



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

File Reference Number:
Date Received by Department:
Date Received by Component:
Form Duly Signed and Dated:

(For official use only)	
	Yes No

PROJECT TITLE

EXPANSION AND WASTE LICENSE APPLICATION FOR THE GROENFONTEIN KLAPMUTS COMPOST FACILITY ON REMAINDER FARMS GROENFONTEIN ANNEX 716 PORTION 54; PORTION 56 AND A PORTION OF PORTION 25, PAARL

A. SCOPE AND IMPORTANT INFORMATION

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

EIA Regulations Listing Notice 1 of 2014 (as amended)

- Activity 19, Listing Notice 1: The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving- (a) will occur behind a development setback;

- (b) is for maintenance purposes undertaken in accordance with a maintenance management plan;
- (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;
- (N.B. Points (d) and (e) does not apply as these activities fall within the coastal zone)

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

EIA Regulations Listing Notice 2 of 2014 (as amended)

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

EIA Regulations Listing Notice 3 of 2014 (as amended)

- Activity 12, Listing Notice 3: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a MMP.

i. Western Cape

- i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
 - ii. Within critical biodiversity areas identified in bioregional plans;
 - iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or
 - v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.
- (NB. Point iii does not apply as this activity falls within the coastal zone)

- 4) In deciding the request, the competent authority may define conditions related to auditing compliance with the MMP; monitoring requirements; reporting requirements, review; updating and amending the document and period for which the MMP is defined/adopted.
- 5) The purpose of the MMP is to maintain both man-made and ecological infrastructure in a manner that either improves the current state of, and/or reduces the negative impacts on a watercourse to ensure that ecosystems services are preserved/improved and to prevent further deterioration of the watercourse.

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

the General Authorisation for sections 21 (c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) to ensure continued alignment and compliance.

B. MAINTENANCE MANAGEMENT PRINCIPLES

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

- 2) The following table provides a simple overview for the determination of the need for a MMP:

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

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

Maintenance Category	Types of maintenance activities (examples only)
<p>Category A: Sediment removal as a result of deposition or sediment deposition as a result of erosion</p>	<ul style="list-style-type: none"> • Clearing sediment or placing sediment at: <ul style="list-style-type: none"> ○ Pump hole/trench ○ Return flow (irrigation) ○ Off-take weir ○ Stormwater outfall ○ Detention/retention ponds ○ Canalized urban rivers ○ Bridges, culverts and drifts • Prevent formation of islands in the channel of the river • Dredging of in-stream dams
<p>Category B: Emergency repairs – urgent action required to manage risk and damage to assets</p>	<ul style="list-style-type: none"> • Repair to erosion of river bank or servicing infrastructure (e.g. pipelines/roads) • Removal of material built up as a result of flooding/sedimentation and increasing risk to infrastructure • Address damage or replacement of infrastructure (e.g. bridge, pipeline, pump house) • Manage the condition of flood protection berms, and existing structures such as gabions, canalized and stormwater systems • Installing temporary gravel approaches at flood-damaged river crossings
<p>Category C: Managing alien invasive and bush encroachment plant species</p>	<ul style="list-style-type: none"> • Clearing of alien invasive vegetation out of a watercourse to reduce maintenance requirements as they relate to erosion and sedimentation • Management of indigenous species categorized as bush encroachment, to improve hydrological flow and reduce associated flooding impacts
<p>Category D: Rehabilitation and restoration activities for maintaining ecological infrastructure</p>	<ul style="list-style-type: none"> • Development and maintenance of ecological buffering systems to improve and/or restore functioning (e.g. wetlands and stormwater detention ponds) • Actively rehabilitating riparian zones through planting of locally indigenous species • Bank grading and movement/removal of berms and barriers to flow

- 4) The development of appropriate method statements to mitigate the impact of the maintenance needs, should be aligned within the framework of these considerations:
- a. Watercourses experience a natural process of sedimentation and erosion, with varying rates depending on the geomorphology and the integrity of the land-uses within the catchment;

- b. Manipulation of the watercourse results in increased erosion and/or deposition being experienced further downstream, perpetuating greater need for manipulation and more drastic and costly maintenance interventions;
 - c. Locally indigenous riparian and wetland vegetation assists in the stabilization of river banks through effective root structures, while contributing to improve in-stream habitat and water quality conditions;
 - d. 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;
 - e. Persons undertaking maintenance activities have a responsibility to ensure a sense of duty of care is applied as prescribed within NEMA Section 28(1).
- 5) It is recognized that within urban areas, sedimentation and erosion rates are significantly amplified as a result of development in urban areas and thus systems associated with watercourses in such areas can no longer be considered as 'natural'. In such a context, the drivers of such a process are often located outside the control of the landowner or responsible authority (i.e. Municipality). Therefore, the response taken to address the needs of a maintenance management plan for a watercourse within the urban environment may be limited in mitigating the requirement for maintenance to be undertaken.

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

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

1. PERSONAL DETAILS

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

REGION 1 (City of Cape Town Metropolitan and West Coast District) <input type="checkbox"/>	REGION 2 (Cape Winelands District, Overberg District) <input checked="" type="checkbox"/>	REGION 3 (Eden & Central Karoo Districts) <input type="checkbox"/>
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Name of person/authority who will undertake responsibility for the activity:	Boland Organic Supplies (Pty) Ltd		
Contact person (if other):	Mr. SP Visser		
Postal address:	PO Box 272, Moorreesburg		
Telephone:	021 971 1404	Postal code:	7310
Fax:	022 433 1440	Cell:	082 553 3240
Email:	pietervisser@tiptrans.co.za		
Name of person who has prepared the MMP:	Eco Impact Legal Consulting (Pty) Ltd		
Contact Person (if other):	Lauren Abrahams		
Postal address:	PO Box 45070, Claremont		
Telephone:	021 671 1660	Postal code:	7735
Fax:	021 671 9976	Cell:	066 210 9892
E-mail:	admin@ecoimpact.co.za		
Name of landowner(s) on whose behalf the plan has been developed*:	Boland Organic Supplies (Pty) Ltd		
Contact person(s):	Mr. SP Visser		
Postal address:	PO Box 272, Moorreesburg		
Telephone:	021 971 1404	Postal code:	7310
Fax:	022 433 1440	Cell:	082 553 3240
E-mail:	pietervisser@tiptrans.co.za		
Municipality for proposed project:	Drakenstein Municipality		
Farm name(s), erf(s) and portion number(s) etc*:	Farm Groenfontein Annex 716/25 = 43.64ha Farm Groenfontein Annex 716/54 = 4.49ha Farm Groenfontein Annex 716/56 = 6.61ha		
Magisterial District or Town:	Cape Winelands District Municipality		
Name(s) of watercourse(s) in question:	Non-perennial tributary of the Klapmuts River.		
*In instances where there is more than one landowner, please attach a list of landowners with their full names, contact details, farm name, farm number, portion number, Erf number, coordinates and signed declaration confirming approval for development and responsibility of the MMP			

2. DECLARATION

THE PERSON THAT WILL BE UNDERTAKING THE MAINTENANCE

I, in my **personal capacity** or **duly authorised** (please circle the applicable option) by (name of legal entity) thereto hereby declare that I/we:

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

Signature of the proponent:

Date:

Name of institution/company:

3. BACKGROUND AND INTRODUCTION

Introduction:

The proposed development is for the expansion of an existing composting facility located on Farm Groenfontein Annex 716 Portion 56.

The existing facility is operating under an existing Environmental Authorisation please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:

- Current extent of the composting area (in hectares or m²):
±1.36ha currently being used
- Tonnage of compost produced (per month / annum):
Figures are based on sales for the period from Jan 2018 – Jan 2019:
 - Chicken manure: 1,267 m³/month
 - Compost: 538 m³/month
 - Waste Manure: 426 m³/month

The proposed activity is for the expansion and licensing of a compost facility to recycle and treat organic waste to produce compost on approximately 14.3ha.

Composting activity:

Composting of organic waste is done using the turned windrow method. It is proposed to expand the existing footprint of the composting activity by 3ha; this would allow the facility to treat general and organic waste with a capacity in excess of 10 tons but less than 100 tons.

The facility will be expanded to accept mixed compostable organic waste for composting by turned windrow method. The facility intends to accept approximately 200m³ of organic waste per day which would equate to 4000m³ of compostable organic waste to be accepted per month.

Please take note that for the purpose of this report “**compostable organic waste**” is defined as: A carbon-based material of animal or plant origin (that is defined as waste in terms of the South African gazetted National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008:)) that naturally enhances fertility of soil through a natural degradation process but excludes human made organic chemicals and naturally occurring organic chemicals which have been refined or concentrated by human activity.

“Organic Waste” will generally comprise materials that can be accepted for disposal at a licensed municipal general waste landfill facility (i.e. excludes infectious, poisonous, health-care and hazardous organic wastes)”.

National Organic Waste Composting Strategy, 2013.

Stormwater management:

Current dams capacity:

The existing two dams (located on Portions 54 and 56 respectively) have a combined storage capacity of ±6600m³.

Proposed dam and capacity:

It is envisaged that the existing dams will be reshaped, and the walls merged in order to create a single dam with a smaller footprint. This will provide more economical usage of the available land.

- The proposed dam with a 3m high wall will have a capacity of ±13 800m³ including a spare capacity of ±15%.
- If the wall is raised to 3.5m the storage capacity will increase to ±15 600m³ with a spare capacity of ±30%.

In order to limit the runoff to the dams a cut-off drain will be constructed on the southern boundary of Portion 56. Runoff from the adjacent property will then be intercepted and directed towards the watercourse described above. This will reduce the catchment area of stormwater crossing the properties to ±13ha.

This MMP has been compiled for the following:

A 32m Zone of Regulation (ZoR) in accordance with the National Environmental Management Act, 1998 (Act 107 of 1998), and a 500m ZoR in accordance with the National Water Act, 1998 (Act 36 of 1998) was assigned to the non-perennial tributary of the Klapmuts river running adjacent to the proposed development.

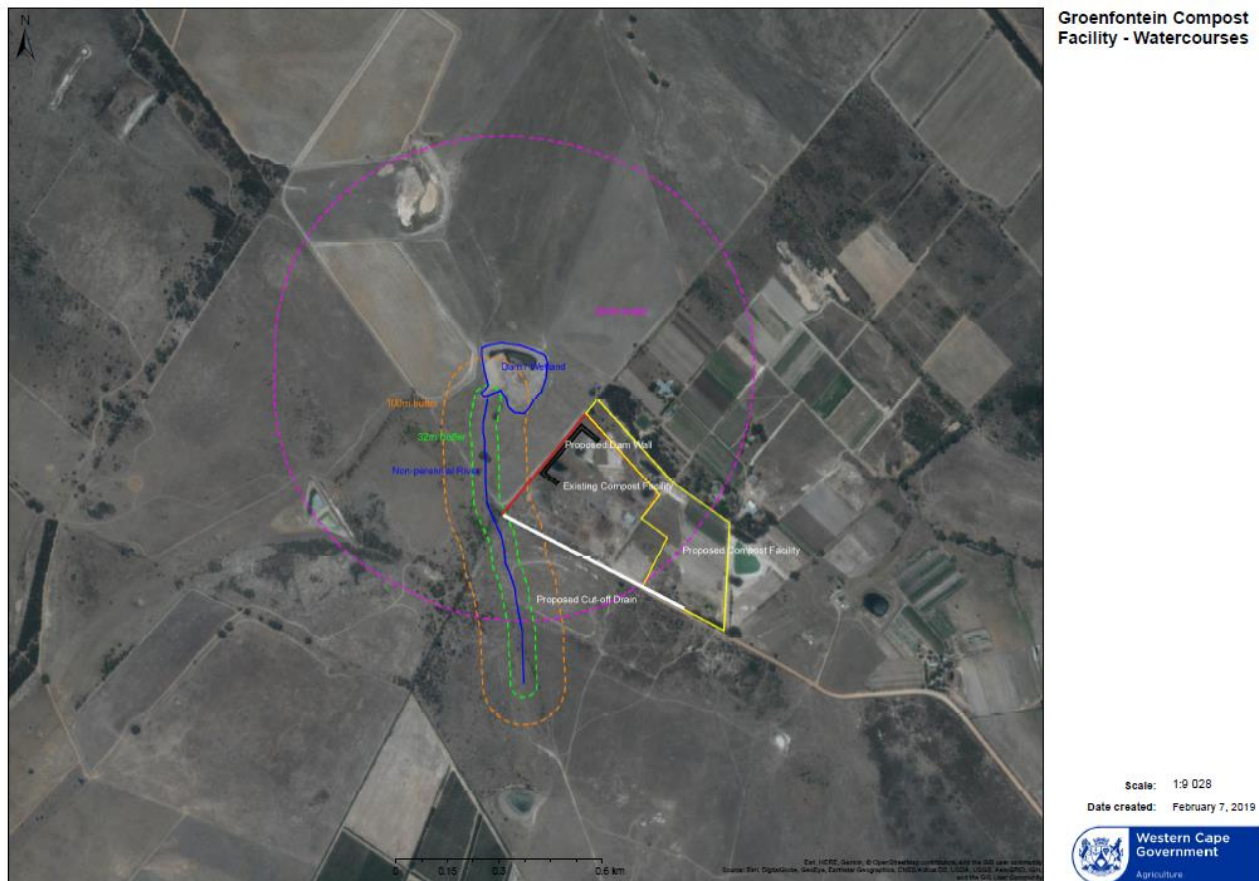


Figure 1: Applicable Zones of Regulation in accordance with the NWA and the NEMA associated with the study area.

Please note that the applicable section 21 application in terms of the NWA has been submitted to DWS. The application is still in process. Please see DWS' comments in Appendix F3 of the Draft BAR.

This MMP has been prepared principally in compliance with the requirements of “Annexure A – Guideline for Compiling a Maintenance Management Plan”.

This document, together with the conditions in the EMPr, Environmental Authorisation, Water Use Authorisation, must be adhered to.

Responsible Party:

The responsible party that will be implementing the MMP is Boland Organic Supplies (Pty) Ltd.

Boland Organic Supplies (Pty) Ltd has committed itself to a set of values that include the maintenance of good relations and transparent communications with all stakeholders, and the dynamic engagement of the larger community.

Boland Organic Supplies (Pty) Ltd undertakes to implement suitable management systems for all the areas and aspects of this operation. This will ensure that development itself and management of the project will comply with legal, technical, environmental and transformation policies and standards.

Boland Organic Supplies (Pty) Ltd intends to enable continuous improvement in legal compliance and the sustainable operation of the site. This MMP intends to further guide the achievement of the strategic objectives of the organization at the project site.

The satisfactory implementation of the MMP on site will require both the full support and commitment of all personnel.

3.1 DEFINITIONS OF TERMS AND ACRONYMS

Acronyms and technical terms used in the MMP must be defined or clarified so that the person(s) who must implement the plan understands the document clearly.

Definitions:

Auditing:	A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis based to a (e.g. ISO 19011:2003) standard.
Biodiversity:	The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.
Contractor:	An employer, as defined in section 1 of the Occupational Health and Safety Act 85 of 1993, who performs construction work and includes principal contractors.
Developer:	One who builds on land or alters the use of an existing building for some new purpose.
Environment:	A place where living, non-living and man-made features interact, and where life and diversity is sustained over time.
Evaporation:	The change by which any substance (e.g. water) is converted from a liquid state into and carried off as vapour.
Groundwater:	Subsurface water in the zone in which permeable rocks, and often the overlying soil, are saturated under pressure equal to or greater than atmospheric.
Independent:	Is independent and has no interest in any business related to the development site, nor will receive any payment or benefit other than fair remuneration for the task undertaken.
Landowner:	Holder of the estate in land with considerable rights of ownership or, simply put, an owner of land.
Monitoring:	A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.

Natural vegetation:	All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on a site.
Pollution:	The result of the release into air, water or soil from any process or of any substance, which is capable of causing harm to man or other living organisms supported by the environment.
Protected Plants:	Plant species officially listed under the Threatened or Protected Species regulations as well as on the Protected Plants List (each province has such a list), and which may not be removed or transported without a permit to do so from the relevant provincial authority.
Red Data Species:	Plant and animal species officially listed in the Red Data Lists as being rare, endangered or threatened.
Rehabilitation:	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydro logically stable landscapes that support the natural ecosystem mosaic.
Site:	Property or area where the proposed development will take place.

Acronyms:

DEA&DP:	Department of Environmental Affairs and Development Planning
DWS:	Department of Water and Sanitation
ECO:	Environmental Control Officer
EA:	Environmental Authorisation
EIA:	Environmental Impact Assessment
EM:	Environmental Manager
EMP:	Environmental Management Programme
EO:	Environmental Officer
ER:	Engineer's Representative
I&AP:	Interested and Affected Party
IEM:	Integrated Environmental Management
MS:	Method Statement
PM:	Project Manager
SANS:	South African National Standards

4. ENGAGEMENT PROCESS

4.1 AUTHORITY ENGAGEMENT

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

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

Western Cape Department of Health

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

Summary of the comments received by key departments and stakeholders on circulation of the Pre-Application BAR:

DEADP: AIR QUALITY MANAGEMENT

- 1.1. Dust and noise may be generated during the construction phase of the project.
- 1.2. In this regard, the operation must comply with the following:
 - National Environmental Management: Air Quality Act (NEM: AQA). National Dust Control Regulations (Notice 827 of 2013);
 - Western Cape Noise Control Regulations (PH 200/2013).
- 1.3. The D: AQM is aware that the composting process generates a certain level of odour and this could possibly lead to complaints being received regarding alleged excessive odour emissions emanating from the composting plant. The facility must investigate best practice measures to minimise or avoid offensive odours.

"In terms of Section 35 (2) of the NEM: AQA (Act No. 39 of 2004), the occupier of the premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on such premises."

- 1.4. The proposed Standard Operating Procedures (SOP's) mentioned in the Pre- Application BAR should be instituted and maintained in the daily operational production process. The EMP should include, but not be limited to the following considerations related to the abovementioned SOP's
 - The composting facility lies 3.2 km away from the residential area of Klapmuts, therefore it is important to mitigate measures to reduce odours resulting in nuisance conditions.
 - High temperatures may pose a fire risk, therefore the windrows and bulk storage areas should be monitored for temperature spikes.
 - Hydrogen sulphide and ammonia ratios must be at the required level as to abate potential odour release.

Manner in which the comments were incorporated:

- 1.1. The impact of noise and dust during the construction phase of the project has been assessed in the Impact tables of Appendix J and included in the BAR. Mitigation measures for noise and dust have been included in the construction phase of the EMPr.

- 1.2. Noted. As above.
- 1.3. Best practice measures have been included under the Operational phase of the EMP (Goal 5).
- 1.4. Mitigation measures to mitigate odours have been included in the operation EMP (Goal 5).
A complaints register must be kept and maintained. All complaints must be investigated and acted upon.

Measuring of temperature of windrows have been included in Operational Data Specification to ensure that risk of fire is reduced as a result of bulk stockpiling / windrows.

The Operational Data Specification has been included as an annexure to the EMP.

DEADP: DEVELOPMENT MANAGEMENT

1. This Department's comments are as follows:
 - 1.1. Based on Google Earth imagery the composting facility has been operational since before 2005. Please confirm when the existing facility was established and what the current footprint of the composting facility is.
 - 1.2. Be advised that the National Department of Environmental Affairs confirmed in a response to an enquiry that composting is not considered to fall within the ambit of an agri-industrial activity, as defined in either Activity 8 or 43 of GN No. 327 of the NEMA EIA Regulations, 2014 (as amended) and is therefore not applicable to the proposed development.
 - 1.3. According to the information provided, the dam in the north-western corner of the site is classified as a wetland. If the wetland is a watercourse, as defined in terms of the NEMA EIA Regulations, 2014 (as amended), the proposed alterations to the dam will trigger the listed activities indicated below. In addition to the above, it was also indicated that a cut-off drain will be constructed along the southern boundary of the site, which will intercept runoff from the adjacent properties towards the watercourse. If the drain will be located within 32m of the watercourse or within a watercourse, it might also trigger the following listed activities:

- **Activity 12 of GN No. 327**

The development of-

(i) dams or weirs, where the dam or weir, including infrastructure. and water surface area, exceeds 100 square metres; or

(ii) Infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs

(a) within a watercourse;

(b) in front of a development setback; or

(c) If no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; -

excluding-

(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;

(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;

(dd) where such development occurs within an urban area;

(ee) where such development occurs within existing roads, road reserves or railway lines; or

(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.

- **Activity 19 of GN No. 327**

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.

1.4.If Activity 19 of GN No. 327 is triggered, and future maintenance related work may be required, the Department recommends that a Maintenance Management Plan ("MMP") forms a component of the Environmental Management Programme ("EMPr"). Should the Department agree to the proposed MMP, future maintenance work specified within the MMP would not require an Environmental Authorisation prior to the undertaking thereof. Please refer to the attached document. Please be advised that the MMP relates to the aforementioned listed activity only.

1.5.Since the proposed expansion is in close proximity to a watercourse, the distance / buffer area between the watercourse and the development must be clearly indicated on a layout plan.

1.6.Comment from the following key stakeholders must be included in the Final BAR:

1.6.1.A comment from the Department of Agriculture since the site will be expanded onto agricultural land.

1.6.2.A comment from the Department of Water and Sanitation ("DWS"). Please be advised that in terms of the Standard Operating Procedure between this Department and the Department of Water and Sanitation, which came into effect on 1 July 2017, the Environmental Assessment Practitioner must submit a written water use application request to the Department of Water and Sanitation to determine whether or not a General Authorisation or WULA in terms of the National Water Act, 1998 (Act No. 36 of 1998) is required. In terms of the Agreement for the One Environmental System (section 50A of the NEMA and sections 41 (5) and 163A of the NWA) the processes for a WULA and for an EIA must be aligned and integrated with respect to the fixed and synchronised timeframes, as prescribed in the EIA Regulations, 2014 (as amended), as well as the 2017 WULA Regulations.

1.7.It was noted that the preferred technology alternative is composting using the turned windrow method. Please indicate whether this is the Low Technology alternative or the Medium Technology alternative since both refer to the turned windrows as examples of composting methods. You are also required to provide motivations why the other technology alternatives are not preferred.

1.8.Further to the above, although different technology alternatives were included under Section E of the Draft BAR, these were not included in the Impact Tables attached as Appendix J. The Impacts Tables must be repeated for each identified alternative to ensure a comparative assessment.

Manner in which the comments were incorporated:

1.1. Please be advised that the facility does have an existing Environmental Authorisation - please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:

- Current extent of the composting area (in hectares or m²):

+/- 1.36ha currently being used

- Tonnage of compost produced (per month / annum):

Figures are based on sales for the period from Jan 2018 – Jan 2019

- Chicken manure: 1,267 m³/month
- Compost: 538 m³/month
- Waste Manure: 426 m³/month

1.2. Noted. As such the listed activity will be excluded from the application.

1.3. As the artificial wetland is considered a watercourse the proposed activity will trigger Listed activity 12 and 19 in Listing Notice 1.

1.4. As listed activity 19 is triggered an MMP will be included as part of the operational EMP. This will be submitted on the DEADP template provided and submitted with the Draft BAR.

1.5. Watercourses and buffers are clearly indicated on the map provided in Appendix D.

1.6. Comment from the Department of Agriculture (Western cape) was received to which they have indicated that they have no objection to the expansion (their comment has been captured as part of this comments and responses report).

Comment from the Department of Water and Sanitation has been received to which they have indicated the water uses associated with the application. An application has been lodged on eWULAs which has been included in Appendix E2 of the BAR (their comment has been captured as part of this comments and responses report).

1.7. The application is for the EXPANSION of an existing composting facility currently implementing composting by turned windrow (low technology). The facility intends to accept mixed "compostable organic waste" including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc). As such the turned windrow method implemented at the EXPANDED facility would be considered to fall within both Low Technology as well as Medium Technology due to the organic waste accepted at the facility.

Additional motivations have been added to the technology alternatives – it must be noted that alternatives are based upon the National Organic Waste Composting Strategy, 2013.

1.8. Technology alternatives are discussed, however as this is an EXPANSION application based on the existing operation of the current activities at the facility. Changing the facilities entire operation is not reasonable or feasible in terms of this application.

DEADP: WASTE MANAGEMENT

1.1. Kindly provide a more detailed description of the current composting facilities occurring on site. Kindly include details on when the composting at the facility started, what is currently being composted, what is the current size of the operations in terms of quantities being composted, as well as the physical size of the operation.

1.2. It is not clear from the application what types of organic waste will be composted. Kindly clarify what will be composted, the expected quantities to be composted, as well as where the materials will be sourced and how it will be transported to the Facility, in the draft BAR to be submitted.

1.3. Page 14 states that the Facility is near a tributary of the non-perennial Klipmuts River. Page 31 states that there is a concern about the proximity of the facility to this River and that a Water Use License would be required to authorise the expansion of this Facility. Kindly obtain comment from the Department of Water and Sanitation on this proposed

development and include proof of submission of the Water Use License Application in the draft BAR.

- 1.4. On page 35, it is stated that no geological investigation was carried out on site. However, on page 54, the report states that storing feedstock and compost on a bunded and hard foundation, would reduce groundwater intrusion by leachate generated by the activity. Kindly note, that the composting operation will have to take place on an impermeable surface. It will be the onus of the applicant to prove to the Department that the ground at the Facility is suitable to prevent pollution of ground water. It is recommended that a soil specialist be appointed to provide this clarity to the Department.
- 1.5. According to the Waste Management License Application Additional Information Annexure, the site has a b+ climatic water balance, which means there is an increased probability leachate will be generated. Will groundwater be monitored? Should boreholes be installed, kindly indicate where the boreholes will be placed.
- 1.6. On various occasions in the document it is mentioned that the existing dams will be merged, and the volume of the dam will increase. Are these dams lined in any way? Are there any plans to have them lined?
- 1.7. According to page 53 of the Report, there is a possibility that chipping of wood might occur on site.

Kindly note, as the operational area of the facility is greater than 1000m², the chipping of wood will need to adhere to the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) 'National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening or Baling of General Waste', as contained in Government Notice (GN) No. 1093 of 11 October 2017.

- 1.8. Regarding the section on Record Keeping on page 14 of the Environmental Management Programme (EMPr), kindly include records of the amounts of incoming waste, waste processed at the Facility and waste and compost removed from Facility.
- 1.9. Kindly note that empty pesticide containers might still contain residual pesticide and as such, these empty containers are considered hazardous waste. Kindly ensure that these containers are appropriately stored, prior to its disposal at a registered licenced waste management facility, capable of handling such waste.
- 1.10. On page 5 of the Waste Management License Application Additional Information Annexure, two different waste quantities to be treated are mentioned. Kindly clarify the amount of waste expected to be treated at the Facility.
- 1.11. Page 10 of the Waste Management License Application Additional Information Annexure refers to a Soil Study that was attached to the Report as Appendix G3. No such appendix, or Soil Study has been included in the pre-application BAR received.

Manner in which the comments were incorporated:

- 1.1. Please be advised that the facility does have an existing Environmental Authorisation - please refer to Appendix K4 for a copy of the Authorisation. The facility is currently operating in terms of the following:

- Current extent of the composting area (in hectares or m²):

+/- 1.36ha currently being used

- Tonnage of compost produced (per month / annum):

Figures are based on sales for the period from Jan 2018 – Jan 2019

- Chicken manure: 1,267 m³/month
- Compost: 538 m³/month
- Waste Manure: 426 m³/month

- 1.2. The Facility intends to accept mixed organic waste including but not limited to primary sewage sludge, manure, and in some cases animal waste (carcasses, abattoir waste, etc). Details regarding the organic waste intended to be accepted at the facility have been included in the WML Annexure A in Appendix I of the BAR.

1.3. Comment from the Department of Water and Sanitation has been received, dated 23/10/2018, to which they have indicated the water uses associated with the application. An application has been lodged on eWULAA's which has been included in Appendix E2 of the BAR (their comment has been captured as part of this comments and responses report).

1.4. Based on a desktop investigation the facility falls within an area with a land type: Db60, which is described as B horizon not red and is classed as prisma-cutanic and/or pedocutanic diagnostic horizons dominant. The soil is classed as soils with a strong texture contrast and are described as soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition one or more vertic, melanic and plinthic soils may be present. The soils depth ranges: $\geq 450\text{mm}$ and $< 750\text{mm}$; with a clay content of $< 15\%$. These soils have a high erodibility with an erodibility factor of 0.58.

The appointed engineer whom designed the stormwater plan was also of the opinion that the soils are indicative of clayey consistency. According to the DWS guidelines for leachate control the following is required in terms of limiting or preventing leachate: "A designed lining system, which ensures low-permeability limit the movement of leachate into groundwater. Liners are made from low-permeability soils (typical clays) or synthetic materials (e.g. plastic)." Soils with sufficient clay content would therefore be suitable lining to prevent leachate from penetrating to groundwater and causing contamination. The applicant to apply an additional clay layer to areas for composting this should render the composting areas impermeable.

1.5. Please refer to the climatic water balance located in Appendix K3. Take note that the calculation is conservative as it ignores run-off and thus assumes that all precipitation will infiltrate. The calculation also ignores the moisture storage capacity of the waste body or the cover.

It must also be noted that the proposed activity is for the composting of organic waste through the method of turned windrows. A stormwater management plan and cut off drains to manage runoff on the proposed development area is included in Appendix K2 of the BAR. Based on the specific site factors, including the physical geomorphological features and topography as well as the management of runoff on site it is not expected that significant leachate will be generated through the operations conducted at the facility.

1.6. The dam will have a clay lining.

1.7. Noted. Should an operational area exceed 1000m^2 the applicant will comply with the Norms and Standards applicable to the activity. This has been included in the operational EMPr.

1.8. The section dealing with record keeping has been amended as per the Departments comments.

1.1. Pest control containers are handled as per the requirements of NEMWA and the applicable by-law. This has been included in the relevant sections of the EMPr.

1.2. This has been amended.

1.3. This was erroneously included in the document and has been amended.

CAPENATURE

1. According to the Western Cape Biodiversity Spatial Plan (BSP) of 2017 terrestrial Critical Biodiversity Areas (CBAs) mapped on portions 54 (north and north eastern section of the property), portion 25 (small area near the boundary with portion 54) and a thin strip along the north eastern boundary of portion 56. The desired management objective for CBAs is that they are maintained in a natural or near-natural state with no further loss of habitat. Degraded areas should be rehabilitated, and only low impact biodiversity sensitive land uses are appropriate. This is correctly reflected in the report.
2. The majority of the proposed expansion area does not coincide with the mapped CBAs and thus it is not opposed. However, there is a strip of proposed expansion area which runs along

the north eastern boundary of the existing development which does coincide with the CBA (as indicated in Appendix D1 in the Biodiversity Map of your report). It is recommended that this section of the proposed expansion to be omitted from the development footprint in order to allow for the CBA to remain intact.

3. The mapped vegetation for the area, if it were in a natural state, is Swartland Silcrete Renosterveld (Critically Endangered) across most of portion 56; Swartland Alluvium Fynbos (Critically Endangered) covering the north and eastern sections of portion 54 and Swartland Granite Renosterveld (Critically Endangered) which runs along the north western boundary of portion 56 and the south western boundary of portion 54. Portion 25 is mapped as a mix of these 3 Critically Endangered vegetation types. It is reflected in the report that the actual state of vegetation on site is largely transformed by previous and currently land-use however please provide clarity as to whether a botanical survey was done; given that the indigenous vegetation that would naturally occur in this area is listed as critically endangered it is important to provide more thorough information on the current status of the vegetation on site.
4. In relation to the stormwater management component of this application, it is noted that the proposed combining of the two existing dams will create a single dam with a smaller footprint. This is not opposed.
5. In relation to water runoff and the potential for water pollution, it is noted that the design layout has provided for channels along downslope boundaries and for run off to be kept separate from the natural water course. If implemented correctly this should avoid impacts on indigenous aquatic biota in the natural water course.
6. Rehabilitation of all eroded areas and regular and ongoing control of invasive alien species is required across all properties and not just limited to the immediate area of the development footprint.

Manner in which the comments were incorporated:

A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.



DEADP: POLLUTION AND CHEMICALS MANAGEMENT

1. The proposed mitigation measures as proposed in this application must be implemented, maintained and adhered to during construction and implementation phases to prevent soil and water contamination;
2. The following phrase is misleading, and clarity is sought:
"The existing two dams have a **combined** storage capacity of $\pm 6600m^3$."
The BAR indicates a combined storage is $\pm 13\ 200m^3$ and not $\pm 6600m^3$. Please clarify.

Manner in which the comments were incorporated:

1. Noted.
2. The current combined capacity of the dams is approximately $\pm 6600\text{m}^3$. The proposed combined capacity once the dams are merged will have a capacity of $\pm 13\,800\text{m}^3$ (if a 3m dam wall is erected) or $\pm 15\,600\text{m}^3$ (if a 3.5m dam, wall is erected).

DEPARTMENT OF WATER AND SANITATION

This Department has perused the abovementioned document and has the following comments:

- A Section 21 (g) disposing of waste in a manner which may detrimentally impact on a water resource; water use authorisation must be obtained prior to the proposed compositing activity.
- A Section 21 (e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1); water use activity must be applied for should the waste (dirty storm water) water be used on the property for irrigation purposes on the farm or on neighbouring farms. This authorisation must be approved prior to the activity going ahead.
- The proposed activity will happen within the 500 m from the boundary of a wetland. It therefore triggers water uses in terms of Section 21 (c) impeding or diverting the flow of water in a watercourse AND (i) altering the bed, banks, course and characteristics of a water course of the National Water Act, 1998 (Act 36 of 1998).
- The Risk Matrix (Appendix A) submitted by yourselves indicates that the impact of the activity will not be low but Medium. Therefore, kindly advise your client to apply for and obtain a Water Use Authorisation from this Department prior to commencing with any of the activities, as per Government Gazette No. 40229 in Government Notice 509 dated 28 August 2016.
- You are hereby advised to arrange for a water use authorisation pre-application meeting with the Department to advise on the water use authorisation process. Please note that as from January 2018, this Department ONLY accepts electronic water use applications.
- Water use applications can be submitted by <http://www.dwa.gov.za/projects.aspx> and then click on e-wulaas.

Manner in which the comments were incorporated:

Noted. A Pre-application enquiry was lodged on the eWULAA platform on the 20 December 2018. We await further instruction / correspondence from the Department in terms of the pending enquiry.

WESTERN CAPE DEPARTMENT OF AGRICULTURE – LAND USE MANAGEMENT

In principal the Western Cape Department of Agriculture has no objection against the proposed application.

Manner in which the comments were incorporated:

Noted.

4.2 PUBLIC PARTICIPATION

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

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

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

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

(i) Given written notice to the owner or person in control of that land if the person undertaking the maintenance activity is not the owner or person in control of the land.	Yes / No	Evidence to be letter from landowner acknowledging development of MMP.
(ii) Given written notice to adjacent landowners (up to 500m upstream and downstream from furthest upstream and downstream maintenance site and opposite side of the banks) of the development of the MMP.	Yes / No	Evidence to be dated letters addressed to landowner and/or manager of adjacent properties.
(iii) Stakeholder meeting held for adjacent landowners, in which MMP is presented. This must include an opportunity for adjacent landowners to provide comment.	Yes / No	Evidence will consist of meeting requests, attendance register of said meeting, minutes / notes of the meeting, and comments provided.
(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.	Yes / No	Evidence will include relevant dated letters to the relevant government agencies and departments.
(v) Provided written notice and confirmation to the relevant Water Users Association (WUA) or Irrigation Board (IB) of the development of the MMP, if applicable.	Yes / No	Evidence to be dated letter(s) to management body (secretary and chairperson) for the WUA/IB.

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

(i) Given written notice to the owner(s) or person(s) in control of the land if the person(s) undertaking the maintenance activity(ies) is not the owner or person in control of the land.	Yes / No	Evidence to be letter from landowner acknowledging development of MMP.
(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	Yes / No	Evidence to be dated letters addressed to landowner and/or manager of adjacent properties.

<i>is made by a WUA or IB.</i>		
(iii) Stakeholder meeting held for all participating and non-participating landowners, in which details and methodology of MMP is presented. A minimum of two meetings are required, to present on the development of the plan and a final draft version of the plan.	Yes / No	Evidence will consist of meeting requests, attendance register of said meeting, minutes/ notes of the meeting, and comments provided.
(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.	Yes / No	Evidence will include dated letters to the relevant government agencies and departments.
(v) Provide written notice and confirmation to the relevant Water Users Association (WUA) or Irrigation Board (IB), of the development of the MMP <i>(if a MMP is not requested and managed through a WUA/IB).</i>	Yes / No	Evidence to be dated letter(s) to management body (secretary and chairperson) for the 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.	Yes / No	Evidence to be referenced accordingly based on the measures taken and/or developed.

Kindly note, the Department may request further or allow reduced requirements for public participation, noting the specific circumstances applied to each request to define or adopt an MMP. Please include or delete the respective sections as agreed to with the Department in the pre-consultative meeting, with supporting evidence of this agreement included.

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

5. DATA COLLECTION AND ASSESSMENT

[This section is intended to provide the required information on the needs for the scientific content and methodology statements of a MMP. It provides headings for the various sections that a MMP must contain, as well as a brief description of typical content and the level of detail required under each heading]

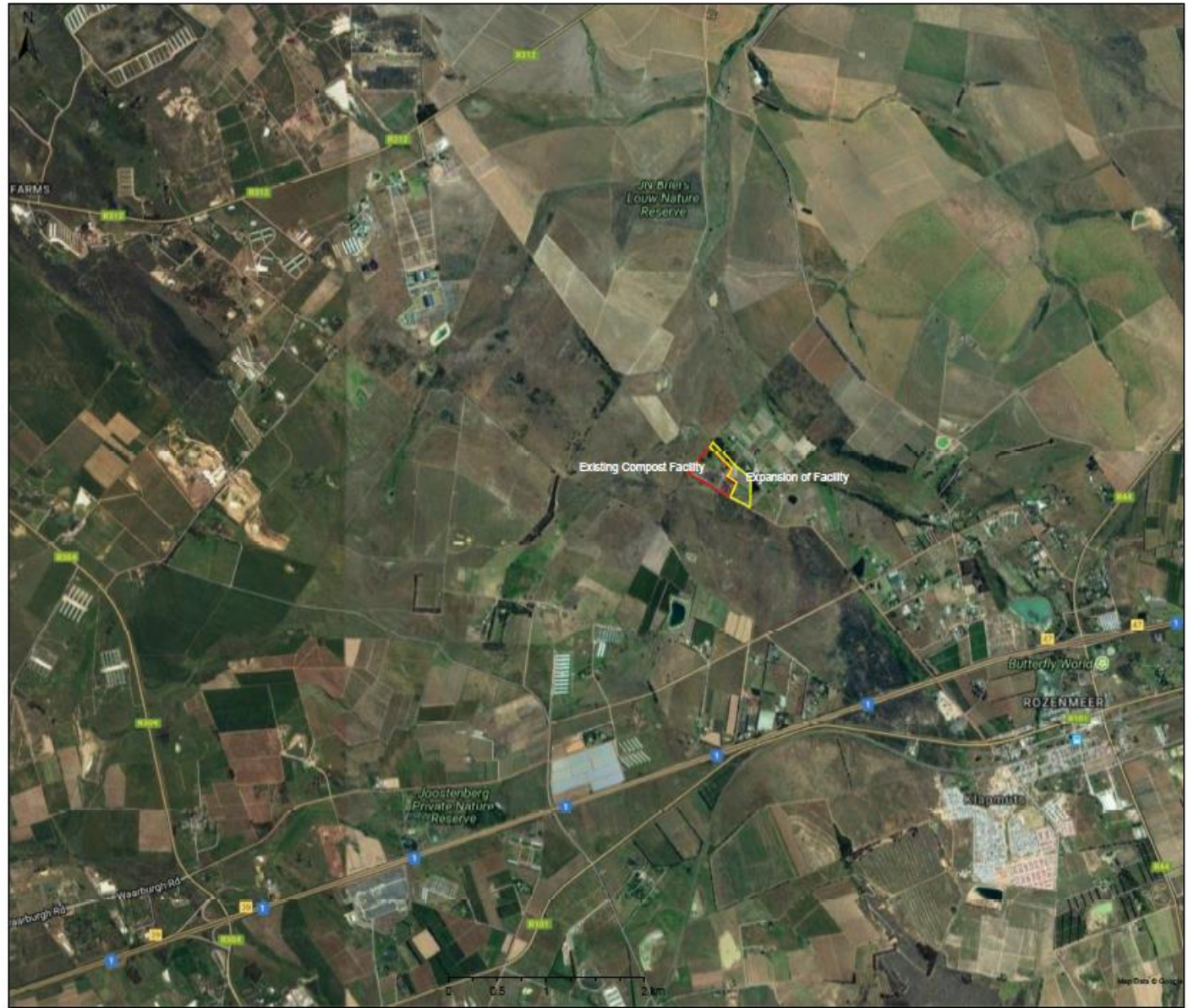
Note: Information relating to the specifications and Terms of Reference used for the appointment of all specialist inputs must be provided.

Information required for maintenance and management activities for a single/~~multiple~~ owner along a watercourse.

5.1 Provide a map (at an appropriate scale) of the watercourse or stretch of watercourse being applied for within the stretch where maintenance activities will take place being clearly defined – consideration must be made to mapped features relating to Critical Biodiversity Areas (CBAs) and National Freshwater Ecosystem Priority Areas (NFEPAs).

Maps indicating the relevant environmentally sensitive features have been included in this document as follows:

Map 1: Locality map



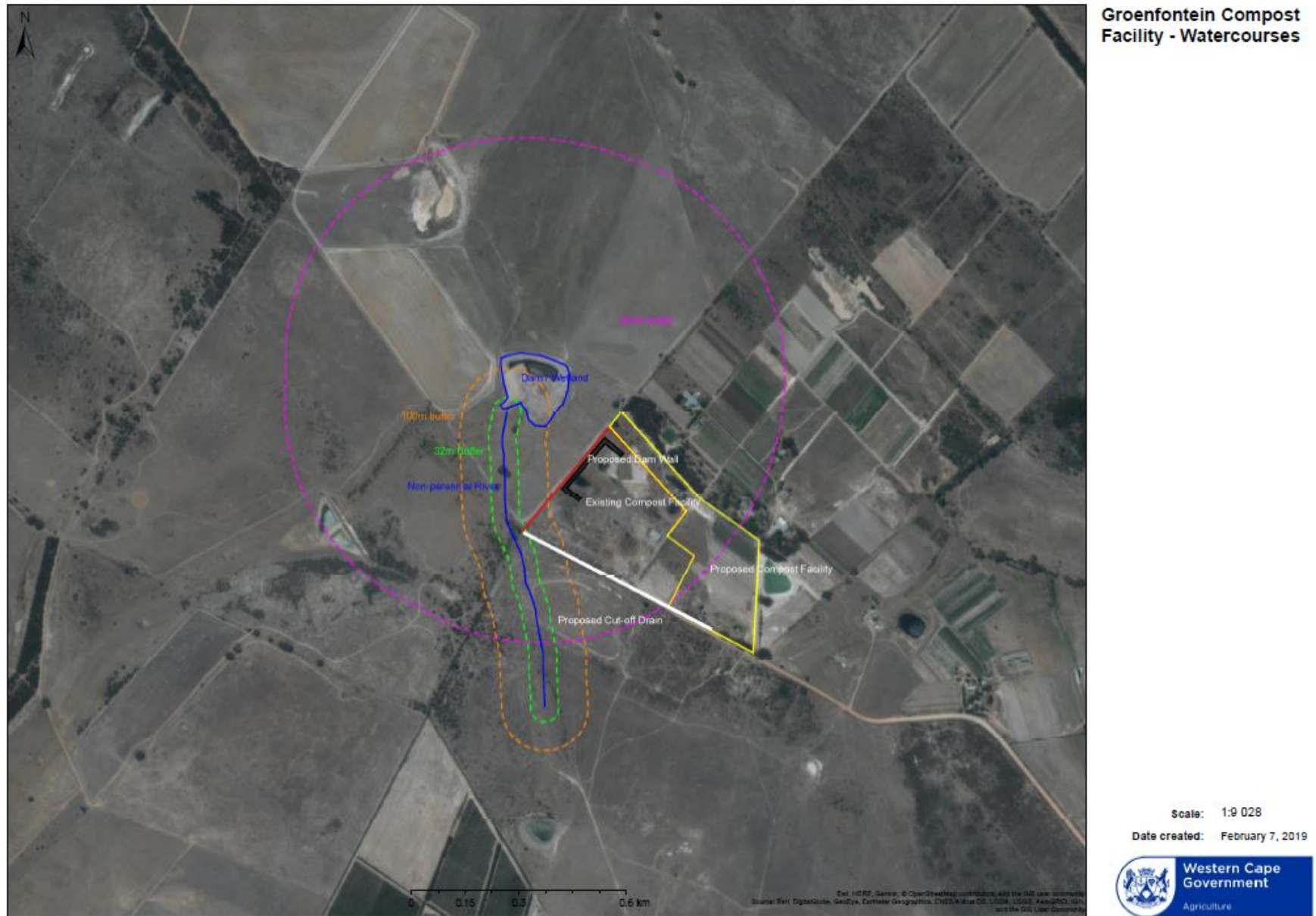
Locality Map

Scale: 1:36 112

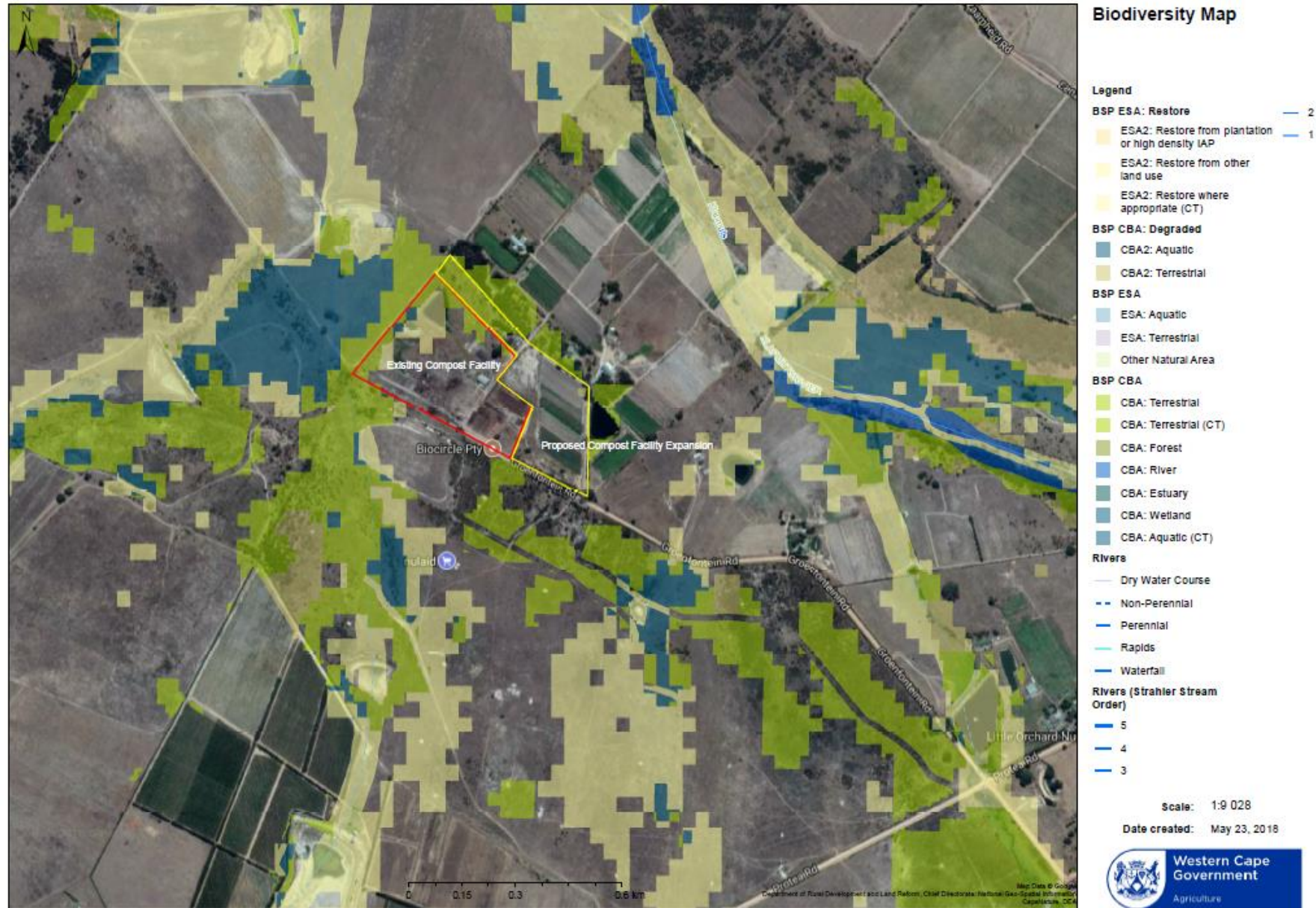
Date created: March 1, 2018



Map 2: Applicable Zones of Regulation in accordance with the NWA and the NEMA associated with the study area.



Map 3: Biodiversity overlay as depicted by the Western Cape Biodiversity Spatial Plan (2017).



5.2 GPS coordinates must be provided for all site(s) at which maintenance activities will take place and included on the map which defines the stretch of watercourse. Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94 WGS84 co-ordinate system. Where numerous properties/sites are involved (e.g. linear activities), you may attach a list of property descriptions and co-ordinates to this form.

The co-ordinates for various points of interest are as follows:

Site / Activity	Latitude	Longitude
Proposed dam (Centre Point)	33°47'04.65"S	18°50'09.78"E
Stormwater cut-off channels (point closest to watercourse)	33°47'09.37"S	18°50'04.23"E
Existing composting area (Centre Point)	33°47'10.24"S	18°50'11.94"E

5.3 Specialist assessment to be undertaken to determine (NOTE: information relating to the specifications and Terms of Reference used for the appointment of all specialist inputs must be provided):

Please see below the conclusions and recommendations of the specialist studies undertaken for the project.

**WATER USE AUTHORIZATION APPLICATION - RISK MATRIX
N.W. Hanekom – Eco Impact Legal Consulting (Pty) Ltd**

Summary of Risk Assessment outcomes

No.	Risk Rating	Confidence level	Control measures	Borderline MODERATE Classes	LOW – Rating	PES and EIS of Watercourses
1	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged		Refer to above in report
2	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged		Refer to above in report

Recommendations in Terms of Water Use Application Requirements

The overall risk rating of potential Impacts on the applicable river after mitigation is rated as low negative. It is recommended that a GA being issued for the proposed water use.

5.4 Mapped biodiversity features such as Critical Biodiversity Area, Ecological Support Area, National Freshwater Ecosystem Priority Area (NFPEA), and the National list of Ecosystems that are threatened and in need of protection (2011) gazetted in terms of Section 52 of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA), the Western Cape Biodiversity Spatial Plan 2017, as well as relevant provincial specific plans and classifications etc. Please consult the website www.bgis.sanbi.org.za to determine mapped features.

The existing earthen dams located on portion 54 and 56 respectively has been classified as follows in terms of the western cape biodiversity spatial plan 2017:

Feature: River, Wetland, Watercourse

Category 1: ESA2: Restore from other land use

It is not the intention for the proposed development to negatively impact on the existing functioning of these two earthen dams. It is proposed that the two dams be consolidated into one dam and that a 3m earthen dam wall be erected on the dam's western boundary. This will allow for sufficient capacity within the dam for the stormwater runoff from the properties and the activities proposed to be conducted on these properties. The dam is expected to have a combined capacity of approximately 13800m³ sufficient for a catchment of 13ha with the implementation of the cut-off drain established on the southern boundary of portion 53 to limit runoff on the property from adjacent properties.

Northern half of portion 54 is classified as a CBA: Terrestrial. The CBA makes up 13.2% of the proposed development area and consists predominantly of grass and a clustering of trees. The CBA falls within an ecosystem which historically consists of Swartland Alluvium Fynbos (CR). It is however not likely that this classification is consistent with the current vegetation (grass and clustering of trees) on the property. The conservation / biodiversity significance of the vegetation present is considered to be low.

A site visit was again conducted on 16 February 2019. This is not the correct time of the year to do a botanical survey, but taking in consideration the status of the area, the time of year is deemed appropriate to do a survey. There is no natural vegetation present on the site. The area is disturbed with heaps of soil and overgrown with (Kikuyu grass) *Pennisetum clandestinum*. It is clear in the pictures below that the area is transformed and disturbed with no remnants of natural vegetation or ecological functioning left on the mapped CBA areas. The site survey and assessment revealed that the proposed area does not qualify as a CBA area and that it was incorrectly mapped as a CBA due to current status of the area.





5.5 Include a description of existing or previous protection measures or reinforcements (eg. gabions or groynes etc.) and infrastructure. Describe any evidence of erosion and/or siltation at the various sites and outlining possible causal factors and maintenance practices.

A non-perennial tributary of the Klappmuts River runs adjacent to the western and northern boundary of the site. The tributary originates south west of the town of Klappmuts and flows in a northern eastern direction past the west and northern boundary of the site to flow into the Klappmuts River to the east of the site. A rehabilitated landfill site on the western boundary of the site already diverted and impeded the flow of the river. The river on the northern boundary is totally transformed and a dam was constructed to further impede the flow of the river. A dam, which is the existing storm water collection dam to collect leachate off the exiting compost site, is constructed on the northern boundary. These dams are not wetlands and cannot be classified as wetlands. They are artificial manmade structures. All runoff from site will enter the two collection dams. A channel runs between the two dams with a sump and pump which pumps the collected runoff into the dams. It is proposed that the channel be closed and the two dams altered into one dam in order to avoid the risk of overflow at the sump and leachate from the compost site entering the non-perennial tributary of the Klappmuts river to the north.

5.6 Provide historical maps and data (images/flow/water quality/land use) of the river channel (if available) in order to assess the natural to changing flow patterns of the watercourse to determine cause of maintenance and possible impact of the maintenance activities, to inform mitigation measures.

Habitat Assessment Of The Non-Perennial River adjacent to the compost facility
Instream Habitat Integrity

Weights	14	13	13	13	14	10	9	8	6		
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REACH	Water abstraction	Flow modification	Bed modification	Channel modification	Water quality	Inundation	Exotic macrophytes	Exotic fauna	Solid waste disposal	Total Score (%)	Classification
Impacted Site	25	25	25	25	25	2	25	25	25	9.2	E: Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.

None	Small	Moderate	Large	Serious	Critical
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Riparian Zone Habitat Integrity

Weights	13	12	14	12	13	11	12	13			Classification
REACH	Vegetation removal	Alien encroachment	Bank erosion	Water abstraction	Flow modification	Channel modification	Water quality	Inundation	Total Score (%)		
Impacted Site	25	25	25	25	25	25	25	2	11.96		E: Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.

None	Small	Moderate	Large	Serious	Critical
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From the results of the application of the IHIA to the impacted site, it is evident that the rivers reach is modified and that the loss of natural habitat, biota and basic ecosystem functions is extensive. Instream impacts included a large impact from flow modifications, as well as bed and channel modifications. Overall, the site achieved a 9.2 % score for instream integrity.

Riparian impacts included a large impact from flow modifications, and bed and channel

modifications. Overall, the site achieved a 11.96 % score for instream integrity.

The site obtained an overall IHIA rating of 10.48%, which indicates the loss of natural habitat, biota and basic ecosystem functions is moderate. (Class E conditions).

Riparian Vegetation Response Assessment Index (VEGRAI)

LEVEL 3 ASSESSMENT					
METRIC GROUP	CALCULATED RATING	WEIGTED RATING	CONFIDENCE	RANK	% WEIGHT
MARGINAL	20,0	7,5	2,7	2,0	60,0
NON MARGINAL	50,0	31,3	2,7	1,0	100,0
					2.0
LEVEL 3 VEGRAI (%)				38,8	
VEGRAI EC				D/E	
AVERAGE CONFIDENCE				2,7	

The score attained for the VEGRAI indicated that the riparian system falls into the category D/E. This indicates that the loss of natural habitat, biota and basic ecosystem functions is largely modified. The loss of natural habitat, biota and basic ecosystem functions is extensive.

Ecological Importance and Sensitivity (EIS)

Table 9: Results of the EIS assessment for the affected watercourse

Component	Score	Confidence	Comments/description
Channel type	1	5	Impeded and diverted non-perennial river.
Conservation context	0	5	No Status
Vegetation and habitat Integrity	0	5	Largely modified
Connectivity	2	5	Connection to Klappmuts River.
Threat Status of Vegetation Type	5	5	Vegetation used to has critical endangered conservation status
EIS Category	0.32		Low/marginal

EIS considers a number of biotic and habitat determinants surmised to indicate either importance or sensitivity. The determinants are rated according to a four-point scale. The median of the resultant score is calculated to derive the EIS category.

The non-perennial river is considered to be of low ecological importance.

Risk Assessment Matrix – Confidence Level and Proposed Post Control/Mitigation Measures

No.	Risk Rating	Confidence level	Control measures	Borderline MODERATE Classes	LOW – Rating	PES and EIS of Watercourses
1	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged		Refer to above in report
2	21 Low	90%	Refer to the EMP included in the EIA process	Low and unchanged		Refer to above in report

Recommendations in Terms of Water Use Application Requirements

The overall risk rating of potential impacts on the applicable river after mitigation is rated as low negative. It is recommended that a GA being issued for the proposed water use.

5.7 Provide a photographic record for the condition of the riparian habitat around maintenance sites, with the presence of important and/or sensitive habitat/species noted.

Please refer to the relevant sections above.



Photograph 1: Existing compost site and storm water collection dams. Proposed compost expansion area.



Photograph 2: Existing compost site in background of picture. Picture taken from south in northerly direction. Proposed compost expansion area.



Photograph 3: Existing compost site on right of picture. Picture taken from north in a southerly direction. Proposed compost expansion area.

5.8 For sites prone to flood damage, a description regarding the history and effect of past floods and include dates of most recent events must be provided. This must inform the process to understand what actions are required along the stretch of the watercourse to reduce such impacts to the resource quality characteristics.

The area is not specifically associated with heavy flooding events. As such the maintenance requirements required would generally consist of the following:

- Alien Clearing,
- Silt removal / cleaning of pipes,
- Stabilisation of infilled drainage line crossing,
- Erosion monitoring and prevention,
- Prevention of pollution.

These will be further detailed in the method statements in Section 6 of this MMP.

5.9 Explain the risks associated with the no-go option for the MMP i.e. the risk of not undertaking the maintenance activities as stated in the MMP.

Should the maintenance activities not be undertaken as prescribed in this MMP could have the following results:

- Extreme erosion - continual erosion without monitoring, prevention and mitigation could result in the altering of flow of the adjacent river.
- Pollution - Pollution may occur as a result of installing the infrastructure. This is easy mitigated through educating of staff in environmentally positive habits and procedures.
- Encroachment and infestation of alien vegetation - All alien vegetation must be cleared from the property. Alien vegetation clearing to be followed up regularly to ensure that the infestation of alien vegetation is controlled. The encroachment of alien vegetation

would result in the loss of indigenous vegetation through their resilience to out-compete naturally occurring vegetation.

- 5.10 Reference must be made to any strategic plan where available, for example, a Catchment Management Strategy, with the objectives of the MMP shown to be in alignment with such plans.

The objectives of this MMP is aligned with the strategies as manifested in the **Catchment Management Strategy for the Breede-Gouritz Water Management Area, July 2017.**

The MMP speaks to the three overarching strategic areas governing the overall strategic management objective of the CMA described as follows:

Strategic Area 1: Protecting for People and Nature: focussing primarily on management of streamflow, water quality, habitat and riparian zones related to riverine, wetland, estuarine and groundwater resources, to maintain important ecosystem goods and services and biodiversity.

Strategic Area 2: Sharing for Equity and Development: focussing primarily on management of water use from surface and groundwater resources through the operation of infrastructure, in order to provide water for productive and social purposes within and outside of the WMA.

Strategic Area 3: Co-operating for Compliance and Resilience: focussing primarily on co-operation and management of institutional aspects to enable and facilitate the protection and sharing of water, including the more co-operative stakeholders, partnerships, information sharing, disaster risk and adaptation elements of the strategy.

This MMP therefore is well aligned to maintaining the objectives as manifested by the CMA.

6. METHOD STATEMENTS

- 6.1 The method statement must provide a step-by-step plan (which may include a schematic diagram etc.) to inform the responsible person(s) on the process and actions to take in a sequential and logical manner, which aims to reduce the impact of undertaking the activity within a reasonable timeframe and cost.
- 6.2 A method statement should be compiled for each individual activity given the likely specific circumstances and conditions of a site requiring maintenance. However, in situations whereby uniform conditions and circumstances are evident for multiple sites requiring the same type of activity, a method statement can be given for a specific type of activity to be undertaken at multiple sites given the aforementioned requirements.
- 6.3 The detail of the method statement will be assessed by the Department and other relevant regulatory authorities to ensure actions that are taken are such that they do not perpetuate increased incidences of erosion/deposition of material.
- 6.4 Time periods must be given within which the maintenance actions contemplated need to be implemented. An indication must be made whether maintenance actions will be repeated, e.g. clearing of silt/debris from under a bridge annually or after flood events.
- 6.5 The following serves as a general guide required to minimise the spatial impact of the maintenance activity:

- Repairs and maintenance should be undertaken within the dry season, except for emergency maintenance works.
- Where at all possible, existing access routes should be used. In cases where none exist, a route should be created through the most degraded area avoiding sensitive/indigenous vegetation areas.
- Responsible management of pollutants through ensuring handling and storage of any pollutants is away from the watercourse. When machinery is involved, ensure effective operation with no leaking parts and refuel outside of the riparian area, at a safe distance from the watercourse to manage any accidental spillages and pose no threat of pollution.
- At no time should the flow of the watercourse be blocked (temporary diversions may be allowed) nor should the movement of aquatic and riparian biota (noting breeding periods) be prevented during maintenance actions.
- No new berms can be created.
- In circumstances which require the removal of any top soil, this must be sufficiently restored through sustainable measures and practices.
- Concerted effort must be made to actively rehabilitate repaired or reshaped banks with indigenous local vegetation.
- No deepening of the watercourse beyond the original, pre-damage determined thalweg, unless such deepening is directly related to the natural improved functioning and condition of such a watercourse.
- Where at all possible, limit the disturbance to the zone of the thalweg. This is due to the ecological importance of the low flow channel and respective habitat being allowed to re-establish improving the ecological condition.
- The build-up of debris/sediment removed from a maintenance site may:
 - be utilised for the purpose of in-filling or other related maintenance actions related to managing erosion, which form part of an adopted MMP;
 - not be used to enlarge the height, width or any extent of existing berms;
 - not be deposited anywhere within the watercourse or anywhere along the banks of a river where such action is not part of the proposed maintenance activity (ies). Material that cannot be used for maintenance purposes must be removed out of the riparian area to a suitable stockpile location or disposal site. Further action and consideration may be required where the possibility of contaminated material may occur, such as in urban watercourses.
- The use of foreign material, such as concrete, rubble, woody debris and/or dry land based soil, is strictly prohibited from being used in maintenance actions, unless for the specific purpose of repairs to existing infrastructure, coupled with appropriate mitigation measures.
- On completion of the maintenance action, the condition of the site in terms of relative topography should be similar to the pre-damaged state (i.e. the shape of the river bank should be similar or in a state which is improved to manage future damage). This ultimately dictates that the channel, banks and bed cannot be made narrower, higher or deepened

respectively. Exceptions are considered for systems involved with the management of stormwater and improvements for water quality within the urban context.

METHOD STATEMENTS

Activity A		
Description of maintenance activity	Alien vegetation removal.	
Actions	The following actions are anticipated to be undertaken in order to carry out alien vegetation removal: <ul style="list-style-type: none"> Removal of the invasive and alien plants should be according to the appropriate invasive alien plant clearing guidelines/methods provided by the Working for Water Programme. 	
Impacts of actions	The following impacts are anticipated as a result of undertaking the maintenance activity: <ul style="list-style-type: none"> Minor disturbance to the local indigenous vegetation within the aquatic habitats as a result of removal of alien and invasive plants. Clearance of alien and invasive vegetation from the area and subsequent improvement in the ecological health where construction and rehabilitation has taken place within aquatic habitats 	
Severity of impacts	Minor disturbance to the local vegetation	If all mitigation measures are implemented, the severity of the impact will be Negligible.
	Alien vegetation clearance	<ul style="list-style-type: none"> N/A this impact is a POSITIVE
Measures to mitigate the severity of the impact	Minor disturbance to the local vegetation	Mitigation measures listed as follows: <ul style="list-style-type: none"> Removal of the invasive and alien plants should be according to the guidelines provided by the Working for Water Programme.
	Alien vegetation clearance	<ul style="list-style-type: none"> N/A this impact is a POSITIVE
Remedial measures if mitigation measures are not implemented adequately on site.	There are no additional remedial mitigation measures other than those listed above. As such, all mitigation measures as outlined above should be implemented in full.	
Method of Access to the site	Access to the site could be gained using existing footpaths and access roads located adjacent to the affected areas.	
Time period of maintenance management activity	The maintenance management activity should be undertaken on a regular basis (at least 12 monthly) after the work is completed. The maintenance management activity will last for approximately 1-2 days.	

Activity B		
Description of maintenance activity	Inspection of the stormwater cut-off drains and dam within the regulated area and rehabilitated areas.	
Actions	Undertake regular inspections to ensure that: <ul style="list-style-type: none"> • No erosion occurs; and • The areas remain clear of invasive alien plants and nuisance plant growth. These inspections can be undertaken from the banks where there is access and disturbance of any aquatic habitat is minimal. 	
Impacts of actions	The following impacts are anticipated as a result of undertaking the maintenance activity: <ul style="list-style-type: none"> • A negligible disturbance to the local vegetation as a result of the inspection process. 	
Severity of impacts	Minor disturbance to the local vegetation	If all mitigation measures are implemented, the severity of the impact will be Negligible.
Measures to mitigate the severity of the impact	Minor disturbance to the local vegetation	Mitigation measures are listed as follows: <ul style="list-style-type: none"> • The minimum area for the maintenance activity to be adequately undertaken should be properly demarcated. Outside of the maintenance activity area should be treated as a no-go area.
Remedial measures if mitigation measures are not implemented adequately on site.	There are no additional remedial mitigation measures other than those listed above. As such, all mitigation measures as outlined above should be implemented in full.	
Method of Access to the site	Access to the site could be gained using existing footpaths and access roads located adjacent to the affected areas.	
Time period of maintenance management activity	The maintenance management activity should be undertaken on a regular basis after the river works are completed and in particular following significant rainfall events as well as prior to the onset of the winter rainfall period. This maintenance management activity will last for not more than 2 hours.	

Activity C		
Description of maintenance activity	Erosion Protection along the cut of drains, dam; and any rehabilitated areas.	
Actions	The following actions are anticipated to be undertaken in order to remove blockages from the stormwater cut off drains, dam and associated areas: <ul style="list-style-type: none"> • All rubble and waste debris in the stormwater cut-off drains and dam within the regulated area should be by hand. • Clearing of nuisance growth of plants within the stormwater cut-off drains and dam within the regulated area as necessary should also be undertaken by hand during the low/no flow period. 	
Impacts of actions	The following impacts are anticipated as a result of undertaking the maintenance activity: <ul style="list-style-type: none"> • Minor disturbance to the local indigenous vegetation as a result of continued human activity in relation to the affected areas. • Disturbance due to removal of sediment, debris and nuisance plant growth 	

Severity of impacts	Disturbance to the channelled and un-channelled valley bottom wetlands due to removal of sediment, debris or nuisance plant growth	If all mitigation measures are implemented, the severity of the impact will be Negligible.
Measures to mitigate the severity of the impact	Disturbance to the channelled and un-channelled valley bottom wetlands due to removal of sediment, debris or nuisance plant growth Alien vegetation clearance	Mitigation measures listed as follows: <ul style="list-style-type: none"> • The disturbance of aquatic habitats associated with the maintenance works should be limited (both temporal and spatial extents) as far as possible. • Care should be taken to minimize the sedimentation that would be caused downstream of the works. • Work should preferably be undertaken by hand with no machinery driven into aquatic habitats. • Activities associated with the maintenance work should be undertaken during the low flow period before the onset of the high flows.
Remedial measures if mitigation measures are not implemented adequately on site.	There are no additional remedial mitigation measures other than those listed above. As such, all mitigation measures as outlined above should be implemented in full.	
Method of Access to the site	Access to the site could be gained using existing footpaths and access roads located adjacent to the affected areas.	
Time period of maintenance management activity	The maintenance management activity should be undertaken on a regular basis (at least 6 monthly) after the work is completed. The maintenance management activity will last for approximately 1-2 days.	
Activity D		
Description of maintenance activity	Removal of Sediment, Debris or Nuisance vegetation growth within the stormwater cut-off drains and dam.	
Actions	The following actions are anticipated to be undertaken in order to remove blockages from the channelled and un-channelled valley bottom wetlands and associated areas: <ul style="list-style-type: none"> • All rubble and waste debris in the river channel should be removed out of the stormwater cut-off drains and dam within the regulated area by hand. • Clearing of nuisance growth of plants within the stormwater cut-off drains and dam within the regulated area if necessary should also be undertaken by hand during the low/no flow period. 	
Impacts of actions	The following impacts are anticipated as a result of undertaking the maintenance activity: <ul style="list-style-type: none"> • Minor disturbance to the local indigenous vegetation as a result of accessing the site; • Disturbance to the stormwater cut-off drains and dam within the regulated area due to removal of sediment, debris and nuisance plant growth. 	

Severity of impacts	Disturbance to the channelled and un-channelled valley bottom wetlands due to removal of sediment, debris or nuisance plant growth	If all mitigation measures are implemented, the severity of the impact will be Negligible.
Measures to mitigate the severity of the impact	Disturbance to the channelled and un-channelled valley bottom wetlands due to removal of sediment, debris or nuisance plant growth Alien vegetation clearance	Mitigation measures listed as follows: <ul style="list-style-type: none"> • The disturbance of aquatic habitats associated with the maintenance works should be limited (both temporal and spatial extents) as far as possible. • Care should be taken to minimize the sedimentation that would be caused downstream of the works. • Work should preferably be undertaken by hand with no machinery driven into aquatic habitats. • Activities associated with the maintenance work should be undertaken during the low flow period before the onset of the high flows. • Soil, debris and nuisance plant growth removed from the stormwater cut-off drains and dam within the regulated area should not be dumped within the immediate areas surrounding the aquatic habitats or any indigenous vegetation removed from the site. Removed soil could be used to fill eroded areas.
Remedial measures if mitigation measures are not implemented adequately on site.	There are no additional remedial mitigation measures other than those listed above. As such, all mitigation measures as outlined above should be implemented in full.	
Method of Access to the site	Access to the site could be gained using existing footpaths and access roads located adjacent to the affected areas.	
Time period of maintenance management activity	The maintenance management activity should be undertaken on a regular basis (at least 6 monthly) after the work is completed. The maintenance management activity will last for approximately 1-2 days.	

7. MONITORING AND REPORTING

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

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

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

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

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

REPORTING FOR INTENT TO UNDERTAKE MAINTENANCE ACTIVITIES – FORM A				
Section A: Landowner Details				
Name	Surname	Farm No.	Erf No.	Today's Date
Section B: Details of proposed maintenance activity				
WUA/GA reference number and DEA&DP reference number for MMP.	Activity Type:	Reference code (make reference to MMP)	Footprint area (m²)	Volume of material (m³)
Equipment to be used:	Description of method for planned activity:			Date when work will commence:
Date of last flood event for site:	Note any further damage and comments regarding the state of the site			
Section C: Photographs of activity location before maintenance				

<p>Before A</p> <p>Coordinates: S E</p>	
<p>Before B</p> <p>Coordinates: S E</p> <p>Date of photos taken:</p>	

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

<p>After A</p> <p>Coordinates: S E</p>	
<p>After B</p> <p>Coordinates: S E</p> <p>Date of photos taken:</p>	

DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

“Watercourse” means:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows; and
any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and

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

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

ACRONYMS

CBA	Critical Biodiversity Area
DEA&DP	Department of Environmental Affairs & Development Planning
DWS	Department of Water & Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
GA	General Authorisation, in terms of the National Water Act, 1998 (Act No. 36 of 1998)
GN	Government Notice
IB	Irrigation Board
MEC	Member of Executive Council
MMP	Maintenance Management Plan
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PES	Present Ecological State
SANParks	South African National Parks Authority
WUA	Water Users Association
WULA	Water Use Licence Application

REFERENCE GUIDE FOR DRAFTING MMPs FOR A WATERCOURSE

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

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

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

National Water Act, 1998 (Act No. 36 of 1998). Available at: <http://www.gov.za/documents/national-water-act>

General Authorisation, in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) for water uses as defined in Section 21 (c) or Section 21 (i).

REFERENCES

Hanekom N.W. 2018. WATER USE AUTHORIZATION APPLICATION - RISK MATRIX. Eco Impact Legal Consulting (Pty) Ltd.

ANNEXURE A

DEPARTMENTAL DETAILS

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

WESTERN CAPE DEPARTMENT OF AGRICULTURE DETAILS

Francis Steyn
 Director: Sustainable Resource Management, LandCare Programme
 Western Cape Department of Agriculture
 Private Bag X1
 Elsenburg
 7607
 Main Building, Elsenburg, Muldersvlei Road
 Tel: 021 808 5090
 Email: franciss@elsenburg.com

METHODOLOGIES USED IN THE ASSESSMENT

RIVER HEALTH ASSESSMENTS: INDEX OF HABITAT INTEGRITY

Assessment of habitat integrity of a river can be seen as a precursor of the assessment of biotic integrity and is a measure of the degree to which a river has been modified from its natural state. Habitat and biotic integrity together constitute ecological integrity (Kleynhans, 1996). A site-based approach was carried out at all sites, where it is based on ground level observations at each monitoring site, but also makes use of other sources of information (maps, local knowledge etc.). The objectives of the Index of Habitat Integrity (IHI) assessment are to put into perspective the significance of various factors in the degradation of the habitat integrity of a specific river (Kleynhans, 1996).

The methodology (Kleynhans, 1996) involves an assessment of the number and severity of anthropogenic impacts on a river and the damage they potentially inflict upon the system. These disturbances include both abiotic and biotic factors, which are regarded as the primary causes of

degradation of a river. The severity of each impact is ranked using a six-point scale with 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).

Table A1: Criteria evaluated in the Index for Habitat Integrity

Instream Criteria	Weight	Riparian Zone Criteria	Weight
Water abstraction	14	Vegetation Removal	13
Flow modification	13	Exotic Vegetation	11
Bed modification	13	Bank Erosion	12
Channel modification	13	Channel Modification	13
Water quality	14	Water Abstraction	13
Inundation	10	Inundation	12
Exotic macrophytes	9	Flow Modification	14
Exotic fauna	8	Water Quality	12
Solid waste disposal	6		

Based on the relative weights of the criteria, the impacts of each criterion are estimated as follows:

Rating for the criterion/maximum value (25) x weight (percent)

Example: for criterion, which received a rating to 10 in the assessment, with weighting of 14 is calculated as follows:

$$10/25 \times 14 = 5.6$$

The estimated impacts for all criteria calculated in this way are summed, expressed as a percentage and subtracted from 100 to arrive at a provisional assessment of habitat integrity for the instream and riparian components respectively. The eventual total scores for the instream and riparian zone components are then used to place the habitat integrity in of both in a specific habitat integrity category. These categories are indicated in Table A2 below.

Table A2: Intermediate Habitat Integrity categories (from Kleynhans, 1996)

Category	Description	Score (% of total)
A	Unmodified, natural.	90-100
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.	80-90
C	Moderately modified. A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.	60-79
D	Largely modified. A large loss of natural habitat, biota and basic ecosystem functions has occurred.	40-59
E	The loss of natural habitat, biota and basic ecosystem functions is extensive.	20-39
F	Modifications have reached a critical level and the lotic system has been modified completely with almost complete loss of natural habitat and biota. In worst instances basic ecosystem functions have been destroyed and changes are irreversible.	0-19

ECOLOGICAL IMPORTANCE AND SENSITIVITY (EIS)

EIS considers a number of biotic and habitat determinants surmised to indicate either importance or sensitivity. The determinants are rated according to a four-point scale. The median of the resultant score is calculated to derive the EIS category.

Table A3: Definition of the four-point scale used to assess biotic and habitat determinants presumed to indicate either importance or sensitivity

Four point scale	Definition
1	One species/taxon judged as rare or endangered at a local scale.
2	More than one species/taxon judged to be rare or endangered on a local scale.
3	One or more species/taxon judged to be rare or endangered on a Provincial/regional scale.
4	One or more species/taxon judged as rare or endangered on a National scale (i.e. SA Red Data Books)

Table A4: Ecological importance and sensitivity categories (DWAF, 1999)

EISC	General description	Range of median
Very high	Quaternaries/delineations that are considered to be unique on a national and international level based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only a small capacity for use.	>3-4
High	Quaternaries/delineations that are considered to be unique on a national scale based on their biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases may have substantial capacity for use.	>2-≤3
Moderate	Quaternaries/delineations that are considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are not usually very sensitive to flow modifications and often have substantial capacity for use.	>1-≤2
Low/marginal	Quaternaries/delineations which are not unique on any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have substantial capacity for use.	≤1