**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).**

| | | (For official use only) |
|---|---|---|
| File Reference Number: | | |
| Date Received by Department: | | |
| Date Received by Component: | | |
| Form Duly Signed and Dated: | | Yes No |

**PROJECT TITLE**

**ERF 9445 IDAS VALLEY STELLENBOSCH**

## 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? | YES |
| 2.3 | Is there infrastructure or any community at risk of being damaged by flooding? | YES |
| 2.4 | Is the design of infrastructure considered inadequate in terms of managing the risk of flooding, erosion and/or sedimentation? | YES |
| 2.5 | Would you consider an improved design to existing infrastructure to reduce maintenance needs? | YES |
| 2.6 | Are there specific incidences where the watercourse is obstructed or blockages occur that alter the flow of the river during floods? | YES |
| 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? | YES |

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

| Maintenance Category | Types of maintenance activities (examples only) |
|---|---|
| **Category A:**<br>Sediment removal as a result of deposition or sediment deposition as a result of erosion | • Clearing sediment or placing sediment at:<br>  o Pump hole/trench<br>  o Return flow (irrigation)<br>  o Off-take weir<br>  o Stormwater outfall<br>  o Detention/retention ponds<br>  o Canalized urban rivers<br>  o Bridges, culverts and drifts<br>• Prevent formation of islands in the channel of the river<br>• Dredging of in-stream dams |
| **Category B:**<br>Emergency repairs – urgent action required to manage risk and damage to assets | • Repair to erosion of river bank or servicing infrastructure (e.g. pipelines/roads)<br>• Removal of material built up as a result of flooding/sedimentation and increasing risk to infrastructure<br>• Address damage or replacement of infrastructure (e.g. bridge, pipeline, pump house)<br>• Manage the condition of flood protection berms, and existing structures such as gabions, canalized and stormwater systems<br>• Installing temporary gravel approaches at flood-damaged river crossings |
| **Category C:**<br>Managing alien invasive and bush encroachment plant species | • Clearing of alien invasive vegetation out of a watercourse to reduce maintenance requirements as they relate to erosion and sedimentation<br>• Management of indigenous species categorized as bush encroachment, to improve hydrological flow and reduce associated flooding impacts |
| **Category D:**<br>Rehabilitation and restoration activities for maintaining ecological infrastructure | • Development and maintenance of ecological buffering systems to improve and/or restore functioning (e.g. wetlands and stormwater detention ponds)<br>• Actively rehabilitating riparian zones through planting of locally indigenous species<br>• 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<br>(City of Cape Town Metropolitan and West Coast District) | REGION 2<br>(Cape Winelands District, Overberg District)<br>**X** | REGION 3<br>(Eden & Central Karoo Districts) |
|---|---|---|

| | | | |
|---|---|---|---|
| Name of person/authority who will undertake responsibility for the activity: | Stellenbosch Municipality | | |
| Contact person (if other): | Myra Francis | | |
| Postal address: | P.O Box 17; Stellenbosch | | |
| Telephone: | (021) 808 8760 | (021) 808 8760 | (021) 808 8760 |
| Fax: | NA | NA | NA |
| Email: | Myra.Francis@stellenbosch.co.za | | |
| | | | |
| Name of person who has prepared the MMP: | Jessica Hansen | | |
| Contact Person (if other): | NA | | |
| Postal address: | P.O. Box 45070; Claremont | | |
| Telephone: | (021) 671 1660 | Postal code: | 7735 |
| Fax: | (021) 671 9976 | Cell: | 083 666 8046 |
| E-mail: | admin@ecoimpact.co.za | | |
| | | | |
| Name of landowner(s) on whose behalf the plan has been developed:* | Stellenbosch Municipality | | |
| Contact person(s): | Myra Francis | | |
| Postal address: | P.O Box 17; Stellenbosch | | |
| Telephone: | (021) 808 8760 | Postal code: | 7600 |
| Fax: | NA | Cell: | 079 453 5052 |
| E-mail: | Myra.Francis@stellenbosch.co.za | | |
| | | | |
| Municipality for proposed project: | Stellenbosch Municipality | | |
| Farm name(s), erf(s) and portion number(s) etc*: | Erf 9445 | | |
| Magisterial District or Town: | Idas Valley | | |
| Name(s) of watercourse(s) in question: | Unnamed non-perennial 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 (FINAL TO BE SIGNED)

**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:

**Note: This is a Draft. The applicant will sign the Final version.**

## 3. BACKGROUND AND INTRODUCTION

*The MMP (MMP) must be submitted with the signed declaration (see above) for the MMP to be defined or adopted in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations, 2014 (as amended).*

*Provide a strategic overview of the need for the development of the MMP – what is the need for this plan; how this plan will aim to contribute to furthering sustainable practices and reducing and/or mitigating the need for maintenance.*

*This section must also include details of the responsible party who will implement the MMP, engineers or other specialists appointed and the specifications for their appointment to assess the needs for the maintenance work, the Environmental Assessment Practitioner (EAP) or consultant appointed to compile the MMP. A short portfolio of evidence which indicates the relevant freshwater/ aquatic experience of the EAP/consultant or the person who prepared the MMP is required as supporting information to the introduction.*

*Should sufficient expertise and resources be available for the development of an MMP by the* proponent*, the process of appointing an EAP for the final compilation and submission of the MMP to the Department is still required.*

*This MMP has been compiled for erf 9445 Lindida Idas Valley Stellenbosch.*

*Two Seep Wetlands were identified situated along the northern and north-western boundary of the study area with a river located along the eastern boundary.*

*Two rivers are located on site. Both rivers are tributaries of the Krom River. The non-perennial river on the eastern edge of the development rises in the foothills of the Simonsberg Mountains and flows from north to south on the western edge of Lindida, Idas Valley area of Stellenbosch. The non-perennial river rises at 222m above mean sea level and runs for 1.2km before it reaches the property at 168m above mean sea level. The middle portion of the river on erf 9445 has been silted up and the defined channel that is evident on either side of this area disappears. Much of this river is invaded by Kikuyu Grass (Pennisetum clandestinum). The perennial tributary rises in the Hottentots Holland mountains and runs through Idas Valley and forms the southern boundary of the proposed development.*

*Maintenance (following construction and rehabilitation) will be required in the following areas:*

- *Public open spaces (rivers and wetland)*
- *600m$^2$ retention pond*
- *South river crossing: gabion mattress protection, 2 x1500 x 1200 rectangular portal culverts*
- *North river crossing: gabion mattress protection, 2 x1500 x 1200 rectangular portal culverts*

*Please note that the applicable section 21 application in terms of the NWA has been submitted to DWS. The application is still in process.*

*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.*

*The need for the development of the MMP stems from the operational requirements to maintain the attenuation dams, road crossings, wetlands and sections of the river.*

***Responsible Party:***

The responsible party that will be implementing the MMP is the Stellenbosch Municipality.

Stellenbosch Municipality 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.

Stellenbosch Municipality 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. 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.

Eco Impact Legal Consulting ("Pty") Ltd ("Eco Impact") is appointed as independent Environmental Assessment Practitioners to compile the MMP. Mrs Jessica Hansen of Eco Impact Legal Consulting (Pty) Ltd (referred to hereafter as "Eco Impact") has been appointed as the independent EAP for this project as required in terms of the regulations. Jessica has a BSc (Honours) in Environmental and Geographical Science in 2011 from the University of Cape Town and subsequently obtained her MSc in Zoology in 2013. Jessica has trained as an Environmental Assessment Practitioner since 2013 and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications and Baseline Biodiversity Surveys for numerous clients.

## 3.1 DEFINITIONS OF TERMS AND ACRONYMS

**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 overlaying 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:

- X Department of Water and Sanitation
- ☐ Catchment Management Agency
- X CapeNature
- ☐ SANParks
- X Western Cape Department of Agriculture, Directorate: Sustainable Resource Management
- X District Municipality
- X Local Municipality
- ☐ Irrigation Board / Water Users Association
- X Heritage Western Cape
- ☐ Department of Agriculture, Forestry and Fisheries
- X Department of Environmental Affairs & Development Planning
- ☐ Other (please list):
  **This MMP (draft) will be circulated with the draft EIR to all I&APs and key departments.**

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.

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

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

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

## 4.2 PUBLIC PARTICIPATION

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

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

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

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

| | | |
|---|---|---|
| (i) Given written notice to the owner or person in control of that land if the person undertaking the maintenance activity is not the owner or person in control of the land. | ***NA*** | ***Landowner will be undertaking maintenance.*** |
| (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~~*** | ***See Appendix_G_PPP*** |
| (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*** | ***No meetings held*** |
| (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~~*** | ***See Appendix_G_PPP*** |
| (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~~*** | ***See Appendix_G_PPP***<br><br>***Wineland Water Users Association (Stellenbosch, Western Cape)*** |

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).

See Appendix B

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.

Point 1: 33°55'4.45"South 18°53'23.58"East (Southern river crossing)

Point 2: 33°54'57.17"South 18°53'30.87"East (Northern river crossing)

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):

See Appendix H1 – Freshwater Assessment (river only)

See Appendix H2 – Wetland

See Appendix H3 – Wetland Rehabilitation and Management Plan

5.4 Mapped biodiversity features such as Critical Biodiversity Area, Ecological Support Area, National Freshwater Ecosystem Priority Area (NFEPA), 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.

See Appendix E.

5.5 Include a description of existing or previous protection measures or reinforcements (e.g. 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.

- South river crossing: gabion mattress protection, 2 x1500 x 1200 rectangular portal culverts

**Gabions**

- Work is complete between CH 350 and CH 118.3
- Between CH 118.3 and CH 108.8 the gabions are halfway and needs to be completed.
- Between CH 108.8 and CH 38 the excavation is about complete but will need to be cleaned and inspected before gabions are constructed as per design.
- Between CH 80 and CH 60 a stabilizing layer of rock fill wrapped in geotextile is to be placed before the construction of the gabions as per design.

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.

See Appendix D.

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.

See Appendix D.

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.

No data available.

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.

- Flooding. The proposed new housing development will cause an increase in storm water which needs to be managed according to the storm water management plan in order to prevent flooding of residential areas etc. Damage to infrastructure.
- Extreme erosion - continual erosion without monitoring, prevention and mitigation could result in the altering of flow of the drainage line. It could also result in the washing away of the instream infrastructure should erosion not be mitigated or controlled to minimise the effects on the environment and downstream users.
- Siltation / build-up occurs over time within the river system. It is a maintenance requirement to remove siltation by cleaning the infrastructure placed within the drainage line to ensure that flow is not impacted / reduced. Blocked infrastructure could result in the washing away of the drainage line crossing or altering the flow of the drainage line which could result in the loss of ecosystem function.
- 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.

Department of Water and Sanitation, South Africa. February 2017. Determination of Water Resources Classes and Associated Resource Quality Objectives in the Berg Catchment: Status Quo Report. Project Number WP10987. DWS Report No: RDM/WMA9/00/CON/CLA/0516

## 6. METHOD STATEMENT

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.

  Refer to Annexure A.

## 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 ($m^2$)** | **Volume of material ($m^3$)** |
| | | | | |
| **Equipment to be used:** | **Description of method for planned activity:** | | | **Date when work will commence:** |
| | | | | |
| **Date of last flood event for site:** | **Note any further damage and comments regarding the state of the site** | | | |
| | | | | |
| **Section C: Photographs of activity location before maintenance** | | | | |
| **Before A**<br><br>**Coordinates:**<br>**S**<br><br>**E** | | | | |
| **Before B**<br><br>**Coordinates:**<br>**S**<br><br>**E**<br><br><br>**Date of photos taken:** | | | | |

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

## 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 |

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).

## 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:<br><br>Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 1)<br>Private Bag X 9086<br>Cape Town,<br>8000<br><br>Registry Office<br>1st Floor Utilitas Building<br>1 Dorp Street,<br>Cape Town<br><br>Queries should be directed to the Directorate: Development Management (Region 1) at:<br>Tel: (021) 483-5829<br>Fax (021) 483-4372 | Requests for competent authority to adopt an MMP must be sent to the following details:<br><br>Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 2)<br>Private Bag X 9086<br>Cape Town,<br>8000<br><br>Registry Office<br>1st Floor Utilitas Building<br>1 Dorp Street,<br>Cape Town<br><br>Queries should be directed to the Directorate: Development Management (Region 2) at:<br>Tel: (021) 483-5842<br>Fax (021) 483-3633 | Requests for competent authority to adopt an MMP must be sent to the following details:<br><br>Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 3)<br>Private Bag X 6509<br>George,<br>6530<br><br>Registry Office<br>4th Floor, York Park Building<br>93 York Street<br>George<br><br>Queries should be directed to the Directorate: Development Management (Region 3) at:<br>Tel: (044) 805-8600<br>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

| Activity A | | |
|---|---|---|
| **Description of maintenance activity** | **Alien vegetation removal along the river corridor. Removal of all alien vegetation from the river channel and associated areas that were constructed. Popules and Acacia saligna trees.** | |
| Actions | The following actions are anticipated to be undertaken in order to carry out alien vegetation removal:<br>• 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:<br>• Minor disturbance to the local indigenous vegetation within the aquatic habitats as a result of removal of alien and invasive plants.<br>• 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 | • 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:<br>• Removal of the invasive and alien plants should be according to the guidelines provided by the Working for Water Programme. |
| | Alien vegetation clearance | • 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 the access roads and selected demarcated 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** | **Site Inspections of the river corridor and at river crossings.**<br>**Inspection of the section of constructed and rehabilitated areas.** | |
| Actions | Undertake regular inspections to ensure that:<br>• The river channel, road crossing and associated areas do not become blocked with sediment, debris or nuisance vegetation growth;<br>• No erosion of the upgraded river channel and associated areas occurs; and<br>• The areas remain clear of invasive alien plants and nuisance plant growth should it serve to block the channel or associated areas. These inspections can be undertaken from the banks where there is access and disturbance of any aquatic habitat is minimal.<br>• All waste within the drainage channels must be removed on a weekly basis.<br>• Sandy areas and riffles must be maintained for frog habitat. | |
| Impacts of actions | The following impacts are anticipated as a result of undertaking the maintenance activity:<br>• 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:<br>• 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 the access roads and selected demarcated 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 river corridor and buffer areas and at river crossings.** | |
| Actions | The following actions are anticipated to be undertaken in order to remove blockages from the river channel and associated areas:<br>• All rubble and waste debris in the river channel should be removed out of the river channel and banks by hand. Particular attention should be given to upstream of the structures in the river channel.<br>• Clearing of nuisance growth of plants within the channel 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:<br>• Minor disturbance to the local indigenous vegetation as a result of accessing the site<br>• Disturbance to the river banks due to removal of sediment, debris and nuisance plant growth | |
| Severity of impacts | Disturbance to the river bed and banks 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 river bed and banks due to removal of sediment, debris or nuisance plant growth<br>Alien vegetation clearance | Mitigation measures listed as follows:<br>• The disturbance of aquatic habitats associated with the maintenance works should be limited (both temporal and spatial extents) as far as possible.<br>• Care should be taken to minimize the sedimentation that would be caused downstream of the works.<br>• Work should preferably be undertaken by hand with no machinery driven into aquatic habitats.<br>• Activities associated with the maintenance work should be undertaken during the low flow period before the onset of the high flows.<br>• Soil, debris and nuisance plant growth removed from the river channel and associated areas 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 | 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. | |

| | |
|---|---|
| adequately on site. | |
| Method of Access to the site | Access to the site could be gained using the access roads and selected demarcated 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 river corridor and buffer areas; at river crossings and the stormwater ponds.** | |
| Actions | The following actions are anticipated to be undertaken in order to remove blockages from the river channel and associated areas:<br>• All rubble and waste debris in the river channel should be removed out of the river channel and banks by hand. Particular attention should be given to upstream of the structures in the river channel.<br>• Clearing of nuisance growth of plants within the channel 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:<br>• Minor disturbance to the local indigenous vegetation as a result of accessing the site<br>• Disturbance to the river banks due to removal of sediment, debris and nuisance plant growth | |
| Severity of impacts | Disturbance to the river bed and banks 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 river bed and banks due to removal of sediment, debris or nuisance plant growth<br>Alien vegetation clearance | Mitigation measures listed as follows:<br>• The disturbance of aquatic habitats associated with the maintenance works should be limited (both temporal and spatial extents) as far as possible.<br>• Care should be taken to minimize the sedimentation that would be caused downstream of the works.<br>• Work should preferably be undertaken by hand with no machinery driven into aquatic habitats.<br>• 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 river channel and associated areas 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 the access roads and selected demarcated 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. | |