vehicles and is quite narrow. Many residents park their vehicles on the side of the road, which makes it even narrower, reducing traffic flow and increasing the chance of a vehicle collision with a construction vehicle or a construction vehicle damaging the vehicles or properties of the surrounding residents.

The Applicant has received approval from CCT for Left-In-Left-Out access to the site via Hout Bay Main Road. Due to this approval, access to the site during the construction phase via Birch Road and Blue Valley Avenue is no longer necessary, and these roads will not be used for construction vehicles to access the site. During the operational phase, access to the site will be via Dorman Way.

Department of Environmental Affairs and Development Planning
The need for a water use license must be confirmed, and comments from the Department of Water and Sanitation must be included in the final BAR.

The EMPr must be updated to include traffic management, stormwater management, dust and noise management, as well as relevant parts of the Maintenance Management Plan.

Comments must be obtained from:
- Department of Water and Sanitation
- Heritage Western Cape
- CapeNature
- City of Cape Town

Proof of submission of a water use license application will be included in the final BAR.

The EMPr has been amended accordingly.

Comments have been received from Heritage Western Cape and the City of Cape Town. Comments from Department of Water and Sanitation and CapeNature will be included in the final BAR.

City of Cape Town
Air quality branch outlined requirements for dust emissions resulting from the construction activities, including the use of waterless dust suppression methods and the implementation of dust screening if excessive dust is generated during the decommissioning.

Reticulation (sewer infrastructure), Transport Impact Assessment and Development Control, and Environment and Heritage branches had no objection to the development as long as the recommendations identified by the specialists are adhered to.

The measures in the comments have been included in the BAR and the EMPr.

COMMENTS ON THE PRE-APPLICATION DBAR
Ingrid Kington
The I&AP is a Hout Bay resident in close proximity to the proposed Oakhurst Residential Estate. The comments raised by the I&AP includes comments on the Part 2 Amendment application associated with the proposed changes to the approved project, and only the comments relevant to the bridge upgrade are included in this section.
The I&AP objects to the construction camp being located close to her property, as well as the proposal to use Blue Valley Avenue to access the construction site.

The site camp location has not yet been finalised, as this will only be done at the final planning approval stage.
Blue Vally Avenue has been identified as the closest and most practical access road to the bridge in the Traffic Impact Assessment (TIA). This access road will only be used for the bridge upgrade, after which Oakhurst Road will be used.

C&A Friedlander
C&A Friedlander represents 45 of the surrounding households situated within the vicinity of the proposed Oakhurst Residential Estate. The comments received from this I&AP includes comments on the Part 2 Amendment application, and only the comments relevant to the bridge upgrade are included in this section.
Concerns were raised with regards to the traffic generated by the bridge upgrade, and the inability Dorman Way and Blue Valley Avenue to handle the increase traffic volumes. The I&AP also notes that the heavy construction equipment and increased traffic volumes will cause a nuisance to the surrounding residents and will degrade the road surface. The I&AP also suggests that the mitigation measures included in the Botanical Compliance Statement and the Update Fresh Water Assessment Opinion are not adequate to address the construction phase impacts on an already degraded river channel and sensitive watercourse.

The outcome of the TIA indicated that the surrounding road network can, in fact, accommodate the trips associated with the proposed development. Mitigation measures to reduce the impact of noise associated with the heavy construction vehicles are included in the Impact Assessment in this DBAR as well as the EMPr.
With regards to the construction work being undertaken on an already degraded river channel and environmentally sensitive watercourse, the relevant specialists note that the current state of the river is due to previous disturbances and the dominant presence of alien invasive vegetation along the river channel. By addressing these challenges in the DBAR and EMPr, the proposed development will result in in the rehabilitation of the watercourse and management of alien vegetation. Furthermore, construction activities will only be undertaken at the existing bridge site, and the remaining river corridor is excluded from the development footprint. The recommended buffer zones will be strictly implemented.

Western Cape Department of Environmental Affairs and Development Planning (DEADP)
DEADP requested that a Herpetology Assessment be undertaken, and that the Fresh Water Impact Assessment be revised. Further comments included confirmation regarding information included in the Pre-Application DBAR and reminders of the requirements that must be complied with.

The required Herpetology Assessment was undertaken (Appendix G3.1) and the Fresh Water Assessment was updated, and the additional recommendations and mitigation measures have been included in the BAR and EMPr.

Jeff Cawcutt
The I&AP is a nearby resident and requested more clarity regarding the proposed upgrade of the bridge with its associated impacts on traffic, services, and security.

Information was provided to the I&AP as requested.

COMMENTS RECEIVED ON THE PRE-APPLICATION PART 2 AMENDMENT IMPACT ASSESSMENT REPORT

Surrounding landowners/residents
Surrounding landowners and residents registered as I&APs for the project, and many landowners raised objections regarding the proposed amendments, the impact it will have on the calm neighbourhood during both construction and operational phases, as well as the use of Blue Valley Road to access the site. C&A Friedlander represents 45 of the surrounding landowners, raising the same issues as discussed above.

The outcome of the TIA indicated that the surrounding road network can, in fact, accommodate the trips associated with the proposed development. Mitigation measures to reduce the impact of noise associated with the heavy construction vehicles are included in the Impact Assessment in this DBAR as well as the EMPr. With regards to the construction work being undertaken on an already degraded river channel and environmentally sensitive watercourse, the relevant specialists note that the current state of the river is due to previous disturbances and the dominant presence of alien invasive vegetation along the river channel. By addressing these challenges in the DBAR and EMPr, the proposed development will result in in the rehabilitation of the watercourse and management of alien vegetation. Furthermore, construction activities will only be undertaken at the existing bridge site, and the remaining river corridor is excluded from the development footprint. The recommended buffer zones will be strictly implemented.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that *"Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."*

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
    - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
    - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
    - if a facsimile was sent, a copy of the facsimile Report;
    - if an electronic mail was sent, a copy of the electronic mail sent; and
    - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	~~YES~~	**NO**
1.2.	Provide the name and or company who conducted the specialist study.		
N/A			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
N/A			
1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.		
N/A			

2. Surface water

2.1.	Was a specialist study conducted?	**YES**	~~NO~~
2.2.	Provide the name and/or company who conducted the specialist study.		
The Freshwater Assessment was conducted by Ms. Toni Belcher (Blue Science): **Appendix G2.1**			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

An initial freshwater assessment was conducted in 2008 and reviewed in 2010 (**Appendix G2.3**). A specialist opinion was compiled on the tributary buffer in 2014 (**Appendix G2.4**). A wetland delineation was conducted in 2021 (**Figure 1**) whereas a Confirmation Statement of the wetland buffer was compiled in 2021 (**Appendix G2.2**). The number of assessments conducted / opinions compiled on the Bokkemanskloof allows for a holistic identification of potential impacts over time that the amended development layout will have on the watercourse.

The proposed bridge to be upgraded traverses the Bokkemanskloof River, a tributary of the Disa River. This watercourse bisects the site from south to north. The Bokkemanskloof River comprises of a deeply eroded channel whereby small tributaries drain into the stream. Two wetland types (valley bottom and seep wetlands) were identified and delineated on site. The Lower Bokkemanskloof River is classified as a simple, single channel (alluvial channel type) with seasonal hydrological features.

The riparian zone and instream Habitat Integrity (IHI) of the Bokkemanskloof River were classified as Class D (Largely Modified – large loss of natural habitat, biota, and ecosystem function) and Class C (Moderately Modified – loss/change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged), respectively. The Ecological Importance and Sensitivity (EIS) for the Bokkemanskloof River is High/Moderate (i.e. watercourses that are sensitive to flow modifications but have substantial capacity for use).

The Present Ecological State (PES) of the delineated wetland was categorized as a moderately/largely-to-largely modified condition (based on the degree of loss of natural habitats and basic ecosystem functions). The Ecological Importance and Sensitivity (EIS) of the valley bottom and seep wetlands were classified as Moderate and Moderate/High, respectively, whereby the valley bottom wetland (associated with the Bokkemanskloof River) provides more valuable ecosystem services (relative to flood attenuation, flow regulation, and water quality improvement) compared with the seep wetland. The seep wetland does however provides habitat for biodiversity (including the Western Leopard Toad, Cape River Frog, and Gray's Stream Frog). Based on the Aquatic Confirmation Statement (**Appendix G2.2**), subject to the implementation of proposed mitigation measures, the delineated wetland buffer (measured from the delineated edge of the wetland edge) is 15m.

The Recommended Ecological Condition of the larger river system (Hout Bay River) associated with the site is categorized as D (largely modified) according to the Water Resources Classes and Resource Quality Objectives for the Berg Water Management Area. This indicates that the river should not deteriorate any further and should be rehabilitated where necessary. The Bokkemanskloof River and associated wetlands can be improved by the implementation of the 15m buffer and the removal of alien invasive vegetation from the river.

During the construction and operational phases, the following freshwater-related impacts were identified, namely (1) disturbance and loss of aquatic habitat; (ii) alteration in stormwater (surface water) runoff from the developed site; and (iii) potential for localized water quality impairment. Mitigation measures have been included in the EMPr and must be implemented accordingly. From an aquatic ecosystem perspective, the proposed additions to the original, previously authorised development of ERF 2224, it can be said that the proposed new development would not result in a significant increased level or change in the nature of impacts relative to the original assessment although the cumulative impacts could be expected to increase slightly.

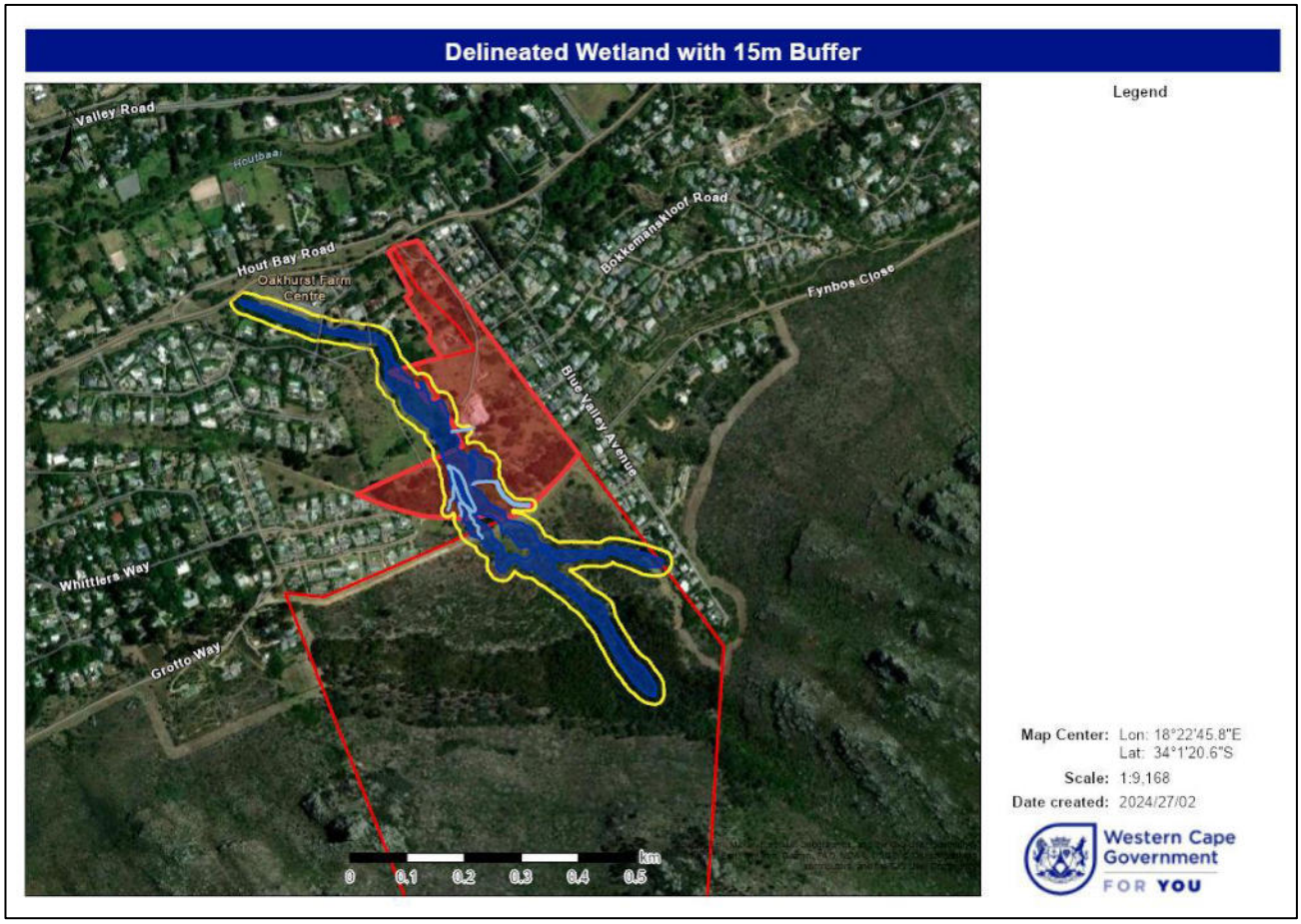

Figure 16. Wetland delineated by The Biodiversity Company (2021) whereby the 15m buffer was confirmed by Ms. Toni Belcher (**Appendix G2.2**). The extent of the delineated and associated buffer informed the extent of the amended development layout.

Bulk Sewer Connection:

As part of the investigation into the sewer services, and specifically regarding the clearance of indigenous vegetation, the botanical assessment report concluded that the sewer line will not trigger the listed activity related to the removal of more than 300m² of indigenous vegetation:

"*Considering the findings of the site visit, the only footprints considered to contain indigenous vegetation include the upper 60 metres of site 4, around 5 metres of sites 6 and 8, and 10 metres in site 9. Site 7 is not considered to be indigenous vegetation since the indigenous species present are likely to be escaped garden material, apart from a small area along the lower part of around 10m in length where a few indigenous shrub species are present. Therefore, assuming a footprint of up to 3 metres of disturbance along pipeline routes, this adds up to 270m² of impact within potentially indigenous vegetation. Therefore, this would not trigger a listed activity since less than 300m² of indigenous vegetation may be impacted. Note however that the area mapped here as indigenous vegetation is hardly representative of Cape Peninsula Granite Fynbos vegetation in terms of structure or diversity, which would historically have occurred within the site. This development is therefore supported from a botanical perspective.*"

3. Coastal Environment

3.1.	Was a specialist study conducted?	~~YES~~	**NO**
3.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
N/A			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
	N/A		
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		

4. Biodiversity

4.1.	Were specialist studies conducted?	**YES**	~~NO~~
4.2.	Provide the name and/or company who conducted the specialist studies.		
Dr Stuart Hall – Capensis (Botanical Compliance Statement) Mr. Michael Adams – The Biodiversity Company (Herpetofauna Assessment)			
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		

The following systematic conservation planning tools were used for the:

Botanical Component (Appendix G1):

- DEA Screening Tool
- Site boundaries: The property boundaries have been downloaded from the Cape Farm Mapper Website (https://gis.elsenburg.com/apps/cfm/).
- Vegetation Types: Mucina & Rutherford, (2006), and South African National Biodiversity Institute (SANBI)
- Ecosystem threat status:
    - The National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette, 2011);
    - Western Cape State of Biodiversity 2017 Report (Turner, 2017); and
    - The City of Cape Town Biodiversity Network (Holmes & Pugnalin, 2016), and (4) The National Biodiversity Assessment 2018 (SANBI, 2019).
- Biodiversity Planning: City of Cape Town Biodiversity Network (BioNet) GIS (City of Cape Town, 2017)
- Presence/absence of important species: Red List of South African Plants (Raimondo et al. 2009) (www.redlist.sanbi.org).
- Previous studies: Two previous botanical studies have been undertaken within the region of the study area, one by Dr David McDonald (2008) and another by Nick Helme (2010).

Herpetofauna Component (Appendix G3.1):

- South African Reptile Conservation Assessment (SARCA) (sarca.adu.org)
- A Guide to the Reptiles of Southern Africa (Alexander & Marais, 2007);
- Field guide to Snakes and other Reptiles of Southern Africa (Branch, 1998);
- Atlas and Red list of Reptiles of South Africa, Lesotho and Swaziland (Bates et al., 2014);
- A Complete Guide to the Frogs of Southern Africa (du Preez & Carruthers, 2009);
- iNaturalist (iNaturalist.org);
- Animal Demography Unit (ADU) - FrogMAP (frogmap.adu.org.za);
- Atlas and Red Data Book of Frogs of South Africa, Lesotho and Swaziland (Mintner et al., 2004); and
- Ensuring a future for South Africa's frogs (Measey, 2011).

4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

As per the Western Cape Biodiversity Spatial Plan (WCBSP) the management guideline determines the ecological state or condition in which a parcel of land or freshwater feature should be maintained. The management objectives are determined for a range of land uses i.e. Protected Areas (PAs), Critical Biodiversity Areas (CBAs) as well as Ecological Support Areas (ESAs).

As can be seen from the figure below, there are no PA, CBA, or ESA areas located within the proposed site for the upgrade of the existing bridge. The proposed site is highly disturbed/ transformed with limited indigenous vegetation remains. Therefore, it is envisaged that the proposed development will have an insignificant impact on biodiversity.

4.5.	Explain what impact the proposed development will have on the site specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.

As per the Biodiversity Spatial Plan, the proposed upgrade will not occur within a CBA or ESA (**Figure 3**).

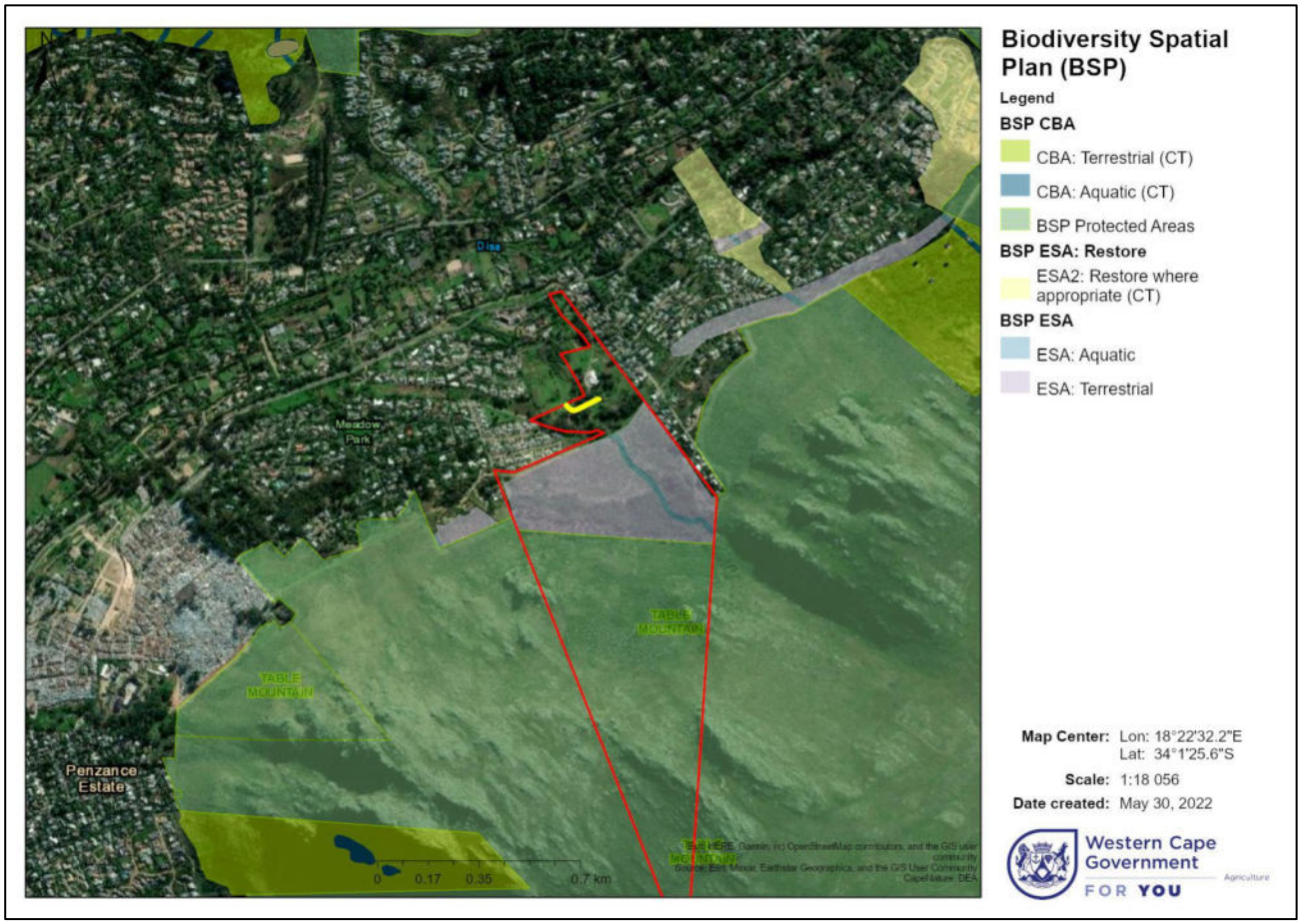

Figure 7. Biodiversity Spatial Plan (BSP) associated with the proposed bridge to be upgraded (yellow polygon)

As per the Biodiversity Spatial Plan, the proposed amendment will not occur within a CBA, ESA, or Protected Area (namely the Table Mountain National Park – TMNP) (**Figure 17**).

Based on the Botanical Compliance Statement (**Appendix G1.1**):

- The re-assessed proposed amended development footprint was classified as a highly disturbed, transformed habitat of low ecological value.
- No plant species characteristic of the vegetation type (Cape Peninsula Granite Fynbos) were present within the proposed amended development footprint.
- No plant species of conservational concern (SCC) were recorded within the proposed amended development footprint. Vegetation present on site comprised alien vegetation.
- The additional site (i.e. a portion of Erf 2958) was classified as highly disturbed and similarly transformed relative to the remaining development footprint (i.e. RE of Erf 2224).
- The botanical specialist:
    - Confirmed that the proposed amendment would **not** result in an increased level/change in the nature of impacts relative to the original assessment; and
    - Concluded that from a botanical perspective, the proposed amendment is supported.

Based on the Herpetofauna assessment (**Appendix G3.1**):

- The project area was considered transformed with little indigenous vegetation still remaining,

The likelihood of *Breviceps gibbosus* (Cape Rain Frog), *Cacosternum platys* (Flat Caco), *Capensibufo rosei* (Rose's Mountain Toadlet), and *Xenopus gilli* (Cape Platanna) occurring in the proposed site is low, whereas the likelihood of *Microbatrachella capensis* (Micro Frog) is highly likely, *Arthroleptella lightfooti* (Cape Peninsula Moss Frog) is Low-to-Moderate, and *Sclerophrys pantherina* (Western Leopard Toad) has been previously confirmed

Please note that the entire extent of RE of Erf 2224 was assessed as part of the Herpetofauna Application.

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

The site is located adjacent to the Table Mountain National Park.	
4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
Based on the findings of the specialist assessments, proposed mitigation measures have been provided in this report and the EMPr (**Appendix H)** must be implemented.	

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
It is envisaged that no geographical aspects will be significantly impacted by the proposed bridge upgrade.

6. Heritage Resources

6.1.	Was a specialist study conducted?	**YES**	~~NO~~
6.2.	Provide the name and/or company who conducted the specialist study.		
Ms. Louise van Riet			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
	A Notice of Intent to Develop (NID) (**Appendix G4.1**) was submitted to Heritage Western Cape (HWC). As per the response from HWC (**Appendix G4.2 / E1**), "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*". ***Please note that the entire extent of RE of Erf 2224, as well as the proposed upgrade of the bridge, was assessed as part of the NID.***		

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
A Notice of Intent to Develop (NID) (**Appendix G4.1**) was submitted to Heritage Western Cape (HWC). As per the response from HWC (**Appendix G4.2**), "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*".

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
	- The proposed development is situated in proximity to the informal settlement of Imizamo Yethu. - The proposed development is also adjacent to medium to high-income residential areas. - The site is situated in a medium-density populated residential area which is interspersed with open grassy areas. - According to the City of Cape Town's website(www.capetown.gov.za) the population of the area has the following characteristics, based on the Statistics South Africa Census 2011 data: o The population is predominantly Black African (43%) and White (35%). o 55% of those aged 20 years and older have completed Grade 12 or higher. o 79% of the labour force (aged 15 to 64) is employed. o 47% of households have a monthly income of R3 200 or less. o 63% of households live in formal dwellings. o 71% of households have access to piped water in their dwellings or inside their yard. o 80% of households have access to a flush toilet connected to the public sewer system. o 82% of households have their refuse removed at least once a week. o 91% of households use electricity for lighting in their dwellings. o Approximately 51.1% of the population comprises males. It must be noted that while a national census was undertaken in 2022, these results were not available at the time that this report was compiled.
8.2.	Explain the socio-economic value/contribution of the proposed development.

The proposed bridge upgrade will enable safe and formalised access across the Bokkemanskloof River. This will reduce the impact on downstream users and the integrity of the river due to vehicles crossing the river at other non-formalised points. To meet the demands of the developing area, this existing bridge would require substantial maintenance or repair to continue fulfilling the intended service and proposed service (i.e. increase in traffic across the Bokkemanskloof River amid the authorised Oakhurst Development). Moreover, ageing concrete bridges typically exhibit symptoms of deterioration prior to reaching the end of their designed service life. The proposed upgrade will reduce the frequency and degree of repairs/maintenance required, reducing the short- and long-term financial cost associated with maintaining the structural integrity of the bridge. Based on the expected increase in vehicle loads and traffic volume (amid the previously authorised Oakhurst Development), which will need to cross the Bokkemanskloof River, the proposed upgrade of the existing bridge will be a positive impact. This is attributed to the proposed bridge providing a more safe, reliable and efficient crossing point compared with the existing bridge (*please refer to Table 1 for comparison in structure dimensions*). This will enable more vehicles and pedestrians to safely cross the Bokkemanskloof River at the same time, promoting and regulating traffic flow.

The following socio-economic impacts will be realized should the proposed amendment application be authorized:

- As per the current amendment EA, the ownership of the EA was changed to Oakhurst Lifestyle Estate (Pty) Ltd. Oakhurst Lifestyle Estate has a different vision for the study site (i.e. a portion of RE of Erf 2224, RE of Erf 8343 and a portion of Erf 2958).
- Oakhurst Lifestyle Estate proposes the establishment of a safe and secure residential housing development catering to the needs of individuals and/or families older than 50 years. This includes the provision of different household types, namely dwelling houses and apartments for independent functioning residents, care units for assisted living, and residents in need of full-time frail care.
- The proposed change in the layout will provide residents with active and passive recreation, improving their overall mental and physical health and well-being. This will also enable residents to socialize with other residents of a similar age.
- Older citizens form part of the vulnerable proportion of the community relative to being targets of crime. The proposed change in the layout will enhance the provision o adequate security to residents and their property. This change in layout adopts the Crime Prevention Through Environmental Design ("CPTED") principles in the planning of the development project. The Oakhurst Lifestyle Estate will therefore be operated as a private security estate with the implementation of the City of Cape Town's Gated Development Policy.
- Increased conservation of biodiversity and habitat associated with the Bokkemanskloof watercourse: The proposed change in the layout and the addition of RE of 8343 and a section of Erf 2958 will increase the conservation of biodiversity and habitats through the maintenance of buffers and the implementation of mitigation measures proposed by the specialists. Due to the location of the site relative to the backdrop of Table Mountain, the proposed nature-based development will promote symbiosis between nature and residents residing on the property.

• Niche in the market: The proposed development of a residential estate for residents older than 50 years will provide a range of housing options relative to the resident's stage of life whereby care facilities or independent living will be available. This presents a niche in the market as such housing opportunities are not currently available in the retirement market segment in Hout Bay.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
The applicant has undertaken various specialist studies for the Oakhurst Lifestyle Estate. This includes identifying various impacts (e.g. traffic-related impacts) whereby various mitigation measures have been proposed by the specialists which will be implemented by the applicant.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
The proposed development of a residential estate for residents older than 50 years will provide a range of housing options relative to the resident's stage of life whereby care facilities or independent living will be available. This presents a niche in the market as such housing opportunities are not currently available in the retirement market segment in Hout Bay. It is envisaged that the proposed bridge upgrade will not have any significant impact on people's health and well-being as this proposal is for the upgrade to an existing bridge. The upgrade of the bridge will be a positive impact, allowing safe, reliable, and efficient access across the Bokkemanskloof River.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
The preferred site alternative is located on Erf RE/2224, Erf RE/8343 and Erf 2958, Hout Bay, within Ward 74 of the City of Cape Town Metropolitan. No additional sites were considered as positioning the bridge upstream or downstream of the existing crossing point would result in the transformation of previously undisturbed areas. Additionally, there is an existing and valid Environmental Authorisation for a residential development on the site. Therefore, there is only one preferred site alternative (**Appendix A1**).	
Provide a description of any other property and site alternatives investigated.	
N/A. Please refer to response above.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.	
No additional sites were considered as positioning the bridge upstream or downstream of the existing crossing point would result in the transformation of previously undisturbed areas, and there is an existing and valid Environmental Authorisation in place for the residential development. Therefore, there is only one preferred site alternative (**Appendix A1**).	
Provide a full description of the process followed to reach the preferred alternative within the site.	
No additional sites were considered as positioning the bridge upstream or downstream of the existing crossing point would result in the transformation of previously undisturbed areas, and there is an existing and valid Environmental Authorisation in place for the residential development. Therefore, there is only one preferred site alternative (**Appendix A1**).	
Provide a detailed motivation if no property and site alternatives were considered.	
No additional sites were considered as positioning the bridge upstream or downstream of the existing crossing point would result in the transformation of previously undisturbed areas, and there is an existing and valid Environmental Authorisation in place for the residential development. Therefore, there is only one preferred site alternative (**Appendix A1**).	
List the positive and negative impacts that the property and site alternatives will have on the environment.	
Positive Impacts: 1. The existing bridge will be upgraded. This will reduce the impact on other areas of the Bokkemanskloof River should a new bridge be constructed in a previously untransformed or undisturbed area. 2. Employment and skill development opportunities will be created during the construction phase 3. Increased conservation of biodiversity and habitat associated with the Bokkemanskloof watercourse **Negative impacts:** 1. Temporary impact on the Bokkemanskloof River during the construction phase. 2. Clearing of vegetation	
1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise

	positive impacts.
Provide a description of the preferred activity alternative.	
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative activities were investigated.	
Provide a description of any other activity alternatives investigated.	
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative activities were investigated.	
Provide a motivation for the preferred activity alternative.	
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative activities were investigated.	
Provide a detailed motivation if no activity alternatives exist.	
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative activities were investigated.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative activities were investigated.	
1.3.	Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts
Provide a description of the preferred design or layout alternative.	

PROPOSED BRIDGE UPGRADE

The preferred alternative design will comprise of the following (Table 3):

Table 3. Dimensions of the preferred alternative (proposed bridge structure and associated infrastructure)

Preferred alternative: Structure and Associated Infrastructure Description	Length	Width	Height	Area (m^2)
Proposed expansion and associated infrastructure	**10m**	**5.5m**	**3.19m**	**~55m^2**
Proposed approach roads located within the delineated wetland buffer	**121m**	**5.5m**	**N/A**	**~665m^2**

The following building quantities are proposed for the upgrade of the bridge and associate infrastructure:

3. Bridge quantities

3.4. Excavation: ~300m^3
3.5. Backfill: ~100m^3
3.6. Concrete: ~85m^3

4. Road and bulk earthworks

4.1. Topsoil strip to spoil: ~500m^3
4.2. Fill: ~1 750m^3
4.3. Imported layer work: ~350m^3

The proposed construction methodology for the proposed upgrade of the Oakhurst bridge will comprise of the following:

- The existing bridge structure will be decommissioned.
- There is limited vegetation within the watercourse that is to be cleared due to the presence of the existing bridge structure. Only necessary clearing and grubbing of the site for access and construction of the works will be undertaken.
- Heavy machinery (e.g. TLB) will be used to excavate the soil. This will be at the position of the abutments. Bedding material will then be compacted into this excavation, rebar, and formwork will be placed on this bedding material in preparation for the concrete base slab to be cast.
- Ready-mixed concrete will be brought to the site and used to cast the base slab to attach to these piles.
- Formwork will then be used to form the shape of the abutments and ready-mixed concrete will be poured to form these abutments.
- Wing walls downstream and upstream on either side of the Bokkemanskloof river. Compacted backfill will be placed between the walls;
- Once the abutments have been cast there will be no further major works within the watercourse.
- The contractor will then install staging for the deck and place the deck rebar.

- Ready-mixed concrete will be brought to the site again and used to cast the bridge deck.
- Wing walls will also be cast, and selected material will then be used to backfill behind the wing walls. This material will then also be used to form the shape of each approach.
- Erosion mitigation measures, including but not limited to gabion baskets, will be constructed for additional protection at the crossing point where/if required.

PROPOSED AMENDMENTS

As per the Amended EA* (Amended EA Ref: 14/3/1/1/A6/36/0535/21*), the currently authorized project description includes:

The total site area is approximately 78.15 hectares in extent. The development was to comprise full title residential properties, open space components, private roads, and bulk services infrastructure serving the development. The number of properties and extent of each land use envisaged for the authorized development were:

- 65 single residential erven (± 7.64 hectares)
- 1 special residential erf comprising 8 units (± 0.25 hectares)
- 2 rural erven (± 3.20 hectares)
- Private open space / Ecological Buffers / Riparian Corridors (± 5.10 hectares)
- Private roads (± 1.16 hectares)
- Undetermined land portion (future high-level road reserve ± 1. 84 hectares)

The residential erven were to range in size but will all exceed the minimum allowable extent of 650m^2. The remaining area of the site comprises:

- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management: Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

Please refer to Figure 3 for the authorized SDP.

Proposed amendment:

The proposed amendment will comprise:

- 74 Dwelling houses: ranging from two-to-three bedrooms (~0.64ha)
- 8 very low-density single dwelling houses (~ 13ha)
- 20 two-bedroom and 4 one-bedroom apartments (~1.21ha)
- One centralized care centre is comprised of 28 suites/rooms (~0.12m^2).
    - The care centre will also accommodate a reception/waiting area, lobby and lift, consulting/examining room, matron's office, administrative office, assisted shower and bath bathrooms, dining hall, kitchen, staff room and ablutions, storerooms (various), laundry, and basement parking.
- The existing "Old Dairy" building will be renovated and converted into a clubhouse facility comprised of recreation activities (including billiards, card games, gymnasium, yoga studio, sauna, Amendment Application/lounge, function dining areas, outside dining terrace, and dressing rooms & ablutions) and offices for management functions. A swimming pool is proposed north of the clubhouse building whereas a bowling green and associated terraced seating are also proposed.
- Private roads (~1.16ha)
- Formal walkways along internal roads
- Four stormwater attenuation ponds and an existing dam will serve as stormwater attenuation and retention functions. This will also be landscaped with indigenous vegetation endemic to the area to promote biodiversity.
- Bokkemanskloof River and associated delineated wetland (~1.81ha)
- An approximately 9ha open space area just south of the development footprint, which is too steep and too ecologically sensitive to develop; and
- An approximately 48.28ha area adjacent to the Table Mountain National Park, which is currently being managed by SANParks in terms of the National Environmental Management:

Protected Areas Act. The area is being managed in accordance with a long-term management agreement between the landowner and SANParks.

The estate will be developed in phases. Phase A will include the development of the clubhouse and associated recreational facilities, apartment blocks, and the stormwater attenuation ponds. The remaining phases (B and C to the north, and E to F to the south) will include the remaining residential dwellings as well as the assisted living and frail care unit. At this stage there are no details available regarding the timing of phases B-F since the development of these phases will be dictated by sales.

Provide a description of any other design or layout alternatives investigated.

Other types of crossings were considered, namely pipe culverts. The proposed methodology for the construction of pipe culverts includes:

- Necessary clearing and grubbing of the site for access and construction of the works will be done. This will include the clearing and cleaning of vegetation within the construction footprint of the site which will also include a 5m construction servitude on either side of the culvert's footprint;
- Clearing and grubbing of the site will be undertaken by heavy machinery i.e. a TLB. Bulk earthwork will take place once the site has been prepared;
- Once the above has been completed the construction of the new culverts will commence;
- Bedding material will be compacted into the area excavated by a TLB;
- Once the pipes have been cast there will be no further major works within the watercourse;
- Once the culvert has been completed the area surrounding the culvert will be completely rehabilitated back to its original state;
- Finally, rehabilitation / re-vegetation of all areas affected by the upgrade and construction activities will be undertaken using intensive grass sod planting or hydroseeding with a suitable indigenous grass seed mix, characteristic of the Peninsula Granite Fynbos.

The following specialist studies were conducted to inform the developer of the potential impacts of the proposed amended layout and development footprint:

- Botanical Compliance Statement: Appendix G1.1
- Freshwater Opinion Update: Appendix G2.1
- Herpetofauna Assessment: Appendix G3.1
- Revised Visual Impact Assessment: Appendix G4.1
- Notice of Intent to Develop (NID): Appendix G5.1
- Updated Traffic Impact Assessment: Appendix G6.1
- Updated Engineering Services Report: Appendix G7.1
- Updated Stormwater Management Plan: Appendix 8.1
- Updated Electrical Services Report: Appendix 9.1

The potential impacts identified, and proposed mitigation measures were used to inform the developer of the feasibility of the proposed amendment to the previously authorized layout and the addition of a portion of Erf 2958. Specialists and project team members were consulted on an ongoing basis.

Provide a motivation for the preferred design or layout alternative.

The preferred alternative (bridge – **Appendix B1**) will provide an improved formalised watercourse crossing point which will have the capacity to provide safe, reliable, and efficient for the expected increase in vehicles and pedestrians crossing the Bokkemanskloof River. The structure will promote the free flow of water, improving the functionality of the watercourse at the crossing point as there will no longer be artificial barriers (such as pipes) within the rivers, impacting the natural flow of water (as would be the case should pipe culverts be constructed). During heavy rainfall events, debris may accumulate and block the pipe culverts, resulting in potential flooding events. This will have a detrimental impact to the integrity of the watercourse and pipe culvert which may become overtopped. The selection of the preferred alternative (**Appendix B1**) should have a positive impact on the Bokkemanskloof River and the greater catchment at large.

The proposed amendment is conducive to the proposed retirement residential estate based on environmental, economic and social factors as outlined below:

- **Type of housing development**: as per the current amendment EA, the ownership of the EA was changed to Oakhurst Lifestyle Estate (Pty) Ltd. Oakhurst Lifestyle Estate has a different vision for the study site (i.e. a

portion of RE of Erf 2224, RE of Erf 8343 and a portion of Erf 2958). Oakhurst Lifestyle Estate proposes the establishment of a safe and secure residential housing development catering to the needs of individuals and/or families older than 50 years. This includes the provision of different household types, namely dwelling houses and apartments for independent functioning residents, care units for assisted living, and residents in need of full-time frail care. The proposed change in the layout will provide residents with active and passive recreation, improving their overall mental and physical health and well-being. This will also enable residents to socialize with other residents of a similar age. Older citizens form part of the vulnerable proportion of the community relative to being targets of crime. The proposed change in the layout will enhance the provision of adequate security to residents and their property. This change in layout adopts the Crime Prevention Through Environmental Design ("CPTED") principles in the planning of the development project. The Oakhurst Lifestyle Estate will therefore be operated as a private security estate with the implementation of the City of Cape Town's Gated Development Policy.

- **Increased conservation of biodiversity and habitat associated with the Bokkemanskloof watercourse**: The proposed change in the layout and the addition of RE of Erf 8343 and a section of Erf 2958 will increase the conservation of biodiversity and habitats through the maintenance of buffers and the implementation of mitigation measures proposed by the specialists. Due to the location of the site relative to the backdrop of Table Mountain, the proposed nature-based development will promote symbiosis between nature and residents residing on the property.
- **Niche in the market**: The proposed development of a residential estate for residents older than 50 years will provide a range of housing options relative to the resident's stage of life whereby care facilities or independent living will be available. This presents a niche in the market as such housing opportunities are not currently available in the retirement market segment in Hout Bay

Provide a detailed motivation if no design or layout alternatives exist.

N/A

List the positive and negative impacts that the design alternatives will have on the environment.

Positive impacts:

1. The preferred alternative will include the upgrade of an existing bridge in a previously transformed area.
2. Less maintenance will be required compared to alternative designs (e.g. clogging of pipe culverts with debris over time which may lead to the structure being overtopped)
3. Less infill is likely to be required.
4. Less anthropogenic structures will be introduced into the watercourse as the pipes may alter the natural flow of the watercourse.
5. Increased conservation of biodiversity and habitat associated with the Bokkemanskloof watercourse.

Negative Impacts:

1. The receiving environment will be affected during the construction phase.
2. Vegetation clearing during construction.

1.4.	Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred technology alternative:

<u>Energy and Water Saving Technologies</u>

The development of Erf 2224 will have some impact on scarce natural resources such as water supply and fossil fuels. This is both during the construction phase – e.g. vehicles, equipment and materials used in the construction process – as well as once the development is established: water and electricity supply to residences and private open spaces, etc.

It is imperative that the use of scarce natural resources is minimized as their state is currently under such pressure from anthropogenic activities. Any development, therefore, needs to ensure such minimization of natural resource use in order to be considered sustainable.

As per the Electricity and Fibre Services Report (**Appendix G9**), residential greener initiatives and renewable energy initiatives were proposed which include, but are not limited to, rainwater catchment and harvesting, LPG Gas, solar collectors, inverter, and battery backup [*as per statements issued by the National Regulator, residential developments can participate in becoming independent (preparing for further electrical network outages). The engineers proposed the provision of a central standby generator for continued electrical supply and to incorporate bi-directional tariff meters whereby residents with solar systems can import/export excess energy within the internal electrical network*], recycling waste, landfill and biodegradable compost, electric vehicles, water

heating (solar panel heating and vacuum tubes), and greywater recycling. Accordingly, technology alternatives for the minimization of natural resource use have been investigated against outdated technologies which are more resource-intensive:

- The development will implement natural lighting schemes as far as practicably possible as opposed to standard space lighting through electrical means. This will reduce the energy requirements for heating and cooling of the facility as well as the lighting of the facility.
- One or a combination of the following measures will be implemented for all geysers to reduce their energy requirements as opposed to standard technologies – energy-efficient geyser blankets, solar-heated water geysers and/or geyser timers. This will reduce the energy requirements for heated water to be available on tap.
- The development will implement roof insulation technology and materials as opposed to no insulation in the roofing superstructures. This will reduce the energy requirements for heating and cooling of the facility.
- The development will implement passive heating and cooling mechanisms as far as practicably possible as opposed to mechanically ventilated solutions. This will reduce the energy requirements for heating and cooling of the facility.
- Rainwater harvesting technologies will be implemented as far as practicably possible as opposed to allowing water runoff to disperse into the storm water system, which contributes to the inundation of natural watercourses and associated impacts on their natural flow regimes and ecology.
- Drip irrigation technologies for all landscaped areas will be implemented as far as practicably possible as opposed to standard irrigation technologies. Drip irrigation saves up to 90% of water use when compared to standard irrigation systems. Drip irrigations also curb weed growth which in turn requires less maintenance on landscaped areas.
- All buildings on site will be implementing water-saving devices such as, but not limited to, dual-flush cisterns, waterless urinals and aerated taps as opposed to standard flush cisterns and standard taps.

From the above investigation, the energy and water-saving technologies are the only alternatives considered to be reasonable and feasible given the stressed state of natural resources. These have therefore been included in the development proposal

Provide a description of any other technology alternatives investigated.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative technology(ies) was investigated.
Provide a motivation for the preferred technology alternative.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative technology(ies) was investigated.
Provide a detailed motivation if no alternatives exist.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative technology(ies) was investigated.
List the positive and negative impacts that the technology alternatives will have on the environment.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. Therefore, no alternative technology(ies) was investigated.

1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred operational alternative.
This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation. No operational alternatives were investigated.
Provide a description of any other operational alternatives investigated.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation.
Provide a motivation for the preferred operational alternative.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation.
Provide a detailed motivation if no alternatives exist.
N/A. This proposal is for the proposed upgrade of an existing bridge and the amendment of an existing Environmental Authrorisation.
List the positive and negative impacts that the operational alternatives will have on the environment.
Positive:

1. The formalization of the bridge will improve access and safety for pedestrians and vehicles crossing the Bokkemanskloof River.
2. Less maintenance will be required on the new bridge compared with the existing bridge. This will decrease the number of personnel/machinery entering the watercourse to attend to maintenance issues.
3. Housing and assisted living facilities for the elderly and vulnerable.
4. Improved conservation of biodiversity and habitat associated with the Bokkemanskloof watercourse.

Negative:

4. Clearance of vegetation

1.6.	The option of not implementing the activity (the 'No-Go' Option).

Provide an explanation as to why the 'No-Go' Option is not preferred.

The proposed upgrade of the existing bridge will not take place, and the proposed amendments to the Environmental Authorisation will not be implemented. Thus, challenges associated with the existing bridge will remain unresolved, and the proposed development will not efficiently utilise the space of the site. This includes the inefficient and potentially unsafe movement of traffic and pedestrians across the Bokkemanskloof River and the need for maintenance (whereby personnel and machinery will need to enter the watercourse thereby disturbing fauna and flora and the flow of the watercourse).

The 'No-Go' option will therefore negatively impact the three pillars of sustainable development.

1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.

This proposal is for the upgrade of an existing bridge and the amendment of an existing Environmental Authorisation. No feasible alternatives exist. Should the proposed bridge be constructed at a different point along the watercourse, the proposed development will have a larger impact on the receiving environment as these areas have not been transformed / severely disturbed. If the proposed amendments are not implemented, the project will have a larger negative impact on the environment.

1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.

No feasible site alternative was investigated as this proposal is for the upgrade of an existing bridge and the amendment of an existing and valid Environmental Authorisation.

Based on the factors highlighted above, the proposed bridge structure (**Appendix B1**) is the preferred alternative due to:

- The proposed development of the bridge in an alternative location will increase the impact on the Bokkemanskloof River as the proposed site has already been impacted (highly disturbed/transformed) due to the previous construction of the existing bridge.
- Less maintenance will be required compared with the alternative layout (i.e. pipe culverts) or the 'No-Go' alternative. This will decrease the number of personnel/machinery entering the watercourse to attend to maintenance issues resulting in various environmental, economic, and/or social impacts. Moreover, the use of pipe culverts introduces anthropogenic structures directly into the watercourse thereby impacting the natural flow of the watercourse.
- The proposed upgrade will provide a safe, reliable, and efficient crossing point with the capacity to cater for the expected increase in traffic and pedestrians needing to cross the watercourse.
- Employment and skill development opportunities will be created during the construction phase (compared with the 'No-Go' alternative).

The proposed amendments to the existing Environmental authorisation is the preferred alternative due to the changed layout will provide improved conservation of biodiversity in the Bokkemanskloof watercourse, as well as address issues such as development setback lines raised by IAPs.

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).

All areas upstream and downstream of the construction footprint must be demarcated as a 'no-go' zone for the duration of the construction process. Areas within 15m of the delineated wetland (excluding the approach roads) have been identified as 'no-go' areas (**Figure 1**). No site staff are permitted to enter these areas.

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

The Basic Assessment was undertaken in accordance with the principles of Integrated Environmental Management as detailed in Section 23 of NEMA and in the NEMA EIA Regulations.

The impact assessment is aimed at determining the likely significance of any impacts (positive or negative) associated with the development. The significance of the impacts is determined by investigating certain key aspects, or parameters, of the potential impact, which are determined by the nature of the activity, as well as the nature of the receiving environment. Aspects investigated include the extent, duration and timing, and magnitude of the impact.

Table 4: Methodology in determining the extent, duration, probability, significance, reversibility, and cumulative impact of an environmental impact (to be read with impact tables below).

Determination of Extent (Scale):

Site Specific	The impact is limited to the development site (development footprint) or part thereof.
Local	The impacted area includes the whole or a measurable portion of the site, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area.
Regional	The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties.
National	The impact would affect the whole country (if applicable).

Determination of Duration:

Temporary	The impact will be limited to part of the construction phase or less than one month.
Short term	The impact will continue for the duration of the construction phase, or less than one year.
Medium term	The impact will continue for part of the operational phase
Long term	The impact will continue for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter.
Permanent	This is the only class of impact that will be non-transitory. Such impacts are regarded to be irreversible, irrespective of what mitigation is applied.

Determination of Probability:

Improbable	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
Probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made.
Highly	It is most likely that the impacts will occur at some stage of the development. Plans

probable	must be drawn up to mitigate the activity before the activity commences.
Definite	The impact will take place regardless of any prevention plans.

Determination of Significance (without mitigation):

No significance	The impact is not substantial and does not require any mitigation action.
Low	The impact is of little importance but may require limited mitigation.
Medium	The impact is of sufficient importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
Medium-High	The impact is of high importance and is therefore considered to have a negative impact. Mitigation is required to manage the negative impacts to acceptable levels.
High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.
Very High	The impact is critical. Mitigation measures cannot reduce the impact to acceptable levels. As such the impact renders the proposal unacceptable.

Determination of Significance (with mitigation):

No significance	The impact will be mitigated to the point where it is regarded to be insubstantial.
Low	The impact will be mitigated to the point where it is of limited importance.
Low - Medium	The impact will be mitigated to a point where it may occur but will have a limited / low effect / impact to people and / or the environment. Taken within the overall context of the project this impact can be mitigated to a significance rating that is acceptable given the overall benefit.
Medium	Notwithstanding the successful implementation of the mitigation measures, the impact will remain of significance. However, taken within the overall context of the project, such a persistent impact does not constitute a fatal flaw.
High	Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and taken within the overall context of the project, is considered to be a fatal flaw in the project proposal.

Determination of Reversibility:

Completely Reversible	The impact is reversible with the implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intense mitigation measures are required
Barely Reversible	The impact is unlikely to be reversed even with the implementation of intense mitigation measures
Irreversible	The impact is irreversible, and no mitigation measures exist

Determination of Degree to which an Impact can be Mitigated:

Can be mitigated	The impact can be completely mitigated
Can be partly mitigated	The impact can be partly mitigated
Can be barely mitigated	It is possible to mitigate the impact only slightly
Not able to mitigate	It is not possible to mitigate the impacts

Determination of Loss of Resources:

No loss of resource	The impact will not result in the loss of any resources
Marginal loss of resource	The impact will result in marginal loss of resources
Significant loss of resources	The impact will result in significant loss of resources
Complete loss of resources	The impact will result in a complete loss of all resources

Determination of Cumulative Impact:

Negligible	The impact would result in negligible to no cumulative effects
Low	The impact would result in insignificant cumulative effects
Medium	The impact would result in minor cumulative effects
High	The impact would result in significant cumulative effects

Other factors which are also considered in the assessment of impacts include whether the impact is direct, indirect, or cumulative. A direct impact can be explained as being a direct result of activities associated with the development, such as damage of infrastructure due to a fire.

An indirect impact would be a downstream, secondary or "knock-on" impact resulting from an impact directly associated with the development (such as the contamination of freshwater resources downstream).

A cumulative impact would be an impact which already occurs in the receiving environment associated with other activities taking place in proximity to the development, such as noise, vibration and dust due to construction activities.

Other factors considered include whether the impact is reversible; and whether the impact could cause an irreplaceable loss of resources.

The impact assessment methodology used has been closely guided by the DEA EIA Guideline Document 5, on the assessment of impacts and alternatives (DEAT 2006); as well as reference to the description of the criteria used for the assessment of impacts as contained in the DEA&DP Specialist Guidelines Series (2005).

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

IMPACTS ASSOCIATED WITH THE PROPOSED BRIDGE UPGRADE

Alternative:	**Preferred Alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Erosion
Nature of impact:	Clearing and construction-related activities resulting in erosion within the Bokkemanskloof River. The expected increase in rainfall events due to climate change may also increase the potential for erosion. This may result in downstream sedimentation negatively impacting water quality via (1) an increase in water turbidity and suspended solids thereby impacting aquatic organisms (e.g. reduction in photosynthesis by aquatic plants) and their habitat, and (2) degradation of the riparian zone.
Extent and duration of impact:	Local and short-term
Consequence of impact or risk:	Medium
Probability of occurrence:	Likely
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	1. Creation of blockages leading to the area being flooded.
Cumulative impact prior to mitigation:	Low-to-Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low-to-Medium
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The following measures must be carried out to mitigate erosion: 1. The areas of the watercourse that are not within the direct project footprint must be demarcated as 'no-go' areas. No site staff are permitted to enter these areas. 2. Construction activities within the wetland buffer should take place during the dry season (October-to-April) to reduce contaminated runoff, erosion, and downstream sedimentation. 3. Temporary stormwater measures should be implemented to ensure that material does not wash off the surface into any watercourse during construction. 4. All construction activities occurring within the watercourse must be undertaken with extreme care to avoid any erosion taking place in the watercourse. 5. Areas exposed to erosion must be protected using sandbags, berms, and efficient construction processes i.e.: limiting the extent (footprint) and duration period that areas are exposed. 6. Construction processes must limit the extent (footprint) and duration period that areas are exposed. 7. The contractor must limit in-stream work to minimize streambank and bed disturbance. 8. Chemical toilets must be placed at least 32m away from the watercourse. Chemical toilets must be regularly emptied (weekly) by a registered disposal company. Waste receipts are required as proof of safe disposal. 9. Strict environmental controls regarding site clearing and construction activities and the installation of sediment traps in appropriate places downstream of construction activities must be implemented.

	10. Construction activities must take place within the demarcated construction footprint. Areas more than 5m up- and downstream of the proposed location for the bridge upgrade must be demarcated as 'no-go' zones. No site staff are permitted to enter these areas. 11. Stockpiling of material must be located at least 32m away from the proposed site for bridge upgrade. 12. Stockpiles must be managed to reduce erosion and sediment runoff. 13. No excavated material, fill, or bedding material may be stored within 32m of the watercourse. As per the Freshwater Assessment: 14. The upgrade of the existing bridge and associated activities should take place in drier months of the year; 15. No construction activities other than the proposed bridge upgrade and rehabilitation measures should take place within the recommended development setback (i.e. 15m from the edge of the delineated wetland). 16. The design of the bridge should not alter the shape, alignment, or depth of the watercourse channel or impede low/high flows. As per the Specialist's conclusion, the bridge design is in line with this requirement. 17. Upstream and downstream security walls or fencing through the river corridor must allow for the movement of small aquatic biota; 18. The water quality impacts during the construction phase should be addressed through a Construction Environmental Management Plan for the project, and implemented by an on-site Environmental Officer; 19. The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation; 20. Invasive alien plants species should be removed from the river corridor according to a rehabilitation plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required. 21. The stormwater management plan for the site should ensure that any impacts of stormwater from the site are mitigated as far as possible within the site. Mitigation measures, such as the use of permeable surfaces, re-use of runoff from built areas such as roofs as well as the use of measures such as swales) should be considered to minimize stormwater impacts on the associated aquatic habitats; 22. A maintenance management plan should be compiled to guide long-term maintenance works in the river.
Residual impacts:	Low
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	Erosion during bridge operation.
Nature of impact:	An increase in hardened surfaces due to the upgraded bridge structure may increase stormwater runoff resulting in increased erosion of nearby areas.
Extent and duration of impact:	Local and short-term

Consequence of impact or risk:	Low
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Creation of blockages leading to the structure being overtopped during a flooding event(s).
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	1. The Bokkemanskloof River must only be crossed at the bridge crossing. 2. Erosion mitigation measures (including, but not limited to, gabion baskets, stone pitching, etc) must be maintained and inspected regularly. 3. Areas surrounding the bridge must be inspected regularly to ensure that no erosion is taking place. 4. Areas impacted by erosion must be rehabilitated. This includes the revegetation (with indigenous plant species characteristic of the Cape Peninsula Granite Fynbos) of impacted areas to reduce further erosion.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred Layout**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impact on the Bokkemanskloof watercourse and associated

	wetland
Nature of impact:	This may result in the loss and/or degradation of habitats and the functioning (e.g. hydrological dynamics) of the watercourse.
Extent and duration of impact:	Local and short-term
Consequence of impact or risk:	Medium
Probability of occurrence:	Low-to-Medium
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Loss of biodiversity inhabiting areas associated with the Bokkemanskloof watercourse.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	The proposed site for the bridge upgrade comprises an existing impact of a similar nature (i.e. an existing bridge is present). As per the Botanical Compliance Statement (**Appendix G1**), the vegetation within the development footprint is highly degraded/transformed. The following mitigation measures must be implemented: 1. As per the Wetland Buffer Confirmation Statement (Appendix G2.2), a buffer of 15m (measured from the delineated edge of the wetland edge) was recommended and must be maintained.  **Figure 4.** Wetland delineation and recommended buffer. 2. Erosion and sediment mitigation measures (e.g. sediment traps, interceptor ditches, seeding and sodding, riprap of exposed embankments, mulching, etc.) must be implemented to reduce the degradation of the riparian habitat. 3. Vegetation clearing must be minimized as only areas in the immediate vicinity of the existing bridge and approach roads will be cleared.

	4. Caution must be exercised when working near and within the watercourse. 5. Construction materials must be stockpiled more than 32m from the watercourse. 6. Heavy vehicles must be kept at least 32m away from the watercourse except where needed for the construction process. 7. The footprint of the bridge must not be widened more than is necessary. 8. Alien vegetation must not be allowed to encroach onto the construction site and must be continually removed during the construction phase. Construction must not promote further alien plant disturbances in the surrounding area. 9. Sand and aggregate for concrete must not be obtained from within the riverbed or riparian zone but must be sourced from a permitted source. 10. A spill containment plan is required to be in place prior to construction to minimize the potential impacts of spills or leaks of hazardous substances. 11. Contamination of the watercourse with unset cement must be prevented as the discharge/runoff of contaminated water is detrimental to aquatic biota. 12. The bridge must be constructed as per the approved design, as the bridge has been designed to ensure that the natural flow of the watercourse is not interrupted. 13. Litter generated by workers and general construction activities must be cleared from the site and its surrounds on a daily basis. 14. At the end of construction, all old rubble, construction material and any other waste resulting from the activities must be removed from the site – this includes any areas in the channel where concrete has been accidentally deposited. 15. Method statements must be compiled, clearly outlining how the contractor will minimize the passage of contaminants such as cement into the river or onto its bank – prevention of accidental spillage into the river might be achieved through the use of plastic sheeting beneath the new platform during concrete casting. 16. No tools or other materials should be washed in the watercourse during construction. 17. Disturbed riverbanks and beds must be rehabilitated to their pre-construction condition or better, if necessary, by ripping of compacted areas and/or reshaping the riverbed to gentle grades of ideally 1:4 or less steep. A freshwater ecologist should oversee and/or have to sign off on the final rehabilitation effort. 18. The appointed, independent Environmental Control Officer (ECO) must inspect the bridge and river works on at least a weekly basis during active construction and take measures to address unforeseen or other disturbances that occur despite the implementation of the above mitigation measures. 19. A construction phase monitoring program must be compiled, in which specific measures to minimize pollution and other environmental impacts to the river and surrounding area are outlined, for implementation during construction. As per the Freshwater Assessment: 20. The upgrade of the existing bridge and associated activities should take place in drier months of the year. 21. No construction activities other than the proposed bridge upgrade and rehabilitation measures should take place within the recommended development setback (i.e. 15m from the edge of the delineated wetland).

	22. The design of the bridge should not alter the shape, alignment, or depth of the watercourse channel or impede low/high flows. As per the Specialist's conclusion, the bridge design is in line with this requirement. 23. Upstream and downstream security walls or fencing through the river corridor must allow for the movement of small aquatic biota. 24. The water quality impacts during the construction phase should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer. 25. The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation. 26. Invasive alien plants species should be removed from the river corridor according to a plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required. 27. The stormwater management plan for the site should ensure that any impacts of stormwater from the site are mitigated as far as possible within the site. Mitigation measures, such as the use of permeable surfaces, re-use of runoff from built areas such as roofs as well as the use of measures such as swales) should be considered to minimize stormwater impacts on the associated aquatic habitats. 28. A maintenance management plan should be compiled to guide long-term maintenance works in the river. 29. As per the Maintenance Management Plan (Appendix G2.6), the following mitigation measures are proposed: 30. Identify alien plants to be removed. If unsure, please contact the City of Cape Town's Biodiversity Management Branch or CapeNature for assistance. 31. Regular monitoring and control of alien vegetation should be undertaken to ensure that the plants are removed while still young saplings can more easily be removed (usually, pulling of seedlings by hand is possible when the soil is wet). This also prevents the spread of the alien plants once seeds have been produced 32. Avoid trampling or clearing of indigenous vegetation by using established paths were possible. 33. Clear alien vegetation according to the described alien vegetation removal methods for each invasive species as provided in the detailed method statement or with the methods and herbecides/biological control recommended on in the Working for Water website: www.environment.gov.za/projectsprogrammes/wfw/ resources 34. Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area; 35. Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new

	vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows; 36. Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required 37. The growth of indigenous Phragmite reeds and Typha bulrush plants must be manged in the rivers of developed areas. 38. Under no circumstances should the palmiet (Prionium serratum) be cleared from within the valley bottom and seep wetland under this MMP. 39. All cut vegetation (including removed alien vegetation) must be removed from the channel and the riparian zone for disposal at a garden waste facility
Residual impacts:	Disturbances to the riparian habitat may alter the physicochemical conditions of the watercourse downstream.
Cumulative impact post-mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	Impact on the Bokkemanskloof watercourse and associated wetland
Nature of impact:	Loss of highly degraded/transformed habitat may result in erosion, and possible migration of fauna previously inhabiting the area. It must be noted that this proposal is for the upgrade of an existing bridge structure (which has existing operational impacts).
Extent and duration of impact:	Local and Long Term
Consequence of impact or risk:	Low
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	The revegetation of impacted areas with indigenous plant species characteristic of the site's vegetation type may increase the establishment of indigenous vegetation promoting riparian habitat extent and enhancing the functionality.
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium-to-High
Degree to which the impact can be mitigated:	Medium-to-High
Proposed mitigation:	1. Alien vegetation should be cleared, using approved methods appropriate for use in a sensitive aquatic zone, for a distance of 10m upstream and 10m downstream of the proposed structure. 2. Efforts should be made to establish locally indigenous riparian vegetation in disturbed areas of the riverbanks at densities of at least 1 plant per m^2 within the disturbed area (excluding the footprint of the bridge itself) and the re-establishment of locally indigenous riparian plant species to a cover of 80% after one year. 3. Maintenance of planted areas through irrigation, if necessary, should be allowed for over at least one summer and autumn season. 4. Regular inspections and maintenance (when applicable) must be undertaken on the bridge. 5. The establishment of a stream monitoring program would ensure any impacts are identified timeously and remedied. 6. Speed limits within the residential estate must be strictly enforced.

	7. Structures underneath the roads 32m away from the bridge in both directions must be developed to allow for amphibians and other small animals to cross the road with limited exposure to moving vehicles. 8. Road signs must be posted within the estate to make road users aware of the presence of the animals. 9. Roadways must be illuminated at night. 10. As per the Maintenance Management Plan: 11. Clear alien vegetation according to the described alien vegetation removal methods for each invasive specias as provided in the detailed method statement or with the methods and herbecides/biological control recommended on in the Working for Water website: www.environment.gov.za/projectsprogrammes/wfw/ resources 12. Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area; 13. Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows; 14. Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required 15. Removal of indigenous instream vegetation should be conducted by hand cutting or mowing wherever possible, and should avoid large scale removal of soi land vegetation on the banks or in the channel. 16. Such removal of indigenous vegetation must be limited to nuisance growths and must take place outside the bird breeding season. 17. Patches of reeds immediately upstream or downstream of formal road crossings can be routinely cut as to not cause blockages of the pipes and culverts. 18. Reeds should be cut so the stump is no taller than 12cm when cut by hand, and 15cm when using a bush cutter. 19. Indigenous sedge and other grasses must be allowed to establish in cleared sections. 20. Any clearing works in the channel must not impede the movement of aquatic and riparian biota. 21. A minimum base flow should be maintained in the river channel at all times.
Residual impacts:	Positive impact whereby rehabilitated areas, impacted during the construction phase, may promote the extent and functionality of the Bokkemanskloof watercourse.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A

Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post-mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impact on flora and fauna within and surrounding the Bokkemanskloof watercourse.
Nature of impact:	Fauna and flora may be directly and indirectly (*please refer to impact above – "Loss of habitat"*) impacted. As per the Botanical Compliance Statement, the proposed development footprint was classified as highly degraded/transformed.
Extent and duration of impact:	Local and Short-Term
Consequence of impact or risk:	Medium
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Medium
Indirect impacts:	*Please refer to impact above – "Loss of habitat" and proposed mitigation measures.*
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Although there will be vegetation clearing, no plant species of conservation significance (SCC) will be impacted. The proposed site for the bridge upgrade was classified as highly degraded/transformed (Botanical Compliance Statement – **Appendix G1**). Areas in the vicinity of the existing bridge comprise alien plant species such as *Iris pseudacorus* (NEMBA category 1a), *Pennisetum clandestinum* and *Plantago lanceolata* as well as some opportunistic indigenous plant species including *Cenchrus caudatus*, *Juncus kraussii* and *Athanasia crithmifolia*. As per the Herpetofauna Assessment (**Appendix G3.1**), the proposed upgrade will affect possible migration routes and foraging habitats of the Western Leopard Toad (WLT). However, there is a low probability that other species of conservation concern occur on the site and surrounding area. Therefore, the upgrade to the existing bridge is expected to have a low impact on the flora provided that the following mitigation measures are implemented: 30. Mitigation measures as per the "Western Leopard Toad Habitat Assessment for the Proposed Development of Erf

	2224, Hout Bay (NCC, 2014)", "The Construction Phase Environmental Management Guideline and Construction Checklist", and "The Western Leopard Toad Development Design Guidelines" must be implemented. Records of these completed documents/checklists must be kept on site and available on request. 31. An Environmental Control Officer (ECO) with appropriate herpetofauna experience should be present during initial site clearing activities, in the event that any amphibian or reptile SCC are encountered. The suitably qualified ECO must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies. 32. The wetlands must be demarcated as "no-go" areas. 33. All alien invasive plant species should be removed from the project area and the wetlands during the wetland rehabilitation process, in accordance with advice from a horticulturist/rehabilitation expert. Such rehabilitation should ideally be conducted from January to June, to avoid the primary breeding season of most amphibian species. The removal of alien tree species from the Bokkemanskloof River should be a priority. 34. Appropriate traffic calming measures need to be put in place and signage warning road users of the possible presence of WLTs. 35. The feasibility of installing wildlife corridors or tunnels under access roads should be considered. 36. Indigenous plant species (and preferably locally indigenous plant species) should be used for all landscaping. 37. Construction personnel must be educated on the possible presence of endangered species of amphibians and chameleons, and the intentional killing of any amphibians or reptiles is strictly prohibited. 38. The use of poisons, such as pesticides, must be avoided. The ECO must be notified should the applicant/contractor propose the use of a pesticide. 39. A nocturnal search and rescue mission should be conducted to capture and relocate any Cape Dwarf Chameleons in the project area. This should be done before construction begins. It is recommended that these animals be relocated to suitable habitat in the adjacent Table Mountain National Park (but not further than 2km from the project area). 40. Ensure that no structures are built, during and after construction that could act as potential pit-fall traps for amphibian species. 41. Any trenches that are necessary during construction must be checked every morning for the presence of amphibians and reptiles. 42. Ensure that no pollutants enter the stormwater system or the wetland areas. 43. Any other herpetofauna encountered can be relocated either to the wetlands in the southern portion of the project area or (preferably) into the Table Mountain National Park adjacent. 44. Care should be taken not to construct any impermeable barriers. 45. Regular visual, chemical, and biological monitoring as determined by the Environmental Management Plan (**Appendix H**). 46. Appropriate traffic calming measures need to be put in place and signage warning road users of the possible presence of WLTs.

47. All vegetation clearing will take place under the supervision of the ECO and Engineer.
48. Erosion prevention and sediment control measures must be implemented. Temporary and permanent erosion control methods may include silt fences, interceptor ditches, seeding and sodding, riprap of exposed embankments, and mulching.
49. The project footprint must be kept as small as possible.
50. Heavy machinery must not be permitted to move beyond the demarcated footprint.
51. Sand and aggregate for concrete must not be obtained from within the riverbed or riparian zone but must be sourced from a permitted source.
52. A spill containment plan is required to be in place prior to construction to minimize the potential impacts of spills or leaks of hazardous substances.
53. Contamination of the river system with unset cement must be prevented as it is detrimental to aquatic biota health and survival.
54. Kerb and channel drains may be required along steep sections of the approach roads.
55. Should a large tree or section of indigenous vegetation require clearing, the ECO must be consulted before clearing takes place.
56. All construction must be done in accordance with an approved Environmental Management Plan (EMP), which must include the recommendations made in this report.
57. No clearing of any area outside of the construction footprint may be allowed.
58. An integrated waste management approach must be implemented during construction. Construction-related general and hazardous waste may only be disposed of at Municipal approved waste disposal sites.

As per the Freshwater Assessment:

59. The upgrade of the existing bridge and associated activities should take place in drier months of the year.
60. No construction activities other than the proposed bridge upgrade and rehabilitation measures should take place within the recommended development setback (i.e. 15m from the edge of the delineated wetland).
61. The design of the bridge should not alter the shape, alignment, or depth of the watercourse channel or impede low/high flows. As per the Specialist's conclusion, the bridge design is in line with this requirement.
62. Upstream and downstream security walls or fencing through the river corridor must allow for the movement of small aquatic biota.
63. The water quality impacts during the construction phase should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer.
64. The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation.
65. Invasive alien plants species should be removed from the river corridor according to a plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species

	may be required. 66. The stormwater management plan for the site should ensure that any impacts of stormwater from the site are mitigated as far as possible within the site. Mitigation measures, such as the use of permeable surfaces, re-use of runoff from built areas such as roofs as well as the use of measures such as swales) should be considered to minimize stormwater impacts on the associated aquatic habitats; 67. A maintenance management plan should be compiled to guide long-term maintenance works in the river. 68. As per the Maintenance Management Plan (Appendix G2.6), the following mitigation measures are proposed: 69. Identify alien plants to be removed. If unsure, please contact the City of Cape Town's Biodiversity Management Branch or CapeNature for assistance. 70. Regular monitoring and control of alien vegetation should be undertaken to ensure that the plants are removed while still young saplings can more easily be removed (usually, pulling of seedlings by hand is possible when the soil is wet). This also prevents the spread of the alien plants once seeds have been produced 71. Avoid trampling or clearing of indigenous vegetation by using established paths were possible. 72. Clear alien vegetation according to the described alien vegetation removal methods for each invasive species as provided in the detailed method statement or with the methods and herbecides/biological control recommended on in the Working for Water website: www.environment.gov.za/projectsprogrammes/wfw/ resources 73. Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area; 74. Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows; 75. Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required 76. The growth of indigenous Phragmite reeds and Typha bulrush plants must be manged in the rivers of developed areas. 77. Under no circumstances should the palmiet (Prionium serratum) be cleared from within the valley bottom and seep wetland under this MMP. 78. All cut vegetation (including removed alien vegetation) must be removed from the channel and the riparian zone for disposal at a garden waste facility
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	Personnel utilizing the upgraded bridge may impact flora and fauna.

Nature of impact:	Traffic may exceed speed limits or not exercise the necessary caution. This may result in the killing any potential WLTs in the vicinity of the upgraded bridge.
Extent and duration of impact:	Site-specific and Long-Term
Consequence of impact or risk:	Medium
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Low
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	1. Appropriate traffic calming measures need to be put in place and signage warning road users of the possible presence of WLTs. 2. Internal speed limits must be strictly enforced. 3. Ensure that no pollutants enter the stormwater system or the wetland areas. 4. Any other herpetofauna encountered can be relocated either to the wetlands in the southern portion of the project area or (preferably) into the Table Mountain National Park adjacent.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred Layout**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Dust Generation
Nature of impact:	Dust may be generated by construction activities for the

	proposed bridge upgrade.
Extent and duration of impact:	Site-Specific and Short-Term
Consequence of impact or risk:	Low
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Low
Indirect impacts:	1. Dust may settle on leaves of surrounding indigenous plant species, compromising photosynthesis. 2. Dust may be inhaled/ingested by workers, resulting in coughing and related illnesses.
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	There will be increased dust generated during the construction phase due to construction-related activities. However, this will be on a temporary basis and restricted to the study site. The following mitigation measures must be implemented: 1. Vehicle speed limits must not exceed 40km/hr. This will reduce the amount of dust generated around the site. 2. Any material being transported to the site in the back of the trucks must be covered. 3. Where effective and practical, waterless dust suppression methods must be applied. 4. Where waterless methods are not practical or effective, water carts must be used on site should dust levels exceed a nuisance level. Only non-potable water is to be used for dust suppression. 5. A complaints register must be kept on site to record any complaints received and detail how these complaints were addressed. 6. Shade cloth must be used for stockpiled materials where required. 7. The applicant must comply with the National Dust Regulations (Government Notice R827, 2013) with regard to dust levels produced on site.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	Dust Generation
Nature of impact:	It is envisaged that limited dust will be generated during the operational phase and is therefore a non-significant impact.
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A

Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	N/A. It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impact on heritage and/or cultural resources.
Nature of impact:	Heritage resources, e.g. graves, archaeological material, and paleontological material, may be discovered during the construction phase. However, it must be noted that this proposal is for the upgrade of an existing bridge whereby the discovery of such items is unlikely.
Extent and duration of impact:	Site-specific and Short-Term
Consequence of impact or risk:	Medium
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Low
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	A section of RE of Erf 2224 and Erf 2958 (additional section) was assessed for the NID (**Appendix G4.1**). In response, the HWC stated: "*You are hereby notified that, since there is no reason to believe that the proposed residential development*

	on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization". Thus, the following mitigation measures must be implemented: 1. If any heritage resources are discovered during construction activities, all construction activities must be stopped immediately. 2. The ECO and HWC must be immediately notified. 3. A fossil finds procedure should be included in the environmental authorization. 4. A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other applicable conditions. 5. All construction must be done in accordance with an approved Environmental Management Plan (EMP), which must include the recommendations made in this report. 6. No clearing of any area outside of the construction footprint is permitted.
Residual impacts:	N/A.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	N/A. It is envisaged that it is highly unlikely that the operational phase will impact any heritage resources.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	N/A. It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A

Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Insufficient number of toilet facilities on site and inappropriate disposal of toilet waste
Nature of impact:	The inappropriate disposal of toilet waste results in the contamination of the Bokkemanskloof watercourse and surrounding area. The inappropriate discharge of toilet waste may increase the level of pathogens (e.g. *Escherichia coli - E. coli*) in the watercourse resulting in health and safety risks for downstream users.
Extent and duration of impact:	Local and Short-to-Medium Term
Consequence of impact or risk:	High
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The increase in construction personnel during the construction phase will require an appropriate number of toilet facilities for the site. 1. Appropriate and sufficient toilet facilities (1 toilet per 15 employees) must be provided by the contractor. 2. All toilet facilities must be checked on a daily basis. 3. All toilet facilities must be emptied and cleaned on a weekly basis. 4. A registered waste removal contractor must remove sewage waste from the site. 5. Safe disposal slips for the disposal of effluent waste must be obtained and kept on site as proof of safe disposal. 6. This issue must be addressed by the ECO during the Environmental Awareness Training and by the contractor

	during inductions and toolbox talks. 7. All chemical toilets must be removed prior to the contractor vacating the site.
Residual impacts:	Workers may fall ill delaying the completion of construction activities.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	As per condition 7, all chemical toilets must be removed from the site on completion of the construction phase.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Chemical toilets may be required should the upgraded bridge need to be decommissioned.
Nature of impact:	The inappropriate disposal of toilet waste results in the contamination of the Bokkemanskloof watercourse and surrounding area. The inappropriate discharge of toilet waste may increase the level of pathogens (e.g., *Escherichia coli - E. coli*) in the watercourse resulting in health and safety risks for downstream users.
Extent and duration of impact:	Local and Short-to-Medium Term
Consequence of impact or risk:	High
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The increase in construction personnel during the construction phase will require an appropriate number of toilet facilities for the site. 1. Appropriate and sufficient toilet facilities (1 toilet per 15

	employees) must be provided by the contractor. 2. All toilet facilities must be checked on a daily basis. 3. All toilet facilities must be emptied and cleaned on a weekly basis. 4. A registered waste removal contractor must remove sewage waste from site. 5. Safe disposal slips for the disposal of effluent waste must be obtained and kept on site as proof of safe disposal. 6. This issue must be addressed by the ECO during the Environmental Awareness Training and by the contractor during inductions and toolbox talks. 7. All chemical toilets must be removed prior to the contractor vacating the site.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Unsustainable sourcing of raw materials such as gravel, sand, water etc.
Nature of impact:	Unsustainable sourcing of materials may result in illegal mining operations which can cause significant damage to the environment.
Extent and duration of impact:	Regional and Medium-Term
Consequence of impact or risk:	High
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low
Indirect impacts:	The sourcing of sand in an unsustainable manner may impact the geohydrological and physicochemical properties of the watercourse where the sand may have been illegally mined.
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The following mitigation measures must be implemented: 1. Bridge construction will require raw materials to be sourced and brought to the site. 2. Contractors must provide proof of sustainable sourcing of materials (i.e., permits for quarries and sand-winning operations from which stone and sand have been obtained). 3. Proof must be kept on site and made available on request.
Residual impacts:	N/A
Cumulative impact post mitigation:	Very Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low
OPERATIONAL PHASE	
Potential impact and risk:	N/A. It is envisaged that raw materials will not be required

	during the operational phase.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	N/A. It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Generation of noise associated with the construction.
Nature of impact:	The construction phase will result in an increase in vehicles moving through the area, building-related noises (e.g. equipment), etc.
Extent and duration of impact:	Local and Short-Term
Consequence of impact or risk:	Low
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Low
Indirect impacts:	Fauna may move away from the source of noise.

Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	The following mitigation measures must be implemented: 1. All construction vehicles and any equipment (if applicable) operating on site must be fitted with standard silencers to reduce the noise levels produced. 2. Construction activities must only take place during designated operating times (i.e. between 7:30 and 17:30 on weekdays). 3. All applicable municipal by-laws with regards to noise control must be implemented/adhered to. 4. Access to and from the site must be obtained via Left-In-Left-Out access from Hout Bay Main Road, as approved by the City of Cape Town.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
OPERATIONAL PHASE	
Potential impact and risk:	N/A. Noise will be generated during the construction phase.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	
Nature of impact:	Should the bridge be decommissioned, decommissioning-related activities (e.g. deconstruction of the upgraded structure) will generate noise.
Extent and duration of impact:	Local and Short-Term
Consequence of impact or risk:	Low
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Low
Indirect impacts:	Fauna may move away from the source of noise.
Cumulative impact prior to mitigation:	Low

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	The following mitigation measures must be implemented: 1. All construction vehicles and any equipment (if applicable) operating on site must be fitted with standard silencers to reduce the noise levels produced. 2. Construction activities must only take place during designated operating times (i.e. between 7:30 and 17:30 on weekdays). 3. All applicable municipal by-laws with regards to noise control must be implemented/adhered to.
Residual impacts:	N/A
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Removal of alien invasive plant species presents within the development footprint.
Nature of impact:	The development footprint was classified as highly degraded/transformed. Alien invasive plant species negatively impact hydrology, nutrient cycling, fire intensity, and compete with indigenous vegetation for water, food, space, and light resources. Alien invasive vegetation encroachment is one of the major drivers of the transition of vegetation to degraded conditions and is a contributing factor to erosion experienced in the watercourse.
Extent and duration of impact:	This is a positive impact.
Consequence of impact or risk:	This is a positive impact.
Probability of occurrence:	This is a positive impact.
Degree to which the impact may cause irreplaceable loss of resources:	This is a positive impact.
Degree to which the impact can be reversed:	This is a positive impact.
Proposed mitigation:	The following mitigation measures must be implemented: 1. An integrated management approach is recommended. This approach comprises of clearing invasive alien species and the prevention through rehabilitation of disturbed areas (e.g. areas impacted by construction activities) with the rehabilitation and restoration of these sites. 2. Prevention is the best form of invasive species management. If prevention is no longer possible, the following is recommended: a. **Early detection and rapid response**: Implement alien removal programs when the alien plants are small to prevent them from establishing on site. b. **Control**: This includes controlling and removing alien plants before seeding. This reduces future alien encroachment events. c. **Monitoring**: consistent follow-up work is required for sustainable management. 3. Alien and invasive plant species should be removed manually as far as possible, from the site as well as any areas on the property. 4. All work must be done by hand (manually), either by pulling, using shears, hand saws, or chainsaws

	(depending on the size of the tree). The use of vehicles or mechanical means for alien removal will be prohibited within the riparian zone. 5. The use of herbicides must be avoided. However, only herbicides that have been certified and proved for aquatic environments by an independent testing authority may be considered. The ECO must be consulted should the applicant propose the use of any herbicide/pesticide. 6. Removed alien plant material should be covered when transported to prevent it from being blown away. Vegetation that was removed must be transported off-site for disposal to reduce fire hazards. 7. Weekly monitoring should be implemented in areas surrounding the proposed upgraded bridge. 8. Alien vegetation management and monitoring should take place for five (5) consecutive years whereby the alien invasive removal plan is implemented every six (6) months. The following mitigation measures proposed by the Freshwater Specialist support the measures outlined above: 9. Invasive alien plant species should be removed from the river corridor according to a rehabilitation plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required. 10. All invasive alien vegetation removed during construction, must be disposed of at a garden waste facility
Indirect impacts:	The removal of alien invasive species will promote the establishment of indigenous plant species as well as indigenous fauna which depend on such vegetation.
Cumulative impact prior to mitigation:	Low-to-Medium (Positive)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (Positive impact). Construction must not promote further alien plant disturbances in the surrounding area.
Degree to which the impact can be avoided:	This is a positive impact.
Degree to which the impact can be managed:	This is a positive impact.
Degree to which the impact can be mitigated:	This is a positive impact.
Proposed mitigation:	This is a positive impact.
Residual impacts:	This is a positive impact.
Cumulative impact post mitigation:	This is a positive impact.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (Positive)
OPERATIONAL PHASE	
Potential impact and risk:	Removal of alien invasive plant species within the previous development footprint. This is a positive impact.
Nature of impact:	Alien vegetation encroachment may negatively impact the establishment of indigenous vegetation present in the development footprint.
Extent and duration of impact:	This is a positive impact.
Consequence of impact or risk:	This is a positive impact.
Probability of occurrence:	This is a positive impact.
Degree to which the impact may cause irreplaceable loss of resources:	This is a positive impact.

Degree to which the impact can be reversed:	N/A
Indirect impacts:	The removal of alien invasive species will promote the establishment of indigenous plant species as well as indigenous fauna which depend on such vegetation.
Cumulative impact prior to mitigation:	This is a positive impact.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	This is a positive impact. Operational activities must not promote further alien plant disturbances in the surrounding area. Monitoring of the watercourse must be undertaken, and all alien vegetation identified must be removed and replaced with indigenous vegetation as soon as possible. Maintenance in the river and wetland areas must be undertaken as per the Maintenance Management Plan, and must include the removal of alien invasive vegetation and managing indigenous nuisance growths such as reeds and bulrush.
Degree to which the impact can be avoided:	This is a positive impact.
Degree to which the impact can be managed:	This is a positive impact.
Degree to which the impact can be mitigated:	This is a positive impact.
Proposed mitigation:	This is a positive impact.
Residual impacts:	This is a positive impact.
Cumulative impact post mitigation:	This is a positive impact.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (Positive)
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	N/A. It is envisaged that the upgraded bridge will not be decommissioned.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

Alternative:	**Preferred alternative**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Employment and skills development opportunities
Nature of impact:	The proposed upgrade to the existing bridge will require workers during the construction phase. Thus, the proposed upgrade will create employment and skills development opportunities for local labour.
Extent and duration of impact:	Local and Short-Term (during the construction phase). This is a positive impact.
Consequence of impact or risk:	This is a positive impact.
Probability of occurrence:	This is a positive impact.
Degree to which the impact may cause	This is a positive impact.

irreplaceable loss of resources:	
Degree to which the impact can be reversed:	This is a positive impact.
Indirect impacts:	This is a positive impact.
Cumulative impact prior to mitigation:	This is a positive impact.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low-to-Medium (Positive)
Degree to which the impact can be avoided:	This is a positive impact.
Degree to which the impact can be managed:	This is a positive impact.
Degree to which the impact can be mitigated:	This is a positive impact.
Proposed mitigation:	This is a positive impact.
Residual impacts:	This is a positive impact.
Cumulative impact post mitigation:	This is a positive impact.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low-to-Medium (Positive)
OPERATIONAL PHASE	
Potential impact and risk:	N/A. It is envisaged that no workers will be required after the construction phase.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	N/A. It is envisaged that the upgraded bridge will not be decommissioned. Should the upgraded bridge be decommissioned, employment opportunities will be created.
Nature of impact:	N/A
Extent and duration of impact:	N/A
Consequence of impact or risk:	N/A
Probability of occurrence:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Degree to which the impact can be reversed:	N/A
Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A

Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

IMPACTS ASSOCIATED WITH THE PROPSOED EA AMENDMENTS

Potential noise impacts:	**Construction-related noise impacts**	
Nature of impact:	Noise associated with the operation of heavy vehicles and equipment.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and short-term impact.	**Post-mitigation** The impact will have a local and short-term impact.
Probability of occurrence:	**Pre-mitigation** Definite.	**Post-mitigation** Probable.
Degree to which the impact can be reversed:	Noise impact can be reversed through the implementation of relevant noise mitigation measures.	
Degree to which the impact may cause irreplaceable loss of resources:	Noise impacts will not result in an irreplaceable loss of resources.	
Cumulative impact prior to mitigation:	The impact can be considered cumulative as there are activities on adjacent sites which are already sources of noise, e.g. noise associated with residential developments and public roads that pass by the site.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be mitigated:	Noise impact can be mitigated to a high degree.	
Proposed mitigation:	• Working hours shall adhere to those stipulated by the City of Cape Town: 7am to 6pm, Monday to Friday; 7:30am to 1pm Saturday; and no work on Sundays. • The Contractor must use appropriate, modern equipment, which produces the least noise. • Any unavoidably noisy equipment must be identified and located in an area where it has the least impact. • The use of noise shielding screens should be considered by the project team as and when required. • The provisions of SABS 1200A Sub-clause 4.1 regarding "built-up areas" shall apply to all areas within audible distance of residents whether in urban, peri-urban or rural areas. • No amplified music shall be allowed on site. The use of radios, tape recorders, compact disc players, television sets etc. shall not be permitted unless the volume is kept sufficiently low as to avoid any intrusion on members of the public within range. • The Contractor shall not use sound amplification equipment on site unless for the purposes of site safety and communications and in emergency situations. • The Contractor will issue ear protection for any noise activities with a noise output of 85 dB or more.	

	• The Contractor must notify all adjacent property owners/occupants of the proposed development and that noise impacts above 85 dB may occur as a result of the above. • No noise-generating work is to be conducted outside of approved working hours unless in consultation with the local authority and advised to the adjacent property owners/occupants.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above.
Cumulative impact post-mitigation:	A slight cumulative impact can be associated with noise resulting from the construction sites.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	No. Noise-related impacts are envisaged to remain the same as previously assessed. The significance rating of impact after mitigation remains "Very Low".

Potential impacts on biological aspects:	**Impacts on the wet environments on and along the Bokkemanskloof River**	
Nature of impact:	• Trampling and disturbance of riparian zone and stream bed. • Obstruction of stream flow. • Erosion of stream banks and excessive silt entering the stream. • Disturbance of the Western Leopard Toad foraging and migrating routes. • Liquid and solid waste pollution. • Spillage of fuels, oils, chemicals and construction material that could runoff into the stream. • Short-term degradation of stream ecology.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and short-term impact.	**Post-mitigation** The impact will have a regional and short-term impact.
Probability of occurrence:	**Pre-mitigation** Highly probable	**Post-mitigation** Probable
Degree to which the impact can be reversed:	The impact is irreversible.	
Degree to which the impact may cause irreplaceable loss of resources:	Damage to the Wet Environments on site may result in the irreplaceable loss of resources as well as ecosystem services.	
Cumulative impact prior to mitigation:	Due to the construction activity-specific nature of the impact and the light-intensity urban environment surrounding the Bokkemanskloof downstream of Erf 2224, the impact is considered to be direct.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be mitigated:	Damage to Wet Environments can easily be mitigated with the implementation of a buffer area around the areas.	
Proposed mitigation:	• Based on the motivations provided in the Aquatic	

	Confirmation Statement (**Appendix G2.2**), subject to the implementation of proposed mitigation measures, the delineated wetland buffer (measured from the delineated edge of the wetland edge) is 15m. • The river channel and buffer zones should be declared a no-go zone, particularly for any construction vehicles. • Contaminated runoff from the construction activities should be prevented from flowing into the stream: materials management, concrete/cement mixing, stockpiling, etc. must be subject to the conditions contained in the EMP. • Immediately following the completion of the construction activities the riparian zone should be rehabilitated. • No structures should be built within the river channel that either impede or divert the flow in the stream, and in particular, interfere with the low flow. Prior permission will need to be obtained from the Department of Water and Sanitation and the City of Cape Town Environmental Resource Management for any such structures. • The river channel should be cleared of any debris after the construction phase and kept clear of debris and litter. • Strict environmental controls regarding site clearing and construction activities and the installation of sediment traps in appropriate places downstream of construction activities. • Regular visual, chemical and biological monitoring to be undertaken. This is to include basic water quality in situ measurements of electrical conductivity, dissolved oxygen, Sechi disc depth and pH, as well as inspection for the growth of alien invasive plants that should be removed as well as potential erosion areas that need mitigation.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	N/A. It is envisaged that the proposed amended development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not increase the impact on the Bokkemanskloof River and associated delineated wetland. The updated Stormwater Management Plan provides various measures to treat the quality of stormwater runoff and attenuate the runoff. This will have a positive impact on the Bokkemanskloof River system. However, the following, additional mitigation measures are proposed: 40. Erosion and sediment mitigation measures (e.g. sediment traps, interceptor ditches, seeding and sodding, riprap of exposed embankments, mulching, etc.) must be implemented to reduce the degradation of the riparian habitat. 41. Caution must be exercised when working near and within the watercourse. 42. Construction materials must be stockpiled more than 32m from the watercourse. 43. Heavy vehicles must be kept at least 32m away from the watercourse except where needed for the construction process. 44. Alien vegetation must not be allowed to encroach onto the construction site and must be continually removed during the construction phase. Construction must not promote further alien plant disturbances in the surrounding area. 45. Sand and aggregate for concrete must not be obtained

	from within the riverbed or riparian zone but must be sourced from a permitted source. 46. A spill containment plan is required to be in place prior to construction to minimize the potential impacts of spills or leaks of hazardous substances. 47. Contamination of the watercourse with unset cement must be prevented as the discharge/runoff of contaminated water is detrimental to aquatic biota. 48. Litter generated by workers and general construction activities must be cleared from the site and its surrounds on a daily basis. 49. At the end of construction, all old rubble, construction material and any other waste resulting from the activities must be removed from the site – this includes any areas in the channel where concrete has been accidentally deposited. 50. Method statements must be compiled, clearly outlining how the contractor will minimize the passage of contaminants such as cement into the river or onto its bank – prevention of accidental spillage into the river might be achieved through the use of plastic sheeting beneath the new platform during concrete casting. 51. No tools or other materials should be washed in the watercourse during construction. 52. Disturbed riverbanks and beds must be rehabilitated to their pre-construction condition or better, if necessary by ripping of compacted areas and/or reshaping the river bed to gentle grades of ideally 1:4 or less steep. A freshwater ecologist should oversee and/or have to sign off on the final rehabilitation effort. 53. The appointed, independent Environmental Control Officer (ECO) must inspect the site on at least a weekly basis during active construction, and take measures to address unforeseen or other disturbances that occur despite the implementation of the above mitigation measures; 54. A construction phase monitoring program must be compiled, in which specific measures to minimize pollution and other environmental impacts to the river and surrounding area are outlined, for implementation during construction. 55. The implementation of stormwater management measures will ensure that the post-development flows are attenuated to pre-development levels for the entire site area. 56. Erosion mitigation measures as per Annexure D must be implemented where applicable. This includes, but is not limited to the use of diversion drains, revegetation, level spreaders, silt fences, temporary construction exits, sediment traps, etc. 57. A maintenance plan has been developed by the engineers. The implementation of the maintenance plan must be undertaken by Oakhurst Lifestyle Estate Management. 58. As per the Freshwater Assessment (Appendix G2.1), the following mitigation measures were proposed:

59. Upstream and downstream security walls or fencing through the river corridor must allow for the movement of small aquatic biota;
60. The water quality impacts during the construction phase should be addressed through a Construction Environmental Management Plan for the project, and implemented by an on-site Environmental Officer;
61. The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation;
62. Invasive alien plant species should be removed from the river corridor according to a plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required.
63. The stormwater management plan for the site should ensure that any impacts of stormwater from the site are mitigated as far as possible within the site. Mitigation measures, such as the use of permeable surfaces, re-use of runoff from built areas such as roofs as well as the use of measures such as swales) should be considered to minimize stormwater impacts on the associated aquatic habitats;
64. With the creation of the stormwater management and wetland areas, consideration should be given to discouraging the nuisance growth of bulrushes that would require ongoing management;
65. A maintenance management plan should be compiled to guide long-term maintenance works in the river.
66. As per the Maintenance Management Plan (Appendix G2.6), the following mitigation measures are proposed:
    - Identify alien plants to be removed. If unsure, please contact the City of Cape Town's Biodiversity Management Branch or CapeNature for assistance.
    - Regular monitoring and control of alien vegetation should be undertaken to ensure that the plants are removed while still young saplings can more easily be removed (usually, pulling of seedlings by hand is possible when the soil is wet). This also prevents the spread of the alien plants once seeds have been produced
    - Avoid trampling or clearing of indigenous vegetation by using established paths were possible.
    - Clear alien vegetation according to the described alien vegetation removal methods for each invasive species as provided in the detailed method statement or with the methods and herbecides/biological control recommended on in the Working for Water website:

	www.environment.gov.za/projectsprogrammes/wfw/ resources • Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area; • Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows; • Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required • The growth of indigenous *Phragmite* reeds and *Typha* bulrush plants must be manged in the rivers of developed areas. • Under no circumstances should the palmiet (Prionium serratum) be cleared from within the valley bottom and seep wetland under this MMP. o All cut vegetation (including removed alien vegetation) must be removed from the channel and the riparian zone for disposal at a garden waste facility
Cumulative impact post mitigation:	No cumulative impact.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very low
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on the water resource system. The significance rating of impact after mitigation remains "Very Low".

Potential impacts on biological aspects:	**Construction impacts on the Western Leopard Toad**	
Nature of impact:	Potential impacts on habitat associated with Western Leopard Toads.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and short-term impact.	**Post-mitigation** The impact will have a regional and short-term impact.
Probability of occurrence:	**Pre-mitigation** Highly probable	**Post-mitigation** Improbable

Degree to which the impact can be reversed:	Irreversible
Degree to which the impact may cause irreplaceable loss of resources:	Impacts resulting from construction activities may result in the permanent loss of natural habitat for the Western Leopard Toad.
Cumulative impact prior to mitigation:	Activities on site will have a cumulative impact as the site is bound by residential development on the east and west boundaries of the site.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	The impact on the natural habitat can be restricted through the implementation of mitigation measures.
Proposed mitigation:	• An Environmental Control Officer (ECO) must inspect construction development on a regular basis to ensure environmental compliance. • The river buffer areas recommended for the protection of the sensitive freshwater and botanical aspects of the river corridor, wetland area and tributaries across the site, should be implemented for the protection of the WLT habitat. • Construction workers and all those accessing the site should be educated as to the potential occurrence of Western Leopard Toads on site to avoid potential mishaps i.e. toads are found trapped in trenches (temporary signage can be out up to further inform and remind construction workers of Western Leopard Toads). The ECO should then move individual toads found on site to a safe and shaded place on site where no development is to occur. • Stormwater drains should be covered by a mesh/drain cover with a diameter of less than 3 cm, to prevent toads from falling into the drains and being trapped. • All internal (if any) and perimeter fencing must be made toad-friendly and not act as unpassable barriers. • It is recommended that holes of 15 x 10 cm are made at ground level in the fencing, at least every 10 m, to allow for toad and other animal movements. Palisade fencing would be ideal. • With regard to swimming pools, toads often fall in and cannot get out, some eventually drown, To avoid this, shade cloth overhangs or similar structures should be installed along pools, which could provide support to get out. • All man-made and natural waterbodies present should be cordoned off and after the construction phase is rehabilitated and preferably only between January and June, to avoid the breeding season and emergence of toadlets from waterbodies. • The City of Cape Town's Western Leopard Toad Construction Phase Environmental Management Guideline must be implemented.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	A Herpetofauna Assessment was undertaken (**Appendix G3.1**). As per the Herpetofauna Assessment, the proposed amendment to the existing development

	will still affect possible migration routes and foraging habitats of the Western Leopard Toad (WLT). However, there is a low probability that other species of conservation concern occur on the site and surrounding area. Therefore, the proposed amendment to the development footprint and change in layout is expected to have a low impact on the flora provided that the following mitigation measures are implemented: 1. An Environmental Control Officer (ECO) with appropriate herpetofauna experience must be present during site clearing activities. Any encountered herpetofauna must be relocated either to the wetlands or the southern portion of the project area. 2. The wetland area must be demarcated as a no-go area. 3. The feasibility of installing wildlife corridors or tunnels under access roads should be considered. 4. Applicable traffic calming measures must be put in place. Signage warning road users of the possible presence of WLTs is required. 5. All alien invasive species should be removed from the project area and the wetlands during the rehabilitation process. Such rehabilitation should occur from January to July to avoid the primary breeding season of most amphibian species. The removal of alien tree species from the Bokkemanskloof River should be prioritized. 6. Construction personnel must be educated on the possible presence of endangered amphibians and chameleons. The intentional killing of any amphibian or reptile is strictly prohibited. 7. The use of poisons should be avoided as far as possible. 8. Prior to the commencement of construction activities, a nocturnal search and rescue mission should be conducted to capture and relocate any Cape Dwarf Chameleons in the project area. Should any chameleons be found, the animals are to be relocated to suitable habitat in the adjacent Table Mountain National Park (not further than 2mk from the project area). 9. Ensure that no structures are built which could act as a pit-fall trap for amphibian species. Should any trenches be excavated, such trenches must be checked every morning for the presence of amphibians and reptiles. 10. Ensure no pollutants enter the wetland areas. 11. Any new fences or walls to be constructed must be as "frog-friendly" as possible. This may include the use of palisade fencing or rectangle holes (~ 10cm in height x 15m in length) at the bottom of the

	wall/fence. This will enable the movement of amphibians across Erf 2224. 12. Only indigenous vegetation be used for attenuation ponds. This creates habitat for amphibian species and may establish a WLT breeding site. 13. Indigenous plant species should be used for landscaping. This should be encouraged for all residents on Erf 2224. 14. Shade cloth overhangs (or similar structures) should be placed in all swimming pools to prevent any amphibians from drowning. 15. Stormwater drains should be covered by mesh/drain covers (diameter < 3cm) to prevent WLTs from falling into such drains. 16. All residents/visitors must keep domestic pets (e.g. dogs) at bay. It was recommended that garden areas are cornered off to enable WLTs to forage and aestivate from the intrusion of domestic pets. 17. Signage must be placed at a central point of the proposed residential development to educate residents and visitors about the presence of WLTs. Should any areas become active breeding sites, residents must be made aware of the breeding season (late July – early September) and exercise caution (especially with driving). WLTs should not be unnecessarily handled or moved to waterbodies unnecessarily. However, signage warning road users of the possible presence of WLTs is required and has therefore been included in the proposed mitigation measures to be implemented should this proposal be authorised). 18. Moreover, based on the recommendations made by the Herpetofauna Specialist, mitigation measures detailed above must be read in conjunction with the following mitigation measures from the "Western Leopard Toad Habitat Assessment for the Proposed Development of Erf 2224, Hout Bay (NCC, 2014)" report as well as in conjunction with the guidelines developed by the Biodiversity Management Plan of the WLT (**Appendix G3.2**), namely: 19. The Construction Phase Environmental Management Guideline and Construction Checklist. 20. The Western Leopard Toad Development Design Guidelines. 21. These completed documents must be kept on site and made available on request. 22. As per the Freshwater Assessment, o Upstream and downstream security walls or fencing through the river corridor must allow for

	the movement of small aquatic biota. o The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation.
Cumulative impact post mitigation:	Provided all recommended mitigation measures are adhered to rigorously, the cumulative impact on loss of habitat will be minor.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on the WLT individuals if present on site. The significance rating of impact after mitigation remains "Very Low".

Potential geographical and physical impacts:	**Construction-related dust impacts**	
Nature of impact:	Construction activities such as land clearing, excavating, materials and fill stockpiling, and vehicles traversing sandy surfaces of the site, generate dust.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and short-term impact.	**Post-mitigation** The impact will have a local and short-term impact.
Probability of occurrence:	**Pre-mitigation** Definite	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	Easily reversible	
Degree to which the impact may cause irreplaceable loss of resources:	No loss of irreplaceable resources. The impact may result in a nuisance to adjacent sites.	
Cumulative impact prior to mitigation:	The developed nature of the surroundings to the north, east and west, and the vegetated nature of the site and the mountainside to the south, suggest that this impact will be direct.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be mitigated:	The impact can be mitigated to a high degree.	
Proposed mitigation:	• Dust generated from construction-related activities will be controlled through a variety of measures including the covering of topsoil stockpiles and wetting of stockpiles and other soil surfaces. • Dust controls such as straw stabilizing, shade cloth etc. should be considered. • The Contractor will be bound by relevant mitigation measures as detailed in the Construction Environmental Management Programme.	
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above. The following additional mitigation measures are proposed to further reduce the impacts associated with dust generation:	

	8. Vehicle speed limits must not exceed 40km/hr. This will reduce the amount of dust generated around the site. 9. Any material being transported to the site in the back of the trucks must be covered. 10. Water carts must be used on site should dust levels exceed a nuisance level. Only non-potable water is to be used for dust suppression. 11. A complaints register must be kept on site to record any complaints received and detail how these complaints were addressed. 12. Shade cloth must be used for stockpiled materials where required. 13. The applicant must comply with the National Dust Regulations (Government Notice R827, 2013) with regard to dust levels produced on site.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	No. Dust-related impacts are envisaged to remain the same as previously assessed. The significance rating of impact after mitigation remains "Very Low".

Potential cultural-heritage impacts:	**Heritage impacts**	
Nature of impact:	Oak woodland, a grove of Klipkershout trees, and the Bokkemanskloof river corridor have heritage and aesthetic significance. Inadequately managed construction activities (clearance of the land, etc.) could impact negatively on these heritage resources.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and permanent impact.	**Post-mitigation** The impact will have a regional and permanent impact.
Probability of occurrence:	**Pre-mitigation** Probable	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	The impact is irreversible.	
Degree to which the impact may cause irreplaceable loss of resources:	Should the mitigation measures/recommendations not be followed the impact could result in the permanent loss of irreplaceable heritage resources.	
Cumulative impact prior to mitigation:	This is not a cumulative impact	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium	
Degree to which the impact can be mitigated:	The impact can be mitigated/restricted.	
Proposed mitigation:	• The section of oak woodland on Erf 2224 should be protected for its historic significance. While 10 oak trees well be removed, a further 109 trees will be planted as per the update Landscaping plan. • The Bokkemanskloof riverine corridor and its vegetation should be protected in terms of its	

	aesthetic and scientific significance. The buffer areas recommended must be implemented prior to the commencement of land clearing. • The Klipkershout grove is to be accommodated within the river corridor buffer area.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	No heritage resources were present on the additional site (i.e. (a portion of Erf 2958) or in the areas where the change in the layout will take place. The recommendations made by Aikman Associates (**Appendix G5.3**) are supported. The specialist recommended that no further heritage studies are required. In response, the HWC stated: "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*". The following additional mitigation measures are proposed to further reduce any potential impact on heritage resources: 1. Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and the HWC must be notified without delay. 2. Fossil finds procedure to be included in the environmental authorization 3. As per the recommendations of the updated NID, the following mitigation measures should be implemented: 4. The section of oak woodland on Erf 2224 should be protected for its historic significance. While 10 trees will be removed, a further 109 will be planted as per the updated Landscaping plan. 5. The Bokkemanskloof riverine corridor and its vegetation should be protected in terms of its aesthetic and scientific significance. The buffer areas recommended must be implemented prior to commencement of land clearing. 6. The Klipkershout grove is to be accommodated within the river corridor buffer area.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation	Low

(Low, Medium, Medium-High, High, or Very-High)	
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on any heritage resources on site. The significance rating of impact after mitigation remains "Low".

Potential geographical and physical impacts:	**Waste related impacts**	
Nature of impact:	Solid Waste; hazardous waste (asbestos, chemicals such as sealants, etc.) and wastewater (such as excess cement mixing water) need to be adequately managed to prevent negative impacts on soil and freshwater resources and on the municipal stormwater and waste management systems. The inappropriate disposal of toilet waste results in the contamination of the Bokkemanskloof watercourse and surrounding area. The inappropriate discharge of toilet waste may increase the level of pathogens (e.g. *Escherichia coli - E. coli*) in the watercourse resulting in health and safety risks for downstream users.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and temporary impact.	**Post-mitigation** The impact will have a local and temporary impact.
Probability of occurrence:	**Pre-mitigation** Definite	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	Reversible	
Degree to which the impact may cause irreplaceable loss of resources:	It is unlikely that inadequate management of waste water and solid waste would cause irreplaceable loss of resources. Remediation should suffice.	
Cumulative impact prior to mitigation:	The impact is a direct result of construction activities.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be mitigated:	High degree.	
Proposed mitigation:	• Recommend use of ready-mix cement/concrete. • All waste generated during the construction activity will be stored on site in covered waste containers and emptied regularly by a private waste contractor. • The Contractor will be bound by relevant mitigation measures as detailed in the Construction Environmental Management Programme. • Asbestos Regulations (2001) from the	

	Occupational Health and Safety Act (Act No. 85 of 1993) must be enforced when asbestos is removed from the site.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	Additional mitigation measures are proposed due to the potential increase in construction personnel during the construction phase will require an appropriate number of toilet facilities for the site. 8. Appropriate and sufficient toilet facilities (1 toilet per 15 employees) must be provided by the contractor. 9. All toilet facilities must be checked on a daily basis. 10. All toilet facilities must be emptied and cleaned on a weekly basis. 11. A registered waste removal contractor must remove sewage waste from the site. 12. Safe disposal slips for the disposal of effluent waste must be obtained and kept on site as proof of safe disposal. 13. This issue must be addressed by the ECO during the Environmental Awareness Training and by the contractor during inductions and toolbox talks. 14. All chemical toilets must be removed prior to the contractor vacating the site.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	Based on the factors outlined above, it is envisaged that the proposed amendment will not significantly increase the impact on waste-related activities. The significance rating of impact after mitigation remains "Very Low".

Potential geographical and physical impacts:	**Construction-related traffic impacts (e.g. tip trucks and excavators etc.)**	
Nature of impact:	• Road safety and pedestrian safety. • Congestion. • Noise. • Exhaust emissions. • Negative impacts on the lifestyle of residents from all of the above.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and short-term impact.	**Post-mitigation** The impact will have a local and short-term impact.
Probability of occurrence:	**Pre-mitigation** Definite	**Post-mitigation** Probable
Degree to which the impact can be reversed:	Traffic impacts can be easily reversed by the cessation of activities.	
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable loss of resources would occur.	
Cumulative impact prior to mitigation:	The impact can be seen as cumulative. The site is bound by residential development and public access	

	roads with associated traffic.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High degree
Proposed mitigation:	• Relevant traffic signage must be erected. Controlling direction in which traffic moves, speed and designated routes. • Signage must be erected warning the public of the construction activities taking place on site. • Site access must be controlled. • CoCT has approved temporary Left-In-Left-Out access to the site for construction vehicles off Hout Bay Main Road, which will reduce the noise and air quality impacts in the Blue Valley township. • Construction activities must only take place within approved local municipal work hours.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above
Cumulative impact post mitigation:	The increase in traffic will not have significant impacts once appropriate mitigation is put in place.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on construction-related traffic impacts. The significance rating of impact after mitigation remains "Very Low".

Potential visual impacts:	**Construction-related visual impacts**	
Nature of impact:	• Visibility of construction vehicles, contractor's camp, stockpiles, etc., from neighbouring areas and from a scenic, tourist route.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and short-term impact.	**Post-mitigation** The impact will have a regional and short-term impact.
Probability of occurrence:	**Pre-mitigation** Definite.	**Post-mitigation** Probable.
Degree to which the impact can be reversed:	The impact is reversible with the cessation of all construction activities.	
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable resources would be lost.	
Cumulative impact prior to mitigation:	The impact is a direct impact.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low	
Degree to which the impact can be mitigated:	This impact is not easily mitigated but is not of a scale to be considered significant.	

Proposed mitigation:	None
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	The following mitigation measures have been proposed by the VIA Specialist: • A hedge and tree border must be planted along the north western border to screen the proposed development from the Historic Oakhurst Homestead. • Visually recessive building materials and colours must be used • Large trees, already surveyed should be retained where possible and in accordance with the Landscape Plan. • Clumps of indigenous plants that have been surveyed must be retained as per the Landscape Plan. • Hedging to provide visual screening for sensitive receptors to the east should be addressed. • Street and parking area lights must be minimised but in accordance with local authority requirements. • Any luminaires must be top shielded so that light only shines downwards, thereby preventing pollution • Light spillage should be contained • No uplighting onto buildings • Limit extent of damage, keeping cut and fill to a minimum. • The construction areas must be fenced off to minimise visual disturbance thereby protecting and retaining trees and other vegetation • Erect temporary shadecloth on boundaries with sensitive receptors such as residential areas to the east • The site must be kept tidy at all times • Erosion mitigation measures must be implemented to protect building material stockpiles • Appropriate mitigation measures must be implemented to minimise dust generation and its effect on the surrounding buildings and dwellings.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on construction-related visual impacts. The significance rating of impact after mitigation remains "Very Low".

Potential socio-economic impacts:	**Employment**
Nature of impact:	The construction activities associated with the development will result in temporary jobs during the construction phase.
Extent and duration of impact:	The impact will have a local and temporary positive impact.
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	The impact is cumulative: there are other sources of employment in the surrounding developed areas.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low (positive)
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	No mitigation measures are required. Positive local impact.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	N/A
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on construction-related traffic impacts. The significance rating of impact after mitigation remains "Very Low".

(b) **Impacts that may result from the <u>operational phase</u> (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.**

THE FOLLOWING IMPACTS ARE ASSOCIATED WITH THE OPERATIONAL PHASE OF THE DEVELOPMENT DEVELOPMENT FOOTPRINT AND LAYOUT AMENDMENT .

Potential noise impacts:	**Operational phase noise impacts**	
Nature of impact:	There will be noise impacts associated with the established development. These will be the standard noise impacts associated with any occupied residential development, such as vehicle noise. The impact is considered to be in keeping with the developed residential surroundings.	
Extent and duration of impact:	**<u>Pre-mitigation</u>** The impact will have a local and permanent	**<u>Post-mitigation</u>** The impact will have a local and permanent

	impact.	impact.
Probability of occurrence:	**Pre-mitigation** Definite	**Post-mitigation** Probable
Degree to which the impact can be reversed:	High degree	
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable resource will be lost.	
Cumulative impact prior to mitigation:	The impact is considered cumulative as the site is nearby other residential developments.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be mitigated:	High degree	
Proposed mitigation:	• All occupants will be bound by the relevant local authority by-laws regarding noise generation. • All occupants will be bound by any other relevant noise legislation.	
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above.	
Cumulative impact post mitigation:	The site is earmarked for residential development and therefore noise generation from the site will be cumulative.	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low	
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on operational noise impacts. The significance rating of impact after mitigation remains "Very Low".	

Potential impact biological aspects:	**Impacts on wet environments on and along the Bokkemanskloof River**	
Nature of impact:	• Erosion of stream banks as a result of over utilisation for recreation. • Re-infestation of the riparian zone with invasive alien plants. • Contamination of stream by spillage from sewage pipes or pumps. • Contamination of stream by polluted stormwater runoff from roads and gardens. • Permanent destruction of Western Leopard Toad foraging areas, limitations to toad movement and unsafe road crossings. Loss of highly degraded/transformed habitat may result in erosion, and possible migration of fauna previously inhabiting the area.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and permanent impact.	**Post-mitigation** The impact will have a positive regional and permanent impact.
Probability of occurrence:	**Pre-mitigation**	**Post-mitigation**

	Definite.	Definite positive impact.
Degree to which the impact can be reversed:	Impact can result in permanent damage should mitigation measures not be implemented.	
Degree to which the impact may cause irreplaceable loss of resources:	Impact can result in the loss of an irreplaceable resource.	
Cumulative impact prior to mitigation:	The impact is a direct impact.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium	
Degree to which the impact can be mitigated:	High-degree; mitigation measures can result in a positive impact on Wet Environments.	
Proposed mitigation:	• As per the Wetland Buffer Confirmation Statement (**Appendix G2.2**), a buffer of 15m (measured from the delineated edge of the wetland edge) was recommended and must be maintained. • The buffer areas should be cleared of invasive alien vegetation and planted with suitable local indigenous riparian vegetation. • The buffer areas should be designated private open spaces under estate management. • Establishment of specific use areas such as paths and crossings and measures to encourage the eco-friendly installation of sediment traps in appropriate places. • The establishment of a stream monitoring programme would ensure any impacts are identified timeously and remedied. • Regularly monitor the stream water quality. • Proper environmental controls regarding malfunction of the sewage system with backup sumps if necessary. • Encourage residents not to use fertilizers or pesticides. • Design the estate with as many permeable surfaces as possible to allow sand filtering of stormwater before it enters the stream. • There should be no direct discharge of stormwater into the stream. Stormwater runoff should be attenuated on site and infiltration should be encouraged as far as possible in line with the City's latest policy on the management of urban stormwater impacts. • The stormwater management plan compiled by Graeme McGill Consulting and contained in **Appendix G8.1** must be implemented. • The contamination of runoff should also be minimized through the careful use of fertilizers and pesticides. • As per the updated Engineering Services Report (**Appendix 7.1**), the sewer line (previously indicated during the Basic Assessment Application) will not cross the Bokkemanskloof River – this further reduces impacts associated with potential sewage spillages and water course contamination incidents. ▪ Prevention of spillages from the pipeline: With regards to the manholes in the pipeline at those points where the pipeline is closest to the river	

	(that is within 30m from the river), these manholes should be sealed as far as possible to minimize spills from these manholes that may occur as a result of pipeline blockages. The use of hinged manhole covers that can be clipped closed and that rubber seals be used to seal the manholes is recommended for those manholes located within 30m of the river's top of the bank. ▪ Prevention of breakages in the pipeline: All possible measures should be made in the construction of the pipeline to prevent future breakages as a result of flood damage. It is recommended that a steel pipe be utilized in certain ections and that the pipe is encased in concrete. ▪ The pipeline should be regularly monitored and maintained to ensure that any problems with the pipeline are rectified before they can impact on the river. • No structures should be built within the river channel that either impede or divert the flow in the stream, and in particular, interfere with the low flow. Prior permission will need to be obtained from the Department of Water and sanitation and DEA&DP for any such structures. • The river channel should be kept clear of debris and litter.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	To further reduce the operational impacts of the amended development, the following mitigation measures are proposed: • The implementation of stormwater management measures will ensure that the post-development flows are attenuated to pre-development levels for the entire site area. • Erosion mitigation measures as per Annexure D must be implemented where applicable. This includes, but is not limited to the use of diversion drains, revegetation, level spreaders, hale bale, silt fences, temporary construction exit, sediment traps, etc. • A maintenance plan has been developed by the engineers. The implementation of the maintenance plan must be undertaken by the management of Oakhurst Lifestyle Estate. • In order to attenuate stormwater runoff, five stormwater attenuation ponds will be required. These ponds will act as both an attenuation facility and sediment/litter trap. The two existing dams will be used to treat runoff and attenuate the peak runoff from the development site and the external sub-catchments. • The quality of stormwater runoff will be adequately treated by the use of the stormwater

	measures proposed above. • As per the Freshwater Assessment, the following mitigation measures must be implemented: o Invasive alien plants species should be removed from the river corridor according to a plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. Pennisetum clandestinum and Cortaderia selloana) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required. o With the creation of the stormwater management and wetland areas, consideration should be given to discouraging the nuisance growth of bulrushes that would require ongoing management; o A maintenance management plan should be compiled to guide long-term maintenance works in the river. As per the Maintenance Management Plan: o Clear alien vegetation according to the described alien vegetation removal methods for each invasive specias as provided in the detailed method statement or with the methods and herbecides/biological control recommended on in the Working for Water website: www.environment.gov.za/projectsprogrammes/wfw/ resources • Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area; • Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows; • Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required

	• Removal of indigenous instream vegetation should be conducted by hand cutting or mowing wherever possible, and should avoid large scale removal of soi land vegetation on the banks or in the channel. • Such removal of indigenous vegetation must be limited to nuisance growths and must take place outside the bird breeding season. • Patches of reeds immediately upstream or downstream of formal road crossings can be routinely cut as to not cause blockages of the pipes and culverts. • Reeds should be cut so the stump is no taller than 12cm when cut by hand, and 15cm when using a bush cutter. • Indigenous sedge and other grasses must be allowed to establish in cleared sections. • Any clearing works in the channel must not impede the movement of aquatic and riparian biota. • A minimum base flow should be maintained in the river channel at all times.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium positive impact.
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on the environment associated with the Bokkemanskloof River. The significance rating of impact after mitigation remains "Medium (positive)".

Potential impacts on the geographical and physical aspects:	**Traffic Impacts**	
Nature of impact:	• Road safety and pedestrian safety. • Congestion. • Noise. • Exhaust emissions. • Negative impacts on the lifestyle of residents from all of the above. • The proposed amended development layout will impact northbound vehicles turning right into Hout Bay Main Road with the additional 10 vehicles. This will increase the delay for PM peak hour by ~ five seconds (resulting in a total delay of 42 seconds).	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and permanent impact.	**Post-mitigation** The impact will have a local and permanent impact.
Probability of occurrence:	**Pre-mitigation** Improbable	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	The impact is not reversible, as traffic flows will remain for as long as the development remains.	
Degree to which the impact may cause	No irreplaceable loss of resources will occur.	

irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	The impact is considered cumulative as the site is bound by residential development and public roads.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	The development access design is mitigation in itself.
Proposed mitigation:	• The provision of dedicated parking facilities for bicycles and motorbikes/scooters is encouraged. • The provision of dedicated pedestrian and cycle routes is encouraged. • A mountable curb should be provided where required along Birch Street in order to facilitate on-street parking. • Road markings and signage must be provided according to the South African Road Traffic Signs Manual.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	In light of this, the following intersections were studied, namely the Hout Bay Main Road / Dorman Way (Priority stop control) (Intersection 1), and Hout Bay Main Road / Blue Valley Avenue (Priority stop control) (Intersection 2). Five (5) traffic scenarios were identified and analysed. The results of these scenarios have been included below to highlight the methodology used to determine access to the site: **Scenario 1, 2022 existing traffic conditions:** based on capacity results and analyses, all intersections operate at an acceptable level of service (LoS) and with sufficient capacity. **Scenario 2, 2027 background traffic conditions**: conditions were based on the existing scenario intersections geometry/control. A negative growth rate of ~ 1 – 2% along Hout Bay Main Road was observed from 2013 – 2016 traffic volumes. 2021 traffic volumes were therefore escalated by a growth rate of 1%/annum for five years plus the approved/in development trips. This was also based on the previous traffic report (ITS 2350.2 Response to Prof. Vanderschuren Report). Intersection 2 is within an acceptable LoS with sufficient capacity. With regards to Intersection 1, vehicles on the northbound turning right are expected to be challenged finding gaps along Hout Bay main road. However, it must be noted that the traffic volume is expected to increase by 10 vehicles. **Scenario 3, 2027 total traffic conditions (access via Birch Street onto Blue Valley Avenue):** Based on the traffic engineer's assessment, Intersection 2 operates at an acceptable LoS and with sufficient capacity, whereas Intersection 1 whereby vehicles travelling northbound will turn right northbound along Hout Bay Main Road. Please refer to Figure 6 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**).

	Scenario 4, 2027 total traffic conditions (access via Oakhurst Avenue onto Dorman Way): Based on the traffic engineer's assessment, Intersection 2 operates at acceptable LoS and will sufficient capacity, except Intersection 1 whereby vehicles travelling northbound will turn right northbound along Hout Bay Main Road. Furthermore, the additional 10 vehicles would increase the delay for PM peak hour by ~ five seconds (resulting in a total delay of 42 seconds). Due to this elevated delay, it is recommended that a roundabout be constructed. Please refer to Figure 8 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**). **Scenario 5, 2027 total traffic conditions (access via Oakhurst Avenue onto Dorman Way with 3% growth escalation per year)**: Based on the traffic engineer's assessment, Intersection 2 will continue to operate at an acceptable LoS and with sufficient capacity, however Intersection 1 would not operate at an acceptable LoS. However, should the proposed roundabout upgrade, Intersection 1 would operate at an acceptable LoS and with sufficient capacity. Please refer to Figure 9 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**). The 3% increase was factored into calculations to account for the potential, unknown effects of how the previous COVID-19 pandemic has impacted traffic volumes along Hout Bay Road (for example, more would-be travellers may be working from home permanently, etc). Oakhurst Avenue is planned to extend by 260m south before an estimated 10m long bridge which needs to be constructed (currently being applied for through a basic assessment application). In addition to the mitigation measures above, the following mitigation measures are proposed: • A roundabout is implemented at Intersection 1. This will enable Intersection 1 to operate at an acceptable LoS and with sufficient capacity. • The proposed development will generate an estimated 44 total trips (20 in and 20 out) during weekday A.M. peak hour traffic and an estimated 48 total trips (24 in and 24 out) during weekday p.m. peak hour traffic times. • There is a need for formal sidewalks along certain public roads for pedestrian safety. Moreover, due to the absence of such facilities (i.e. side walks would lead to nowhere), the construction of such sidewalks would not significantly contribute to the facilitation of non-motorized transport (NMT). However, due to the current road designs (*viz* – internal streets are narrow and winding), vehicle speeds will be low which will benefit NMT.

	• It is recommended that a bus embayment be considered in both directions on Hout Bay Main Road. In addition to the recommendations above, and due to comments received from interested and affected parties, the following changes to the internal roads were made: • The road geometries have been amended to accommodate changes made to the unit types along the eastern boundary. • A cul-de-sac turn-around facility for fire truck and emergency vehicles has been included close to the Hout Bay Main Road side of the site.
Cumulative impact post mitigation:	The cumulative impact of traffic associated with the development is Low provided the development access design recommended by the traffic engineers is adhered to.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Will the proposed amendment have an increased impact:	Based on the Traffic Engineer's investigation, the potential traffic-related impacts of the proposed development on the external road network will be insignificant. Furthermore, it was recommended that from a traffic perspective, the proposed development be considered for approval. Based on these factors outline above, and the implementation of the mitigation measures, it is envisaged that the impact on traffic will remain "Low".

Potential impacts on the geographical and physical aspects:	**Visual Impacts**	
Nature of impact:	• Change from an un-built, open area to a built landscape. • Visibility from scenic, tourist routes. • Light pollution	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and permanent impact.	**Post-mitigation** The impact will have a regional and permanent impact.
Probability of occurrence:	**Pre-mitigation** Definite.	**Post-mitigation** Highly probable.
Degree to which the impact can be reversed:	Irreversible.	
Degree to which the impact may cause irreplaceable loss of resources:	A loss of an irreplaceable visual resource can occur if the mitigation measures are not implemented.	
Cumulative impact prior to mitigation:	The impact can be considered cumulative as a result of the surrounding urban land uses.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium	

Degree to which the impact can be mitigated:	The impact can be successfully mitigated.
Proposed mitigation:	• Architectural guidelines that will control the extent of the building footprint and height. Footprint control will assist with allowing surrounding areas for soft landscaping which in turn will help to visually absorb the height of the buildings. • Insisting on "soft" landscaping on individual yards including tree planting. • Planting trees along roads so that new buildings are screened. • Preventing solid boundary walls on the perimeter of the site, allowing visual permeability. • Guidelines and limitations on building materials. • No use of reflective materials. E.g. untreated zinc roofing sheets which will reflect sunlight. • An extensive planting programme will be undertaken as per the revised Landscaping Plan. • With the exception of the central area of the development, all new buildings will be single story buildings which will allow for the quicker development of the tree canopy. • Green boulevards will be established along internal roadways and along the boundary with the Blue Valley township to enhance privacy. • All new oak trees that will be planted (109 trees) will be within 100l containers and at least 18m high. • Landscaping will substantially soften the visual impact of the built environment.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	The following potential impacts were identified by the VIA specialist, namely (1) change in character of the site, (2) visibility from a scenic, tourist route, and (3) light pollution. The proposed development is in line with the City of Cape Town's policies regarding densification. As per the change in layout, the proposed development will be situated on the lower lying slopes – reducing its visual impact, compared with the 2011 SDP, in areas in the valley. Based on the design of the units, the layout is visually acceptable due to the units in front screening the lower storey of the double story units situated behind these units in the front. The specialist has stated that there is sufficient space between the proposed development and the Oakhurst homestead to mitigate thevisual intrusion whereby a green visual screen can be provided along the northern western boundary. In this case, a historic hedge would be appropriate. It is the opinion of the VIA Specialist that should the proposed mitigation measures be implemented, the proposed amendment should be supported.
Cumulative impact post mitigation:	The development will not impact the visual character of the area to a significantly negative degree once mitigation measures have been implemented.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Will the proposed amendment have an increased impact:	The following mitigation measures were proposed by the VIA Specialist:

	• Construction-related mitigation measures must be carried through to the operational phase where applicable. To this end it must be ensured that the: • Oakhurst Lifestyle Estate Management have an Operational Plan that clearly states their obligations in terms of ongoing maintenance of buildings and landscaping (existing and new) • Oakhurst Lifestyle Estate Management continue minimising light pollution. This includes, but is not limited to, top covering luminaires, installation of low spill type lights to minimize light spill and pollution, keep outdoor lighting as bollard lighting, external lighting on buildings must be minimised or completely omitted. • The plant visual screen (historic in nature), along the northern western boundary of the proposed development such that the proposed development is screened from the Oakhurst Homestead, must be maintained. In addition to the recommendations above, the following alterations to the Site Layout Plan was made based on comments received from interested and affected parties: • Unit types have been changed so that there will be no double story units along the eastern boundary of the site. • A 1.5m setback line will be maintained along the boundary of the remainder of Erf 2958, and a 5m setback line will be maintained along all other site boundaries.

Potential socio-economic impacts:	**Employment opportunities**
Nature of impact:	The operation of the proposed development may result in permanent domestic jobs being created. These will likely benefit mostly unskilled or semi-skilled residents from the nearby Imizamo Yethu informal settlement. Moreover, the proposed amended development may also create skills development opportunities through employment on the residential estate. It is estimated that 160 new jobs will be created through the operational phase.
Extent and duration of impact:	The impact will have a local and long-term impact.

Probability of occurrence:	Highly probable
Degree to which the impact can be reversed:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	The impact is cumulative: there are other sources of employment in the surrounding developed areas.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	No mitigation measures are required. Positive local impact.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	As outlined above.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	N/A
Will the proposed amendment have an increased impact:	It is envisaged that the proposed amendment to the development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on operational employment opportunities. The significance rating of impact after mitigation remains as a positive impact.

Potential faunal impacts:	**Western Leopard Toad**	
Nature of impact:	Potential impacts on habitat associated with the Western Leopard Toad.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and permanent impact.	**Post-mitigation** The impact will have a positive regional and permanent impact.
Probability of occurrence:	**Pre-mitigation** Probable.	**Post-mitigation** Highly probable positive impact.
Degree to which the impact can be reversed:	It is unlikely that the impact would be reversible.	
Degree to which the impact may cause irreplaceable loss of resources:	Loss of irreplaceable habitat of the Western Leopard Toad.	
Cumulative impact prior to mitigation:	This is a cumulative impact since there are other developments in the area, which comprises WLT habitat, which would have entailed a loss of such habitat.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium (negative)	
Degree to which the impact can be mitigated:	High degree	
Proposed mitigation:	• The river buffer areas recommended for the protection of the sensitive freshwater and botanical aspects of the river corridor, wetland area and	

	tributaries across the site, should be implemented and maintained for the protection of WLT habitat. • Homeowners should be made aware that toads peruse gardens and homes. Their conservation threat status should be emphasized. It is illegal and unethical to kill or hunt/disturb them. Toads encountered are to be translocated to a safe and similar habitat. • Oakhurst Lifestyle Estate Management should take on the responsibility of informing homeowners and enforcing toad-friendly measures. • Signage should be placed at a central point to educate homeowners and their visitors of the toad and its presence on the site. • Homeowners should be made aware of the breeding season (i.e. late July to early September). During this period, many toads will make their way to the site, crossing lawns and roads. • Homeowners should drive carefully in this period, and if toads are found on the roads to move them onto the verge safely, in the direction they were travelling. • Toads should not be moved to waterbodies unnecessarily. Towards, the end of November, through December, the toadlets emerge from the waterbodies. They are 2 – 3 cm long and often hundreds of them move out at any one time. • The use of poisons (e.g. pesticides) for landscaped areas and homeowners' gardens should be avoided. Poisons kill insects and other organisms prey on toads. Toads provide natural control of garden pests and the gardener/s should be informed of this. • It is advisable that homeowners keep pets at bay, especially when toads are regularly encountered in the vicinity. • A recommendation is to cordon off garden areas where toads are known to forage and aestivate, from the intrusion of domestic pets.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	The project area was found to be moderate-to-heavily transformed from its original condition but still maintains basic ecological functionality and habitats which can support various herpetofauna. This habitat includes wetlands and ponds which are used as breeding grounds for amphibians (including Western Leopard Toads (WLT), as reported in the NCC report (2014)). No amphibian species of conservational concern (SCC) were recorded on the RE of Erf 2224 or in adjacent wetlands as identified by NCC in 2014 (**Appendix G3.2**). Amphibians recorded during the herpetofauna assessment included *Amietia fuscigula* (Cape River Frog) and *Strongylopus grayii* (Clicking Stream Frog) whereas reptiles included *Afrogecko porphyreus* (Marbled Leaf-toed Gecko), *Lygodactylus capensis* (Common Dwarf Gecko), and *Naja nivea* (Cape Cobra). These recorded species are classified as Least Concern (IUCN, 2017 / SARCA, 2014).

	It must be noted that due to the (i) cryptic nature of some amphibians, (ii) single-season and seasonal timing of the survey, and (iii) historic recordings of certain amphibians (during previous assessment – **Appendix G3.2**), it is plausible that some species may be present and/or utilize parts of the site for brief periods during the year. Based on these factors, the specialist rated the likelihood of herpetofauna SCC occurring on the assessed site. Based on the findings of the Herpetofauna Assessment, the following, additional mitigation measures were proposed: • Applicable traffic calming measures must be put in place. Signage warning road users of the possible presence of WLTs is required. • All alien invasive species should be removed from the project area and the wetlands during the rehabilitation process. Such rehabilitation should occur from January to July to avoid the primary breeding season of most amphibian species. The removal of alien tree species from the Bokkemanskloof River should be prioritized. • The use of poisons should be avoided as far as possible. • Ensure that no structures are built which could act as a pit-fall trap for amphibian species. Should any trenches be excavated, such trenches must be checked every morning for the presence of amphibians and reptiles. • Ensure no pollutants enter the wetland areas. • Any new fences or walls to be constructed must be as "frog-friendly" as possible. This may include the use of palisade fencing or rectangle holes (~ 10cm in height x 15m in length) at the bottom of the wall/fence. This will enable the movement of amphibians across Erf 2224. • Indigenous plant species should be used for landscaping. This should be encouraged for all residents on Erf 2224. • Shade cloth overhangs (or similar structures) should be placed in all swimming pools to prevent any amphibians from drowning. • Stormwater drains should be covered by mesh/drain covers (diameter < 3cm) to prevent WLTs from falling into such drains. • All residents/visitors must keep domestic pets (e.g. dogs) at bay. It was recommended that garden areas are cornered off to enable WLTs to forage and aestivate from the intrusion of domestic pets. • Signage must be placed at a central point of

	the proposed residential development to educate residents and visitors about the presence of WLTs. Should any areas become active breeding sites, residents must be made aware of the breeding season (late July – early September) and exercise caution (especially with driving). WLTs should not be unnecessarily handled or moved to waterbodies unnecessarily. However, signage warning road users of the possible presence of WLTs is required and has therefore been included in the proposed mitigation measures to be implemented should this proposal be authorised. • Moreover, based on the recommendations made by the Herpetofauna Specialist, mitigation measures detailed above must be read in conjunction with the following mitigation measures from the "Western Leopard Toad Habitat Assessment for the Proposed Development of Erf 2224, Hout Bay (NCC, 2014)" report as well as in conjunction with the guidelines developed by the Biodiversity Management Plan of the WLT (**Appendix G3.2**).
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive impact with the implementation of the river buffer areas and rehabilitation of the river corridor.
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on the WLT individuals if present on site. The significance rating of impact after mitigation remains "Low (Positive)".

Potential biological impacts:	**Restoration and rehabilitation of natural vegetation**
Nature of impact:	The development proposal, inclusive of river buffer areas, will have a positive impact on the conservation-worthy vegetation on site.
Extent and duration of impact:	The impact will have a positive local, long-term impact.
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	N/A. Positive impact.
7777Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	The impact is directly associated with the development proposal.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-	N/A: mitigation has to be in place before this benefit is realised.

High)	
Degree to which the impact can be mitigated:	The benefit is easily realised with the implementation of appropriate mitigation measures.
Proposed mitigation:	• As per the Wetland Buffer Confirmation Statement (**Appendix G2.2**), a buffer of 15m (measured from the delineated edge of the wetland edge) was recommended and must be maintained. • All landscaping should be done with locally indigenous plant species i.e. Granite and Sandstone Fynbos species. • No kikuyu grass (*Pennisetum clandestinum*) or pampas grass (*Cortaderia species*) may be used on site. • It is recommended that the Endangered silver tree (*Leucadendron argentenum*) be extensively planted, as it occurs naturally on the northern Peninsula, typically on richer soils just below the sandstone layer [approximately 556 *Leucadendron spp*. will be planted]. • The riverine areas should be rehabilitated with a suitable mix of indigenous riverine and thicket species. • A Landscape Management Plan should be prepared and submitted to the City's heritage resources branch as part of the land use planning application for the development.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	A Landscape Plan (**Appendix G10**) has been prepared. Along with no indigenous trees being removed, the following species are to be planted: • As part of the landscape plan, the following indigenous species will be planted: o 45 x *Olea europaeae* subspecies. *africana* o 45 x *Diospyros whyteania* o 80 x *Syzigium guineense* o 45 x *Kiggleria africana* o 31 x *Searsia lucida* o 30 x *Rapanea melanophloeos* o 109 x *Quercus rober* ***Riverine areas*** o 5736 x *Cyperus textiles* o 5736 x *Elegia tectorum* o 5736 x *Juncus capensis* o 5736 x *Melianthus major* ***Natural areas*** o 1342 x *Agathosma ovata* o 2683 x *Aristida junciformis* o 894 x *Erica glandulosa* o 2683 x *Helichrysum petiolare* o 8046 x *Lampranthus spectabilis* ***Public areas*** o 1937 x *Felicia amelloides* o 323 x *Leucadendron salignum*

	o 976 x *Pelargonium capitatum* o 1292 x *Plumbago auriculata* o 7752 x *Searsia crenata* o 7752 x *Arctotis acaulis* ***Residential areas*** o 6002 x *Agapanthus praecox* o 2667m² x *Cynodon dactylon* o 2667 x *Clivia miniate* o 1334 x *Dietes grandiflora* o 667 x *Gazania rigens* o 2001 x *Pelagonium reniforme* o 2667 x *Plectranthus zuluensis* Alien trees, such as the approximately 82 Bluegum trees, will be removed. This will be a positive impact on water-resource saving as *Eucalyptus spp* have a high evapotranspirational rate[11].
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive impact realised once mitigation measures are implemented.
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on any restoration initiatives but rather improve them due to the compilation of a Landscape Plan. The significance rating of impact after mitigation remains "Low (Positive)".

Potential cultural-heritage related impacts:	**Loss of heritage resources**	
Nature of impact:	Loss of heritage resources (e.g. graves) which are discovered during the operational phase.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a local and permanent negative impact.	**Post-mitigation** The impact will have a local and long-term positive impact.
Probability of occurrence:	**Pre-mitigation** Definite (negative)	**Post-mitigation** Definite (positive)
Degree to which the impact can be reversed:	Loss of heritage resources would be irreversible.	
Degree to which the impact may cause irreplaceable loss of resources:	Potential loss of irreplaceable resources.	
Cumulative impact prior to mitigation:	The impact would be directly associated with the development.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low (loss of valuable heritage resources).	

[11] Albaugh, J.M., Dye, P.J. and King, J.S., 2013. *Eucalyptus* and water use in South Africa. *International Journal of Forestry Research*, *2013*.

Degree to which the impact can be mitigated:	The impact can easily be avoided.
Proposed mitigation:	The implementation of the amended development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will conserve valuable heritage and aesthetic resources on the property into the operational phase.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	No heritage resources were present on the additional site (i.e. (a portion of Erf 2958) or in the areas where the change in the layout will take place. The recommendations made by Aikman Associates (**Appendix G5.3**) are supported. The specialist recommended that no further heritage studies are required. In response, the HWC stated: "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*". The following additional mitigation measures are proposed to further reduce any potential impact on heritage resources: 1. Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and the HWC must be notified without delay. 2. Fossil finds procedure to be included in the environmental authorization 3. As per the recommendations of the updated NID, the following mitigation measures should be implemented: 4. The section of oak woodland on Erf 2224 should be protected for its historic significance. While 10 trees will be removed, an additional 109 will be planted as per the updated Landscaping plan. 5. The Bokkemanskloof riverine corridor and its vegetation should be protected in terms of its aesthetic and scientific significance. The buffer areas recommended must be implemented prior to the commencement of land clearing. 6. The Klipkershout grove is to be accommodated within the river corridor buffer area.

Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive (conservation of valuable heritage resources)
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on heritage resources but rather enhance the positive impact associated with the conservation of valuable heritage resources. The significance rating of impact after mitigation remains "Low (Positive)".

Potential physical and geographical impacts:	**Operational bulk engineering services-related impacts**	
Nature of impact:	Impact on bulk engineering infrastructure services offered by the local municipality (solid waste; sewerage and effluent; water supply; electricity supply)	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and long-term impact.	**Post-mitigation** The impact will have a regional and long-term impact.
Probability of occurrence:	**Pre-mitigation** Definite	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	The impact is reversible with the decommissioning of the development, or the sourcing of alternative means of supplying water; effluent and sewerage treatment; solid waste management and electricity.	
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable resources will be lost.	
Cumulative impact prior to mitigation:	The surrounding areas to the west, north and east are developed and reliant on municipal bulk engineering services and so this impact is cumulative.	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium	
Degree to which the impact can be mitigated:	Easily mitigated	
Proposed mitigation:	• All solid waste generated on site will be collected by the municipality. • Access for municipal waste collection vehicles and on-site waste storage arrangements must comply with the requirements communicated by the City of Cape Town in a letter dated 29/08/2014. • Refuse removal facilities will be provided, and arrangements made for collection in accordance with the Integrated Waste Management Policy of the City of Cape Town and the guidelines for minimum requirements for waste collections and waste storage areas/rooms published by the solid waste management department. • Further, the Applicant will implement an Integrated Waste Minimisation Strategy as detailed by the	

	DEA&DP. • Sewerage effluent will be disposed of through the municipal sewerage system. • Water will be supplied by the City of Cape Town. • Electricity will be supplied by the City of Cape Town. The design of bulk engineering services should comply with the specifications indicated in the Civil Engineering Services Report dated July 2023, and the Electrical Engineering Services Report dated June 2022, which are contained in **Appendix G7.1**. On the basis of these reports, the City has confirmed the availability of engineering services supply capacity.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	Same as outlined above. Sufficient civil engineering services are available within the vicinity of the proposed amended development. CoCT has confirmed the availability of sufficient water and sewage services for the development.
Cumulative impact post mitigation:	The development will not impact unacceptably on the municipal services supply infrastructure, provided the specifications of the project engineers are adhered to.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an increased impact:	Based on factors and the implementation of proposed mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact on engineering services. The significance rating of impact after mitigation remains "Very Low".

Potential geographical and physical impacts:	**Stormwater impacts**	
Nature of impact:	• Inadequate provision for flood or storm periods could lead to erosion and silting of the Bokkemanskloof River and damage to the river's ecosystem functioning. • Flooding and damaging of properties on and off-site.	
Extent and duration of impact:	**Pre-mitigation** The impact will have a regional and long-term impact.	**Post-mitigation** The impact will have a regional and long-term impact.
Probability of occurrence:	**Pre-mitigation** Probable	**Post-mitigation** Improbable
Degree to which the impact can be reversed:	The impact is reversible, but man-made interventions would likely be required to rehabilitate the river, and would definitely be required to repair flood damage to properties.	
Degree to which the impact may cause irreplaceable loss of resources:	It is unlikely that the scale of the impact would lead to a loss of irreplaceable natural resources, but rather damage to the river which could be remediated.	
Cumulative impact prior to mitigation:	The impact is considered cumulative as urban development to the north of Erf 2224 is likely to be	

	impacting the river corridor downstream to some degree.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High degree
Proposed mitigation:	The Stormwater Management Plan contained in **Appendix G8.1** needs to be implemented in the design of the development.
Impact associated with the proposed amendment to the development layout and addition of a portion of Erf 2958.	From a Stormwater Management Perspective, and in line with the City of Cape Town's Management of Urban Stormwater Impacts Policy is designed to implement Sustainable Drainage Systems (SuDS), runoff from buildings mainly comprises suspended solids (SS) and total phosphorous (TP) which needs to be trapped and removed. Stormwater runoff will be attenuated (and treated) by the use of attenuation ponds, permeable paving, sediment traps, and revegetated areas. In order to attenuate stormwater runoff, five stormwater attenuation ponds will be required. These ponds will act as both an attenuation facility and sediment/litter trap. The two existing dams will be used to treat runoff and attenuate the peak runoff from the development site and the external sub-catchments. The quality of stormwater runoff will be adequately treated by the use of stormwater measures proposed above. The following additional stormwater management mitigation measures are proposed to improve stormwater management on the amendment development layout: • The implementation of stormwater management measures will ensure that the post-development flows are attenuated to pre-development levels for the entire site area. • Erosion mitigation measures as per Annexure D must be implemented where applicable. This includes, but is not limited to the use of diversion drains, revegetation, level spreaders, hay bales, silt fences, temporary construction exit, sediment traps, etc. • A maintenance plan has been developed by the engineers. The implementation of the maintenance plan must be undertaken by Oakhurst Lifestyle Estate Management.
Cumulative impact post mitigation:	With the implementation of the Stormwater Management Plan, the cumulative impacts on the area associated with stormwater management of the development would be Very Low.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low
Will the proposed amendment have an	Based on factors and the implementation of proposed

increased impact:	mitigation measures, it is envisaged that the proposed amendment to the previously authorized development layout and the addition of RE of Erf 8343 and a portion of Erf 2958 will not significantly increase the impact of Stormwater Management but rather promote stormwater management on site. The significance rating of impact after mitigation remains "Very Low".

It must be noted that the no-go alternative will include the development of the previously authorized Oakhurst Development (as per **Amended EA Ref: 14/3/1/1/A6/36/0535/21**).

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.

The following findings and mitigation measures were provided by the specialists:

1. Botanical Compliance Statement (Appendix G1)

1.1. Findings:

The proposed development footprint was classified as highly degraded/transformed and did not contain any important plant species or habitats (i.e. species of conservation concern – SCC). Based on the Specialist's definitions, "highly degraded" areas include areas where original vegetation is usually absent and has been previously cleared/removed. Furthermore, the restoration potential of these highly degraded sites is very low with only a few remnant or pioneer species being present. "Transformed" habitats were classified as sites comprised of no remanent species whereby the landscape has been altered irreversibly with no restoration potential. Based on the findings, the site was classified as having a "Very Low" botanical sensitivity. Outside the proposed development footprint, some indigenous vegetation was present up- and downstream of the existing bridge. Vegetation within the footprint was not representative of any original vegetation or habitat characteristic of the vegetation type associated with the site (*viz* - Cape Peninsula Granite Fynbos). Plant species composition comprised of:

<u>West of bridge</u>*:* the area was dominated by *Cynodon dactylon* (Kweek) and *Pennisetum clandestinum* (Kikuyu). Some shrubs present included *Osteospermum moniliferum* (Bietou), *Conyza spp*. (Horseweed) and *Senecio pterophorus* (Ragwort) which were located on the edge of the development footprint.

<u>East of Bridge</u>: plant species comprised of *Cenchrus caudatus* (African Feather Grass), with some incidents of *Juncus kraussii* (Sea Rush) and *Athanasia crithmifolia* (Divided Kanniedood). Alien plant species present within the development footprint include *Iris pseudacorus* (Flag Iris – categorised as NEMBA category 1a invasive species), *Pennisetum clandestinum*, and *Plantago lanceolata* (Plantain). Natural vegetation (although in a highly disturbed condition with low species diversity), comprising of *Kiggelaria africana* (Wild Peach) and *Searsia lucida* (Blinktaaibos) to the east of the bridge (within the development footprint).

The portion of Erf 2958 was classified as highly disturbed with low botanical sensitivity. The only indigenous species present within this portion include opportunistic bulbs [Beetle Lily (Baeometra uniflora) and Threadstar (Moraea cf. virgatum)], Graminoids [Sedge (Ficinia cf. oligantha] and Haregrass (Triboloium uniolae)], and shrubs [Kooigoed (Helichrysum patulum), Goldilocks (Chrysocoma coma-aurea) and Renosterbos (Dicerothamnus rhinocerotus)]. Alien vegetation present within the area include Lantana (Lantana camara), Woolly Plectranthus (Coleus Amendment Applicationbatus) and Prickly Pear (Opuntia sp), as well as other alien species including Taupata (Coprosma repens) and Passerina corymbosa, as well as English Oak (Quercus robur).

Based on the findings of the Botanical Compliance Statement, the Specialist concluded that

- The proposed upgrade to the existing bridge is supported from a botanical perspective should the proposed mitigation measures be implemented.
- The proposed amendment will not result in an increased level or change in the nature of impacts compared with the original assessment.
- The proposed amendment is therefore supported from a botanical perspective.

1.2. Proposed mitigation measures:

1.2.1. Construction activities must be restricted to the development footprint.

1.2.2. Indigenous trees (outside of the development footprint) must not be disturbed.

2. Updated Freshwater Assessment Opinion (Appendix G2)

2.1. Findings:

The initial freshwater assessment was undertaken by Dr Barbara Gale of Aqua Catch cc in April 2008. A review of the freshwater report and further input was provided by Ms. Toni Belcher. Aquatic features within the property comprise the Bokkemanskloof River, a tributary of the Disa/Hout Bay River. The watercourse is the most significant tributary of the Hout Bay River and is approximately 3.2 km in length. Wetlands (valley bottom and seep) occur along the length , and adjacent to the watercourse. Vegetation within the site has largely been transformed due to previous anthropogenic activities whereby the riparian zone comprises alien invasive [*Acacia saligna* (Port Jackson willow), *Acacia mearnsii* (black wattle), and *Paraserianthes lophantha* (stinkbean) and *Pennisetum clandestinum* (kikuyu grass) fringe the riparian zone] and indigenous [*Kiggelaria africana* (wild peach), *Olea europaea* subsp. *africana* (wild olive), *Rapanea melanophloeos* (Cape beech), *Gymnosporia buxifolia* (common spikethorn), *Searsia lucida* (blinktaaibos). Indigenous *Typha capensis* (bulrush), *Prionium serratum* (palmiet), *Pteridium aquilinum* (bracken), *Cliffortia strobilifera* (river Caperose), *Ficinia nodosa* (knotted club-rush) and *Zantedeschia aethiopica* (arum lilies)] plant species. The watercourses were classified as follows:

Parameter	**Rating**		**Reason**
Bokkemanskloof River - classified as a simple, single channel (alluvial channel type) with seasonal hydrological features.			
	Riparian	**Instream**	
Index of Habitat Integrity Assessment	Class D (Largely Modified)	Class C (Moderately Modified	Riparian: Attributed to historic disturbances of the site and subsequent alien vegetation encroachment. A large loss of natural habitat, biota, and ecosystem function has resulted in the modified watercourse. Instream: loss/change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged
Ecological Importance and Sensitivity (EIS)	High/Moderate		Watercourse provides habitat and corridor for fauna and flora movement between the mountains and te sea. Such rivers may be sensitive to flow alterations but in some cases may have substantial capacity for use.
Identified and delineated wetlands – classified as valley bottom and seep wetlands			
	Valley Bottom	**Seep**	
Wetland Integrity	Class C (Moderately/ Largely Modified)	Class D (Largely Modified)	Valley Bottom: moderately modified, but with some loss of natural habitats. Seep: A large loss of natural habitats and basic ecosystem functions The wetlands are closely associated with the river and in similar condition, exposed to the same impacts.
Wetland importance	High/Moderate	Moderate	Wetlands with high importance (valley bottom) may be sensitive to flow modifications but in some cases may have substantial capacity for use. Wetlands with moderate importance (seep) are not usually very sensitive to flow modifications and often have substantial capacity for use. These wetlands differ in terms of flood attenuation, flow regulation and water quality improvement features whereby such ecosystem services are linked to the river system. The seep wetland area has an important role in the maintenance of biodiversity, providing habitat for the endangered Western Leopard Toad. The wetlands are also likely to support other amphibians such as Cape River Frog (*Amietia fuscigula*), and Gray's Stream Frog (*Strongylopus grayii*), both listed as Least Concern.

The Target Ecological Category for the larger river system, *viz.* Hout Bay River (Quaternary G22B), is classed as Category D (Largely Modified). Based on this condition, the system should be rehabilitated where necessary and not allowed to degrade any further. The specialist stated that the target can be easily achieved by

implementing the 15m buffer (Appendix G2.2) and removing invasive alien vegetation from the river corridor. During the construction and operational phases, the following freshwater-related impacts were identified, namely (1) disturbance and loss of aquatic habitat; (ii) alteration in stormwater (surface water) runoff from the developed site; and (iii) potential for localized water quality impairment. Mitigation measures have been included in the EMPr and must be implemented accordingly. From an aquatic ecosystem perspective, the proposed additions to the original, previously authorised development of ERF 2224, it can be said that the proposed new development would not result in a significant increased level or change in the nature of impacts relative to the original assessment although the cumulative impacts could be expected to increase slightly.

The proposed bridge to be upgraded traverses the Bokkemanskloof River, a tributary of the Disa River. This watercourse bisects the site from south to north. The Bokkemanskloof River comprises of a deeply eroded channel whereby small tributaries drain into the stream. Two wetland types (valley bottom and seep wetlands) were identified and delineated on site. The Lower Bokkemanskloof River is classified as a simple, single channel (alluvial channel type) with seasonal hydrological features. The riparian zone and Instream Habitat Integrity (IHI) of the Bokkemanskloof River were classified as Class D (Largely Modified – large loss of natural habitat, biota, and ecosystem function) and Class C (Moderately Modified – loss/change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged), respectively. The Ecological Importance and Sensitivity (EIS) for the Bokkemanskloof River is High/Moderate (i.e. watercourses that are sensitive to flow modifications but have substantial capacity for use).

The Present Ecological State (PES) of the delineated wetland was categorized as a moderately/largely-to-largely modified condition (based on the degree of loss of natural habitats and basic ecosystem functions). The Ecological Importance and Sensitivity (EIS) of the valley bottom and seep wetlands were classified as Moderate and Moderate/High, respectively, whereby the valley bottom wetland (associated with the Bokkemanskloof River) provides more valuable ecosystem services (relative to flood attenuation, flow regulation, and water quality improvement) compared with the seep wetland. The seep wetland does however provide habitat for biodiversity (including the Western Leopard Toad, Cape River Frog, and Gray's Stream Frog). Based on the Aquatic Confirmation Statement (**Appendix G2.2**), subject to the implementation of proposed mitigation measures, the delineated wetland buffer (measured from the delineated edge of the wetland edge) is 15m.

The Recommended Ecological Condition of the larger river system (Hout Bay River) associated with the site is categorized as D (largely modified) according to the Water Resources Classes and Resource Quality Objectives for the Berg Water Management Area. This indicates that the river should not deteriorate any further and should be rehabilitated where necessary. The Bokkemanskloof River and associated wetlands can be improved by the implementation of the 15m buffer and the removal of alien invasive vegetation from the river.

As per the Freshwater Report, the design of the bridge does not alter the channel shape, alignment or depth and does not impede low or high flows within the Bokkemanskloof watercourse. The design of the bridge is therefore supported by the Freshwater Specialist.

2.2. Proposed mitigation measures:

2.2.1. The upgrade of the existing bridge and associated activities should take place in drier months of the year;

2.2.2. No construction activities other than the proposed bridge upgrade and rehabilitation measures should take place within the recommended development setback (i.e. 15m from the edge of the delineated wetland).

2.2.3. The design of the bridge should not alter the shape, alignment, or depth of the watercourse channel or impede low/high flows. As per the Specialist's conclusion, the bridge design is in line with this requirement.

2.2.4. Upstream and downstream security walls or fencing through the river corridor must allow for the movement of small aquatic biota;

2.2.5. The water quality impacts during the construction phase should be addressed through a Construction Environmental Management Plan for the project, and implemented by an on-site Environmental Officer;

2.2.6. The created wetland areas within the site associated with the stormwater infrastructure should be comprised of local indigenous vegetation;

2.2.7. Invasive alien plants species should be removed from the river corridor according to a plan. This plan must address the progressive removal of alien vegetation and replacement of alien vegetation with local indigenous vegetation. Invasive grasses (e.g. *Pennisetum clandestinum* and *Cortaderia selloana*) should not be planted in the stormwater wetland areas or within the river buffer area. The growth of invasive grasses must be controlled and removed where applicable. On-going monitoring and removal of alien invasive plant species may be required.

2.2.8. The stormwater management plan for the site should ensure that any impacts of stormwater from the site are mitigated as far as possible within the site. Mitigation measures, such as the use of permeable surfaces, re-use of runoff from built areas such as roofs as well as the use of measures such as swales) should be considered to minimize stormwater impacts on the associated aquatic habitats;

2.2.9. A maintenance management plan (MMP) has been compiled to guide long-term maintenance works in the river as Appendix G2.3. The relevant mitigation measures have been included in this report as well as the EMPr. The MMP includes the following mitigation measures:

2.2.9.1. Identify alien plants to be removed. If unsure, please contact the City of Cape Town's Biodiversity Management Branch or CapeNature for assistance.

2.2.9.2. Regular monitoring and control of alien vegetation should be undertaken to ensure that the plants are removed while still young saplings can more easily be removed (usually, pulling of seedlings by hand is possible when the soil is wet). This also prevents the spread of the alien plants once seeds have been produced;

2.2.9.3. Avoid trampling or clearing indigenous vegetation by using established paths where possible;

2.2.9.4. Clear alien vegetation according to the described alien vegetation removal methods for each invasive species as provided in the detailed method statements or with the methods and herbicides/biological control recommended on the Working for Water website: https://www.environment.gov.za/projectsprogrammes/wfw/resources

2.2.9.5. Clear felled alien vegetation from the river corridor. Larger tree stumps can be left to minimise erosion of the cleared area;

2.2.9.6. Where necessary, revegetate cleared areas with suitable indigenous vegetation as suggested in this report. Planted areas will require irrigation and care for 1-2 years following planting. This is particularly a requirement where most of the natural flow within the watercourses has been diverted for use or where the re-established vegetation is on the dry banks of the rivers. Planting the new vegetation at the start of the wet season can assist in ensuring that the new vegetation is kept wet; however, one would need to then avoid planting new vegetation within the areas that will be inundated in winter or subjected to flood flows;

2.2.9.7. Ongoing monitoring and clearing of the regrowth of alien plants within these areas will be required

2.2.9.8. The growth of indigenous Phragmite reeds and Typha bulrush plants must be manged in the rivers of developed areas.

2.2.9.9. Under no circumstances should the palmiet (Prionium serratum) be cleared from within the valley bottom and seep wetland under this MMP.

2.2.9.10. Removal of indigenous instream vegetation should be conducted by hand cutting or mowing wherever possible, and should avoid large scale removal of soi land vegetation on the banks or in the channel.

2.2.9.11. Such removal of indigenous vegetation must be limited to nuisance growths and must take place outside the bird breeding season.

2.2.9.12. Patches of reeds immediately upstream or downstream of formal road crossings can be routinely cut as to not cause blockages of the pipes and culverts.

2.2.9.13. Reeds should be cut so the stump is no taller than 12cm when cut by hand, and 15cm when using a bush cutter.

2.2.9.14. Indigenous sedge and other grasses must be allowed to establish in cleared sections.

2.2.9.15. Any clearing works in the channel must not impede the movement of aquatic and riparian biota.

2.2.9.16. A minimum base flow should be maintained in the river channel at all times.

2.2.9.17. All cut vegetation (including removed alien vegetation) must be removed from the channel and the riparian zone for disposal at a garden waste facility

3. Herpetofauna Assessment (Appendix G3.1)

3.1. Findings:

The project area was found to be moderate-to-heavily transformed from its original condition but nonetheless

still maintains basic ecological functionality and habitats which can support various herpetofauna. This habitat includes wetlands and ponds which are used as breeding grounds for amphibians (including Western Leopard Toads (WLT), as reported in the NCC report (2014)).

No amphibian species of conservational concern (SCC) were recorded on the RE of Erf 2224 or in adjacent wetlands as identified by NCC in 2014 (Appendix G3.2). Amphibians recorded during the herpetofauna assessment included *Amietia fuscigula* (Cape River Frog) and *Strongylopus grayii* (Clicking Stream Frog) whereas reptiles included *Afrogecko porphyreus* (Marbled Leaf-toed Gecko), *Lygodactylus capensis* (Common Dwarf Gecko), and *Naja nivea* (Cape Cobra). These recorded species are classified as Least Concern (IUCN, 2017 / SARCA, 2014).

It must be noted that due to the (i) cryptic nature of some amphibians, (ii) single-season and seasonal timing of the survey, and (iii) historic recordings of certain amphibians (during previous assessment – **Appendix G3.2**), it is plausible that some species may be present and/or utilize parts of the site for brief periods during the year. Based on these factors, the specialist rated the likelihood of herpetofauna SCC occurring on the assessed site.

Table 5. Likelihood of herpetofauna SCC occurring on site. Table adapted from the Herpetofauna Assessment (**Appendix G3.1**).

Scientific Name	Common Name	Likelihood of Occurrence	Specialist Comment
Amphibians			
Arthroleptella lightfooti	Cape Peninsula Moss Frog	Low - Moderate	Habitats present on Erf 2224 do not provide an ideal habitat for *A. lightfooti* however, few records have been reported within 5km.
Breviceps gibbosus	Cape Rain Frog	Low	There are no records for any of these species within 4km of the project area.
Cacosternum platys	Flat Caco	Low	
Capensibufo rosei	Rose's Mountain Toadlet	Low	
Microbatrachella capensis	Micro Frog	Highly Unlikely	Based on site conditions and the species' habitat requirements, it is 'highly unlikely' that this species exists in the project area, nor would it utilize the site in the foreseeable future.
Sclerophrys pantherina	Western Leopard Toad	Confirmed	The presence of this species has been confirmed within the project area and is known to breed in the project area (NCC, 2014 – Appendix G3.2).
Xenopus gilli	Cape Platanna	Low	No records have been reported within 5km of the Erf 2224. It is considered unlikely that this species could migrate to the project area given the anthropogenic barriers that exist.
Reptiles			
Bradypodion pumilum	Cape Dwarf Chameleon	Moderate	*Bradypodion pumilum* inhabits a wide range of habitats, ranging from indigenous to alien vegetation, as well as urban environments.

3.2. Proposed mitigation measures:

The following mitigation measures were proposed:

3.2.1. An Environmental Control Officer (ECO) with appropriate herpetofauna experience must be present during site clearing activities. Any encountered herpetofauna must be relocated either to the wetlands or southern portion of the project area.
3.2.2. Wetland area must be demarcated as a no-go area.
3.2.3. The feasibility of installing wildlife corridors or tunnels under access roads should be considered.
3.2.4. Applicable traffic calming measures must be put in place. Signage warning road users of the possible presence of WLTs is required.
3.2.5. All alien invasive species should be removed from the project area and the wetlands during the rehabilitation process. Such rehabilitation should occur from January to July to avoid the primary breeding season of most amphibian species. The removal of alien tree species from the Bokkemanskloof River should be prioritized.

3.2.6. Construction personnel must be educated on the possible presence of endangered amphibians and chameleons. The intentional killing of any amphibian or reptile is strictly prohibited.

3.2.7. The use of poisons should be avoided as far as possible.

3.2.8. Prior to the commencement of construction activities, a nocturnal search and rescue mission should be conducted to capture and relocate any Cape Dwarf Chameleons in the project area. Should any chameleons be found, the animals are to be relocated to suitable habitat in the adjacent Table Mountain National Park (not further than 2mk from the project area).

3.2.9. Ensure that no structures are built which could act as a pit-fall trap for amphibian species. Should any trenches be excavated, such trenches must be checked every morning for the presence of amphibians and reptiles.

3.2.10. Ensure no pollutants enter the wetland areas.

3.2.11. Moreover, based on the recommendations made by the Herpetofauna Specialist, mitigation measures detailed above must be read in conjunction with the following mitigation measures from the "Western Leopard Toad Habitat Assessment for the Proposed Development of Erf 2224, Hout Bay (NCC, 2014)" report as well as in conjunction with the guidelines developed by the Biodiversity Management Plan of the WLT (**Appendix G3.2**), namely:

- The Construction Phase Environmental Management Guideline and Construction Checklist.
- The Western Leopard Toad Development Design Guidelines.

These completed documents must be kept on site and made available on request.

4. Updated Visual Impact Assessment (Appendix G4.1):

4.1. Findings:

the following visual impacts were identified by the specialist, namely namely (1) change in character of the site, (2) visibility from a scenic, tourist route, and (3) light pollution. The specialist rated the visual impacts as follows:

Potential Visual Impacts		Impact associated with 2011 Previously Authorised SDP	Impact associated with 2022 Proposed Oakhurst Amendment SDP
Change in site character		Medium (-) post mitigation	Low (-) post mitigation
Visibility from scenic tourist route	Partial loss of scenic resource	Low (-) post mitigation	Low (-) post mitigation
	Visibility from sensitive receptors	Low (-) post mitigation	Low (-) post mitigation
	Visual intrusion on historic precinct	Low (-) post mitigation	Low - Medium (-) post mitigation

The proposed development is in line with the City of Cape Town's policies regarding densification. As per the change in layout, the proposed development will be situated on the lower lying slopes – reducing its visual impact, compared with the 2011 SDP, in areas in the valley. Based on the design of the units, the layout is visually acceptable due to the units in front screening the lower storey of the double story units situated behind these units in the front. The specialist has stated that there is sufficient space between the proposed development and the Oakhurst homestead to mitigate thevisual intrusion whereby a green visual screen can be provided along the northern western boundary. In this case, a historic hedge would be appropriate. It is the opinion of the VIA Specialist that should the proposed mitigation measures be implemented, the proposed amendment should be supported.

4.2. Proposed mitigation measures:

The following mitigation measures were proposed by the VIA Specialist:

- A hedge and tree border must be planted along the north western border to screen the proposed development from the Historic Oakhurst Homestead.
- Visually recessive building materials and colours must be used
- Large trees, already surveyed should be retained where possible and in accordance with the Landscape Plan.
- Clumps of indigenous plants that have been surveyed must be retained as per the Landscape Plan.
- Hedging to provide visual screening for sensitive receptors to the east should be addressed.

- Street and parking area lights must be minimised but in accordance with local authority requirements.
- Any luminaires must be top shielded so that light only shines downwards, thereby preventing pollution
- Light spillage should be contained
- No uplighting onto buildings
- Limit extent of damage, keeping cut and fill to a minimum.
- The construction areas must be fenced off to minimise visual disturbance thereby protecting and retaining trees and other vegetation
- Erect temporary shadecloth on boundaries with sensitive receptors such as residential areas to the east
- The site must be kept tidy at all times
- Erosion mitigation measures must be implemented to protect building material stockpiles.
- Appropriate mitigation measures must be implemented to minimise dust generation and its effect on the surrounding buildings and dwellings.
- Construction-related mitigation measures must be carried through to the operational phase where applicable. To this end it must be ensured that the:
    - Oakhurst Lifestyle Estate Management have an Operational Plan that clearly states their obligations in terms of ongoing maintenance of buildings and landscaping (existing and new)
    - Oakhurst Lifestyle Estate Management continue minimising light pollution. This includes, but is not limited to, top covering luminaires, installation of low spill type lights to minimize light spill and pollution, keep outdoor lighting as bollard lighting, external lighting on buildings must be minimised or completely omitted.
    - The plant visual screen (historic in nature), along the northern western boundary of the proposed development such that the proposed development is screened from the Oakhurst Homestead, must be maintained.

5. Updated NID (Appendix 5.1):

5.1. Findings:

- No heritage resources were present on the additional site (i.e. portion of Erf 2958) or in the areas where the change in the layout will take place.
- The recommendations made by Aikman Associates (**Appendix G5.3**) are supported.
- The specialist recommended that no further heritage studies are required.
- In response, the HWC stated:

> "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*".

5.2. Proposed mitigation measures:

- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and the HWC must be notified without delay.
- Fossil finds procedure to be included in the environmental authorization
- As per the recommendations of the updated NID, the following mitigation measures should be implemented:
- The section of oak woodland on Erf 2224 should be protected for its historic significance. Hile 10 trees will be removed, 109 trees will be planted as per the updated Landscaping plan.
- The Bokkemanskloof riverine corridor and its vegetation should be protected in terms of its aesthetic and scientific significance. The buffer areas recommended must be implemented prior to the commencement of land clearing.
- The Klipkershout grove is to be accommodated within the river corridor buffer area.

6. Updated Traffic Impact Assessment:

6.1. Findings:

Based on the proposed amendment application, the TIA was revised (**Appendix G6.1**) to re-evaluate the

potential traffic-related impacts associated with the proposed amendment to the development, as well as recommend measures to mitigate identified impacts.

The City of Cape Town Municipality has approved temporary Left-In-Left-Out access via Hout Bay Main Road during the construction phase. Oakhurst Avenue onto Dorman Way will be the primary access over the long term.

In light of this, the following intersections were studied, namely the Hout Bay Main Road / Dorman Way (Priority stop control) (Intersection 1), and Hout Bay Main Road / Blue Valley Avenue (Priority stop control) (Intersection 2).

Five (5) traffic scenarios were identified and analysed. The results of these scenarios have been included below to highlight the methodology used to determine access to site:

Scenario 1, 2022 existing traffic conditions: based on capacity results and analyses, all intersections operate at an acceptable level of service (LoS) and with sufficient capacity.

Scenario 2, 2027 background traffic conditions: conditions were based on the existing scenario intersections geometry/control. A negative growth rate of ~ 1 – 2% along Hout Bay Main Road was observed from 2013 – 2016 traffic volumes. 2021 traffic volumes were therefore escalated by a growth rate of 1%/annum for five years plus the approved/in development trips. This was also based on the previous traffic report (ITS 2350.2 Response to Prof. Vanderschuren Report). Intersection 2 is within an acceptable LoS with sufficient capacity. With regards to Intersection 1, vehicles on the northbound turning right are expected to be challenged finding gaps along Hout Bay main road. However, it must be noted that the traffic volume is expected to increase by 10 vehicles.

Scenario 3, 2027 total traffic conditions (access via Birch Street onto Blue Valley Avenue): Based on the traffic engineer's assessment, Intersection 2 operates at an acceptable LoS and with sufficient capacity, whereas Intersection 1 whereby vehicles travelling northbound will turn right northbound along Hout Bay Main Road. Please refer to Figure 6 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**).

Scenario 4, 2027 total traffic conditions (access via Oakhurst Avenue onto Dorman Way): Based on the traffic engineer's assessment, Intersection 2 operates at acceptable LoS and will sufficient capacity, except Intersection 1 whereby vehicles travelling northbound will turning right northbound along Hout Bay Main Road. Furthermore, the additional 10 vehicles would increase the delay for PM peak hour by ~ five seconds (resulting in a total delay of 42 seconds). Due to this elevated delay, it is recommended that a roundabout be constructed. Please refer to Figure 8 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**).

Scenario 5, 2027 total traffic conditions (access via Oakhurst Avenue onto Dorman Way with 3% growth escalation per year): Based on the traffic engineer's assessment, Intersection 2 will continue to operate at an acceptable LoS and with sufficient capacity, however Intersection 1 would not operate at an acceptable LoS. However, should the proposed roundabout upgrade, Intersection 1 would operate at an acceptable LoS and with sufficient capacity. Please refer to Figure 9 in Annexure A of the revised Traffic Impact Assessment (**Appendix G6.1**). The 3% increase was factored into calculations to account for the potential, unknown effects of how the previous COVID-19 pandemic has impacted traffic volumes along Hout Bay Road (for example, more would-be travellers may be working from home permanently, etc).

Oakhurst Avenue is planned to extend by 260m south before an estimated 10m long bridge which needs to be upgraded (currently being applied for through a basic assessment application).

6.2. Proposed mitigation measures:

The Traffic Engineer made the following recommendations:

- A roundabout is implemented at Intersection 1. This will enable Intersection 1 to operate at an acceptable LoS and with sufficient capacity.
- The proposed development will generate an estimated 44 total trips (20 in and 20 out) during weekday A.M. peak hour traffic and an estimated 48 total trips (24 in and 24 out) during weekday p.m. peak hour traffic times.
- There is a need for formal sidewalks along certain public roads for pedestrian safety. Moreover, due to the absence of such facilities (i.e. sidewalks would lead to nowhere), the construction of such sidewalks would not significantly contribute to the facilitation of non-motorized transport (NMT). However, due to the current road designs (*viz* – internal streets are narrow and winding), vehicle speeds will be low which will benefit NMT.
- It is recommended that a bus embayment be considered in both directions on Hout Bay Main Road.

Based on the Traffic Engineer's investigation, the potential traffic-related impacts of the proposed development

on the external road network will be insignificant. Furthermore, it was recommended that from a traffic perspective, the proposed development be considered for approval.

7. Updated Engineering Services Report (Appendix G7.1):
7.1. Findings:

Water Demands

- The Average Daily Water Demand (AADD) for the development is: 92.80kl/d
- The Total Average Annual Daily Water Demand (TAADD) is: 111.36kl/day (TAADD for previously authorized development was ~ 193.60kl/day)
- Peak hour demand (Phour)of 5.19l/s (Phour for previously authorized development was ~ 13.7l/s)
- It is proposed that the same connection point and route as per council-approved development on RE of Erf 8434 (*not this application*). It is proposed to connect to the existing 100mm diameter main water main in Grotto Wat at the Bell Mouth (located to the west of the proposed development. Contingency plans have been provided in the Engineering Services Report.
- The internal distribution system will comprise of 110mmØ uPVC Class 12 water mains (up to the contour elevation RL59.35m). Thereafter, the static head is 90m relative to the connection point head. Below this elevation, uPVC Class 16 water mains will be provided as well as a Pressure Reducing Valve at contour elevation RL59.35m.

Sewage Demands

- Peak Daily Dry Weather Flow (PDDWF) typically ranges from 0.60 to 0.80kl/day/unit for retirement villages. Using an average of 0.70kl/day/unit equates to 70% of AADD. The total PDDWF is 56.56kl/day.
- the Instantaneous Peak Dry Weather Flow (IPDWF) is 1.44L/s excluding infiltration. The groundwater infiltration flow is estimated to be 0,24l/s or 20.79kl/d. The total IPDWF including infiltration is, therefore: 1.68l/s.
- As per the Instantaneous Peak Wet Weather Flow (IPDWF) an allowance of 30% spare capacity is made for stormwater ingress resulting in an IPDWF of 2.19l/s.
- The internal sewer network will be water-borne gravity sanitation system. The main sewer lines will be 160mmØ uPVC pipes (Class 34) with 110mmØ erf connections. Foul Sewer pipe to be located in the road reserve.
- Due to the Bokkemanskloof River dividing the development site into an eastern and western portion in terms of foul sewer planning, the development requires two foul sewer connection points. Connection point 1 is located at the north-eastern corner and Connection Point 2 is located on Erf 8434 (Oakbridge Estate).

Refuse Removal

- Refuse removal facilities will be provided, and arrangements made for collection in accordance to the Integrated Waste Management Policy of the City of Cape Town and the guidelines for minimum requirements for waste collections and waste storage areas/rooms published by the solid waste management department.

Based on the findings of the Engineering Services Report, the engineers concluded that:

- Sufficient civil engineering services are available within the vicinity of the proposed amended development
- CoCT has confirmed the availability of sufficient water and sewage services for the development.

8. Updated Stormwater Management Plan:
8.1. Findings:

- From a Stormwater Management Perspective, and inb line with the City of Cape Town's Management of Urban Stormwater Impacts Policy is designed to implement Sustainable Drainage Systems (SuDS), runoff from buildings mainly comprises suspended solids (SS) and total phosphorous (TP) which needs to be trapped and removed.
- Stormwater runoff will be attenuated (and treated) by the use of attenuation ponds, permeable paving, sediment traps, and revegetated areas.
- In order to attenuate stormwater runoff, five stormwater attenuation ponds will be required. These ponds will act as both an attenuation facility and sediment/litter trap. The two existing dams will be used to treat runoff and attenuate the peak runoff from the development site and the external sub-catchments.
- The quality of stormwater runoff will be adequately treated by use of stormwater measures proposed

above.

8.2. Proposed mitigation measures:

- The implementation of stormwater management measures will ensure that the post-development flows are attenuated to pre-development levels for the entire site area.
- Erosion mitigation measures as per Annexure D must be implemented where applicable. This includes, but is not limited to the use of diversion drains, revegetation, level spreaders, hale bale, silt fences, temporary construction exit, sediment traps, etc.
- A maintenance plan has been developed by the engineers. The implementation of the maintenance plan must be undertaken by the management of Oakhurst Lifestyle Estate.

9. Electrical and Fibre Services:

9.1. Findings:

- The Before (BDMD) and After (ADMD) Diversity Maximum Demand for the development will be 2095.60 and 955.70kVA, respectively.
- The CoCT has indicated that spare kVA capacity is available on their network to accommodate the new development but that the capacity is not reserved.
- In conclusion, the electrical engineers state that the proposed amended development can be adequately serviced by the local authority electricity department and fibre is available in the surrounding area. Furthermore, the following was identified/proposed:
- A utility substation with an outdoor bulk metering unit is to be constructed at the gatehouse entrance off of Birch Lane with 24hr access. The substation is for exclusive use by the CoCT.
- A consumer substation is proposed for the control of the estate's private MV network
- Minisubs, LV network and kiosks with the provision of prepaid and conventional credit metering.
- Internal and external MV and LV cables must be installed underground within the road reserve.
- Street lighting is required along internal roads,
- A general services supplies at the gatehouse, etc.

9.2. Proposed mitigation measures:

- As per the Engineers Report, residential greener initiatives and renewable energy initiatives were proposed which include:
- Rainwater catchment and harvesting
- LPG Gas
- Solar collectors, inverter, and battery backup: as per statements issued by the National Regulator, residential developments can participate in becoming independent (preparing for further electrical network outages). The engineers proposed the provision of a central standby generator for continued electrical supply and to incorporate bi-directional tariff meters whereby residents with solar systems can import/export excess energy within the internal electrical network.
- Recycling waste
- Landfill and biodegradable compost
- Electric vehicles
- Water heating (solar panel heating and vacuum tubes)
- Greywater recycling

10. Landscape Management Plan

10.1. Findings and recommendations:

- Alien trees, such as the approximately 82 Bluegum trees, will be removed.
- As part of the landscape plan, the following indigenous species will be planted:
    - 45 x *Olea europaeae* subspecies. *africana*
    - 45 x *Diospyros whyteania*
    - 80 x *Syzigium guineense*
    - 45 x *Kiggleria africana*
    - 31 x *Searsia lucida*
    - 30 x *Rapanea melanophloeos*
    - 109 x *Quercus rober*

Riverine areas

- 5736 x *Cyperus textiles*

- 5736 x *Elegia tectorum*
- 5736 x *Juncus capensis*
- 5736 x *Melianthus major*

Natural areas

- 1342 x *Agathosma ovata*
- 2683 x *Aristida junciformis*
- 894 x *Erica glandulosa*
- 2683 x *Helichrysum petiolare*
- 8046 x *Lampranthus spectabilis*

Public areas

- 1937 x *Felicia amelloides*
- 323 x *Leucadendron spp.*
- 967 x *Pelargonium capitatum*
- 1292 x *Plumbago auriculata*
- 7752 x *Searsia crenata*
- 7752 x *Arctotis acaulis*

Residential areas

- 6002 x *Agapanthus praecox*
- 2667m^2 x *Cynodon dactylon*
- 2667 x *Clivia miniate*
- 1334 x *Dietes grandiflora*
- 667 x *Gazania rigens*
- 2001 x *Pelagonium reniforme*
- 2667 x *Plectranthus zuluensis*

2.	List the impact management measures that were identified by all Specialist that will be included in the EMPr

Please see impact mitigation measures mentioned above. Please refer to **Appendix H**.

3.	List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented.

N/A

4.	Explain how the proposed development will impact the surrounding communities.

This proposal is for the upgrade of an existing bridge that will benefit the previously authorised Oakhurst Development. This will also formalise a crossing thereby reducing any indirect/residual impact associated with the integrity and size of the existing bridge. The applicant has undertaken various specialist studies for the Oakhurst Lifestyle Estate. This includes identifying various impacts (e.g. traffic-related impacts) whereby various mitigation measures have been proposed by the specialists which will be implemented by the applicant.

5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

When considering climate change in an EIA or BA context, two specific terms are appropriate, i.e. climate change "adaptation" and "mitigation". Climate change "adaptation" refers to the implementation of measures to reduce the impacts of climate change on a specific project, thereby addressing a project's vulnerability to climate change by implementing measures to increase project resilience. Climate change "mitigation" refers to the implementation of measures to reduce the impact of a proposed project on climate change, thereby reducing a project's greenhouse gas (GHG) emissions.

The information below aims to identify potential adaptation responses to the effects of climate change as it relates to the proposed development, and to identify potential measures to minimise the effects of the proposed project on climate change through climate change mitigation (by reducing GHG emissions).

The complexity associated with climate change prediction highlights the need for adaptive and flexible responses to climate variability. The incorporation of climate change mitigation and adaptation into projects through the EIA and BA processes is therefore eminent.

Climate change adaptation:

Climate change projections for the Western Cape include higher mean annual temperatures, higher maximum

temperatures, more hot days and more heat waves, higher minimum temperatures, fewer cold days and frost days, intensification of rainfall events, and increased mean sea level and associated storm surges (DEA&DP, 2014).

To increase a project's ability to adapt to the impacts of climate change, it is important to identify its vulnerability or sensitivity to the potential effects of climate change. The parameters to which this project could be vulnerable or sensitive, together with more information on the potential impacts, are as follows:

Increased rainfall events may cause flooding within the Bokkemanskloof River:

The increased rainfall events associated with climate change may lead to increased flooding events. Inadequate erosion mitigation measures may compromise the integrity of the watercourse and existing structure. However, the significance of this potential impact (i.e. as addressed under the identified potential "erosion" impact) will be "Low-to-Medium" without mitigation and "Low" with mitigation.

It is not estimated that the occurrence of climate change is likely to have an influence on the proposed development. Due to the nature of this proposal, it is envisaged that the proposed upgrade of the bridge will have a negligible impact on climate change.

Climate Change mitigation:

Measures to mitigate the impact the potential impact of erosion (due to climate change-related flooding events) have been proposed:

1. The areas of the watercourse that are not within the direct project footprint must be demarcated as 'no-go' areas. No site staff are permitted to enter these areas.
2. Construction activities within the wetland buffer should take place during the dry season (October-to-April) to reduce contaminated runoff, erosion, and downstream sedimentation.
3. Temporary stormwater measures should be implemented to ensure that material does not wash off the surface into any watercourse during construction.
4. All construction activities occurring within the watercourse must be undertaken with extreme care to avoid any erosion taking place in the watercourse.
5. Areas exposed to erosion must be protected through the use of appropriate erosion mitigation measures including, but not limited to, sandbags, berms, gabion baskets, etc.
6. Construction processes must be limited to the extent (footprint) and duration period that areas are exposed.
7. The contractor must limit in-stream work to minimize streambank and bed disturbance.
8. Construct culverts in the dry season.
9. No excavated material, fill, or bedding material may be stored within 32m of the watercourse.
10. Chemical toilets must be placed at least 32m away from the watercourse. Chemical toilets must be regularly emptied (weekly) by a registered disposal company. Waste receipts are required as proof of safe disposal.
11. Strict environmental controls regarding site clearing and construction activities and the installation of sediment traps in appropriate places downstream of construction activities.
12. Construction activities must take place within the demarcated construction footprint. Areas more than 5m up- and downstream of the proposed location for the bridge upgrade must be demarcated as 'no-go' zones. No site staff are permitted to enter these areas.
13. Stockpiling of material must be located at least 32m away from the proposed site for bridge upgrade. Stockpiles must be managed to reduce erosion and sediment runoff.
14. Areas exposed to erosion must be protected using sandbags, berms, and efficient construction processes i.e.: limiting the extent (footprint) and duration period that areas are exposed.
15. Alien trees, such as the approximately 82 Bluegum trees, will be removed. This will be a positive impact on water-resource saving as *Eucalyptus spp* have a high evapotranspirational rate[12]. This will reduce the use of water resources by alien plants.
16. The areas of the watercourse must be demarcated as 'no-go' areas. No site staff are permitted to enter these areas, excluding the construction site for the proposed bridge upgrade.
17. Stormwater mitigation measures must be implemented and adequately maintained during the operational phase.

[12] Albaugh, J.M., Dye, P.J. and King, J.S., 2013. *Eucalyptus* and water use in South Africa. *International Journal of Forestry Research*, *2013*.

18. Areas exposed to erosion must be protected through the use of appropriate erosion mitigation measures including, but not limited to, sandbags, berms, gabion baskets, etc.
19. Construction processes must be limited to the extent (footprint) and duration period in that areas are exposed.
20. No excavated material, fill, or bedding material may be stored within 32m of the watercourse.
21. Chemical toilets must be placed at least 32m away from the watercourse. Chemical toilets must be regularly emptied (weekly) by a registered disposal company. Waste receipts are required as proof of safe disposal.
22. Strict environmental controls regarding site clearing and construction activities and the installation of sediment traps in appropriate places downstream of construction activities. Erosion mitigation measures as per Annexure E of the SWMP must be implemented where applicable.
23. As per the recommendations of the Electrical Engineer (**Appendix G9**), residential greener initiatives and renewable energy initiatives were proposed which include:
    - Rainwater catchment and harvesting
    - LPG Gas
    - Solar collectors, inverter, and battery backup: as per statements issued by the National Regulator, residential developments can participate in becoming independent (preparing for further electrical network outages). The engineers proposed the provision of a central standby generator for continued electrical supply and to incorporate bi-directional tariff meters whereby residents with solar systems can import/export excess energy within the internal electrical network.
    - Recycling waste
    - Landfill and biodegradable compost
    - Electric vehicles
    - Water heating (solar panel heating and vacuum tubes)
    - Greywater recycling

This will reduce the energy consumption of the residential development as well as reduce the development's reliance on fossil fuels.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

N/A

7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

Specialist studies, desktop screening, and site visits, along with policies, guidelines, and protocols, have been integrated to inform the proposed mitigation measures that should be implemented to manage the potential impacts identified during the BA process. The findings and recommendations have been incorporated as part of the EMPr which must be complied with during the construction and operational (where applicable) phases.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

According to the Environmental Impact Assessment and Management strategy for South Africa, 2014 Impact Mitigation Hierarchy is a tool used throughout a project lifecycle to limit negative impacts on the environment (Figure 5)

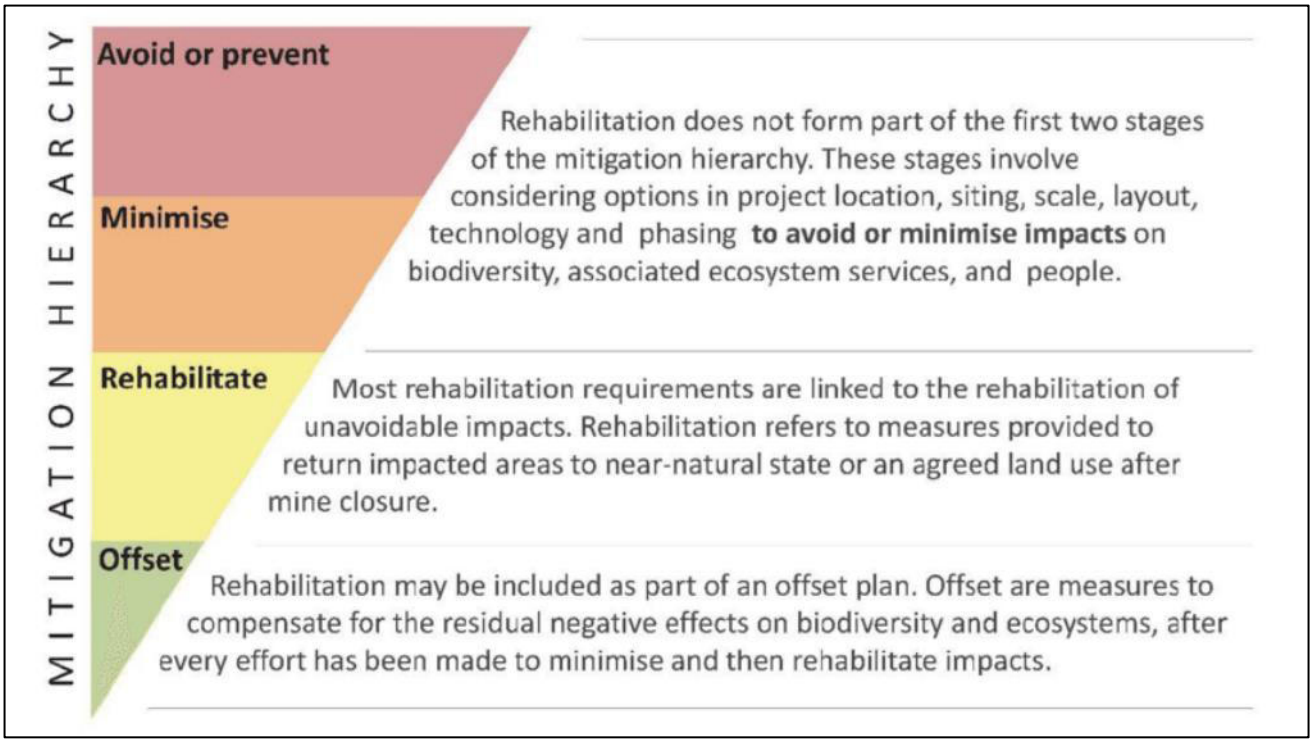

Figure 5. Mitigation hierarchy as a tool to avoid/prevent, minimise, rehabilitate, and/or offset potential impacts associated with a proposed development.

The mitigation hierarchy is comprised of four actions which are designed to be implemented sequentially[13], namely (1) avoidance, (2) minimization, (3) rehabilitation, and (4) offset (if required), where the following actions are applicable and have been applied in the context of this environmental process to promote the best feasible environmental option:

(1) Avoidance: avoiding impacts on biodiversity within the proposed site of development and the surrounding area includes identifying potential risks and investigating alternatives[14]. Avoidance was carried out in the context of this process as environmental components (namely potential erosion, botanical, freshwater, and faunal impacts) were identified and rated by specialists. Due to the nature of this project, i.e. upgrade of existing bridge, no additional sites were considered as positioning the bridge upstream or downstream of the existing crossing point would result in the transformation of previously undisturbed areas. Therefore, there is only one preferred site alternative. Thus, the development of a bridge in a new location will negatively impact previously untransformed or undisturbed areas of the Bokkemanskloof River and associated wetland.

(2) Minimize potential impacts: mitigation measures and recommendations have been proposed by the Specialists and EAP to mitigate and reduce identified potential impacts. These mitigation measures and recommendations have been incorporated into the EMPr and are to be implemented during the construction and operational (where applicable) phases. The development will keep environmental impacts to a minimum by adhering to these mitigation measures.

(3) Rehabilitation: It is not anticipated that there will be irreplaceable loss of a resource, especially since the site has been previously disturbed/transformed. It is not expected that the upgraded bridge will be decommissioned.

[13]Arlidge, W.N., Bull, J.W., Addison, P.F., Burgass, M.J., Gianuca, D., Gorham, T.M., Jacob, C., Shumway, N., Sinclair, S.P., Watson, J.E. and Wilcox, C., 2018. A global mitigation hierarchy for nature conservation. *BioScience*, 68(5), pp.336-347.
[14]Phalan, B., Hayes, G., Brooks, S., Marsh, D., Howard, P., Costelloe, B., Vira, B., Kowalska, A. and Whitaker, S., 2018. Avoiding impacts on biodiversity through strengthening the first stage of the mitigation hierarchy. *Oryx*, 52(2), pp.316-324.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.

The proposed site for development has been highly disturbed/ transformed by previous anthropogenic activities, namely the previous construction of the existing bridge to be upgraded. The site is located within the Peninsula Granite Fynbos, a vegetation type classified as Critically Endangered (CR) however, the proposed site is not located within a PA, CBA or ESA.

As per the Botanical Assessment (Appendix G1): the proposed development footprint was classified as highly degraded/transformed and does not contain any important plant species (SCC) or habitats. Moreover, vegetation within the footprint does not represent any original vegetation or habitat characteristic of the vegetation type associated with the site (*viz* - Cape Peninsula Granite Fynbos). The site also has Low-to-Very Low restoration potential. The Botanical Specialist concluded that the proposed upgrade to the existing bridge is supported from a botanical perspective should the proposed mitigation measures be implemented, and that the proposed amendments will not result in an increased level or change in the nature of impacts compared with the original assessment.

As per the Updated Freshwater Assessment Opinion (Appendix G2): An initial freshwater assessment was conducted in 2008 and reviewed in 2010 (**Appendix G2.3**). A specialist opinion was compiled on the tributary buffer in 2014 (**Appendix G2.4**). A wetland delineation was conducted in 2021 (**Figure 1**) whereas a Confirmation Statement of the wetland buffer was compiled in 2021 (**Appendix G2.2**). The number of assessments conducted / opinions compiled on the Bokkemanskloof allows for a holistic identification of potential impacts over time that the amended development layout will have on the watercourse. The proposed bridge to be upgraded traverses the Bokkemanskloof River, a tributary of the Disa River. This watercourse bisects the site from south to north. The Bokkemanskloof River comprises of a deeply eroded channel whereby small tributaries drain into the stream. Two wetland types (valley bottom and seep wetlands) were identified and delineated on site. The Lower Bokkemanskloof River is classified as a simple, single channel (alluvial channel type) with seasonal hydrological features. The riparian zone and instream Habitat Integrity (IHI) of the Bokkemanskloof River were classified as Class D (Largely Modified – large loss of natural habitat, biota, and ecosystem function) and Class C (Moderately Modified – loss/change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged), respectively. The Ecological Importance and Sensitivity (EIS) for the Bokkemanskloof River is High/Moderate (i.e. watercourses that are sensitive to flow modifications but have substantial capacity for use). The Updated Fresh Water Assessment also recommends that a Maintenance Management Plan (MMP) for the river be drafted, and the mitigation measures be included in the EMPr. The MMP is attached as **Appendix G2.6** and the mitigation measures included in this report and the EMPr

The Present Ecological State (PES) of the delineated wetland was categorized as a moderately/largely-to-largely modified condition (based on the degree of loss of natural habitats and basic ecosystem functions). The Ecological Importance and Sensitivity (EIS) of the valley bottom and seep wetlands were classified as Moderate and Moderate/High, respectively, whereby the valley bottom wetland (associated with the Bokkemanskloof River) provides more valuable ecosystem services (relative to flood attenuation, flow regulation, and water quality improvement) compared with the seep wetland. The seep wetland does however provides habitat for biodiversity (including the Western Leopard Toad, Cape River Frog, and Gray's Stream Frog). Based on the Aquatic Confirmation Statement (**Appendix G2.2**), subject to the implementation of proposed mitigation measures, the delineated wetland buffer (measured from the delineated edge of the wetland edge) is 15m. The Recommended Ecological Condition of the larger river system (Hout Bay River) associated with the site is categorized as D (largely modified) according to the Water Resources Classes and Resource Quality Objectives for the Berg Water Management Area. This indicates that the river should not deteriorate any further and should be rehabilitated where necessary. The Bokkemanskloof River and associated wetlands can be improved by the implementation of the 15m buffer and the removal of alien invasive vegetation from the river.

During the construction and operational phases, the following freshwater-related impacts were identified, namely (1) disturbance and loss of aquatic habitat; (ii) alteration in stormwater (surface water) runoff from the developed site; and (iii) potential for localized water quality impairment. Mitigation measures have been included in the EMPr and must be implemented accordingly. From an aquatic ecosystem perspective, the proposed additions to the original, previously authorised development of ERF 2224, it can be said that the proposed new development would not result in a significant increased level or change in the nature of impacts relative to the original assessment although the cumulative impacts could be expected to increase slightly.

As per the Herpetofauna Assessment (Appendix G3.1): The project area was found to be moderate-to-heavily

transformed from its original condition but still maintains basic ecological functionality and habitats which can support various herpetofauna. This habitat includes wetlands and ponds which are used as breeding grounds for amphibians (including Western Leopard Toads (WLT), as reported in the NCC report (2014)). No amphibian species of conservational concern (SCC) were recorded on the RE of Erf 2224 or in adjacent wetlands as identified by NCC in 2014 (Appendix G3.2). Amphibians recorded during the herpetofauna assessment included *Amietia fuscigula* (Cape River Frog) and *Strongylopus grayii* (Clicking Stream Frog) whereas reptiles included *Afrogecko porphyreus* (Marbled Leaf-toed Gecko), *Lygodactylus capensis* (Common Dwarf Gecko), and *Naja nivea* (Cape Cobra). These recorded species are classified as Least Concern (IUCN, 2017 / SARCA, 2014). It must be noted that due to the (i) cryptic nature of some amphibians, (ii) single-season and seasonal timing of the survey, and (iii) historic recordings of certain amphibians (during previous assessment – **Appendix G3.2**), it is plausible that some species may be present and/or utilize parts of the site for brief periods during the year.

As per the Updated Visual Impact Assessment (Appendix 4.1):
The proposed development is in line with the City of Cape Town's policies regarding densification. As per the change in layout, the proposed development will be situated on the lower lying slopes – reducing its visual impact, compared with the 2011 SDP, in areas in the valley. Based on the design of the units, the layout is visually acceptable due to the units in front screening the lower storey of the double story units situated behind these units in the front. The specialist has stated that there is sufficient space between the proposed development and the Oakhurst homestead to mitigate thevisual intrusion whereby a green visual screen can be provided along the northern western boundary. In this case, a historic hedge would be appropriate. It is the opinion of the VIA Specialist that should the proposed mitigation measures be implemented, the proposed amendment should be supported. In addition, changes to the unit types along the eastern boundary were made to accommodate comments received from interested and affected parties. A 1.5m setback line from the site boundary abutting the remainder of Erf 2958, and a 5m setback line along the remaining boundaries, have also been included.

As per the HWC's response to the submitted NID (Appendix G5.1):

- No heritage resources were present on the additional site (i.e. E]portion of Erf 2958) or in the areas where the change in the layout will take place.
- The recommendations made by Aikman Associates (**Appendix G5.3**) are supported.
- The specialist recommended that no further heritage studies are required.
- In response, the HWC stated:

> "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*".

As per the Updated Traffic Impact Assessment (Appendix G6.1): Based on the proposed amendment application, the TIA was revised (**Appendix G6.1**) to re-evaluate the potential traffic-related impacts associated with the proposed amendment to the development, as well as recommend measures to mitigate identified impacts. The Traffic Engineer made the following recommendations:

- A roundabout is implemented at Intersection 1. This will enable Intersection 1 to operate at an acceptable LoS and with sufficient capacity.
- The proposed development will generate an estimated 44 total trips (20 in and 20 out) during weekday A.M. peak hour traffic and an estimated 48 total trips (24 in and 24 out) during weekday p.m. peak hour traffic times.
- There is a need for formal sidewalks along certain public roads for pedestrian safety. Moreover, due to the absence of such facilities (i.e. sidewalks would lead to nowhere), the construction of such sidewalks would not significantly contribute to the facilitation of non-motorized transport (NMT). However, due to the current road designs (*viz* – internal streets are narrow and winding), vehicle speeds will be low which will benefit NMT.
- It is recommended that a bus embayment be considered in both directions on Hout Bay Main Road.
- Road geometries have been updated to accommodate changes to the unit types along the eastern boundary.
- A cul-de-sac turn-around facility for fire trucks and other emergency vehicles has been included along the Hout Bay Main Road side of the site.

Based on the Traffic Engineer's investigation, the potential traffic-related impacts of the proposed development

on the external road network will be insignificant. Furthermore, it was recommended that from a traffic perspective, the proposed development be considered for approval.

As per the Updated Engineering Services Report (Appendix G7.1): Based on the findings of the Engineering Services Report, the engineers concluded that:

- Sufficient civil engineering services are available within the vicinity of the proposed amended development
- CoCT has confirmed the availability of sufficient water and sewage services for the development.

As per the Updated Stormwater Management Plan (Appendix G8.1):

- From a Stormwater Management Perspective, and in line with the City of Cape Town's Management of Urban Stormwater Impacts Policy is designed to implement Sustainable Drainage Systems (SuDS), runoff from buildings mainly comprises suspended solids (SS) and total phosphorous (TP) which needs to be trapped and removed.
- Stormwater runoff will be attenuated (and treated) by the use of attenuation ponds, permeable paving, sediment traps, and revegetated areas.
- In order to attenuate stormwater runoff, five stormwater attenuation ponds will be required. These ponds will act as both an attenuation facility and sediment/litter trap. The two existing dams will be used to treat runoff and attenuate the peak runoff from the development site and the external sub-catchments.
- The quality of stormwater runoff will be adequately treated by the use of stormwater measures proposed above.

As per the Electrical and Fibre Services Report (Appendix G9.1): The CoCT has indicated that spare kVA capacity is available on their network to accommodate the new development but that the capacity is not reserved. In conclusion, the electrical engineers stated that the proposed amended development can be adequately serviced by the local authority electricity department and fibre is available in the surrounding area. Furthermore, the following was identified/proposed:

- A utility substation with an outdoor bulk metering unit is to be constructed at the gatehouse entrance off of Birch Lane with 24hr access. The substation is for exclusive use by the CoCT.
- A consumer substation is proposed for the control of the estate's private MV network
- Minisubs, LV network and kiosks with the provision of prepaid and conventional credit metering.
- Internal and external MV and LV cables must be installed underground within the road reserve.
- Street lighting is required along internal roads,
- A general services supplies at the gatehouse, etc.

As per the Landscape Plan (Appendix G10):

- No indigenous trees will be removed.
- Alien trees, such as the approximately 82 Bluegum trees, will be removed.
- As part of the landscape plan, numerous plant species will be planted around the site.

Faunal and floral diversity changes through space and time and are directly influenced by anthropogenic activities. Such activities include the transformation of land (Chapin *et al*., 2000). Direct impacts are typically associated with developments resulting in land cover changes (and consequent loss of natural areas) and edge effects, whereas indirect impacts include impacts associated with the generation of waste and its management (McDonald *et al.,* 2020). Edge effects have diverse impacts on biodiversity and ecological functioning (Razafindratsima *et al.,* 2018). Such effects contribute to a disturbance factor, which is likely to have driven most wild animals away from the study area and negatively impacted plant species diversity. These further limit the potential impact of the proposed amended development footprint and layout on fauna and flora within the development footprint Thus, the site is highly disturbed/transformed due to the previous disturbances and surrounding land uses.

1.2.	Provide a map that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
	Please refer to **Appendix B2.**
1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

This proposal is for the upgrade of an existing bridge.

Positive impacts:
The proposed upgrade to the existing bridge will have the following positive impacts relative to the three pillars of sustainable development:

1. **Environmental:**
    a. frequency and degree of workers entering the Bokkemanskloof River to repair the existing bridge
    b. promote the hydrological functioning of the river based on the design features (Table 1) of the proposed structure (Appendix B1).
    c. Removal of alien invasive plant species which negatively impact hydrology, nutrient cycling, fire intensity, erosion, and compete with indigenous vegetation for water, food, space, and light resources

2. **Economic:**
    a. To meet the demands of the developing area, this existing bridge would require substantial maintenance or repair to continue fulfilling the intended service and proposed service (i.e. increase in traffic across the Bokkemanskloof River amid the authorized Oakhurst Development).
    b. Ageing concrete bridges typically exhibit symptoms of deterioration prior to reaching the end of their designed service life. The proposed upgrade will reduce the frequency and degree of repairs/maintenance required, reducing the short- and long-term financial cost associated with maintaining the structural integrity of the existing bridge.

3. **Social:**
    a. Based on the expected increase in vehicle loads and traffic volume (amid the previously authorised Oakhurst Development), which will need to cross the Bokkemanskloof River, the proposed upgrade of the existing bridge will be a positive impact. This is attributed to the proposed bridge providing a more safe, reliable, and efficient crossing point compared with the existing bridge (please refer to Table 1 for comparison in structure dimensions). This will enable more vehicles and pedestrians to safely cross the Bokkemanskloof River at the same time, promoting and regulating traffic flow.
    b. Employment and skills development opportunities: The proposed upgrade to the existing bridge will require workers during the construction phase. Thus, the proposed upgrade will create employment and skills development opportunities for local labour.

Negative impacts:

1. Should the proposed mitigation measures not be implemented, the main impacts associated with the proposed upgrade of the existing bridge include

1.1. Erosion ("Low" impact *post-implementation of mitigation measures*): Clearing and construction-related activities resulting in erosion within the Bokkemanskloof River. The expected increase in rainfall events due to climate change may also result in erosion.

1.2. Impact on the Bokkemanskloof watercourse and associated wetland ("Low" impact *post-implementation of mitigation measures*): Impact on the Bokkemanskloof watercourse resulting in the loss and/or degradation of habitats and functioning of the watercourse. As per the Freshwater Report, the design of the bridge does not alter the channel shape, alignment or depth and does not impede low or high flows within the Bokkemanskloof watercourse. The design of the bridge is therefore supported by the Freshwater Specialist.

1.3. Impact on flora and fauna associated with the Bokkemanskloof watercourse ("Low" impact *post-implementation of mitigation measures*): Fauna and flora may be directly and indirectly (*please refer to impact above – "Loss of habitat"*). As per the Botanical Compliance Statement, the proposed development footprint was classified as highly degraded/transformed.

1.4. Impact on heritage and/or cultural resources ("Low" impact *post-implementation of mitigation measures*): Heritage resources, e.g. graves, archaeological material, and paleontological material, may be discovered during the construction phase. It must be noted that this proposal is for the upgrade of an existing bridge whereby the discovery of such items is unlikely.

The proposed amendments to the Environmental Authorisation:
This proposal is for the amendment to the previously authorised development footprint and the addition of a portion of Erf 2958. As detailed in the impact assessment above, it is envisaged that the proposed amendment is highly unlikely to significantly increase the impact on the environmental, economic, and/or social pillars of sustainable development. Please refer to the impact assessment above for more information. The positive and negative impacts of the proposed amendment have been tabulated below:

<u>Construction Phase</u>

Impact	Significance		
	Pre-mitigation	**Post-mitigation**	**Will the proposed amendment increase the impact? What is the final significance of the amendment impact?**
Impact on conservation-worthy natural vegetation	Medium – Low	Low	No ("Low")
Construction-related noise impacts	Low	Very Low	No ("Very Low")
Impacts on the wet environments on and along the Bokkemanskloof River	Low	Very Low	No ("Very Low")
Construction impacts on the Western Leopard Toad	Low	Very Low	No ("Very Low")
Construction-related dust impacts	Low	Very Low	No ("Very Low")
Heritage impacts	Medium	Low	No ("Very Low")
Waste related impacts	Low	Very Low	No ("Very Low")
Construction-related traffic impacts (e.g. tip trucks and excavators etc.)	Low	Very Low	No ("Very Low")
Construction-related visual impacts	Very Low	Very Low	No ("Very Low")
Employment	Low positive impact	N/A	No ("Low Positive")

Operational Phase

Impact	Significance		
	Pre-mitigation	**Post-mitigation**	**Will the proposed amendment increase the impact? What is the final significance of the amendment impact?**
Operational phase noise impacts	Low	Low	No ("Low")
Impacts on the wet environments on and along the Bokkemanskloof River	Medium	Medium positive impact	No ("Medium positive impact")
Traffic impacts	Low	Low	No ("Low")
Visual impacts	Medium	Low	No ("Low")
Employment Opportunities	Low positive impact	N/A	
Western Leopard Toad	Medium	Low positive	No ("Low positive")
Heritage Impacts	Low	Low positive	No ("Low positive")
Operational bulk engineering services-related impacts	Medium	Very Low	No ("Very Low")
Stormwater Impacts	Low	Very Low	No ("Very Low")
Restoration and rehabilitation of natural vegetation	N/A	Low positive impact	No ("Low Positive Impact")

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr

The general planning and design, construction, post-construction rehabilitation, and operational phase site management measures to minimise health, safety and environmental risk associated with the development, which is contained in the EMPr in **Appendix H**, should be adhered to. Impact management, mitigation, and monitoring measures are captured in the impact assessment and significance rating, as well as in the Environmental Management Plan/Programme (EMPr) attached as **Appendix H**.

The EMPr forms part of the contractual obligations to which all persons including but not limited to, contractors/sub-contractors or employees involved in construction, operation, maintenance, or decommissioning work, must be committed. It also serves as a baseline information document for the project applicant and any entity working on behalf of the applicant, during the various phases of the proposed activity. The EMPr aims to comply with Section 24N of the National Environmental Management Act No. 107 of 1998, as

amended (NEMA), as well as any additional specific information requested by any government department, including the regulating authority for this specific project, the DEA&DP. The overall objective of the EMPr is to direct and guide all responsible parties, binding all contractors, sub-contractors, and all other persons working on the site to adhere to the terms and conditions of the EMPr during the construction, operation, maintenance, and anticipated demolition/decommissioning phases of the project. The overall outcome of the EMPr is to prevent avoidable damage and/or minimize or mitigate unavoidable environmental damage associated with the construction, operation, maintenance, and possible decommissioning phases of the proposed project. The specific outcomes of the EMPr will be achieved by ensuring that the mitigation and management measures detailed in the EMPr are implemented and adhered to throughout the project duration. Compliance monitoring and independent assessment/auditing allow the verification of achievement of the EMPr outcomes and ultimately, fulfilment of the EMPr objectives.

The EMPr:

- identifies project activities that could cause actual environmental damage (or potential environmental risks) and provides a summary of actions required;
- identifies persons responsible for ensuring compliance with the EMPr;
- provides standard procedures to avoid and/or minimize the identified negative environmental impacts and to enhance the positive impact of the project on the environment;
- provides the site and project-specific rules and actions required, including a site plan/s showing:
  o areas where construction, maintenance, or demolition work may be carried out;
  o areas where any material or waste may be stored;
  o allowed access routes, parking, and turning areas for construction or construction-related vehicles;
- forms a written record of procedures, responsibilities, requirements, and rules for contractor/s, their staff, and any other person who must comply with the EMPr;
- provides a monitoring and auditing program to track and record compliance and identify and respond to any potential or actual negative environmental impacts; and
- provides a monitoring program to record any mitigation measures that are implemented

2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

All mitigation measures proposed in the EMPr (especially Specialist mitigation measures) must be implemented.

2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.

As per the Botanical Assessment (Appendix G1.1): The proposed development amended footprint was classified as highly disturbed and transformed with a low ecological value and very low restoration potential. Based on the findings of the Botanical Compliance Statement, the botanical specialists concluded that:

- The proposed amendment will not result in an increased level or change in the nature of impacts compared with the original assessment.
- The proposed amendment is therefore supported from a botanical perspective.

As per the Updated Freshwater Assessment (Appendix G2.1): from an aquatic ecosystem perspective, the proposed additions to the original, previously authorised development of ERF 2224, it can be said that the proposed new development would not result in a significant increased level or change in the nature of impacts relative to the original assessment although the cumulative impacts could be expected to increase slightly.

As per the Herpetofauna Assessment (Appendix G3.1): The project area was found to be moderate-to-heavily transformed from its original condition. However, the site still maintains its basic ecological functionality and habitats which can support various herpetofauna. It must be noted that due to the (i) cryptic nature of some amphibians, (ii) single-season and seasonal timing of the survey, and (iii) historic recordings of certain amphibians (during previous assessment – **Appendix G3.2**), it is plausible that some species may be present and/or utilize parts of the site for brief periods during the year.

As per the Updated Visual Impact Assessment (Appendix 4.1): The proposed development is in line with the City of Cape Town's policies regarding densification. As per the change in layout, the proposed development will be situated on the lower lying slopes – reducing its visual impact, compared with the 2011 SDP, in areas in the valley. Based on the design of the units, the layout is visually acceptable due to the units in front screening the lower storey of the double story units situated behind these units in the front. The specialist has stated that there is sufficient space between the proposed development and the Oakhurst homestead to mitigate thevisual intrusion whereby a green visual screen can be provided along the northern western boundary. In this case, a historic hedge would be appropriate. It is the opinion of the VIA Specialist that should the proposed mitigation measures be implemented, the proposed amendment should be supported.

As per the HWC's response to the submitted NID (Appendix G5.1): The specialist concluded that no heritage resources were present on the additional site (i.e. a portion of Erf 2958) or in the areas where the change in the layout will take place. The specialist recommended that no further heritage studies are required. In response, the HWC stated:

> "*since there is no reason to believe that the proposed residential development on Erf 2224 and 2958, Off Hout Bay Main Road, Hout Bay, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure to be included in environmental authorization*".

As per the Updated Traffic Impact Assessment (Appendix G6.1):
Based on the Traffic Engineer's investigation, the potential traffic-related impacts of the proposed development on the external road network will be insignificant. Furthermore, it was recommended that from a traffic perspective, the proposed development be considered for approval.

As per the Updated Engineering Services Report (Appendix G7.1):
Based on the findings of the Engineering Services Report, the engineers concluded that (1) Sufficient civil engineering services are available within the vicinity of the proposed amended development, and (2) CoCT has confirmed the availability of sufficient water and sewage services for the development .

As per the Updated Stormwater Management Plan (Appendix G8.1): The implementation of stormwater management measures will ensure that the post-development flows are attenuated to pre-development levels for the entire site area.

As per the Electrical and Fibre Services Report (Appendix G9.1): The electrical engineers concluded that the proposed amended development can be adequately serviced by the local authority electricity department and fibre is available in the surrounding area.

As per the Landscape Plan (Appendix G10): No indigenous trees will be removed whereas numerous alien trees (including the 82 x Bluegum trees) will be removed. This is a positive impact. As part of the Landscape Plan, thousands of indigenous plant species will be planted throughout the site.

Based on the findings of these specialist studies, as well as the impact assessment, it is envisaged that the proposed amendment will not increase the significance of identified potential impacts. It is of the EAP's opinion that this is adequate motivation for the proposed amendment to be approved.

The implementation of the design, construction and operational phase measures contained in the EMPr in **Appendix H**, will maximize the benefits and avoid/ minimize any environmental risks associated with the proposed amendment to the development footprint and layout. It is in this case of particular importance to manage and mitigate identified potential impacts associated with the proposed amendment.

There is thus adequate motivation for the proposed amendment to be approved. **It is therefore recommended that the proposed bridge upgrade and the proposed amendment to the existing Environmental Authorisation be authorized with the necessary conditions of approval as described throughout this Report the EMPr (Appendix H).**

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
	Assumptions • It is assumed that all the information provided in this report and on which the report is based is correct and valid. • The exact impacts discussed in this report may vary once the project commences due to real-life events. The impacts identified and the mitigatory measures proposed are predicted to occur with the information as per this report. • It is assumed that the proposed mitigation measures as listed in this report and the EMPr (**Appendix H**) will be implemented and adhered to. • The assessment of impacts and recommendation of mitigation measures was informed by the site-specific ecological concerns and based on the assessor's working knowledge and experience with similar development projects. **Uncertainties**

	• That the construction will be carried out according to the EMPr. • That management will act in a responsible manner and act when incidents occur to determine the cause and/or rectify the cause of the problem. HSE consultant will be appointed to assist management to ensure compliance with the OSH ACT. • That the available data, including specialist reports, maps (Water resource Map, Biodiversity Spatial Plan, Geological Maps, etc.) photographs, and information received from the project team are reasonably accurate. • That all specialist input and all information extracted from the specialist reports to complete the assessment are correct. **Gaps in Knowledge:** There are no significant gaps in knowledge for the proposed project.
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.

The period within which commencement must occur;	5 years
The period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects;	N/A – The EA does include operational aspects
The period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and	5 years
The period for which the portion of the environmental authorisation that deals with operational aspects is granted.	N/A – the operation phase is permanent.

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.
1. Should dust be generated during the construction phase, a water cart will be used whereby only non-potable water will be used when required. Shade netting and straw will be used on any stockpiles to reduce the need to use water for dust suppression. 2. Potable water will only be used when mixing cementitious materials such as concrete, mortar, and plaster. Water used for external works will be processed effluent which would be trucked in. Any water leakages will be fixed immediately.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
Once construction starts, chemical toilet(s) must be made available on site. The toilet should not be placed within 32m of a watercourse and should be routinely serviced by a Registered Disposal Contractor and removed after construction is completed. Waste receipts are required as proof of safe disposal. All waste generated on-site (general and hazardous) must be collected, consolidated in dedicated bins, removed, and disposed of at registered disposal facilities. Waste must be separated into recyclable and non-recyclable material and disposed of at a dedicated recycling point (where applicable). Waste receipts are required as proof of safe disposal. Water efficient technologies will be implemented in the residential development and the support infrastructure.

5. Energy Efficiency

5.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
• The development will implement natural lighting schemes as far as practicably possible as opposed to standard space lighting through electrical means. This will reduce the energy requirements for heating and	

cooling of the facility as well as the lighting of the facility.

- One or a combination of the following measures will be implemented for all geysers to reduce their energy requirements as opposed to standard technologies – energy-efficient geyser blankets, solar-heated water geysers and/or geyser timers. This will reduce the energy requirements for heated water to be available on tap.
- The development will implement roof insulation technology and materials as opposed to no insulation in the roofing superstructures. This will reduce the energy requirements for heating and cooling of the facility.
- The development will implement passive heating and cooling mechanisms as far as practicably possible as opposed to mechanically ventilated solutions. This will reduce the energy requirements for heating and cooling of the facility.

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I, IAN RAUBENHEIMER, ID number 6309125041086, in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

17/10/2024.

Signature of the Applicant: Date:

OAKHURST LIFESTYLE ESTATE (PTY) LTD

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I Chantel Muller EAPASA Registration number 2019/1362 as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

21/08/2024

Signature of the EAP: Date:

Sillito Environmental Consulting

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

I ....., EAPASA Registration number ..... as the appointed Review EAP hereby declare/affirm that:

- I have reviewed all the work produced by the EAP;
- I have reviewed the correctness of the information provided as part of this Report;
- I meet all of the general requirements of EAPs as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I ……, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

I ....., as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s):
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):