Appendix I: Environmental Management Programme

Maintenance Management Plan

Rehabilitation and Maintenance of the Riparian Area and River Channel of the Jonkershoek River, Jonkersdrift Farms

Bengale 1440, Jonkersdrift 1441 and Stellenbosch Farm 1620

March 2025

Greenfire Enviro
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Maintenance Management Plan

Rehabilitation and Maintenance of the Riparian Area and River Channel of the Jonkershoek River, Jonkersdrift Farms Bengale 1440, Jonkersdrift 1441 and Stellenbosch Farm 1620

Document control record

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1	October 2024	Draft
2	January 2025	Final

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Western Cape Government

Department of Environmental Affairs and Development Planning

ADOPTION OF A MAINTENANCE MANAGEMENT PLAN

Request for the adoption of a Maintenance Management Plan in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations, 2014.

APRIL 2024

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: **DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1)** (City of Cape Town, West Coast District, Cape Winelands District & Overberg District)	**GEORGE REGIONAL OFFICE:** **DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3)** (Central Karoo District & Garden Route District)
The completed Form must be sent via electronic mail to: DEADPEIAAdmin@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 1) at: E-mail: DEADPEIAAdmin@westerncape.gov.za Tel: (021) 483-5829 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000	The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THE ATTACHED FORM:

1. Purpose

The purpose of this form is to provide baseline information for the adoption of a Maintenance Management Plan ("MMP) by the competent authority.

2. Administrative requirements

This form must be used to request the competent authority to adopt a Maintenance Management Plan in terms of the NEMA EIA Regulations, 2014.

3. Maintenance Management Plan information

3.1 This form is for the adoption of a MMP and only relates to the Listed Activities as contained in Listing Notice 1, 2 and 3 of the EIA Regulations, 2014 that make provision for the adoption of a MMP.

3.2 Please note that an MMP can only be considered for activities pertaining to maintenance related work. Construction work related to new or expanded structures or infrastructure beyond the existing footprint cannot be considered as part of the request for the adoption a MMP by the competent authority.

3.3 Construction work related to new or expanded structures or infrastructure beyond the existing footprint may trigger a listed activity in terms of the EIA Regulations, 2014 and environmental authorisation may be required. If this is the case an application for environmental authorisation must be submitted to the competent authority.

3.4 Notwithstanding the MMP possibly being defined or adopted by the Competent Authority, any other applicable statutory requirements 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)).

3.5 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.

3.6 The adoption of a 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.

3.7 Please note that the content of a MMP must include *inter alia*, the following:

- A description of the objectives of the MMP; **(see pp. .xiii – xiv)**
- A description of the relevant legislation and polices within which the MMP is prepared; **(see pp. xv – xvii and Section C)**
- A description of the site and a locality map; (**see p. 1 and Appendix A)**
- A description of the proposed maintenance activities; **(Appendix B)**
- A description of the tasks that will be performed (method statement); **(Appendix B and C)**
- A description of the potential impacts on the receiving environment and any management and/or mitigation measures to minimise the potential impacts associated with the maintenance activity; **(Appendix D)**
- Any specialist inputs that were obtained; and **(Appendix E)**
- The roles and the responsibilities of the role players who will be involved in the maintenance activity. **(Appendix F)**

3.8. A public participation process must be undertaken as part of the request for the competent authority to adopt a MMP. **(see pp. 4 – 5 and APPENDIX G)**

As a minimum you will be required to:

- inform the surrounding neighbours, your local authority and the relevant water authority of your intentions (these interested and affected parties will be regarded as registered interested and affected parties);
- allow a minimum of 30 days as a commenting period for these interested and affected parties;
- obtain written comment from all relevant Organs of State and the Local Authority; and

- respond to comments received and the proof of the public participation including all comments received and responses provided thereto must be submitted to the competent authority.

4. General

4.1 *Submission of documentation, reports and other correspondence:*

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

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

DEADPEIAAdmin@westerncape.gov.za
Directorate: Development Management (Region 1):
City of Cape Town; West Coast District Municipal area;
Cape Winelands District Municipal area and Overberg District Municipal area.

DEADPEIAAdmin.George@westerncape.gov.za
Directorate: Development Management (Region 3):
Garden Route District Municipal area and Central Karoo District Municipal area

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

4.2 The required information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary. Please make use contrasting colours in the answer blocks to improve the visibility and highlight information.

4.3 The quality, correctness and detail of information submitted by you is extremely important and it remains your responsibility to interrogate the specifics of your proposed development in order to report on the potential listed activities in this form.

4.4 This form is a guide to the information that must be submitted. Any additional information, pictorial evidence or explanations prompted by the form must be submitted along with this form in order to ensure that the competent authority does not need to request additional information from you. Incomplete forms will result in a request for additional information.

4.5 Unless protected by law all information contained in, and attached to this form, will become public information on receipt by the Department. Upon request, the Applicant/EAP must provide any interested and affected party with the information contained in or submitted with this Form.

Protection of Personal Information Act, 2013 (Act No. 4 of 2013) ("POPIA"):
Your attention is drawn to POPIA which is a comprehensive data protection legislation enacted in South Africa and came into effect on 1 July 2020. POPIA aims to give effect to the constitutional right to privacy, whilst balancing this against competing rights and interests, particularly the right of access to information. Please note that your personal information will only be used as far as it relates to the EIA process. By including your personal details in the Form and any subsequent reports and documents it will be deemed as giving consent to use this information as far as it relates to the EIA process.

4.6 This form is current as of **April 2024**. It is the responsibility of the Proponent/EAP to ascertain whether subsequent versions of the form have been released by the Department. Visit the Department's website at http://westerncape.gov.za/eadp to check for the latest version of this Form.

4.7 This form must be **duly dated and signed** by the Proponent and/or EAP (wherever applicable) and must be submitted to the Department at the details provided below.

4.8 Please note that it is an offence for a person to provide incorrect or misleading information in any form, including any document submitted in terms of the EIA Regulations to a competent authority or omits information that may have an influence on the outcome of a decision of a competent authority.

5. Circulars, Guidelines and Tools

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

ADOPTION OF A MAINTENANCE MANAGEMENT PLAN FORM

REQUEST FOR THE ADOPTION OF A MAINTENANCE MANAGEMENT PLAN IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) ("NEMA") AND THE ENVIRONMENTAL IMPACT ASSESSMENT ("EIA") REGULATIONS, 2014.

APRIL 2024

PART 1: ADMINISTRATIVE DETAILS

SECTION A: DETAILS OF PROPONENT | EAP| LANDOWNER| MUNICIPALITY

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

	DETAILS OF PROPONENTS					
1.	Name of Proponent:	**Stoney Meadows Investments 11 (Pty)Ltd**				
	Contact person name (if other):	Marli van Zyl				
	Company/ Trading name State Department/Organ of State:	**Stoney Meadows Investments 11 (Pty)Ltd**				
	Company Registration Number:					
	Postal address & Postal code:	PO BOX 6184 Uniedal, Stellenbosch			Code	7612
	Contact numbers:	Tel.	+27(0)	Cell:	+27(0) 82837 9250	
	E-mail:	marli@stbhh.co.za				
	DETAILS OF EAP/Specialist					
2.	Company of EAP/Specialists:	Greenfire Enviro (Pty) Ltd				
	EAP / Candidate EAP / Specialist name:	Desiree du Preez				
	EAP / Specialists registration no:	EAPASA: 2020/1486; SACNASP: 4000050/98				
	Postal address & Postal code:	17 Mountain Road, Glen Barrie, George			Code	6530
	Contact numbers:	Tel.	+27(0) 87 808 4823	Cell:	+27(0) 82 922 3180	
	E-mail:	desiree@greenfireenviro.co.za				

	LANDOWNERS					
3.B	Name of landowner:	**Stoney Meadows Investments 11 (Pty)Ltd**				
	Name of contact person for landowner (if other):	Marli van Zyl				
	Postal address & Postal code:	PO BOX 6184 Uniedal, Stellenbosch			Code	7612
	Contact numbers:	Tel.	+27(0)	Cell:	+27(0) 82837 9250	
	E-mail:	marli@stbhh.co.za				

4.	Name of Person in control of the land:	As per the Landowner information above				
	Contact person for 'person in control of the land' (if other):					
	Postal address & Postal code:				Code :	
	Contact numbers:	Tel.	+27(0)	Cell:	+27(0)	
	E-mail:					
5.	Municipality in whose area of jurisdiction the proposed activity will be undertaken:	Stellenbosch				
	Name of contact person:	Schalk van der Merwe				
	Postal address & Postal code:	PO Box 17, Stellenbosch			Code	7600
	Contact numbers:	Tel.	+27(0)21808 8111	Cell:	+27(0)	
	E-mail:	Schalk.vandermerwe@stellenbosch.gov.za				

PART 2: ADOPTION OF A MAINTENANCE MANAGEMENT PLAN

SECTION B: DETAILS OF THE PROPOSED MAINTENANCE ACTIVITY(IES)

Property

1.	Provide a detailed description of the proposed maintenance activity(ies). (Please ensure that a method statement is included for each maintenance activity.)
See APPENDIX A and APPENDIX C	

2.	Clearly describe the current state of the area where the maintenance activities will take place. (This must be supported by recent colour photographs)
See APPENDIX D	

3.	Property location	Jonkershoek River Valley, Stellenbosch
4.	Erf/Farm name(s), number(s) and portion(s)	- Farm Bengale 1440, Stellenbosch - Farm Jonkersdrift, 1441 Stellenbosch - Farm 1620 Stellenbosch
5.	Property size(s) (m^2) of all proposed sites:	- Farm Bengale 1440, Stellenbosch: 1333600 m^2 - Farm Jonkersdrift, 1441 Stellenbosch: 525900 m^2 - Farm 1620 Stellenbosch: 155300 m^2

6.	SG Digit code(s) of the all the proposed property(ies)																				
Farm Bengale 1440, Stellenbosch	C	0	6	7	0	0	0	0	0	0	0	0	1	4	4	0	0	0	0	0	0
Farm Jonkersdrift, 1441 Stellenbosch	C	0	6	7	0	0	0	0	0	0	0	0	1	4	4	1	0	0	0	0	0
Farm 1620 Stellenbosch	C	0	6	7	0	0	0	0	0	0	0	0	1	6	2	0	0	0	0	0	0

7.	Coordinates of the proposed site(s) where the maintenance activity/ies will be conducted:			
Start	Latitude (S)	**33°**	**57'**	**6.502"**
	Longitude (E)	**18°**	**54'**	**15.516"**
Middle	Latitude (S)	**33°**	**56'**	**46.720"**
	Longitude (E)	**18°**	**53'**	**56.976"**
End	Latitude (S)	**33°**	**56'**	**31.229"**
	Longitude (E)	**18°**	**53'**	**34.246"**

Note: If the maintenance activities will be undertaken along a linear stretch such as a watercourse, the start, middle and end co-ordinates must be provided.

SECTION C: POTENTIAL LISTED ACTIVITIES THAT YOU REGARD TO BE APPLICABLE TO THE PROPOSED MAINTENANCE ACTIVTY(IES)

All activities listed in terms of the EIA Regulations, 2014 that may be associated with the proposed maintenance activities must be provided below.

Activity No(s):	Provide the relevant **Activities** as set out in **Listing Notice 1**	Describe the portion of the <u>proposed development</u> to which the applicable listed activity relates.
Activity 19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 10 cubic metres from a. (i) Watercourse but excluding where such infilling, depositing, dredging, excavation, removal or moving (a) will occur behind a development setback. (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; [or] (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. **(NB. Points (d) and (e) do not apply as it relates to the coastal zone)**	Entire river stretch where required as described in APPENDIX B
Activity 27	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. *This activity is not relevant to this project*	Entire river stretch where required as described in APPENDIX B
Activity No(s):	Provide the relevant **Activities** as set out in **Listing Notice 2**	Describe the portion of the proposed development to which the applicable listed activity relates.
Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- I. The undertaking of a linear activity; or II. Maintenance purposes undertaken **in accordance with a MMP**. *This activity is not relevant to this project*	Entire river stretch where required as described in APPENDIX B
Activity 24	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**. *This activity is not relevant to this project*	Entire river stretch where required as described in APPENDIX B
Activity No(s):	Provide the relevant **Activities** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.
Activity 12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken **in accordance with an MMP**. 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	Entire river stretch where required as described in APPENDIX B

PART 3: DECLARATIONS

SECTION A: DECLARATION OF THE PROPONENT – 1B

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

I, MARLI VAN ZYL	ID Number:	8	9	0	6	0	9	0	0	2	4	0	8	4

in my personal capacity or duly authorised thereto hereby declare/affirm that:

- the information provided or to be provided as part of this form, is true and correct;
- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, as defined in Chapter 5 of NEMA (as amended) and any relevant Specific Environmental Management Acts and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware that is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I will provide the EAP and specialist, where applicable, and the competent authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the EIA Regulations, 2014 and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any person contracted by the EAP; and
  - costs in respect of any specialists, if any.

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

Signature of the Proponent:

10/03/25

Date:

STONEY MEADOWS INVESTMENTS 11 (PTY) LTD

Name of company (if applicable):

SECTION B: DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")/SPECIALIST

I, DESIREÉ DU PREEZ	EAP / Specialist Registration Number:	2	0	2	0	/	1	4	8	6

as the appointed EAP / Specialist hereby declare/affirm that:

- my EAP / Specialist Registration is current and up to date, and will inform the proponent and Department if the registration should lapse;
- the information provided or to be provided as part of this form, is true and correct;
- I have disclosed/will disclose, to the Proponent, the specialist (if any), the competent authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document prepared or to be prepared as part of the request for the adoption of a Maintenance Management Plan;
- I have ensured/will ensure that information containing all relevant facts in respect of the request for the adoption of a Maintenance Management Plan was/will be distributed or was/will be made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- I have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the competent authority;
- I have ensured/will ensure the inclusion of inputs and recommendations from any specialists in respect of the request for the adoption of a Maintenance Management Plan, where relevant;
- I have kept/will keep a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014.

Signature of the EAP/Specialist:	10 March 2025 Date:

Greenfire Enviro

Name of company (if applicable):

A. GENERAL PROJECT DESCRIPTION

Purpose, Objectives and Overview

The purpose of the MMP is to maintain both man-made and ecological infrastructure in a manner that both improves the current state of the affected watercourses located within the site as well as reduce any negative impacts on the watercourses to ensure that ecosystem services are preserved and improved and to prevent future deterioration of the affected watercourses.

Main objectives of this plan are to provide for the continuous and timely maintenance and rehabilitation of a section of the Jonkershoek River, a tributary of the Eerste River, Stellenbosch, Western Cape. The river section runs adjacent and through several properties that are dependent on each other upstream. Maintenance of the riparian areas and stream channel is required to prevent damage to the various properties during flooding events or other natural disasters that me periodically occur in the valley. Recent flooding events caused large natural material (eg. trees and rocks) to wash downstream damaging infrastructure alongside and within the riparian area, agricultural and cultivated land, roads adjacent to the riverbank and negatively influence ecological processess within the watercourse. The debris and obstacles need to be removed now and as and when it may occur again while repairs to infrastructure is required now and in the future to mainly contain pollution and for human safety and health purposes.

The adoption and authorisation of this MMP will enable the landowner to act swiftly in an environmentally sensitive manner to maintenance issues on site, preventing long-term degradation and/or a shift in baseline conditions of the affected watercourse.

Overarching Principles

The following are overarching principles to be used by landowners and managers when considering the development and implementation of this MMP:

- 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;
- Avoid and reduce unnecessary maintenance;
- 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;
- 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;
- Managers and organs of state must identify, address and, where feasible, eliminate the factors that necessitate intrusive, environmentally damaging maintenance; and
- A process of continuous management improvement be applied, namely Planning; Implementing; Checking (monitoring, auditing, determine corrective action) and Acting (management review).

The maintenance activities are required on:

- Farm Bengale 1440, Stellenbosch
- Farm Jonkersdrift, 1441 Stellenbosch
- Farm 1620 Stellenbosch

Additionally, the overarching principal of "duty of care" must be applied to the maintenance activities detailed within this report. This principal 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."

In line with their overall environmental and social responsibility, the owners of the properties mentioned above are committed to ensuring the efficient and sustainable use of natural resources, the sustainable maintenance of existing and both man-made and ecological infrastructure in a manner that improves the current state of the affected watercourses within and adjacent to their properties. Additionally, the intention is to ensure that sound environmental principles and ethical social values strengthen their custodianship of the river section to which this MMP is directed.

B. APPLICABLE LEGISLATION AND POLICY

National Environmental Management Act (No. 107 of 1998), and EIA Regulations, 2014, as amended.

The National Environmental Management Act of 2008 (NEMA) as amended, outlines measures that…." *prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*."

With regards to this, Maintenance Management Plans are implemented with reference to Chapter 1(4r)(NEMA), which states that sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

Section 24 of NEMA requires that the potential impact on the environment, socio-economic conditions and cultural heritage of activities that require authorisation or permission by law, must be considered, investigated and assessed prior to implementation, and reported to the relevant regulatory authority.

For development outside the urban edge, many development activities within 32m of a watercourse, measured from the edge of the watercourse (taken to be the edge of the active channel), trigger the need for an environmental authorisation. This may be a Basic Assessment or a full Environmental Impact n , depending on the specifications of the activity.

However, the development of a Maintenance Management Plan for a watercourse will be considered when the proposed maintenance activities constitute any one of the following Listed Activities in terms of the NEMA EIA Regulations, 2014 (as amended). These Listed Activities are detailed in **Part 3: Section C** below.

National Water Act (No. 36 of 1998)

The primary regulatory requirements with regards to aquatic features is stipulated by the National Water Act No. 36 of 1998 (NWA). Under Section 21 of the NWA, eleven water uses that require authorisation are detailed. These include:

a) Taking water from a water resource;
b) Storing water;
c) Impeding or diverting the flow of water in a watercourse;
d) Engaging in a stream flow reduction activity;
e) Engaging in a controlled activity identified and declared as such in terms of the Act;
f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
g) Disposing of waste in a manner which may detrimentally impact on a water resource;
h) Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
i) Altering the bed, banks, course or characteristics of a watercourse;
j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) Using water for recreational purposes.

Maintenance activities in and around watercourses can lead to the changes in flow of the watercourse (Section 21 (c) of NWA) or alterations to the bed and banks/characteristics of the affected watercourse (Section 21 (i) of NWA). As such a Water Use Authorisation must be obtained for these specific activities.

It is further noted that the Department of Water and Sanitation (DWS) have issued several General Authorisations (GA) in terms of Section 39 of the National Water Act. This allows for a water use to be generally authorised by the Department if it falls within a specific threshold or area. The GA of the 8th of December 2023 (Government Notice 4167, 2023, GG 49833) provides the limits and conditions of Section 21 (c) and (i) water uses that may be generally authorised and defines the regulated zone within which the GA applies.

The maintenance activities proposed within this application can lead to the changes in flow in (Section 21 (c)) or alterations to the bed and banks/characteristics of (Section 21 (i)) the affected watercourse. As such, a Water Use Authorisation application will be lodged with the Department of Water & Sanitation (DWS) simultaneous to the application for an MMP. Freshwater risk assessments have been undertaken by a Freshwater Ecologist to identify the significance of the risks posed to aquatic resources on site. The outcome of the specialist input is attached as Appendix D

Western Cape Biodiversity Spatial Plan (2017)

The Western Cape Biodiversity Spatial Plan (WCBSP) delineates Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) which require protection to ensure the sustainability and functioning of species and ecosystems, including the delivery of ecosystem services, across terrestrial and freshwater habitats. These spatial priorities are used to inform sustainable development in the Western Cape Province. This product replaces all previous systematic biodiversity planning products and sector plans with updated layers and features.

The adoption of the MMP aligns with the WCBSP as it promotes the protection, sustainability and rehabilitation of the local watercourses and ecosystem types within the farm boundaries.

The Stellenbosch Integrated Development Plan (IDP) 2022 – 2027

The adoption of the MMP for the Jonkershoek River section is aligned with Stellenbosch Municipality Integrated Development Plan in that the proposal subscribes to the vision of the 2022-2027 IDP's strategic focus areas namely: Strategic Focus Area 2: Green and Sustainable Valley.

The IDP states that the ecological dimension "*recognises that the natural environment and its processes provide the setting in which and the basic resources with which, human life is played out.*" Additionally, through an economic and productive dimension "*the natural environment underpins vitally important tourism and agricultural economy.*"

As such, the adoption of the MMP will occur in alignment with the following pre-determined objectives:

- Managing human use of the biosphere and its resources.
- Enhancing the integrity of the environment is imperative for long term sustainability; and
- Incorporating biodiversity into the environment as an imperative for long-term sustainability.

The MMP is also aligned with Sustainable Development Goal 6, to ensure availability and sustainable management of water and sanitation for all, which is noted within the IDP.

The Stellenbosch Municipality Spatial Development Framework (SMDF)

The Stellenbosch SDF encourages the conservation of Stellenbosch's natural environment and heritage assets. The SDF is clear that the sense of place of an area must be protected at all costs. Against this background, the SDF (2019: 52) proposes that "*the areas and spaces – built and unbuilt – that embody*

the cultural heritage and opportunity of (Stellenbosch) need to be maintained intact, and that others provide the opportunity for new activity, in turn exposing and enabling new expressions of culture"

Therefore, the maintenance activities detailed within the MMP would be acceptable in terms of the SDF as it promotes the protection and sustainability of watercourses and associated infrastructure found within the site.

The MMP also aligns with the following principles noted within the SMDF:

- All rivers above a minimum size shall be protected by river conservation zones of 10-30m on either side of the bank, depending on the width and maturity of the river (as determined by an aquatic ecologist or land surveyor). These zones should be returned to their natural riparian status for passive recreational use only, and no urban development or intensive agriculture shall be permitted within them.
- Peak water demand should be accommodated with supplementary storage and recycling (e.g. rainwater tanks, grey water recycling) of water so that the municipality can focus on satisfying base demand and meeting the needs of the poor.
- Water conservation measures should be adopted, for example minimising unaccounted for water through leak repair and pressure adjustment, installing water meters, educating consumers about water saving, promoting water saving devices and promoting water-wise gardening.
- Technologies that facilitate the efficient use of irrigation water should be encouraged.
- Conservation areas should continue to enjoy the highest possible level of protection in order to ensure water quality and quantity at least in the upper reaches of the river system.
- The eradication of alien vegetation from all areas should be supported.
- Sensitive biodiversity areas should be mapped, and clear and appropriate guidelines introduced to conserve them.
- Outside of formal conservation areas, landowners should be encouraged to conserve vegetation classified by SANBI as Endangered or Critically Endangered (particularly along ridge lines) and to link to existing conservancies (e.g. through the CapeNature Stewardship Program). These land uses should be classified in the Core SPC

C. GENERAL REQUIREMENTS

1. LOCALITY MAP

A locality map is attached to the Form, as Appendix A. The scale of the locality map is at 1:50 000. For The includes the following:

- an accurate indication of the project site position;
- road names or numbers of all the major roads as well as the roads that provide access to the site(s)
- a north arrow;
- a legend; and
- GPS co-ordinates (Indicate the position of the proposed maintenance activities). **Maintenance activities will be undertaken along a stretch of a watercourse and the start, middle and end co-ordinates is provided.**

2. BASELINE ENVIRONMENT

2.1 Site Area and Surrounding Land-uses

The subject area comprises several smaller farm portions within the lower foothill farming area of the Jonkershoek River Valley, as further set out in Section B hereof. It falls within the upper Eerste River Catchment (Department of Water and Sanitation Quaternary Catchment G22F), within the larger Berg-Olifants Water Management Area. Several small streams drain the southern hillslope of the Stellenbosch Berg within the valley and feed into the Jonkershoek River. Within their lower reaches, many of the streams are no longer visible in the landscape as a result of the development of cultivated areas. The elevation at the river reach is between 200 m and 184m above mean sea level. The Jonkershoek Valley has a predominantly agricultural nature, and is situated East of Stellenbosch Town and accessed via the Jonkershoek Road leading towards the Jonkershoek Nature Reserve. The Stellenbosch University sports fields lie to the northwest of the farms.

The farm portions described herein falls within the Southwestern Coastal Belt ecoregion and the southern folded mountains (from Kleynhans et al., 2005a). The main attributes of these ecoregions are provided in Table 1 below.

Table 1: Characteristics of the Southwestern Coastal Belt Ecoregion

Main Attributes	Characteristics
Terrain Morphology	Plains; Low to Moderate Relief; Closed Hills; Mountains; Moderate and High Relief
Vegetation types	Sand Plain Fynbos; Mountain Renosterveld; West Coast Renosterveld; Dune Thicket;Strandveld Succulent Karoo
Altitude	0-300; 300-900 limited (m a.m.s.l)
MAP	100 to 1000 (mm)
Coefficient of Variation	20 to 39 (% of annual precipitation)
Rainfall concentration index	30 to 60
Rainfall seasonality	Winter
Mean annual temp.	(°C) 14 to 20
Median annual simulated run-off	<5; 20 to >250 (mm) for quaternary catchment

The river runs through a largely transformed agricultural landscape with associated infrastructure such as roads, pipelines, gabions, dams, reservoirs etc. The surrounding areas also contains several modern private

dwellings. Due to the nature of the various agricultural activities and the residential activities occurring within the Jonkersdrift estate and neighbouring properties, the frequency of maintenance and construction of infrastructure depends on the locality and the functional and temporal requirement.

The dominant aquatic ecosystem within the study area is the Jonkershoek River, an important perennial tributary of the Eerste River. Along the subject river reach, portions of undeveloped areas exists where marginal indigenous vegetation are found. This river is a lower foothill, cobble-bed system typical of the Fynbos Biome. The instream biotopes typically consist of riffle-run sequences and occasional pools. Although the river is largely unconfined it is within a single channel, with low sinuosity and a channel bed consisting mainly of gravel and alluvium soils.

Streams towards the Jonkershoek River are relatively undisturbed, arising on relatively pristine mountain slopes with healthy riparian vegetation their upper catchments. Many of these streams enter farm dams located on the Jonkersdrift Estate while numerous agricultural drains cross into the river and serving to channel surface water away from houses and fields. The Jonkershoek Tributary is in a largely natural condition (A/B Category) on the hillslope but once it reaches the valley floor it becomes seriously to critically modified ecological condition (E/F Category). This is a result of the past modification of the stream within the agricultural area. Naturally the stream is likely to have become distinct and dispersed over a wider area into the valley. The channel is invaded with alien kikuyu grass at various areas where residence gardens are very close to the river and within the river riparian areas. The habitat integrity of the larger Jonkershoek River at the subject river reach is moderately modified. There are almost no wetlands within the subject area while some remnants of more extensive wetland areas are visible, but these have been impacted by the surrounding activities.

In terms of previous protection measures implemented on site, the various owners along the river have constructed gabions, hardened watercourse channels, headwalls, bridges, thoroughfares and agricultural channels which are used to mitigate against flood risk and prevent the sedimentation and erosion of watercourse channels.

2.2 Freshwater Assessment of the Jonkershoek River

The South African Scoring System version 5 (SASS5), Index for Habitat Integrity (IHI) and Riparian Vegetation Index (RVI) were utilised to provide information on the ecological condition of the Jonkershoek River reach. SASS5 and RVI assessments were undertaken to provide additional information on the ecological condition of the river and to inform future monitoring and management requirements for the system. The assessments were undertaken at sites upstream and downstream of the subject river reach in the Jonkershoek River (See Locality Map, Appendix A). The River Health Programme has also undertaken a number of assessments in the river and provides additional data for the river assessment.

2.2.1 Habitat Integrity

Assessment using the Index of Habitat Integrity (IHI) provides a measure of the degree to which a river has been modified from its natural state. The methodology (DWAF, 1999) involves a qualitative assessment of the severity of anthropogenic impacts on a river and the damage potentially inflicted upon the system. Disturbances includes abiotic and biotic factors, regarded as the primary causes of degradation of a river. The severity of each impact is ranked using a six-point classification, each with its own scale, where 0 = no impact, 1 to 5 = small impact, 6 to 10 = moderate impact, 11 to 15 = large impact, 16 to 20 = serious impact and 21 to 25 = critical impact.

The IHI Assesses the impacts of the riparian zone and the instream habitat of the river. Both component's assessments are made separately, but data of the riparian zone assessment are interpreted primarily in terms of the potential impact on the instream component. The estimated impacts of all criteria calculated in this way are summed, expressed as a percentage and subtracted from 100 to arrive at an assessment of habitat integrity for the instream and riparian components respectively. The total scores for the instream and riparian zone components are then used to place the habitat integrity of both in a specific habitat category (Table 2 & 3).

The estimated impact of each criterion is calculated as follows:

Rating for the criterion

Impact value (maximum value: 25) ***X*** ***weight (percent)***

Table 2

INSTREAM HABITAT INTEGRITY	Jonkersdrift Section	Comment
Water Abstraction (Impact 1 - 25)	8	Run-of-river abstraction in upstream catchment
Flow Modification ((Impact 1 - 25)	10	Upstream instream dam and off channel dams reduce medium to low flows and irrigation releases
Bed Modification (Impact 1 - 25)	6	Siltation
Channel Modification (Impact 1 - 25)	6	Some alteration of banks for flood protection
Water Quality (Impact 1 - 25)	9	Adjacent farming impacts, septic tanks and interbasin transfer
Inundation (Impact 1 - 25)	2	Some inundation as a result of bed modifications
Exotic Macrophytes (Impact 1 - 25)	1	
Exotic Fauna (Impact 1 - 25)	3	Trout
Rubbish Dumping (Impact 1 - 25)	1	Some littering
Instream Habitat Integrity Score	**77**	
Integrity Class	**B/C**	

Table 3:

RIPARIAN HABITAT INTEGRITY	Jonkersdrift Section	Comment
Vegetation Removal (Impact 1 - 25)	5	Some vegetation removal due to farming activities on banks
Exotic Vegetation (Impact 1 - 25)	8	Limited alien plant invasion due to farming disturbances
Bank Erosion (Impact 1 - 25)	3	Bank erosion due to removal of indigenous vegetation
Channel Modification (Impact 1 - 25)	6	Some bank modification and stabilisation by farming activities
Water Abstraction (Impact 1 - 25)	8	Run-of-river abstraction in upstream catchment
Inundation (Impact 1 - 25)	2	Some inundation as a result of bed modifications
Flow modification (Impact 1 - 25)	10	Upstream instream dam and off channel dams reduce medium to low flows and irrigation releases
Water quality (Impact 1 - 25)	9	Adjacent farming impacts, septic tanks and interbasin transfer
Instream Habitat Integrity Score	**74**	
Integrity Class	**B/C**	

2.2.2 Riparian Vegetation Assessment

Impact assessment of riparian zones rely on the interpretation of typical and characteristic riparian vegetation as well as its service to stream condition and bank structure. Assessment in this regard rates the bank zonation, riparian vegetation (cover of indicator and canopy species), abundance, recruitment rates and population structure as well as *alpha* and *beta* diversity of the species composition. Facets driving riparian zone ecology are assessed within a perceived reference state usually being a pristine benchmark or one that has the least heterogeneous factors impacting on its natural functionality (DWAF 2007). However, the purpose of this assessment will be to provide some information on the impacts and change from past and existing land-uses on the already impacted river reach.

The major impacts found in this assessment are: the invasion of exotic trees and problematic weeds along the riverbank and vegetation transformation due to drought, floods and farm related practices. These impacts can be discussed by referring to the conditions of the respective riparian zones in the context of

the degree of change from the riparian reference state for the whole sampling area. A summary of the RVI results are contained in Table 4 hereunder.

Table 4: RVI results for the riparian areas of the river reach applicable to the MMP

Sample Location and Impact description	**RVI summary**
Jonkershoek Upstream Modified. Loss and change of natural habitat, biota and basic ecosystem functions have occurred	RVI = [(EVC)=((SI x PCIRS) + (RIRS))] RVI = [(8)=((1.25(1 x 0.7)) + (3))] RVI = **11.84 D - Poor to Fair**
Jonkershoek Downstream	**RVI summary**
Modified. Loss and change of natural habitat, biota and basic ecosystem functions have occurred	RVI = [(EVC)=((SI x PCIRS) + (RIRS))] RVI = [(8)=((2((2 x 0.3)(2 x 0.7)) + (2))] RVI = 12.42 **D - Poor to Fair**

Marginal Zone:

The riparian marginal zone was largely covered by exposed alluvial and cobble deposits from past flooding events and ranged from 55% to 75% of the zone in the upstream site and less so in the downstream site. Riparian sedge species Palmiet, *Cyperus spp.* and *Juncus spp.* were underrepresented in both assessments and occupied a sparsely clumped distribution in and along runs and pools. Of major concern is the representation of alien trees in this zone recruiting in low- medium distributions but medium-high densities. These trees have straightened the channel and places strain on the river by inducing intensified flood events in the rain seasons (evidence of erosion and flood scour). They also transform the habitat and exclude the natural vegetation compositional structure and integrity of the riparian zone.

Lower Zone/ Wetbank:

The lower zones were characterised by a high degree of alien vegetation (50% cover). Although the vegetation represented across the assessment points differed in distribution and intensity, the impacts of these aliens remained alike (channel straightening, flood inducing agents, over- stabilisation of bank, etc). However, the upstream site had a higher degree of established invasion and flood impact than the lower site. Also, indigenous vegetation species was slightly better represented in the lower zone (even though the upper zone had better instream habitats).

Upper Zone/Dry bank:

The primary feature of this zone was a moderate to good representation of riparian and terrestrial shrubs amid farmland.

2.2.3 Geology

The area comprises granite of the Stellenbosch Pluton, Cape Granite Suite with greywacke, phyllite and quartzitic sandstone of the Tygerberg Formation, Malmesbury Group. This is largely covered by gritty sand and screed. Alluvium deposits occur along the wider Jonkershoek River valley floor. Deep weathered soils (clay and coarse-grained sand) from Cape Granites of the Stellenbosch Pluton underlie the alluvial and colluvial deposit topsoils. The soils are in general of the Glenrosa and/or Mispah forms.

2.2.4 Aquatic biodiversity

The river reach lies within the middle to lower reaches of the Jonkershoek River, The Jonkershoek River originates in the Jonkershoek Mountains and mountain reserve and while still largely natural in its upper reaches has been disturbed by forestry, agriculture and then urban activities in its lower reaches. It joins the Plankenbrug River below Stellenbosch to form the Eerste River. The Jonkershoek River is moderately disturbed by overgrown invasive trees and grasses; receives summer releases from Theewaterskloof Dam

and is dammed in its upstream section. A relatively high diversity of aquatic invertebrates occurs in the system, as well as frogs (Cape River Frog and Cape Ghost Frog), fish (Berg River redfin) and birdlife.

A number of small streams drains from the hillslope towards the river. No wetlands have been mapped at, or adjacent to the river. This catchment has a mean annual rainfall total of 1000 mm per annum and lies in a high rainfall intensity zone (sensu Schulze, 2007). Mapped freshwater resources in terms of the Catchment Area, Water Management Area, the National Wetland Map 5, the National Freshwater.

2.2.5 Biodiversity Conservation Value

Three sets of biodiversity conservation mapping results are of relevance to the national and provincial identification of the ecological importance that has been attributed to the freshwater features in the study area. The National Freshwater Ecosystem Priority Areas (FEPA) map, National Wetland map version 5 and the 2017 Western Cape Biodiversity Spatial Plan (WCBSP) that was a product of the Provincial Fine Scale mapping process undertaken at a local authority level.

FEPAs are intended to provide strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting the sustainable use of water resources. These areas were determined through a process of systematic biodiversity planning and were identified using a range of criteria for serving ecosystems and associated biodiversity of rivers, wetlands and estuaries. The river and wetland FEPAs are required to be maintained in a largely natural ecological state, while fish support areas should not be allowed to degrade from their existing ecological condition. The Jonkershoek River is within a FEPA River sub- catchment. No wetlands have been mapped at or adjacent to the river within the FEPA wetland mapping or the National Wetland Map 5.

The WCBSP aims to guide sustainable development by providing a synthesis of biodiversity information to decision-makers to ensure appropriate land use and planning for the best possible long-term benefits and to promote integrated management of natural resources. Critical Biodiversity Areas (CBAs) (Terrestrial and Aquatic), Ecological Support Areas (ESA) (Critical and Other), Other Natural Areas and Protected Areas are the main categories mapped. The first two mentioned categories represent the biodiversity priority areas that should be maintained in a natural to a near-natural state. The current watercourses is mapped as an aquatic CBA, while south of the site is the formally protected Hottentots-Holland Mountain Catchment Area. The Jonkershoek Nature Reserve is located to the east of the subject area and is listed as a Type 2 World Heritage Site. Within the same locality and surrounding the Jonkershoek Nature Reserve is the Hottentots-holland Nature Reserve and the Cape Floral Region Protected Areas. Both are listed as a SAPAD protected area.

Critical Biodiversity Areas have the desired management objective to "*Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate*."

The CBAs mapped for the river reach and located within the south-eastern region are classified as Category 1 and Category 2 areas (**Figure 1**). The CBAs mapped are associated with terrestrial habitats. Aquatic CBAs identified are predominantly associated with the Jonkershoek and Eerste River and various wetlands located throughout the area.

In terms of the Ecological Support Areas the desired management objective is to, "*Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.*" and "*Restore and/or manage to minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement.*"

The ESAs located at the river tributary are primarily associated with the watercourses and riparian habitats and range between Terrestrial; Aquatic; and ESA2 - Restore from other land use.

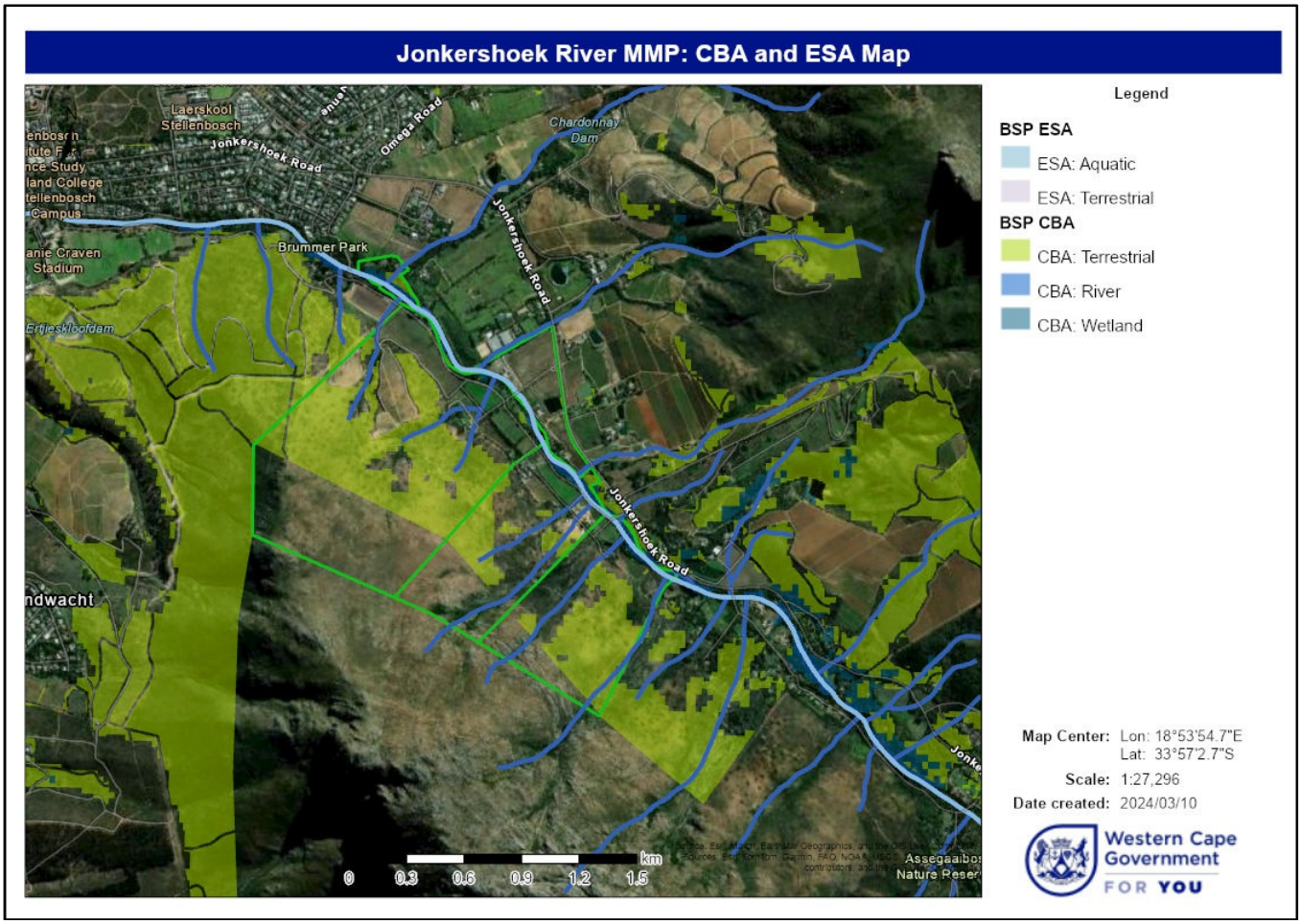


Figure 1: Map of CBA and ESA regions at or near Jonkershoek Site

2.2.6 Groundwater resources

The subject area site is overlayed on three aquifer types, namely:

- A Major Intergranular and fractured aquifer, located within the eastern portions of the site. This aquifer is noted to have a yield of 0.1 – 0.5l/s.
- A Minor intergranular and Fractured aquifer, located within the western region of the site. This is noted to have a yield of 0.1 – 0.5l/s.
- A Fractured aquifer, located within the central portion of the site. This aquifer is noted to have a yield of 2.0 – 5.0l/s. This aquifer is classified as Minor within the western portions and Major within the more central portion.

Throughout the site, the depth to groundwater ranges from 7.2 to 7.3 metres below ground level. Groundwater quality of the site is noted to be 0 – 70 mS/m.

3. SPECIALIST INPUT

A freshwater assessment was conducted by Ekologik (Pty) Ltd to determine the baseline conditions, anticipated impacts and proposed mitigations in relation to the maintenance activities proposed within this MMP. This report is attached as **Appendix E.**

Within the freshwater ecological report, a description of all inland aquatic systems at the participating properties was provided, including riparian areas, streams, rivers and wetlands. Within watercourse/s description, reference was made to the observed vegetation and stream dynamics. These watercourses included riparian area of the relevant section of the Jonkershoek River.

The Present ecological status, ecological importance, and sensitivity of the aquatic ecosystem within the study area on the site were assessed for condition, importance, and sensitivity, according to nationally accepted protocols.

All aquatic ecosystems that have been assessed to be in an A, B, or C state must be maintained in that condition. All ecosystems in a D state or lower must be rehabilitated to at least a C PES. Rehabilitation of watercourses and wetlands to an improved state should take the form of invasive alien plant (IAP) removal (except for historically, aesthetically and structurally important tree species), and replacement with indigenous plant species. The recommendations provided should be followed and where necessary, with additional advice from a freshwater ecologist.

4. PROPOSED MAINTENANCE ACTIVITIES

A need has arisen within the various properties described herein, to implement various maintenance activities throughout the site. However, the location and scope of these activities are noted to encroach within sensitive areas and trigger the need for a Maintenance Management Plan, as per the NEMA, and Water Use License, as per the NWA.

As per the *Document for the Adoption of a Maintenance Management Plan*, it is important to consider the type of maintenance required to assess the impacts of the activities on the relevant systems so as to determine how best to mitigate against these impacts. The implementation of this MMP will enable the landowners to maintain their localised watercourses and agricultural channels in a sustainable manner that will:

- Enable the reduction in the encroachment, spread and obstruction of alien invasive species within natural watercourses;
- Enable the sustainable maintenance of existing infrastructure surrounding the watercourses, preventing degradation of both the watercourses and the existing structures;
- Enable the reinstatement of watercourse channel depth and associated swales to pre-sedimentation levels which will promote natural hydrological processes;
- Promote the natural growth of indigenous species; and
- Increase local ecosystem services of the watercourse.

5. IMPLEMENTATION AND RESPONSIBILITY OF THE MMP

The landowners and holder of the MMP is responsible for the implementation of the MMP, unless another party formally acknowledges the roles and responsibilities therein. If a change in holder of the MMP or responsibilities for the MMP is needed, written notification thereof which includes a letter signed by the new party responsible, acknowledging their understanding of the requirements and the MMP attached, must be provided to the Department of Environmental Affairs and Development Planning (DEA&DP) and the Department of Water and Sanitation (DWS). Details of the Project Management Team and/or Contractor cannot be provided as they have not yet been appointed (because the MMP proposal is still in the permitting phase) and the date/duration of their applicability will be as per the MMP adoption

The responsibilities of the holder of the MMP, or party formally appointed by the holder to manage the development, are to:

- Ensure that the requirements as set out in this MMP, and the conditions outlined by the competent authority are adhered to and implemented by the appointed project team and/or principal contractors.
- Ensure that the proposed maintenance activities are implemented as per the intention and conditions of approvals for the Jonkershoek River section property owners.
- Ensure that the maintenance footprint is contained within site limits and is minimal.
- Assist the project team and/or principal contractors in ensuring that the conditions of the MMP are being adhered to and promptly issue instructions in the case of non-compliance or if requested by the competent authority and/or ECO.
- Order the removal of person(s) and/or equipment not complying with the specifications contained herein.
- Issue penalties for transgressions of MMP.

The MMP may be implemented through contracts/ appointments of appropriate professionals where this expertise is not available in-house, although checks can be executed and documented internally, with works to be done internally or externally, as far as expertise allows for this.

6. MONITORING AND REPORTING

Monitoring

Implementation of this MMP should be monitored by a suitably qualified freshwater ecologist at least once every two years. Monitoring should be undertaken in terms of the Monitoring schedules prescribed for the Method Statements and included in **APPENDIX C** and ensure to audit the following :

- Repair work is done to the original specifications;
- No new erosion or sedimentation has occurred;
- The bed and banks of watercourses and wetlands that have been impacted by the felling of trees and removal of alien grasses must be in good condition, and not eroding or bare;
- IAPs have been removed from areas that have been prioritised for clearing;
- Vegetation management has not resulted in deterioration in the condition of watercourses and wetlands (i.e. that PES has not changed, where the desired state is maintenance of existing condition);
- Where the intention is to improve ecosystem condition, that this has been achieved in comparison with the baseline condition.
- Areas within the streams, wetlands and their ecological buffers that have been impacted by maintenance activities have been re-planted.

It is the responsibility of the landowner to ensure that monitoring takes place timeously. It is the responsibility of the ecologist to provide a short report (in the form of a letter) regarding the condition of the aquatic ecosystems on the site. The report must be submitted to the landowner, and to the case officer at Department of, Water and Sanitation, Bellville at least 30 days after finalisation of the report.

Reporting

Form A (Appendix X) must be completed by the Holder of the MMP authorisation, or appropriate appointed professional (e.g., Contractor, Resident Engineer, Project Manager, ECO, or freshwater ecologist) before maintenance activities are undertaken and **Form B** (Appendix X) after a maintenance activity has been completed. 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.

A copy of each completed Form A and B must be sent to the DEA&DP, DWS and the Stellenbosch Municipality, as required. Where relevant/applicable, these forms can also be appended to ECO audit reports and need not be separately submitted, if programming allows.

Form A must 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).

Note that the DEA&DP and other authorities may, within a reasonable notice period, request to evaluate the maintenance activities and assess the maintenance sites as per the adopted MMP.

7. STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION PROCESS

Authority Engagement

During the development and compilation of the draft MMP, the following authorities were engaged to provide input into the proposed maintenance activities and public participation processes required:

- Department of Water and Sanitation (DWS); and
- Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).

Public Participation

This draft MMP is currently out for public review for a period of 30 days. The following state departments have been notified of the availability of the Draft MMP for review and comment:

- The Department of Water and Sanitation;
- Cape Nature;
- Western Cape Department of Agriculture, Elsenburg;
- District Municipality (Cape Winelands District Municipality);
- Local Municipality (Stellenbosch Municipality);
- Department of Environmental Affairs & Development Planning (DEA&DP);

Additionally, the following activities have been conducted or will be conducted following this application for the adoption of a *Maintenance Management Plan:*

(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.

(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 river banks) of the development of the MMP. 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

(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 required, to present on the development of the plan and a development of the plan and a required, to present on the development of the plan and a final draft version of the plan.

(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.

(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).

(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.

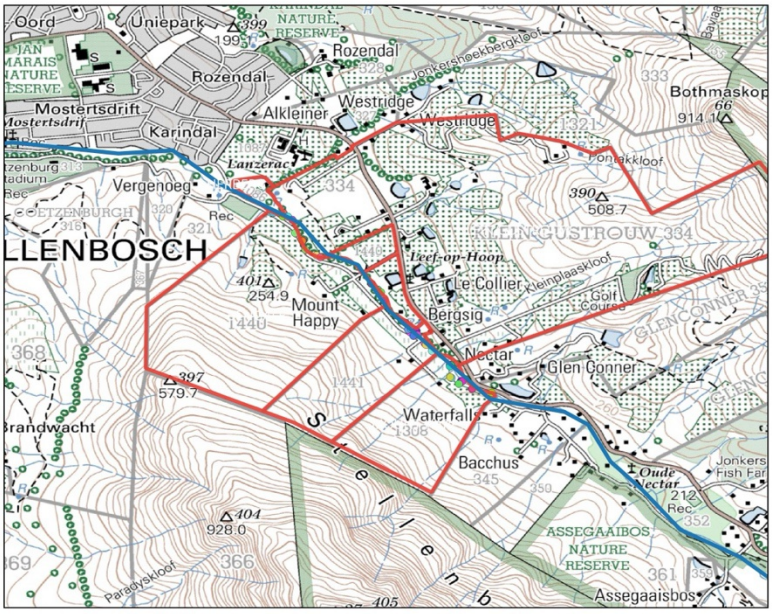
The following public participation activities have been undertaken to allow for public and authority comment on the undertaken to allow for public and authority comment on the draft MMP:

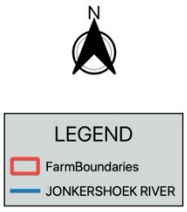
- Hosting of the Draft MMP on the Greenfire Environmental Website;
- Notification of I&APs on the availability and comment period;
- The placement of a Notice board at the participating properties
- The placement of an advert in a local newspaper;
- 30-day public review of Draft MMP including distribution and responding to comments.

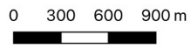
APPENDIX A

LOCALITY MAP

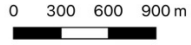
RIVER SECTION and FARMS APPLICABLE TO MAINTENACE MANAGEMENT PLAN







RIVER SECTION APPLICABLE TO MAINTENACE MANAGEMENT PLAN



APPENDIX B

MAINTENANCE ACTIVITIES and MAINTENANCE METHOD STATEMENTS

Maintenance categories have been classified for the activities required as set out in this Maintenance Management Plan. Method Statements have been compiled based on these categories and to enable the impact of the activities to be assessed and mitigation measure to be implemented on site by the operations/maintenance management team.

Table 5 hereunder describes the Maintenance categories while correlating the maintenance activities required for each category.

Table 5: Maintenance Categories and Activities ito the Maintenance Management Plan

Maintenance Category	Types of Maintenance Activities
Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels.	Clearing sediment at: - Rivers and streams - Agricultural channels - Dams - Bridges, culverts, drifts and weirs Activities to occur after heavy rainfall events (e.g. 1:100 year flood) or as needed. Annual inspections and surveys, especially after winter rainfall season.
Category B: Emergency repairs and maintenance to infrastructure and structures located adjacent to and within watercourses and agricultural channels on site – urgent action required to manage risk and damage to assets	This includes *inter alia* - Repair to erosion of riverbank or servicing infrastructure (e.g. pipelines/roads) - Removal of material built up as result of flooding / sedimentation and increasing risk to infrastructure - Attend to damage or replacement of infrastructure (e.g. bridges, pipelines, pump houses etc) - Managing the condition of flood protection berms, existing structures (e.g. gabions) and canalized and stormwater systems. These structures must be monitored, and their state recorded after high-rain events (such as a1:100 year flood), otherwise annually, in spring. Maintenance must be undertaken as needed, per issues identified in the annual audit.
Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site.	This activity will include the removal of invasive alien plant species, as well as potentially obstructive indigenous species encroachment to reduce maintenance requirements as they relate to erosion and sedimentation as well as to improve hydrological flow and reduce associated flooding impacts. Clearing of vegetation from affected watercourses and associated buffers should be actioned annually Indigenous species are only to be cleared where manifested instances of blockage occurs at headwalls, culverts, weirs and instream channels
Category D: Rehabilitation and restoration activities for maintaining ecological infrastructure	Activities include *inter alia*: - Development and maintenance of ecological buffering systems to improve and/or restore functioning of watercourses - Bank grading and shaping to assist movement and removal of berms and barriers to flow. - Actively rehabilitating riparian zones through planting of locally indigenous species. See Table9 hereunder "

A Method Statement is a 'starting point' for understanding the nature of the intended actions to be carried out and allows for all parties to review and understand the procedures to be followed in order to minimise risk of harm to the environment. It is also a "live document" in that modifications are negotiated between the Contractor and the ECO/project management team as circumstances unfold. In this instance, a Method Statement describes the scope of the intended work in a step-by-step description in order for the Project Manager and/or ECO to understand the implementation and methods employed in achieving a maintenance activity. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks.

The Method Statements indicated below are aligned with the following considerations:

- 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; The surrounding land-uses for the site and the catchment context have been considered in the freshwater impact assessment, and the recommendation of associated mitigation measures, which are included in this document.
- 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. The mitigation measures provided by the freshwater ecologist in the independent assessment have considered the downstream and cumulative impacts and the mitigations recommended takes account of this.
- 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. The mitigation measures and list of replanting species provided by the freshwater ecologist in the independent assessment have considered the downstream and cumulative impacts and the mitigation measures indicated takes account of this.
- Invasive alien and bush encroachment vegetation significantly impacts on the functioning of a watercourse, often leading to increased flood associated damage, with further implications and a reduction in water quality and availability. This is understood and would be implemented via the replanting of recommended species, as required. It would also be considered in the annual plan in terms of the regular removal of invasive alien plants within affected watercourses.
- Persons undertaking maintenance activities have a responsibility to ensure a sense of duty of care is applied as prescribed within NEMA Section 28(1). This is a guiding principle in the compilation of the MMP, wherein measures have been included to protect the environment.

In addition to the described Method Statements, the following overarching principles must be followed, where feasible, for each maintenance activity on site:

- Repairs and maintenance should be undertaken within the dry season, except for emergency maintenance works, where possible.
- 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.
- In circumstances which require the removal of any topsoil, 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.
- 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 as discussed below, 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 riverbank 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.

Impacts, Mitigations and Recommendations.

Category A: Sediment removal as a result of deposition or sediment deposition as a result of erosion

The following impacts can be associated with the removal of sediment from channels, and may occur within 500m downstream of the activity:

- Reduced availability of sediment for downstream reaches can lead to river flow becoming "sediment hungry", i.e. more likely to erode downstream reaches. This can lead to gully, head-cut channel (incision) and / or bank erosion.
- Alteration of the shape and slope of the banks and beds of watercourses and wetlands during sediment removal (especially by machine) can lead to gully, head-cut channel (incision) and / or bank erosion.
- Riparian and instream vegetation may be damaged or destroyed during sediment removal activities, especially if machinery is used.

The following ecological principles must guide sediment management activities on Jonkersdrift Estate:

- Sediment management activities will be conducted with the aim of not leading to alteration of the natural shape and slope of watercourse / wetland banks and beds. The aim will be to return a channel to its **natural pre-sedimented state**, in order to reinstate the natural capacity of the channel to hold and transport water.

- Sediment management will not stop the natural processes of sediment transport and deposition, but rather will be implemented as "damage control" where these processes may be placing infrastructure and natural systems at risk.

The freshwater specialist has determined that it is unlikely for the identified impacts to extend beyond the affected river channel. As a result of the above impacts being identified, proposed mitigations for the management and control of vegetation are detailed in Table 6.

Table 6: Mitigation Activities during Category A- maintenance activities

Mitigation Activity	Description
Sedimentation Management	• When dealing with a channelised or canalised section of watercourse, or an agricultural drain, sediment can be removed down to the original invert level of the channel. • Sediment removal can only be done during the dry summer months. For perennial watercourses, flow in the watercourse must be diverted while sediment is removed. This can be done in a phased manner on each side of the channel. All diversion measures must be completely removed from the watercourse once sediment removal has been completed. • Sediment in an unlined watercourse or channel should only be removed by hand. Sediment in a lined watercourse or channel can be removed mechanically, however, only if indigenous riparian vegetation will not be damaged in any way. • Sediment removed from a channel or canal should be stored on the farm, and used for other purposes such as landscaping, road construction, etc. • Sediment should never be removed from a wetland, unless supervised by a freshwater ecologist.

Category B: Emergency repairs – urgent action required to manage risk and damage to assets

The following impacts can occur as a result of the repair activities under Category B, and may extend 500m downstream of the maintenance activity:

- Introduction of concrete / cement into watercourses and wetlands. This can alter the pH of the water, and cause smothering of habitat, fauna and flora.
- Leakage of fuels, oils, etc. from construction machinery – this would lead to pollution of the wetlands or watercourses.

The following impacts may be felt in the broader catchment, up and downstream of the activities:

- Foot and vehicular traffic across the site where repairs are taking place, leading to destruction or deterioration of aquatic habitat. Access to the watercourses or wetlands during construction can lead to damage of soils, substrate (in the stream) and vegetation.
- Obstruction or diversion of surface flow during repair work. This could lead to a loss of connectivity within a watercourse or erosion in an area receiving diverted flow.

As a result of the above impacts, proposed mitigations for the maintenance of bridge crossings and culverts are detailed in Table 7 below.

Table 7: Mitigation activities during Category B – maintenance activities

Mitigation Activity	Description
Infrastructure Repair	• Repair work must be done during the dry season, when most watercourses, channels and wetlands are dry. • If work must be done in a perennial watercourse, surface flow must be diverted away from the repair site, to avoid any pollutants (such as cement) entering the watercourse. All diversion structures must be removed from the watercourse after repairs are complete. • Concrete or cement must not be mixed on site, but rather delivered pre-mixed. • All construction footprints must be minimised, and sensitive areas demarcated as no-go areas. • Care must be taken not to damage or destroy any indigenous riparian or instream vegetation. • Maintenance must be monitored before and after repairs have been done by a suitably qualified Environmental Control Officer (ECO). • Areas where vegetation must be cleared for repair work to occur, or where vegetation has been damaged or destroyed as a result of repair work, must be rehabilitated and re-planted, to the satisfaction of the ECO.

Category C: Managing alien invasive and bush encroachment plant species.

The following impacts have been identified under Category C with respect to vegetation management and control activities:

- Damage to bed and banks of watercourses and wetlands during vegetation removal. This can lead to erosion and sedimentation downstream.
- Erosion of soil due to removal of stabilising plant cover. This can lead to the deposition of sediment downstream.
- Change in temperature regime due to removal of shade.
- Obstructions to flow caused by removed biomass being placed in the watercourse or wetland.

Proposed mitigations for the management and control of vegetation are detailed in Table 8.

Table 8: Mitigation activities during Category C – maintenance activities

Mitigation Activity	Description
Clearing	• Removal of problematic riparian or instream vegetation must be done by hand, in order to ensure the integrity of the banks and bed of the channels. • Clearing of vegetation must be done during mid- to late summer / autumn (December – April), when most channels are dry. • Cleared vegetation (biomass) must be removed from the cleared areas, and preferably chipped for use as mulch, or burned. • Indigenous vegetation in watercourses that have a PES of C and above should not be removed, without the approval of a freshwater ecologist. • Wherever possible and where vegetation growth is not a direct problem for surface water flow, cleared areas should be replanted with appropriate indigenous species • Clearing activities must be overseen by a suitably qualified ECO, who must visit the clearing sites regularly during clearing, and once all biomass has been removed.
Re-planting	• Mulch must be used in all areas where re-planting is to take place. The following shall apply: • All mulch shall be free of alien species. • Any vegetative material shall be reduced by either mechanical means (chipper) or by hand-axing to sticks no longer than 100 mm. • Compost from a local source can also be utilised as mulch during replanting and rehabilitation of the watercourse. The compost shall be well decayed, friable and free from weed seeds. • Wood chips (including bark), which are half composted and have not been treated with preservatives can also be utilised as mulch during replanting of the site. • The chips shall be no longer than 50 mm in length or breadth. • Plants such as sedges, rushes and grasses are the best means of planting. These will need to be sourced early from nurseries, as these are sometimes difficult to obtain. • Plants should be placed in clumps rather than evenly spaced, as this allows some protection of smaller plants by the larger individuals, and appears more natural. This also facilitates more effective irrigation. • Unless proper nursery conditions are created on site, plants must not be stored for longer than 10 days on site prior to planting. • Planting shall be done by a skilled team. • The planted areas shall be monitored for erosion during the first winter, and areas that are subject to erosion shall be stabilised.

Category D: Rehabilitation and restoration activities for maintaining ecological infrastructure.

Rehabilitation measures from this category have been integrated as a mitigation action within each respective maintenance activity discussed above. Further mitigation is provided in Table 9 hereunder.

Table 9:Mitigation activities during Category C – maintenance activities

Mitigation Activity	Description
Re-planting of indigenous vegetation	• Mulch must be used in all areas where re-planting is to take place. The following shall apply: o All mulch shall be free of alien species. o Compost from a local source can also be utilised as mulch during replanting and rehabilitation of the watercourse • Indigenous specie that should be used in these rehabilitation efforts is indicated in the table below, together with the river zones where it will mostly thrive (Fig.2) • The planted areas shall be monitored for erosion during the first winter, and areas that are subject to erosion shall be stabilised.

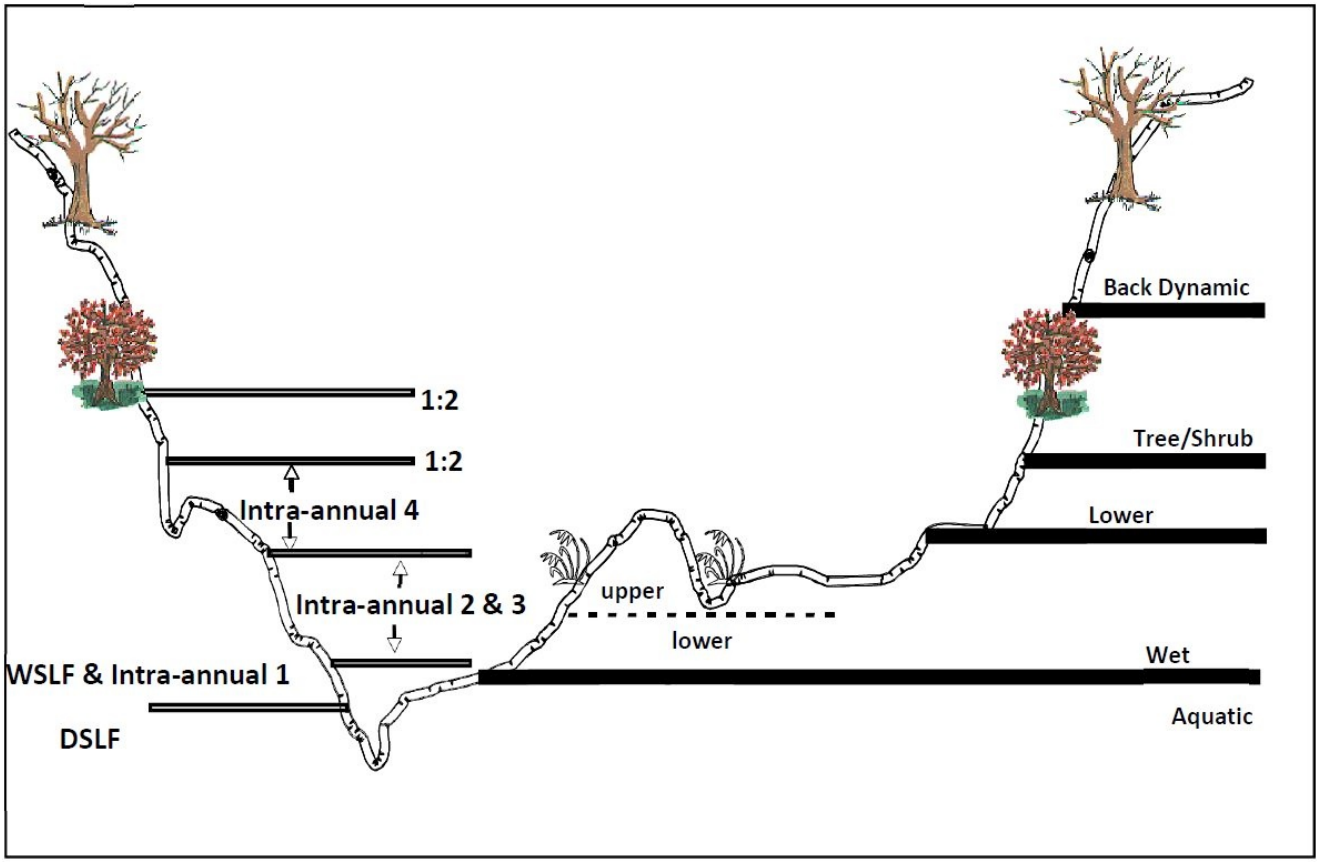


Figure 2: General lateral plant community zones and respective components of the flow regime. WSLF = Wet Season Low Flow; DSLF = Dry Season Low Flow; four classes (1-4) of intra-annual flood categories, whilst 1:2 and 1:20 describe inter-annual return-period floods (Kemper & Boucher, 2000)

Species name/s	Common Name	Zone	Photograph
Maytenus oleoides	Klipkershout	Tree/shrub - Upper to lower dry bank	
Salix mucronata	Kaapse wilger	Tree/shrub - Upper to lower dry bank	
Searsia angustifolia	Willow karee	Tree/shrub - Upper to lower dry bank	
Searsia undulata	Kunibos	Shrub - Upper to lower dry bank	
Cliffortia strobilifera	Vleibos	Shrub - Upper to lower dry bank	
Melianthus major	Kruidjie-roer-my-n	Shrub - Upper dry bank	
Leonotis leonurus	Wild dagga	Shrub - Upper dry bank	
Cyperus textilis	Matjiesgoed	Reed - Lower bank	

The following **Maintenance Method Statements** have been compiled for the various categories set out in Table 5.

1. MS001 – Demarcation of the Maintenance area

Methods for site demarcation including material type and monitoring.

2. MS002 – Clearance of alien and obstructive/encroaching vegetation within and alongside watercourses –

Methods outlining the clearance of alien and obstructive/encroaching vegetation within and alongside an affected watercourse.

3. MS003 – The maintenance of hardened channels, consisting of cement and natural stone walls.

Methods of repairing or maintaining the walls and banks of hardened channels, consisting of cement and natural stone.

4. MS004 – The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure.

Methods outlining the maintenance and emergency repair of infrastructure and structures located alongside or within a watercourse or agricultural channel.

5. MS005 – The reinstatement of watercourse channel depth and associated swales to pre-sedimentation levels

Methods outlining the reinstatement of watercourse channel depth and associated swales to pre-sedimentation levels. Includes the management and control of potential erosion and sedimentation during maintenance activities.

6. MS006 – Materials Handling and Storage/Stockpiling

Location of storage and stockpiling areas, methods for stockpiling and types of materials. Location, layout, and preparation of cement / concrete mixing areas including the methods employed for the mixing of concrete, particularly the containment of runoff water from such areas and the method of transportation of concrete.

7. MS007 – Waste Management

Expected solid waste types, sorting methods, quantities, methods and frequency of collection and disposal, as well as location of disposal sites. Include details of the proposed recycling program.

Note that all Method Statements apply to the Jonkershoek River section as depicted in **Appendix A** and as described in Paragraph A. The applicable watercourses and their reaches have been included within the Freshwater Specialist's independent assessment. The activities detailed above will occur during day-today operational phases of the site and as such would typically occur annually and/or as required. In terms of environmental standards, the following requirements would apply:

- Conditions of authorisation in terms of the adoption of the Maintenance Management Plan from the DEA&DP noting the general 'duty of care' also applies; and
- Conditions of the Water Use License in terms of the NWA.

APPENDIX C

METHOD STATEMENTS APPLICABLE TO THE MAINTENANCE ACTIVITIES SET OUT IN ANNEXURE A

MS001

DEMARCATION OF THE MAINTENANCE AREA

Description: The demarcation of maintenance sites and no-go areas

Environmental Management Objective: To ensure that the site area is appropriately demarcated at all times. To ensure that adjacent sensitive areas are demarcated as no-go areas.

Environmental Management Outcome: No deviations from the below and no damage to environmentally sensitive areas because of poor or inadequate demarcation.

Responsible Party:

Holder of the MMP (or appointed representative), Project Management Team and/or Principal Contractor

Timing of Implementation:

As maintenance activities are required. Demarcation must occur at least one day prior to the activities commencing on site. Monitoring of the activity should be daily, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

- Appropriate signage or information boards must be erected where public access to the areas adjacent to the maintenance site will occur.
- Only the project team and appointed specialists will be permitted within the maintenance sites. Site access must be monitored and unauthorised access prohibited.
- Maintenance sites will be demarcated with appropriate material such as temporary fences, fabric hoarding/screening etc. as approved by the holder or their appointed representative and the ECO. Demarcation is to be monitored daily.
- No go areas include all areas outside of the maintenance site footprint and areas of high environmental sensitivity. These areas are to be avoided during maintenance activities and access prohibited unless maintenance is required and/or approved by the holder and ECO.

MS002

CLEARANCE OF ALIEN AND OBSTRUCTIVE/ENCROACHING VEGETATION WITHIN AND ALONGSIDE WATERCOURSES

Description: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.

Removal of invasive alien plant species to reduce maintenance requirements as they relate to erosion and sedimentation and to improve hydrological flow and reduce associated flooding impacts. Invasive alien species must be removed from the identified watercourses and associated ecological buffers within site limits. Also applies to removal or pruning/cutting back of indigenous species from infrastructure (culverts, headwalls, pump house/irrigation infrastructure etc.) if they are causing blockage or obstruction

Environmental Management Objective: No unacceptable levels of vegetation encroachment or invasive alien spread. To avoid and/or minimise impacts on the adjacent infrastructure and surrounding land uses and environmental landscape as well as to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term

Environmental Management Outcome: No deviations from the below and no damage to environmentally sensitive areas as a result of the maintenance activities.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor

Timing of Implementation:

Clearing of vegetation must be done during mid- to late summer / autumn (December – April), when most channels are dry.

Annual clearing of invasive alien plants from stream, wetlands, and associated buffers. Annual cutting back/pruning of indigenous species from affected infrastructure (channels, culverts, crossings etc.).

Monitoring of the activity should be as required and agreed and once all biomass have been removed, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

General

- An adequately qualified environmental control officer (ECO), who may be directly appointed by the applicant, will be appointed before maintenance activity commences. Clearing activities must be overseen by a suitably qualified ECO, who must visit the clearing sites twice weekly during clearing, and once all biomass has been removed
- The planning and removal of vegetation shall be undertaken with cognisance to minimising the potential for soil erosion.
- No large machinery should enter the stream bed.
- Existing roads and tracks must be used to access the areas for maintenance activities.
- Disturbed areas must be monitored regularly for alien and invasive seedlings.
- Any existing or newly created exposed surfaces shall be compacted and/or planted as quickly as possible with suitable indigenous vegetation
- Special care should be taken around storm and heavy rain events. The maintenance sites should be inspected for erosion damage at these times (i.e., after heavy rainfall).

Clearing

- Removal of problematic riparian or instream vegetation must be done by hand, to ensure the integrity of the banks and bed of the channels
- No chemicals may be used for vegetation clearance
- Clearing of vegetation must be done during mid- to late summer / autumn (December – April), when most channels are dry
- Cleared vegetation (biomass) must be removed from the cleared areas, and preferably chipped for use as mulch, or burned
- Indigenous vegetation in watercourses should not be removed, without the approval of a freshwater ecologist
- Wherever possible and where vegetation growth is not a direct problem for surface water flow, cleared areas should be replanted with appropriate indigenous species

Replanting

- Mulch must be used in all areas where re-planting is to take place, with the following processes:
    - All mulch shall be free of alien species.

- Any vegetative material shall be reduced by either mechanical means (chipper) or by hand-axing to sticks no longer than 100 mm.
- Compost from a local source can also be utilised as mulch during replanting and rehabilitation of the watercourse. The compost shall be well decayed, friable and free from weed seeds.
- Wood chips (including bark), which are half composted and have not been treated with preservatives can also be utilised as mulch during replanting of the site.
- The chips shall be no longer than 50 mm in length or breadth

- Plants such as sedges, rushes and grasses are the best means of planting. These will need to be sourced early from nurseries, as these are sometimes difficult to obtain.
- Plants should be placed in clumps rather than evenly spaced, as this allows some protection of smaller plants by the larger individuals and appears more natural. This also facilitates more effective irrigation
- Unless proper nursery conditions are created on site, plants must not be stored for longer than 10 days on site prior to planting
- The planted areas shall be monitored for erosion during the first winter, and areas that are subject to erosion shall be stabilised
- No fertilisers shall be used on site
- The planted areas shall be irrigated if conditions are dry

Erosion Control

- Additional erosion control measures must be put in place, where there is a risk of soil erosion occurring after clearing (or other maintenance activities). The ideal longitudinal slope to prevent erosion in a river channel is 1:7 (roughly 14%), while laterally the banks should in general not be steeper than 1:3 (roughly 33%)
- Stabilisation materials include:
  - Ecologs (dry woody material or sand contained in a hessian roll;
  - Biodegradable netting/matting;
  - Geotextile matting of thick filaments designed to be secured over a vulnerable slope to prevent surface erosion;
  - Mulch stabilisation, or o Compost stabilisation.

MS003

THE MAINTENANCE OF HARDENED CHANNELS, CONSISTING OF CEMENT AND NATURAL STONE WALLS.

Description: Repairs and maintenance to lined and hardened channels on site (Emergency and otherwise).

Environmental Management Objective: To avoid and/or minimise impacts on the adjacent infrastructure and surrounding land uses and environmental landscape as well as to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent contamination of watercourses.

Environmental Management Outcome: No deviations from the below and no damage to environmentally sensitive areas because of the maintenance or cement batching activities. No enlargement of the footprint of repaired structures is allowed.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor

Timing of Implementation:

Repair work must be done during the dry season, when most watercourses, channels and wetlands are dry or as required during emergency incidents. Monitoring and audit of the activity should be as required and agreed once the activities are concluded, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

General

- Repair work must be done during the dry season, when most watercourses, channels and wetlands are dry .
- If work must be done in a perennial watercourse, surface flow must be diverted away from the repair site, in order to avoid any pollutants (such as cement) entering the watercourse .
- All diversion structures must be removed from the watercourse after repairs are complete .
- Concrete or cement must not be mixed on site, but rather delivered pre-mixed .
- No large machinery will enter the stream bed.
- All construction footprints must be minimised, and sensitive areas demarcated as no-go areas.
- Care must be taken not to damage or destroy any indigenous riparian or instream vegetation
- Maintenance must be monitored before and after repairs have been done by a suitably qualified Environmental Control Officer (ECO)
- Areas where vegetation must be cleared for repair work to occur, or where vegetation has been damaged or destroyed as a result of repair work, must be rehabilitated and re-planted, to the satisfaction of the ECO .

Erosion Control

- Additional erosion control measures must be put in place, where there is a risk of soil erosion occurring after clearing (or other maintenance activities). The ideal longitudinal slope to prevent erosion in a river channel is 1:7 (roughly 14%), while laterally the banks should in general not be steeper than 1:3 (roughly 33%)
- Stabilisation materials include :
    - Ecologs (dry woody material or sand contained in a hessian roll;
    - Biodegradable netting/matting;
    - Geotextile matting of thick filaments designed to be secured over a vulnerable slope to prevent surface erosion;
    - Mulch stabilisation, or o Compost stabilisation.

MS004

MAINTENANCE OF EXISTING HEADWALLS, THOROUGHFARES, PIPELINE CROSSINGS, BRIDGE CROSSINGS, CULVERTS & INFRASTRUCTURE

Description: Emergency repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.

Environmental Management Objective: To avoid and/or minimise impacts on the adjacent infrastructure and surrounding land uses and environmental landscape as well as to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent contamination and disturbance of watercourses.

Environmental Management Outcome: No deviations from the below and no damage to environmentally sensitive areas as a result of the maintenance or repair activities.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor.

Timing of Implementation:

Repair work must be done during the dry season, when most watercourses, channels and wetlands are dry or as required during emergency incidents. Monitoring and audit of the activity should be as required and agreed once the activities are concluded, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

- Repair work must be done during the dry season, when most watercourses, channels and wetlands are dry .
- If work must be done in a perennial watercourse, surface flow must be diverted away from the repair site, in order to avoid any pollutants (such as cement) entering the watercourse .
- All diversion structures must be removed from the watercourse after repairs are complete .
- Concrete or cement must not be mixed on site, but rather delivered pre-mixed .
- No large machinery will enter the stream bed.
- All construction footprints must be minimised, and sensitive areas demarcated as no-go areas.
- Care must be taken not to damage or destroy any indigenous riparian or instream vegetation.
- Maintenance must be monitored before and after repairs have been done by a suitably qualified Environmental Control Officer (ECO) .
- Areas where vegetation must be cleared for repair work to occur, or where vegetation has been damaged or destroyed as a result of repair work, must be rehabilitated and re-planted, to the satisfaction of the ECO .

MS005

REINSTATEMENT OF WATERCOURSE CHANNEL DEPTH AND ASSOCIATED SWALES TO PRE-SEDIMENTATION LEVELS

Description: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.

Environmental Management Objective: No unacceptable levels of erosion or sedimentation. To avoid and/or minimise impacts on the adjacent infrastructure and surrounding land uses and environmental landscape as well as to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent wind and water erosion and/or sedimentation of any natural features.

Environmental Management Outcome: No deviations from the below and no damage to environmentally sensitive areas as a result of the maintenance activities.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor.

Timing of Implementation:

After heavy rain events (such as a 1:100-year flood), or as needed. To monitor and note at least annually, after winter. Monitoring of the activity should be daily, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

- The planning and removal of sediment shall be undertaken in liaison with the project team and cognisance should be given to minimising the potential for soil erosion.
- When dealing with a channelised or canalised section of watercourse, or an agricultural drain, sediment must be removed down to the original invert level of the channel .
- Sediment removal must occur during the dry summer months
- For perennial watercourses, flow in the watercourse must be diverted while sediment is removed. This must be done in a phased manner on each side of the channel. All diversion measures must be completely removed from the watercourse once sediment removal has been completed .
- Sediment in an unlined watercourse or channel must be removed by hand or with hand-held tools.
- Sediment in a lined watercourse or channel can be removed mechanically, however, only if indigenous riparian vegetation will not be damaged in any way.
- No large machinery will enter the stream bed.
- Sediment removed from a watercourse must be stored within away from, and used for other purposes such as landscaping, road construction, etc .
- All stockpile of sediment materials (e.g. sand) will be protected to prevent erosion by wind and water. Stockpiles should not be higher than 1.5m.
- Existing roads and tracks must be used to access the areas for maintenance activities.
- Disturbed areas must be monitored regularly for alien and invasive seedlings.
- Any existing or newly created exposed surfaces shall be compacted and/or planted as quickly as possible with suitable indigenous vegetation.
- Special care should be taken around storm and heavy rain events. The maintenance sites should be inspected for erosion damage at these times (i.e., after heavy rainfall).
- Additional erosion control measures must be put in place, where there is a risk of soil erosion occurring after clearing (or other maintenance activities). The ideal longitudinal slope to prevent erosion in a river channel is 1:7 (roughly 14%), while laterally the banks should in general not be steeper than 1:3 (roughly 33%).
- Stabilisation materials include:
    - Biodegradable netting/matting;
    - Geotextile matting of thick filaments designed to be secured over a vulnerable slope to prevent surface erosion;
    - Mulch stabilisation, or
    - Compost stabilisation.

MS006

MATERIALS HANDLING AND STORAGE/STOCKPILING

Description: The stockpiling and storage of materials and equipment on site during maintenance activities.

Environmental Management Objective: To ensure that the stockpiling and storage of materials and equipment on site do not occur within environmentally sensitive areas. To ensure that materials handling does not impact the surrounding environment or obstruct maintenance activities on site.

Environmental Management Outcome: No non-conformances from the below and no damage to environmentally sensitive areas as a result of stockpiling and materials handling on site.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor

Timing of Implementation:

As maintenance activities are required. Confirmation of stockpiling and storage of equipment to be completed at least one day prior to activities commencing on site. Monitoring of the activity should be daily, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

- Stockpiling and storage of equipment and materials will occur in an area of least environmental sensitivity and will occupy a minimal footprint as agreed by the holder and/or the project team.
- Stockpiling and storage of equipment and materials will not occur within no-go areas away from the river.
- The laydown and storage of equipment will be conducted in a neat and orderly manner. Laydown of materials will not obstruct maintenance activities or site access.
- Stockpiling will occur per type. No mixed stockpiles will be allowed on site.
- Materials will be stored in piles that do not exceed 1.5m in height and will be protected from the wind to prevent spread of fine materials across the site.
- Should additional capacity be required for storage of materials the Project Manager is to be consulted before laydown of materials or equipment occurs.
- Fuel will be stored on within an impermeable container and monitored for leaks daily.
- No stockpiling of materials or equipment will be permitted within riparian area of a watercourse.
- Cement and empty cement bags will be stored in a secure weatherproof location to avoid contamination of the environment.
- Mixing trays will be used at all mixing and supply points. No mixing of cement will occur on bare ground.
- All runoff from batching areas shall be strictly controlled so that contaminated water does not enter the environment including watercourses, agricultural channels and stormwater systems.
- Cleaning of equipment is not permitted on site.
- No cement water will be discharged into the environment.

MS007

WASTE MANAGEMENT

Description: The generation and management of waste on site during maintenance activities.

Environmental Management Objective: To prevent pollution/contamination associated with the generation and temporary storage of general waste, hazardous waste, rubble and litter generated by the workforce on site.

Environmental Management Outcome: No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of waste generation and management activities.

Responsible Party:

Holder of the MMP (or appointed representative), Maintenance/Operations Management Team and/or Principal Contractor

Timing of Implementation:

As maintenance activities are required. Confirmation of waste management areas and protocols to be completed at least one day prior to activities commencing on site. Monitoring of the activity should be daily, with records kept as per the Monitoring Schedule requirements.

Description of how potential environmental impacts will be prevented or managed:

General

- Construction related waste will include general waste (such as plastic packaging, strapping, and lunch wrappers.), rubble (like broken bricks, natural stones, waste concrete), organic waste (such as vegetation) and limited quantities of hazardous waste items.
- An integrated waste management system will be established on site.
- Waste management on site will be underpinned by the waste management hierarchy:

- No refuse, building rubble or waste material will be disposed of by burying.
- Rubble shall be temporarily stockpiled in a waste skip or a central stockpile and shall be removed from site to an approved landfill site as soon as it constitutes a practical load for removal and before temporary closure of the site.
- No plastics, shrink wrap, paint buckets or any other debris that do not constitute clean building rubble, shall be stored at such stockpile sites.
- The removal of the waste will occur weekly at a minimum, or as a practical load accumulates, to Municipal-approved recycling facilities (where possible), as well as the final disposal of non-recyclable wastes to a registered landfill facility.
- On-site waste segregation shall take place according to type.

Storage, handling, and disposal of general waste

- Waste will be temporarily stored on site in a central waste storage area that is weatherproof and scavenger-proof.
- All waste shall be sorted in the waste handling / storing area.
- Clearly marked skips / bins will be utilised in order to differentiate the various waste types suitable to each receptacle.
- General waste will be removed from the site at least once a week if it does not pose a risk to human health
- Waste will only be disposed of at a licenced landfill site approved or to legitimate recycling facilities or through the municipal waste removal service (if appropriate).
- Waste disposal certificates will be obtained and filed in an environmental file and stored on site.
- As far as possible, materials used or generated by maintenance activities shall be recycled.

Litter prevention and housekeeping

- Waste bins on site shall not be allowed to become overfull and shall be emptied as required, but at least weekly, to prevent overtopping.
- Dedicated resources will be provided to clean up the working areas daily to prevent spreading by wind or animals.
- Empty cement bags will be collected from the maintenance areas by the end of every day and before rain events and shall be stored in bins that are either placed under cover or have been fitted with lids.
- Wind-blown litter beyond the site boundary that are in the opinion of the project manager emanating from works on site will be cleared as part of the waste management of the site.

Storage, handling, and disposal of hazardous waste

- Hazardous and general waste will be stored separately

- Hazardous waste containers will be stored in a secure area with bunding / secondary containment and should not be easily accessible.
- All hazardous waste will be placed in drums / containers labelled for this purpose. These containers will be kept securely closed when not in use and will be protected from the ingress of rain.
- Hazardous waste will not be disposed to a General Landfill site and will be removed by a registered hazardous waste Contractor.
- Records of hazardous waste disposal will be maintained on site in the environmental file. Copies of receipts from such waste disposal sites will serve as proof of proper disposal.
- Storage and disposal of waste items will also be controlled through other relevant legislation which must be complied with e.g., Occupational Health & Safety Act.

Storage, handling, and disposal of organic/vegetative waste

- Cleared vegetative material will not to be disposed anywhere other than a composting facility or licenced waste disposal site.
- Any invasive alien plant species, which are removed from the site, will not to be chipped for mulch if they are in a seedbearing state. Such material is to be disposed of at a suitable waste disposal site.

APPENDIX D

MONITORING SCHEDULE

The above activities will be monitored by an Environmental Control Officer (ECO). The holder, maintenance management team or appointed contractor must designate an employee as ECO. The Schedule below describes the Monitoring periods and protocols. Monitoring must take place during Maintenance and Operational phases.

Monitoring Activity	Record of Activity
Monitoring of maintenance sites before activities commence	**Form A** below (*and referred to in **C. 5. Monitoring and Reporting***), shall be completed by the ECO at least seven working days before the commencement of any maintenance activity. Photographic evidence (at least two photographs) will Photographic evidence (at least two photographs) will be included within the reports and will include images be included within the reports and will include images from at least two different points of perspective (A and B) looking at the site. Coordinates of these reference points will be noted.
Monitoring of maintenance sites during maintenance phase	Monitoring checklist and photographic evidence completed by the ECO.
Monitoring of maintenance sites after activities commence	**Form B** below (*and referred to in **C. 5. Monitoring and Reporting***), shall be completed by the ECO at least three working days following the completion of the maintenance activities. Photographic evidence (at least two photographs) will Photographic evidence (at least two photographs) will be included within the reports and will include images be included within the reports and will include images from at least two different points of perspective (A and B) looking at the site. Coordinates of these reference points will be noted. To note the following: • All Invasive Alien Plants have been removed from the river, riverbank, wetlands, and their buffers; • The bed and banks that have been impacted by the felling of trees and removal of alien vegetation must be in good condition, and not eroding or bare; and • Areas within the streams, wetlands and buffers that have been impacted by maintenance activities have been appropriately re-planted.
Incident reporting	Environmental Incident Reports including corrective action
Public complaints	Complaints Register.
Staff training	Toolbox talks attendance register for maintenance staff.

Monitoring during Operational Phase

Monitoring Activity	Record of Activity
Annual audit of maintenance sites by ECO.	Monitoring checklist and photographic evidence

REPORTING FOR INTENT TO UNDERTAKE MAINTENANCE ACTIVITIES – FORM A				
Section A: Landowner Details				
Name	**Surname**	**Farm Name**	**Farm No.**	**Today's Date**
Section B: Details of proposed maintenance Activity				
WUA/GA reference number	**DEA&DP reference number (MMP)**	**Activity Type**	**Footprint area (m2)**	**Volume material (m3)**
Equipment to be used		**Description of method for planned activity**		**Commencement date**
Date of last flood event		**Note any further damage or comments of state of site**		
Section C: Photographs of activity location before maintenance				
Before A				
Coordinates:				
S				
E				
Before B				
Coordinates:				
S				
E				
Date photos taken				

REPORTING FOR COMPLETING MAINTENANCE ACTIVITIES – FORM B				
Section A: Landowner Details				
Name	**Surname**	**Farm Name**	**Farm No.**	**Today's Date**
Section B: Details of completed maintenance Activity				
WUA/GA reference number	**DEA&DP reference number (MMP)**	**Activity Type**	**Footprint area (m2)**	**Volume material (m3)**
Equipment to be used		**Description of method for planned activity**		**Commencement date**
Date of last flood event		**Note any further damage or comments of state of site**		
Section C: Photographs of activity location after maintenance				
Before A				
Coordinates:				
S				
E				
Before B				
Coordinates:				
S				
E				
Date photos taken				

The Monitoring Schedule and activity audit must be reviewed weekly and the below MS Review Schedule Form must be completed and kept on site with the Monitoring records.

MS Review Schedule

Date	Comments

Distribution and Approval

Holder of MMP (or appointed representative)		Environmental Control Officer	Principal Contractor
Name:			
Signature:			
Date:			

APPENDIX E

DESCRIPTION OF THE SITES WHERE PROPOSED MAINTENANCE ACTIVITY(IES) ARE REQUIRED

PROPERTIES:

- Farm Bengale 1440, Stellenbosch
- Farm Jonkersdrift, 1441 Stellenbosch
- Farm 1620 Stellenbosch

Activity	Coordinates	Maintenance Activity	Current State of area	Method Statement
13	S 33°57'5.85" E 18°54'14.32"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
14	S 33°57'4.29" E 18°54'12.80"	Category B: The maintenance of hardened channels, consisting of cement and natural stone walls. Activity: Repairs and maintenance to lined and hardened channels on site (Emergency and otherwise). Re-instatement of gabion walls and weirs		MS003
15	S 33°57'3.90" E 18°54'12.46"	Category B: The maintenance of hardened channels, consisting of cement and natural stone walls. Activity: Repairs and maintenance to lined and hardened channels on site (Emergency and otherwise). Re-instatement of gabion walls and weirs		MS003
16	S 33°57'2.11" E 18°54'9.73"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005
17	S 33°57'1.88" E 18°54'10.79"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005
18	S 33°57'0.83" E 18°54'10.38"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005

19	S 33°57'0.60" E 18°54'10.25"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
20	S 33°57'0.59" E 18°54'9.74"	10223 Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
21	S 33°57'1.28" E 18°54'8.99"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
22	S 33°57'0.39" E 18°54'9.15"	10220 Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
23	S 33°57'0.53" E 18°54'8.40"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005
24	S 33°57'0.07" E 18°54'8.84"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002

25	S 33°56'59.37" E 18°54'8.35"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		**MS002**
26	S 33°56'58.94" E 18°54'7.88"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		**MS004**
27	S 33°56'58.86" E 18°54'7.71"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		**MS002**
28	S 33°56'53.51" E 18°54'2.47"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		**MS004**
29	S 33°56'52.98" E 18°54'2.41"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		**MS002**
30	S 33°56'51.42" E 18°54'1.74"	Category B: The maintenance of hardened channels, consisting of cement and natural stone walls. Activity: Repairs and maintenance to lined and hardened channels on site (Emergency and otherwise). Re-instatement of gabion walls and weirs		**MS003**

31	S 33°56'50.72" E 18°54'0.97"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
32	S 33°56'49.27" E 18°53'59.39"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		MS004
33	S 33°56'42.76" E 18°53'46.81"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
34	S 33°56'42.27" E 18°53'45.84"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
35	S 33°56'40.95" E 18°53'43.12"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005
36	S 33°56'38.74" E 18°53'42.36"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002

37	S 33°56'38.66" E 18°53'42.49"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		MS004
38	S 33°56'38.50" E 18°53'42.56"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005
39	S 33°56'38.30" E 18°53'42.36"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		MS004
40	S 33°56'38.30" E 18°53'42.36"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		MS004
41	S 33°56'38.28" E 18°53'42.13"	Category C: Managing alien invasive and bush encroachment plant species within and adjacent to the watercourses and agricultural channels located on site. Activity: Clearing of alien invasive and bush encroachment plant species and obstructive plant material due to flooding events within and adjacent to the watercourses and agricultural channels located on site.		MS002
42	S 33°56'36.79" E 18°53'40.54"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS004
43	S 33°56'31.88" E 18°53'35.17"	Category A: Sediment removal as a result of deposition within affected watercourses and agricultural channels. Activity: Sediment removal as a result of deposition within or adjacent to a watercourse or agricultural channel or sediment deposition as a result of erosion.		MS005

44	S 33°56'31.77" E 18°53'34.61"	Category B: The maintenance of existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure. Activity: Repairs and maintenance to existing headwalls, thoroughfares, bridge crossings, culverts and infrastructure on site.		**MS004**

APPENDIX F

SPECIALIST INPUTS

See Freshwater Ecology Report (De Lange, 2023)

APPENDIX G

IMPLEMENTATION AND RESPONSIBILITY OF THE MMP

The landowner sand holder of the MMP as described in Part 1: Section A is responsible for the implementation of the MMP, unless another party formally acknowledges the roles and responsibilities therein. If a change in holder of the MMP or responsibilities for the MMP is needed, written notification thereof which includes a letter signed by the new party responsible, acknowledging their understanding of the requirements and the MMP attached, must be provided to the Department of Environmental Affairs and Development Planning (DEA&DP) and the Department of Water and Sanitation (DWS).

The responsibilities of the holder of the MMP, or party formally appointed by the holder to manage the development, are to:

- Ensure that the requirements as set out in this MMP, and the conditions outlined by the competent authority are adhered to and implemented by the appointed project team and/or principal contractors.
- Ensure that the proposed maintenance activities are implemented as per the intention and conditions of approvals for the Jonkershoek River section
- Ensure that the maintenance footprint is contained within site limits and is minimal.
- Assist the project team and/or principal contractors in ensuring that the conditions of the MMP are being adhered to and promptly issue instructions in the case of non-compliance or if requested by the competent authority and/or ECO.
- Order the removal of person(s) and/or equipment not complying with the specifications contained herein.
- Issue penalties for transgressions of MMP.

The MMP may be implemented through contracts/ appointments of appropriate professionals where this expertise is not available in-house, although checks can be executed and documented internally, with works to be done internally or externally, as far as expertise allows for this.

APPENDIX H

PUBLIC PARTICIPATION

Request for the adoption of a MMP _Jonkershoek Rivier_JONKERSDRIFT_Final-25

Final Audit Report 2025-03-10

Created:	2025-03-10
By:	Desiree du Preez (desireedup@gmail.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAk21lERds2hbJhlT6UTtAtz40POVJxGmX

"Request for the adoption of a MMP _Jonkershoek Rivier_JONKERSDRIFT_Final-25" History

Document created by Desiree du Preez (desireedup@gmail.com)
2025-03-10 - 2:43:25 PM GMT- IP address: 102.182.207.37

Document emailed to marli@stbhh.co.za for signature
2025-03-10 - 2:45:38 PM GMT

Email viewed by marli@stbhh.co.za
2025-03-10 - 2:47:16 PM GMT- IP address: 169.1.253.10

Signer marli@stbhh.co.za entered name at signing as Marli van Zyl
2025-03-10 - 2:49:52 PM GMT- IP address: 169.1.253.10

Document e-signed by Marli van Zyl (marli@stbhh.co.za)
Signature Date: 2025-03-10 - 2:49:54 PM GMT - Time Source: server- IP address: 169.1.253.10

Agreement completed.
2025-03-10 - 2:49:54 PM GMT

Western Cape Government

Department of Environmental Affairs and Development Planning
Samornay Smidt
Directorate: Development Management, Region 1
Samornay.Smidt@westerncape.gov.za | Tel: 021 483 5828

REFERENCE: 16/3/3/6/3/B4/45/1584/24
DATE: **04 JUNE 2025**

The Board of Directors
Stoney Meadows Investments 11 (Pty) Ltd
PO Box 6184
Uniedal
STELLENBOSCH
7621

Attention: Ms. Marli van Zyl

Cell: 082 837 9250
E-mail: marli@stbhh.co.za

Dear Madam

ADOPTION OF THE 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 FOR MAINTENANCE AND MANAGEMENT ACTIVITIES OF THE RIPARIAN AREA AND RIVER CHANNEL OF THE JONKERSHOEK RIVER ON FARM BENGALE NO. 1440, FARM JONKERSDRIFT NO. 1441 AND FARM NO. 1620, STELLENBOSCH

1. The final Maintenance Management Plan ("MMP") dated March 2025, received by the Directorate: Development Management (Region 1) ("this Directorate") on 6 May 2025 and this Directorate's correspondence dated 14 May 2025, refer.

2. In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), viz, the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), the competent authority hereby adopts the MMP, dated March 2025, for the proposed rehabilitation and maintenance of the riparian area and river channel of the Jonkershoek River, Farm Bengale No. 1440, Farm Jonkersdrift No. 1441 and Farm 1620, Stellenbosch.

3. Please note that:

   3.1 The adoption of the MMP only relates to the following listed activities and to the determination of whether or not environmental authorisation in terms of NEMA is required before undertaking the tasks stipulated in the MMP.

   Listing Notice 1:

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

   but excluding where such infilling, depositing, dredging, excavation, removal or moving—

(a) will occur behind a development setback;
(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;
(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;
(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or
(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.

Listing Notice 3:

Activity Number: *12*
The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

i. Western Cape

i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
ii. Within critical biodiversity areas identified in bioregional plans;
iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;
iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or
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.

3.2 Although the abovementioned activities are applicable, the proposed rehabilitation and maintenance of the riparian area and river channel of the Jonkershoek River, Farm Bengale No. 1440, Farm Jonkersdrift No. 1441 and Farm 1620, Stellenbosch, will be undertaken in accordance with the adopted MMP and therefore do not require an environmental authorisation in terms of NEMA.

3.3 Any other statutory requirements that may be applicable to the undertaking of the development must be adhered to.

3.4 The fact that the MMP for the proposed rehabilitation and maintenance of the riparian area and river channel of the Jonkershoek River, Farm Bengale No. 1440, Farm Jonkersdrift No. 1441 and Farm 1620, Stellenbosch, is adopted by the competent authority does not absolve you from your general "Duty of Care" set out in Section 28(1) of the NEMA which states that:

"Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, 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 their "duty of care" responsibility, cognisance must be taken of the principles of sustainability contained in Section 2 of NEMA).

3.5 It is, however, reiterated that the MMP only relates to the listed activities mentioned above. If any of the other listed activities are triggered, then environmental authorisation will have to be obtained in terms of NEMA. If the maintenance work is in any way amended, additional listed activities might become applicable. It remains the responsibility of the proponent to determine if listed activities are triggered and to ensure that the necessary environmental authorisation is obtained.

4. Please note that Interested and Affected Parties ("I&APs") that registered during the Public Participation Process must be informed of this decision and to the fact that an appeal may be lodged against the decision in terms of National Appeal Regulations 2025 as detailed hereunder.

5. **APPEALS**

Appeals must comply the *National Appeal Regulations, 2025 (Government Notice No. R. 5985 in Government Gazette No. 52269 of 13 March 2025.* Please note the provisions of Regulation 1(2) & (3) of the *National Appeal Regulations, 2025* when calculating the period of days.

5.1 The holder (applicant) of this decision must submit an appeal to the Appeal Administrator, any registered Interested and Affected Parties (I&AP's) and the decision maker (Competent Authority who issued the decision) within **20 calendar** days from the date this decision was sent by the decision maker.

5.2 The I&AP's (not the holder of this decision) must submit an appeal to the Appeal Administrator, the holder (applicant) of the decision and the decision maker within **20 calendar days** from the date this decision was sent to the registered I&AP's by the holder (applicant) of the decision.

5.3 All appeals submitted must:

5.3.1 be in writing in the appeal form obtainable from the Departmental website;

5.3.2 include supporting documents referred to in the appeal; and

5.3.3 include proof of payment of the prescribed non-refundable appeal fee, if prescribed.

5.4 The holder (applicant) of the decision must:

5.4.1 notify registered I&AP's and affected organs of state of any appeal received, and make the appeal available to them, within 5 calendar days after the 20-day appeal period ends.

5.4.2 Submit proof of this notification to the Appeal Administrator within 5 calendar days after sending the last notification.

5.5 The applicant, where applicable, the decision-maker, or any person notified under regulation 4 of the *National Appeal Regulations, 2025* may submit a Responding Statement within **20 calendar days** from the date they received the appeal, in the form obtainable from the Department website to the Appeal Administrator and to the appellant, where the appellant is not the applicant.

5.6 Appeals, Responding Statements and supporting documents must be submitted to the Appeal Administrator by means of one of the following methods:

a. **By e-mail**:
DEADP.Appeals@westerncape.gov.za or

b. **By hand** where that person submitting does not hold an electronic mail account:
Attention: Mr Marius Venter
Room 809, 8th Floor Utilitas Building,
1 Dorp Street, Cape Town, 8001

Note: You are also requested to submit an electronic copy (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Administrator via email or to the address listed above.

A prescribed appeal form, responding statement form as well as assistance regarding the appeal processes is obtainable from the relevant website of the appeal authority: http://www.westerncape.gov.za/eadp or the office of the Minister at: Tel. (021) 483 3721 or email DEADP.Appeals@westerncape.gov.za

6. If there is a material non-compliance by the applicant with this MMP, this Directorate shall issue a written notice to the applicant. The notice shall specify any acts and omissions constituting the breach, and that this Directorate shall withdraw its adoption of the MMP if the breach is not remedied within ten days of receiving the notice. The effect of this will be that environmental authorisation in terms of NEMA shall be required before undertaking the activities stipulated in the MMP.

7. This Directorate will not be held liable for any loss or damage to property or person as a consequence of the activities to be undertaken in accordance with the adopted MMP.

8. This Directorate reserves the right to revise or withdraw comments or request further information from you based on the information received.

Yours faithfully

MR. ZAAHIR TOEFY
DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)
DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

Cc: (1) Ms. D du Preez (Greenfire Enviro (Pty) Ltd) Email: desiree@greenfireenviro.co.za
(2) Mr. S v/d Merwe (Stellenbosch Municipality) Email: Schalk.vandermerwe@stellenbosch.gov.za
(3) Ms. L Knoetze (CapeNature) Email: lknoetze@capenature.co.za