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THE FINAL

BASIC ASSESSMENT REPORT FORM

FOR THE

**PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND
CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602
KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF
FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE
DISTRICT**



Applicant: Western Cape Government Department of Infrastructure: Transport Infrastructure

Environmental Consultant: Sharples Environmental Services CC
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Assisted by: Jessica Gossman (Candidate EAPASA: 2022/6154)

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CHANGES BETWEEN THE REVISED DRAFT BASIC ASSESSMENT REPORT AND THE FINAL BASIC ASSESSMENT REPORT

The following amendments were incorporated into the Final BAR following the conclusion of the second Public Participation Process and the final review of the assessment documentation:

- **Executive Summary:** Updated to reflect the completion of the second Public Participation Process undertaken from 12 August 2026 to 10 September 2026.
- **Section C:** The Hydrological Assessment requirement identified through the updated Screening Tool was addressed, with clarification provided that the relevant hydraulic and flood-related considerations are incorporated into the engineering design and aquatic assessment.
- **Section E:** The aquatic/wetland CBA encroachment was corrected from approximately 6 m² to **12 m²**, with the corrected figure reflected consistently in the relevant assessment and mapping.
- **Section G:** The terrestrial biodiversity discussion was updated to incorporate the 30 July 2026 Screening Tool information and to distinguish updated desktop screening information from site-specific specialist findings.
- **Section G:** The professional registration status and historical role of Ms. Edmari Lewis were clarified, distinguishing her current professional registration from her Candidate Natural Scientist status at the time of the original assessment.
- **Section G / Appendix C:** The site photographic record was updated to include July 2026 site verification photographs.
- **Section I:** The avifaunal impact description was updated from Very Low to Low, consistent with the 2026 specialist verification.
- **Section I:** The Environmental Impact Statement was revised to provide an objective summary of the specialist findings and the role of the recommended mitigation measures in managing identified impacts.
- **Section G / Heritage:** The Heritage Statement reference was amended to reflect its inclusion in the **Final BAR**.
- **Appendices/Attachment Schedule:** The attachment schedule and appendix references were reviewed and updated to reflect the final supporting documentation.

Changes to the Assessment Documentation and Motivation for the Extension of Time

Following the first round of public participation and the subsequent review of the Draft BAR, additional technical and specialist information was obtained and incorporated into the assessment documentation. The extension of time was required to allow this information to be properly considered and incorporated into the BAR and EMPr prior to finalisation.

The **fundamental nature and assessed footprint of the proposed development remained unchanged**. The updates were primarily required to confirm the applicability of the existing specialist findings, incorporate updated site verification information, and ensure that the environmental management measures adequately reflected the latest engineering and specialist recommendations.

The following updates were incorporated:

- **Aquatic Biodiversity:** The latest engineering drawings for the DR1602 causeway were reviewed by the aquatic specialist on **3 August 2026**. The specialist supported the proposed structure in principle, noting its substantially larger hydraulic openings, but identified the need for the final environmental documentation to clearly address erosion control, rehabilitation, wetland and riverbank stabilisation, downstream erosion protection, energy dissipation at culvert outlets and protection of roadside stormwater outlets. These recommendations were therefore incorporated into the environmental management requirements.
- **Terrestrial Biodiversity, Plant and Animal Species:** A verification site inspection was undertaken on **1 July 2026**. The specialist confirmed on **5 August 2026** that the terrestrial environment and development footprints remained substantially unchanged, that no additional ecological features increasing the sensitivity of the sites had been identified, and that the original sensitivity ratings, conclusions and recommendations remained applicable.
- **Avifauna:** The Avifauna Compliance Statement was reviewed and confirmed in **August 2026**. The specialist confirmed that the proposed development had not changed, remained confined to the previously assessed disturbed road reserves, and that the verified Low avifaunal sensitivity and associated impact assessment and mitigation measures remained applicable.
- **Heritage:** The Heritage Statement was incorporated into the assessment documentation to confirm the heritage implications of the proposed works. The assessment confirmed that the affected areas are already disturbed and transformed and that the proposed activities do not trigger the requirement for a Notification of Intent to Develop. The Fossil Finds Procedure was also identified as a precautionary construction requirement.

The above updates required corresponding amendments to the BAR and EMPr to ensure consistency between the **engineering design, specialist assessments, impact assessment and environmental management measures**. In particular, the aquatic specialist's recommendations required additional detail regarding the management and rehabilitation of the watercourse and disturbed areas.

The additional time was therefore necessary to ensure that the revised BAR incorporated the **most current available specialist verification and technical information**, that the recommendations were appropriately translated into the EMPr, and that the updated information could be made available for consideration during the **second round of public participation undertaken from 12 August 2026 to 10 September 2026**.

The extension was accordingly required to ensure that the Final BAR was supported by a complete and current assessment record and that the changes and additional information arising following the first public participation process were appropriately incorporated before finalisation.

EXECUTIVE SUMMARY

Sharples Environmental Services CC (SES) has been appointed by Hatch Consulting Engineers (Pty) Ltd, on behalf of the Western Cape Government: Department of Infrastructure (Transport Infrastructure Branch), to undertake a Basic Assessment (BA) process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended).

The application relates to the proposed removal, replacement, and realignment of an existing causeway and associated road infrastructure along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48, crossing the Varings River on Farm 338 and Portion 6 of Farm 220 within the Mossel Bay Local Municipality, Garden Route District.

Project Background and Need

The existing low-level causeway was significantly damaged during the November 2021 flood events, resulting in structural failure, erosion of embankments, and compromised road safety. The proposed development forms part of a broader provincial flood damage repair programme aimed at improving infrastructure resilience, ensuring continued access, and reducing future risks to both ecological systems and transport infrastructure.

Proposed Development

The project entails:

- Removal of the existing damaged causeway;
- Construction of a new, realigned causeway and road section located slightly downstream of the current crossing;
- Installation of reinforced concrete culverts with erosion protection measures;
- Construction of a temporary deviation road to maintain traffic during construction;
- Rehabilitation of all disturbed areas post-construction.

The total development footprint is approximately 1,646 m², including temporary works, with portions extending beyond the existing road reserve.

Legislative Context and Listed Activities

The proposed development triggers activities in terms of the EIA Regulations, 2014 (as amended) and is therefore subject to a Basic Assessment process.

Listing Notice 1 (GN R327 of 2017, as amended):

- Activity 12: Development within a watercourse exceeding 100 m²;
- Activity 19: Infilling, excavation, or movement of material (>10 m³) within a watercourse;
- Activity 48: Expansion of infrastructure (bridge/causeway) within a watercourse.

Listing Notice 3 (GN R324 of 2017, as amended):

- Activity 4: Development of a road wider than 4 m in areas containing indigenous vegetation outside urban areas;
- Activity 12: Clearance of more than 300 m² of indigenous vegetation;
- Activity 14: Development of infrastructure or structures with a footprint of 10 m² or more within a watercourse in a sensitive area.

These activities are primarily triggered due to the location of the development within a watercourse and within sensitive indigenous vegetation (Garden Route Granite Fynbos).

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FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION
ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL
MUNICIPALITY, GARDEN ROUTE DISTRICT.**

Receiving Environment

The site is located within a rural agricultural landscape and crosses the Varings River, which supports riparian habitat and associated ecological functions. The surrounding area includes indigenous vegetation classified as Garden Route Granite Fynbos, identified as sensitive in regional biodiversity planning frameworks.

Specialist Assessments

Specialists Name	Prof. Registration	Assessment Conducted
Upstream Consulting Debbie Fordham	Pr.Sci.Nat. <u>Ecological Science</u> (119102)	Freshwater Impact Assessment
MORA Ecological Services Mokgatla Molepo	Pr. Sci. Nat. <u>Ecological Science / Zoological Science</u> (009509)	Avifaunal Compliance Statement
EnviroWorks Megan Smith	Pr.Nat.Sci. <u>Ecological Science</u> Reg [no 130295]	Terrestrial Biodiversity, Plant Species and Animal Species Compliance Statement
Edmari Lewis	SACNASP Pr.Nat.Sci. Reg no 147171	
Dr Peter Nilssen	ASAPA professional member # 097	Heritage Statement

Key Environmental Considerations

The main potential environmental impacts associated with the proposed development include:

- Disturbance of the watercourse and riparian habitat;
- Vegetation clearance and habitat loss;
- Sedimentation and water quality impacts during construction;
- Temporary disturbance from construction activities.
- The DFFE Environmental Screening Tool (2026) identified the Animal Species Theme as High sensitivity due to the potential occurrence of the Knysna Warbler (*Bradypterus sylvaticus*), Denham's Bustard (*Neotis denhami*), and African Marsh Harrier (*Circus ranivorus*) within the broader landscape. An Avifauna Compliance Statement was therefore undertaken in accordance with the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes and the Species Environmental Assessment Guideline Version 4.1 (2026) to verify the site sensitivity.
- The specialist assessment revised in 2026 concluded that the proposed development footprint is confined to an existing disturbed road reserve associated with an existing causeway and culvert infrastructure. No suitable breeding, roosting or long-term habitat for the screened Species of Conservation Concern occurs within the project footprint. Consequently, the verified avifaunal sensitivity of the development footprint is Low, and the anticipated impacts on avifauna are considered to be localised, temporary and of Low significance following the implementation of the recommended mitigation measures.

These impacts are largely localised and of short duration, primarily occurring during the construction phase.

Mitigation and Environmental Management

An Environmental Management Programme (EMPr) has been developed to ensure that all identified impacts are effectively mitigated. Key mitigation measures include:

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- Implementation of erosion and sediment control measures;
- Limiting the footprint of disturbance;
- Rehabilitation of disturbed areas;
- Timing construction activities to minimise impacts on water flow;
- Compliance with all relevant permits and approvals, including water use authorisation (where applicable).

Public Participation

A public participation process was undertaken in accordance with the EIA Regulations 39 to 44 of the Environmental Impact Assessment Regulations, 2014 (as amended), ensuring that all Interested and Affected Parties (I&APs) were informed and provided with a 30-day Public Participation Process to provide an opportunity to comment on the proposed development. The first round of public participation was run from May 15th, 2026, to June 15th, 2026. An additional round of public participation was conducted from August 12th, 2026, to September 10th, 2026.

Conclusion

The proposed project is considered necessary, given its role in restoring critical transport infrastructure and improving resilience to future flood events. While the development does result in impacts to the watercourse and surrounding environment, these impacts can be adequately mitigated to acceptable levels through the implementation of the recommended mitigation measures within the EMP.



**Western Cape
Government**

Department of Environmental Affairs and
Development Planning

BASIC ASSESSMENT REPORT

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

APRIL 2024



**Western Cape
Government**

BASIC ASSESSMENT REPORT

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

APRIL 2024

(For official use only)	
Pre-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)

THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

Sharples Environmental Services cc (SESc) has been appointed by Hatch Consulting Engineers (Pty) Ltd, on behalf of the Western Cape Department of Infrastructure: Transport Infrastructure Directorate, to oversee the environmental authorisation process for the proposed removal, replacement, and realignment of the existing causeway and associated road infrastructure along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48, over the Varings River. The site is located on Farm 338 and Portion 6 of Farm 220 within the Mossel Bay Local Municipality, Garden Route District, Western Cape.

Several roads in the Garden Route suffered flood damage during a flood event in November 2021. The proposed project forms part of the strategy aimed at repairing and upgrading the affected sections of these roads. This proposed project forms part of the overarching project and is aimed toward preventing future damage to the ecological resources and services infrastructure, as well as mitigating the road safety implications of the existing infrastructure.

Located at DR 1602 (Kleinplaas Road), the existing causeway construction sees its starting coordinates at 33°57'36.34"S; 22°14'30.05"E, its end coordinates at 33°57'35.59"S; 22°14'27.31"E and is located within a road reserve with a width of approximately 20 m. In order to effectively re-establish and upgrade the existing causeway, it is required that a temporary deviation road be installed north of the existing road. The temporary deviation road will be approximately 4 m in width; however, some of the proposed construction works will be located outside of the existing road reserve. The temporary deviation road will see its starting coordinates at 33°57'35.24"S; 22°14'29.08"E and its end coordinates at 33°57'35.56"S; 22°14'27.37"E. The proposed project will require a working buffer of 3 meters.

Although the re-establishment of the causeway does lie under the ambit of the definition of commencement of an original activity, the construction activities that are outside of the existing road reserve do trigger one or more listed activities in terms of Environmental Impact Assessment (EIA) Regulations of 2014, as amended (GNR 326 of 2017; GNR 517 of 2021).

Please note: The proposed project is part of a larger scope of work that is not included in this application. The following proposed works are highlighted: flood damage repairs on Main Road 355 at km 2 to 12 (Seven Passes). Additionally, the proposed works extend to Division Roads located along DR1791, DR1633, DR1639, and (this application area) DR1602, in various areas throughout the Garden Route. The majority of the larger scope of works fall under various Section 30A Directives, including one for flood remediation work along the broader DR1602. While the proposed realignment in this process does not fall within the scope of a S30A, it has been included in the Western Cape Department of Infrastructure: Transport Infrastructure Directorate's construction programme. The current program is aligned with the S30A decision timeframes and aims to have

all flood damage works concluded by January 2027. It is anticipated that the works proposed in this BAR will require 3 months to conclude. As such, any assistance from the Department in accelerating the decision-making timeframe to align with the programme would be greatly appreciated.

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, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".
3. *Submission of documentation, reports and other correspondence:*

The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

DEADPEIAAdmin.George@westerncape.gov.za

Directorate: Development Management (Region 3):

Garden Route District Municipal area and Central Karoo District Municipal area

General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

4. 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.
5. All applicable sections of this BAR must be completed.
6. 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.

FINAL BASIC ASSESSMENT REPORT FORM

FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

7. This BAR is current as of **April 2024**. 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> to check for the latest version of this BAR.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.

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DEPARTMENTAL DETAILS

	GEORGE REGIONAL OFFICE: DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3) (Central Karoo District & Garden Route District)
	The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530

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.



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	- 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): - Watercourses / Rivers / Wetlands - Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); - Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"); - Ridges; - Cultural and historical features/landscapes; - 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:	Zoning Map	✓
	Appendix A3:	Map with the GPS coordinates for linear activities	✓
Appendix B:	Appendix B1: Site development plan(s)	Site Development Plan Map	✓
		Total Construction Footprint	✓
	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: November 2023		✓
	Photographs: July 2026		✓
Appendix D: Biodiversity overlay map	Appendix D1 : Western Cape Biodiversity Spatial Plan Map		✓
	Appendix D2: Freshwater Resource Map		✓
	Appendix D3: Ecosystem Threat Status		✓
	Appendix D4: Overlay Specialist Sensitivity Map		✓
	Appendix D5: Site Sensitivity Verification Report		✓
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	n/a

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	Appendix E2:	Copy of comment from Cape Nature	✓
	Appendix E3:	Final Comment from the DWS/ BOCMA	✓
	Appendix E4:	Comment from the DEA: Oceans and Coast	✓
	Appendix E5:	Comment from the DAFF	✓
	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 – Confirmed that they do not have comments
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management) - Not applicable as no services are required during the construction and operational phase).	n/a
	Appendix E17:	Comment from the District Municipality	✓

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	Appendix E18:	Comments from DEA&DP	✓
	Appendix E19:	Copy of an exemption notice	n/a
	Appendix E20	Pre-approval for the reclamation of land	n/a
	Appendix E20: Proof of agreement/TOR of the specialist studies conducted.	Appendix E 20: A Animal Specialist TOR	✓
		Appendix E 20: B Aquatic Specialist TOR	✓
		Appendix E 20: C Plant Specialist TOR	✓
		Appendix E 20: D Terrestrial Specialist TOR	✓
	Appendix E21:	Proof of land use rights	n/a
	Appendix E22:	Proof of public participation agreement for linear activities	n/a
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 Appendix F1: Public participation information: • A - Register of I & APs • B - Comment and Response Tables • C - Proof of Notices & Advertisements • D – Email Notifications		✓
Appendix G: Specialist Report(s)	Appendix G 1: Aquatic Impact Assessment Report		✓
	Appendix G 2: Revised Plant, Animal and Terrestrial Biodiversity Compliance Statement		✓
	Appendix G 3: Revised Avi-Faunal Compliance Statement		✓

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	Appendix G 4: Heritage Statement	✓
Appendix H:	EMPr	✓
Appendix I:	Screening tool report	✓
Appendix J:	The impact and risk assessment for each alternative	X – Included within the BAR
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	X – Included within the BAR
Appendix L:	Engineering Report and Drawings	✓
Appendix M:	DEADP: NOI Response & Acknowledgement of Receipt	✓
Appendix N:	Existing Approvals: • General Authorisation • Section 30A Directive	✓
Appendix O:	Revised Site Sensitivity Verification Report 09/2026	✓

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall			GEORGE OFFICE: REGION 3
	(City of Cape Town, West Coast District)	(Cape Winelands District & Overberg District)	
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent: Name of contact person for Applicant/Proponent (if other): Company/ Trading name/State Department/Organ of State: Company Registration Number: Postal address: Telephone: E-mail:	Western Cape Government: Department of Infrastructure: Transport infrastructure Branch		
	Lousie Buys		
	Western Cape Government: Department of Infrastructure: Transport infrastructure Branch		
	N/A		
	11 Leeuwen Street Cape Town		
			Postal code: 8000
	(021) 483 6465		
	Louise.buys@westerncape.gov.za		
	Company of EAP: Sharples Environmental Services cc Author: Betsy Ditcham (2020/1480) Assisted by Candidate EAP: Jessica Gossman (2022/6154)		
	Postal address: PO Box 443 Cape Town		
		Postal code:	
(021) 554 5195		Cell: 079 028 1218	
betsy@sesc.net		Fax: ()	
jessica@sesc.net			



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FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

Section B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	New	Expansion	✓
2.	Is the proposed site(s) a brownfield or greenfield site? Please explain.			
The existing causeway infrastructure would be considered a brownfield site; however, the construction of the temporary deviation road will be located in an area which has been underdeveloped in the past.				
3.	For Linear activities or developments			
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:			
The proposed project is located along (DR) 1602 KM 8.48, Kleinplaas Road, Crossing Farm 338 and Portion 6 of Farm 220				
3.2.	Development footprint of the proposed development for all alternatives.	Total Development footprint: Approx 16461 m ² Working area outside of the new road reserve: 45m ² Working area outside of the existing road reserve: 233 m ²		
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.			
The proposed development entails the removal and replacement of the existing flood-damaged causeway and associated road infrastructure along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48, where the route crosses the Varings Rivier on Farm 338 and Portion 6 of Farm 220, within the Mossel Bay Local Municipality, Western Cape. Based on the engineering design (Hatch, 2022), the proposed development involves the construction of a new, realigned bridge and approach road section positioned immediately South (downstream) of the existing crossing. The new road section will form part of the provincial road network and constitutes a linear activity under the EIA Regulations. The total length of the realigned section, including the causeway and its approach roads, will be approximately 100 – 150 metres. The roadway width will be about 6.2 metres and the bridge structure 4.0 m between guide blocks, with an overall development footprint width of the bridge being approximately 15 metres. The road reserve is 20 metres wide, with the construction working corridor extending 3 metres beyond the road footprint on either side for machinery access and material handling. The causeway structure will consist of three rectangular reinforced-concrete culvert cells, each approximately 6 to 8 metres long and about 3 metres high, with associated inlet and outlet apron slabs, wing walls, and stone pitching, and gabions for erosion protection. The total development footprint for the permanent works is located centrally within the Varings River. The current design allows for the most adverse geotechnical conditions requiring a raft foundation slab, apron slabs and cut-off beams about 15m wide measured perpendicular to the bridge. It appears as if bedrock is present at the current river level where the new structure will be located, providing the possibility to have small pad footings (about 5 x 1.5m in plan) under the piers and abutments, thus omitting the raft foundation, apron slabs and cut-off beams. This investigation will be done during the construction phase. The current design has been based on the worst-case geotechnical scenario requiring a raft foundation slab, apron slabs and cut-off beams. Should competent bedrock be confirmed during construction, the detailed engineering design may be refined to utilise smaller pad footings beneath the piers and abutments. This would reduce the permanent foundation footprint and would not increase the environmental footprint assessed in this BAR. Any design modification that would increase the approved disturbance footprint or affect sensitive environmental features would be referred to the EAP, Aquatic Specialist and Competent Authority for review prior to implementation. To maintain traffic during construction, a temporary deviation road will be established north of the new alignment, as shown in Figure 1 below. The proposed temporary deviation road will be approximately 42 metres in length and 4 metres in width. The proposed construction works will extend beyond the 20 m road reserve. The footprint of the temporary deviation road within the watercourse is estimated at ±180 m², and a 3 m working buffer will be applied around the working area. The total working area for the proposed works will be approx. 1,646 m², and the working area outside of the new road reserve 45m² and the existing road reserve will be extended 233m², outside of the road reserve. The deviation will be removed, and the area will be rehabilitated once the new causeway is operational.				

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Figure 1. The Proposed Construction for DR1602 Mossel Bay with a revised road reserve.

Error! Reference source not found. below illustrates the proposed road and culvert works along DR1602 (Kleinplaas Road) at the Varings R iver crossing, showing the existing and new road reserve in relation to the existing road reserve. The red boundary indicates the area of the new road reserve, and the blue line shows the existing road reserve.

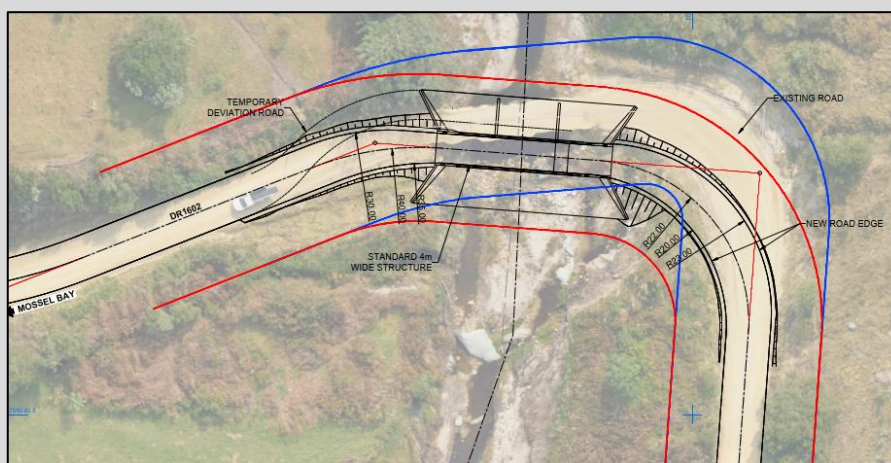


Figure 2. Proposed engineering layout of the new proposed causeway and culverts infrastructure showing the existing (blue) and new (red) road reserve, located on DR1602 km 8.4. (Hatch Engineering, 2026).

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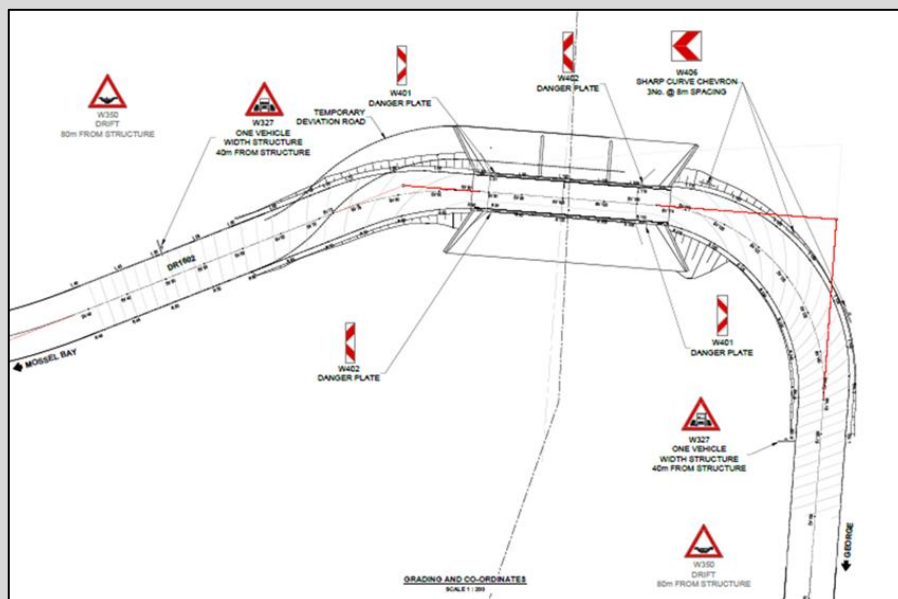


Figure 3. Area for the temporary traffic accommodation signs on the existing road, (Hatch Engineering, 2026).

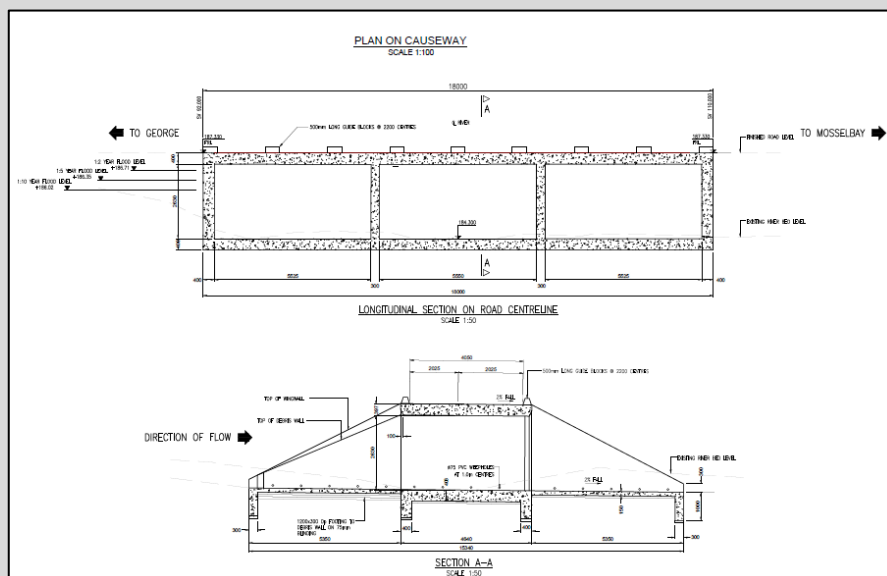


Figure 4. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Should base rock be available for the foundations, the concept engineering design will change as follows:

- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
- Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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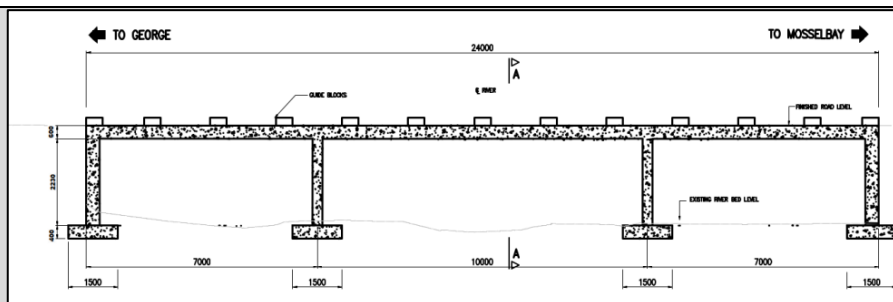


Figure 5. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

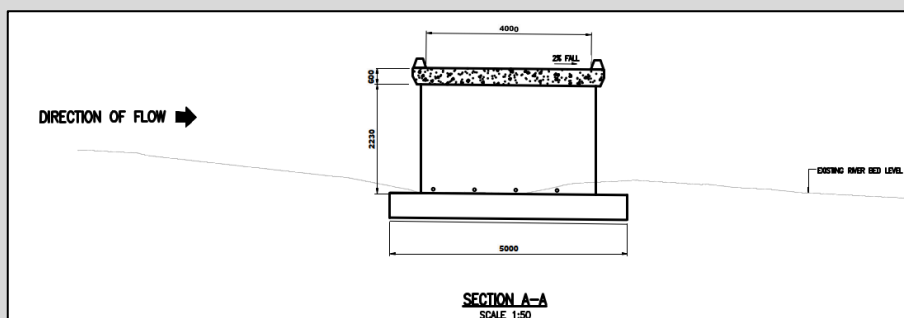


Figure 6. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Kindly note that the proposed layout designs are included in the engineering report and drawings within Appendix L of this BAR.

3.4. Indicate how access to the proposed routes will be obtained for all alternatives.

Located along Division Road 1602 Kleinplaas Road at km 8.4 can be accessed via Kleinplaas Road, which leads off the R102.

Farm number 338	C0270000000033800000
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Portion 6 of Farm 220	C02700000000022000006
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Starting point co-ordinates for all alternatives

Latitude (S)	33°	57'	36.42"
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Longitude (E)	22°	14'	30.03"
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Middle point co-ordinates for all alternatives

Latitude (S)	33°	57'	35.39"
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Longitude (E)	22°	14'	28.81"
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End point co-ordinates for all alternatives

Latitude (S)	33°	57'	35.62"
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Longitude (E)	22°	14'	27.19"
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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

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
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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:QA"). 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.
- o <u>Other legislation that may be applicable to the current project:</u> - o The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996): In 1996, the South African Government promulgated the constitution of the Republic of South Africa (Act No. 108 of 1996) (The Constitution). Section 24 of the Constitution describes the following: 24. Everyone has the right- (a) To an environment that is not harmful to their health or wellbeing; and (b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: Prevent pollution and ecological degradation; ii. Promote conservation; and iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. • National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA): In 1998, the South African Government promulgated the National Environmental Management Act (Act No. 107 of 1998) (NEMA) aimed towards providing means of governing of the environment and the latent impacts of activities on the different spheres of the environment (social, biophysical, cultural and economic), thereby promoting sustainable development. The Section 24 of the NEMA also provided the Government with the opportunity to promulgate regulations in terms of specific activities which would require approval authorisation prior to commencement. Through this, the following regulations were promulgated: - Environmental Impact Assessment (EIA) Regulations of 2014, as amended (GNR 326 of 2017) – Providing clear instructions as to the methodology to be followed for the purpose of obtaining Environmental Authorisation for a proposed project. - Listing Notice 1 of 2014, as amended (GNR 327 of 2017) – Infrastructure specific listed activities of - Listing Notice 2 of 2014, as amended (GNR 325 of 2017) – infrastructure specific listed activities of great magnitude; - Listing Notice 3 of 2014, as amended (GNR 324 of 2017) – infrastructure specific listed activities of small magnitude, based on the biographical sensitivity of the development site. - The listed activities applicable to the proposed project have been indicated in Section D below.

- **The Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA):**
The Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) was promulgated in order to provide a means for the Department of Agriculture to control the utilisation of the natural agricultural resources of the country, which in turn would promote the conservation of soil, water resources and vegetation. In addition, the CARA provides a means of combating weeds and invader plants. In 2013, the Department of Agriculture promulgated a list of alien and invasive species. These species were assigned similar concern status to the NEMBA Alien and Invasive species list. As such these species were separated into various categories (1, 2 and 3) based on the threat the pose to the indigenous resources.
- **The National Environmental Management: Biodiversity Act (NEMBA), Act 10 of 2004:**
The NEMBA provides for the management and conservation of South Africa's biodiversity and the protection of species and ecosystems that warrant national protection. It includes provisions for the regulation of alien and invasive species (AIS), through the Alien and Invasive Species Regulations, 2014 (as amended in 2020). These regulations classify species into different categories based on the level of threat they pose to indigenous biodiversity. This legislation is relevant to the proposed project as it may involve activities such as vegetation clearing, earthworks, or landscaping, which could disturb or spread invasive plant species.
- **The National Water Act, 1998 (Act 36 of 1998) (NWA):**
The purpose of the National Water Act, 1998 (Act 36 of 1998) (NWA), is to ensure that the country's water resources are protected, used, developed, conserved, managed and controlled in a manner that allows for equitable access opportunity to water, basic human needs are met, the management of resources in a safe manner and which promotes social and economic development.
As part of the NWA, a number of water uses were identified, aimed towards ensuring the equitable and responsible use of water resources throughout the Republic. These water uses were stipulated in Section 21.
In terms of Section 21 of the NWA, the following water uses hold relevance to the project:
(c) impeding or diverting flow of water in a watercourse;
(i) Altering the bed, banks, course or characteristics of a watercourse.
In September 2016, the Department of Water and Sanitation promulgated GN509 of 2016 in terms of the NWA (Act 36 of 1998) which made provisions for the general authorisation water uses (c) and (i) identified in terms of Section 21 of the NWA provided the impacts of the proposed project are considered to be low as determined by the DWS Risk Assessment Matrix (modified 2015, DWS). According to the DWS Risk Assessment Matrix completed by the appointed specialist (Confluent Aquatic Consulting and Research), the impacts of the proposed projects are expected to be LOW after mitigation. **Therefore, the proposed water uses are authorised under the General Authorisation issued in terms of Section 39 of the National Water Act, 1998 (Act 36 of 1998), for water uses identified under Sections 21(c) and 21(i). The Department of Water and Sanitation has confirmed that the proposed activities fall within the ambit of the applicable General Authorisation and has registered the water use accordingly. Refer to Appendix N for the DWS Registration Letter and General Authorisation documentation.**
- **South African National Roads Agency Limited and National Roads Act 7 of 1998:**
to make provision for a national roads agency for the Republic to manage and control the Republic's national roads system and take charge, amongst others, of the development, maintenance and rehabilitation of national roads within the framework of government policy.
- **National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)**
The National Environmental Management: Waste Act (NEMWA) (Act 59 of 2008), strives to protect the health and well-being of the people and the environment by providing reasonable measures for the minimisation of natural resource consumption, avoiding and minimising the generation of waste, reducing, recycling and recovering waste, and treating and safely disposing of waste as a last resort.
Since only limited quantities of general construction waste will be generated, no activities under the NEM: WA will be triggered as part of the proposed project. Furthermore, no waste will be generated during the operational phase of the proposed project. No listed waste management activities in terms of GN 921 of 2013 (as amended) will be triggered.
- **Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA):**
Promoting spatial transformation, encourage growth socially and environmentally.
- **National Road Traffic Act 93 of 1996**
Promote a standard road traffic matters throughout South Africa.
- **Local Government: Municipal Systems Act 32 of 2000**

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To establish a framework for support, monitoring and standard setting by other spheres of government in order to progressively build local government into an efficient, frontline development agency capable of integrating the activities of all spheres of government for the overall social and economic upliftment of communities in harmony with their local natural environment;

- **Western Cape Biodiversity Act, Act 6 of 2021:**

The act is a significant step in modernising biodiversity governance in the Western Cape Province and aligns with national and international policies. On November 15, 2022, key chapters and sections of the Western Cape Biodiversity Act, including governance, planning, and reporting, came into effect. The next phase involves developing regulations to ensure the conservation and sustainable use of biodiversity. Complementing that is the 2023 Western Cape Biodiversity Spatial Plan (WCBSP), which is the first provincial spatial plan under the WCBA. It identifies priority conservation areas, ecological infrastructure, etc. South African Government. In Relevance to the project, the area falls within or close to any of the WCBSP's priority biodiversity areas or ecological corridors; additional constraints or mitigation requirements may apply. Engineering designs

4. Policies

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

The policies that the project complies with are the following;

Garden Route District Framework (2022- 2027) (GRDF):

The District Framework is a mechanism to ensure alignment and integration between the Integrated Development Plan (IDP) of the district and its Local Municipalities. The framework ensures that the processes of the district and local Municipalities are mutually linked; Municipalities' process plans need to comply with the district framework. IDP & Budget are 2 distinct but integrally linked processes; must be mutually consistent and credible.

Based on the GRDF the following strategic objectives comply with this project:

- strategic Objective 1: A Skilled Workforce and Communities: The project promotes construction labour force, this not only encourages skilled labour and training, but also incorporates and improve the social dynamics of economic development by providing staff an income.
- Strategic Objective 2: Bulk Infrastructure Co-ordination: the upgrade and repair project is to existing damaged infrastructure, that promotes infrastructure maintenance and improvements.
- Strategic Objective 7: Sustainable Environmental Management and Public Safety: The project incorporates and considers the environment. Specialist assessments are being conducted to encourage and minimise environmental impact. The project will also be beneficial to road safety, as the road is currently damaged and can cause significant harm to humans if the road is not repaired.

Mossel Bay Municipality: Integrated Development Plan (2022-2027) (IDP):

The purpose of the IDP is to promote principal strategic planning instrument which guides and informs all planning and development, and all decisions regarding planning, management, and development in a Municipality. An IDP provides the strategic direction for all the activities of a Municipality over five years linked to the council term of office.

In terms of section 25 (3) of the MSA, a municipal council may adopt the IDP of its predecessor, with or without amendments. Before taking such a decision, the council must comply with section 29(1)(b)(i),(c) and (d).

The project is aligned with the following sustainable development goals, national development plan and provincial strategic priority area that fall within the integrated development plan.

- **Local Government: Municipal Systems Act 32 of 2000**

To establish a framework for support, monitoring, and standard setting by other spheres of government in order to progressively build local government into an efficient, frontline development agency capable of integrating the activities of all spheres of government for the overall social and economic upliftment of communities in harmony with their local natural environment;

- **Mossel Bay Municipality: By-law related to Streets:**

Section 32. Discharge of water on public roads; (b): by any means whatever, raise the level of water in a river, dam or watercourse so as to cause interference with or endanger a public road. Based on the nature of the cause of the road damage was due to flooding.

section 39. Construction, maintenance, and naming of streets

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FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

The municipality may in its area –

a. make, construct, reconstruct, alter, and maintain streets.

Based on these sections of the by-law, the nature of the project is to repair roads and culverts due to a flooding incident within the Mossel Bay area, not. Not compromising on road maintenance safety.

o **Mossel Bay Municipality: By-law related to Solid Waste Disposal:**

The purpose of the by-law is to promote a safer and healthier environment. This can be achieved by incorporating procedures, methods, and practices in encouraging waste management activities, such as reduce, reuse and recycling methods. Based on the site having to remove and reconstruct damaged roads and culverts, emphases will be placed on adequate waste management on site, having a skip readily available and having bins on site. As well as a training manual in proper waste disposal methods will be addressed within the Environmental Management Programme (EMPr) and will be briefed to the construction team on site.

o **Mossel Bay Municipality: By-Law related to Stormwater Management:**

The purpose of this by-law is to regulate stormwater management and activities that may have an adverse impact on the development, operation and maintenance of the stormwater system. Based on the project it'll be to upgrade and maintain the natural watercourse and improve the culverts and road structure.

o **Western Cape Spatial Development Framework (WCSDF) – 2023**

The WCSDF guides spatial planning and sustainable development across the Western Cape. The proposed project aligns with key principles of the WCSDF, including:

Promoting climate-resilient infrastructure.

Supporting sustainable land use and the maintenance of ecological support areas.

Enhancing regional connectivity and mobility, especially in areas vulnerable to climate-related disasters such as flooding.

o **Garden Route District Municipality's Climate Change Response Strategy (2022 update) and the Western Cape Climate Change Response Strategy (WCCCRS) (2014, updated 2023):**

Outline adaptive measures for building climate-resilient communities and infrastructure.

The proposed activity supports these objectives by:

Enhancing the resilience of transport infrastructure to flood events, a key vulnerability identified in the Garden Route District's risk and vulnerability assessment.

Incorporating stormwater system upgrades, which contribute to improved water management and reduce flood risk during extreme rainfall events;

Applying low-impact construction methods that avoid unnecessary habitat destruction and support long-term environmental sustainability.

This project is a direct response to the increased frequency and severity of extreme weather events experienced in the region and is aligned with the climate adaptation goals of both the provincial and district-level response strategies. It contributes to the overarching objective of strengthening infrastructure and reducing community vulnerability under projected climate change scenarios.

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.

- **Western Cape Department of Environmental Affairs and Development Planning (DEA&DP)**
- **Guideline on Need and Desirability (DEA&DP, 2013)**
- **Used to assess the socio-economic and environmental rationale of the development, ensuring alignment with local and provincial planning frameworks.**
- **EIA Guideline and Information Document Series (DEA&DP, 2013):**
- **Guideline on Public Participation**
- **Guided the stakeholder engagement process to ensure transparency and procedural fairness.**
- **Guideline on Alternatives**
- **Informed the identification and assessment of feasible and reasonable alternatives.**
- **Generic Terms of Reference for EAPs and Project Schedules**
- **Informed the scope of work and reporting standards for environmental assessment practitioners.**
- **Guideline for Environmental Management Plans (EMPs) (DEA&DP, 2005)**

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- Informed the structure and content of the proposed Environmental Management Programme (EMPr) for implementation and monitoring.
- **Guideline for Determining the Scope of Specialist Involvement in EIA Processes (DEA&DP, 2005)**
- Assisted in determining when and which specialists were required, based on screening and site sensitivities.
- **Guideline for the Review of Specialist Input in EIA Processes (DEA&DP, 2005)**
- Informed the evaluation of specialist studies to ensure accuracy, relevance, and compliance.
- **Guideline for Involving Biodiversity Specialists in EIA Processes (DEA&DP, 2005)**
- Assisted in structuring biodiversity assessments in accordance with best practices.
- **Guideline for Involving Heritage Specialists in EIA Processes (DEA&DP, 2005)**
- Provided a framework for early identification and assessment of potential heritage resources.
- **DEA&DP Circular: EADP:0028/2014 – “One Environmental Management System”**
- Guided the integration of environmental authorisation processes under the 2014 EIA Regulations (as amended), aligning provincial and national responsibilities.

- **National Department of Environmental Affairs (DEA) – Integrated Environmental Management (IEM) Series**

- Series 5: Impact Significance (DEA, 2002)
Informed the criteria for assessing the significance of identified impacts.
- Series 7: Cumulative Effects Assessment (DEA, 2004)
Provided guidance on identifying and evaluating cumulative impacts.
- Series 11: Criteria for Determining Alternatives (DEA, 2004)
Supported the development of rational and defensible alternatives.
- Series 15: Environmental Impact Reporting (DEA, 2004)
Informed the structure and presentation of environmental reporting in the BAR.

- **Other Applicable Guidance**

Specialist Assessment Protocols (GN R. 320, 2020)

- Where applicable, these protocols were referenced to ensure that specialist studies comply with the latest minimum requirements under the 2014 EIA Regulations (as amended).

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

An Environmental Screening Tool report was produced for the proposed project using the Department of Forestry, Fisheries and the Environment's (DFFE) Web-based National Environmental Screening Tool (2025). The Site Sensitivity Verification Report (SSVR) reports on the ground truthing undertaken to verify the indicated sensitivity ratings of the screening report, promulgated in terms of Sections 24(5)(a) and (h), and 44 of the National Environmental Management Act, 1998 as amended (Act 107 of 1998), when applying for an Environmental Authorisation in terms of the EIA Regulations of 2014, as amended.

The National Sector Classification Category selected to produce the Screening Tool Report, dated 28th of October 2025, attached to this report: Infrastructure | Transport Services | Roads | Public

The table below indicates the environmental sensitivity that has been identified in accordance with the DFFE, Screening Tool Report (2025), which has been further updated on the 30/07/2026.

Table 1. Themes identified in terms of the DEA Screening Tool as promulgated in terms of the EIA Regulations of 2014, as amended (GNR 326 of 2017)

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Theme	Sensitivity Rating			
	Very High	High	Medium	Low
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			

Based on the screening tool results, it was recommended that the following specialist assessments be undertaken for the proposed project:

- Agriculture Impact Assessment
- Landscape/visual Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Socio-Economic Assessment
- Ambient Air Quality Assessment
- Plant Species Assessment
- Animal Species Assessment

• **Archaeological/ Paleo:** Dr Peter Nillsen of Point of Human Origins - It was confirmed by the appointed Heritage Consultant that the proposed activities do not trigger Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999). Therefore, the Heritage consultant confirmed that it was not required to submit a NID to the Heritage Western Cape. This information is included within the compliance statement, as attached with all the specialist reports within Appendix G.

Although portions of the existing road and causeway infrastructure are likely older than 60 years, the specialist confirmed that these structures were substantially damaged during the 2023 flood events and do not possess structural, architectural or cultural heritage significance. The proposed works are limited to the replacement of existing flood-damaged infrastructure within an already transformed road reserve and disturbed river crossing. Consequently, the proposed works do not constitute the demolition of a protected heritage resource and a permit in terms of Section 34 of the NHRA is therefore not required. Refer to Appendix G4 (Heritage Statement) for the detailed assessment.

The following specialist assessments as identified by the Web-based Screening Tool, have **not** been undertaken for this proposal:

- **Landscape/Visual Impact Assessment:** The area will not be visually changed, as it is a replacement/ upgrade of the existing infrastructure with minimal visual effects. The visual impacts that will be experienced during the construction phase of the proposed project (specifically regarding the establishment of the temporary deviation road) will be addressed in the Environmental Impact Assessment Phase.
- **Agricultural Impact Assessment:** No agricultural land will be altered during the construction phase of the proposed project, as the upgrades are located in its entirety within the existing road reserve. Where the proposal encroaches outside of the road reserve, the activities are located within a delineated watercourse, on land that is generally deemed unsuitable for agricultural practices (croplands).
- **Noise Impact Assessment:** Based on the fact that the works will be conducted predominantly within an existing road reserve, it is not anticipated that noise will be a significant additional impact of the proposed development. Furthermore, there are no significant sensitive receptors located near the project footprint.
- **Traffic Impact Assessment:** This assessment will not be conducted as part of the proposed project. However, traffic management measures for implementation during the construction phase will be included in the Environmental Management Programme (EMPr). Additionally, to facilitate traffic flow during the project's construction, a temporary deviation road will be constructed to ensure smooth traffic movement.
- **Geotechnical Assessment:** A formal geotechnical investigation will not be undertaken as part of this project. The proposed works are limited to the rehabilitation and upgrading of an existing rural road causeway within the

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established road reserve. Engineering design parameters are therefore being informed by the existing site conditions, visual inspections, and historical performance of the infrastructure as captured in the engineering report. Should unforeseen geotechnical challenges arise during construction, the contractor and engineer will address them through adaptive design and construction methodologies.

- **Socio-Economic Impact Assessment:** The proposed repair is for existing infrastructure and will not impact the socio-economic aspect of the area in accordance with the Mossel Bay SDF and IDP. The proposed project will improve the area by providing safer roads as well as providing economic movement, for example, transportation of agricultural resources, therefore, improving economic development and quality of life for local communities.
- **Ambient Air Quality Impact Assessment:** This impact assessment will not be necessary for the project since the work will take place along an existing road, which means it will not create additional sources of air pollution. Given the nature of the project, we do not expect any significant impacts. However, we will incorporate dust suppression methods into the Environmental Management Programme (EMPr).
- **Hydrological Assessment:** A standalone hydrological assessment was not undertaken. The proposed development comprises the replacement and realignment of an existing road and causeway crossing, and the relevant hydraulic and flood-related considerations have been incorporated into the engineering design, including the configuration and hydraulic capacity of the proposed culvert openings, maintenance of longitudinal flow, erosion protection and stabilisation of outlets. These considerations have also been considered from an aquatic ecological perspective in the Aquatic Biodiversity Impact Assessment. The relevant hydrological and stormwater management measures are incorporated into the project design and EMPr. Should material changes to the approved design or development footprint occur, the EAP, Engineer, Aquatic Specialist and Competent Authority will be consulted, as applicable, prior to implementation.

Specialist studies conducted in response to the findings of the DEA Screening Tool and based on the findings of the Site Sensitivity Verification Report compiled in terms of the NOI are as follows:

- **Terrestrial, Animal and Plant Compliance Statement:** Megan Smith of Enviroworks
- **Avifaunal Compliance Statement:** Mokgatla Molepo, of MORA Ecological Services
- **Aquatic Biodiversity:** Debbie Fordham from Upstream Consulting.
- **Archaeological/ Paleo:** Dr Peter Nillsen of Point of Human Origins.

The following protocols are applicable to the proposed project:

Terrestrial Biodiversity Compliance Statement	Terrestrial Biodiversity Assessment Protocol
Aquatic Biodiversity Impact Assessment	Aquatic Biodiversity Assessment Protocol
Plant Species Compliance Statement	Plant Species Assessment Protocol
Animal Species Compliance Statement	Animal Species Assessment Protocol

The assessment has considered the requirements of the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes together with the Species Environmental Assessment Guideline Version 4.1 (2026). The findings of the updated Avifauna Compliance Statement were incorporated into the assessment and used to verify the sensitivity identified by the DFFE Environmental Screening Tool.

Section D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

-
- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
 - Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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Activity No(s):	Provide the relevant Basic Assessment Activities as set out in Listing Notice 1	Describe the portion of the <u>proposed development</u> to which the applicable listed activity relates.
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 the development and where indigenous vegetation will not be cleared.	The permanent realigned causeway and associated roadworks occur within the Varings River, with a combined footprint exceeding 100 m² (±180 m² working area outside of the road reserve). The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.
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 (i) watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or	Approximately 200–300 m³ of material will be excavated, filled, and compacted within the watercourse to form new embankments and construct the temporary and permanent crossings. These activities exceed the threshold; therefore, The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.

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	(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	
48	The expansion of- (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more; where such expansion 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 expansion of infrastructure or structures within (bb) existing ports or harbours that will not increase the development footprint of the port or harbour; (cc) where such expansion activities are related to the (dd) development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (ee) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 23 in Listing Notice 3 of 2014, in which case that activity applies; (ff) where such expansion occurs within an urban area; or (gg) where such expansion occurs within existing roads, road reserves or railway line reserves.	The existing low-level crossing is being demolished and replaced with a higher-capacity reinforced concrete causeway at the same river crossing. The upgraded structure, including new inlet and outlet works and an apron, increases the in-channel footprint, representing a physical enlargement of road infrastructure within a watercourse The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.
Activity No(s):	Provide the relevant Basic Assessment Activities as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
4	The development of a road wider than 4 metres with a reserve less than 13.5 metres. (i) Western Cape (i) Areas zoned for use as public open space or equivalent zoning; (ii) Areas outside urban areas: (aa) Areas containing indigenous vegetation; (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or (iii) Inside urban areas: (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	The realigned section of DR01602, situated outside an urban area, encroaches indigenous riparian and terrestrial vegetation adjacent to the Varings River. The project site is located outside the Mossel Bay urban edge, within an area identified as critically endangered Garden Route Granite Fynbos. The proposed road is wider than 4 m and has a reserve less than 13.5 m. The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.
12	The clearance of an area of 300 square metres or more of indigenous vegetation	Clearance of indigenous vegetation within the as critically endangered Garden Route Granite Fynbos to

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	except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. 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; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on even in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	accommodate the new alignment footprint and working area. The combined construction and working area required for the realigned road section and causeway is expected to exceed 300 m² of indigenous vegetation. The site is mapped as critically endangered Garden Route Granite Fynbos and does not qualify for maintenance exclusions. The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.
14	<i>The development of (ii) infrastructure or structures with a physical footprint of 10 square metres or more where such development occurs (a) within a watercourse.</i> i. Western Cape: i. Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	The portion of the realigned causeway and approach road that falls within the Varings River, which is mapped as critically endangered Garden Route Granite Fynbos The new causeway alignment and its associated infrastructure will occur within the delineated CBA wetland watercourse and the mapped wetlands Channelled valley-bottom. The infrastructure footprint outside of the road reserve (±180 m²) exceeds 10 m². The exclusions to this listed activity are not applicable to this aspect of the proposed project. Therefore, this activity will be triggered.
Activity No(s):	Provide the relevant Scoping and EIR Activities as set out in Listing Notice 2	Describe the portion of the proposed development to which the applicable listed activity relates.
Note: - Only those activities listed which will be applied for shall be considered for authorisation. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. Environmental Authorisation must be obtained prior to commencement with each applicable listed activity. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. - The Minister responsible for mineral resources is the Competent Authority to deal with all applications where the listed or specified activity is directly related to- (a) prospecting or exploration of a mineral or petroleum resource; or (b) extraction and primary processing of a mineral or petroleum resource.		

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

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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.
No activities in relation to the NEM:WA holds relevance to the proposed project		

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.
No activities in relation to the NEM:AQA holds relevance to the proposed project.		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
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- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
 - Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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The proposed development entails the removal and replacement of the existing flood-damaged causeway and associated road infrastructure along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48, where the route crosses the Varings Rivier on Farm 338 and Portion 6 of Farm 220, within the Mossel Bay Local Municipality, Western Cape.

Based on the engineering design (Hatch, 2022), the proposed development involves the construction of a new, realigned bridge and approach road section positioned immediately South (downstream) of the existing crossing. The new road section will form part of the provincial road network and constitutes a linear activity under the EIA Regulations. The total length of the realigned section, including the causeway and its approach roads, will be approximately 100 – 150 metres. The roadway width will be about 6.2 metres and the bridge structure 4.0 m between guide blocks, with an overall development footprint width of the bridge being approximately 15 metres. The road reserve is 20 metres wide, with the construction working corridor extending 3 metres beyond the road footprint on either side for machinery access and material handling.

The causeway structure will consist of three rectangular reinforced-concrete culvert cells, each approximately 6 to 8 metres long and about 3 meters high, with associated inlet and outlet apron slabs, wing walls, and stone pitching, and gabions for erosion protection. The total development footprint for the permanent works is located centrally within the Varings River. The current design allows for the most adverse geotechnical conditions requiring a raft foundation slab, apron slabs and cut-off beams about 15m wide measured perpendicular to the bridge. It appears as if bedrock is present at the current river level where the new structure will be located, providing the possibility to have small pad footings (about 5 x 1.5m in plan) under the piers and abutments, thus omitting the raft foundation, apron slabs and cut-off beams. This investigation will be done during the construction phase.

The current design has been based on the worst-case geotechnical scenario requiring a raft foundation slab, apron slabs and cut-off beams. Should competent bedrock be confirmed during construction, the detailed engineering design may be refined to utilise smaller pad footings beneath the piers and abutments. This would reduce the permanent foundation footprint and would not increase the environmental footprint assessed in this BAR. Any design modification that would increase the approved disturbance footprint or affect sensitive environmental features would be referred to the EAP, Aquatic Specialist and Competent Authority for review prior to implementation.

To maintain traffic during construction, a temporary deviation road will be established north of the new alignment, as shown in Figure 1 below. The proposed temporary deviation road will be approximately 42 metres in length and 4 metres in width. The proposed construction works will extend beyond the 20 m road reserve. The footprint of the temporary deviation road within the watercourse is estimated at $\pm 180 \text{ m}^2$, and a 3 m working buffer will be applied around the working area.

The total working area for the proposed works will be approx $1,646 \text{ m}^2$, and the working area outside of the new road reserve 45 m^2 and the existing road reserve will be extended 233 m^2 , outside of the road reserve. The deviation will be removed, and the area will be rehabilitated once the new causeway is operational.

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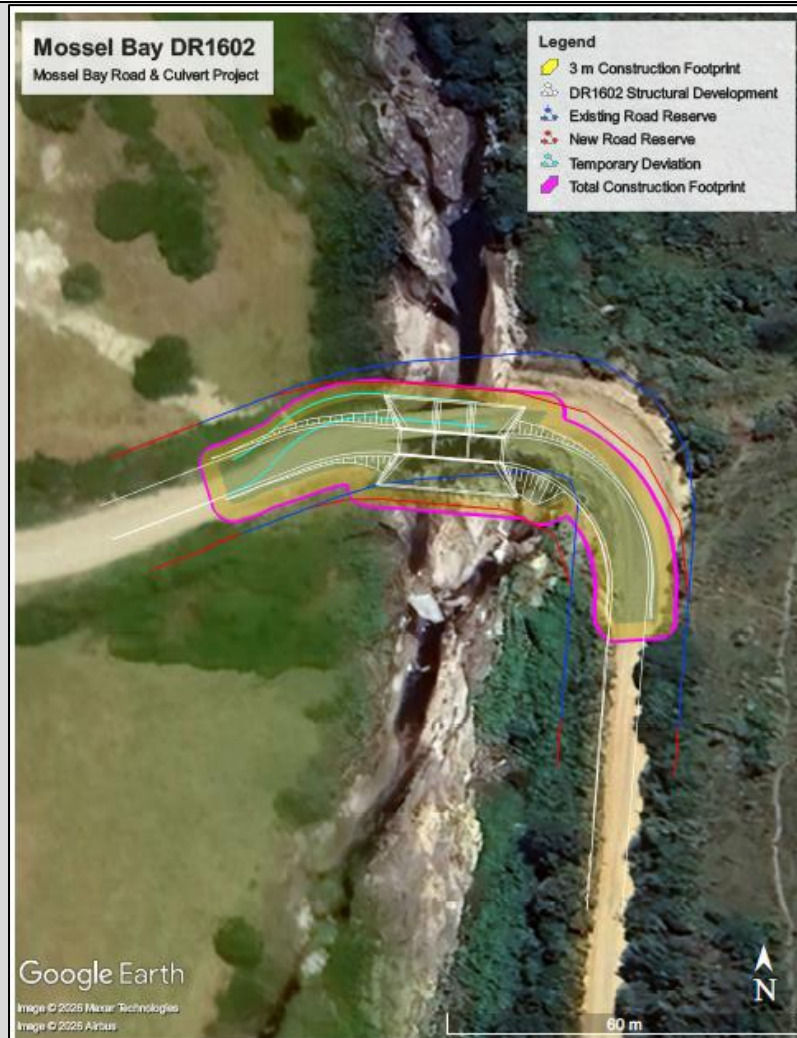


Figure 7. The Proposed Construction for DR1602 Mossel Bay with a revised road reserve.

Figure 8 below illustrates the proposed road and culvert works along DR1602 (Kleinplaas Road) at the Varings River crossing, showing the existing and new road reserve in relation to the existing road reserve. The red boundary indicates the area of the

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new road reserve, and the blue line shows the existing road reserve.

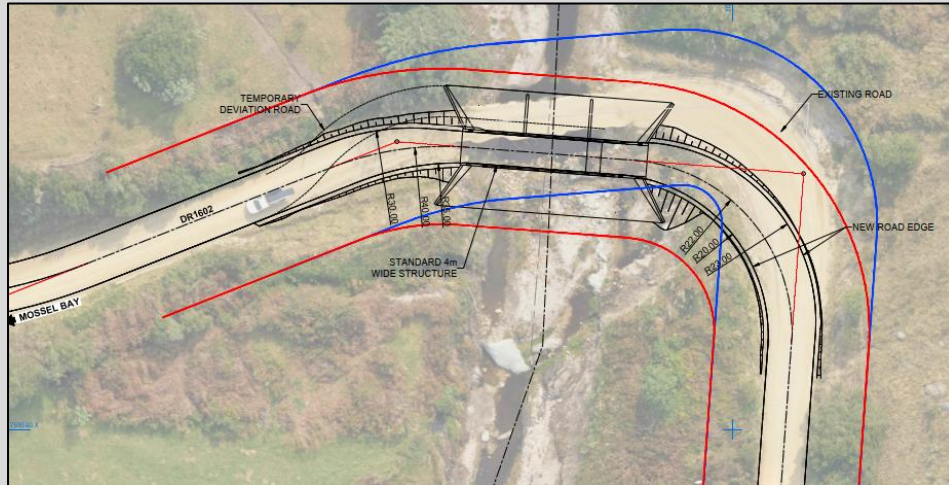


Figure 8. Proposed engineering layout of the new proposed causeway and culverts infrastructure showing the existing (blue) and new (red) road reserve, located on DR1602 km 8.4. (Hatch Engineering, 2026).

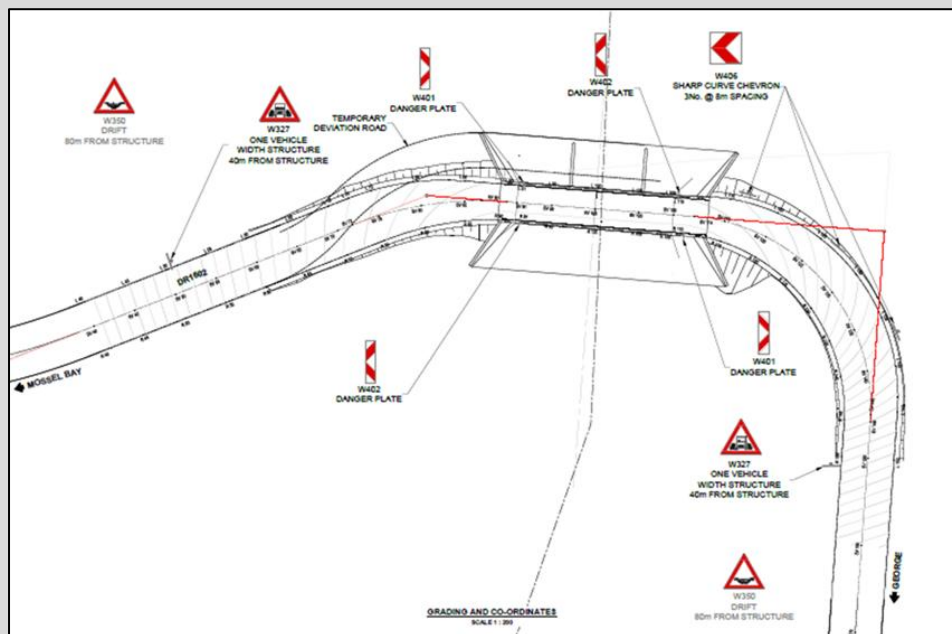


Figure 9. Area for the temporary traffic accommodation signs on the existing road, (Hatch Engineering, 2026).

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MUNICIPALITY, GARDEN ROUTE DISTRICT.

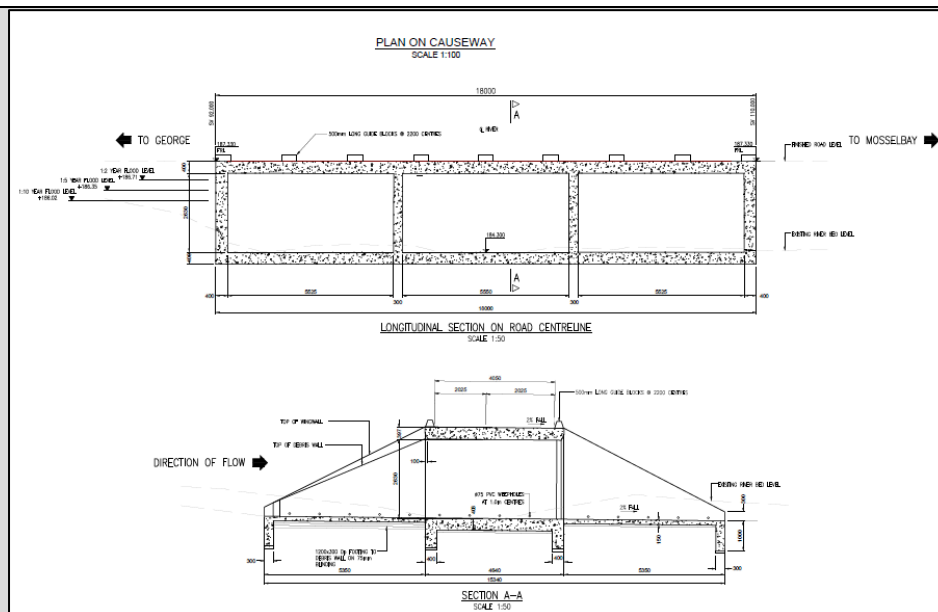


Figure 10 Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Should base rock be available for the foundations, the concept engineering design will change as follows:

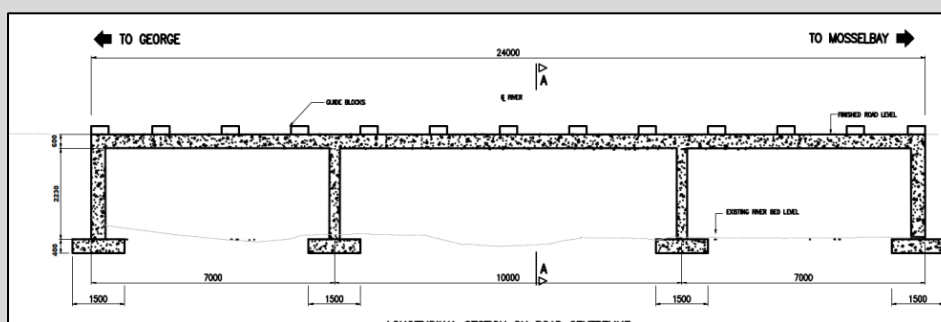


Figure 11. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

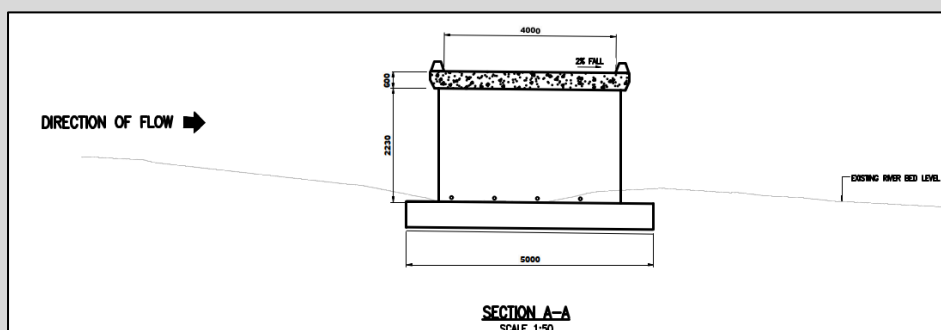


Figure 12. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Kindly note that the proposed layout designs are included in the engineering report and drawings within Appendix L of this BAR.

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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 proposed project involves the repair, replacement, and minor realignment of the existing causeway structure, together with the construction of a temporary deviation road to facilitate traffic during the construction period. The realigned causeway remains within a 20 meter wide road reserve and is fully consistent with the established transport use of the site. Although a small portion of the construction activities will extend beyond the 20 m reserve into adjacent agricultural land, this area will be rehabilitated in full following construction, and no permanent change in land-use rights will occur. Accordingly, the proposed development is fully aligned with the existing lawful land-use rights of the affected properties and represents the maintenance and improvement of existing provincial infrastructure rather than a new land-use activity. The proposal does not require rezoning, consent use, or departure in terms of the Mossel Bay Municipal Land Use Planning By-Law.	
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.
No conflicts have been identified for this project. However, it is important to note that the proposed project is part of a larger scope of work that is not included in this application. The following proposed works are highlighted: flood damage repairs on Main Road 355 at km 2 to 12 (Seven Passes). Additionally, the proposed works extend to Division Roads located along DR1791, DR1633, DR1639, and (this application area) DR1602, in various areas throughout the Garden Route. The areas affected by flood damage that are included in this scope are several locations along MR355 (DEA&DP Reference:16/6/D2/19/0126/24), DR01639 (DEA&DP Reference:16/6/D2/19/0129/24), and DR1633 (DEA&DP Reference: 6/6/D2/19/0128/24. These areas have been approved for an emergency directive under Section 30A(1) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) due to the emergency situation. The relevant approvals and submissions will be included in Appendix M of this application.	
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
The Provincial Spatial Development Framework (PSDF) The proposed development is consistent with the principles and objectives of the Western Cape Provincial Spatial Development Framework (PSDF, 2014), which provides strategic direction for sustainable spatial development across the province. The project entails the repair and upgrading of existing provincial road infrastructure (DR1602) and the replacement and realignment of the existing causeway crossing the Varings River, located within the Mossel Bay Local Municipality of the Garden Route District Municipality. The PSDF identifies the maintenance and upgrading of existing infrastructure as a critical mechanism to achieve spatial efficiency, resilience, and equitable access to services, particularly in rural landscapes that support agricultural production and connectivity. The proposed project supports these objectives by ensuring the long-term functionality of an essential rural access route used by farming communities and local residents for transport, logistics, and access to Mossel Bay and surrounding economic nodes. The PSDF's Spatial Policies and Goals most relevant to the DR1602 project include: Policy R1 – Protect and Strengthen Productive Rural Landscapes: The project supports this policy by maintaining road infrastructure critical to agricultural activity and rural livelihoods. The DR1602 route provides direct access to surrounding farmlands, ensuring continued economic productivity and market access. Policy S3 – Ensure Infrastructure Investment is Spatially Aligned and Sustainable: The proposed causeway replacement constitutes the upgrading of existing provincial infrastructure rather than new development. It directs investment toward maintaining essential services in established rural areas, which aligns with the PSDF's principle of spatial efficiency. Policy E3 – Ensure the Sustainable Use of Environmental Resources: The project incorporates erosion control, sedimentation prevention, and water quality protection measures within the Varings River corridor, aligning with the PSDF's objective of safeguarding ecological infrastructure and ecosystem services. Policy N2 – Plan for Sustainable and Resilient Settlements: While the project is located outside the urban edge, it enhances climate resilience and safety for rural communities by improving access routes vulnerable to flooding and infrastructure failure. Through these alignments, the project contributes to several of the PSDF's provincial spatial goals, namely: Goal 2: Improve efficiency, resilience, and connectivity of infrastructure networks. Goal 3: Sustain the integrity of the province's ecological and agricultural resources.	

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Goal 4: Support sustainable rural development and economic growth.

The proposed causeway replacement and road upgrade along DR1602 are in full alignment with the PSDF's strategic objectives of promoting spatial justice, efficiency, resilience, and sustainability. The project strengthens rural accessibility, supports local economic activity, enhances climate resilience, and protects environmental integrity within the Varings River watercourse, directly supporting the PSDF's vision for a well-connected, sustainable, and inclusive provincial spatial structure.

4.2 | The Integrated Development Plan of the local municipality.

The proposed DR1602 Kleinplaas road and culvert upgrade and repair project is consistent with the strategic goals and development priorities of the Mossel Bay Local Municipality's 5th Generation Integrated Development Plan (IDP, 2022–2027).

The IDP identifies the maintenance and upgrading of municipal and provincial infrastructure as a key focus area under the strategic objectives of "*Sustainable Infrastructure and Basic Service Delivery*" and "*Resilient, Safe and Connected Communities*."

The project directly supports these objectives by improving the functionality, safety, and accessibility of the DR1602 provincial road, which serves as an important rural connector route between agricultural properties and the Mossel Bay service area. By rehabilitating the flood-damaged causeway crossing the Varings River, the project ensures reliable access for the transport of goods, agricultural produce, and services, thereby strengthening local economic development and regional mobility.

Furthermore, the project aligns with the IDP's commitment to environmental sustainability and climate resilience, as it incorporates erosion control, stormwater management, and rehabilitation measures to protect riparian habitats and prevent further flood-related degradation. These actions are consistent with the IDP's goals of "*Protecting Natural Resources and Environmental Assets*" and "*Building Resilient Infrastructure and Communities*."

The proposed DR1602 causeway repair and road upgrade are fully aligned with the Mossel Bay Local Municipality's IDP (2022–2027) by promoting sustainable infrastructure maintenance, economic resilience, and environmental protection, in turn supporting the municipality's vision of fostering a safe, inclusive, and sustainable living environment for its residents.

4.3. | The Spatial Development Framework of the local municipality.

The proposed development aligns with the spatial planning vision, objectives, and policies outlined in the Mossel Bay Municipal Spatial Development Framework (MBSDF, 2021), which forms part of the approved Municipal Planning Framework in terms of the Spatial Planning and Land Use Management Act (SPLUMA, 2013). The MBSDF seeks to manage growth sustainably by balancing development needs with environmental protection and rural economic support.

The project area, located along Divisional Road (DR1602) crossing the Varings River on Farm 338 and Portion 6 of Farm 220, falls within the rural agricultural area of the Mossel Bay Municipal, outside the urban edge. Within this spatial context, the MBSDF designates the area for agricultural and rural support functions, with a focus on maintaining and upgrading existing provincial and municipal road infrastructure that sustains agricultural productivity and safe rural connectivity.

The MBSDF (2021) identifies several spatial objectives and focus areas directly relevant to the proposed project:

Objective 1: Environmental Management - Protect and restore ecological systems, manage flood risk, and implement disaster mitigation measures. The replacement of the flood-damaged causeway across the Varings River directly contributes to this objective by reducing flood vulnerability and controlling erosion and sedimentation.

Objective 3: Movement Network - Maintain, upgrade, and expand the road network to improve accessibility and mobility for all users, particularly in rural areas. The upgrading of DR1602 improves safety, resilience, and connectivity between rural farming areas and the Mossel Bay service node.

Objective 5: Sustainable Rural Development - Support rural livelihoods and infrastructure that underpin agricultural economies. The project supports this by ensuring reliable transport for farm goods, workers, and emergency access routes.

By addressing these objectives, the proposed DR1602 causeway and road upgrade aligns with the MBSDF's broader spatial goals of sustainability, resilience, and integrated infrastructure planning. It enhances accessibility, supports the local agricultural economy, and contributes to the municipality's vision of a safe, well-connected, and environmentally responsible rural landscape.

4.4. | The Environmental Management Framework applicable to the area.

The Mossel Bay Local Municipality forms part of the area covered by the Garden Route Environmental Management Framework (EMF) - Version 2 (2023).

The proposed DR1602 causeway repair and replacement project is located within a rural agricultural landscape, largely outside the Mossel Bay urban edge, and falls within an area classified in the EMF as a Modified Natural Environment / Rural Production Landscape. Within this zone, the EMF supports the maintenance and upgrading of essential infrastructure, provided that appropriate mitigation measures are implemented to protect aquatic ecosystems, water quality, and biodiversity. The details outlined in the EMPr include mitigations provided by Aquatic Specialist Debbie Fordham of Upstream Consulting.

The project aligns with the EMF's management objectives by:

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- Rehabilitating existing provincial road infrastructure in a manner that improves flood resilience and reduces long-term environmental degradation;
- Implementing erosion control and sedimentation management measures to protect the Varings River;
- Limiting disturbance to indigenous vegetation and riparian habitat through defined working corridors and post-construction rehabilitation; and
- Ensuring ongoing stakeholder engagement (public participation process) and environmental oversight as part of the Basic Assessment Process and Environmental Management Programme (EMPr).

The proposed project is consistent with the intent and management guidelines of the Garden Route EMF (2023), as it promotes the upgrading of critical infrastructure in a manner that is environmentally responsible, spatially appropriate, and in alignment with the EMF's principles of ecosystem protection, water management, and sustainable rural development.

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

Comments from the relevant authorities and specialists have been incorporated after the completion of the 30-day Pre-Application Public Participation Process, as prescribed in Sub-Regulation 19 of the NEMA EIA Regulations, 2014 (as amended by GNR 326 of 2017).

Avifaunal Compliance Statement

The avifaunal assessment, conducted by Mokgatla Molepo of MORA Ecological Services, confirmed that no Species of Conservation Concern (SCC) or sensitive bird habitats occur within the proposed development footprint. The site supports only five common bird species, *Southern Red Bishop*, *Pied Crow*, *Laughing Dove*, *Yellow Bishop*, and *Hadedda Ibis*, and no significant faunal presence was recorded. The specialist rated the anticipated avifaunal impacts as Low due to the disturbed nature of the area and the absence of suitable breeding or foraging habitat.

As a result, the proposed works were confined to the existing road reserve to avoid unnecessary vegetation clearance, and it was recommended that all activities comply with the Environmental Management Programme (EMPr). No additional adaptive mitigation measures were required beyond standard best-practice management.

Aquatic Impact Assessment

The aquatic specialist, Upstream Consulting (2023), identified four Hydrogeomorphic (HGM) units within a 500 m radius of the site. The Varings River (HGM1), a channelled valley-bottom wetland, is directly affected by the construction footprint, while associated seep wetlands (HGM4 and HGM5) and an upstream tributary (HGM6) form part of the larger wetland habitat. To protect aquatic integrity, the specialist recommended a series of mitigation measures that have been incorporated into the project design:

- restricting all works to the smallest possible working corridor,
- designating no-go zones outside the construction area,
- implementing erosion, sediment, and stormwater control measures, and
- ensuring full compliance with the National Water Act (Act 36 of 1998).

These measures influenced the construction methodology and footprint to ensure that the project improves drainage and streamflow functionality without causing significant ecological disturbance. The overall post-mitigation impact on aquatic biodiversity was assessed as Low.

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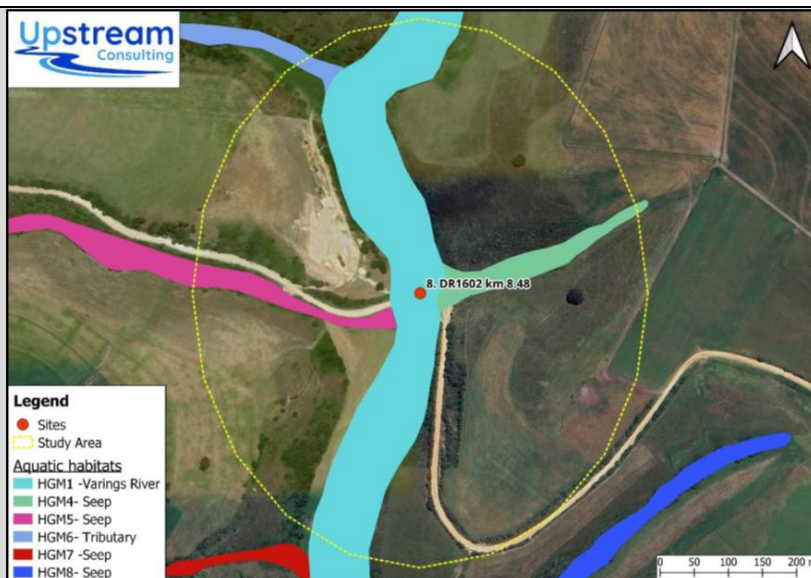


Figure 13. Map of the delineated aquatic habitat within the 500m radius study area of DR1602 Kleinplaas km 8.48.

Terrestrial Biodiversity Compliance Statement

The Enviroworks (2023), terrestrial assessment determined the Site Ecological Importance (SEI) as Low, reflecting the degraded condition of the surrounding habitat and the dominance of alien invasive vegetation. The area falls within Endangered Garden Route Shale Fynbos and Critically Endangered Garden Route Granite Fynbos, but these vegetation types are heavily transformed within the road reserve. The specialist confirmed a low likelihood of encountering SCC and recommended alien plant management and rehabilitation following construction. Accordingly, the proposed works were confined to the existing disturbed corridor, with no expansion into undisturbed habitat, and rehabilitation measures were added to the EMP to promote vegetation recovery.

The updated Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement prepared by Enviroworks (2026), together with the 5 August 2026 Addendum, confirms that the proposed development footprint remains highly disturbed and is characterised by existing road infrastructure, alien invasive vegetation, disturbed soils and fragmented indigenous vegetation. The 1 July 2026 SES site photographs (Appendix C) confirmed that no material changes have occurred within the development footprint since the original assessment. The verified sensitivity remains Low for the Terrestrial Biodiversity, Plant Species and Animal Species Themes, with no Species of Conservation Concern recorded within the proposed development footprint. The specialist confirmed that the original findings, impact assessment and recommendations remain valid and applicable to the proposed development.

Heritage Compliance Statement

The Heritage Statement prepared by Dr Peter Nilssen (Appendix G4) concludes that the proposed works do not trigger the provisions of Section 38 of the National Heritage Resources Act, 1999 (Act 25 of 1999), and accordingly a Notification of Intent to Develop (NID) to Heritage Western Cape is not required. Although portions of the existing road and causeway infrastructure are likely older than 60 years, the specialist confirmed that these structures were substantially damaged during the 2023 flood events and do not possess structural, architectural or cultural heritage significance. The proposed works are limited to the replacement of existing flood-damaged infrastructure within an already transformed road reserve and disturbed river crossing. Consequently, the proposed works do not constitute the demolition of a protected heritage resource and a permit in terms of Section 34 of the NHRA is therefore not required. Refer to Appendix G4 (Heritage Statement) for the detailed assessment.

Comments received from the Department of Forestry, Fisheries and the Environment (DFFE), Garden Route District Municipality (GRDM), and the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) influenced the proposed development by strengthening the biodiversity assessment, specialist reporting and Environmental Management Programme (EMPr), rather than requiring amendments to the project layout or development footprint.

DFFE requested that impacts on indigenous forests, protected trees and biodiversity be adequately assessed and managed in accordance with the National Forests Act. In response, the specialist findings were expanded to confirm that the development footprint is located within an already disturbed road reserve dominated by alien invasive vegetation, that no protected plant species or Species of Conservation Concern were recorded within the footprint, and that biodiversity impacts are expected to be low. The EMP was strengthened to include pre-construction ECO inspections, protection of no-go areas, restriction of disturbance to the approved footprint, environmental awareness training, and commitments to obtain the necessary permits should protected trees, indigenous forest vegetation or other protected biodiversity features be encountered.

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The Garden Route District Municipality acknowledged that although the development footprint is disturbed, it occurs within a sensitive biodiversity setting associated with the Varings River, including Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs), wetlands and riparian habitat. The Municipality recommended that the Final BAR further strengthen biodiversity management, rehabilitation, invasive alien plant control, erosion and sediment management, ecological monitoring, and protection of aquatic habitats. These recommendations were incorporated into the revised draft BAR and EMPr, with additional clarification of the aquatic disturbance footprint, strengthened rehabilitation commitments, continued use of an independent ECO, and confirmation that the project will remain confined to the assessed footprint and implemented in accordance with specialist recommendations and the applicable Water Use General Authorisation.

The comments from DEA&DP during public participation reviewed the biodiversity documentation and requested improvements to the Site Sensitivity Verification Report (SSVR), including clarification of the specialist responsible for each biodiversity theme, clearer justification of the Animal Species Theme, improved treatment of Species of Conservation Concern, and consistency with the Environmental Impact Assessment Protocols. These comments resulted in revisions to the SSVR (Appendix O) and revised draft BAR, including clearer reporting of specialist findings, confirmation that no Species of Conservation Concern were recorded during field surveys, improved explanation of biodiversity sensitivities, and correction of inconsistencies relating to aquatic Critical Biodiversity Area encroachment. These amendments strengthened the environmental assessment but did not require changes to the proposed development footprint or design.

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

Based on the Western Cape Biodiversity Spatial Plan Handbook (2017), and its updated spatial datasets (2023) The main purpose of a biodiversity spatial plan is to ensure that the most recent and best quality spatial biodiversity information can be accessed and used to inform land use and development planning, environmental assessments and authorisations, natural resource management and other multi-sectoral planning processes. A biodiversity spatial plan achieves this by providing a map of terrestrial and freshwater areas that are important for conserving biodiversity patterns and ecological processes, these areas are called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs). The map is provided together with contextual information on biodiversity and land use guidelines.

The site is located within the Critically Endangered Garden Route Granite Fynbos region (Figure 14). The proposed project is also located within the National Freshwater Ecosystem Priority Areas (NFEPA), the wetland is recognised for its ecological importance. The National Wetland Map (NWM5) classifies it as a channelled valley-bottom wetland with a moderate confidence level (score 3) regarding its delineation and ecological status. While largely natural, portions of the wetland show minor artificial modification due to existing road infrastructure.

Although the proposed construction footprint does not fall within any mapped terrestrial Critical Biodiversity Area (CBA) or Ecological Support Area (ESA), the proposed project does encroach approximately 12m² within the mapped zones classified as Eastern Fynbos-Renosterveld Shale Fynbos: Channelled Valley-Bottom Wetland, designated as a CBA in natural condition under both the CBA: Aquatic and CBA: Wetland categories (Figure 15 & Figure 16) in accordance with the latest Western Cape Biodiversity Spatial Data. A portion of the road signage accommodation is located within 15m² of CBA 1: terrestrial. However, this encroachment is within the road reserve.

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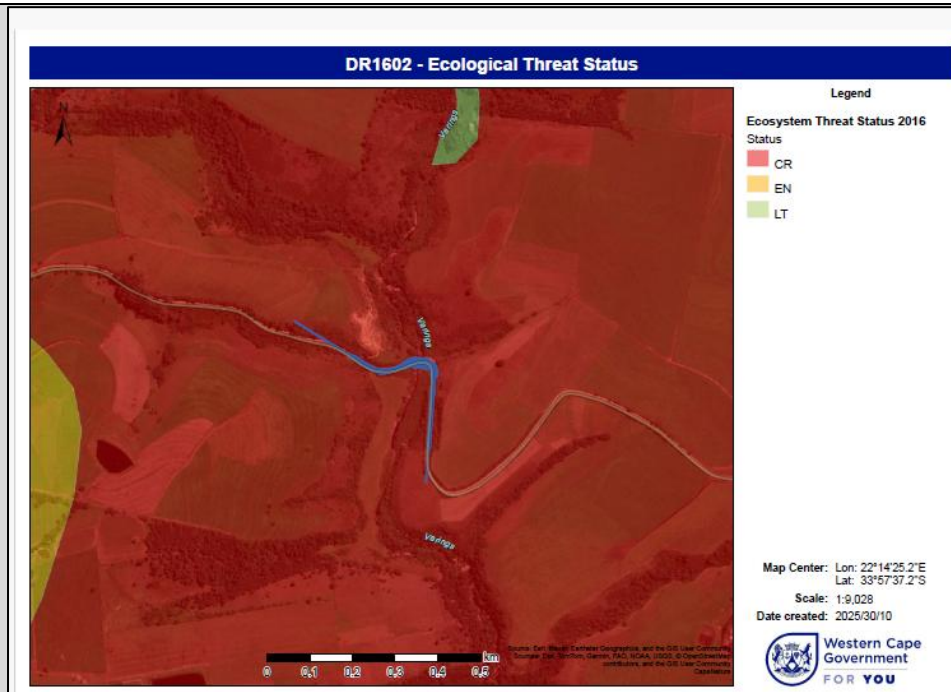


Figure 14. DR1602 is located within the Garden Route Granite Fynbos region, (Cape Farm Mapper, 2025)



Figure 15. DR1602 Western Cape Spatial Biodiversity Spatial Plan, (Cape Farm Mapper, 2025).

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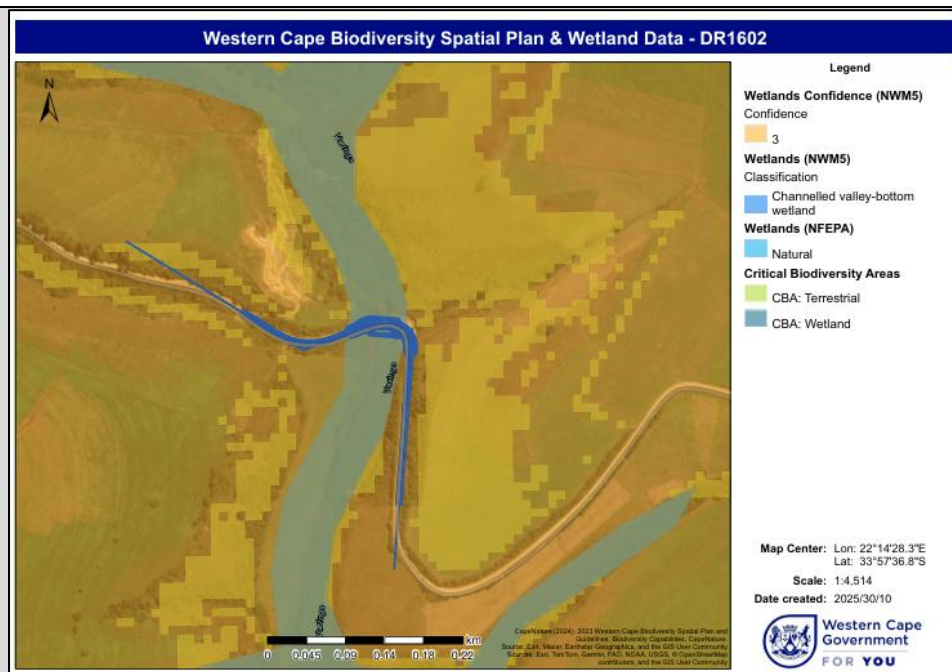


Figure 16. Western Cape Biodiversity Spatial Plan & Wetlands data DR1602, (Cape Farm Mapper, 2025).

National Freshwater Ecosystem Priority Area (NFEPA):

The Varings River and its associated wetland are classified as a Natural Freshwater Ecosystem Priority Area (NFEPA) with a moderate confidence rating (3). Approximately 1310 m² of NFEPA wetland occurs within the road reserve, with an estimated 210 m² extending beyond it. The NFEPA project identifies these wetlands as national priorities for maintaining freshwater ecosystem health and water resource sustainability. The proposed works are temporary and confined to the existing road corridor. With the implementation of mitigation measures, such as restricting activities to the smallest possible working corridor, applying erosion and sediment controls, and rehabilitating disturbed wetland edges, the overall impact significance is expected to remain low, and no significant loss of wetland function is anticipated.

The Western Cape Biodiversity Spatial Plan and its management guidelines have influenced the proposed development by ensuring that the project remains confined to previously disturbed areas, maintains and improves the ecological functioning of the Varings River system, and incorporates biodiversity-sensitive design and rehabilitation principles consistent with the conservation objectives for CBAs, ESAs, and NFEPA wetlands.

Based on the findings of the appointed specialists, the proposed construction area is in a degraded state with altered vegetation chemistry due to the presence of alien species. As a result, the Site Ecological Importance (SEI) is considered low. Given this low biodiversity value, the ecological functioning has a medium recovery rate.

Additionally, the Varings River has experienced habitat loss and disturbance caused by narrow culverts, agricultural practices, and the presence of alien species. Consequently, the watercourse is classified as having a Moderately Modified state compared to its reference condition. The Present Ecological State (PES) is categorised as 'C', which is described as Fair: Moderately modified. While there has been a loss and change of natural habitat and biota, the basic ecosystem functions remain largely intact.

Replacing and realigning the road, along with installing larger culverts, will improve the flow of the Varings River. This enhancement will benefit the river's ecology and dynamics. Additionally, the rehabilitation efforts within the development footprint will promote the recovery of natural biodiversity in the area.

7. Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA. The project is not near or within the coastal area.

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 application form for this proposed project has not been submitted yet. The Screening Tool Report will be included in Appendix I of the attached appendices for this proposed project.

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

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The proposed development does not occur within an urban area and therefore does not involve or optimise vacant urban land. The project is located along the existing DR1602 (Kleinplaas Road) within a rural/agricultural area and is confined to the existing disturbed road reserve, with some of the proposed works extending outside of the road reserve.

As part of the construction process, a temporary ramp will be established downstream to maintain traffic flow and public access during the works. This ramp will be removed once construction is complete, and the area will be rehabilitated. The development makes efficient use of existing infrastructure and avoids the need for additional land take or expansion into new, undeveloped areas.

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

The project will positively impact the area, as the purpose of the project is to repair the road and culvert that is currently damaged and has the potential to harm the environment and human life due to the instability of the road in its current state.

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).

A solid waste capacity letter to be issued to the department.

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.

In line with the *Department of Environmental Affairs and Development Planning (DEA&DP) Guideline on Need and Desirability* (March 2013) and the *DEA Integrated Environmental Management Guideline on Need and Desirability* (2017), the proposed project at Site 8 (DR1602 km 8.4 over the Varings River) has been assessed in terms of its necessity, appropriateness, and alignment with environmental sustainability principles and policy frameworks.

Need for the Proposed Development

The engineering assessment for the DR1602 Kleinplaas causeway confirmed that the existing culvert and crossing structure are structurally compromised due to repeated flood damage, restricted hydraulic capacity, and progressive erosion of the riverbanks. The infrastructure no longer provides safe or reliable passage, particularly during high-flow conditions, creating hazards for local road users and affecting emergency access and agricultural transport.

The proposed upgrade seeks to replace and realign the existing culvert and causeway, improving hydraulic efficiency by increasing the number and size of culvert openings and incorporating erosion protection. The existing structure is a major cause of sedimentation upstream and channel incision downstream. By implementing the improved design, stream flow and ecological connectivity within the Varings River system will be restored, aligning with the objectives of the National Water Act (Act 36 of 1998) and the DEA&DP Sustainable Infrastructure Development Principles (2020).

Ecological Sustainability and Specialist Inputs

The aquatic specialist identified four Hydrogeomorphic (HGM) Units within 500 m of the site, including the Varings River (HGM1), two seep wetlands (HGM4 and HGM5), and an upstream tributary channelled valley-bottom wetland (HGM6). All systems have been modified by the existing road. The Present Ecological State (PES) was rated as Moderately Modified (Category C) due to habitat alteration, alien tree infestation, and hydrological confinement by undersized culverts. The new design will help reverse some of these effects, with the potential for long-term ecological improvement of flow regime and sediment balance.

The terrestrial and botanical specialist (Enviroworks, 2023) confirmed that the road reserve is highly disturbed and dominated by alien vegetation within the Critically Endangered Garden Route Granite Fynbos vegetation type. The Site Ecological Importance (SEI) was rated Low, with no Species of Conservation Concern (SCC) detected. Similarly, the avifaunal specialist (MORA Ecological Services, 2023) recorded only common bird species, confirming low avifaunal sensitivity.

The heritage specialist (Dr. Peter Nilssen, Point of Human Origins, 2024) confirmed that the activity does not trigger Section 38 of the National Heritage Resources Act (Act 25 of 1999). No archaeological or cultural features were identified within the development footprint, and the site is considered of low heritage significance. A chance-find protocol will be included within the EMPr.

Collectively, the specialist findings support the conclusion that the proposed activity will have low residual impacts on biodiversity and heritage resources if implemented with the recommended mitigation measures and Environmental Management Programme (EMPr).

Alignment with Policy and Planning Frameworks

- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
- Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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The project aligns with the following environmental and spatial planning instruments:

- DEA&DP Guideline on Need and Desirability (2013): Promotes infrastructure that meets community needs while ensuring sustainable use of natural resources. The proposed works address a critical need for road safety and hydraulic resilience within existing disturbed footprints.
- DEA Integrated Environmental Management (IEM) Guideline (2017): Encourages development that optimises existing land uses and minimises new environmental disturbance. The project does not require new land conversion and rehabilitates previously impacted areas.
- Western Cape Spatial Development Framework (2023): Supports the maintenance and upgrading of strategic rural routes that connect agricultural and tourism areas while improving resilience to climate change and flood events.
- Mossel Bay Local and Garden Route District SDFs (2022–2023): Identify the DR1602 route as a key rural connector and prioritise road infrastructure upgrades that maintain safety, access, and environmental integrity.
- National Water Act (Act 36 of 1998): Section 21(c) and (i) water uses (impeding/diverting flow, altering bed and banks) will be authorised under a General Authorisation Water Use Licence (WUL) to ensure legal compliance and hydrological sustainability.
- NEMA Section 2 Principles: The project embodies the principles of sustainable development, particularly those related to avoiding pollution, maintaining ecological integrity, and ensuring that development serves both current and future generations.
- DEA&DP Sustainable Infrastructure Development Framework (2020): Endorses the upgrading of critical public infrastructure within existing servitudes to enhance climate resilience and public safety.

Desirability of the Development

The proposed activity is desirable in environmental, social, and economic terms. It will restore a critical transport link, reduce long-term maintenance needs, and improve resilience against flooding. The design promotes ecological rehabilitation by improving water flow and reducing bank erosion. During the construction phase, temporary local employment opportunities will be generated, supporting small-scale contractors and local communities in the Mossel Bay area.

By rehabilitating and upgrading the existing infrastructure, the project meets the DEA&DP policy objective of "optimising existing disturbed land for infrastructure upgrades" while maintaining environmental integrity. The proposed activity, therefore, contributes to both ecological sustainability and social well-being, fulfilling the intent of NEMA's sustainable development framework.

The proposed causeway and culvert upgrade along DR1602 at the Varings River represents a necessary and desirable intervention that balances infrastructure resilience with environmental responsibility. All specialist studies confirm low biodiversity and heritage sensitivity, while the engineering design offers measurable ecological and safety benefits. The project complies with the relevant policy frameworks and environmental legislation, including the NEMA principles, DEA&DP 2013 and DEA 2017 guidelines, and provincial spatial planning policies. With the implementation of the recommended mitigation measures, the development is considered environmentally acceptable, socially beneficial, and aligned with the long-term sustainability objectives of the Western Cape.

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.

The following public participation procedures has been proposed for the purpose of the proposed project. This plan aimed to be in line with Regulations 40 to 44 of the EIA Regulations of 2014, as amended (GNR 326 of 2017):

Table 2. Public Participation Planning for the proposed project.

Public participation requirement based on the EIA Regulations of 2014, as amended (GNR 326 of 2017)		Proposed implementation
40(1)	The public participation process (PPP) to which the (a) basic assessment report and EMPr was subjected to was give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments on each of the basic assessment report, EMPr, scoping report and environmental impact assessment report.	The following Public Participation Timeframes are proposed for this proposal: • A 30-day PPP timeframe from the 15th of May 2026 to the 15th of June 2026 was conducted to allow all parties time to provide comments/show interest in the BAR. This phase of the proposal has fulfilled the requirements of Sub-regulation 41. • A 30-day PPP timeframe was conducted in May/June 2026, which allowed all registered Interested and Affected Parties (I&APs) and Stakeholders/Organs of State the opportunity to provide comment on the Draft BAR. • Throughout the PPP, Regulations 42 and 43 has been adhered to, and the necessary documents (proof of Public Participation) has been included in both the Draft BAR and the submission of the Final BAR. • A second round of public participation has been made available to all interested and affected parties for the revised draft BAR, allowing a 50-day extension. • Public Participation to run from the 12th of August 2026 till the 10th of September 2026.
41(1)	This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.	As per Sub-Regulation 19(1)(a), a 30-day PPP period was conducted prior to the submission of the Final BAR.
41(2)	The person conducting a public participation process has take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and has given notice to all potential interested and affected parties of an application or proposed application which is subject to public participation by -	
41(2)(a)	fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of— (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	Two Notice boards (one in Afrikaans and another in English) in line with Sub-regulation 41(3) and 41(4) was erected on site (at the most northern point of the proposal and the most southern point of the proposal). DR1602 Kleinplaas Road does not intersect any major intersections.

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		As no alternative site is being proposed, no additional site posters was required.
41 (2)(b)	giving written notice, in any of the manners provided for in section 47D of the Act, to— the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken; (iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area; (iv) the municipality which has jurisdiction in the area; (v) any organ of state having jurisdiction in respect of any aspect of the activity; and (vi) any other party as required by the competent authority;	The Draft BAR, all occupiers of the land affected by the proposed project was notified of the proposal. This was done in the form of emails, postal addresses or physical addresses and letter drops (where no other contact details have been made available to the EAP). The I&AP register, including all affected landowners adjacent to the proposed project site, authorities, organs of state and other affected parties, have been compiled and have been maintained for the duration of the process.
41 (2)(i)	Placing an advertisement ii) one local newspaper; or (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	As only one local municipality will be affected by the proposed project, an advertisement was placed only in the local newspaper <i>on the 15th of May 2026</i> , which was deemed accessible to the public.
41 (2)(d)	placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii).	
41 (2)(e)	using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to — (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	All notifications and external communications (as stipulated above) was available in English in order to reach the greatest audience possible. In addition to these measures, notifications were available on the SES website. A hard copy of the Draft BAR was made available for review at Ellen van Rensburg Library for the duration of the 30-day PPP.
Following the first round of public participation and the consideration of updated project information, a second round of public participation was undertaken. This additional public participation process was conducted in accordance with Section 19(2) of the NEMA EIA Regulations (2017).		

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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 information below pertains to the first **and second** round of public participation.

The section above indicates the measures implemented on-site. Similarly, these measures speak directly to the contents of the EIA Regulations of 2014, as amended, as well as the Application Form submitted for the proposed development. In addition to the procedures stipulated in Section F1 above, the Application BAR and associated documentation were circulated to relevant Organs of State, authorities and interested parties for review and comment. These included:

- Western Cape Government: Department of Environmental Affairs and Development Planning (DEA&DP), including the relevant regional office and Directorate: Development Management;
- Western Cape Government: Department of Environmental Affairs and Development Planning – Pollution and Chemical Management / Pollution and Waste Management;
- Western Cape Government: Department of Environmental Affairs and Development Planning – Coastal Management;
- Breede-Gouritz Catchment Management Agency (BOCMA);
- Department of Water and Sanitation (DWS);
- Garden Route District Municipality;
- Mossel Bay Municipality, including the relevant Infrastructure Services, Water and Sanitation and Environmental Management representatives;
- Western Cape Government: Department of Agriculture;
- National Department of Agriculture;
- Department of Forestry, Fisheries and the Environment (DFFE), including the Biodiversity Directorate and Ocean and Coasts;
- Western Cape Government: Department of Infrastructure / Mobility;
- CapeNature;
- Heritage Western Cape;
- South African Civil Aviation Authority;
- Eskom;
- South African National Roads Agency SOC Limited (SANRAL);
- Western Cape Government: Department of Health;
- Western Cape Government: Department of Human Settlements;
- Western Cape Government: Department of Education;
- relevant environmental, conservation, agricultural, community and other interest groups; and
- other authorities and interested and affected parties reflected in the Register of Interested and Affected Parties contained in Appendix F1.

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

Environmental Impact Assessment Admin	Department of Environmental Affairs & Development Planning	DEADPEIAAdmin.George@westerncape.gov.za
Jean Cristo Cox	Mossel Bay Municipality	jcox@mosselbay.gov.za
Anton Dellelijn	Mossel Bay Municipality Ward 5	adellemijn@mosselbay.gov.za
Dr Nina Viljoen	Garden Route District Municipality	nina@gardenroute.gov.za
Whitney Fredericks	Mossel Bay Municipality: Roads, Transport & Stormwater Complaints	wfredericks@mosselbay.gov.za
Marissa Moore	WCG: Mobility Department	HOD.Mobility@westerncape.gov.za
Arabel McClelland	DEA&DP: Pollution and Chemical Management	Arabel.McClelland@westerncape.gov.za
Tertuis Simmers	WCG:Minister of Infrastructure	Melchior.Botes@westerncape.gov.za Jandre.Bakker@westerncape.gov.za
Brandon Layman	WCG: Department of Agriculture	brandont@elsenburg.com
Carlo Abrahams	Breede-Gouritz Catchment Management Agency	cabrahams@bgcma.co.za
Megan Simons	Cape Nature	msimons@capenature.co.za
Lizelle Stroh	South African Civil Aviation Authority	strohl@caa.co.za
Stephanie-Ann Barnardt-Delpert	Heritage Western Cape	stephanie.barnardt@westerncape.gov.za
Melanie Koen	Forestry Western Cape	Mkoen@dfre.gov.za

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

All State Departments and Organs of State were consulted.

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

The State Departments and Organs of State that did not respond are as follows:

- Garden Route District Municipality: Roads
- National Department of Agriculture
- Western Cape Government: Department of Infrastructure
- Western Cape Government: Department of Mobility
- Western Cape Government: Department of Health
- Western Cape Government: Department of Human Settlements
- Western Cape Government: Department of Pollution and Chemical Management
- Western Cape Government: Department of Air Quality
- Western Cape Government: Department of Pollution and Waste Management
- Western Cape Government: Department of Coastal Management

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.

First round of Public Participation:

The public participation process provided Interested and Affected Parties (I&APs) and commenting authorities with the opportunity to review and comment on the Draft Basic Assessment Report (DBAR). No objections to the proposed development were received from registered I&APs. The majority of comments received comprised acknowledgements of receipt, requests for administrative clarification, and comments from organs of state providing technical recommendations relating to environmental management and legislative compliance.

The principal issues raised included the protection of biodiversity and riparian habitat, management of invasive alien vegetation, rehabilitation of disturbed areas, erosion and sediment control, water resource protection, compliance with the National Forests Act and National Water Act, clarification of specialist findings, confirmation of heritage requirements, and strengthening of the Environmental Management Programme (EMPr). Authorities also requested improvements to

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the Site Sensitivity Verification Report (SSVR), clarification of aquatic Critical Biodiversity Area encroachment, and additional detail regarding monitoring, mitigation measures and specialist recommendations.

These issues were incorporated into the revised draft Basic Assessment Report through revisions to the SSVR and specialist summaries, clarification of the project description and impact assessment, confirmation of the low biodiversity sensitivity of the disturbed development footprint, refinement of the quantified aquatic disturbance footprint, and strengthening of the EMPr. Additional mitigation measures include limiting construction to the approved footprint, demarcation of no-go areas, invasive alien vegetation management, erosion and sediment control, rehabilitation of disturbed areas, pre-construction ECO inspections, protection of biodiversity features, implementation of specialist recommendations, and compliance with all applicable environmental authorisations and permits. Importantly, the comments did not necessitate changes to the location, footprint or design of the proposed development, but rather strengthened the environmental safeguards and management commitments associated with the project.

Second Round of Public Participation:

The second round of public participation was undertaken from 12 August 2026 to 10 September 2026 in respect of the Revised Draft Basic Assessment Report and associated appendices. The comments received during this period primarily related to clarification of the proposed development and the Section 30A Directive, specialist assessments and biodiversity sensitivities, protection of indigenous vegetation and protected trees, aquatic and wetland impacts, water-resource management, heritage considerations, and environmental monitoring and management requirements.

The comments relating to the proposed development and Section 30A Directive resulted in further clarification of the development footprint, the proposed temporary deviation, areas extending outside the existing road reserve and the distinction between the emergency works permitted under the Section 30A Directive and the permanent works assessed through the BAR. The FBAR confirms that no permanent construction works associated with the proposed development have commenced and that the permanent removal, replacement and realignment of the causeway remains subject to the Environmental Authorisation process. The temporary deviation and associated disturbed areas will be removed and rehabilitated following completion of the permanent works.

A number of comments concerned the specialist assessments and biodiversity information. These comments resulted in further clarification and updating of the Avifaunal Compliance Statement, Plant, Animal and Terrestrial Biodiversity Compliance Statement and Site-Specific Verification Report. The specialist documentation was revised to clarify specialist responsibilities, the applicable assessment areas, the current Screening Tool information, sensitivity ratings, species information and the continued applicability of the original assessments. The 2026 verification information and current site photographs were also incorporated to confirm the continued applicability of the terrestrial assessment. The comments did not result in a change to the assessed development footprint or the fundamental design of the proposal.

Biodiversity protection measures were further strengthened in response to comments regarding indigenous forests, protected trees, active bird nests and other sensitive biodiversity features. The EMPr provides for pre-construction ECO inspections, avoidance of protected trees and indigenous forest vegetation where possible, protection of active nests and other sensitive features, and the obtaining of all required permits and licences before disturbance where avoidance is not possible. The revised biodiversity mitigation measures were therefore incorporated primarily through the environmental management requirements rather than through a change to the proposed development footprint.

Comments relating to the aquatic environment, Palmiet, potential peat soils, erosion and flooding were considered in the final assessment. The FBAR distinguishes between the recorded presence of Palmiet and the potential occurrence of peat soils, noting that the 2023 Aquatic Biodiversity Impact Assessment identified Palmiet and highly organic wetland soils but did not confirm a peat layer within the proposed development footprint. The updated engineering design was subsequently reviewed by the aquatic specialist on 3 August 2026, with the revised structure supported in principle subject to implementation of the recommended aquatic mitigation measures. The EMPr was strengthened to address watercourse protection, erosion and sediment control, stormwater management, rehabilitation and protection of the riparian environment.

Monitoring and rehabilitation requirements were also strengthened, with additional monitoring where necessary. Rehabilitation measures, erosion control and the removal of temporary works have been incorporated into the EMPr.

Heritage and water-resource matters did not require changes to the development proposal. Heritage Western Cape was advised that, based on the Heritage Compliance Statement, the proposed activities do not trigger the NHRA or require an NID. BOCMA confirmed that it does not object to the Basic Assessment and that its previous comments remain applicable; these requirements have been retained in the assessment and environmental management measures. DFFE Oceans and Coasts likewise confirmed that the project does not trigger coastal-related considerations under its mandate.

Note:

-
- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
 - Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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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?
1.2.	Provide the name and or company who conducted the specialist study.
No specialist studies have been conducted for the groundwater. However, the specialist Debbie Fordham of Upstream Consulting did include in her impact assessment that the proposed project area is not located within any Strategic Water Source Areas for surface water or groundwater.	
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.



Figure 17. Groundwater Spatial Data (CapeFarmMapper, 2025).

As identified using the Department of Water & Sanitation spatial data aquifer layers accessed through CapeFarmMapper (10 November 2025), the project is located within a minor aquifer, classified as an intergranular and fractured system with a yield of 0.1–0.5 l/s. The aquifer is considered least vulnerable and of low susceptibility to contamination. The project area is not located within a Strategic Water Source Area for groundwater. Groundwater recharge is mapped at 114.17 mm/a, with the water table at approximately 22.40 mbgl.

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MUNICIPALITY, GARDEN ROUTE DISTRICT.

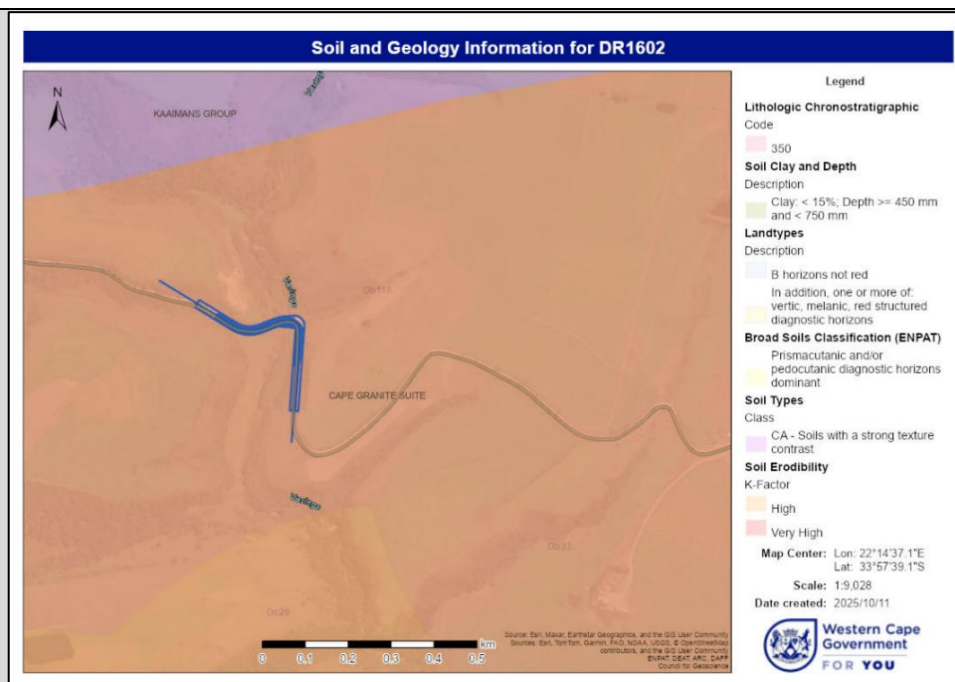


Figure 18. Soil and Geology Data for the proposed DR1602 (Cape Farm Mapper, 2025).

The project area has soils with strong texture contrasts (prismacutanic/pedocutanic), moderate clay content (<15%), and B-horizons that are not red. These soils are very highly erodible. The underlying geology is mainly schist, hornfels, mica schist, and granite. Because the soils are shallow and easily eroded, construction could increase erosion and sedimentation if not managed properly. With basic erosion control and rehabilitation measures, the proposed development is not expected to have significant long-term impacts on the soil or geology.

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.

The depth to groundwater in the project area is approximately 22.4 meters below ground level (mbgl). The project is situated over a minor, intergranular and fractured aquifer with a low yield (0.1–0.5 l/s) and low susceptibility to contamination. Given the relatively deep groundwater and the low-yield, low-susceptibility aquifer type, the proposed development is unlikely to significantly impact groundwater resources. This depth and aquifer characteristics allow for construction activities without risk of direct interference with the water table, and standard stormwater and erosion management measures will be sufficient to prevent potential contamination.

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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.		
	Debbie Fordham from Upstream Consulting has undertaken an Aquatic Impact Assessment for the project.		
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

The proposed construction is to repair and upgrade a causeway and its culvert infrastructure, that is within the Varings river watercourse, as a result the watercourse will be directly impacted. Based on the specialist findings, the causeway proposed for replacement are within the Varings River (HGM1), however, in this lower reach, a channelled valley wetland has formed. HGM4 and HGM5 are seep wetlands which enter the Varings River wetland from the left and right banks, respectively. These systems have already been modified by the road. HGM6 is a tributary channelled valley bottom wetland which merges with the Varings River approximately 400m upstream of the causeway. Furthermore, the improved design of the causeway, with more openings, may result in positive impacts in the long term.

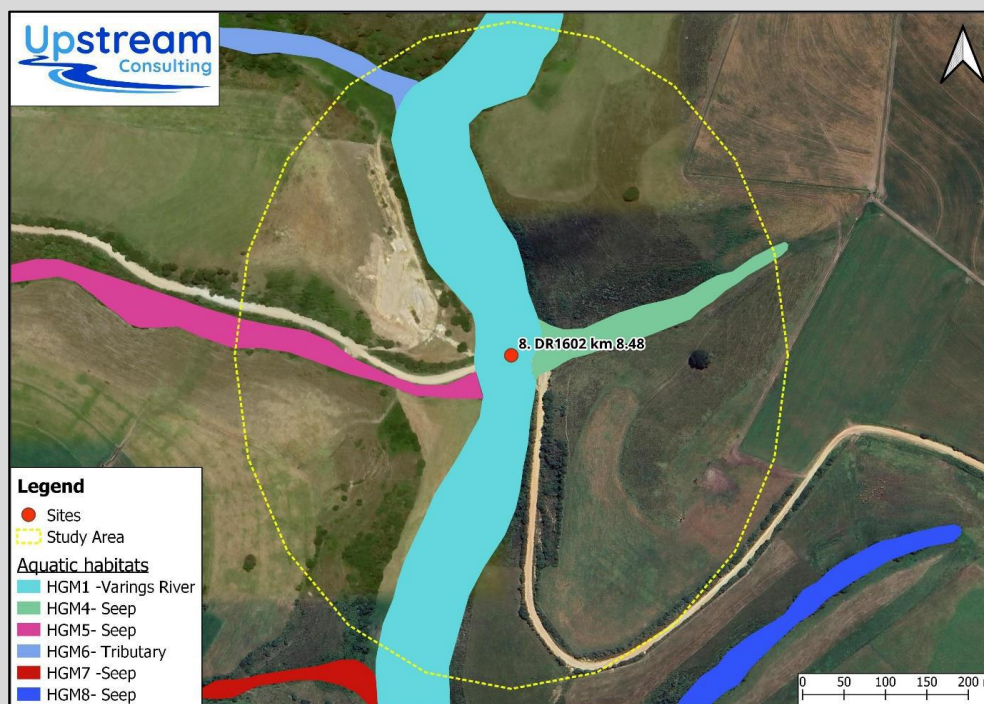


Figure 19. Map of the delineated aquatic habitat within the 500m radius study area of DR1602 Kleinplaas km 8.48.

Present Ecological State (PES):

The Present Ecological State (PES) of a river, watercourse or wetland represents the extent to which it has changed from the reference or near pristine condition (Category A) towards a highly impacted system where there has been an extensive loss of natural habit and biota, as well as ecosystem functioning (Category E).

the Varings River has been subjected to habitat loss and disturbance from the narrow road culverts, encroachment of agricultural lands, and alien tree species infestation. These impacts upon the watercourse have resulted in a Moderately Modified state from the reference condition. The narrow culvert openings have replaced habitat and confined flow, resulting in sedimentation above structures and erosion below. Alien tree roots in the river banks increase bank erosion and collapse. Transformation of riparian and floodplain vegetation to pasture alters the hydrological inputs and retention patterns to the watercourse.

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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.		
	Not applicable to the proposed project.		
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.		
	Not applicable to the proposed project.		
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
	Not applicable to the proposed project.		
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.		
	Not applicable to the proposed project.		

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
	• Plant Species, Animal Species and Terrestrial Biodiversity Themes Compliance Statement was conducted by Megan Smith and Edmari Lewis of Enviro Works. • Avi-Faunal compliance statement was conducted by Mokgatla Molepo from MORA Ecological Services • Aquatic Biodiversity impact assessment was conducted by Debbie Fordham from Upstream Consulting. • Paleontological and Archaeological compliance statement was conducted by Dr Peter Nillsen from Point of Origin		
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.		
	Based on the information gathered from the specialist compliance report on terrestrial and plant biodiversity conducted by Megan Smith and Edmari Lewis, as well as data from the DFFE Screening Tool Report (2023) and the updated Screening Tool information dated July 30, 2026, the following insights were obtained and used in accordance with systematic conservation planning and other relevant biodiversity information that influenced the proposed development site. The Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement: Megan Smith (Pr.Sci.Nat., SACNASP No. 130295) and Edmari Lewis (Pr.Sci.Nat., SACNASP No. 147171), Enviroworks. Ms. Edmari Lewis's designation reflects her current SACNASP professional registration status. Her historical designation as a Candidate Natural Scientist relates to her status at the time of the original specialist assessment. The original assessment was prepared and signed off under the professional responsibility of Ms. Megan Smith (Pr.Sci.Nat., SACNASP No. 130295). The Compliance Statement was updated in 2026 following DEA&DP review comments and includes verification of site conditions based on a further site inspection undertaken on 1 July 2026 by the SES team. The associated 5 August 2026 Addendum confirms that no material changes have occurred within the proposed development footprint and that the original findings, sensitivity ratings, impact assessment and recommendations remain valid.		

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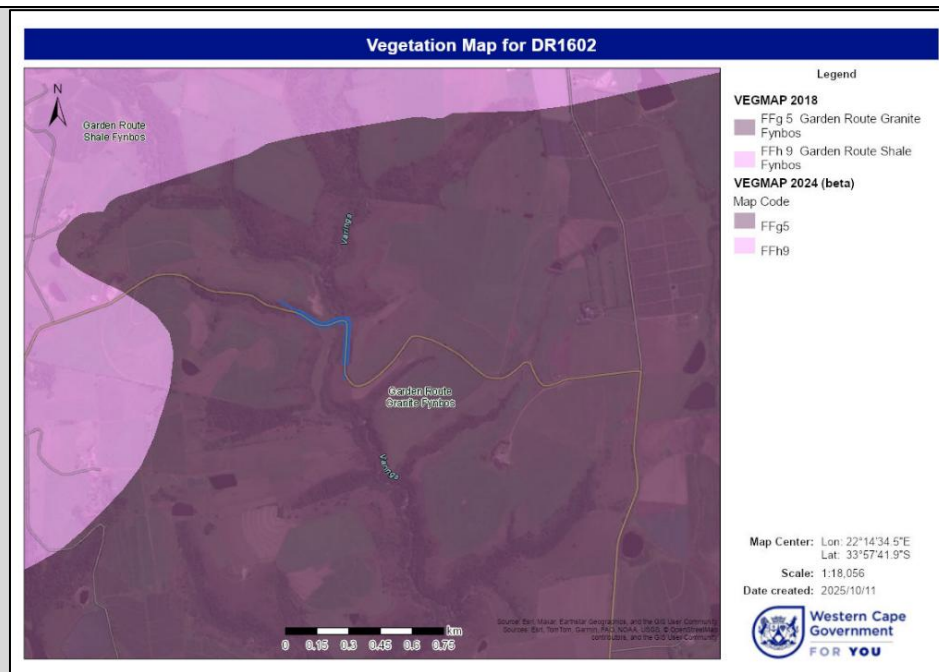


Figure 20. Extract of the DR1602 Vegetation Map, 2024 (CapeFarmMapper, 2025).

The proposed development, repair and upgrade project is located within the Garden Route granite Fynbos area. The site location is regarded as endangered (DFFE, 2024). Garden Route Granite Fynbos is primarily found within the Garden Route region in the Western Cape of South Africa. It occurs on soils derived from granite, a prominent geological feature in the area. This vegetation type is a part of the Cape Floral Kingdom, renowned for its high plant diversity and endemism.

Garden Route Granite Fynbos is marked by its diverse plant community, including various shrubs, geophytes, and ericoids. The rocky terrain and granite-derived soils are characteristic of the region, contributing to the unique flora and ecological dynamics. The landscape often features outcrops and rocky formations, which add to the scenic beauty of the area.

Garden Route Granite Fynbos is classified as Critically Endangered in the Western Cape Biodiversity Spatial Plan (2017) and GN 2747, 2022. The conservation of Garden Route Granite Fynbos is of paramount importance due to the ecosystem's vulnerability to various threats. Garden Route Granite Fynbos is narrowly distributed with high rates of habitat loss in the past 28 years (1990-2018), placing the ecosystem type at risk of collapse. Urban development poses a risk to the natural habitats in the region, as does the encroachment of invasive plant species. Conservation initiatives are focused on preserving the biodiversity of the area, safeguarding these unique ecosystems within the Cape Floral Kingdom, and maintaining the ecological balance that characterizes Garden Route Granite Fynbos.

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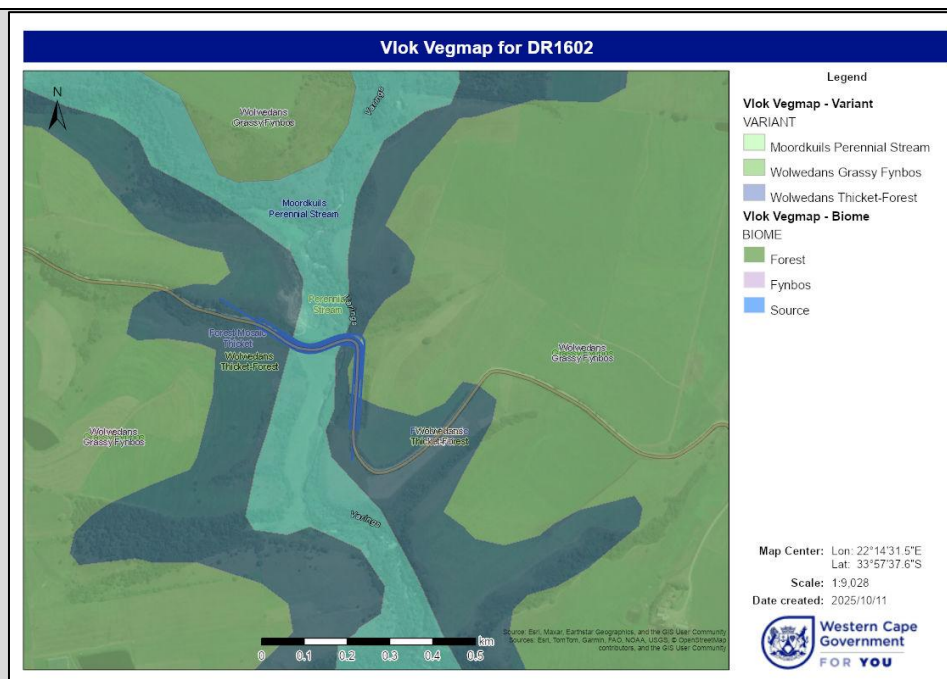


Figure 21. Extract of the Jan Vlok's Vegetation map (CapeFarmMapper, 2025).

Based on Figure 21. extract of the Jan Vlok's Vegetation map:

The site is further refined and located within the mapped Moordkuis Perennial Stream from Riversdale Vegetation, and Forest Mosaic Thicket. The area is in the Brakke region that is regarded as within the Wolwedans Thicket-Forest and is also located within the Riversdale Vegetation.

Strategic Water Source Areas:

The study area falls within the Outeniqua Strategic Water Source Area for surface water. A Strategic Water Source Areas (SWSA) is where the water that is supplied is considered to be of national importance for water security as seen in Figure 22. The specialist has further verified that the causeway repairs will not impact any SWSAs as there will be no reduction in water volume and no permanent changes to water quality.



Figure 22. Map of the proposed site in relation to Strategic Water Source Areas.

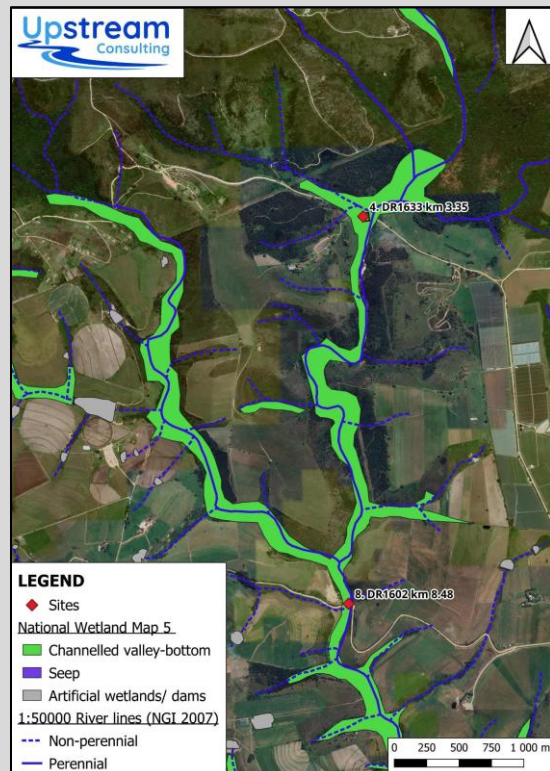


Figure 23. The site in relation to the national river and wetland inventories (CSIR, 2018)

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The National Wetland Map see Figure 23 (NWM5) includes inland wetlands and estuaries, associated with river line data and many other data sets. The NWM5 shows the site is situated within channelled valley bottom wetland habitat along the Varings River.

Aquatic Conservation Priority Areas:

There will be a negligible impact upon CBAs after mitigation is applied. The area crossed by the causeway is listed as CBA 1 wetland habitat and therefore, as a priority conservation area needed for meeting biodiversity targets, there should be no loss of this habitat. Provided the project footprint is limited as far as possible, there should not be any significant loss of habitat.

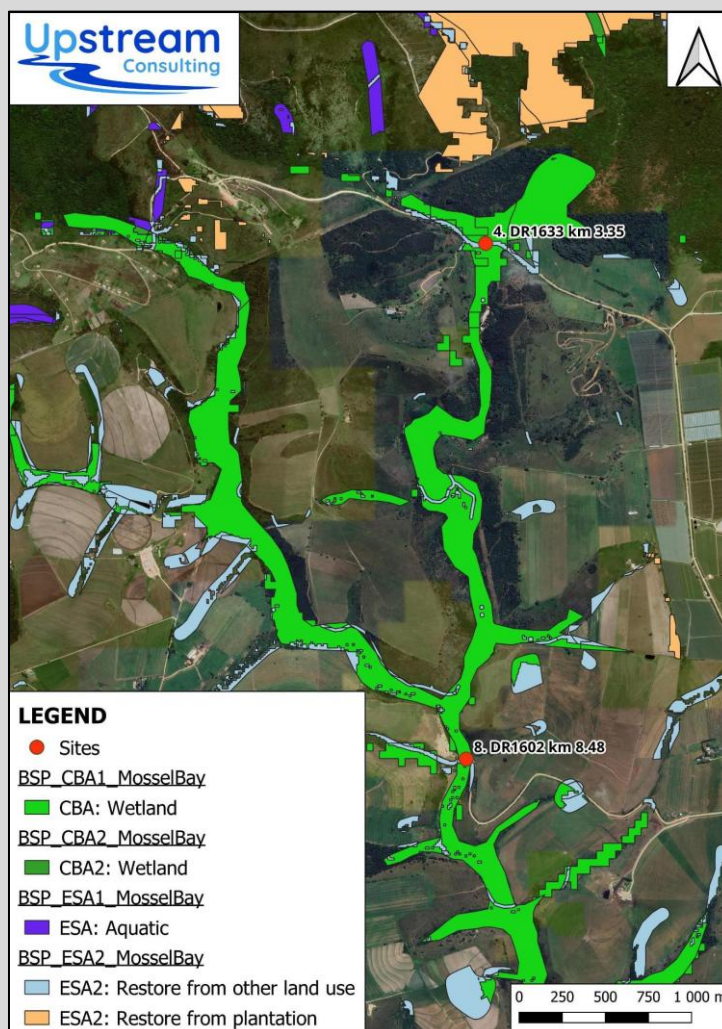


Figure 24. Map of the site in relation to Aquatic Priority Areas identified in the WCBSP (2017)

Strategic Water Source Areas

After mitigation is applied, the project is not expected to have residual impacts upon the environment. It should not impact upon the desktop mapped Strategic Water Source Area. The causeway replacement will not reduce the number of benefits gained by society from the water source area. The activity will need to comply with all regulations of the National Water Act (Act 36 of 1998), including the protection of downstream users, and minimise any potential ecological impacts upon water resources. There is currently no legislation directly related to SWSAs, but by adhering to the NWA legislation, the SWSA will not be compromised.

The Present Ecological State (PES) of the Varings River is rated as Moderately Modified (Category C), primarily due to historic impacts from the existing narrow culverts, agricultural encroachment, and alien vegetation. These have caused sediment deposition upstream, erosion downstream, and altered riparian vegetation structure. The proposed causeway rehabilitation and culvert upgrade are necessary to restore flow connectivity, reduce sedimentation, and stabilise banks. The improved design, which provides additional culvert openings, is anticipated to enhance long-term hydrological and ecological functioning of the river system.

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Approximately 1310 m² of wetland habitat (classified as Natural NFEPA Wetland) occurs within and adjacent to the road reserve, of which an estimated 210 m² lies outside the reserve boundary. The proposed works are temporary and confined to the existing road corridor. Mitigation measures prescribed by the specialist include limiting the working corridor, treating all areas outside it as no-go zones, implementing erosion and sediment controls, rehabilitating disturbed wetland edges, and ensuring full compliance with the National Water Act (Act 36 of 1998).

The integration of the findings and the implementation of maintain hydrological processes and supporting the ecological restoration of the Varings River. Following mitigation and rehabilitation, no permanent loss of aquatic function or wetland habitat is anticipated, and the proposed activity will result in ecological improvement relative to the existing degraded condition.

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.

The proposed development site is situated within the Gouritz Cluster Biosphere Reserve based on the Western Cape Biodiversity Spatial Plan (2017). The site is located 5km southeast of the Doring Rivier Wilderness Protected Area; however, the Protected Area will not be impacted by the proposed upgrades. The proposed site (Figure 25) is located within Critical Biodiversity Areas (CBA): 1 Aquatic and (CBA): 2 Wetland. A portion of the traffic accommodation signage is located within (CBA) 1: Terrestrial; however, this is not located within the proposed construction footprint.

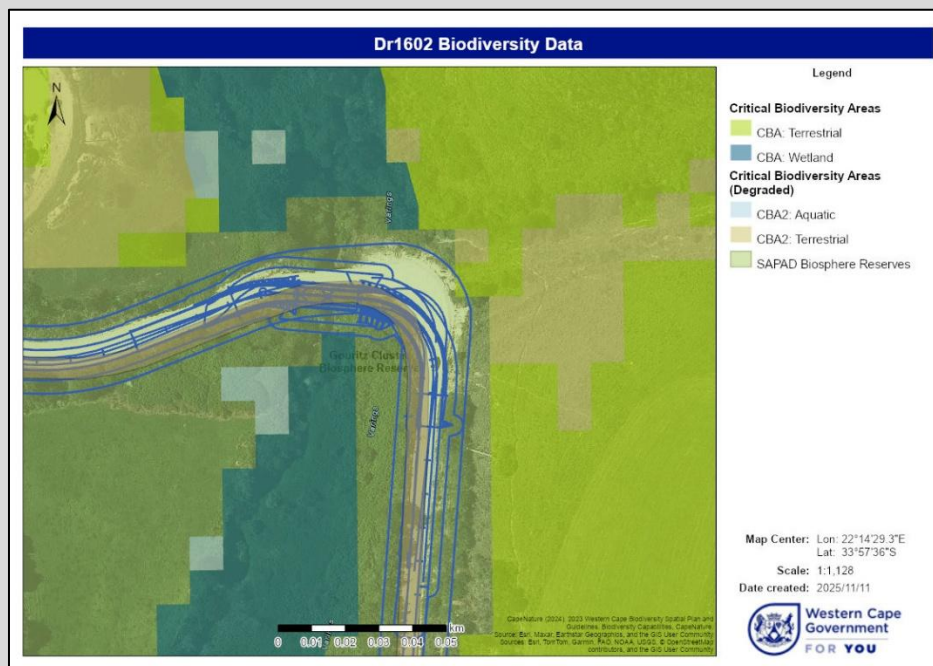


Figure 25. Sensitivity Map for site DR1602 Kleinplaas km 8.48, (Cape Farm Mapper, 2025).

Since the proposed development footprint is situated in sensitive areas identified by the Western Cape Biodiversity Spatial Plan (2017), the development footprint is considered to hold conservation importance within these sensitive areas. To determine whether the proposed development footprint is verified to carry out the functions of the CBA and ESA as mapped, it must first be determined the reason for the CBA and ESA delineation.

For the proposed site as previously mapped within the ESA2 has been classified due to restoration purposes, therefore stating the need for restoration from previous land uses. The overall GRDM Alien Invasive Species Management Plan should be followed to assist with the aforementioned.

They have been classified due to the presence of and the functioning of a watercourse and wetland on either side of the road. Because the CBAs have been delineated due to the presence of a watercourse and wetland, the verification of the CBAs has been excluded from this assessment. It is expected that the verification and impact on the CBA will be included within the Aquatic Assessment.

The site is located within the Gouritz Cluster Biosphere Reserve, which was delineated within the Western Cape Biodiversity Spatial Plan (2017). The target for the Gouritz Cluster Biosphere Reserve with regards to development is to minimise habitat and species loss and ensure ecosystem functionality through strategic landscape planning. The Western Cape Biodiversity Spatial Plan does offer flexibility in permissible land uses, but some authorisation may still be required for high-impact land uses.

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Vegetation description

Based on the site inspection, the vegetation within the proposed site exhibits a high invasion by several alien plant species, namely *Eucalyptus globulus* (Bloekom), *Acacia mearnsii* (Black Wattle), *Acacia saligna* (Port Jackson), and *Casuarina cunninghamiana* (Beefwood). These invasive species dominate the site and have significantly impacted the native vegetation. Indigenous species occurring on the site mostly consists of low shrubs (*Psoralea monophylla*, *Helichrysum cymosum*), tall shrubs (*Searsia lucida*), geophytic herbs (*Pteridium aquilinum*) and grasses (*Cymbopogon marginatus*, *Eragrostis capensis*). Comprehensive management and restoration strategies will be necessary to control the invasion, remove the alien species, and restore the site's indigenous vegetation and ecological integrity, however removing the alien trees will disturb the banks significantly, likely causing erosion. The overall GRDM Alien Invasive Species Management Plan should be followed to assist with the aforementioned.

The Endangered vegetation type, Garden Route Shale Fynbos and the Critically Endangered Garden Route Granite Fynbos for DR1602 Kleinplaas, are not represented at all within the proposed site that was surveyed. The habitats on the site are highly disturbed due to their proximity to the road and host a large number of invasive alien species. Additionally, the site falls within the road reserve and development of these areas is likely to have minimal impacts on the in situ and surrounding terrestrial biodiversity. The photographic record of the site shows the current state of the proposed areas. The vegetation shows elements of Fynbos vegetation and a high density of alien invasive vegetation.

Areas of conservation concern

The proposed construction area was previously located within an ESA2, classified due to restoration purposes; however even if the proposed site is to be restored rather than upgrading the existing culverts, will not contribute to the functioning of the ESA taking into consideration the small development footprint and proposed scope of works. The wider area will be restored according to the GRDM Alien Invasive Species Management Plan. The site is located within the Gouritz Cluster Biosphere Reserve which was delineated within the Western Cape Biodiversity Spatial Plan (2017). The Gouritz Cluster Biosphere Reserve encompasses an area of 3 187 893 hectares, because of the very large area outside of the proposed development site, the loss in Gouritz Cluster Biosphere Reserve for the proposed development site is not likely to impact the functioning of the overall Gouritz Cluster Biosphere Reserve or the wider area. Ecological connectivity is also not expected to be lost given that the proposed footprint is small, and the proposed developments will consist of upgrading the existing culverts and the surrounding areas contain intact vegetation which should provide sufficient habitat and foraging opportunities for fauna.

Ecological Sensitivity Assessment

The terrestrial biodiversity sensitivity is confirmed to be "Low" through site verification as the site does not support the endangered ecosystems identified as "Very High" within the Screening Tool Report. The Site Ecological Importance (SEI) for the site was evaluated as low for each of the habitat units. The aforementioned was determined based on the low biodiversity value and ecological functioning and medium recovery rate.

Table 3. Site Ecological Importance for both DR1602, regarded as site 8:

Site 8	Low: No confirmed or highly likely populations of Species of Conservation Concern; No confirmed or highly likely populations of range-restricted species; < 50 % of receptor contains natural habitat with limited potential to support SCC	Low: Small (> 1 ha but < 5 ha) area. Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat, and a very busy used road network surrounds the area. Low rehabilitation potential. Several minor and major current negative ecological impacts	High: Habitat that can recover relatively quickly (~ 5-10 years) to restore > 70 % of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed	Very Low. Minimization mitigation - Development activities of medium to high impact acceptable and restoration activities may not be required
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Biodiversity Aquatic Assessment:

The Western Cape Biodiversity Spatial Plan (WCBSBP) identifies biodiversity priority areas, CBAs and Ecological Support Areas (ESAs), which, together with Protected Areas, are important for the persistence of a viable representative sample of all ecosystem types and species, as well as the long-term ecological functioning of the landscape as a whole. The primary purpose of a map of Critical Biodiversity Areas and Ecological Support Areas is to guide decision-making about where best to locate development. Critical Biodiversity Areas (CBA's) are required to meet biodiversity targets. According to the WCBSBP, these areas have high biodiversity and ecological value and therefore must be kept in a natural state without further loss of habitat or species. Both causeways are located within CBA 1 river habitat and are therefore in a biodiversity priority area for conservation. The project must not result in the deterioration of any CBA habitat.

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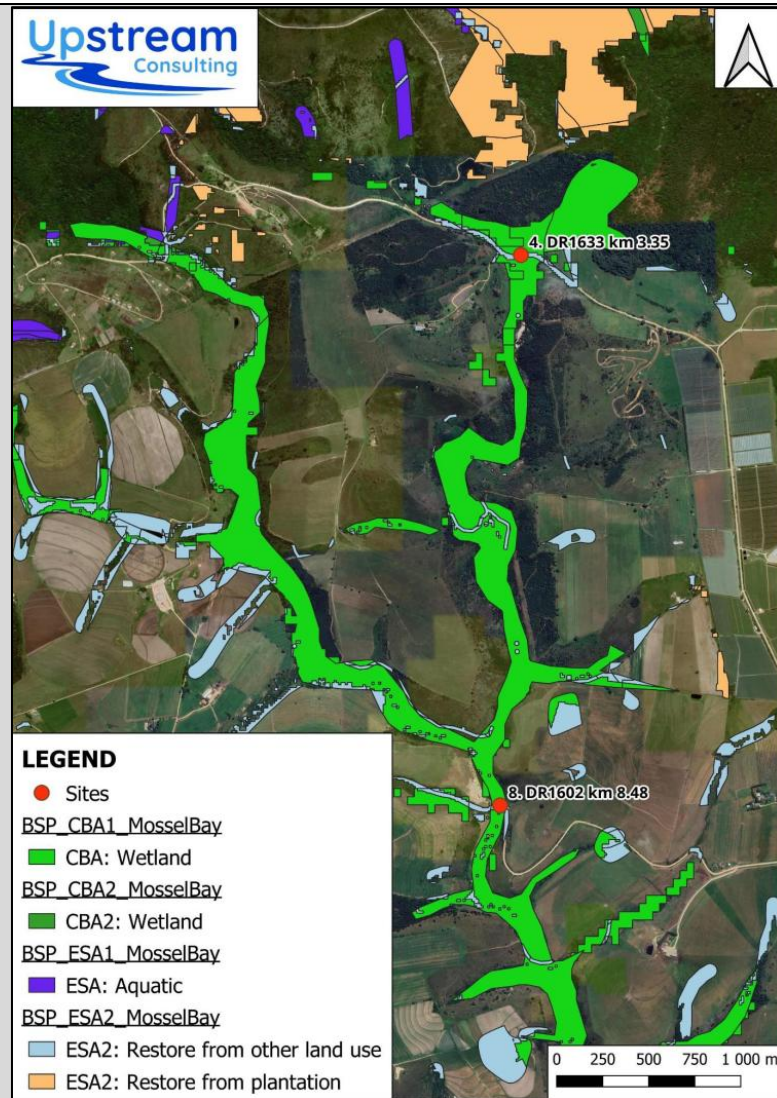


Figure 26. Map of Aquatic priority areas identified for the proposed site.

According to the Enviroworks Terrestrial Biodiversity Report (Smith & Lewis, 2024) and the updated Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement (Smith & Lewis, 2026), together with the 5 August 2026 Addendum, the proposed development site was previously mapped within an adjacent Ecological Support Area 2 under the Western Cape Biodiversity Spatial Plan (2017). The ESA2 classification of the proposed working area. However, based on the latest spatial dataset from CapeNature (2024) – 2023 Western Cape Biodiversity Spatial Plan and Guidelines, the proposed construction footprint itself is no longer mapped within an ESA2. As outlined in the spatial data sets provided by Cape Farm Mapper, all investigations, studies and/or legal processes initiated prior to the 13th Dec 2024 will still recognise the 2017 WC BSP as the official biodiversity prioritisation data informant.

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.

Biodiversity Priorities	Proximity to Biodiversity Area	Square Meters/ Hectares Lost	Alignment to 'LMO'
CBA1: Aquatic CBA1: Wetland	-	The proposed project working area encroaches 12m ² into the CBA1 for Aquatic and Wetland.	YES, according to the land management objectives of the affected CBA, the purpose of the CBA is "To maintain the area in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-

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			impact, biodiversity-sensitive land uses are appropriate. The activities are temporary in nature; therefore, the impact of the proposed projects will be low (with mitigation) during and upon deconstruction of the temporary deviation road infrastructure. The eventual goal of the proposed project is to improve the existing structures on site and subsequently improve the stream flow quality. Therefore, this project would be considered appropriate in these areas.
CBA2	10 m	-	-
ESA1	3151 m	-	-
ESA2	5000 m		YES, Restore and/or manage to minimise impact on ecological infrastructure functioning especially soil and water related services. The eventual goal of the proposed project is to improve the existing structures at the respective sites, and subsequently, improve the stream flow quality. Therefore, this project would be considered appropriate in these areas.
PA	Approx. 9600 m from both sites (The nearest PA is the Doring River Wilderness Area, which is also considered a world heritage site)	-	-
Forest	1998 m	-	
River NFEPA including 32m buffer	-	The proposed project is located within a watercourse; therefore, the proposed project is within 1283m²	(YES, The National Freshwater Ecosystem Priority Areas (NFEPA) project provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supports the sustainable use of water resources. The activities are temporary in nature; therefore, the impact of the proposed projects will be low (with mitigation) during and upon deconstruction of the temporary deviation road infrastructure. Therefore, no net loss of water resources is expected.

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Wetland NFEPA including 32m buffer	-	The proposed project is located within a watercourse; therefore, the proposed project is within 1283 m ²	YES, The National Freshwater Ecosystem Priority Areas (NFEPA) project provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supports sustainable use of water resources. The activities are temporary in nature; therefore, the impact of the proposed projects will be low (with mitigation) during and upon deconstruction of the temporary deviation road infrastructure. Therefore, no net loss of water resources is expected.
Strategic water source area	400 m there is an SWSA for Surface Water called the Outeniqua	YES, The 2021 spatial layer for SWSAs for surface water is a fine-scale delineation of the SWSAs, intended to support the integration of SWSAs in a range of catchment- and local-level planning, management, and regulatory processes. These areas need to be managed as multifunctional landscapes, and the main objective should be minimising the impacts of human activities in these landscapes on water quantity and quality. The proposed developments are located within the Outeniqua SWSA, the area of impact on the watercourse is marginal and the proposed works aim to not only be beneficial to the public but as the structures are improved, the instream processes will also be improved.	-
Threatened species and Red Data listed species	None identified on site by the appointed specialist	N/A – None identified on site by the appointed specialist	

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Figure 27. Western Cape Biodiversity Spatial Plan Mapping (SANBI, 2017; as sourced from Cape Farm Mapper, 2025).

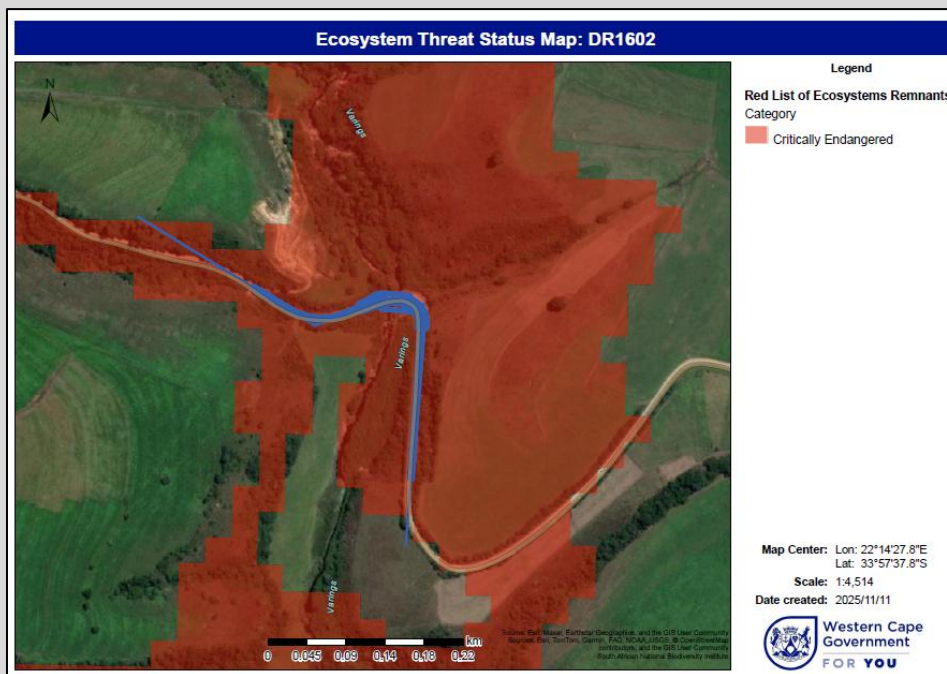


Figure 28. Critically Endangered Garden Route Granite Fynbos (Cape Farm Mapper, 2025).

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.

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The proposed project is located within the Gouritz Cluster Biosphere Reserve as delineated in the *Western Cape Biodiversity Spatial Plan (WCBSP, 2017; updated 2023)*. Although inside this biosphere planning zone, the site is not located within a statutory protected area under the National Environmental Management: Protected Areas Act (Act 57 of 2003).

The biodiversity management framework relevant to the site, therefore, comprises the Critical Biodiversity Area (CBA 1 - Aquatic and Wetland) associated with the Varings River, the formally mapped adjacent Ecological Support Area (ESA 2 - Restoration), the proposed and its inclusion within the Outeniqua Surface Water Strategic Water Source Area (SWSA). According to the aquatic specialist's findings, the proposed project will not impact any SWSA since there will be no reduction in water volume and only temporary changes to water quality.

The Western Cape Biodiversity Spatial Plan management objectives for these features require that:

- **CBAs** be maintained in a natural or near-natural state, with degraded portions rehabilitated; and
- **ESAs** be restored or managed to support ecological infrastructure and hydrological processes.

The project is temporary, linear, and confined within an existing 20 m road reserve, with some proposed construction works outside of the road reserve. The proposed works will replace undersized and deteriorated culverts, repair the causeway structure, and stabilise the Varings River banks, thereby improving hydraulic performance and reducing sedimentation. In this context, and based on the specialist findings summarised below, the proposal is consistent with the management objectives of the WCBSP.

Aquatic Impact Assessment

- Four Hydrogeomorphic (HGM) Units were identified within 500 m of the site:
 - HGM 1 – the Varings River (channelled valley-bottom wetland) directly affected by the existing causeway;
 - HGM 4 and HGM 5 – seep wetlands on either bank modified by the road embankment; and
 - HGM 6 – a tributary channelled valley-bottom wetland entering the Varings River ~400 m upstream.
- The Present Ecological State (PES) of the Varings River is Moderately Modified (Category C) due to historical impacts from narrow culverts, bank erosion, and alien trees.
- The specialist concluded that the proposed culvert upgrade will have an overall positive long-term ecological effect, restore flow connectivity and reduce sediment deposition.
- With mitigation, residual impacts on the aquatic CBA 1 wetland and NFEPA features are Low, and no net loss of wetland function is expected.

These findings demonstrate alignment with WCBSP objectives to maintain and restore aquatic ecosystem functionality.

Terrestrial & Plant Biodiversity Compliance Statement

- The site occurs within Garden Route Granite Fynbos (Critically Endangered) and Garden Route Shale Fynbos (Endangered) regions, but no indigenous SCCs recorded within the proposed project footprint.
- The Site Ecological Importance (SEI) was rated Low, due to the extensive disturbance, dominance of alien species (*Eucalyptus globulus*, *Acacia mearnsii*, *Casuarina cunninghamiana*), and low recovery potential.
- The terrestrial biodiversity theme sensitivity is therefore Low, with minimal residual impact expected.
- The specialists recommended implementation of the GRDM Alien Invasive Species Management Plan to remove invasive species and restore riparian areas post-construction.

This supports the WCBSP's ESA 2 objective of progressive restoration from prior disturbance.

Avi-Faunal & Faunal Compliance Statement

- Five common bird species were recorded; no Species of Conservation Concern or sensitive habitats occur within the footprint.
- The site provides limited habitat due to its disturbed state and proximity to existing road infrastructure.
- Impacts on avifauna are assessed as Low, provided that construction remains within the defined footprint and follows EMPr provisions.

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This confirms that the limited scope of works will not compromise the ecological connectivity or faunal use of adjacent CBAs/ESAs.

The DFFE Environmental Screening Tool (2026) identified the Animal Species Theme as High sensitivity due to the potential occurrence of several Species of Conservation Concern within the broader landscape. These include the Knysna Warbler, Denham's Bustard and African Marsh Harrier.

A specialist avifaunal verification confirmed that although these species have been recorded within the broader region, the proposed development footprint does not provide suitable breeding, nesting, roosting or long-term habitat. The project is restricted to an existing disturbed road reserve and existing culvert crossing where habitat has already been modified through historical road construction and ongoing maintenance activities.

The surrounding landscape contains more suitable habitat than the proposed development footprint, resulting in a verified avifaunal sensitivity of Low despite the High screening sensitivity assessed by the Screening Tool.

Heritage Statement

- No heritage resources were identified within the site, and Section 38 of the National Heritage Resources Act (25 of 1999) is not triggered.
- A precautionary chance-find protocol will be incorporated into the EMPr.

Engineering Report

- The engineering design details replacement and new road alignment of the existing culvert system within the 20 m road reserve, with wider openings and upgraded inlet/outlet protection to accommodate higher flows.
- Temporary traffic accommodation (a temporary deviation road) will also remain within the same reserve, only some of the proposed works will be located outside of the existing road reserve.

The design will reduce back-flooding, upstream sedimentation, and downstream scour, directly addressing the issues that degraded the Varings River PES.

4.7. Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

According to the Avi-Faunal Compliance Statement by Mokgatla Molepo (MORA Ecological Services, as updated in 2026 and the Terrestrial and Plant Biodiversity Compliance Statement by Megan Smith and Edmari Lewis, as updated in 2026, the proposed site at DR1602 Kleinplaas km 8.48 is highly disturbed and supports limited faunal diversity. The surrounding area comprises transformed habitat within the proposed project footprint dominated by alien vegetation (*Eucalyptus globulus*, *Acacia mearnsii*, *Casuarina cunninghamiana*), with only scattered indigenous shrub and grass species remaining.

No Species of Conservation Concern (SCC) or sensitive faunal habitats were recorded during the site visit. Five common bird species were observed (Southern Red Bishop, Pied Crow, Laughing Dove, Yellow Bishop and Hadedda Ibis), and no mammal or amphibian species were detected. The specialists concluded that the likelihood of any resident or breeding fauna within the immediate construction footprint is low, and that any mobile fauna present would readily utilise the adjacent natural and agricultural areas during construction.

Based on these findings, the faunal theme sensitivity is rated Low, and the proposed works are limited to the replacement of existing culverts and causeway infrastructure within the existing road reserve, with some of the proposed works encroaching outside of the road reserve. The proposed project is expected to have a negligible impact on fauna or habitat connectivity. The project design was therefore not required to be altered to avoid faunal impacts, but incorporates the management measures recommended in the EMPr, Appendix H.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

The landscape of the area is characterised as undulating hills that are cut by watercourses. The proposed construction site is located over a perennial river that will be affected by the project; however, after the specialist recommended mitigation measures, limited activity will occur within the watercourse.

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6.1.	Was a specialist study conducted?	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
	Dr Peter Nilsen of Point of Human Origins.		
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
	Dr Peter Nilsen of Point of Human Origins - It was confirmed by the appointed Heritage Consultant that the proposed activities do not trigger Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999). Therefore, the Heritage consultant confirmed that it was not required to submit a Notice of Intent to Develop (NID) to the HWC. In addition, the specialist has further concluded that a demolition permit is not required in accordance with Section 34 of the National Heritage Resource Act (NHRA).		

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.	
The Heritage Statement prepared by Dr Peter Nilsen (Appendix G4) concludes that the proposed works do not trigger the provisions of Section 38 of the National Heritage Resources Act, 1999 (Act 25 of 1999), and accordingly a Notification of Intent to Develop (NID) to Heritage Western Cape is not required. Although portions of the existing road and causeway infrastructure are likely older than 60 years, the specialist confirmed that these structures were substantially damaged during the 2023 flood events and do not possess structural, architectural or cultural heritage significance. The proposed works are limited to the replacement of existing flood-damaged infrastructure within an already transformed road reserve and disturbed river crossing. Consequently, the proposed works do not constitute the demolition of a protected heritage resource and a permit in terms of Section 34 of the NHRA is therefore not required. Refer to Appendix G4 (Heritage Statement) for the detailed assessment. The structures are older than 60 years, but it was confirmed by the specialist that a demolition permit is not required in accordance with Section 34 of the National Heritage Resource Act (NHRA).	

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
	In accordance with the Mossel Bay Local Municipality Integrated Development Plan (2022 – 2027) 5th Generation document. The following socio-economic data was recorded: Demographics The population of Mossel Bay is 140 075 people in 2022 making it the second most populated municipal area in the Garden Route District. This total is expected to grow to 147 220 by 2027, equating to an average annual growth rate of 1.0 per cent (Western Cape Provincial Treasury SEP 2023). Age distribution: The majority of Mossel Bay's population (66.7%) is of working age (15-64 years), with children at 17.9% and the elderly at 15.4%. This supports economic productivity and shapes consumption patterns. Policies should balance the needs of younger and older groups through education, healthcare, and social services. Households: Mossel Bay had an estimated 30,015 households in 2021, with numbers increasing annually. Municipal planning and budget allocations should reflect this growth to ensure adequate basic service delivery and infrastructure. With a population density of 48 people per km², Mossel Bay is the third most densely populated municipality in the Garden Route District, after Bitou and Knysna. (Western Cape Provincial Treasury SEP 2023). Household income and Poverty: The annual income for households is divided into three categories, namely the proportion of people that fall within the low, middle- and high -income brackets. Poor households fall under the low-income bracket, which ranges from no income to R38 200 annually (R3 183 per month). An increase in living standards can be demonstrated by a rising number of households entering the middle- and high income brackets. Approximately 52.8% of households fall within the low-income bracket, of which 17.4% have no income. Less than 50% of households fall within the middle to higher income categories, split between 39.2% in middle income group and 8.1% in the higher income group. A sustained increase in economic growth is needed if the 2030 NDP income target of R110 000 per person, per annum is to be achieved (StatsSA, 2016). The lower poverty headcount shows that the number of poor people within the Mossel Bay municipal area decreased from 3.2% of the population in 2011 to 2.1% in 2016. The decreasing poverty headcount is positive as it means less strain on municipal

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financial resources. The intensity of poverty, i.e., the proportion of poor people that are below the poverty line decreased from 43,5% in 2011 to 43% in 2016. This percentage is still high and should be moving towards zero as income of more households within the municipal area move away from the poverty line (StatsSA, 2016).

Learner Enrolment:

The learner enrolment rate increased by 0.9% from 16 986 in 2019 to 17 458 in 2020. This increase is slightly lower than the district annual average which is 1.1%. Parallel to this, the learner retention rate has also notably decreased from 73.3% in 2019 to 69% in 2020. As such, this means that more initiatives are required within the space of Mossel bay to attract and retain learners within the schooling system. The year – on – year matric result comparison between 2019 and 2020 also follows the same trend with a drop from 84.7% to 79.7%. This also warrants further initiatives for the Department of Education and other stakeholders to pay specific attention and invest in the schooling system within the Mossel Bay municipality.

The Economy:

Like other parts of the Country, Mossel Bay has also experienced hard times in terms of economic growth due to various factors such as energy availability, national fiscal policy, and COVID19 Pandemic amongst others. In 2019, the Mossel Bay GDP was valued at R8.0 billion and subsequent to the above and other factors, it contracted to R7.7 billion in 2020. According to the 2021 Municipal Economic Review Outcome, it is estimated that a staggering 2 613 job opportunities were shed in the municipal space in 2020 (Provincial Treasury, 2021).

8.2. Explain the socio-economic value/contribution of the proposed development.

The road and culvert project will help influence the socio-economic aspects positively, by contributing towards job creation and skills development that is needed within the area. As well as provide a safe road for people to use. The area is also within agriculture, whereas the agriculture sector may benefit in using the road effectively and efficiently when transporting goods and services that contribute to the GDP of the Mossel Bay area. furthermore, prevent flooding in the area that can also cause ecological damage and further infrastructure damage.

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 is committed to supporting and uplifting the local community through the proposed road and culvert project. To achieve this, the project will actively prioritise the use of local labour, providing temporary employment opportunities for residents during the construction phase. In addition, Small and Medium Enterprises (SMMEs) from the surrounding area will be engaged for services, supplies, and subcontracting, promoting local economic growth and business development.

Where feasible, the project will include skills development and on-the-job training for local workers, including training in road construction, culvert installation, safety procedures, and basic equipment handling. This approach ensures that the benefits of the project extend beyond immediate employment, helping participants acquire skills that can be applied in future infrastructure projects. All employment and procurement activities will be conducted in accordance with the Western Cape Governments policies, ensuring fairness, transparency, and equitable access. These initiatives are designed to strengthen the local economy, empower community members, and provide sustainable social benefits aligned with the road and culvert activities.

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.

As the nature of the proposed work is to replace and repair existing infrastructure the work will predominantly be within the construction footprint and the construction works will be temporary. The temporary deviation road will positively impact the community by not disturbing road users as well as construction work and will influence the well-being of road users in not utilising the currently damaged and potentially dangerous construction road till completion.

Following the completion of the construction phase of the proposed project, there will be a significant improvement of the safety the road, providing road users with peace of mind whilst traveling along this portion of the road. This is considered a long term improvement to the road infrastructure.

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 alternative will take place along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48. The proposed repairs will be done at the crossing of the Varings River on Farm 338 abd Pn 6 of Farm 220, within the Mossel Bay Municipality. In accordance with Hatch Engineering, the proposed road repair is necessary due to flood damage that has resulted in uprooted plants and damage to the existing causeway. A temporary deviation ramp will be constructed upstream to accommodate traffic safely. Placing the temporary deviation road upstream is essential to ensure safe traffic flow. Constructing it downstream along a curved section could lead to traffic congestion and increase the risk of vehicular accidents, which could endanger lives.	
Provide a description of any other property and site alternatives investigated.	
Four road alignment alternatives were investigated by the consulting engineers: one on the existing road alignment, and three alternatives short distances downstream of the existing causeway.	
	
Figure 29. Alternative no.1: Keep the road on the same road alignment.	
A temporary ramp will be utilised and only one temporary deviation ramp for site DR1602, which will be located upstream.	

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Figure 30. Alternative 2: Move the road downstream of the existing road alignment.



Figure 31. Alternative 3: Move the road further downstream of Alternative 2.

The proposed Alternative 2 and Alternative 3 were not feasible from an environmental perspective, as these alignments encroach into the specialist no-go mapped area, as outlined in Appendix B2 of this BAR. As such, these Alternatives were not further pursued in the environmental authorisation process.

Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.

The preferred alternative improves road safety considerably due to better alignment with the existing horizontal road alignment, bigger vertical clearance and increased hydraulic capacity. The alternatives further downstream will be considerably more expensive and require the expropriation of agricultural land.

In accordance with Hatch Engineering, the proposed road repair is necessary, as the proposed site suffered flood damage causing plants to be uprooted, and the causeway has resulted in damage. The road will have a constructed deviation road that will be located upstream. Due to the temporary ramp being constructed, there will be disruptions to the clearing of riparian habitat within the site to allow the temporary deviation road, however the proposed construction will take place within the proposed site construction footprint to avoid further impact. The existing causeway is utilized as part of the temporary deviation road, minimising the footprint of additional works in the river.

Provide a full description of the process followed to reach the preferred alternative within the site.

Four road geometric alignments were developed, cost estimates were done, and a proposal was made to the asset owner, comparing technical and financial implications.

The preferred alternative was consolidated with the consulting engineers Hatch, who have identified the need to upgrade and replace the damaged causeway and culvert infrastructures. The need for the project is to positively impact road safety and to strengthen the area and prevent flooding from occurring in the area again, due to the causeway being low and damaged, along with the culvert.

The proposed Alternative 2 and Alternative 3 were not feasible from an environmental perspective as these alignments encroach into the specialist no-go mapped area, as outlined in Appendix B2 of this BAR.

Provide a detailed motivation if no property and site alternatives were considered.

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All four alternatives affect the same properties. The properties are owned by the same landowner on both sides of the road and the landowner supports the proposed alternative.

No alternative properties were considered, as the nature of the project is to repair and replace existing road and culverts that are currently damaged and need to be replaced. The project does require approval for a temporary deviation road to be constructed upstream. If the project does not commence, the roads can further become damaged infrastructure and harm human life and harm the ecology within the area due to road and culvert damage that can break away and/ or uproot ecology in the area.

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

Positive impacts on the environment:

- Risk to aquatic features is low after mitigation.
- Risk to Faunal features is regarded as low.
- Risk to terrestrial features is regarded low as well as having a low value of Ecological Importance.
- Risk to plant species features is regarded as low.
- Opportunity for construction employment and upskill labour force.
- Prevent the likelihood of flooding that will preserve and maintain ecology in the area
- Upgrade infrastructure, prevent human life risks and ecological displacement and uprooting.
- Opportunity to encourage alien invasive clearance and rehabilitation.
- Temporary disturbance.

Negative impacts on the environment:

- Temporary road deviation would require clearing additional land and increase the project footprint.
- Potentially cause disgruntled landowners
- If there is any indigenous vegetation within the project area, it will be lost.
- Temporary nuisance.
- Temporary noise nuisance.

1.2. Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred activity alternative.

The nature of the project is to repair existing infrastructure. A temporary ramp needs to be installed and only one temporary ramp will be utilised, and that will be located upstream to facilitate traffic accommodation during the construction phase.

Provide a description of any other activity alternatives investigated.

No other activity alternatives were investigated, as the nature of the project is to repair and replace existing road and culverts that are currently damaged and need to be replaced. The project does require approval for one by-pass to be constructed upstream. If the project does not commence, the roads can further become damaged infrastructure and harm human life and harm the ecology within the area due to road and culvert damage that can break away and/ or uproot ecology in the area.

Provide a motivation for the preferred activity alternative.

The preferred alternative provides the most positive outcome for an improved, safer road alignment, increased hydraulic capacity of the drainage structure and financial cost.

The nature of the project is to repair and replace existing road and culverts that are currently damaged and need to be replaced. The project does require approval for one by-pass to be constructed upstream. If the project does not commence, the roads can further become damaged infrastructure and harm human life and harm the ecology within the area due to road and culvert damage that can break away and/ or uproot ecology in the area.

Provide a detailed motivation if no activity alternatives exist.

Not applicable. The nature of the project is to repair and replace existing culverts and roads that are damaged. Due to the nature of the project there is no alternative to the current project.

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

Positive impacts on the environment:

- Risk to aquatic features is low after mitigation.
- Risk to Faunal features is regarded as low.
- Risk to terrestrial features is regarded low as well as having a low value of Ecological Importance.
- Risk to plant species features is regarded as low.
- Opportunity for construction employment and upskill labour force.
- Prevent the likelihood of flooding that will preserve and maintain ecology in the area
- Upgrade infrastructure, prevent human life risks and ecological displacement and uprooting.
- Opportunity to encourage alien invasive clearance and rehabilitation.
- Temporary disturbance.

Negative impacts on the environment:

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- Temporary road deviation would require clearing additional land and increase the project footprint.
- Potentially cause disgruntled landowners
- If there is any indigenous vegetation within the project area, it will be lost.
- Temporary nuisance.
- Temporary noise nuisance

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.

The proposed development entails the removal and replacement of the existing flood-damaged causeway and associated road infrastructure along Divisional Road (DR) 1602 (Kleinplaas Road) at km 8.48, where the route crosses the Varings Rivier on Farm 338 and Portion 6 of Farm 220, within the Mossel Bay Local Municipality, Western Cape.

Based on the engineering design (Hatch, 2022), the proposed development involves the construction of a new, realigned bridge and approach road section positioned immediately South (downstream) of the existing crossing. The new road section will form part of the provincial road network and constitutes a linear activity under the EIA Regulations. The total length of the realigned section, including the causeway and its approach roads, will be approximately 100 – 150 metres. The roadway width will be about 6.2 metres and the bridge structure 4.0 m between guide blocks, with an overall development footprint width of the bridge being approximately 15 metres. The road reserve is 20 metres wide, with the construction working corridor extending 3 metres beyond the road footprint on either side for machinery access and material handling.

The causeway structure will consist of three rectangular reinforced-concrete culvert cells, each approximately 6 to 8 metres long and about 3 meters high, with associated inlet and outlet apron slabs, wing walls, and stone pitching, and gabions for erosion protection. The total development footprint for the permanent works is located centrally within the Varings River. The current design allows for the most adverse geotechnical conditions requiring a raft foundation slab, apron slabs and cut-off beams about 15m wide measured perpendicular to the bridge. It appears as if bedrock is present at the current river level where the new structure will be located, providing the possibility to have small pad footings (about 5 x 1.5m in plan) under the piers and abutments, thus omitting the raft foundation, apron slabs and cut-off beams. This investigation will be done during the construction phase.

The current design has been based on the worst-case geotechnical scenario requiring a raft foundation slab, apron slabs and cut-off beams. Should competent bedrock be confirmed during construction, the detailed engineering design may be refined to utilise smaller pad footings beneath the piers and abutments. This would reduce the permanent foundation footprint and would not increase the environmental footprint assessed in this BAR. Any design modification that would increase the approved disturbance footprint or affect sensitive environmental features would be referred to the EAP, Aquatic Specialist and Competent Authority for review prior to implementation.

To maintain traffic during construction, a temporary deviation road will be established north of the new alignment, as shown in Figure 1 below. The proposed temporary deviation road will be approximately 42 metres in length and 4 metres in width. The proposed construction works will extend beyond the 20 m road reserve. The footprint of the temporary deviation road within the watercourse is estimated at $\pm 180 \text{ m}^2$, and a 3 m working buffer will be applied around the working area.

The total working area for the proposed works will be approx $1,646 \text{ m}^2$, and the working area outside of the new road reserve 45 m^2 and the existing road reserve will be extended 233 m^2 , outside of the road reserve. The deviation will be removed, and the area will be rehabilitated once the new causeway is operational.

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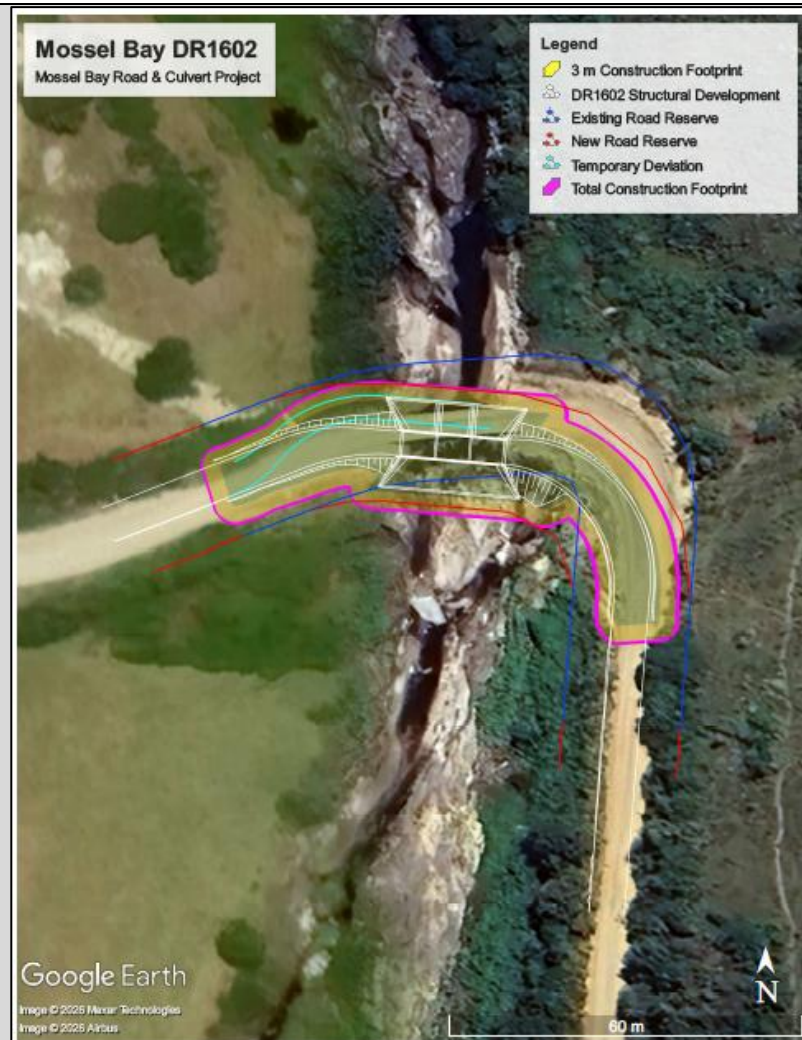


Figure 32. The Proposed Construction for DR1602 Mossel Bay with a revised road reserve.

The below illustrates the proposed road and culvert works along DR1602 (Kleinplaas Road) at the Varings River crossing, showing the existing and new road reserve in relation to the existing road reserve. The red boundary indicates the area of the new road

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reserve, and the blue line shows the existing road reserve.

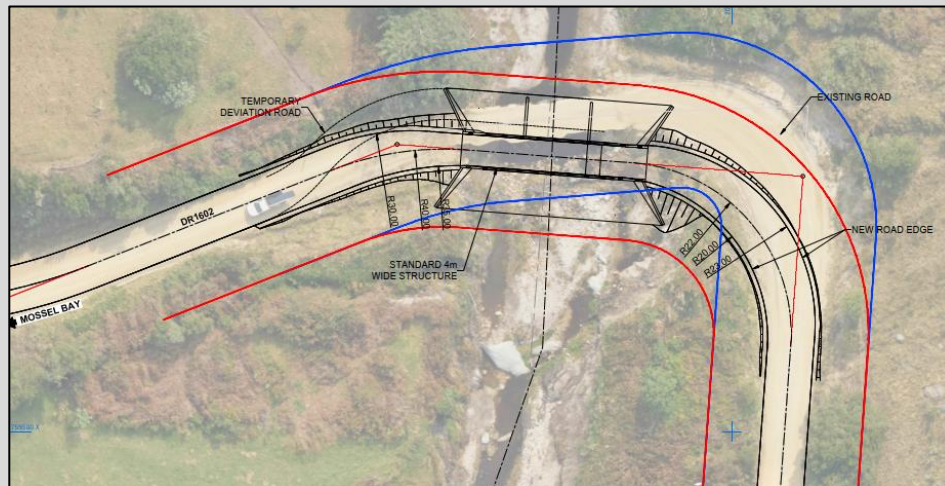


Figure 33. Proposed engineering layout of the new proposed causeway and culverts infrastructure showing the existing (blue) and new (red) road reserve, located on DR1602 km 8.4. (Hatch Engineering, 2026).

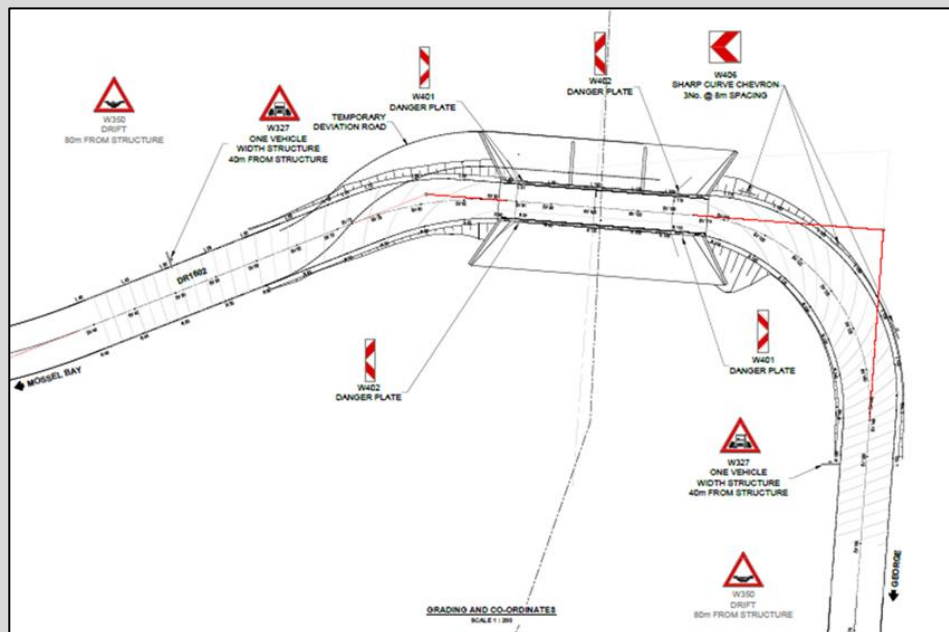


Figure 34. Area for the temporary traffic accommodation signs on the existing road, (Hatch Engineering, 2026).

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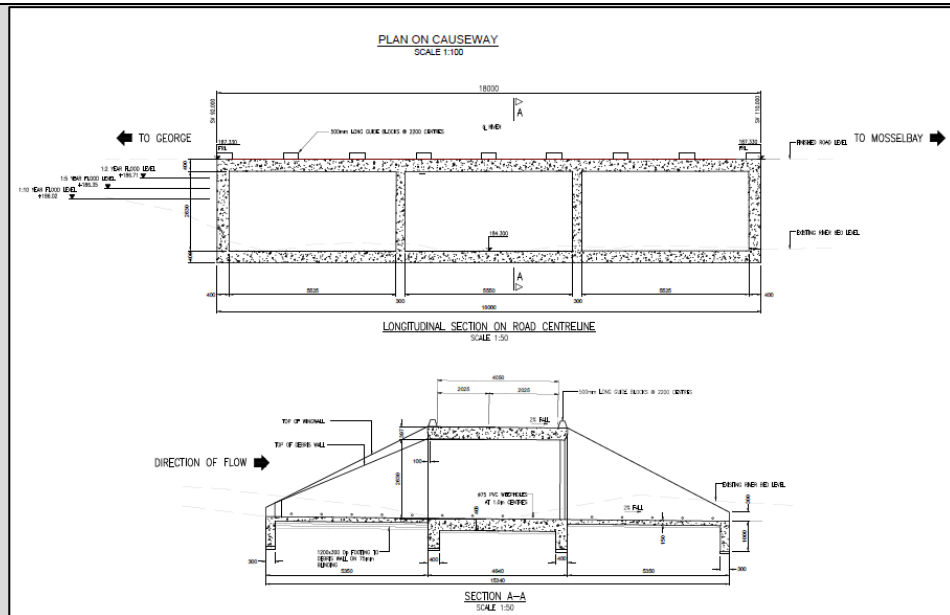


Figure 35. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Should base rock be available for the foundations, the concept engineering design will change as follows:

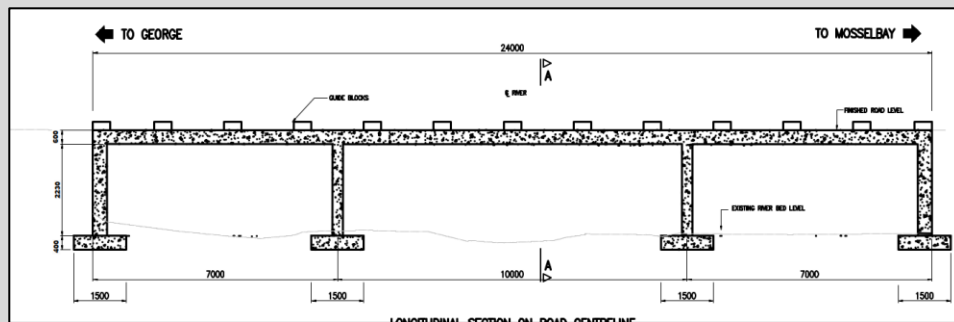


Figure 36. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

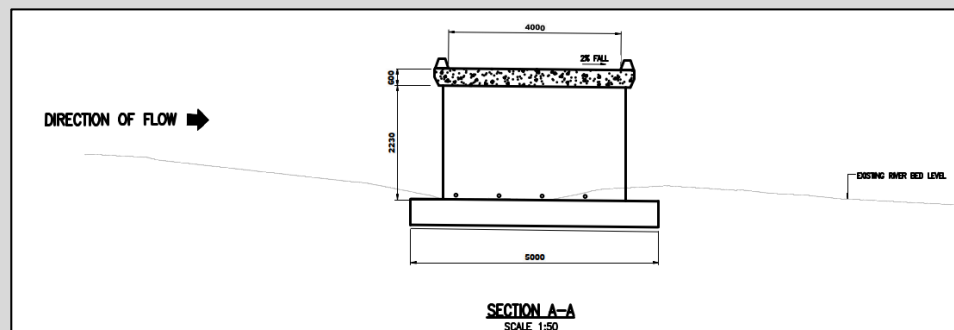


Figure 37. Engineering design of the proposed causeway and associated infrastructure located on DR1602 km 8.4. (Hatch Engineering, 2026).

Kindly note that the proposed layout designs are included in the engineering report and drawings within Appendix L of this BAR.

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

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No other design or layout alternatives were investigated.	
Provide a motivation for the preferred design or layout alternative.	
One temporary deviation road will be constructed upstream. If the project does not commence, the roads can further become damaged infrastructure and harm human life and harm the ecology within the area due to road and culvert damage that can break away and/ or uproot ecology in the area.	
Provide a detailed motivation if no design or layout alternatives exist.	
the upgrade will improve and strengthen the road and culvert infrastructure. The project will also benefit the watercourse as it will be to raise the road and improve and repair the culvert. This will additionally strengthen the road and prevent the likelihood of flooding according again and causing further ecological disturbance.	
List the positive and negative impacts that the design alternatives will have on the environment.	
Positive impacts on the environment: • Risk to aquatic features is low after mitigation. • Risk to Faunal features is regarded as low. • Risk to terrestrial features is regarded low as well as having a low value of Ecological Importance. • Risk to plant species features is regarded as low. • Opportunity for construction employment and upskill labour force. • Prevent the likelihood of flooding that will preserve and maintain ecology in the area • Upgrade infrastructure, prevent human life risks and ecological displacement and uprooting. • Opportunity to encourage alien invasive clearance and rehabilitation. • Temporary disturbance.	
Negative impacts on the environment: • Temporary road deviation would require clearing additional land and increase the project footprint. • Potentially cause disgruntled landowners • If there is any indigenous vegetation within the project area, it will be lost. • Temporary nuisance. • Temporary noise nuisance.	
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:	
No technology alternatives are applicable to the proposed project. All construction materials, designs and methodologies to be adopted on site are considered to be the best practicable measures to promote the integrity of the proposed works	
Provide a description of any other technology alternatives investigated.	
No technology alternatives are applicable to the proposed project.	
Provide a motivation for the preferred technology alternative.	
No technology alternatives are applicable to the proposed project.	
Provide a detailed motivation if no alternatives exist.	
The site is located at the km 8.4 of DR1602 (Kleinplaas Road) where the road crosses the Varings River within the Mossel Bay Local Municipality. During the flooding the causeway openings were too small to let sufficient water through. The banks of the river have been altered by the flood event and some vegetation had been uprooted and swept away. It is proposed to remove the causeway and replace it with a new and bigger opening to provide inlet and outlet, realign the road and provide a new causeway. Furthermore, the nature of the project is to repair and replace existing road and culverts that are currently damaged and need to be replaced. Due to a portion of the proposed works being outside of the road reserve, the project requires approval. If the project does not commence, the roads can further become damaged infrastructure and harm human life and harm the ecology within the area due to road and culvert damage that can break away and/ or uproot ecology in the area.	
List the positive and negative impacts that the technology alternatives will have on the environment.	
Positive impacts on the environment: • Risk to aquatic features is low after mitigation. • Risk to Faunal features is regarded as low. • Risk to terrestrial features is regarded low as well as having a low value of Ecological Importance. • Risk to plant species features is regarded as low. • Opportunity for construction employment and upskill labour force. • Prevent the likelihood of flooding that will preserve and maintain ecology in the area	

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- Upgrade infrastructure, prevent human life risks and ecological displacement and uprooting.
- Opportunity to encourage alien invasive clearance and rehabilitation.
- Temporary disturbance.

Negative impacts on the environment:

- Temporary road deviation would require clearing additional land and increase the project footprint.
- Potentially cause disgruntled landowners
- If there is any indigenous vegetation within the project area, it will be lost.
- Temporary nuisance.
- Temporary noise nuisance.

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

Provide a description of the preferred operational alternative.

Based on the nature of the project, there has been no other alternative investigations.

Provide a description of any other operational alternatives investigated.

Based on the nature of the project, there has been no other alternative investigations.

Provide a motivation for the preferred operational alternative.

The project will benefit the environment as the project is to replace an existing damaged road and culverts. The project will impact road users positively as the road will be sustainable and suitable for use. Furthermore, addressing the flow of water will be addressed to minimise the likelihood of flooding by means of installing the appropriate culverts to suit the environment and flow of water.

Provide a detailed motivation if no alternatives exist.

Additionally from the above comment, the project will further improve Mossel Bay Local Municipality infrastructure and address objectives to be met within the Environmental Management Framework and including the municipalities IDP and SDP.

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

Positive impacts on the environment:

- Risk to aquatic features is low after mitigation.
- Risk to Faunal features is regarded as low.
- Risk to terrestrial features is regarded low as well as having a low value of Ecological Importance.
- Risk to plant species features is regarded as low.
- Opportunity for construction employment and upskill labour force.
- Prevent the likelihood of flooding that will preserve and maintain ecology in the area
- Upgrade infrastructure, prevent human life risks and ecological displacement and uprooting.
- Opportunity to encourage alien invasive clearance and rehabilitation.
- Temporary disturbance.

Negative impacts on the environment:

- Temporary road deviation would require clearing additional land and increase the project footprint.
- Potentially cause disgruntled landowners
- If there is any indigenous vegetation within the project area, it will be lost.
- Temporary nuisance.
- Temporary noise nuisance.

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 No-Go option of the proposed development would be for the road and culvert will remain as is, with no upgrade, repair and improvements done to the road and culvert. Therefore, the safety risks associated with the status quo remains as is adding to the heightened potential for accidents to occur along this route, and negatively disturbed ecology in the area and flooding occurring again. Additionally, the economic benefits of capital contributions to infrastructure and socio-economic benefits of the employment opportunities to be created during the construction phase of the proposal.

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.

Due to the need of this project, no other alternatives were considered. This is due to the need for the portion of the road to be strengthened to ensure the safety of the road for all users thereof. At current, this would be considered a safety hazard for commuters using the road as well as ecology within the area.

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

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The preferred location, site and layout alternative is considered the preferred alternative for the purpose of approving the proposed project as the measures proposed will lead to increased safety aspect of the road and benefit the ecology in the area.

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).

After receiving the information from the specialists, there is no evidence of SCCs on the proposed site. The area is located within the Critically Endangered Garden Route Granite Fynbos, but due to the terrestrial compliance statement the area is heavily infested with alien vegetation and The majority of the study area has already been subjected to disturbance, in accordance with the terrestrial and faunal specialists all areas outside of the project must be considered no-go areas. The aquatic impact assessment has further raised concerns, but after mitigation will be of low impact and may further benefit the Varings river. It is overall recognised that impacts on these areas are unavoidable. The areas beyond the working areas stipulated in this report will be considered no-go areas, with the fence line demarcating the maximum boundary of the site, unless otherwise required.

In accordance with the aquatic assessment, the specialist recommended the following No-Go:

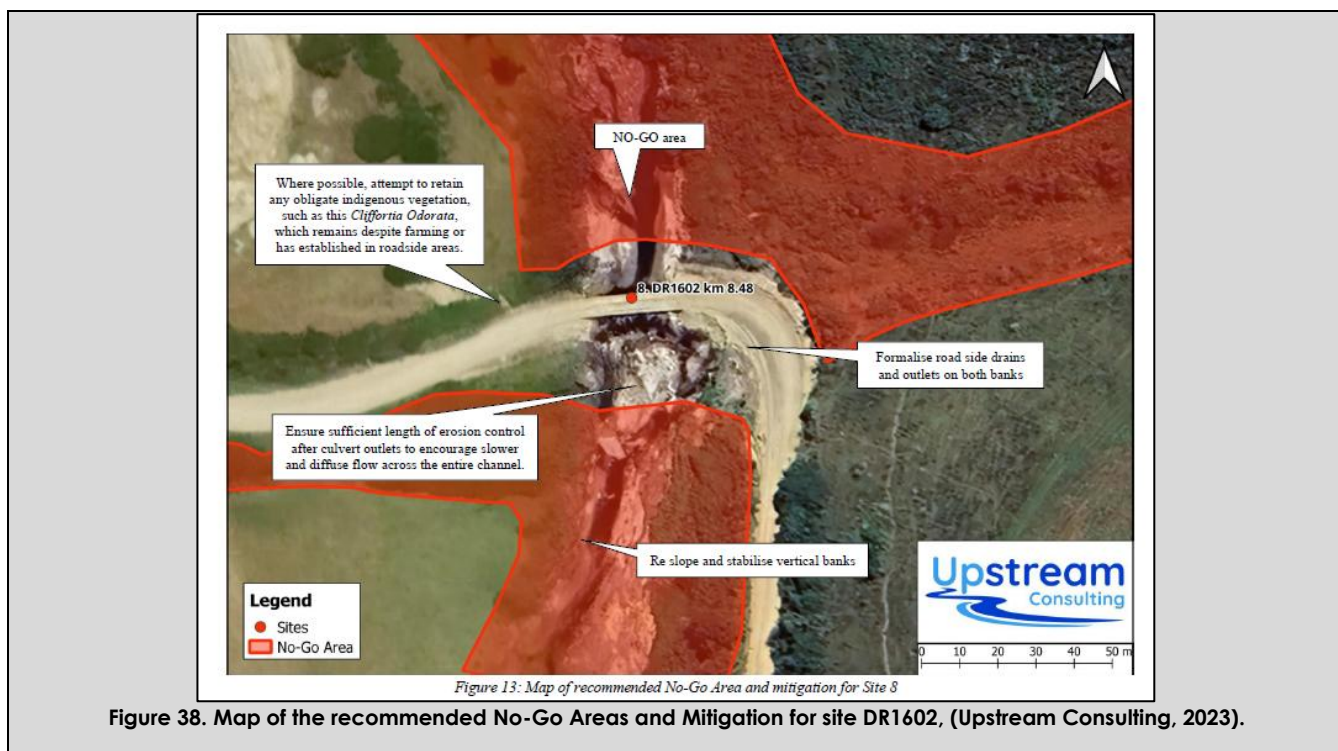
It is proposed the temporary deviation road to be created on the upstream side of the causeway. This is common practice. it is the upstream areas which are intact and, therefore, more sensitive in terms of aquatic biodiversity. It is recommended that the disturbance footprint on the upstream side be reduced. Construction (and any infilling for the bypass road) on the upstream side will require stringent monitoring and demarcation. Please note the recommended No-Go areas in the following map (Figure 38)

On the downstream side of the proposed site the causeway has already been significant changes to channel morphology due to modified flow and severe bed and bank erosion. In the downstream area, it is recommended that the eroding banks be re-sloped and stabilised. Especially where roadside drains are directing high velocity (sediment laden) surface runoff into the watercourse. The roadside drains and outlets should be formalised (baffles, riprap, gabion boxes, reno-mattress, and/or vegetated swales) to prevent erosion from road runoff and resultant sedimentation of the watercourse, as has occurred under present conditions. It is also recommended that the alien trees be removed along the relevant reach to prevent further long-term bank erosion.

Perhaps as another project phase, consider wetland rehabilitation interventions at intervals along the watercourse, such as resloping eroded banks, installing bed control structures (such as low gabion weirs to prevent further gully erosion and headcutting), slow confined flows, and allow for the wetland to reestablish. This will inadvertently increase the resilience of the ecosystem to provide services such as flood attenuation and the associated protection of downstream infrastructure.

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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 assessment criteria utilised in this environmental impact assessment is based on, and adapted from, the Guideline on Impact Significance, Integrated Environmental Management Information Series 5 (Department of Environmental Affairs and Tourism (DEAT), 2002) and the Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations (DEAT, 2006).

The impacts have henceforth been determined through the following parameters:

- The **extent** of the anticipated impact.
- The **duration** for which the impact will be exercised.
- The **probability** of occurrence of the anticipated impact.
- The **significance** of the anticipated impact.
- How **reversible** the anticipated impact would be.
- How **mitigable** the anticipated impact would be.
- The **degree of loss** of the resources.
- The **cumulative impact** of the anticipated aspect.
- The significance of the **consequence** of the aspect.

Determination of the Extent (Scale)

Site specific	On site or within 100m of the site boundary, but not beyond the property boundary
Local	The impacted area includes the whole or a measurable portion of the site and property, 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

- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
- Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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Temporary	The impact will be limited to the construction phase
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase.
Medium term	The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities.
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 probable	It is most likely that the impact will occur at some stage of the development. Plans 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 impact 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.
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 with 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 implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intensive mitigation measures
Barely Reversible	The impact is unlikely to be reversed even with 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 is reversible with implementation of minor mitigation measures
Can be partly mitigated	The impact is partly reversible but more intense mitigation measures
Can be barely mitigated	The impact is unlikely to be reversed even with intense mitigation measures
Not able to mitigate	The impact is irreversible, and no mitigation measures exist.

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.

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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.
Determination of Consequence significance	
Negligible	The impact would result in negligible to no consequences.
Low	The impact would result in insignificant consequences.
Medium	The impact would result in minor consequences.
High	The impact would result in significant consequences.

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 **below**.

Alternative:	The Proposed DR1602	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	Compliance with legislative requirements The proposed works are subject to a number of approvals and permits from various spheres of the environment. Commencement of activities without all relevant permits/permissions/approvals including registered servitudes, permits to remove specific vegetation, etc. as well as commencing without implementation of specialist recommendations, including search and rescue, and compliance with EMP pre-construction activities, can result in penalties, time delays and excessive costs. All stemming from poor planning. Climate change considerations need to be addressed at this stage, and where possible, adaption/mitigation measures found to be feasible must be integrated into the final design/planning during construction, and financial provision must be made where necessary.	No change in the status quo
Nature of impact:	Negative	No impact
Extent and duration of impact:	Local / Short to medium term	
Consequence of impact or risk:	- Non-compliance with the relevant approvals - Penalties or fines to be issued	
Probability of occurrence:	Low	
Degree to which the impact may cause irreplaceable loss of resources:	Low	
Degree to which the impact can be reversed:	Reversible	
Indirect impacts:	Increased traffic impacts as a result of the status quo of the existing infrastructure.	
Cumulative impact prior to mitigation:	Medium	
Significance rating of impact prior to mitigation	Medium	

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(e.g. Low, Medium, Medium-High, High, or Very-High)		
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	General mitigation: • Ensure programme of works is planned accordingly and includes recommended measures where necessary, such as implementing search and rescue activities. • Ensure financial allowances are made for the recommended measures, such as search and rescue plans, rehabilitation, etc. • Ensure all relevant permits/licenses/approvals are in place and are valid prior to commencing with works. • Ensure that the Contractor has accepted the approved EMP and Environmental Authorization (and any other relevant permits/licenses, etc), as a part of their Tender Document, to ensure that they are fully aware of their responsibilities in terms of the implementation of these documents. • Ensure that the Contractor provides method statements for activities intended to be undertaken, and these are checked and approved by the ECO as well as the Engineer. • Inform ECO of planned works ahead, so as to ensure inductions are undertaken timeously. • Involve ECO in selection of site camp location. • Upon detailed design phase, additional signage is to be included to enhance the safety of the road. These safety signs include, but are not limited to the inclusion of road junction signs indicating major access roads into existing establishments. • Climate Change Considerations including adaption, must be integrated into the final design, and mitigation must be integrated into the construction scope of works, where necessary, all financial provision must be made: • Utilise hand sanitiser for washing hands. • Request that labour use their own water bottles, to be filled up, rather than drinking from taps	
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	No impact
Potential impact and risk:	Site establishment and Pre-construction activities Poor site establishment can lead to long-term issues on site. Failure to appropriately designate working corridors can result in works exceeding the approved assessed footprint, resulting in non-compliance and potentially penalties and delays.	
Nature of impact:	Negative	

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Extent and duration of impact:	Local and short-medium term	No change to the status quo of the site
Consequence of impact or risk:	- Site camp location may create issues and can lead to additional listed activities. - Non-compliance with approved documentation.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Low	
Degree to which the impact can be reversed:	Reversible	
Indirect impacts:	Penalties, fines and time delays	
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 (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	<u>General:</u> - Inform ECO of planned works ahead, to ensure inductions are undertaken timeously. - Involve ECO in selection of site camp location. - Ensure all labour and sub-contractors undergo environmental inductions. - Ensure all permits are obtained – allow at least 1 or 2 months before commencement. - Environmental Awareness and training (EAT) – Ensure all labour are informed and plant operators are aware of risks, issues, dos and don'ts and no-go areas. <u>Landowners:</u> - Notify landowners of the construction programme to ensure that they are aware that construction activity may bring about delays/obstructions as well as ensuring that they are aware of any risks. - Ensure clear signage is erected on the access road. - Ensure that landowners are notified before private roads are crossed and this is done in a timeous and practical manner in order to ensure access is always available. <u>Site Camp Establishment:</u>	

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	• Ensure site selected is inspected and approved by ECO. • Utilize disturbed or transformed areas for site camp establishment. • Ensure the site camp is positioned on a levelled area and is easily accessible. • Ensure site camp is fenced off with appropriate fencing and shade cloth, to block out activities within. • Ensure access to site is at one point, unless to existing points of entry/exit are identified. • Ensure access onto site is controlled. • Ensure there is 24hr security, if required. • Designate specific areas for specific purpose, including storage areas, machinery storage areas, parking areas, waste disposal areas, etc. • Ensure an Environmental File is established on site that remains on site for the duration of construction, for auditing purposes. This file should contain as a minimum: ○ Copies of audit reports. ○ Copies of disposal/cleaning slips related to waste disposal at a registered waste disposal site and from company appointed to clean toilets. ○ Copies of purchase orders for rehabilitation material etc. ○ Copies of all approvals, including: Environmental Authorization, EMP, and any other license/permit/approval. ○ Incident register. ○ Complaints register. ○ Copies of induction registers. • Infographics must be available on site in public areas, including information on safety measures, potential harmful fauna (ie. snakes common to the areas, and emergency contact information, including, but not limited to: Snake catchers, Ambulance; Fire Department; the closest hospital, veterinarian (ie: for anti-venom, etc). • Must contain a spill-kit. • Plan positioning of Potable Toilets for labour working along the route. • Consider designating a vehicle for the transportation of labourers to toilets> the vehicle can be equipped with a spill-kit. • Clean potable water must be available to workers on site during construction. Portable Toilets: • Ensure toilets are positioned on levelled areas and are protected from wind and rain that could result in them blowing over and spilling waste contents. • Ensure toilets are positioned at least 32m's from any watercourse. • Ensure toilets are rented from a registered company, with whom arrangements should be made for cleaning of these toilets on a weekly basis. • Disposal slips/cleaning slips from this company must be obtained following every cleaning and must be filed in the Environmental File.	
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	• Ensure an adequate quantity of toilets are provided at each working area. • Hazardous substances including oil/fuel etc. should be: • Stored in bunded areas, on hardened/impermeable surfaces, where the barrels/drums/containers are protected from the natural elements. • Appropriate signage indicating hazardous/flammable materials are stored. • A fire extinguisher and contact details for the fire department and other emergency numbers must be positioned in close proximity. • May only be decanted/filled on the aforementioned surface. • Must be disposed of as hazardous waste, at an appropriately registered facility. <u>Hazardous Substances:</u> • Stored in bunded areas, on hardened/impermeable surfaces, where the barrels/drums/containers are protected from the natural elements. • Appropriate signage indicating hazardous/flammable materials are stored. • A fire extinguisher and contact details for the fire department and other emergency numbers must be positioned in close proximity. • May only be decanted/filled on the aforementioned surface. • Must be disposed of as hazardous waste, at an appropriately registered facility. <u>Waste Management:</u> • Designate areas for temporary waste storage, this area should be: • Protected from wind/rain displacement. • Should be on a levelled surface. • An appropriate number of skips/bins must be made available on site, to accommodate the various types of waste generated, as waste must be separated. • Ensure weighted covers are positioned on skips/bins, to ensure that animals cannot get into the bins as well as to avoid waste dispersion. • Label bins appropriately. • Ensure that the nearest appropriate waste disposal facility is identified and ensure that disposal is undertaken when waste has reached 75% capacity of the bin/skip. • Waste containers for general waste and hazardous waste must be disposed in appropriate and clearly marked containers and kept in a designated area/s. • No waste/excavated soil/ etc. intended to be removed from site may remain on site for more than 90-days. • Ensure waste receptacles are available where works are being undertaken, this can take the form of black bin bags, etc. however it must: • Be sufficient to hold the waste without tearing/spilling.	
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	- It must be removed from working area on a daily basis and re-established at the start of every day, when works occurs in that area. - Request that the foreman responsible for the labour team in a specific area, is responsible for ensuring that this waste receptacle is utilized, removed and established daily. Working Corridor: - Designate working corridor, where possible and especially in sensitive areas (ie. forest areas and watercourses/riparian areas), utilize the smallest possible working corridor. - Utilize a physical barrier to indicate the extent of the working corridor, ie. poles and mesh fencing. - Refer to EMPr for areas indicated as very sensitive, to ensure that the working corridors in these areas are reduced as much as possible.	
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	No impact
CONSTRUCTION PHASE		
Potential impact and risk:	Erosion, Earthworks and Land Clearance	
Nature of impact:	Negative	No Impact
Extent and duration of impact:	Site specific / Medium term	
Consequence of impact or risk	Susceptibility of some areas to erosion because of construction related disturbances due to of vegetation cover and soil disturbance in and around the watercourse, as well as alien invasive encroachment and management is needed.	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Medium	
Degree to which the impact can be reversed:	Partly reversable	
Indirect impacts:	- Alien invasive encroachment. - Erosion of banks and sediments	
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:	Partly avoided	

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Degree to which the impact can be managed:	Manageable (Can be managed)	
Degree to which the impact can be mitigated:	Medium (Can be partly mitigated)	
Proposed mitigation:	<u>General mitigation measures:</u> • Ensure working corridor is demarcated appropriately. • Ensure the working corridor is not excided. • Take into account sloped areas. • Be mindful of rainfall events, and plan construction works during dry season where possible. • Ensure programme of works includes rehabilitation after. • Ensure ALL works on site, remain within the working corridor (this includes stockpiling, if necessary, on site). <u>Stockpiling:</u> • Ensure stockpiles do not exceed 2m's in height. • Prohibit stockpiling of material close to slopes. • Ensure stockpiles are bundled, and if necessary, cover with shade cloth to avoid loss of material. • Separate topsoil and subsoils during excavations. • Remove alien invasives/weeds established on stockpiled soils prior to re-instatement. • Continue with weed management throughout construction, in line with the EMPr. <u>Excavations:</u> • Ensure excavations are undertaken as per specifications. • Ensure that excavations are not left open overnight. If it is necessary to do so, the working corridor demarcation must be checked by the safety officer to ensure that there is no potential for encroachment by fauna or people. The excavation may need to be covered using metal sheeting or other somewhat rigid cover. • No excavations may be left open overnight if rain is predicted. • Integrate shoring measures if pit walls are collapsing. <u>Exposed surfaces:</u> • Implement weed management measures as detailed in the EMPr. • After backfilling an area, immediately commence with rehabilitation, as detailed in the EMPr, and continue with weed management. • Ensure dust creation is controlled, as detailed in the EMPr. • No surface should be left exposed for extended periods of time. <u>Alien invasive management:</u> • Ensure that alien invasive species are identified, and measures are taken to consistently remove alien invasive species from within the development footprint – implement weed management plan/alien invasive management plan as per EMPr.	

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	• Stockpiled alien invasive species cleared from site, should be contained and removed from site as soon as possible, so as to not allow dispersal. • Indigenous vegetation must be utilized where possible. • Implement rehabilitation plan. <u>Erosion Management:</u> • Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. • If natural vegetation re-establishment does not occur, a suitable grass must be applied. • Be mindful of weather conditions that may cause runoff. • Utilize silt fences, if necessary, at demarcated working corridor fence line, to capture runoff. <u>Stormwater management :</u> • Stormwater Management Plans must be developed for the site and should include the following: • The management of stormwater during construction. • The installation of stormwater and erosion control infrastructure. The management of infrastructure after completion of construction. • Diversion channels should be constructed ahead of the open cuts, and above emplacement areas and stockpiles to intercept clean runoff and divert it around disturbed areas into the natural drainage system downstream of the site. • Rehabilitation is necessary to control erosion and sedimentation of all eroded areas (where work will take place). • Visual inspections will be done on a regular basis with regard to the stability of the water control structure, erosion and siltation. <u>Soil Aspects</u> • Sufficient topsoil must be stored for later use during decommissioning, particularly from outcrop areas. • Topsoil shall be removed from all areas where physical disturbance of the surface will occur prior to commencement of any operations. • The removed topsoil shall be stored on high ground • Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of road. • The stockpiled topsoil shall be protected from being blown away or being eroded. The application of a suitable grass seed/runner mix will facilitate this and reduce the minimise weeds. • Rehabilitation of Processing and Excavation Areas • On completion of construction, the surface of the processing areas especially if compacted due to hauling and dumping operations shall be scarified to a depth of at least 200 mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area • The area shall be fertilised, if necessary, to allow vegetation to establish rapidly. The site shall be seeded with suitable grasses and local indigenous seed mix.	
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	- Waste (non-biodegradable refuse) will not be permitted to be deposited in the excavations. - If a reasonable assessment indicates that the reestablishment of vegetation is unacceptably slow, the ECOMay require that the soil be analysed and any deleterious effects on the soil arising from the activity, be corrected and the area be seeded with a vegetation seed mix to his or her satisfaction. - Final rehabilitation must comply with the requirements mention in the Rehabilitation Plan. Monitoring: - Bush clearing - Ensure working plant has no oil or hydraulic leaks - Check delineated footprints area not exceeded - Regular checks on trenches for trapped animals and possible drowning risks. - Regular demarcation tape.	
Residual impacts:	None.	
Cumulative impact post mitigation:	Medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	
Potential impact and risk:	Impact on Agricultural Resources Based on the site located within agriculture this impact has been considered. However, there will be no significant impact on the Agricultural resources of the area. This is due to the absence of cultivated land within the footprint of the proposed development site. The proposed footprint of the development does not impinge anywhere on these pasture croplands.	
Nature of impact:	Negative	No impact
Extent and duration of impact:	Site specific / short term	
Consequence of impact or risk:	Loss of agricultural resources	
Probability of occurrence:	Negligible	
Degree to which the impact may cause irreplaceable loss of resources:	Negligible	
Degree to which the impact can be reversed:	Completely reversible	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Negligible	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Negligible (-)	
Degree to which the impact can be avoided:	High	

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Degree to which the impact can be managed:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	General mitigation: - A minimum footprint approach must be followed for the purpose of the works associated with the proposal. - Site camp to be in an already disturbed area, within the road reserve.	
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Negligible (-)	No impact
Potential impact and risk:	Aquatic impact: Disturbance of aquatic habitat biota from clearance of vegetation, earthworks, bypass road, and further invasive alien plant infestation	
Nature of impact:	Negative	No impact
Extent and duration of impact:	Regional/ Long-term	
Consequence of impact or risk:	Can result in deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Partial Loss	
Degree to which the impact can be reversed:	Barely	
Indirect impacts:	Highly probable	
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:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	- Aquatic Specialist recommendation:	

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	- A construction method statement must be compiled and available on site. Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. - It must consider the No-Go area and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the watercourse. - The final designs, layouts, and construction methods/disturbance area should be approved by the aquatic specialist prior to commencement. - The agreed-upon construction boundary must be clearly demarcated. - Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. Stay away from tributaries and do not alter their confluences. - Prior to commencement, any instream vegetation in the construction corridor must be moved to a similar location instream, outside of the working area, permanently, or for use in rehabilitation. - Vegetation removal must be avoided as far as possible. Bare areas on the banks must be covered with geotextiles or revegetated to prevent sediments eroding into the watercourse. - Remove any alien plant species within the working corridor and as far as possible along the reach. - Stockpiles must not be located within 50 metres of the riparian zone. The furthest threshold must be adhered to. Erosion control measures including silt fences, low soil berms and/or shutter boards must be put in place around the stockpiles to limit sediment runoff from stockpiles. - Where possible, construction activities should be conducted during the drier months of the year to minimise the possibility of erosion, sedimentation and transport of suspended solids associated with disturbed areas and rainfall events. Planning for such a situation must be undertaken. - Coarse bedding material or geotextile wrapped dump rock must be considered for bypass roads. Or a similar design which can be easily removed without causing sediment to remain in the watercourse. Consider narrower bypass roads. - Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities. - Monitoring should be conducted before commencement to confirm demarcations are in place, every second day during construction within the river, and bi-weekly post-construction for a period of three months or until fully rehabilitated according to ECO.	
Residual impacts:	Very low	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact

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Potential impact and risk:	Aquatic impact: Sedimentation and erosion. Excavation and infilling in the river and sediment laden surface stormwater runoff entering from road side drains.	
Nature of impact:	Negative	No Impact
Extent and duration of impact:	Regional/ long-term	
Consequence of impact or risk:	Poorly designed or constructed causeway outlets can cause confined flow and erosion downstream. These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for flora & fauna.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Barley	
Indirect impacts:	Highly probable	
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:	Moderate	
Degree to which the impact can be managed:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	Aquatic Specialist recommendation: - The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to pre-erosion state. - The design must allow for unhindered longitudinal flow through the structures and erosion protection downslope with energy dissipaters such as dense baffles. - The stormwater road side drains and outlets should be formalised and stabilised to manage the increase of surface water flows directly into any natural systems. - Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, etc. - All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable. - Construction must have contingency plans for high rainfall events during construction.	

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	- The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to a more natural state. - Any bypass roads or working areas must be fully rehabilitated to the preconstruction condition at a minimum. - Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters. The project has been registered under the applicable General Authorisation issued in terms of Section 39 of the National Water Act, with the following requirements: - Limitation of disturbance: Activities within the watercourse must be restricted to the smallest practicable footprint and shortest feasible duration, with no unnecessary widening or extension of disturbance beyond the approved footprint. - Protection of aquatic habitat and flow: Natural flow regimes must be maintained as far as practicable during construction, and measures must be implemented to prevent excessive sedimentation, erosion, or scouring of the riverbed and banks. - Pollution prevention: No hydrocarbons, cement, concrete, chemicals, fuels, or other hazardous substances may enter the watercourse. All construction materials and plant must be managed in accordance with the GA conditions and method statements. - Vegetation management and rehabilitation: Clearing of indigenous riparian vegetation must be minimised. All disturbed areas within the watercourse and riparian zone must be rehabilitated post-construction using appropriate indigenous species. - Alien invasive species control: Disturbed areas must be monitored and managed to prevent the establishment and spread of alien invasive plant species, in line with the Aquatic Biodiversity Specialist Assessment and the EMPr (Appendix G). - Monitoring and compliance: An Environmental Control Officer (ECO) must oversee compliance with the GA conditions, specialist recommendations, and the EMPr during construction.	
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	No impact
Potential impact and risk:	Aquatic impact: Change in instream flow patterns on hydrological form and function during the construction phase.	
Nature of impact:	Negative	No impact – Status quo remains as is
Extent and duration of impact:	Regional and permanent	

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Consequence of impact or risk:	Altered instream flow hydraulics due to different design resulting in form and function changes within aquatic habitat. The impact can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services, but positive impacts if designed to mimic more natural flow pattern and channel morphology.	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Barley	
Indirect impacts:	Highly probable	
Cumulative impact prior to mitigation:	Low	
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:	Low	
Degree to which the impact can be mitigated:	Partly	
Proposed mitigation:	<u>Aquatic Specialist recommendation:</u> - The design must allow for unhindered longitudinal flow through the structures and erosion protection downslope with energy dissipaters such as dense baffles. - Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. - The stormwater management infrastructure, such as road side drains, must be designed to ensure the runoff is not highly concentrated before entering the riparian area. - Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil and side drain outlets. Contingency plans must be in place for high rainfall events which may occur during construction. - The bypass roads must allow for longitudinal flow with no scour at any diversion outlets. The bypass material must be removed, and the channel morphology and substrate be reinstated. - The project will need to comply with all regulations of the National Water Act (Act 36 of 1998), including the protection of downstream users, and minimis any potential ecological impacts upon water resources. The conditions of General Authorisation which must be adhered to for Low impact projects. These conditions of general authorisation are as follows: Conditions for impeding or diverting the flow of water or altering the bed, banks, course or characteristics of a watercourse (Government Notice R509 of 2016)	

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	(1) The water user must ensure that: (a) impeding or diverting the flow or altering the bed, banks, course or characteristics of a watercourse do not detrimentally affect other water users, property, health and safety of the general public, or the resource quality; (b) the existing hydraulic, hydrologic, geomorphic and ecological functions of the watercourse in the vicinity of the structure is maintained or improved upon; (c) a full financial provision for the implementation of the management measures prescribed in this General Authorisation, including an annual financial provision for any future maintenance, monitoring, rehabilitation, or restoration works, as may be applicable; and (d) upon written request of the responsible authority, they implement any additional management measures or monitoring programmes that may be reasonably necessary to determine potential impacts on the water resource or management measures to address such impacts. (2) Prior to the carrying out of any works, the water user must ensure that all persons entering on -site, including contractors and casual labourers, are made fully aware of the conditions and related management measures specified in this General Authorisation. (3) The water user must ensure that - (a) any construction camp, storage, washing and maintenance of equipment, storage of construction materials, or chemicals, as well as any sanitation and waste management facilities - (i) is located outside the 1 in 100 year flood line or riparian habitat of a river, spring, lake, dam or outside any drainage feeding any wetland or pan, and (this is not possible as the entire valley floor through the poort will be within the floodline. However, the abovementioned activities must be located in areas outside of riparian habitat and as far as possible, such as at rest stops) (ii) is removed within 30 days after the completion of any works. (b) The water user must ensure that the selection of a site for establishing any impeding or diverting the flow or altering the bed, banks, course or characteristics of a watercourse works: (i) is not located on a bend in the watercourse; (this is not possible for this project as some work is on the existing bridges that are located near bends in the river) (ii) avoid high gradient areas, unstable slopes, actively eroding banks, interflow zones, springs, and seeps; (iii) avoid or minimise realignment of the course of the watercourse; (iv) minimise the footprint of the alteration, as well as the construction footprint so as to minimise the effect on the watercourse. (c) The water user must ensure that a maximum impact footprint around the works is established, clearly demarcated, that no vegetation is cleared or damaged beyond this demarcation, and that equipment and machinery is only operated within the delineated impact footprint. (d) The water user must ensure that measures are implemented to minimise the duration of disturbance and the footprint of the disturbance of the beds and banks of the watercourse. (e) The water user must ensure that measures are implemented to prevent the transfer of biota to a site, which biota is not indigenous to the environment at that site. (f) The water user must ensure that all works, including emergency alterations or the rectification of incidents, start upstream and proceed in a downstream direction, to ensure minimal impact on the water resource.	
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FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

	(g) The water user must ensure that all material excavated from the bed or banks of the watercourse are stored at a clearly demarcated location until the works have been completed, upon which the excavated material must be backfilled to the locations from where it was taken (i.e. material taken from the bed must be returned to the bed, and material taken from the banks must be returned to the banks). (h) The water user must ensure that adequate erosion control measures are implemented at and near all alterations, including at existing structures or activities with particular attention to erosion control at steep slopes and drainage lines. (i) The water user must ensure that alterations or hardened surfaces associated with such structures or works - (i) are structurally stable; (ii) do not induce sedimentation, erosion or flooding; (iii) do not cause a detrimental change in the quantity, velocity, pattern, timing, water level and assurance of flow in a watercourse; (iv) do not cause a detrimental change in the quality of water in the watercourse; (v) do not cause a detrimental change in the stability or geomorphological structure of the watercourse; and (vi) does not create nuisance condition, or health or safety hazards. (j) The water user must ensure that measures are implemented at alterations, including at existing structures or activities, to - (i) prevent detrimental changes to the breeding, nesting or feeding patterns of aquatic biota, including migratory species; (ii) allow for the free up and downstream movement of aquatic biota, including migratory species; and (iii) prevent a decline in the composition and diversity of the indigenous and endemic aquatic biota. (k) The water user must ensure that no substance or material that can potentially cause pollution of the water resource is being used in works, including for emergency alterations or the rectification of reportable incidents. (l) The water user must ensure that measures are taken to prevent increased turbidity, sedimentation and detrimental chemical changes to the composition of the water resource as a result of carrying out the works, including for emergency alterations or the rectification of reportable incidents. (m) The water user must ensure that in- stream water quality is measured on a weekly basis during construction, including for emergency alterations or the rectification of reportable incidents, which measurement must be by taking samples, and by analysing the samples for pH, EC/TDS, TSS/Turbidity, and /or Dissolved Oxygen ("DO ") both upstream and downstream from the works. (n) The water user must ensure that in- stream flow, both upstream and downstream from the works, is measured on an ongoing basis by means of instruments and devices certified by the South African Bureau of Standards ("SABS "), and that such measurement commences at least one week prior to the initiation of the works, including for emergency alterations or the rectification of reportable incidents. (o) During the carrying out of any works, the water user must take the photographs and video- recordings referred to in paragraph (p) below, on a daily basis, starting one (1) week before the commencement of any works, including for emergency structures and the rectification of reportable incidents, and continuing for one (1) month after the completion of such works:	
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	(p) The following videos recordings and photographs must be taken as contemplated in paragraph (o) above: (i) one or more photographs or video -recordings of the watercourse and its banks at least 20 meters upstream from the structure; (ii) one or more photographs or video -recordings of the watercourse and its banks at least 20 meters downstream from the structure; and (iii) two or more photographs or video -recordings of the bed and banks at the structure, one of each taken from each opposite bank. (4) Upon completion of any works, the water user must ensure that the hydrological functionality and integrity of the watercourse, including its bed, banks, riparian habitat and aquatic biota is equivalent to or exceeds that what existed before commencing with the works.		
Residual impacts:	Low		
Cumulative impact post mitigation:	+ Medium (Positive)		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	+ Low (Positive)		No impact
Potential impact and risk:	Aquatic impact: During construction, earthworks will expose and mobilise earth materials, and a number of materials as well as hydrocarbons/ cement/ chemicals may end up in the surface water.		
Nature of impact:	Negative		No impact – Status quo remains as is.
Extent and duration of impact:	Regional and medium-term		
Consequence of impact or risk:	This can result in possible deterioration in aquatic ecosystem integrity and species diversity.		
Probability of occurrence:	Probable		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss		
Degree to which the impact can be reversed:	Reversible		
Indirect impacts:	Probable		
Cumulative impact prior to mitigation:	Medium		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium-Low	Medium-Low	
Degree to which the impact can be avoided:	High		
Degree to which the impact can be managed:	High (Can be managed)		
Degree to which the impact can be mitigated:	High (can be mitigated)		
Proposed mitigation:	Aquatic Specialist recommendation:		

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	- Spills or leaks from vehicles or machinery must be entirely avoided. Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channel and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks. - Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered site. - Sedimentation must be minimised with appropriate measures. - Where possible, construction activities should be conducted during the drier months of the year. - All post-construction building material and waste must be cleared in accordance with the EMPr. The solid domestic waste must be removed and disposed of offsite. - Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use, for the necessity, type proposed to be used, effectiveness and impacts of the product on aquatic biota. - Construction must be immediately followed by rehabilitation.	
Residual impacts:	Negligible	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	No impact
Potential impact and risk:	Animal Biodiversity: Impact of the project on animal and avi-faunal species	
Nature of impact:	Negative (-)	No impact – Status quo remains as is
Extent and duration of impact:	Site Specific / Medium term	
Consequence of impact or risk:	Loss of faunal species due to the disturbance of their habitat.	
Probability of occurrence:	Low	
Degree to which the impact may cause irreplaceable loss of resources:	Completely reversible	
Degree to which the impact can be reversed:	Reversible	
Indirect impacts:	Loss of biodiversity	
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:	Partially avoided	

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Degree to which the impact can be managed:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	General Mitigation: Before construction can commence, a general sweep of the area is required to make sure no faunal and avi-faunal species are on site.	
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Potential impact and risk:	General management: Pollution of hydrocarbons due to spills and leaks	No impact – Status quo remains as is
Nature of impact	Negative (-)	
Extent and duration of impact:	Site specific / Short term	
Consequence of impact or risk:	During construction activities, there is a risk of contamination as a result of spills and leaks occurring on site.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Partial loss to natural resources	
Degree to which the impact can be reversed:	Cannot be reversed	
Indirect impacts:	Contamination of the shallow groundwater table	
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 (Can be largely avoided)	
Degree to which the impact can be managed:	Medium (Can be partly managed)	
Degree to which the impact can be mitigated:	Medium (Can be partly mitigated)	
Proposed mitigation:	General: - Spill kits must be available on site at all times. - Where fuelling does occur on site, a drip tray must be used to contain any spilled fuel.	

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	- All construction vehicles must be equipped with drip trays at all times. - No maintenance activities may occur on site for the duration of the construction phase. - Where emergency maintenance is required, such maintenance must be communicated with the independent Environmental Control Officer appointed to oversee the alignment of the construction works with the applicable environmental legislation. - All construction buffers, as requested by the aquatic specialist, must be adhered to. The construction site camp must also adhere to the construction limits (30m away from the edge of any identified watercourses).	
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	No impact
Potential impact and risk:	General nuisances: Noise, dust, light, and general housekeeping	
Nature of impact	Negative	No impact – Status quo remains as is
Extent and duration of impact:	Site specific / temporary	
Consequence of impact or risk:	Based on the site characteristics there is a risk of dust pollution and rock slides during the blasting and excavation activities, that will also cause noise.	
Probability of occurrence:	Highly probable	
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely	
Degree to which the impact can be reversed:	Completely reversible	
Indirect impacts:	- Poor visibility due to the dispersal of dust - Safety risk due to rock fragments in the road and watercourse - Site camp lights impairing drivers' vision - Effects on human and animal health from noise impacting on hearing and disturbances on animals within the area.	
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:	Can be avoided	
Degree to which the impact can be managed:	Can be completely managed	

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Degree to which the impact can be mitigated:	Can be partly mitigated	
Proposed mitigation:	<u>Dust:</u> - Dust suppression methods, such as non-potable water spraying must be used during the construction phase of the proposed refurbishment project. - Vehicular speed must be controlled at all times with no indiscriminatory driving permitted by any construction vehicles, or the general public. <u>Noise:</u> - All construction vehicles must be equipped with muffled reverse sirens (which are to the standard of the Occupational Health & Safety Act (Act 85 of 1993). - No constructions activities are permitted between 17:00 and 7:00 unless previously agreed upon between the Contracting team and the Municipality. - Construction workers are to remain within the designated site boundary at all times. - Eating areas are to be located away from any residential units/homesteads and tourists attractions within proximity to the current working areas. <u>Lights:</u> - Lights must be positioned in such a way so as to not shine directly ahead onto the road during nighttime hours (i.e. must be positioned facing downward). - Where practically possible, low intensity lighting must be used for areas which requires to be illuminated. <u>General housekeeping:</u> - A clean site policy must be adopted at all time during the construction phase. - Where possible, storage and disposal of waste must take place in a sustainable manner, where clearly marked recycle bins must be provided to workers at the site camp.	
Residual impacts:	None	
Cumulative impact post mitigation:	Low-Medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	No impact
Potential impact and risk:	Road safety: Traffic Impacts and Road Safety	No impact – Status quo remains as is
Nature of impact	Negative	
Extent and duration of impact:	Site Specific / Long term	
Consequence of impact or risk:	The constructed deviation road will need to have proper signage, demarcations that will direct and facilitate traffic flow.	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource	

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Degree to which the impact can be reversed:	Barely reversible	
Indirect impacts:	Delayed travel time for commuters travel along the causeway.	
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 (can be avoided)	
Degree to which the impact can be managed:	High (can be completely managed)	
Degree to which the impact can be mitigated:	High (can be partly mitigated)	
Proposed mitigation:	<u>General:</u> • Proper signage must be used and signage must align with the National Road Traffic Act (Act No. 93 of 1996). • Adequate signage, that is both informative and cautionary to passing traffic (motorists and pedestrians), warning them of the construction activities must be suitably located in the area where the construction is occurring and must be easily visible by all road users. Signage needs to be clearly visible and needs to include, among others, the following: ◦ Identifying working area as a construction site; ◦ Cautioning against relevant construction activities; ◦ Prohibiting access to construction site; ◦ Clearly specifying possible detour routes and/or delay periods; ◦ Possible indications of time frames attached to the construction activities, and; ◦ Details of responsible contractors and engineers are working on the site. • Construction activities will not be planned over the December/January high-season (i.e. between 15 December and 6 January) as well as the Easter holidays. • The procedures outlined in the Communication Plan of the Department of Infrastructure (the Applicant) must be implemented for the proposed project.	No impact
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	
Potential impact and risk:	Plant biodiversity: Impact of the project on indigenous flora	
Nature of impact	Negative (-)	
Extent and duration of impact:	Site Specific /Long term	

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Consequence of impact or risk:	Loss of irreplaceable indigenous vegetation resources, due to land clearing.	
Probability of occurrence:	Low	
Degree to which the impact may cause irreplaceable loss of resources:	Partly reversable	
Degree to which the impact can be reversed	Medium	
Indirect impacts:	Loss of biodiversity	
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:	Partially avoided	
Degree to which the impact can be managed	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be managed)	
Proposed mitigation:	<u>General mitigation</u> The specialist confirmed there are no SCCs. However, before construction can commence, a general sweep of the area is required to make sure no indigenous plant species are located within the project site.	
Residual impacts:	None	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	
Potential impact and risk:	Socio-economic impacts: Employment opportunities	
Nature of impact	Positive	Negative
Extent and duration of impact:	Local / Long term	Regional / Permanent
Consequence of impact or risk:	Income provision to individuals employed during the construction phase.	No income generated as a result of the

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		construction phase activities
Probability of occurrence:	Definite	Definite
Degree to which the impact may cause irreplaceable loss of resources:	N/A	N/A
Degree to which the impact can be reversed:	N/A	N/A
Indirect impacts:	Quality of life of the labourers would be temporarily uplifted due to the capital influx for households.	N/A
Cumulative impact prior to mitigation:	Low	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	High
Degree to which the impact can be avoided:	N/A	Low (no avoidance of the impact)
Degree to which the impact can be managed:	Can be completely managed - as an organ of state, the applicant is to meet job creation targets. This is also in line with SANRAL's Strategy Plan.	Low
Degree to which the impact can be mitigated:	N/A	Low
Proposed mitigation:	General As far as possible, individuals from the local community must be employed. Especially for low to semi-skilled activities.	No mitigation measures applicable
Residual impacts:	None	None
Cumulative impact post mitigation:	Medium	High
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium-High (+)	Medium-High (-)
POST-CONSTRUCTION REHABILITATION / OPERATIONAL ACTIVITIES		
Potential impact and risk:	Road safety: Provision of safer roadway	
Nature of impact:	Positive	Negative
Extent and duration of impact:	Regional / permanent	Regional / permanent
Consequence of impact or risk:	A safer commute and a more pleasant experience to all users of the road.	
Probability of occurrence:	Definite	The current road condition remains as is
Degree to which the impact may cause irreplaceable loss of resources:	N/A	High
Degree to which the impact can be reversed:	N/A	Can be reversed
Indirect impacts:	N/A	Increased occurrences of

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		accidents along the route
Cumulative impact prior to mitigation:	Medium	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very High	Very High
Degree to which the impact can be avoided:	N/A	Can be avoided
Degree to which the impact can be managed:	N/A	Can be managed
Degree to which the impact can be mitigated:	N/A	Can be mitigated
Proposed mitigation:	No mitigation measures applicable (Positive impact).	Environmental Authorisation of the activities proposed is required
Residual impacts:	None	None
Cumulative impact post mitigation:	Very High	High
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very High (+)	High (-)
Potential impact and risk:	Aquatic impact: Poorly designed or constructed causeway outlets can cause confined flow and erosion downstream.	
Nature of impact:	Negative	No impact – Status quo remains as is
Extent and duration of impact:	Regional/Long-term	
Consequence of impact or risk:	These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for flora & fauna.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Barley	
Indirect impacts:	Highly Probable	
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:	Moderate	

FINAL BASIC ASSESSMENT REPORT FORM

FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

Degree to which the impact can be managed:	High (can be managed)	
Degree to which the impact can be mitigated:	High (can be mitigated)	
Proposed mitigation:	<u>Aquatic Specialist recommendation:</u> • The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to pre-construction state. • Flow across the width of the wetland must not be confined. The design must allow for unhindered longitudinal flow through the structure and erosion protection downslope with energy dissipaters such as dense baffles. • The stormwater road side drains and outlets should be formalised and stabilised to manage the increase of surface water flows directly into the watercourse. • Sedimentation must be minimised with appropriate measures. • Any bypass roads or working areas must be fully rehabilitated to the preconstruction condition at a minimum. Consider an upstream bypass if practical.	
Residual impacts:	Low	
Cumulative impact post mitigation:	Low	No impact
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	
Potential Impact and Risk:	Aquatic Impact: Change in instream flow patterns on hydrological form and function during the construction and into the operational phase.	No impact status quo remains as is.
Nature of Impact:	Negative	
Extent and duration of Impact:	Regional/Permanent	
Consequence of impact or risk:	Altered instream flow hydraulics due to different design resulting in form and function changes within aquatic habitat. The impact can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services, but positive impacts if designed to mimic more natural flow pattern and channel morphology.	
Probability of occurrence	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	Barley	
Indirect impacts:	Highly probable	
Cumulative impact prior to mitigation:	Medium	

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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 :	Low	
Degree to which the impact can be mitigated:	Partly	
Proposed mitigation:	<u>Aquatic Specialist recommendation:</u> - The stormwater management infrastructure, such as road side drains, must be designed to ensure the runoff is not highly concentrated before entering the riparian area. - Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil and side drain outlets. Contingency plans must be in place for high rainfall events which may occur during construction. - The project will need to comply with all regulations of the National Water Act (Act 36 of 1998), including the protection of downstream users, and minimise any potential ecological impacts upon water resources. Conditions for impeding or diverting the flow of water or altering the bed, banks, course or characteristics of a watercourse (Government Notice R509 of 2016) need to be adhered to for Low impact of the projects.	
Residual impacts:	Low	
Cumulative impact post mitigation:	+Low (Positive)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	

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.				
Specialist Company	Specialist Details	Sensitivity of receptors	Summary of findings	Specific structural components that will directly impact upon the resource	Summary of Management measures
HERITAGE OBSERVATIONS					
Point of Human Origins	Dr Peter Nilsen (Heritage Consultant)	Low	It was confirmed by the appointed Heritage Consultant, Dr Peter Nilsen (ASAPA Professional Member No. 097), that the proposed activities do not trigger the provisions of Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and that a Notification of Intent to Develop (NID) to Heritage Western Cape is therefore not required. At the request of the Project Engineer, a Heritage Statement was prepared and included in the final BAR as Appendix G4. The Heritage Statement concludes that, although portions of the existing road and causeway infrastructure are likely older than 60 years, these structures were substantially damaged during the 2023 flood events and do not possess structural, architectural or cultural heritage significance. The proposed works are limited to the replacement of flood-damaged road and culvert infrastructure within an already transformed road reserve and disturbed river crossing, and no heritage resources were identified within the temporarily or permanently affected areas. Consequently, the proposed works do not constitute the demolition of a protected heritage resource and a permit in	None of the heritage resources and features of interest identified by the appointed specialist will be impacted upon as a result of the proposed project.	No management measures have been recommended.

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			terms of Section 34 of the NHRA is therefore not required. Refer to Appendix G4 (Heritage Statement) for the detailed specialist assessment and supporting rationale. A precautionary Heritage Chance-Find Procedure has been incorporated into the Environmental Management Programme (EMPr). Should any archaeological, palaeontological, burial or other heritage material be uncovered during construction, all work within the immediate vicinity of the discovery must cease immediately and the Environmental Control Officer (ECO) must notify the appointed Heritage Specialist and/or Heritage Western Cape before works recommence.		
AQUATIC BIODIVERSITY ASSESSMENT					
Upstream Consulting	Debbie Fordham (Aquatic Consultant)	Very High	The proposed construction is to repair and upgrade a causeway and its culvert infrastructure, that is within the Varings river watercourse, as a result the watercourse will be directly impacted. Based on the specialist findings, both causeways proposed for replacement are within the Varings River (HGM1), however, in this lower reach, a channelled valley wetland has formed. HGM4 and HGM5 are seep wetlands which enter the Varings River wetland from the left and right banks, respectively. These systems have already been modified by the road. HGM6 is a tributary channelled valley bottom wetland which merges with the Varings river approximately 400m upstream of the causeway. Furthermore, the improved design of the causeways, with more openings, may result in positive impacts in the long-term.	Characterisation of hydrogeomorphic (HGM) types was conducted. Following the desktop findings, the infield site assessment on the 4th of November confirmed the location and extent of these systems. Subsequent screening provided an indication of which of these systems may potentially be impacted upon by the project. It was determined that two reaches along the Varings River will be directly impacted. The watercourse was therefore assessed in detail to determine the impact of the project. Impact assessment was undertaken for the following grouped potential	Herewith a summary of the impacts identified by the appointed specialist: Construction Phase & Operational Phase: • A construction method statement must be compiled and available on site. Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. • It must consider the No-Go area and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the watercourse. • The final designs, layouts, and construction methods/disturbance area should be approved by the aquatic specialist prior to commencement.

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			Present Ecological State (PES): The Present Ecological State (PES) of a river, watercourse or wetland represents the extent to which it has changed from the reference or near pristine condition (Category A) towards a highly impacted system where there has been an extensive loss of natural habit and biota, as well as ecosystem functioning (Category E). the Varings River has been subjected to habitat loss and disturbance from the narrow road culverts, encroachment of agricultural lands, and alien tree species infestation. These impacts upon the watercourse have resulted in a Moderately Modified state from the reference condition. The narrow culvert openings have replaced habitat and confined flow, resulting in sedimentation above structures and erosion below. Alien tree roots in the river banks increase bank erosion and collapse. Transformation of riparian and floodplain vegetation to pasture alters the hydrological inputs and retention patterns to the watercourse.	impacts, direct and indirect in nature: • Impact 1: Disturbance and loss of aquatic habitat and biota • Impact 2: Sedimentation and erosion, which could also occur into the operational phase • Impact 3: Hydrological changes • Impact 4: Potential impact on localised surface water quality The impact significance upon aquatic biodiversity for the project was determined as Low after mitigation. The impact assessment was based on a number of assumptions. At present, there are no detailed layout plans, civil designs, or construction method statements, and it is assumed that there will not be any significant expansion of the disturbed area or changes to road alignment. During construction there will be clearance of riparian vegetation, excavations of the bed and bank, infilling, diversion of flows, a bypass road, and potential for cement and fuel spills within the watercourse. The impacts can be decreased to acceptable levels provided that mitigation measures are implemented (including No-Go areas) and adhered to. The	• The agreed-upon construction boundary must be clearly demarcated. • Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. Stay away from tributaries and do not alter their confluences. • Prior to commencement, any instream vegetation in the construction corridor must be moved to a similar location instream, outside of the working area, permanently, or for use in rehabilitation. • Vegetation removal must be avoided as far as possible. Bare areas on the banks must be covered with geotextiles or revegetated to prevent sediments eroding into the watercourse. • Remove any alien plant species within the working corridor and as far as possible along the reach. • Stockpiles must not be located within 50 metres of the riparian zone. The furthest threshold must be adhered to. Erosion control measures including silt fences, low soil berms and/or shutter boards must be put in place around the stockpiles to limit sediment runoff from stockpiles. • Where possible, construction activities should be conducted during the drier months of the year to minimise the possibility of erosion, sedimentation and transport of suspended solids associated with disturbed areas and rainfall events. Planning for such a situation must be undertaken. • Coarse bedding material or geotextile wrapped dump rock must be considered for bypass roads. Or a similar design which can be easily removed without causing sediment to remain in the watercourse. Consider narrower bypass roads.
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				improved design of the causeways, with more openings, may result in positive impacts in the long-term. There should be stringent monitoring during construction in the river and post-construction rehabilitation must be appropriately costed for and undertaken in a sensitive manner. In conclusion, from an aquatic perspective, there are no fatal flaws associated with the project, provided all the mitigation measures are strictly adopted. The project has been registered under the applicable General Authorisation issued in terms of Section 39 of the National Water Act. Due to the low risk the activities pose, after mitigation, the project falls within the Ambit of General Authorisation for Section 21 (c) and (i) water uses. The General Authorisation was obtained on the 8th of December 2025. All GA conditions apply to the proposed project.	• Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities. • Monitoring should be conducted before commencement to confirm demarcations are in place, every second day during construction within the river, and bi-weekly post-construction for a period of three months or until fully rehabilitated according to ECO. • The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to pre-erosion state. • The design must allow for unhindered longitudinal flow through the structures and erosion protection downslope with energy dissipaters such as dense baffles. • The stormwater road side drains and outlets should be formalised and stabilised to manage the increase of surface water flows directly into any natural systems. • Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, etc. • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
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					• Construction must have contingency plans for high rainfall events during construction. • The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to a more natural state. • Any bypass roads or working areas must be fully rehabilitated to the preconstruction condition at a minimum. • Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters. • The design must allow for unhindered longitudinal flow through the structures and erosion protection downslope with energy dissipaters such as dense baffles. • Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. • The stormwater management infrastructure, such as road side drains, must be designed to ensure the runoff is not highly concentrated before entering the riparian area. • Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil and side drain outlets. Contingency plans must be in place for high rainfall events which may occur during construction. • The bypass roads must allow for longitudinal flow with no scour at any diversion outlets. The bypass material must be
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					removed, and the channel morphology and substrate be reinstated. •The project will need to comply with all regulations of the National Water Act (Act 36 of 1998), including the protection of downstream users, and minimise any potential ecological impacts. upon water resources. shows the conditions of General Authorisation which must be adhered to for Low impact projects. Found within the - Conditions for impeding or diverting the flow of water or altering the bed, banks, course or characteristics of a watercourse (Government Notice R509 of 2016) •Spills or leaks from vehicles or machinery must be entirely avoided. Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channel and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks. •Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered site. •Sedimentation must be minimised with appropriate measures. •Where possible, construction activities should be conducted during the drier months of the year. •All post-construction building material and waste must be cleared in accordance with the EMPr. The solid domestic waste must be removed and disposed of offsite. •Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use, for the
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					necessity, type proposed to be used, effectiveness and impacts of the product on aquatic biota. •Construction must be immediately followed by rehabilitation.
Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement					
Enviro Works.	Megan Smith & Edmari Lewis (Ecological Specialists)	Low	Terrestrial Theme: During the investigation the specialist has regarded the site to be of low terrestrial sensitivity as opposed to the screening tool regarding the area as being very high. The specialist concluded that based on the area already being degraded and the ecological state already been disturbed in the area, and that its unlikely to affect the Garden Route Biosphere Reserve (GRBR). The site is highly vegetated by alien invasive species and therefore will minimally impact on the GRBR and its ecological state. The specialist also concluded the compliance statement that the construction site footprint has a low value of Ecological Importance (SEI). Plant Theme: During the investigation the specialist has regarded the site to be of low plant sensitivity as opposed to the screening tool regarding the area as being a medium sensitivity. The site is highly degraded and disturbed. The specialist recorded (30) plant species on site, each of them are rated as 'least concern' or 'not evaluated' in accordance with the Red List Status. No Species of Conservation Concern was found on site.	Terrestrial Theme: The site is located within an ESA2, classified due to restoration purposes, however even if the proposed site is to be restored rather than upgrading the existing culverts, will not contribute to the functioning of the ESA taking into consideration the small development footprint and proposed scope of works. The wider area will be restored according to the GRDM Alien Invasive Species Management Plan. The site is located within the Gouritz Cluster Biosphere Reserve which was delineated within the Western Cape Biodiversity Spatial Plan (2017). The Gouritz Cluster Biosphere Reserve encompasses an area of 3 187 893 hectares, because of the very large area outside of the proposed development site, the loss in Gouritz Cluster Biosphere Reserve for the proposed development site	The following management measures have been proposed for which needs to be taken into consideration during the construction phase of the proposal for all themes: • The majority of the study areas has already been subjected to disturbance. The list below highlights the key integrated mitigation measures that are applicable to the development to suitably manage and mitigate ecological impacts, on both fauna and flora that are associated with the footprint. Provided that all management and mitigation measures are implemented, as stipulated in this report, the overall risk to floral and faunal diversity, habitat and Species of Conservation Concern can be adequately mitigated and minimised. • Fires are strictly prohibited. • Sufficient fire management equipment must be on the site. • Smoking must be restricted to designated smoking areas. • No dumping of sewage or hazardous waste into an adjacent ecosystem. • All activities must remain within the designated footprint. • All areas outside of the footprint must be considered no-go areas • Vehicles use must be restricted to designated roads.

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			Animal Species Theme: During the site inspection, no species of conservation concern were found within the proposed development footprint. This is likely a result of the degraded nature of the site creating unsuitable habitat for these species. It is expected that the faunal species in these areas are limited to avifauna, as well as smaller reptiles, amphibians, and mammals all of which are common and non-threatened. Given that the project only entails upgrades, the species would have the ability to seek refuge in case of any disturbances in the area. No SCC was found on site. Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement: Enviroworks (2026) The updated Compliance Statement and 5 August 2026 Addendum confirm that the proposed development footprint remains within highly disturbed road reserve areas associated with existing road infrastructure. The terrestrial habitat remains characterised by disturbed soils, alien invasive vegetation, fragmented indigenous vegetation and ongoing human disturbance. The Terrestrial Biodiversity Theme sensitivity remains Low, as the development footprint does not exhibit the structural composition or ecological functionality associated with intact Garden Route Shale Fynbos or Garden Route Granite Fynbos.	is not likely to impact the functioning of the overall Gouritz Cluster Biosphere Reserve or the wider area. Ecological connectivity is also not expected to be lost given that the proposed footprint is small and the proposed developments will consist of upgrading the existing culverts and the surrounding areas contain intact vegetation which should provide sufficient habitat and foraging opportunities for fauna. Ecological Sensitivity Assessment The terrestrial biodiversity sensitivity the site is confirmed to be "Low" through site verification as the site does not support the endangered ecosystems identified as "Vey High" within the Screening Tool Report. The Site Ecological Importance (SEI) was evaluated as Low for each of the habitat units. The aforementioned was determined based on the low biodiversity value and ecological functioning and medium recovery rate. Plant Theme: The DFFE Screening Tool identified eleven floral species of special	• All staff must be trained to ensure that they are aware of any potential fauna may be on the footprint or surrounds. • Vehicles should be restricted to a clearly demarcated area and drivers must be vigilant. • Should any faunal species need to be translocated, a faunal or avifaunal (in the case of birds) specialist will need to be consulted. • All personnel working on site must undergo environmental inductions to ensure they are aware of the environmental sensitivities of the site. • No fauna may be caught, trapped, or harmed in any way • No feeding of any fauna is allowed. • All recommendations in the aquatic and avifaunal assessments must be adhered to. • A soil erosion method statement is needed for the site. • Soil erosion monitoring needs to be done monthly.
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			The Plant Species Theme sensitivity remains Low. No Plant Species of Conservation Concern were recorded during the field verification and the vegetation remains predominantly disturbed roadside, secondary and alien vegetation. The Animal Species Theme sensitivity remains Low. No Species of Conservation Concern within the terrestrial faunal groups assessed were recorded, and no breeding sites, refugia or important habitat for sensitive terrestrial fauna were identified within the proposed development footprint. Avifauna was assessed separately by the appointed avifaunal specialist. An additional site verification was undertaken on 1 July 2026 by the SES team with photographic evidence (See Appendix C). The specialist confirmed that no material changes have occurred within the proposed development footprint and that the original findings, sensitivity ratings, impact assessment and recommendations remain valid. No further terrestrial specialist investigations are considered necessary.	concern for site DR1602. During the site inspection, no species of special concern were found within the proposed footprint. Various common, non-threatened, and non-protected species were recorded on the proposed site (Table 7). Additionally, several alien species were observed throughout the site. Considering the extremely proliferation of invasive alien species throughout the proposed site, it is evident that the site is highly disturbed and degraded. Thorough assessments were conducted for site in the surroundings of the developed site, and no observations of special concern species were made, likely due to the lack of suitable habitats. Animal Species Theme: None of the expected species of special concern (according to the DFFE Screening Tool) were observed during the site visit. It is unlikely that the terrestrial faunal species (except avifauna) identified in the Screening Tool report will be found on the footprint given the habitat requirements of the species. Given	
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				that there is potential habitat surrounding the development footprint, any faunal species that inhabits the development footprint, will likely be able to find refuge in the surrounding areas.	
AVI-FAUNAL COMPLIANCE STATEMENT					
MORA Ecological Services (Pty) Ltd	Mokgatla Molepo & Reviewed by Megan Smith from Enviro Works	Low	The specialist confirmed the avifaunal species present within the proposed development footprint. Before the site visit took place, the specialist confirmed from the DFFE screening tool (2023) that three species have been identified as possible highly likely finds on site, <i>Bradypterus sylvaticus</i>, <i>Circus ranivorus</i> and <i>Neotis denhami</i>. The specialist conducted their faunal and avifaunal site visits on the 30th and the 29th of October 2023. During the site visits, the appointed specialist confirmed that there were no sensitive faunal and avifaunal species on site and that 5 bird species were recorded and no identified sensitive bird species from the DFFE screening tool report were observed during the site visits. The <i>Bradypterus sylvaticus</i> has a medium chance of likelihood of occurrence, while the <i>Circus ranivorus</i> is regarded as being low and the <i>Neotis denhami</i> as being very low in likelihood of occurrence. Based on the faunal species there were no Species of Conservation Concern (SCC) observed during the site visit nor likelihood of finding them on the construction footprint.	•The proposed removal and replacement of culverts will be located on already disturbed areas, and anticipated avifaunal impacts are predicted to be Low. •None of the identified sensitive bird species from DFFE screening tool report were observed on site. •No habitats within the proposed project footprint are considered sensitive	•Contractor should adhere to the recommendations provided within the EMP. •Preserve as much of the natural habitat as possible during construction and operation to lessen the operational impacts and to reduce the irreversibility of impacts. •Construction activities should be restricted to the project area. •No fires should be made around the site. •It is the opinion of the specialist that this application be considered.



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

Terrestrial, Animal and plants Biodiversity by Megan Smith from Enviroworks:

The majority of the study area has already been subjected to disturbance. The list below highlights the key integrated mitigation measures that are applicable to the development to suitably manage and mitigate ecological impacts on both fauna and flora that are associated with the footprint. Provided that all management and mitigation measures are implemented, as stipulated in this report, the overall risk to floral and faunal diversity, habitat and Species of Conservation Concern can be adequately mitigated and minimised.

- Fires are strictly prohibited.
- Sufficient fire management equipment must be on the site.
- Smoking must be restricted to designated smoking areas.
- No dumping of sewage or hazardous waste into an adjacent ecosystem.
- All activities must remain within the designated footprint.
- All areas outside of the footprint must be considered no-go areas.
- Vehicles use must be restricted to designated roads.
- All staff must be trained to ensure that they are aware of any potential fauna may be on the footprint or surrounds.
- Vehicles should be restricted to a clearly demarcated area and drivers must be vigilant.
- Should any faunal species need to be translocated, a faunal or avifaunal (in the case of birds) specialist will need to be consulted.
- All personnel working on site must undergo environmental inductions to ensure they are aware of the environmental sensitivities of the site.
- No fauna may be caught, trapped, or harmed in any way.
- No feeding of any fauna is allowed.
- All recommendations in the aquatic and avifaunal assessments must be adhered to.
- A soil erosion method statement is needed for the site.
- Soil erosion monitoring needs to be done every two weekly during construction.

Avi-Faunal Biodiversity by Mokgatla Molepo from Mora Ecological Services (None specifically listed for the project, but a few recommendations have been added below):

The proposed culvert upgrades will be located within already disturbed areas, and anticipated avifaunal impacts are predicted to be Low, subject to implementation of the recommended mitigation measures.

- Contractor should adhere to the recommendations provided within the EMPr.
- Construction activities should be restricted to the project area.
- No fires should be made around the site..

Archaeological and cultural heritage by Dr Peter Nilsen from Human Origins:

It was confirmed by the appointed Heritage Consultant that the proposed activities do not trigger Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999). Therefore, the Heritage consultant confirmed that it was not required to submit a Notice of Intent to Develop (NID) to the HWC.

Aquatic Biodiversity by Debbie fordham from Upstream Consulting:**Construction and Operation Phase:**

1. Disturbance of aquatic habitat biota from clearance of vegetation, earthworks, bypass road, and further invasive alien plant infestation, which can result in deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.

Mitigation:

- A construction method statement must be compiled and available on site. Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no-go areas.
- It must consider the No-Go area and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the watercourse.

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- The final designs, layouts, and construction methods/disturbance area should be approved by the aquatic specialist prior to commencement.
 - The agreed-upon construction boundary must be clearly demarcated.
 - Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. Stay away from tributaries and do not alter their confluences.
 - Prior to commencement, any instream vegetation in the construction corridor must be moved to a similar location instream, outside of the working area, permanently, or for use in rehabilitation.
 - Vegetation removal must be avoided as far as possible. Bare areas on the banks must be covered with geotextiles or revegetated to prevent sediments eroding into the watercourse.
 - Remove any alien plant species within the working corridor and as far as possible along the reach.
 - Stockpiles must not be located within 50 metres of the riparian zone. The furthest threshold must be adhered to. Erosion control measures including silt fences, low soil berms and/or shutter boards must be put in place around the stockpiles to limit sediment runoff from stockpiles.
 - Where possible, construction activities should be conducted during the drier months of the year to minimise the possibility of erosion, sedimentation and transport of suspended solids associated with disturbed areas and rainfall events. Planning for such a situation must be undertaken.
 - Coarse bedding material or geotextile wrapped dump rock must be considered for bypass roads. Or a similar design which can be easily removed without causing sediment to remain in the watercourse. Consider narrower bypass roads.
 - Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse. Sandbags used in any diversion or for any other activity within a watercourse must be in a good condition, so that they do not burst and empty sediment into the watercourse. Upon completion of the construction at the site, the diversions shall be removed to restore natural flow patterns. Under no circumstance shall a new channel or drainage canals be excavated to divert water away from construction activities.
 - Monitoring should be conducted before commencement to confirm demarcations are in place, every second day during construction within the river, and bi-weekly post-construction for a period of three months or until fully rehabilitated according to ECO.
2. Excavation and infilling in the river and sediment laden surface stormwater runoff entering from road side drains. Poorly designed or constructed causeway outlets can cause erosion downstream. These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for flora & fauna.

Mitigation:

- The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to pre-erosion state.
- The design must allow for unhindered longitudinal flow through the structures and erosion protection downslope with energy dissipaters such as dense baffles.

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- The stormwater road side drains and outlets should be formalised and stabilised to manage the increase of surface water flows directly into any natural systems.
 - Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, etc.
 - All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
 - Construction must have contingency plans for high rainfall events during construction.
 - The longitudinal gradient must not be altered in a way that results in erosion downstream or impoundment of flows upstream. The cross sectional profile of the bed and banks must also be restored as far as possible to a more natural state.
 - Any bypass roads or working areas must be fully rehabilitated to the preconstruction condition at a minimum.
 - Stormwater infrastructure must be inspected at least once every year (before the onset of rains) to ensure that it is working efficiently. Any evidence of erosion from this stormwater system must be rehabilitated and the volume/velocity of the water reduced through further structures and/or energy dissipaters.
3. Change in instream flow patterns on hydrological form and function during the construction and into the operational phase. Altered instream flow hydraulics due to different design resulting in form and function changes within aquatic habitat. The impact can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services, but positive impacts if designed to mimic more natural flow pattern and channel morphology.

Mitigation:

- The design must allow for unhindered longitudinal flow through the structure and erosion dissipaters such as dense baffles.
- Diversions must be temporary in nature and no permanent walls, berms or dams may be installed within a watercourse.
- The stormwater management infrastructure, such as road side drains, must be designed to ensure the runoff is not highly concentrated before entering the riparian area.
- Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil and side drain outlets. Contingency plans must be in place for high rainfall events which may occur during construction.
- The bypass road must allow for longitudinal flow with no scour at any diversion outlets. The bypass material must be removed, and the channel morphology and substrate be reinstated.
- The project will need to comply with all regulations of the National Water Act (Act 36 of 1998), including the protection of downstream users, and minimise any potential ecological impacts upon water resources. shows the conditions of General Authorisation which must be adhered to for Low impact projects.

Construction phase:

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4. During construction, earthworks will expose and mobilise earth materials, and a number of materials as well as hydrocarbons/ cement/ chemicals may end up in the surface water. This can result in possible deterioration in aquatic ecosystem integrity and species diversity.

Mitigation:

- Spills or leaks from vehicles or machinery must be entirely avoided. Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channel and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks.
- Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered site.
- Sedimentation must be minimised with appropriate measures.
- Where possible, construction activities should be conducted during the drier months of the year.
- All post-construction building material and waste must be cleared in accordance with the EMPr. The solid domestic waste must be removed and disposed of offsite.
- Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use, for the necessity, type proposed to be used, effectiveness and impacts of the product on aquatic biota.
- Construction must be immediately followed by rehabilitation.

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.

This is not applicable; all impact measures are applicable to the project.

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

Positive impact on the community include:

- Safety towards road users as the road will be to upgrade and strengthen the structure.
- Improvement to infrastructure and service delivery.
- No long term visual impact as the project is to repair and upgrade existing infrastructure.
- Temporary job creation and knowledge and skills transfer.
- Support to local economy, including sourcing from local suppliers, and appointing local labour.
- Temporary ramp that will solve traffic issues that may have been an issue.

Negative impact on the community include:

- Temporary noise and dust generated during construction.

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

The proposed project aims to achieve a number of the sustainability objectives in terms of the Sustainability Development Goals (SDG) as adopted in 2015 as part of the Envision2030 initiative. The goals detailed in the table below are significant to the proposed development and will be addressed to some extent, while others are not relevant.

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Figure 39. Sustainable Development Goals applicable to the proposed project.

SDGs	Description	Relevance
SDG1	No poverty	During the construction phase of the proposed project, a number of employment opportunities will be created. As discussed in the sections above, the use of local labourers will be encouraged for labour intensive activities.
SDG3	Good Health and well-being	The operational phase of the proposed project aims to provide a safer roadway for all who use this road during their commutes.
SDG4	Quality Education	As part of the construction phase of the proposed project, the contractors will be encouraged to teach the workers skills that is transferable to future employment opportunities. Additionally, through the environmental awareness training to be conducted by the independent experienced ECO, the workers will be educated on the importance of the affected environmental receptors as well.
SDG5	Gender equality	Where reasonably possible, woman and men of varying skill levels will be approached for the purpose of completing the construction phase activities for the proposed project.
SDG8	Decent Work and Economic Growth	The proposed project will strive to provide local labourers with an employment opportunity. This will lead to a temporary growth in the local economic situation.
SDG9	Industry, innovation and infrastructure	The proposal will see capital expenditure by the Western Cape Government toward the /improvement of the infrastructure associated with the existing road and culvert infrastructure.
SDG13	Climate Action	The impacts a new road would have on the micro-climate of the area would be seen through the destruction of additional water resources and vegetation communities, which are essential for regulating the micro-climate in an area. An additional road would also increase the Green House Gasses (GHG) in the newly identified area whereas the proposed project will not see to the attraction of GHG sources. The project would rather aim to alleviate traffic and therefore, indirectly, marginally reduce the amount of GHG emissions released along the route. The damaged to the road and culvert is a result from an extreme weather event that can be associated to climate change that can be linked to the flooding event. The new causeway will help combat flooding by facilitating a raised road, along with a larger culvert and wing walls. This will further improve the ecology in the area, by avoiding loss of biodiversity due to the disturbance flooding causes.
SDG15	Life on Land	A number of sensitive themes have been identified within proximity to the development footprint. Therefore, a number of specialists were appointed to investigate the impacts that the proposed project will have on these themes. Through the implementation of the mitigation

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	measures provided by the various specialists, limited impacts on the landscape and all of its constituents will be observed.
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The Western Cape Government, Department of Environmental Affairs and Development Planning have incorporated the Western Cape Climate Change Response Strategy: Vision 2050 (1st revision 2023).

The Climate Change Directorate within the Department of Environmental Affairs and Development Planning (DEA&DP) has undertaken the development, review, and coordination of the revised Strategy. The Strategy is envisaged as a transversal strategy providing policy direction in response to climate-related risks and potential opportunities, through either creating or leveraging systemic innovative response programmes that tackle the region's vulnerability to droughts, heat and floods and take advantage of opportunities that will enable climate resilient development which fosters economic growth that is low-carbon and further creates an advanced Green Economy. Even though the Strategy is drafted by the Western Cape Government, it is a guiding document for all sector stakeholders in the province (both public and private sector) who can play a role in responding to climate change.

The four Guiding Objectives structure the narrative, with each Guiding Objective unpacked in the form of a Climate Action Pathway that specifies key actions along the journey to 2050 (In line with the project caused by flooding)

Objective 1: RESPONSE TO THE CLIMATE EMERGENCY

- o Make Disaster Risk Management Plans more climate resilient by having plans in place to prepare for, and for dealing with extreme heat and flooding events.
- o Ensure that spatial planning and development planning reduces risks to people, infrastructure and assets through integration of climate change considerations by aligning transport planning with climate resilient spatial development planning, integrating climate change into spatial and development planning processes, capacitating local government in respect of climate resilient planning, and using spatial performance indicators to inform progress reporting and land use decision-making.

Objective 2: TRANSITIONING IN AN EQUITABLE AND INCLUSIVE MANNER TO NET ZERO EMISSIONS BY 2050

- o 90% of all disasters globally are now climate related, and the latest science points to the attribution of climate change being a driver behind many extreme weather events.
- o WCG need to formally recognise the economic costs and risks of climate related disasters as ones that we are witnessing will increase in magnitude and frequency. In response to the climate change driven drought of 2015-2019, the cumulative totals of the impact of the drought are still being calculated on an ongoing basis. Drought impacts cost R14 billion in the agriculture sector alone. In addition, a single severe storm, and Knysna fires in June 2017 caused R4 – 6 billion losses in damage; the avian influenza outbreak (associated with the drought) caused losses of R800 million to the poultry sector. Over 30 000 seasonal jobs in agriculture were lost. The responses in reactive disaster funding have been but a fraction of the economic cost: R1 billion in 2017; and close to another half a billion rand was requested from national disaster management funds in 2018/19. The situation is a clear indicator of the economic cost of failure to adapt to climate change. Proactive planning and adaptive measures rather than reactive measures are likely to be less costly.

Objective 3: REDUCING CLIMATE RISKS AND INCREASING RESILIENCE

- o Improve Disaster Risk Management Plans by ensuring that climate change is a consideration in all Disaster Risk Assessments and by identifying adaptation actions that proactively respond to inevitable future extreme circumstances, such as heat waves, storms, flooding, drought and fires, both in sudden onset and chronic disaster forms, by way of locally appropriate climate change responses.
- o Restore the ecological functioning and water quality in our watercourses, by:
 - Halting water pollution
 - Making sure watercourses and their riparian zones retain an ecological base flow.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
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No conflicting recommendations have been identified.

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.
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All impacts and recommendations of the various specialist studies have been integrated into the impact tables as described in Section I of this report, and the attached EMPr. These measures propose to guide the management of the various phases of the project

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
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For the purpose of the proposed project, the Mitigation Hierarchy was considered while determining the best practicable environmental option for the construction and operational phases of the project. Activities related to the proposed

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refurbishments have been considered. Where possible activities have been avoided, therefore all activities included in the proposal of this development are essential for the successful implementation and operation of this development.

All impacts that could not be avoided, have been investigated to establish mitigation measures to minimize and rectify, where possible or radically reduce the predicted impacts. As all the proposed impacts can be sufficiently reduced in significance, and no significant residual negative biodiversity impacts will remain, no biodiversity offset was considered for this development.

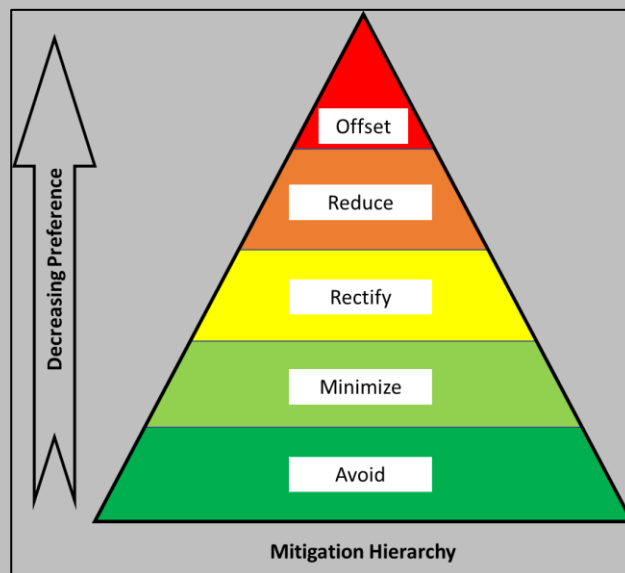


Figure 40. Mitigation hierarchy.

Figure 41 describes the mitigation hierarchy approach followed for the purpose of arriving at the best practicable environmental opinion.

Figure 41. Mitigation hierarchy descriptions.

Hierarchy level		Description in relation to the proposal
1	Avoid	Through the implementation of the proposed project, will provide an effective and safe means of access. Thereby also eliminating/avoiding the need for the construction of a new road.
2	Minimise impacts	The recommended mitigation measures of the various specialists reports in addition to the mitigation measures provided in the EMPr will lead to the minimisation of the impacts of the construction phase (specifically as this is an existing road and culvert proposed to be repaired and upgraded).
3	Rectify	The rehabilitation measures in the EMPr are provided to return the impacted areas, outside of the development footprint, back to a functional state and the developer will be responsible for rectifying any non-compliances with the conditions of the EA and EMPr.
4	Reduce	In order to manage the impact on the watercourse to be intercepted by the proposed project, a minimum impact zone approach has been adopted in order to reduce the anticipated impact on the natural resources in the area. The size of these zones is activity dependent.
5	Offset	In June 2023, the Department of Forestry, Fisheries and Environment (DFFE) promulgated the National Biodiversity Offset Guidelines in terms of the National

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		Environmental Management Act, 1998, as amended (Act No. 107 of 1992). Based on the National Biodiversity Offset Guidelines, 2023 (GN 3569 of 2023), an offset is required where the residual impacts are Medium or High. Based on the findings of the specialist assessments (specifically those relating to the ecosystems identified, as per the definition of the beforementioned guidelines), the following impact ratings were awarded, after the implementation of mitigation measures: • Terrestrial biodiversity and plant assessment: ○ Impact during construction phase: Low ○ Impact during operational phase: Low • Aquatic biodiversity and plant assessment: ○ Cumulative impact during construction phase: Low ○ Cumulative impact during operational phase: Low • Animal and avi-faunal Species assessment: ○ Impact during construction phase: Low Therefore, based on the above, all impacts on the biodiversity component of the proposed infrastructure project can be mitigated to be lower than the threshold necessitating a biodiversity offset. Hence, no offset will be required for the proposed project.
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SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
The key findings of the EIA indicates that the proposed project will have significant positive impacts, that can be further enhanced through the implementation of appropriate enhancement measures. Whereas all negative impacts can be significantly mitigated with reasonable and practical mitigation measures, these can be summarised below: Socio-economic: Positive impact on the community include: • Safety towards road users as the road will be to upgrade and strengthen the structure. • Improvement to infrastructure and service delivery. • No long term visual impact as the project is to repair and upgrade existing infrastructure. • Temporary job creation and knowledge and skills transfer. • Support to local economy, including sourcing from local suppliers, and appointing local labour. • Temporary ramp that will solve traffic issues that may have been an issue. Negative impact on the community include: Temporary impacts such as noise, dust and visual impacts as a result of construction activities. • <u>Positive impacts:</u> ◦ The specialist assessments indicate that the identified impacts on plant, animal and avifaunal biodiversity can be appropriately managed through implementation of the recommended mitigation measures. The Aquatic Biodiversity Impact Assessment similarly identified mitigation measures to manage potential impacts on the watercourse and aquatic habitat. The EAP's assessment has taken these specialist findings and recommendations into account in determining the significance of the identified impacts and the mitigation commitments contained in the EMPr. ◦ With the implementation of the appropriate mitigation measures, the proposed project can be deemed as acceptable from an aquatic perspective. ◦ Due to the requirement of an active effort toward managing the alien and invasive plant community on site, the destructive impact of their presence will be mitigated. ◦ The opportunity to rehabilitate the road reserve to such an extent that the vegetation can be reinstated in all areas where practically feasible. ◦ Opportunity for alien invasive clearance. • <u>Negative impacts:</u> ◦ Temporary disturbance to vegetation and fauna, however, can be controlled and managed. ◦ Erosion management and control will be needed due to the project being within a watercourse. ◦ Temporary nuisances caused as a result of construction activities. ◦ Temporary noise and dust generated during construction. As per the findings from environmental specialist input it has been established that the proposed development is acceptable, along with the recommended mitigation measures, and the EAP is in agreement.	
1.2.	Provide a map that 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)
A map has been included as Appendix B2. The proposed development footprint will encroach on a no-go Aquatic Sensitive area as delineated by the aquatic specialists. The working areas are essential to complete the proposed project. The Very High Aquatic Sensitivity area comprises 12 m² of the development footprint, as illustrated in the figure below. (Figure 42).	

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Figure 42. Overlay Specialist No-go Map, (Upstream Consultancy, 2023).

- 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.

Impact	Both designs are needing approval and have the same impacts: Preferred Design with temporary ramp (Upstream + Downstream)			
	Upstream constructed ramp		Downstream constructed ramp	
	Significance without mitigation	Significance with mitigation	Significance without mitigation	Significance with mitigation
PLANNING AND DESIGN IMPACTS				
Compliance with legislative requirements	Medium (-)	Low (-)	Medium (-)	Low (-)
Site establishment and pre-construction activities	Medium (-)	Low (-)	Medium (-)	Low (-)
CONSTRUCTION PHASE				
Erosion, Earthworks and Land Clearance	Medium (-)	Low (-)	Medium (-)	Low (-)
Agricultural: Impact on Agricultural Resources	Negligible (-)	Negligible (-)	Negligible (-)	Negligible (-)
Aquatic Impacts: Disturbance of aquatic habitat biota from clearance of vegetation, earthworks, bypass road, and further invasive alien plant infestation	Medium (-)	Low (-)	Medium (-)	Low (-)
Aquatic Impacts: Sedimentation and erosion. Excavation and infilling in the river and sediment laden surface stormwater runoff entering from road side drains.	Medium (-)	Low (-)	Medium(-)	Low (-)

- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
- Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments



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Aquatic Impacts: Change in instream flow patterns on hydrological form and function during the construction phase.	Medium (-)	+ Low (Positive)	Medium	+ Low (Positive)
Aquatic impact: During construction, earthworks will expose and mobilise earth materials, and a number of materials as well as hydrocarbons/ cement/ chemicals may end up in the surface water.	Medium-Low (-)	Very low (-)	Medium-Low (-)	Very Low (-)
Animal Biodiversity: Impact of the project on animal and avi-faunal species	Low (-)	Low (-)	Low (-)	Low (-)
General management: Pollution of hydrocarbons due to spills and leaks	Low (-)	Low (-)	Low (-)	Low (-)
General nuisances: Noise, dust, light, and general housekeeping	Medium (-)	Low (-)	Medium (-)	Low (-)
Road safety: Traffic Impacts and Road Safety	Medium (-)	Low (-)	Medium (-)	Low (-)
Plant biodiversity: Impact of the project on indigenous flora	Low (-)	Low (-)	Low (-)	Low (-)
Socio-economic impacts: Employment opportunities	Medium (+)	Medium-High (+)	Medium (+)	Medium-High (+)
POST-CONSTRUCTION REHABILITATION PHASE / OPERATIONAL PHASE				
Road safety: Provision of safer road way	Very-High (+)	Very High (+)	Very-High (+)	Very High (+)
Aquatic impact: Disturbance of aquatic habitat biota from clearance of vegetation, earthworks, bypass road, and further invasive alien plant infestation.	Medium (-)	Low (-)	Medium (-)	Low (-)
Aquatic impact: Poorly designed or constructed causeway outlets can cause confined flow and erosion downstream	Medium (-)	Low (-)	Medium (-)	Low (-)
Aquatic Impact: Change in instream flow patterns on hydrological form and function during the construction and into the operational phase.	Medium (-)	Low (-)	Medium (-)	Low (-)

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 EMP
Construction phase: - Ensuring that the biophysical components (including the soil, surface water and groundwater resources) of the environment is not contaminated as a result of the proposed works. - To promote employment opportunities for local residents.	

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- To limit the amount of visual impact which the proposed project will have on all users of the road and as access into their properties (due to dust, lighting etc.)
- To allow for the smooth movement of traffic (limited traffic flow disruption) along the road.
- Limited loss of natural resources, as this will impact the watercourse.
- The management of alien invasive vegetation species.
- Limit and control erosion as the nature of the site is within a watercourse.

Post-Construction/Rehabilitation phase:

- Ensuring that the biophysical components (including the soil, surface water and groundwater resources) of the environment is limited contamination as a result of the proposed works.
 - The management of alien invasive vegetation species within the project footprint.
 - Ensure that there are limited visual impacts on the surrounding land owners and road users.
 - A safer and easier to use causeway and flow for the watercourse from the culvert structure.
- These environmental management outcomes have also been assessed and mitigation measures toward minimising the negative impacts were explored in depth in Section G of this BAR.

As per the EMPr (and Section G above), the environmental Impact Management aspects have been divided into four (4) sections: Planning and design phase, pre-construction phase, construction phase and post-construction rehabilitation phase.

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.
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The compiled EMPr must be complied with during the construction and rehabilitation phase and as such the implementation of the EMPr is conditional of the impact significance rating post implementation of the mitigation measures.

Other recommended conditions of Authorisation:

- A combined search and rescue plan and Rehabilitation plan for the disturbed areas must be compiled by an appropriately experienced specialist, or ECO and approved by the CA before commencement.
- Laydown areas, storage areas and the site camp area must be approved by the ECO and Site Engineer.
- The Areas outside the Road reserve not including the approved working area must be regarded as No-Go areas.
- All mitigation measures presented by the appointed specialists must be duly implemented on site during all phases of the proposed project.

The following permits and authorisations have been obtained:

- The General Authorisation for Section 21 (c) and (i) water uses under the National Water Act (Act No. 36 of 1998).

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.
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It is the opinion of the EAP that, based on the outcomes of the specialist studies conducted and further potential impacts as identified in this report, the proposed road and culvert project should be approved with the condition that all mitigation measures presented by the independent specialist must be implemented on site.

Considering that all potential negative impacts can be mitigated it must be a condition of Environmental authorisation that the EMPr be implemented, and compliance therewith must be monitored by an experienced ECO.

Furthermore, the proposed development footprint will encroach on a no-go Aquatic Sensitive area as delineated by the aquatic specialists. The working areas are essential to complete the proposed project. The Very High Aquatic Sensitivity area comprises 12 m² of the development footprint, as illustrated in the figure below. (Figure 42).

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Figure 43. Overlay Specialist No-go Map, (Upstream Consultancy, 2023).

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
General assumptions made throughout the report: • It is assumed that all the information provided in this report and on which the report is based is correct and valid at the time receipt thereof. • It is assumed that the proposed mitigation measures, will be implemented and adhered to by all the construction and rehabilitation teams. • The EIA process (in the form of a BAR) will include every effort to enable an adequate and fair public participation process. From a specialists' perspective, the following assumptions, limitations and gaps in the knowledge exists: Plant Species, Animal Species and Terrestrial Biodiversity Theme Compliance Statement: • All information provided by the Applicant, EAP and design team, to the environmental specialist, was correct and valid at the time that it was provided. • The results of the botanical and faunal survey reflect a specific time of year. The botanical and faunal survey was conducted during early summer when some of the annual plant species may not be visually present and when certain animal species will either not be present or active. • The initial study was undertaken as a desktop assessment and as such, the information gathered must be considered with caution, as inaccuracies and data capturing errors are often present within these databases; and, • Global Positioning System (GPS) technology is inherently inaccurate and some inaccuracies due to the use of handheld GPS instrumentation may occur. Avi-Faunal species Biodiversity Theme Compliance Statement: • All information regarding the proposed project and related activities as provided by the client are taken to be accurate. • Fieldwork was limited to the proposed project footprint. Aquatic biodiversity Impact Assessment: • Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this can miss certain ecological information due to seasonality, thus limiting accuracy and confidence. Despite this, confidence in findings is high. • The location and nature of the proposed activities was provided by the client.	

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FOR THE PROPOSED REMOVAL AND REPLACEMENT OF EXISTING ROAD AND CULVERT INFRASTRUCTURE LOCATED ALONG DIVISION ROAD (DR) 1602 KM 8.48, KLEINPLAAS ROAD, CROSSING FARM 338 AND PORTION 6 OF FARM 220 IN MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE DISTRICT.

- While disturbance and transformation of habitats can lead to shifts in the type and extent of aquatic ecosystems, it is important to note that the current extent and classification is reported on here.
- All soil/vegetation/terrain sampling points were recorded using a Garmin Global Positioning System (GPS) and captured using Geographical Information Systems (GIS) for further processing.
- Infield soil and vegetation sampling was only undertaken within a specific focal area around the proposed activities, while the remaining watercourses were delineated at a desktop level with limited accuracy.
- No detailed assessment of aquatic fauna/biota (e.g. fish, invertebrates, microphytes, etc.) was undertaken, and not deemed necessary.
- The vegetation information provided is based on observation not formal vegetation plots. As such species documented in this report should be considered as a list of dominant and/or indicator wetland/riparian species.
- The scope of work did not include water quality sampling and the water quality characteristics were inferred from the biophysical characteristics of the area and catchment land uses.
- The assessment of impacts and recommendation of mitigation measures was informed by the site-specific ecological concerns arising from the field survey and based on the assessor's working knowledge and experience with similar projects. The degree of confidence is considered high.

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 for which the EA is required will be 5 years.

Preconstruction Phase – 1 year

Construction Phase – 3 years

Postconstruction Phase/ Decommissioning – 1 year

ECO monitoring:

In line with the Aquatic Impact Assessment recommendations:

- Monitoring should be conducted bi-weekly during the post-construction phase for a period of three months or until fully rehabilitated according to ECO

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.

There should only be water needed for the construction phase of the operation. The water should be collected in buckets to avoid running water unnecessarily. Efforts to capture rainwater should be implemented. Portable water within the construction site will also be used drinking water.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.

The EMPr will address waste management for the proposed construction and awareness training for the construction team. The waste management plan for the site will be implemented such as the method to reduce, reuse and recycle. Have waste disposal readily available, such as skips and bins allocated on site. Any solid waste intended for disposal must be disposed of at a landfill site, licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or the National Environmental Management: Waste Act (Act No. 59 of 2008).

5. Energy Efficiency

8.1. Explain what design measures have been taken to ensure that the development proposal will be energy efficient.

-
- Environmental Impact Assessments • Basic Assessments • Environmental Management Planning
 - Environmental Control & Monitoring • Water Use License Applications • Aquatic Assessments

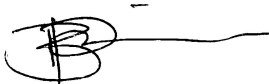


SECTION K: DECLARATIONS

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

IBetsy Ditcham....., EAP Registration number2020/1480.... 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;



16/09/2026

Signature of the EAP:

Date:

Sharples Environmental Services cc

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

IMegan Smith....., 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 Specialist:

Date: 12/08/2026

Enviroworks

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

IDebra Fordham.....(Pr.Sci.Nat. 119102)... 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.

Project Name: Proposed removal and replacement of the existing road and culvert infrastructure along Division Road 1602 Mossel Bay (DEA&DP Ref No: 16/3/3/1/D6/29/0022/26)



Signature of the Specialist:

Date: 1 June 2026

Upstream Consulting (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

I ...Peter Nilssen....., 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.



1 June 2026

Signature of the Specialist:

Date:

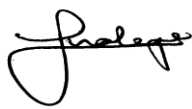
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

I Mokgatla Molepo, 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.



01/06/2026

Signature of the Specialist:

Date:

MORA Ecological Services (Pty) Ltd

Name of company (if applicable):

SECTION K: DECLARATIONS

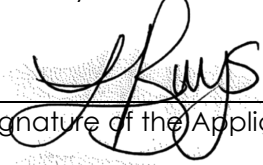
DECLARATION OF THE APPLICANT

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

I...Louise Buys....., ID number ...8303170171086...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.


Signature of the Applicant:

2026 09 18

Date:

Department of Infrastructure: Transport Infrastructure Branch

Name of company (if applicable):