

THE PROPOSED PERIODIC MAINTENANCE OF TRUNK ROAD 16 SECTION 8 (16/8) AND TRUNK ROAD 16 SECTION 9 (16/9) BETWEEN THE NORTHERN CAPE BORDER AND MURRAYSBURG, WESTERN CAPE

FINAL MAINTENANCE MANAGEMENT PLAN

DEA&DP Ref: 16/3/3/6/3/C3/13/0201/23

Prepared for:

Western Cape Government: Department of Infrastructure

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Please note: All amendments made to the 2nd draft
MMP is indicated in blue for ease of reference.

ACRONYMS

BAR	Basic Assessment Report
BPG	Best Practice Guideline
CBA	Critical Biodiversity Area
DEA&DP	Department of Environmental Affairs & Development Planning
DWS	Department of Water & Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GA	General Authorisation, in terms of the National Water Act, 1998 (Act No. 36 of 1998)
GN	Government Notice
IB	Irrigation Board
MEC	Member of Executive Council
MMP	Maintenance Management Plan
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act, 1998 (Act No. 36 of 1998)
ER	Employer's Representative
PES	Present Ecological State
SANParks	South African National Parks Authority
SUDS	Sustainable Urban Drainage Systems
WUA	Water Users Association
WULA	Water Use Licence Application

DEFINITIONS OF TERMS

"Activity" means an activity identified in any notice published by the Minister or MEC in terms of section 24D(1)(a) of the Act as a listed activity or specified activity. Activity in this document refers to the activities as listed in Listing Notice 1, 2 and 3 of the Environmental Impact Assessment Regulations, 2014 (as amended).

"Bush Encroachment" means stands of plants of the kinds specified in column 1 of Table 4 of the Conservation of Agricultural Resources Act (Act No. 43 of 1983) where individual plants are closer to each other than three times the mean crown diameter.

"Diverting" as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means to, in any manner, cause the instream flow of water to be rerouted temporarily or permanently.

"Ecological Infrastructure" refers to naturally functioning ecosystems that deliver valuable services to people, such as water and climate regulation, soil formation and disaster risk reduction.

"Estuary" has the meaning assigned to it in the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)

"Flood event" is the event where land is inundated by the overflowing of water from a river channel and where this event causes significant damage to infrastructure or results in watercourse erosion and/or sediment deposition.

NOTE that flooding can be a natural phenomenon in many river or wetland systems which, due to encroachment and human modification of the form and function of the affected system, may have evolved into a potential hazard to life or property.

"Flow-altering" as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means to, in any manner, alter the instream flow route, speed or quantity of water temporarily or permanently.

"General Authorisation" in this document refers to the General Authorisation in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) or Section 21(i) (GN. 509 of 26 August 2016).

"Impeding" as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means to, in any manner, hinder or obstruct the instream flow of water temporarily or permanently, but excludes the damming of flow so as to cause storage of water.

"Indigenous vegetation" refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

"Maintenance" means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint.

“Maintenance Management Plan” means a management plan for maintenance purposes defined or adopted by the competent authority.

“River Management Plans” as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), any river management plan developed for the purposes of river or storm water management in any municipal/metropolitan area or described river section, river reach, entire river or sub quaternary catchment that considers the river in a catchment context.

“River reach”, a length of river characterised by a particular channel pattern and channel morphology, resulting from a uniform set of local constraints on channel form. A river reach is typically hundreds of meters in length.

“Stretch” a section of watercourse, delineated between two or more mapped coordinates, within which proposed maintenance activities are to take place as guided by a MMP.

“Thalweg” refers to the line of lowest elevation within a valley or watercourse.

“Watercourse” means:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows; and

any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and

a reference to a watercourse includes, where relevant, its bed and banks.

“Wetland” means, land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

REFERENCES

Ecosystem Guidelines for Environmental Assessment in the Western Cape, Edition 2, 2016. Available at: www.bgis.org.za

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Preliminary guideline for the determination of buffer zones for rivers, wetlands and estuaries, 2014. Available at: <http://www.wrc.org.za>

Wetland offsets: A best practice guideline for South Africa, 2016. Available at: <http://www.wrc.org.za>



**Request for the relevant Competent Authority to define or adopt a Maintenance Management Plan
for a watercourse in terms of the National Environmental Management Act, 1998 (Act No. 107 of
1998), Environmental Impact Assessment Regulations, 2014 (as amended).**

File Reference Number:

Date Received by Department:

Date Received by Component:

Form Duly Signed and Dated:

(For official use only)

	Yes No

PROJECT TITLE

**THE PROPOSED PERIODIC MAINTENANCE OF TRUNK ROAD 16 SECTION 8 (TR16/8) AND
TRUNK ROAD 16 SECTION 9 (TR16/9) – BETWEEN THE NORTHERN CAPE BORDER AND
MURRAYSBURG**

A. SCOPE AND IMPORTANT INFORMATION

- 1) This document is to be used to ensure that the request for adopting or defining a Maintenance Management Plan (MMP) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) is undertaken to the sufficient standard and requirements as defined by the competent authority, the Department of Environmental Affairs and Development Planning of the Western Cape Government (henceforth the Department). It is advised that the determination of applicability regarding the scale of the proposed maintenance/management activity(ies) be undertaken through a pre-application consultation with the Department.
- 2) The geographical scope of the MMP is limited to watercourses as defined in the EIA Regulations, 2014(as amended). The document does not relate to coastal activities or activities to be undertaken in an estuary.
- 3) The use of this document for the development of a MMP for a watercourse **will only** be considered when the proposed maintenance activities constitute any one of the following listed activities identified in terms of the NEMA EIA Regulations, 2014 (as amended):

EIA Regulations Listing Notice 1 of 2014 (as amended)

- **Activity 19, Listing Notice 1: The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shell grit, pebbles or rock of more than 10 cubic metres from a 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;

(N.B. Points (d) and (e) does not apply as these activities fall within the coastal zone)

- **Activity 27, Listing Notice 1: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-**
 - i. The undertaking of a linear activity; or**
 - ii. Maintenance purposes undertaken in accordance with a MMP.**

EIA Regulations Listing Notice 2 of 2014 (as amended)

- Activity 15, Listing Notice 2: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-
 - I. The undertaking of a linear activity; or
 - II. Maintenance purposes undertaken in accordance with a MMP.
- Activity 24, Listing Notice 2: The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils, but excluding where such extraction or removal is for the rehabilitation of wetlands in accordance with a MMP.

EIA Regulations Listing Notice 3 of 2014 (as amended)

- Activity 12, Listing Notice 3: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a MMP.
 - i. Western Cape
 - i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
 - ii. Within critical biodiversity areas identified in bioregional plans;
 - 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
 - v. 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.

(NB. Point iii does not apply as this activity falls within the coastal zone)

- 4) In deciding the request, the competent authority may define conditions related to auditing compliance with the MMP; monitoring requirements; reporting requirements, review; updating and amending the document and period for which the MMP is defined/adopted.

- 5) The purpose of the MMP is to maintain both man-made and ecological infrastructure in a manner that either improves the current state of, and/or reduces the negative impacts on a watercourse to ensure that ecosystems services are preserved/improved and to prevent further deterioration of the watercourse.
- 6) Notwithstanding the MMP possibly being defined or adopted by the Competent Authority, any other applicable statutory requirement must still be complied with (e.g. any obligations under the National Water Act, 1998 (Act 36 of 1998) or the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)).
- 7) The proponent must note that a MMP for a watercourse **must** be undertaken through consultation with the Department of Water and Sanitation and/or the relevant Catchment Management Agency (responsible water authority). This is to ensure compliance in terms of a Permissible Water Use as set out in the National Water Act, 1998 (Act No. 36 of 1998). It is recommended that this process for authorisation in terms of the National Water Act be clarified prior to the drafting and submission of the MMP.
- 8) The development of this document has been done in such a way so as to meet the requirements of both this Department as the competent authority in terms of the NEMA EIA Regulations, 2014 (as amended), as well as the requirements of the delegated water authority, regarding general authorisation considerations for sections 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998), to ensure alignment between the two authorities when defining or adopting the MMP.
- 9) In situations where a Water Use Licence Application (WULA) is required by the water authority regarding the proposed activities within a MMP, this will not prevent the proponent from submitting a request for a MMP to be defined or adopted by the Department.
- 10) Unless protected by law, all information contained in, and attached to this document, shall become public information on receipt by the competent authority.
- 11) A duly dated and originally signed copy of this document together with one hard copy and one electronic copy of the MMP must be posted, to the Department at the postal address given below, or delivered to the Registry Office of the Department.
- 12) A copy of the final defined/adopted MMP and cover letter **must** be submitted to the responsible water authority.
- 13) **NOTE: Adopting or defining the MMP does not absolve the proponent from complying with any applicable legislation or the general “duty of care” set out in Section 28(1) of the NEMA that states, “Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.”** (Note: When interpreting this “duty of care” responsibility, cognisance must be taken of the national environmental management principles contained in Section 2 of the NEMA.
- 14) **NOTE: This document can be used as a template to assist in the information required and is to be filled out in full. The Department reserves the right to request any additional information during the initial development and submission of the draft MMP.**
- 15) **NOTE: The Department reserves the right to not adopt the MMP and requires that an application be submitted to obtain Environmental Authorisation for the respective activities. Furthermore, consideration for the review should also be aligned to the periodic reviews of the General Authorisation for sections 21 (c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) to ensure continued alignment and compliance.**

RELEVANT LEGISLATION AND POLICIES

This Maintenance Management Plan includes **Activities 19 & 27 of Listing Notice 1 (GN 983, 4 December 2014 as amended in GN 327 on 7 April 2017):**

Activity 19 Listing Notice 1 (GN R 983, 7 April 2017)

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-

- (i) **a watercourse;***
- (ii) the seashore; or*
- (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater 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;** or*
 - (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*
 - (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.*

Activity 27, Listing Notice 1 (GN R 083, 7 April 2017)

The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-

- i. The undertaking of a linear activity; or
- ii. **Maintenance purposes undertaken in accordance with a MMP.**

B. MAINTENANCE MANAGEMENT PRINCIPLES

- 1) The following are overarching principles to be used by landowners and managers when considering the development and implementation of an MMP:
 - a. The anticipation and prevention of negative impacts and risks, then minimisation, rehabilitation or 'repair', where a sequence of possible mitigation measures to avoid, minimize, rehabilitate and/or remedy negative impacts is explicitly considered;
 - b. Avoid and reduce unnecessary maintenance;
 - c. Maintenance and management of a watercourse must be informed by the condition of the physical and ecological processes that drive and maintain aquatic ecosystems within a catchment, relative to the desired state of the affected system;
 - d. Management actions must aim to prevent further deterioration to the condition of affected watercourses and, overall, be guided by a general commitment to improving and maintaining ecological infrastructure for the delivery of ecosystem services;
 - e. Managers and organs of state must identify, address and, where feasible, eliminate the factors that necessitate intrusive, environmentally-damaging maintenance; and
 - f. A process of continuous management improvement be applied, namely Planning; Implementing; Checking (monitoring, auditing, determine corrective action) and Acting (management review).
- 2) The following table provides a simple overview for the determination of the need for a MMP:

	Question	If the answer to any of the questions is YES, then a MMP may be applicable.
2.1	Is there a watercourse on or adjacent to the property?	YES
2.2	Has there been a history of flood damage or vandalism to the existing infrastructure or watercourse – erosion and/or sedimentation?	YES
2.3	Is there infrastructure or any community at risk of being damaged by flooding?	NO
2.4	Is the design of infrastructure considered inadequate in terms of managing the risk of flooding, erosion and/or sedimentation?	YES
2.5	Would you consider an improved design to existing infrastructure to reduce maintenance needs?	YES
2.6	Are there specific incidences where the watercourse is obstructed, or blockages occur that alter the flow of the river during floods?	NO
2.7	Is there an existing obstruction in the watercourse that has changed the flow of the river under normal conditions?	NO
2.8	Is there a marked increase in the rate of erosion/sedimentation being experienced,	YES

	which threatens operations and assets?	
2.9	Is there a presence of alien or bush encroachment vegetation within the watercourse and/or the presence of woody debris after flooding?	YES

3) It is important to consider that the type of maintenance required will impact on the level of assessment needed in terms of the impact the activity will have on the system and how best to mitigate the impact. Types of maintenance can broadly be classified in the following categories, with recognition that maintenance activities vary across the rural and urban context:

Maintenance Category	Types of maintenance activities (examples only)
Category A: Sediment removal as a result of deposition or sediment deposition as a result of erosion	- Clearing sediment or placing sediment at: - Pump hole/trench - Return flow (irrigation) - Off-take weir - Stormwater outfall - Detention/retention ponds - Canalized urban rivers - Bridges, culverts and drifts - Prevent formation of islands in the channel of the river - Dredging of in-stream dams
Category B: Emergency repairs – urgent action required to manage risk and damage to assets	- Repair to erosion of river bank or servicing infrastructure (e.g. pipelines/roads) - Removal of material built up as a result of flooding/sedimentation and increasing risk to infrastructure - Address damage or replacement of infrastructure (e.g. bridge, pipeline, pump house) - Manage the condition of flood protection berms, and existing structures such as gabions, canalized and stormwater systems - Installing temporary gravel approaches at flood-damaged river crossings
Category C: Managing alien invasive and bush encroachment plant species	- Clearing of alien invasive vegetation out of a watercourse to reduce maintenance requirements as they relate to erosion and sedimentation - Management of indigenous species categorized as bush encroachment, to improve hydrological flow and reduce associated flooding impacts

Category D: Rehabilitation and restoration activities for maintaining ecological infrastructure	• Development and maintenance of ecological buffering systems to improve and/or restore functioning (e.g. wetlands and stormwater detention ponds) • Actively rehabilitating riparian zones through planting of locally indigenous species • Bank grading and movement/removal of berms and barriers to flow
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4) The development of appropriate method statements to mitigate the impact of the maintenance needs, should be aligned within the framework of these considerations:

- a. Watercourses experience a natural process of sedimentation and erosion, with varying rates depending on the geomorphology and the integrity of the land-uses within the catchment;
- b. Manipulation of the watercourse results in increased erosion and/or deposition being experienced further downstream, perpetuating greater need for manipulation and more drastic and costly maintenance interventions;
- c. Locally indigenous riparian and wetland vegetation assists in the stabilization of riverbanks through effective root structures, while contributing to improve in-stream habitat and water quality conditions;
- d. Invasive alien and bush encroachment vegetation significantly impact on the functioning of a watercourse, often leading to increased flood associated damage, with further implications and a reduction in water quality and availability;
- e. Persons undertaking maintenance activities have a responsibility to ensure a sense of duty of care is applied as prescribed within NEMA Section 28(1).

5) It is recognized that within urban areas, sedimentation and erosion rates are significantly amplified as a result of development in urban areas and thus systems associated with watercourses in such areas can no longer be considered as 'natural'. In such a context, the drivers of such a process are often located outside the control of the landowner or responsible authority (i.e. Municipality). Therefore, the response taken to address the needs of a maintenance management plan for a watercourse within the urban environment may be limited in mitigating the requirement for maintenance to be undertaken.

C. REQUEST FOR THE COMPETENT AUTHORITY TO DEFINE OR ADOPT A MAINTENANCE MANAGEMENT PLAN FOR A WATERCOURSE IN TERMS OF THE NEMA, EIA REGULATIONS 2014 (AS AMENDED).

The following information must be submitted as part of the request for the competent authority to define or adopt the MMP:

1. PERSONAL DETAILS

Highlight the Departmental Sub-Region(s) in which the maintenance is to be undertaken. (mark the appropriate box with an 'X'). For Departmental, details see Annexure A.

REGION 1 (City of Cape Town Metropolitan and West Coast District) ☐	REGION 2 (Cape Winelands District, Overberg District) ☐	REGION 3 (Eden & Central Karoo Districts) ☒	
Name of person/authority who will undertake responsibility for the activity:	Western Cape Government: Department of Infrastructure		
Contact person (if other):	Mr. Azni November		
Postal address:	P.O. Box X9185		
Telephone:	(021) 483 0585	Postal code:	8000
Fax:		Cell:	
Email:	Azni.November@westerncape.gov.za		
Name of person who has prepared the MMP:	Carina Becker / Hetlie Liebenberg		
Contact Person (if other):	Carina Becker		
Postal address:	P.O. Box 2632, Paarl		
Telephone:	(021) 870 1874	Postal code:	7620
Fax:	(021) 870 1873	Cell:	
E-mail:	carina@gnec.co.za / hl@gnec.co.za		

Name of landowner(s) on whose behalf the plan has been developed:	Western Cape Government Department of Infrastructure		
Contact person(s):	Mr. Azni November on behalf of Western Cape Government: Department of Infrastructure		
Postal address:	P.O. Box X9185		
Telephone:	(021) 483 0535	Postal code:	8000
Fax:		Cell:	
E-mail:	Azni.November@westerncape.gov.za		
Municipality for proposed project:	Beaufort West Local Municipality / Central Karoo District Municipality		
Farm name(s), erf(s) and portion number(s) etc*:	The proposed periodic maintenance of TR16/8 and TR16/9 is under the jurisdiction of the Central Karoo District Municipality. The proposed maintenance is proposed to take place within the proclaimed road reserve.		
Magisterial District or Town:	Between the Northern Cape border towards Victoria West and Murraysburg		
Name(s) of watercourse(s) in question:	Two major systems: Brak River and associated tributaries Buffels River and associated tributaries		
*In instances where there is more than one landowner, please attach a list of landowners with their full names, contact details, farm name, farm number, portion number, Erf number, coordinates and signed declaration confirming approval for development and responsibility of the MMP			

2. DECLARATION

THE PERSON THAT WILL BE UNDERTAKING THE MAINTENANCE

I Azni Khail November, in my **personal capacity** or **duly authorised** (please circle the applicable option) by Western Cape Government, Department of Infrastructure (name of legal entity) thereto hereby declare that ~~I~~we:

- Request the MMP to be adopted by the Competent Authority;
- Regard the information contained herein to be true and correct for this Maintenance Management Plan;
- Are fully aware of my responsibilities in terms of the National Environmental Management Act of 1998 ("NEMA") (Act No. 107 of 1998) and that, notwithstanding the adoption of this MMP, I/we shall comply with any other statutory requirement applicable, which may include, but not limited to the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), the National Water Act, 1998 (Act No. 36 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended) ("EIA Regulations"), in terms of NEMA;
- Are fully aware that the proposed maintenance constitutes a listed activity in terms of the NEMA EIA Regulations, 2014 (as amended) and that an environmental assessment for environmental authorisation may be required for any other listed activities not included as part of this MMP;
- Acknowledge that any activity undertaken that does not form part of the defined and adopted MMP, will be subject to the Section 24(F) of NEMA and that appropriate enforcement and compliance requirements will follow;
- Shall undertake only those tasks described in the MMP, failing which environmental authorisation will be required, where applicable;
- Shall provide the competent authorities with access to all information at my disposal that is relevant to this request;
- Shall be responsible for any costs incurred in complying with environmental legislation;
- Hereby indemnify the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of, inter alia, any loss or damage to property or person as a consequence of undertaking this MMP; and
- Are aware that a false declaration is an offence in terms of Regulation 48(1)(a) GN No. R. 982 of 4 December 2014 (as amended).



Signature of the proponent:

21/09/2023

Date:

Western Cape Government, Department of Infrastructure

Name of institution/company:

3. INTRODUCTION AND BACKGROUND

The proposed periodic maintenance of Trunk Road 16 Section 8 (TR16/8) and Trunk Road 16 Section 9 (TR16/9) is located between Murraysburg and Victoria West in the Northern Cape area and is maintained by the Central Karoo District Municipality. Murraysburg is situated approximately 93 kilometres South of Victoria West. TR16/8 (R63) is approximately 4.64km in length and starts at the border of the Northern Cape at km 43.48 and ends at the TR16/8 / N1 intersection at km 48.12. The TR16/9 starts at the N1 intersection and continues straight through the relatively flat Karoo landscape up to the town of Murraysburg, where it ends at the junction with Church Street in the heart of the town at km 42.05.

The N1 National Road is approximately 46.69 kilometres Northwest of Murraysburg. The dominate land-use in the area of the proposed periodic maintenance along the TR16/8 and TR16/9 road is livestock farming and agricultural activities.

EFG Engineers (Pty) Ltd., on behalf of the Western Cape Government: Department of Infrastructure (previously Transport and Public Works), appointed Guillaume Nel Environmental Consultants (GNEC) in order to facilitate a Basic Assessment Process for the proposed periodic maintenance of Trunk Road 16/8 and Trunk Road 16/9.

The listed activities in terms of the National Environmental Management Act (NEMA) EIA Regulations, 2014 (as amended) for the proposed construction/maintenance work are triggered by the maintenance activities taking place within the watercourses on the site. It is important to note that the works on the road surface itself is not triggered (activities including repair of edge break, surfacing and base repair, filling of ruts, texture slurring and resurfacing of the road). The proposed maintenance at structures, mainly sediment removal repairs to existing infrastructure and daylighting situated within watercourses triggers listed activities. Generally, all the culvert inlets and outlets need to be cleaned and most culvert barrels need to be cleaned out as they are blocked. The culverts will therefore be cleaned and repaired. Daylighting of culvert required; daylighting might extend beyond the fence line / road reserve. Daylighting is required to prevent stagnant water within the culvert and next to the road. It is important to note that the maintenance works outside the road reserve only relates to Activity 19 & 27 of Listing Notice 1. The vegetation clearance activity (Activity 27 of Listing Notice 1) might be triggered when vegetation removal at the culverts is required.

It is furthermore important to note that maintenance activities, especially future maintenance, is generic which makes site specific or pinpoint accuracy not possible due to unknown factors. These unknown factors mostly relate to climatic conditions, for example heavy rainfall causing flood damage, or general damage to infrastructure through road accidents or vandalism to infrastructure. Due to the unknown's, it makes planning and design very difficult. This MMP includes a number of generic maintenance activities, page 22, which will trigger Activity 19 and 27

of Listing Notice 1 when required.

The expertise of the person who prepared this report follows:

Carina Becker holds a BA Degree in Development and Environment from Stellenbosch University, a PGD in Environmental Management from Stellenbosch University and Certificate in Environmental Law for the Mining Sector, Centre for Environmental Management (CEM-NWU). Carina Becker has six years relevant experience as an Environmental Assessment Practitioner.

4. ENGAGEMENT PROCESS

4.1 AUTHORITY ENGAGEMENT

Please indicate (with an 'x') which of the following authorities have been consulted to provide input based on the proposed maintenance activities:

- ☐ Department of Water and Sanitation
- ☐ Catchment Management Agency
- ☐ Cape Nature
- ☒ SANParks
- ☐ Western Cape Department of Agriculture, Directorate: Sustainable Resource Management
- ☐ District Municipality
- ☐ Local Municipality
- ☒ Irrigation Board / Water Users Association
- ☐ Heritage Western Cape
- ☒ Department of Agriculture, Forestry and Fisheries
- ☐ Department of Environmental Affairs & Development Planning
- ☐ Other (please list):

For each of the indicated authorities, please provide an explanation as to their required involvement. Details of interactions with each of the respective authorities should be captured by providing an attendance register and minutes of meetings attended with the authority in question. Comments received from the authorities must be submitted and referenced within the final application.

The final MMP will be submitted to the following Authorities:

- Department of Environmental Affairs and Development Planning
- CapeNature
- Heritage Western Cape (HWC)
- Department of Agriculture
- Mzimvubu to Tsitsikamma Proto Catchment Management Agency
- Beaufort West Local Municipality
- Central Karoo District Municipality

For a MMP where multiple property owners are involved or a plan is developed for members of an association, it is recommended that a Project Liaison Committee is setup, to achieve the following objectives:

- Present the project work plan and objectives for approval;
- Present the initial findings and draft of the plan for discussion and approval;
- Present the final accepted plan for agreement and clarification.

In cases where the Municipality is the proponent, it is advised that the Project Liaison Committee represent the multiple departments involved with the maintenance and management of watercourse, which could include but is not limited to departments of, Stormwater, Water and Sanitation, Environment, Parks and Wastewater. Such an approach seeks to ensure alignment and an understanding of the roles and responsibilities of the varying maintenance requirements within the Municipality.

4.2 PUBLIC PARTICIPATION

You are required to notify any and all potential interested and affected party(ies) of the proposed activity(ies) and allow them the opportunity to comment on the MMP for a watercourse. The detail required is outlined below, however this can be further discussed and determined as part of the pre-consultative meeting with the Department, which would ensure due diligence and good governance principles are applied.

It is noted, that for the development of MMPs for watercourses within the urban area, by Municipalities, public notice can be undertaken through the advertisement of the development of a MMP within local/community newspapers for the respective areas, with the relevant evidence of such an advertisement included in the final submission.

The following public participation recommendations, regarding the different scale or geographical extent of the request, are as follows. If no, then motivation must be given as to why a particular process was not undertaken.

Single property / maintenance and management activities along a watercourse occurring along a stretch of no more than 1 kilometer (≤1000 meters):

(i) Given written notice to the owner or person in control of that land if the person undertaking the maintenance activity is not the owner or person in control of the land.	N/A	
(ii) Given written notice to adjacent landowners (up to 500m upstream and	N/A	

downstream from furthest upstream and downstream maintenance site and opposite side of the banks) of the development of the MMP.		
(iii) Stakeholder meeting held for adjacent landowners, in which MMP is presented. This must include an opportunity for adjacent landowners to provide comment.	N/A	
(iv) Given written notice to any organ of state having jurisdiction in respect of any aspect of the activity(ies) proposed within the development of the MMP.	N/A	
(v) Provided written notice and confirmation to the relevant Water Users Association (WUA) or Irrigation Board (IB) of the development of the MMP, if applicable.	N/A	

Single or Multiple properties / WUA / IB / local authority applying for a single MMP to cover a stretch of a watercourse longer than 1 kilometer (>1000 meters) OR a catchment or sub-catchment area

(i) Given written notice to the owner(s) or person(s) in control of the land if the person(s) undertaking the maintenance activity(ies) is not the owner or person in control of the land.		<i>Western Cape Government: Department of Infrastructure is the owner of the respective road reserves and is also responsible for maintenance activities.</i>
(ii) Given written notice to non-participating adjacent landowners (up to 1km upstream and downstream from furthest upstream and downstream maintenance site and opposite side of the riverbanks) of the development of the MMP. <i>This must also include general notice to adjacent WUA or IB of the proposed MMP development if application is made by a WUA or IB.</i>		<i>Site notices were placed along the beginning and end locations along the roads.</i>
(iii) Stakeholder meeting held for all participating and non-participating landowners, in which details and methodology of MMP is presented. A minimum of two meetings are required, to present on the development of the plan and a final draft version of the plan.		<i>No stakeholder meetings is proposed to be held.</i>
(iv) Given written notice to any organ of state having jurisdiction in respect of any aspect of the activity(ies) proposed within the development of the MMP.		<i>The following Organs of State were given notice:</i> • <i>Department of Environmental Affairs and Development Planning</i> • <i>CapeNature</i> • <i>Heritage Western</i>

		Cape (HWC) • Department of Agriculture • Beaufort West Local Municipality • Central Karoo District Municipality • Mzimvubu-Tsitsikamma Catchment Management Agency • SANRAL
(v) Provide written notice and confirmation to the relevant Water Users Association (WUA) or Irrigation Board (IB), of the development of the MMP (if a MMP is not requested and managed through a WUA/IB).		The Mzimvubu-Tsitsikamma Catchment Management Agency was provided with an electronic copy of the final draft MMP.
(vi) Describe any other measures taken to inform the public about this MMP. A complete list of measures that are in place to deal with interactions with the public, if it becomes necessary and required by the competent authority during implementation of the project, must be provided for.		An advertisement was placed in the newspaper as notification of the proposed maintenance work. The newspaper advertisement mentioned that a copy of the draft MMP will be made available electronically and to any I&AP's on request and available on GNEC's website. Site notices were placed at different locations along all the roads. It is important to note that additional site notifications were placed at a local store within in town of Murraysburg.

Please circle the appropriate answer above to indicate the public participation process that has been followed to give notice of this request to potential interested and affected parties and attach any comments and/or objections received, with evidence provided and referenced.

5. DATA COLLECTION AND ASSESSMENT

Information required for *maintenance and management activities for single/ multiple owners along a watercourse.*

Site Location and Activity Description

Site Location:

TABLE 1: SITE LOCATION CO-ORDINATES

TR16/8 from km 43.48 – km 48.23	Starting point co-ordinates for all alternatives			
	Latitude (S)	31°	41'	25.74"
	Longitude (E)	23°	23'	46.33"
	Middle point co-ordinates for all alternatives			
	Latitude (S)	31°	42'	32.89"
	Longitude (E)	23°	24'	48.06"
	End point co-ordinates for all alternatives			
	Latitude (S)	31°	43'	38.52"
	Longitude (E)	23°	26'	10.50"
TR16/9 from km 0.00 – km 41.42	Starting point co-ordinates for all alternatives			
	Latitude (S)	31°	43'	39.69"
	Longitude (E)	23°	26'	12.04"
	Middle point co-ordinates for all alternatives			
	Latitude (S)	31°	49'	58.92"
	Longitude (E)	23°	36'	18.16"
	End point co-ordinates for all alternatives			
	Latitude (S)	31°	57'	44.67"
	Longitude (E)	23°	45'	44.60"

Site Location and photo pages:

Site location of the proposed periodic maintenance roads.

The co-ordinates are indicated in Table 1 above.



Locality Map of the proposed periodic maintenance site.

FIGURE 1: Locality Map of the proposed maintenance roads.



FIGURE 2: SITE PHOTO OF THE EXISTING TR16/8 ROAD.



FIGURE 3: SITE PHOTO OF SPARSE VEGETATION IN CERTAIN AREAS ALONG THE ROUTE.



FIGURE 4: PHOTO OF VEGETATION IN THE AREA AS WELL AS AN EXISTING WATERCOURSE ON TRUNK ROAD 16/8.



FIGURE 5: SITE PHOTO INDICATING BOX CULVERTS.



FIGURE 6: PHOTO OF THE EXISTING GABRIEL STREAM BRIDGE ON TR16/8 INDICATING A WATERCOURSE.



FIGURE 7: SITE PHOTO OF THE INVESTIGATED AREA. PHOTO TAKEN IN A NORTHERN DIRECTION.



FIGURE 8: SITE PHOTO OF AN EXISTING CULVERT AT KM NO. 30.15 ON TR16/9.



FIGURE 9: SITE PHOTO OF THE EXISTING TR16/9 ROAD BETWEEN MURRAYSBURG AND THE N1 NATIONAL ROAD.



FIGURE 10: PHOTO OF THE VEGETATION IN THE AREA.



FIGURE 11: SITE PHOTO OF AN EXISTING CULVERT ALONG THE ROUTE OF TR16/9.



FIGURE 12: SITE PHOTO OF AN EXISTING CULVERT ALONG TR16/9.



FIGURE 13: SITE PHOTO OF THE ROAD AT THE UTKYK RIVER / BRIDGE (TRUNK ROAD 16/9).



FIGURE 14: SITE PHOTO TAKEN IN A NORTHEASTERN DIRECTION.



FIGURE 15: SITE PHOTO INDICATING VEGETATION IN THE AREA AT AN EXISTING CULVERT ON TRUNK ROAD 16/9.



FIGURE 16: SITE PHOTO INDICATING AN EXISTING
CULVERT ALONG THE ROUTE.



FIGURE 17: PHOTO OF AN EXISTING BRIDGE ALONG
THE ROUTE INDICATING A WATERCOURSE.

Activity description

The proposed periodic maintenance of Trunk Road 16 Section 8 and Trunk Road 16 Section 9 is located between Murraysburg towards Victoria West and is maintained by the Central Karoo District Municipality on behalf of the Western Cape Government: Department of Infrastructure. The dominant land-use along the route is livestock farming and agricultural activities.

The proposed maintenance will take place within the existing proclaimed road reserve of the following roads:

- Trunk Road 16/8 from km 43.48 to km 48.12
- Trunk Road 16/9 from km 0.00 to km 41.42

The total length of the road being repaired is approximately 46 kilometers in length.

TR16/8 and TR16/9 (the indicated sections) are existing surfaced roads with stormwater infrastructure being present at different locations along the road to ensure the throughflow of water underneath the road. The majority of the structures along the two roads require minor maintenance, but a number of the structures require future maintenance, after the initial maintenance and minor upgrades proposed during the upcoming construction contract.

There are various minor and major concrete culverts passing under the roads. Generally, all the culvert inlets and outlets need to be cleaned and most culvert barrels need to be cleaned out as they are blocked with sediment and/or vegetation. The culverts will therefore be cleaned and repaired. Daylighting of culvert required; daylighting might extend beyond the fence line / road reserve. Daylighting is required to prevent stagnant water within the culvert and next to the road. During daylighting, sediment and vegetation is removed to allow stagnant water to flow away.

The listed activities in terms of the National Environmental Management Act (NEMA) EIA Regulations, 2014 (as amended) for the proposed future maintenance work are triggered by the maintenance activities taking place within the watercourse along the two roads and due to vegetation clearance being proposed.

The following future maintenance activities are proposed at the culverts situated within watercourses on TR16/8 and TR16/9:

- Clearing of sediment, vegetation and debris from culverts;
- Repairs to headwalls/wingwalls;
- Cracked culvert barrels must be repaired/sealed;
- Repairs to culvert floor;
- Repairs to apron slabs;

- Reinstatement/repairs to concrete slopes;
- Repairs to existing gabions and reno-mattresses for erosion control;
- Reinstatement/repairs to side drains;
- Replacement or realignment of road signs in poor conditions;
- Removal of illegal road signs;
- Removal of overgrown vegetation blocking road signs;
- Reinstatement of danger plates missing at culverts;
- Reinstatement of road markings;
- Repairment of guardrails where required;
- Minor spalling at bridges is to be repaired;
- Minor repairs at bridges including replacement of bridge joints with new Thorma joints;
- Handrailing and gabions at major culverts need to be repaired; and
- Daylighting of culvert required; daylighting might extend beyond the fence line / road reserve. Daylighting is required to prevent stagnant water within the culvert and next to the road.

TR16/8:

The **culverts** (situated within watercourses) along the route of TR16/8 can be found in the list below:

- **Culvert** at Km 43.92 (Approximately 180m Northwest of the Western Cape boundary)
- **Culvert** at Km 44.49
- **Culvert** at Km 46.75
- **Culvert** at Km 47.75

TR16/9:

The **culverts** (situated within watercourses) along the route of TR16/9 can be found in the list below:

- **Culvert** at Km 0.21
- **Culvert** at Km 0.34
- **Culvert** at Km 0.43
- **Culvert** at Km 0.55
- **Culvert** at Km 1.26
- **Culvert** at Km 3.58

- **Culvert** at Km 7.24
- **Culvert** at Km 7.39
- **Culvert** at Km 7.70
- **Culvert** at Km 7.79
- **Culvert** at Km 7.88
- **Culvert** at Km 7.97
- **Culvert** at Km 8.64
- **Culvert** at Km 8.85
- **Culvert** at Km 9.75
- **Culvert** at Km 13.03
- **Culvert** at Km 13.09
- **Culvert** at Km 13.22
- **Culvert** at Km 13.34
- **Culvert** at Km 13.44
- **Culvert** at Km 13.58
- **Culvert** at Km 13.70
- **Culvert** at Km 13.98
- **Culvert** at Km 14.22
- **Culvert** at Km 14.96
- **Culvert** at Km 15.26
- **Culvert** at Km 24.23
- **Culvert** at Km 24.39
- **Culvert** at Km 24.63
- **Culvert** at Km 25.05
- **Culvert** at Km 25.56
- **Culvert** at Km 25.73

- **Culvert** at Km 27.16
- **Culvert** at Km 27.28
- **Culvert** at Km 28.29
- **Culvert** at Km 29.68
- **Culvert** at Km 30.14
- **Culvert** at Km 30.28
- **Culvert** at Km 30.36
- **Culvert** at Km 30.95
- **Culvert** at Km 31.00
- **Culvert** at Km 31.88
- **Culvert** at Km 32.27
- **Culvert** at Km 33.03
- **Culvert** at Km 33.13
- **Culvert** at Km 33.52
- **Culvert** at Km 34.33
- **Culvert** at Km 34.54
- **Culvert** at Km 35.91
- **Culvert** at Km 36.18
- **Culvert** at Km 36.41
- **Culvert** at Km 36.64
- **Culvert** at Km 37.16
- **Culvert** at Km 38.20
- **Culvert** at Km 39.02
- **Culvert** at Km 39.79
- **Culvert** at Km 40.69
- **Culvert** at Km 40.79

- **Culvert** at Km 40.9
- **Culvert** at Km 41.01

The following indicate required future maintenance at the bridges and include the proposed accesses to be used at the bridges.

TR16/8:

Bridge B4611: TR16/8 at Km 46.11 (Gabriel Stream)

The existing bridge is a 7 span simply supported in-situ concrete structure. The bridge consists of precast beams and an in-fill composite deck with closed wall type abutments with wing walls and wall-type piers. The bridge is founded on spread footings – dolerite rock.

The following future maintenance activities are proposed at **Bridge B4611**:

- Reseal deck and seal exposed concrete shoulder;
- Install asphaltic plug joints at piers;
- Roll-over joints with glass grid at abutments;
- Clean and apply a protective cementitious coating to all pier and abutment walls;
- Concrete repairs to balustrades and apply cementitious protective coating;
- Replace bridge handrails with precast concrete handrails;
- Concrete repairs to the deck;
- Concrete repairs at existing piers;
- Sediment removal;
- Maintenance to existing erosion protection works;
- Vegetation clearance where applicable.

The following access is proposed to be used at B4611, if required. Access situated within road reserve.

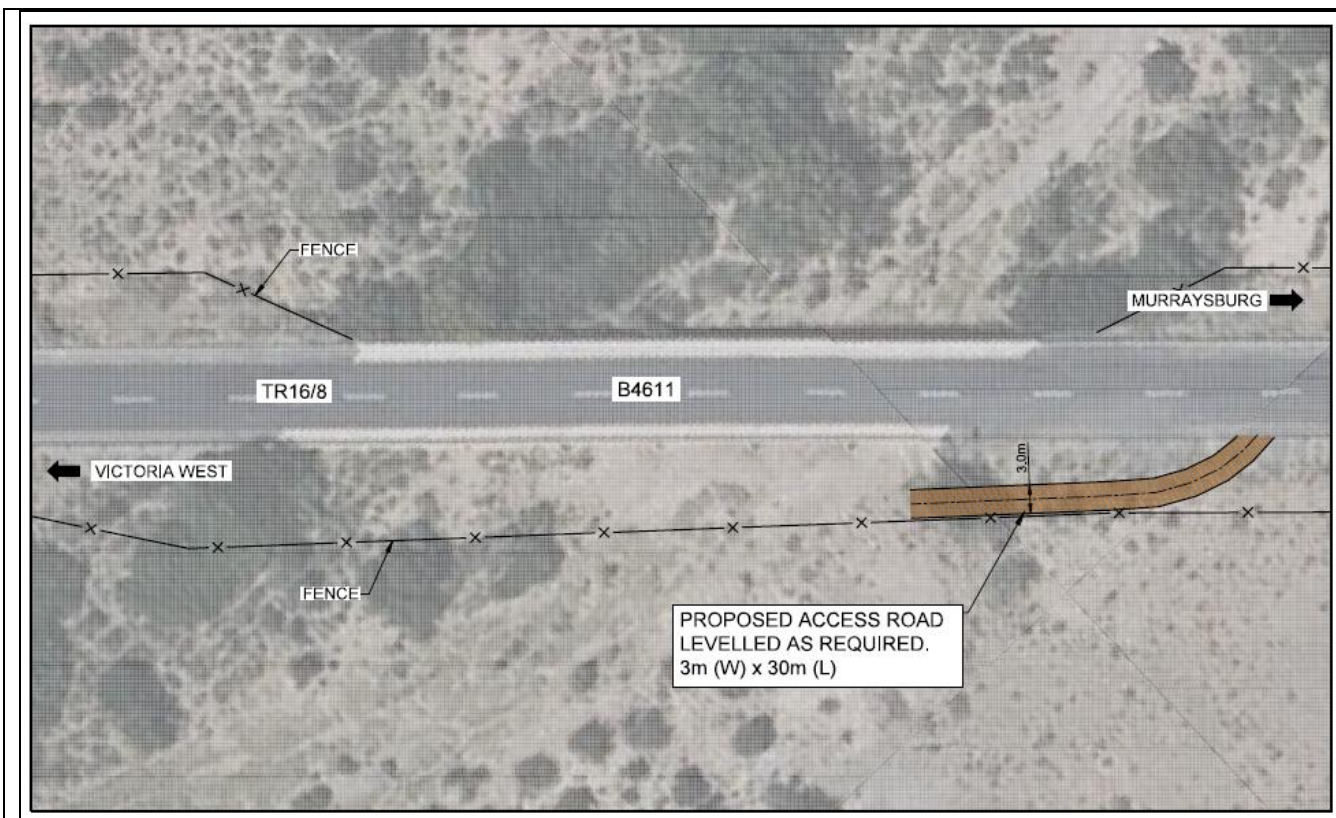


Figure 18: Proposed bridge access at B4611.

TR16/9:

4 Bridges.

Bridge B4612: TR16/9 at Km 17.45 (Brakvallei River)

The existing bridge is a 6 span simply supported concrete structure. The bridge is in fair structural condition and consists of pre-cast beam and an in-fill composite deck. The bridge can be described to have closed wall type abutments with wing walls and wall type piers. The bridge is founded on spread footings on calcrete.

The following maintenance activities are proposed at **Bridge B4612** for the existing structure:

- Reseal deck and seal exposed concrete shoulder;
- Install asphaltic plug joints at piers;
- Roll-over joints with glass grid at abutments;
- Clean and apply a protective cementitious coating to all pier and abutment walls;
- Concrete repairs to balustrades and apply cementitious protective coating;
- Replace bridge handrails with precast concrete handrails;
- Concrete repairs to the deck;
- Concrete repairs at existing piers;

- Sediment removal;
- Maintenance to existing erosion protection works;
- Vegetation clearance where applicable.

The following access is proposed to be used at B4612, if required. Access situated within road reserve.

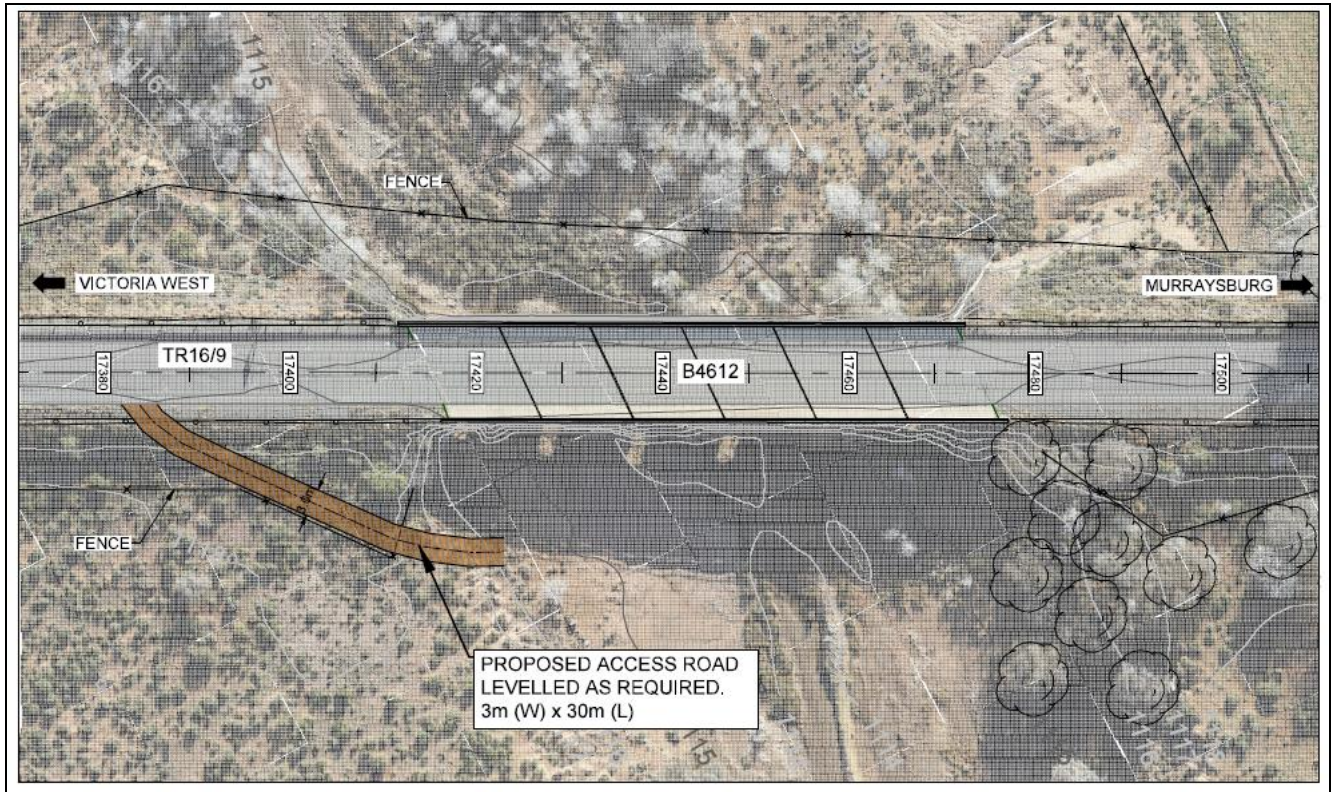


Figure 19: Proposed access at Bridge B4612.

Bridge B4613: TR16/9 at Km 18.92 (Tributary of the Brakvallei River)

The existing bridge is a 3 span simply supported concrete structure. The bridge consists of a precast beam and infill composite deck with closed wall type abutments with wingwalls and wall-type piers. The bridge is founded on spread footings on calcrete.

The following maintenance activities are proposed for existing structure at **Bridge B4613**:

- Reseal deck and seal exposed concrete shoulder;
- Install asphaltic plug joints at piers;
- Roll-over joints with glass grid at abutments;
- Clean and apply a protective cementitious coating to all pier and abutment walls;
- Re-instate gap in balustrade joints;
- Concrete repairs to balustrades and apply cementitious protective coating;
- Concrete repairs to the deck;

- Concrete repairs at existing piers;
- Sediment removal;
- Maintenance to existing erosion protection;
- Vegetation clearance where applicable

The following access is proposed to be used at B4613, if required. Access situated within road reserve.

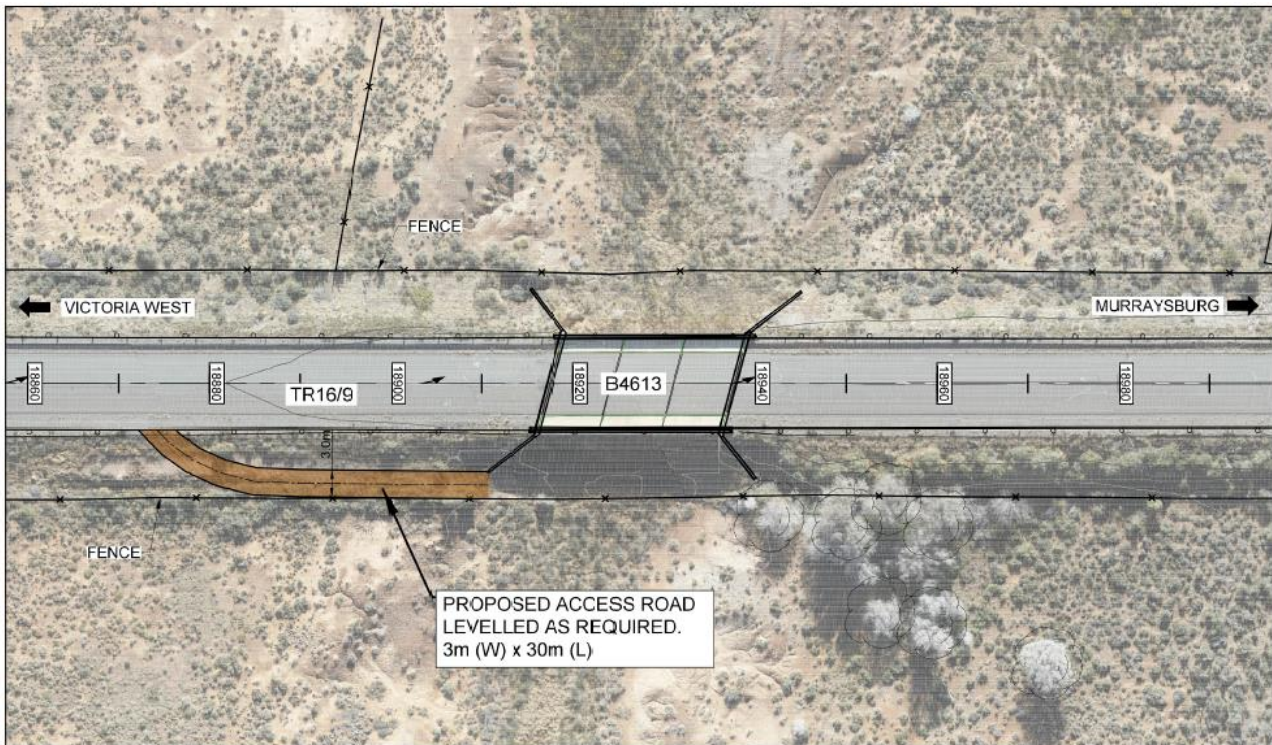


Figure 20: Proposed access to Bridge B4613.

Bridge B4614: TR16/9 at Km 26.94 (Buffalo River)

The existing bridge is a 3 span simply supported concrete structure. The bridge consists of cast-in-situ beams and a slab deck. Closed abutments with return walls on caissons are present as well as wall-type piers on shale.

The following maintenance activities are proposed for existing structures at **Bridge B4614**:

- Reseal deck and seal exposed concrete shoulder;
- Roll-over joints with glass grid at abutments ends / approach slab;
- Clean and apply a protective cementitious coating to all pier and abutment walls;
- Concrete repairs to balustrades and apply cementitious protective coating;
- Replace bridge handrails with precast concrete handrails;
- Repair gabion embankment protection works and bush clearing;
- Maintenance to existing erosion protection;

- Vegetation clearance where applicable;
- Concrete repairs at piers;
- Sediment removal.

The following access is proposed to be used at B4614, if required. Access situated within road reserve.

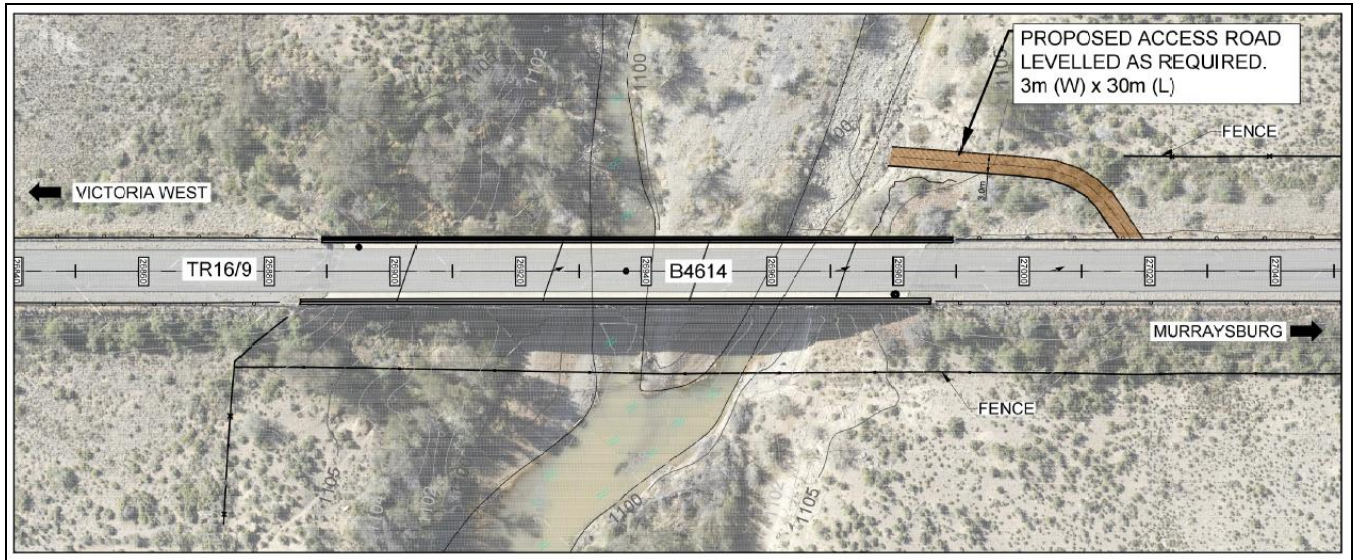


Figure 21: Proposed access at Bridge B4614.

Bridge 4615: TR16/9 at Km 39.50 (Uitkyk River)

The existing bridge is a 3 span simply supported concrete structure. The bridge consists of precast beam and in-fill Solid composite deck with closed wall type abutments with wing walls. The bridge has wall-type piers and is found on spread footings on rocks.

The following maintenance activities are proposed for existing structures at **Bridge B4615**:

- Reseal deck and seal exposed concrete shoulders;
- Install asphaltic plug joints at piers;
- Roll-over joints with glass grid at abutments;
- Clean and apply a protective cementitious coating to all pier and abutment walls;
- Minor concrete repairs in balustrades and apply protective coating;
- Concrete repairs at piers;
- Sediment removal;
- Maintenance to existing erosion protection works;
- Vegetation clearance where applicable;

The following access is proposed to be used at B4615, if required. Access situated within road reserve.

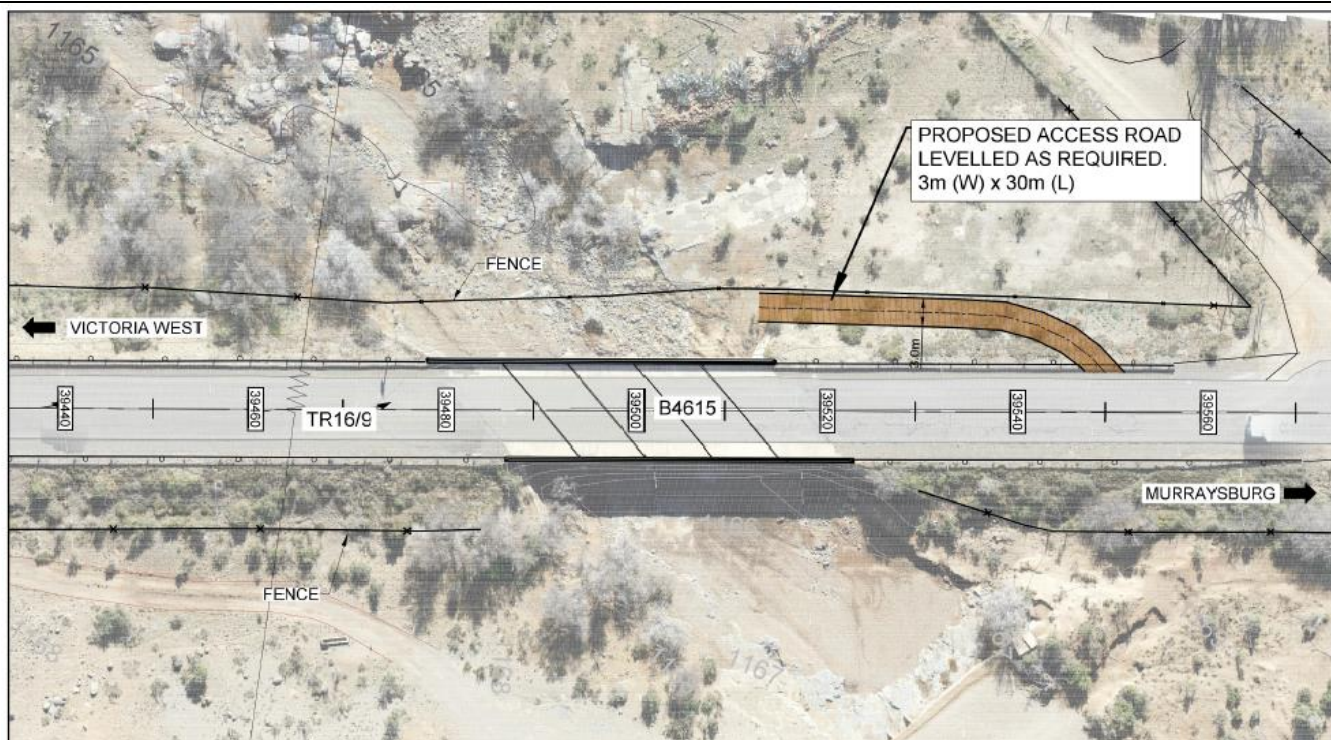


Figure 22: Proposed access to Bridge B4615.

Freshwater

Freshwater Ecologist Network (FEN) Consulting (Pty) Ltd. was appointed by Guillaume Nel Environmental Consultants (GNEC) to conduct a specialist freshwater ecological assessment as part of the Environmental Authorisation (EA) and Water Use Authorisation processes for the proposed periodic maintenance of TR16/8 and TR16/9 which is a section of the R63 road corridor, immediately north-west of the town of Murraysburg, and south of the town of Victoria West, Western Cape.

According to FEN Consulting (2023), two primary drainage systems are traversed by the assessed section TR16/8 and TR16/9, specifically the Brak River and Buffels River, and their associated tributaries which include two channelled valley bottom wetlands which drain into the Brak River. These watercourses are in a largely natural to moderately modified ecological state, and of high ecological importance and sensitivity.

Based on the findings of the freshwater assessment, the proposed periodic maintenance of Trunk Road 16/8 and Trunk Road 16/9 predominantly pose a low risk to the various watercourses, since activities do not require extensive work or time within the active channels of the watercourses.

STATUS OF THE WATERCOURSES FOUND ALONG THE ROADS:

The following section was extracted from the Freshwater Verification and Risk Assessment Report compiled by Freshwater Ecological Network (FEN) Consulting (Pty) Ltd. (2023).

The identified watercourses were classified according to Classification System as an Inland System, located within the Drought Corridor Ecoregion, and Lower Nama Karoo Wetland Vegetation Types,

considered Critically Endangered in terms of conservation status as per Mbona *et al.* (2015).

During the site visit conducted by FEN Consulting (2023), the presence of two primary river systems, specifically the Brak and Buffels Rivers, along with various small tributaries thereof (characterised as periodic episodic drainage lines with riparian vegetation) as well as two Channelled Valley Bottom (CVB) wetlands draining into the Brak River were identified in association of the sections which were assessed, to be maintained.

TABLE 2: CHARACTERISATION OF THE WATERCOURSES ASSOCIATED WITH THE PROPOSED ROAD.

Watercourse	Level 3: Landscape Unit	Level 4: Hydrogeomorphic Type
Channelled Valley Bottom Wetlands	Valley Floor: the base of a valley, situated between two distinct valley side-slopes, where alluvial or fluvial processes typically dominate.	Channelled Valley Bottom wetland: A valley bottom wetland with a river channel running through it.
Rivers and Episodic Drainage lines with riparian vegetation	Slope: an indicated stretch of ground typically located on the side of a mountain, hill or valley, not forming part of a valley floor. Includes scarp slopes, mid-slopes and foot-slopes.	A linear landform with clearly discernible bed and banks, which permanently or periodically carries a concentrated flow of water.

Numerous culverts have been constructed under the TR16/8 and TR16/9 roads to allow for drainage. Whilst many are small box culverts or pipe culverts, several are defined as 'major' culverts, comprising either single box culverts of 2.40m wide or multiples thereof, or two or more 1.80 wide box culverts, inferring that periodically, large volumes of water need to be conveyed under the road.

6. METHOD STATEMENT

The following serves as a general guide required to minimise the spatial impact of the maintenance activity:

- Repairs and maintenance should be undertaken within the dry season, except for emergency maintenance works.
- Where at all possible, existing access routes should be used. In cases where none exist, a route should be created through the most degraded area avoiding sensitive/indigenous vegetation areas.
- Responsible management of pollutants through ensuring handling and storage of any pollutants is away from the watercourse. When machinery is involved, ensure effective operation with no leaking parts and refuel outside of the riparian area, at a safe distance from the watercourse to manage any accidental spillages and pose no threat of pollution.

- At no time should the flow of the watercourse be blocked (temporary diversions may be allowed) nor should the movement of aquatic and riparian biota (noting breeding periods) be prevented during maintenance actions.
- No new berms can be created.
- In circumstances which require the removal of any top soil, this must be sufficiently restored through sustainable measures and practices.
- Concerted effort must be made to actively rehabilitate repaired or reshaped banks with indigenous local vegetation.
- No deepening of the watercourse beyond the original, pre-damage determined thalweg, unless such deepening is directly related to the natural improved functioning and condition of such a watercourse.
- Where at all possible, limit the disturbance to the zone of the thalweg. This is due to the ecological importance of the low flow channel and respective habitat being allowed to re-establish improving the ecological condition.
- The build-up of debris/sediment removed from a maintenance site may:
 - be utilised for the purpose of in-filling or other related maintenance actions related to managing erosion, which form part of an adopted MMP;
 - not be used to enlarge the height, width or any extent of existing berms;
 - not be deposited anywhere within the watercourse or anywhere along the banks of a river where such action is not part of the proposed maintenance activity (ies). Material that cannot be used for maintenance purposes must be removed out of the riparian area to a suitable stockpile location or disposal site. Further action and consideration may be required where the possibility of contaminated material may occur, such as in urban watercourses.
- The use of foreign material, such as concrete, rubble, woody debris and/or dry land based soil, is strictly prohibited from being used in maintenance actions, unless for the specific purpose of repairs to existing infrastructure, coupled with appropriate mitigation measures.
- On completion of the maintenance action, the condition of the site in terms of relative topography should be similar to the pre-damaged state (i.e. the shape of the river bank should be similar or in a state which is improved to manage future damage). This ultimately dictates that the channel, banks and bed cannot be made narrower, higher or deepened respectively. Exceptions are considered for systems involved with the management of stormwater and improvements for water quality within the urban context.

The roles and responsibilities of the various role players involved in the maintenance phase should be noted. The possible role players include the Proponent, Project Manager, Contractor, Environmental Control Officer (ECO) (if applicable) and Civil Engineer (if applicable).

Proponent

The holder of the MMP, in this case the Western Cape Government: Department of Infrastructure, will be the responsible party in ensuring that all mitigation measures are implemented. The proponent will consequently be responsible for the appointment of a suitably qualified Environmental Control Officer (ECO) for works where Activities 19 & 27 of Listing Notice 1 (GN R

983, 2014, as amended) is applicable. This will be required when a commercial contractor is appointed for maintenance activities under an (C) contract. The appointment of an ECO for minor maintenance activities will not be required. Minor maintenance activities can be seen as maintenance activities undertaken by the District Municipality, routinely removing sediment and vegetation overgrowth from culverts and minor repair works to culverts. The future maintenance activities included in the MMP are generic in nature and site-specific maintenance at each structure situated within a watercourse is not known at this stage as the MMP is for future maintenance (when required). The MMP was amended to refer to the current construction design drawings, the auditing requirements were included (only required where large scale maintenance is required under a construction contract), minor day to day repairs and maintenance works to ensure functionality of the structures does not require ECO monitoring or external independent environmental audits in terms of Regulation 34).

The proponent will be responsible for ensuring that the appointed contractor and District Municipality (maintenance agent) receive a copy of the MMP and understand its contents.

Project Manager

The Project Manager must ensure a clear communication line between all parties working on the project, to ensure all environmental concerns and measures, as stipulated in this MMP, are implemented.

The Project Manager should have direct communication with the Proponent.

The Project Manager must ensure that there is sufficient funding and resources for an ECO to adequately perform their role (should the appointment of an ECO be required).

Registered Civil Engineer (if applicable)

Provide all relevant instructions / drawings to the Contractor.

Must immediately inform the Project Manager and ECO if any changes to the project are envisaged.

Must immediately inform the Project Manager and ECO if any aspects of this MMP cannot be complied with.

Must remain in communication with the ECO and the Project Manager to ensure that any design changes required are issued to the Contractor.

Environmental Control Officer (ECO) (if applicable)

As mentioned, the appointment of a suitably qualified independent Environmental Control Officer (ECO) is only required for works where Activity 19 of Listing Notice 1 of GN Reg. No. 983 (as amended 07 April 2017), is applicable as explained above. Hence, the appointment of an ECO for minor maintenance activities will not be required.

The ECO is the person responsible for the monitoring of the implementation of this MMP during the implementation of the activities and for reporting on the degree of compliance.

The ECO is mandated to do the following:

- Ensure that all contractors / subcontractors / employees / construction workers are fully aware of their environmental responsibilities. The ECO is responsible in ensuring everyone on site is given an environmental awareness induction session which not only clearly defines what the environment is and specifics detailing the local environment but outlines the requirements of the MMP as a management tool to protect the environment.
- Monitor site activities on a regular basis (Monthly) (fortnightly site visits) to ensure that there is minimal environmental impact due to the proposed maintenance activities. An environmental audit report should be submitted to the DEA&DP and local municipality on a monthly basis.
- The ECO has the authority to stop works if in his / her opinion there is / may be a serious threat to or impact on the environment caused directly by the maintenance activities.
- The ECO must be competent, independent and suitably qualified.

Contractor

The Contractor/s, in this case, refers to any contractor/s on site.

Such contractor/s will take full responsibility for each of his / her employees and any penalties imposed.

The Contractor must immediately inform the Project Manager and ECO if any changes to the project are envisaged and if any aspects of this MMP cannot be complied with.

It is the responsibility of the Contractor/s to ensure that the measures stipulated within this MMP are adhered to.

Should the Contractor/s require clarity on any aspect of the MMP the Contractor must contact the ECO for advice.

The steps followed before development activities are undertaken, will be the same for all related development activities.

The following should be determined before any works within the freshwater system transpires:

- *Identify risk*

The proposed maintenance will be periodic, therefore occurring at intervals as and when required. Extreme weather conditions, such as flooding, can also damage road infrastructure, which might require maintenance activities. The Western Cape Government: Department of Infrastructure, or any appointed consultant, will inspect the road infrastructure in order to determine the need for

maintenance activities.

- *Determine whether the development activities will impact on sensitive natural habitat, i.e. will the maintenance impact on watercourses or natural vegetation.*

If the development activities will have an impact on natural habitat, the implementation of the mitigation measures stipulated in this MMP is imperative.

- *Before any maintenance activities are conducted, it should be determined whether the proposed works are classified as maintenance activities.*

This MMP is compiled for maintenance related activities. If the scope of the proposed works falls outside of the definition of maintenance, the relevant authorisations should be obtained before construction activities commences.

- *Timing of development*

It is considered imperative that the proposed development activities occur during the drier months, to minimise any impact on the hydrological functioning of the watercourses. An exclusion can be made for emergency related maintenance activities.

General Mitigation Measures during development activities

It should be noted that the implementation of the mitigation measures will ensure that potential impacts on the receiving environment is prevented / minimised.

Maintenance footprint

- All development footprint areas should remain as small as possible and should not encroach into watercourse unless absolutely essential. It must be ensured that the freshwater habitat is off-limits to construction vehicles and non-essential personnel;
- The boundaries of footprint areas, including contractor laydown areas, are to be clearly defined and it should be ensured that all activities remain within defined footprint areas. Edge effects will need to be extremely carefully controlled;
- Planning of temporary roads and access routes (if applicable) should avoid watercourse and be restricted to existing roads where possible;
- Appropriate sanitary facilities must be provided for the life of the construction phase and all waste removed to an appropriate waste facility;
- All hazardous chemicals as well as stockpiles should be stored on bunded surfaces and have facilities constructed to control runoff from these areas;
- It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage;

- No fires should be permitted in or near the construction area; and
- Ensuring that an adequate number of waste and “spill” bins are provided will also prevent litter and ensure the proper disposal of waste and spills.

Vehicle access

- All vehicles must be regularly inspected for leaks. Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into the topsoil;
- In the event of a vehicle breakdown, maintenance of vehicles must take place with care and the recollection of spillage should be practiced near the surface area to prevent ingress of hydrocarbons into topsoil and subsequent habitat loss; and
- All spills should they occur, should be immediately cleaned up and treated accordingly.

Vegetation

- Removal of the alien and weed species encountered on the property must take place in order to comply with existing legislation (amendments to the regulations under the Conservation of Agricultural Resources Act (CARA, Act 43 of 1983) and Section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)). Removal of alien invasive species should take place throughout the construction, operational, and maintenance phases; and

Species specific and area specific eradication recommendations:

- Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used;
- Footprint areas should be kept as small as possible when removing alien plant species; and
- No vehicles should be allowed to drive through designated sensitive wetland areas during the eradication of alien and weed species.

Soils

- Sheet runoff from access roads should be slowed down by the strategic placement of berms;
- As far as possible, all construction activities should occur in the low flow season, during the drier months;
- As much vegetation growth as possible (of indigenous floral species) should be encouraged to protect soils;
- No stockpiling of topsoil is to take place within the recommended buffer zone around the freshwater resource, and all stockpiles must be protected with a suitable geotextile to prevent sedimentation of the wetland;

- All soils compacted as a result of construction activities as well as ongoing operational activities falling outside of project footprint areas should be ripped and profiled; and
- A monitoring plan for the development and the immediate zone of influence should be implemented to prevent erosion and incision.

Method Statements for the proposed maintenance activities

Construction/maintenance phase:

<u>Proposed Maintenance Activity</u>	Clearing of sediment, vegetation and litter (where applicable) in the crossing (culverts) structures and the watercourse (applicable to most of the crossings assessed)
<u>Actions</u>	• Compaction of soil and disturbance of vegetation due to movement of maintenance personnel or machinery in the active channel of the applicable watercourse; • Potential proliferation of alien and invasive vegetation species due to disturbances.
<u>Impacts</u>	• Exposure of soil, leading to increased runoff and erosion, and thus increased sedimentation of the watercourses; • Loss of freshwater habitat and ecological structure resulting in impacts on biota; • Potential changes to the ecoservice provision of the watercourse; • Potential temporary disruption to the hydrology of watercourses (i.e. flow concentration, the formation of ruts and preferential flow paths)
<u>Mitigation measures</u>	• Contractor laydown areas (if applicable) are to be established outside of the delineated watercourses, and only for a short duration, in consultation with the appropriate authority. • All maintenance footprint areas to remain as small as possible (preferably no more than 2 – 3m in any direction from the maintenance site) and vegetation clearing to be limited to what is essential and may not extend beyond the road reserve (other than vegetation removed through daylighting). • It is considered imperative that the proposed maintenance activities occur during the drier months,

	to minimise any impact on the hydrological functioning of the watercourses. • The watercourses should be demarcated and marked as a 'no-go' area where no maintenance activities are planned. • Areas where bank failure is observed should be immediately repaired. • All alien and invasive vegetation species, debris and litter removal from the crossing must be removed from site and properly disposed of (no stockpiling allowed). • Any sediment or silt removed from the watercourse may be temporarily stockpiled in the road reserve but outside the watercourse, for the duration of the day's work. These stockpiles may not exceed 2m in height, and their footprint should be kept to a minimum. • Stockpiling of removed materials may only be temporary (may only be stockpiled during the period of clearing at a certain crossing point) and should be disposed of at a registered waste disposal facility. • The clearing activities should be limited to only what is necessary. • Only authorised maintenance personnel may be permitted to enter the watercourse as part of the clearing activities to prevent excessive compaction of the soil within the watercourse. • It is preferred that no machinery be used as part of the clearing activities.
<u>Proposed Maintenance Activity</u>	Concrete activities in the watercourses, with focus on major repairs to existing culverts; repairs to concrete walls, outlet structures and stone pitched channels, headwalls and wingwalls, chutes and stilling basins. Repair of apron slabs including backfilling up to apron slabs.
<u>Actions</u>	• Disturbances to soil within the watercourses.

	• Removal of topsoil and creation of stockpiles. • Placement of more than 10m³ of material to infill areas of scouring around in-channel piers. • Uncontrolled trampling of vegetation by personnel within the watercourses.
<u>Impacts</u>	• Disturbance to soil leading to increased alien vegetation proliferation, and in turn to further altered watercourse habitat. • Potential erosion and gully formation as a result of disturbed as a result of disturbed soil and inappropriate slopes resulting in sedimentation of the watercourses. • Potential contamination of soil and surface water as a result of concrete works, leading to further reduced ability to support biodiversity. • Compaction of soil, disrupting the growth medium of the watercourse vegetation. • Disruption to the embankment of the watercourses, potentially causing sedimentation.
<u>Mitigation measures</u>	• It is considered imperative that all works be undertaken during the drier months to limit surface water contamination and the need for any surface water diversion during the construction works (diverting the flow of water through a pipe or an excavated channel was not included as part of this risk assessment). • Limit construction equipment within the watercourses to what is essential. • Excavated materials should not be contaminated (with hydrocarbons, fuel), and should be ensured that the minimum surface area is taken up. Stockpiles may not exceed 2m in height.
<u>Proposed Maintenance Activity</u>	Concrete activities in the watercourses, with focus on minor repairs. Concrete repairs to grouting of stone masonry around existing culverts.

<u>Actions</u>	N/A
<u>Impacts</u>	• Increased sedimentation as a result of disturbances. • Potential loss of indigenous vegetation (if present) and the proliferation of alien floral species due to disturbances.
<u>Mitigation measures</u>	• The soil surrounding the headwalls must be suitably loosened on completion of construction activities and revegetated to prevent erosion. • All exposed soil must be protected for the duration of construction phase with a suitable geotextile (e.g. Geojute or hessian sheeting) to prevent erosion and sedimentation of the watercourse near these stockpiles. • Ensure alien and invasive plant species are managed post construction until suitable basal cover is achieved. • Avoid unnecessary trampling of vegetation irrespective of the vegetation being associated with the watercourses or the surrounding terrestrial area.
<u>Proposed Maintenance Activity</u>	Repair to bridges, involving concrete works within the active works within the active channels of the Brak and Buffels Rivers; seal and repair of cracks in abutments and piers. Concrete repairs to balustrades. Concrete repairs to decks. Repair of gabion embankment protection works. Repair of scouring around piers. (Concrete measures specific to concrete works)
<u>Actions</u>	• Disturbances to soils and sediment. • Removal of vegetation.

<u>Impacts</u>	- Decreasing the habitat availability to aquatic species. - Sedimentation of downstream river reach.
<u>Mitigation measures</u>	- Fresh concrete and cement mortar should not be mixed near the watercourses. Mixing of cement may be done within the construction camp, however may not be mixed near the watercourses. - Mixing of cement be done within the construction camp, however may not be mixed on bare soil, and must be within a lined, bound or bunded portable mixer. Consideration must be taken to use ready mix concrete. - No mixed concrete shall be deposited directly onto ground within the watercourses (outside of the designated area) or associated riparian or wetland habitat. A batter board or other suitable platform/mixing tray is to be provided onto which any mixed concrete can be deposited whilst it awaits placing. - A washout area should be designated outside of the watercourse, and wash water should be treated on-site or discharged to a suitable sanitation system. - Cement bags must be disposed of in the demarcated hazardous waste receptacles and the used bags must be disposed of through the hazardous substance waste stream; and - Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided.
<u>Proposed Maintenance Activity</u>	Maintenance of gabions and/or riprap where required.
<u>Actions</u>	- Disturbances to soil. - Removal of vegetation.

<u>Impacts</u>	Increased sedimentation as a result of disturbances.
<u>Mitigation measures</u>	- It is considered imperative that all works be undertaken during the drier months to limit surface water contamination and the need for any surface water diversion during the construction works. - The clearing of vegetation within the construction footprint area must be kept to a minimum (preferably no more than 2-3m to avoid unnecessary disturbance within the active channel. - Material used as rip rap or to fill the gabion baskets should be in situ material preferably originating from the surrounding area, however it must be sustainably sourced. Alternatively, any imported material must be weed free and not be contaminated by any potential pollutants. - Once gabions are constructed and / or the rip rap installed, the surrounding natural embankments should be reprofiled and revegetated with indigenous species as soon as possible. - Stabilisation of the banks and side slopes may be required, by employing techniques, such as: - Re-sloping of banks to a maximum of a 1:3 slope or tied in with the upstream existing embankments. - Revegetation of re-profiled slopes. - Temporary stabilisation of sloped using geotextiles. - The gabion structures (where applicable) should be monitored for erosion and structural integrity after each rainfall event (especially during the rainy winter season) until suitable basal vegetation cover has re-established. - Use of biodegradable hessian sheeting must be made to prevent sedimentation of downstream resources.
<u>Proposed Maintenance Activity</u>	Resurfacing of the road surface (asphalt), application of sealants and painting of road markings.

<u>Actions</u>	• Potential indiscriminate movement of construction personnel within the watercourse; • Potential of asphalt/sealants/paint to enter the watercourses; • Potential proliferation of alien and invasive species due to disturbances in the road reserve.
<u>Impacts</u>	• Loss of the vegetation within the natural buffer surrounding the watercourses, potentially decreasing the habitat provisioning of the watercourses. • Potential degradation of the surface water of the watercourses, due to the contaminated material entering the systems.
<u>Mitigation measures</u>	• Construction personnel must be limited to the existing road reserve only, and no movement within the delineated watercourses may be permitted. • During resurfacing/painting, it must be ensured that no foreign materials (tar from the resurfacing activities) enter the watercourses. • Care must be taken while painting and all personnel must receive training on the risks of chemical contamination of the watercourses. • If any solid materials do enter the watercourses, they should be immediately removed and disposed at a registered waste disposal facility. Paint spills on soils within the surrounding the riparian habitat should be immediately remediated.

Operational Phase:

<u>Proposed Maintenance Activity</u>	Monitoring of the structural integrity of the major and minor structures in the watercourses.
<u>Actions</u>	• Proactive monitoring to ensure structural integrity is maintained and to identify early signs of erosion

	around the crossing structures. Proactive monitoring to ensure that any litter or debris which may accumulate on and around the crossing structures is cleared to maintain the flow of water.
<u>Impacts</u>	No direct impacted perceived.
<u>Mitigation measures</u>	- All watercourses are to be considered “off limits” to any vehicular activity. - Disturbances to the watercourses should be limited to what is essential for long-term maintenance in line with the mitigation measures presented herein. - Existing access roads must be used for monitoring purposes to minimise the compaction of soils and loss of riparian and instream habitat. - Hot spots for the build-up of debris and excess sediment must be identified and when necessary, debris/excess sediment must be removed by hand to prevent future flooding and potential damage to infrastructure. In this regard, special mention is made of periods following high rainfall and subsequent high instream water volumes. Removal of debris must be undertaken in line with the above listed construction mitigation measures. - The watercourses must be monitored for alien vegetation encroachment and all alien vegetation/weeds must be removed according to a suitable alien vegetation control plan. Annual follow up should be undertaken to all watercourses for at least 3 years post construction. - Any erosion or gully formation must be identified on an ongoing basis and re-profiled and revegetated accordingly.
<u>Proposed Maintenance Activity</u>	Future maintenance of the crossing (including their headwalls, wingwalls, apron slabs and erosion

	protection (where applicable)
<u>Actions</u>	• Disturbance to or removal of vegetation while accessing culverts to carry out maintenance activities. • Disturbances to soils.
<u>Impacts</u>	• Potential loss of indigenous vegetation and further proliferation of alien floral species due to disturbances.
<u>Mitigation measures</u>	• All watercourses are to be considered “off limits” to any vehicular activity. • Disturbances to the watercourses should be limited to what is essential for long-term maintenance in line with the mitigation measures presented herein. • Existing access roads must be used for monitoring purposes to minimise the compaction of soils and loss of riparian and instream habitat. • Hot spots for the build-up of debris and excess sediment must be identified and when necessary, debris/excess sediment must be removed by hand to prevent future flooding and potential damage to infrastructure. In this regard, special mention is made of periods following high rainfall and subsequent high instream water volumes. Removal of debris must be undertaken in line with the above listed construction mitigation measures. • The watercourses must be monitored for alien vegetation encroachment and all alien vegetation/weeds must be removed according to a suitable alien vegetation control plan. Annual follow up should be undertaken to all watercourses for at least 3 years post construction. • Any erosion or gully formation must be identified on an ongoing basis and re-profiled and revegetated accordingly.

<u>Proposed Activity</u>	Monitoring of structures after high rainfall events
<u>Actions</u>	• Routinely monitor structures along the two roads to inspect structures after high rainfall events.
<u>Impacts</u>	• Potential erosion after high rainfall at structures or road itself, causing material and/or vegetation loss and possible sedimentation of watercourses.
<u>Mitigation measures</u>	• All culvert structures should be inspected to assess condition of structures after high rainfall event. • Upon discovery of erosion, maintenance thereof should commence as soon as possible to prevent material, and/ or vegetation loss. • Repair to damaged culvert structures as soon as possible to ensure hydraulic functioning. • Restrict erosion maintenance and structure repairs to the absolute minimum.

7. MONITORING AND REPORTING

It is important to note that any and all activities undertaken outside the scope of the adopted MMP, in terms of the action outlined within the given method statement, the responsible person(s) will be subject to Section 24(F) of NEMA and that appropriate enforcement and compliance requirements will follow.

The specific reporting information required by the competent authority should be discussed during the consultation phase between the proponent and the Department. The relevant information required should be considered on a case-by-case basis.

The following Forms A and B are to be considered as a guideline in terms of the type of information required. It is proposed that Form A below must be completed by the relevant person(s) before maintenance activities are undertaken and Form B after a maintenance activity has been completed. A copy of each completed Form A & B must be sent to the relevant WUA/IB/local authority management if they have undertaken the development of the MMP. For any individual landowner applications, the landowner is responsible to ensure a record of all maintenance activities is recorded as per Form A & B below. Form A and B must also be sent to the Provincial Department of Agriculture, Directorate: Sustainable Resource Management.

The Department may, within a reasonable notice period, request to evaluate the maintenance activities and assess the maintenance sites as per the adopted MMP.

Form A should be completed at least 7 working days before the commencement of any maintenance activity and Form B at least 3 working days following the completion of the maintenance activity(ies). At least two photographs are required from two different points of perspective (A and B) looking at the site (coordinates of these points are required). When listing the type and reference code, this must be done by specifically listing the relevant detail within the adopted MMP.

	Monitoring of structural integrity of the major and minor structures in the watercourses.
<u>Actions</u>	- Proactive monitoring to ensure structural integrity is maintained and to identify early signs of erosion around the culverts. - Proactive monitoring to ensure that any litter or debris which may accumulate on and around the culverts is cleared to maintain the flow of water.
<u>Impacts</u>	No direct impacts perceived.
<u>Mitigation measures</u>	- All watercourses are to be considered "off limits" to any vehicular activity. - Disturbances to the watercourses should be limited to what is essential for long-term maintenance in line with the mitigation measures presented herein. - Existing access roads must be used for monitoring purposes to minimise the compaction of soils and loss of riparian and instream habitat. - Hot spots for the build-up of debris and excess sediment must be identified and when necessary, debris/excess sediment must be removed by hand to prevent future flooding and potential damage to infrastructure. In this regard, special mention is made of periods following high rainfall and subsequent high instream water volumes. Removal of debris must be undertaken in line with the above listed construction mitigation measures. - The watercourse must be monitored for alien vegetation encroachment and all alien vegetation/weeds must be removed according to a suitable alien vegetation control plan. - Any erosion or gully formation must be identified on an ongoing basis and re-profiled and revegetated accordingly.

	Maintenance of culverts in the event of failure (if necessary)
<u>Actions</u>	Disturbances to or removal of vegetation whilst accessing culverts to carry out maintenance activities.
<u>Impacts</u>	Potential loss of indigenous vegetation and the further proliferation of alien floral species due to disturbances.
<u>Mitigation measures</u>	- Ensure that the footprint area of cleared vegetation remains as small as possible. - Limit clearing of indigenous vegetation. - If deemed necessary, re-seed with indigenous vegetation once maintenance activities have been completed.

REPORTING FOR INTENT TO UNDERTAKE MAINTENANCE ACTIVITIES – FORM A				
Section A: Landowner Details				
Name	Surname	Farm No.	Erf No.	Today's Date
Section B: Details of proposed maintenance activity				
WUA/GA reference number and DEA&DP reference number for MMP.	Activity Type:	Reference code (<i>make reference to MMP</i>)	Footprint area (m ²)	Volume of material (m ³)
Equipment to be used:	Description of method for planned activity:			Date when work will commence:
Date of last flood event for site:	Note any further damage and comments regarding the state of the site			
Section C: Photographs of activity location before maintenance				
Before A Coordinates: S E				

Before B Coordinates: S E Date of photos taken:	

REPORTING FOR COMPLETION OF MAINTENANCE ACTIVITIES – FORM B				
Section A: Landowner Details				
Name	Surname	Farm No.	Erf No.	Today's Date
Section B: Details of proposed maintenance activity				
WUA/GA reference number and DEA&DP reference number for MMP.	Activity Type:	Reference code (<i>make reference to MMP</i>)	Footprint area (m ²)	Volume of material (m ³)
Equipment that was used:	Description of method for completed activity and if commence date changed			Date activity completed
Date of last flood event for site:	Note any challenges or difficulties experienced in following the MMP method statement			
Section C: Photographs of activity location after maintenance				
After A Coordinates: S E				

After B Coordinates: S E Date of photos taken:	

ANNEXURES

ANNEXURE A

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: REGION 1 (City of Cape Town & West Coast District)	CAPE TOWN OFFICE: REGION 2 (Cape Winelands District & Overberg District)	GEORGE OFFICE: REGION 3 (Central Karoo District & Eden District)
Requests for competent authority to adopt an MMP must be sent to the following details: Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1) at: Tel: (021) 483-5829 Fax (021) 483-4372	Requests for competent authority to adopt an MMP must be sent to the following details: Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 2) at: Tel: (021) 483-5842 Fax (021) 483-3633	Requests for competent authority to adopt an MMP must be sent to the following details: Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 8058650

WESTERN CAPE DEPARTMENT OF AGRICULTURE DETAILS

Francis Steyn

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