



HilLand Environmental

Environmental Assessment Practitioners

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) and Environmental Assessment Regulations (2014, as amended)

FOR THE MOSSEL BAY HOUSING PROJECT, DEVELOPMENT ON ERVEN 2667, 2686 & 2687, GROOT BRAK RIVIER

TOEKOMS



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ISSUED BY:

HillLand Environmental
P.O. Box 590
George, 6530

Tel: 044 889 0229
Fax: 086 542 5248
E-mail: cathy@hilland.co.za / environmental2@hilland.co.za
Web site: www.hilland.co.za

EMPR:

**THE MOSSEL BAY HOUSING PROJECT, DEVELOPMENT ON ERVEN 2667, 2686 & 2687, GROOT BRAK
RIVIER**

TOEKOMS

Submitted for:

DEADP decision making purposes – submission with the FINAL BAR

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National Environmental Management Act

An EMPr must comply with Section 24N of NEMA and the Environmental Impact Assessment Regulations 2014 (GN 982 Appendix 4) which requires that it must include the following:

REQUIREMENTS	REPORT SECTION
(a) details of- (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Annexure K
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 2
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Annexure B
(d) a description of the impact management [objectives] outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Section 7
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 7, 8, 9 & 12
(f) a description of proposed impact management actions, identifying the manner in which the impact management [objectives and] outcomes contemplated in paragraph (d) [and (e)] will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 7, 8, 9 & 12
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 3.1.2 and 10
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f)	Section 3.1.2 and 10
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 7, 8, 9 & 12
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 1, 3.1.2, 7, 8, 9 & 12
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 1, 3.1.2, 7, 8, 9 & 12
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 1, 3.1.2, 7, 8, 9 & 12
(m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 3
(n) any specific information that may be required by the competent authority.	N/A
Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.	N/A

1 INTRODUCTION

HillLand Environmental have been appointed as the Environmental Assessment Practitioners (EAP) by the applicant, **Mossel Bay Municipality**, to ensure compliance with regulations contained in the National Environmental Management Act (NEMA Act No. 107 of 1998) and the Environmental Impact Assessment Regulations (2014), as amended, for the Mossel Bay Housing Project – **Toekoms site**.



Figure 1: Locality map of the property

This Environmental Management Programme (EMPr) is submitted as per the requirements of a Basic Assessment in terms of NEMA. Various specialist and technical input formed part of the assessment process and mitigation measures and recommendations during the process have been included in this report for implementation during the development.

This EMPr is binding on the applicant (Mossel Bay Municipality) in full or in part for the development as contemplated in this application and any future amendments to the approved layout / development plan.

The monitoring of compliance of the EMPr is mandatory in terms of the construction phase and a compliance reporting is required at the **end** of the construction phase (services installation, rehabilitation thereof, top structure construction and rehabilitation following construction).

This EMPr, in terms of the NEMA "duty of care", also includes the operational- and rehabilitation phases that were highlighted as part of the process and it will be the **Municipality's responsibility** to ensure compliance with the operational phases as they fall outside the scope of the Listed Activities to be authorized in terms of NEMA.

The report is divided to provide a clear distinction between the construction phase(s) and the ongoing operational aspects of the development.

This EMPr must be included in the tender documents of **all** prospective contractors and must also be included in the final contract awarded. **The EMPr must be regarded as binding on all contractors, sub-contractors, agents, consultants and construction staff on the property.**

The full and approved EMPr will be made available to all contractors working on the project.

Please note that this EMPr is a dynamic document, which will grow and be changed with new developments in the field as the need arises.

2 DEVELOPMENT DESCRIPTION

The Mossel Bay Municipality is embarking on new subsidised and social housing projects as identified in the Mossel Bay Housing Pipeline and Spatial Development Framework.

This EMPr is applicable to the **Toekoms** site:

The preferred proposal entails development on erven 2686, 2687 and 2667, Toekoms, Groot Brakrivier.

The following will be developed on these erven:

- 25x freehold residential erven (erven will range between $\pm 189\text{m}^2$ and 485m^2)
- 1x clinic site
- 1x private open space that will be used for a multi-purpose sports centre
- 1x public open space site that will not be developed for housing purposes. The only construction within this space entails the installation of the sewage connection, refer to 'associated services' section;
- Internal roads/driveways.



Figure 2: Preferred site development plan (Marika Vreken Town Planners, 2024) *any deviation from this SDP will require DEADP approval prior to implementation.

The proposal was assessed by the visual specialist, VRM Africa. The statement concluded that the development is unlikely to result in the loss of significant landscape or visual resources. However, there is a potential risk from skyline intrusion as seen from the R102, as well as a limited change to the existing R102 vegetated verge sense of place. To address these issues, the following mitigation measures are recommended:

- **Restrict building heights to 8m for erven located adjacent to the R102.**
- **Introduce screening vegetation along the road edge and the entrance into Toekoms (within the open space erf)**

With these mitigation measures effectively implemented, the development is expected to result in a moderate to low negative visual magnitude in the short-term. Once the vegetation has become established, a positive landscape change is likely that would benchmark the R102 sense of place, and add aesthetic value to both the Toekoms community, and the surrounding residential areas (VRM Africa).

Associated services:

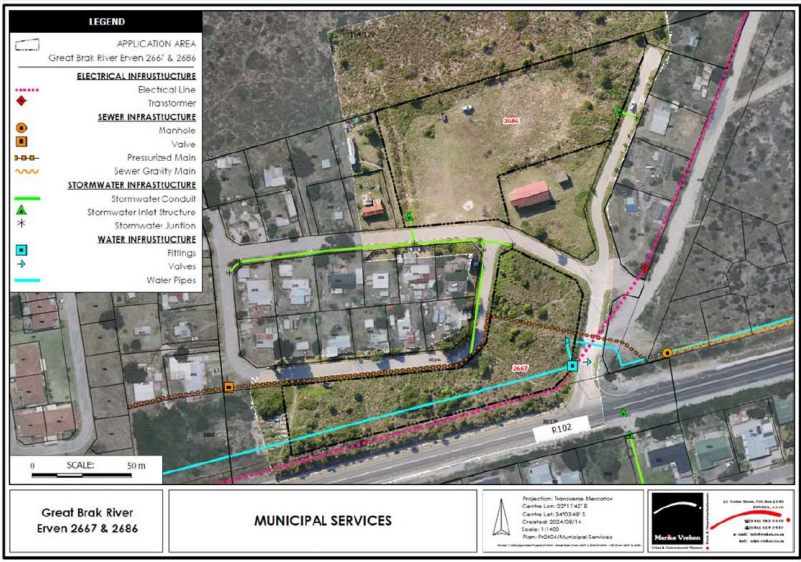
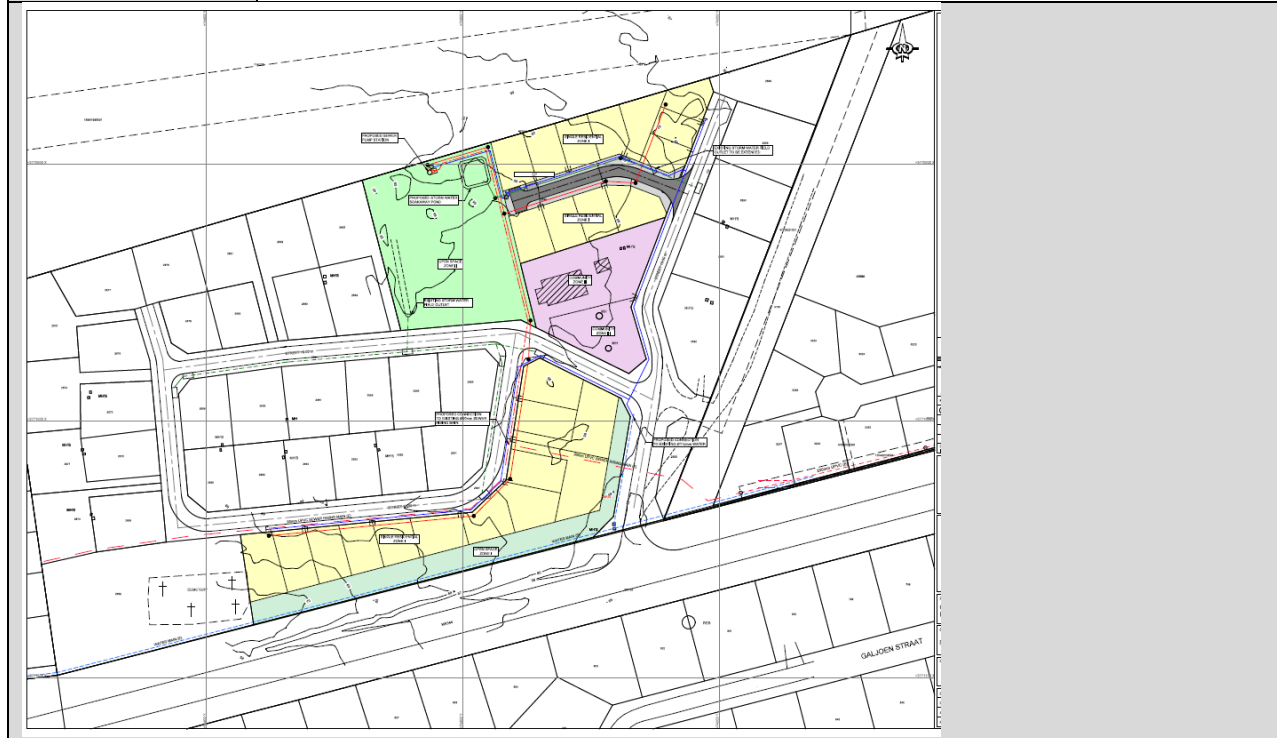


Figure 3: Plan showing the existing services (Marika Vreken Town Planners, 2024)

The following is proposed:

Water (input provided by V3 Consulting Engineers, 28 May 2025 and associated GLS report)	The total annual average daily demand (AADD) and required fire flow for the proposed development on Erven 2667, 2686 & 2687 was calculated as follows: • 25 Residential erven (High density, small sized) @ 0,6 kL/d/unit = 15,0 kL/d • 0,19 ha Business/Commercial @ 20,8 kL/d/ha = 4,0 kL/d Total = 19,0 kL/d <i>Water demand</i> "The development will be serviced by means of a water network consisting of uPVC water pipes of 90mm to 110mm diameter (total estimated length 390m) installed in road reserves. The proposed connection point is to the existing 200 mm Ø supply pipeline situated in Helderkruin Lane. The existing system has sufficient capacity to supply the domestic water demand during peak demand conditions to the proposed development.
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	There is also sufficient capacity in the existing water reticulation network of the Sandhoogte Water Treatment Plant (WTP) Great Brak River (GBR) reservoir water distribution zone to provide fire flow of more than 25,0 L/s to the proposed development" (V3 Consulting Engineers, 2025).
Sewage (input provided by V3 Consulting Engineers, 28 May 2025 and associated GLS report)	"Sewage will be removed by means of a waterborne gravity sewer network. The gravity sewer network will consist of 110mm & 160mm diameter uPVC sewer pipes and 1,0m diameter concrete sewer manholes. The estimated length of the network is approximately 348m and approximately 11 manholes will need to be constructed. The proposed sewer network will drain to a low point on Public Open Space (currently erf 2686), from where it will need to be pumped by means of a small underground sewerage pump station to the nearest gravity main sewer is located approximately 235 m east of the proposed development near Helderkruijn Lane. The proposed connection point to the existing sewer system is to the existing 200 mm dia. uPVC pipeline situated in a pipeline servitude in the Seesig Development The existing sewer reticulation system has sufficient capacity to accommodate the proposed development on Erven 2667, 2686, and 2687" (V3 Consulting Engineers, 2025). Storage capacity in the Sandhoogte WTP GBR reservoir to accommodate the proposed development.



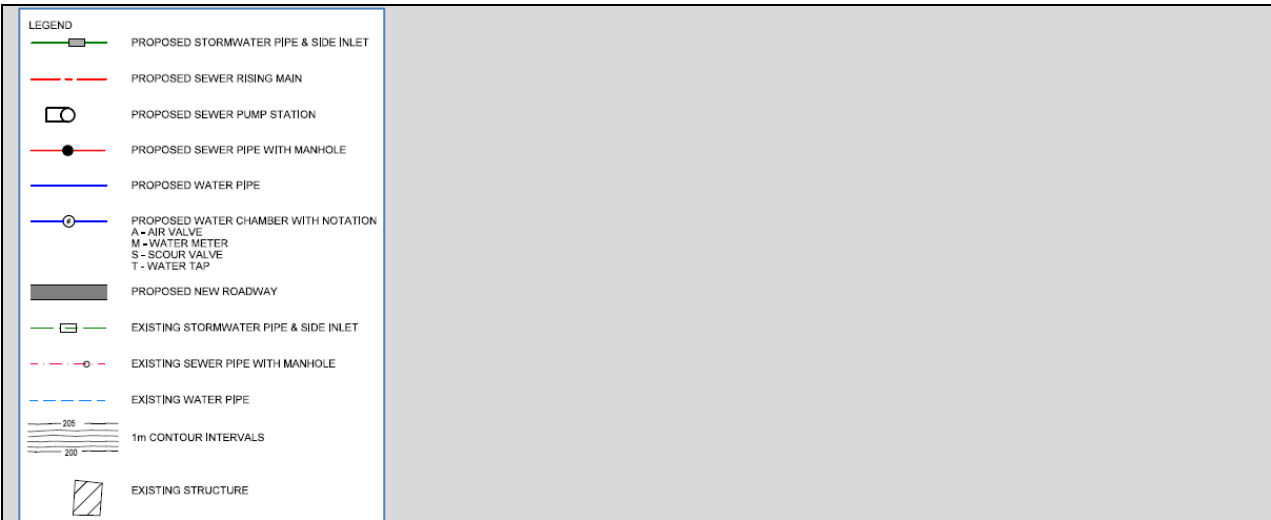


Figure 4: Engineering plan showing the proposed water and sewage connections (existing and proposed) (V3 Consulting Engineers, 2025)

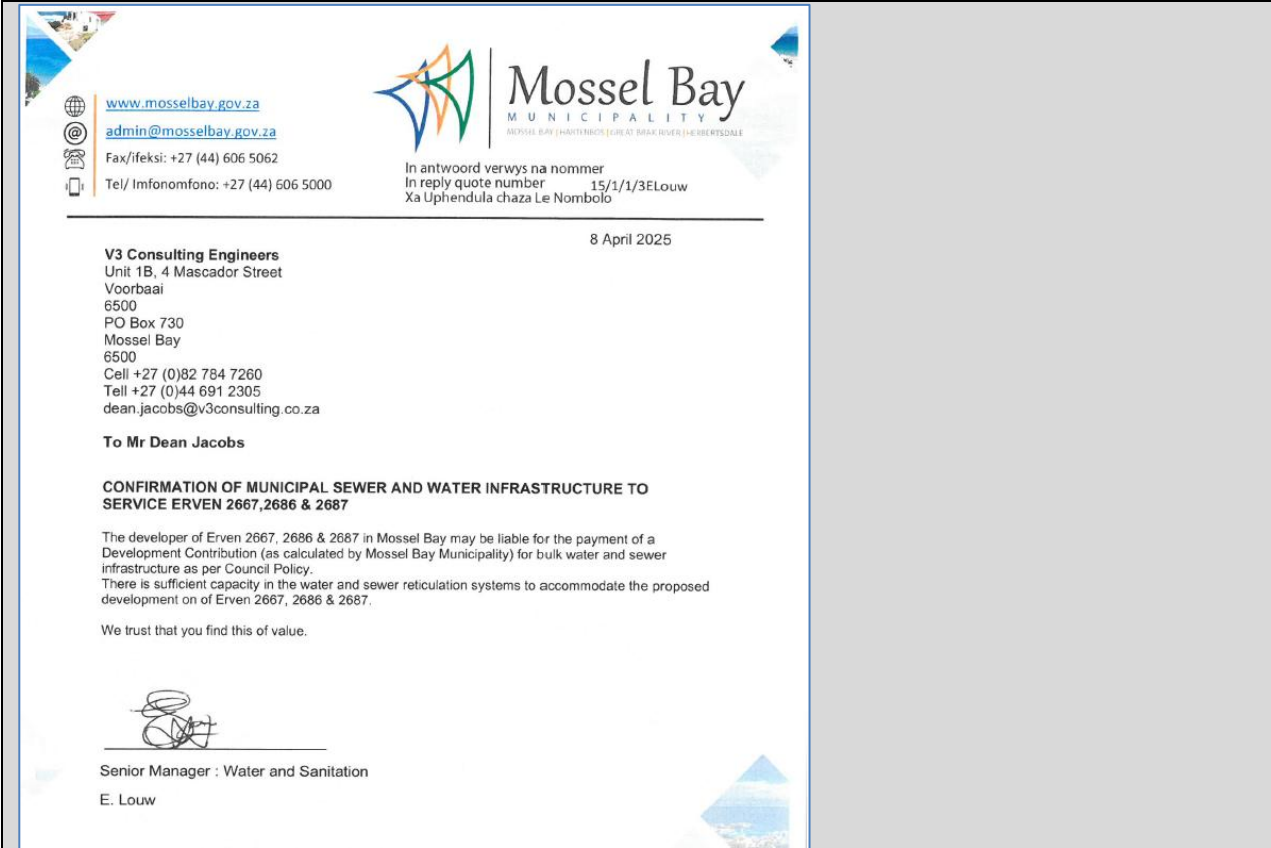


Figure 5: Mossel Bay Municipal confirmation of sewer and water infrastructure availability

Electricity (with input from CVW Consulting Engineers, 18 February 2025)	"Electricity will be supplied by the supply authority, Mossel Bay Municipality. The surrounding area consists of existing infrastructure, which is property of Mossel Bay Municipality and new developments in progress. Overhead powerline from Toekoms 200kVA transformer to MS Taylor (MS Vogelsang) is constructed from 25mm² Overhead copper conductor. The section between transformer BOSHOF TRANSPORT and MS Taylor (MS Vogelsang) is proposed to be removed. The remainder of Toekoms consist of an estimate 34 single residential zone I stands and one open space zone II stand. These erven are supply by an existing 200kVA PMT. It is proposed to establish one 500kVA 11/0.42kV Dyn11 mini substation on the corner of Dagbreek Lane and Helderkruin Lane (Erf 2867). The new proposed development and existing LV infrastructure can be supplied from this mini substation and the existing 200kVA PMT can be decommissioned and taken out of service. The overhead powerline to TRF BOSHOF TRANSPORT will remain in service. The new miniature substation will provide a low voltage supply to Toekoms including the new development (Pr2404-Toeokms). New service kiosk will be fitted with 80A 6kA 1-phase circuit breakers. Prepaid meters will register to the individual property owners. Property owners will become direct
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customers of Mossel Bay Municipality. Existing infrastructure will be used to supply existing customers. Necessary extensions will be made from the new proposed mini substation.

A New 3Way RMU will be required at the edge of road R102 to supply the spur fed to TRF BOSHOF TRANSPORT. A MV joint is proposed at the edge of road R102 and the cable taken to the new proposed 500kVA mini substation. A second cable from the new proposed mini substation will be taken along the entry route and terminate at the newly proposed 3Way RMU.

Mossel Bay Municipality will take over all medium voltage and low voltage installations up until the metering point to each individual erf including the service kiosk(s). Reticulation beyond the metering point of each individual erven will be the responsibility of the property owner to install and maintain" (CVW Consulting Engineers, 20025).



Figure 6: Plan showing the connections, new substation and RMU

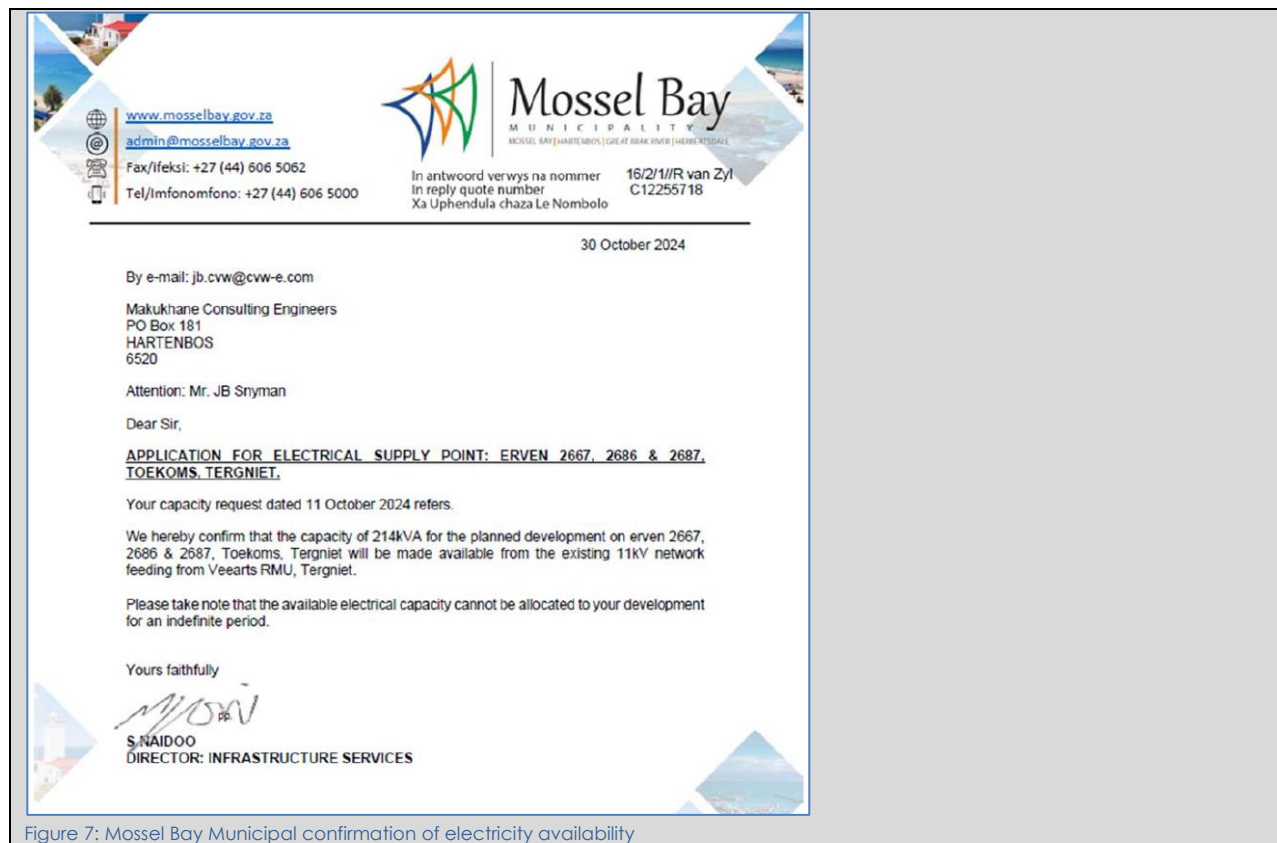


Figure 7: Mossel Bay Municipal confirmation of electricity availability

- Refuse removal** – to be collected and form part of the Municipal waste stream. As recommended by the traffic engineers (UDS Africa):
"Refuse collection is assumed to be managed by the municipality through kerbside collection. It is recommended that a shared refuse collection point for the 12 affected erven be established along Helderkrui Avenue on the nearside of development area and that the existing radius of the turning space at the end of the Helderkrui Avenue cul-de-sac be increased to at least 12 m for refuse vehicle manoeuvrability. This recommendation should be discussed with the relevant authorities to ensure alignment with the future plans for the area".
- Stormwater** - Stormwater from the proposed Development will be directed to the north and discharged into the Public Open Space, where it will soak into the natural permeable soil. Provision is made for a stormwater detention pond on the Public Open Space erf.

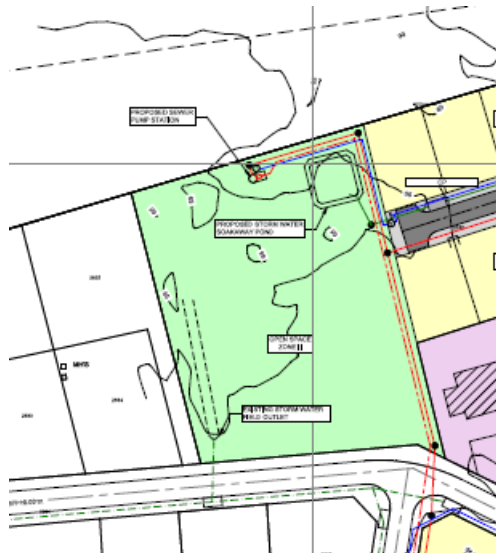


Figure 8: Plan to show the proposed storm water detention pond marked by the blue cross (V3 Consulting Engineers, 2025) **Note that the stormwater detention pond will have to be located taking the proposed recreational facility into account.**

- **Traffic impact (UDS Africa, 2025)**

Access to the new residential erven in Development Area A will be provided via a new public access road intersecting Helderkrui Avenue, ± 85 m north of the Helderkrui Avenue/Dagbreek Avenue intersection. The new residential erven proposed in Development Area B, will obtain direct access to/from the existing southern section of Dagbreek Avenue.

The locations of the access points to/from the community erven are expected to be confirmed during later design stages, once their specific uses are known. At this stage, it is recommended that access to **both** erven be provided via a fourth leg at the Dagbreek Avenue intersection ± 60 m west of Helderkrui Avenue.

With the application of a trip generation adjustment factor for Low Vehicle Ownership, the proposed development has the potential to generate both 43 AM peak-hour trips (21 inbound, 22 outbound) and 43 PM peak-hour trips (21 inbound, 22 outbound).

No intersection upgrades are required to accommodate the total 2030 peak-hour traffic.

The available **lines of sight (both directions) at the R102/Helderkrui Avenue intersection do not meet the applicable requirement.** However, this issue is attributed to overgrown vegetation rather than the road geometry. Therefore, maintaining the landscape elements should ensure sufficient sight distance is achieved. It is recommended planting vegetation that can be maintained at an appropriate height and form to preserve adequate sight distance. This will include pruning trees up so that they do not obstruct the view when seated in a vehicle near the entrance.



Figure 9: Plan to show the access points

The necessary streetlights will be installed, and parking bays will comply with the Mossel Bay Zoning Scheme By-Law.

It is further recommended in the TIA -

"A school bus serves the Toekoms community, with the current approved bus stop located at the unpaved turning space to the east of the Helderkruijn Avenue/Dagbreek Avenue intersection. The provision of a bus shelter or demarcated waiting area should be considered at this stop" (UDS Africa, 2025).

The following plan shows the area that will be cleared and developed (red) and southern open space areas (green) where only ECO approved activities may be undertaken by hand and within a limited working area. Red area – referred to in this EMPr as the development area, green – open space area.

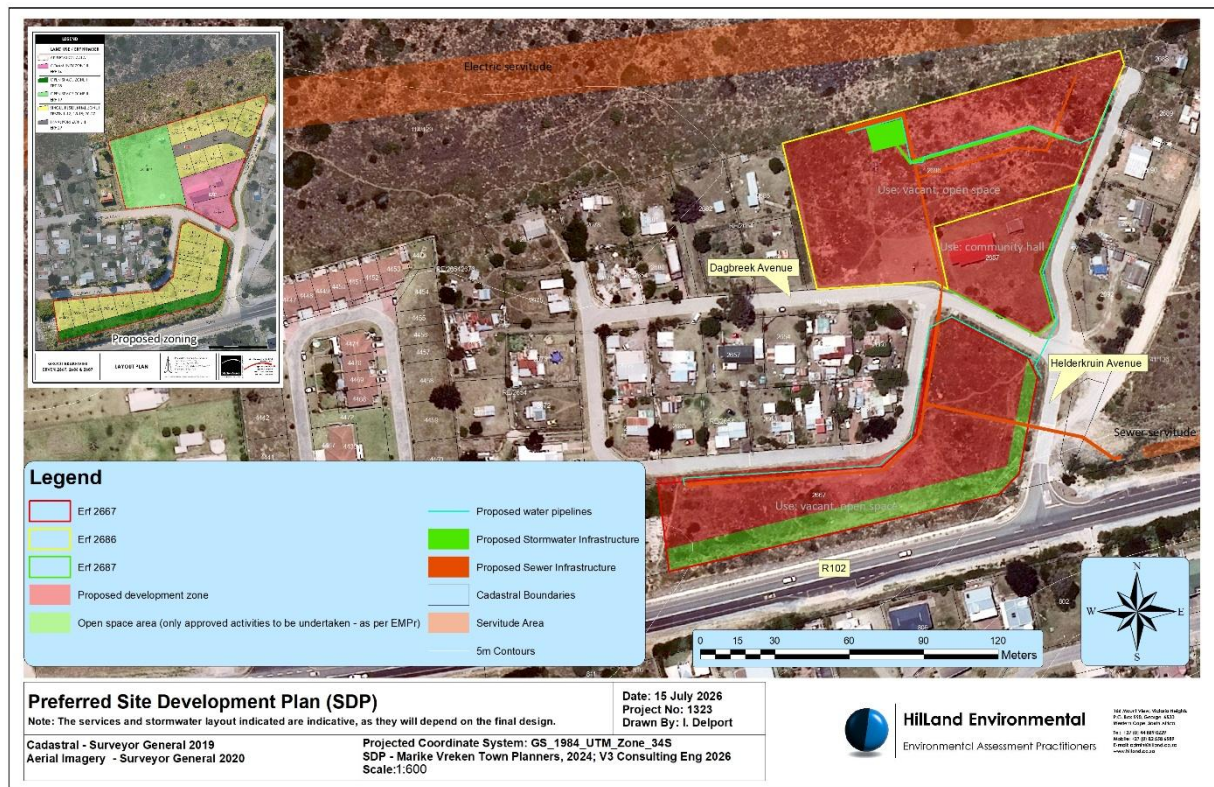


Figure 10: Construction plan

It should be noted that any deviation from the site development plan will need to be approved by DEADP prior to implementation.

3 TERMS OF REFERENCE

The main terms of reference of this EMPr are to identify and mitigate any potential negative environmental impacts that may be associated with listed activities approved in terms of NEMA for the proposed housing development.

The full and approved EMPr must be made available to all contractors working on the project and must be included in all tender documentation. Certain fundamental aspects are therefore of importance:

- The EMPr and these requirements are binding on all contractors and their sub-contractors.
- **It is the responsibility of the applicant (Municipality)** to ensure that any contractor(s) or sub-contractor(s) is made aware of the environmental requirements.
- **The contractor will be required** to make good any damage caused through their actions or the actions of their sub-contractors (in addition to any penalties for non-compliance issued).

4 CONDITIONS OF ENVIRONMENTAL AUTHORISATION (EA)

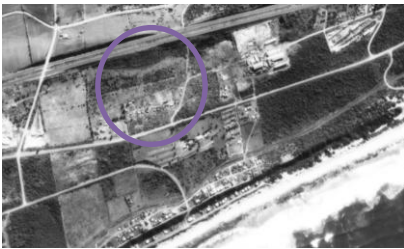
The Environmental Authorisation (EA) (once issued by DEADP) will be attached to the Final EMPr.

It is binding on the holder/Management, contractors, sub-contractors, agents, consultants and construction staff on the property.

If the EA conditions are not included at this point, then the reader is NOT reading the final approved EMPr and should request such a document prior to continuation.

5 LISTED ACTIVITIES

The following listed activities, in terms of the Environmental Impact Assessment Regulations (2014, as amended) (GN NO. R. 324 - 327) will be triggered by the development and may be undertaken by the holder (once the EA has been issued):

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
27	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 maintenance management plan.	The proposal will require the clearance of indigenous vegetation 1ha or more, but less than 20ha
28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	 There may have been some historical agricultural activities on the site.
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
4	The development of a road wider than 4 metres with a reserve less than 13,5 metres. i. Western Cape i. Areas zoned for use as public open space or equivalent zoning; ii. Areas outside urban areas; (aa) Areas containing indigenous vegetation; (bb) Areas on the estuary side of the development setback line or in an	The proposed SDP includes the development of a 10m wide internal road. The properties are inside urban areas zoned Open Space II (erf 2667 and 2686) and Community Zone III (erf 2687).

	estuarine functional zone where no such setback line has been determined; or iii. Inside urban areas: (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	
12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	The erven have been mapped as containing EN Hartenbos Dune Thicket and Erven 2686 and 2667 are open space zone II. Clearance will exceed 300m²
15	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010. f. Western Cape i. Outside urban areas, or ii. Inside urban areas: (aa) Areas zoned for conservation use or equivalent zoning, on or after 02 August 2010; (bb) A protected area identified in terms of NEMPAA, excluding conservancies; or (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act as adopted by the competent authority.	Erven 2686 and 2667 are Open Space II zone and the transformation of these erven that are bigger than 1000m² will be required. The properties are within the urban area. Open space II is not zoned for conservation.

5.1 ENVIRONMENTAL CONTROL OFFICER (ECO)

An environmental control officer (ECO) must be appointed to oversee the installation of services during **civil construction associated with the project**, ensure compliance with the Environmental Authorisation (EA) and the Environmental Management Programme (EMPr) and to assist with issues as they may arise on site.

Please note that the construction of top structures (homes) is NOT linked to the EA and will only require the normal municipal compliance monitoring and building plan approval process.

It will be the ECO's responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in the EA (to be issued) are implemented and complied with by the Municipality.

The **Municipality** will be responsible for the remuneration of the ECO and any other expenses encountered in the process of environmental monitoring of the construction.

5.1.1 SELECTION OF ECO

The appointed ECO must be able to demonstrate that (s)he is of sufficient competency to undertake the required task. This includes:

- Previous experience of environmental control of similar sites.
- Working experience with contractors.
- Knowledge of the particular project and expected areas of concern.

5.1.2 ROLES AND RESPONSIBILITIES OF THE ECO

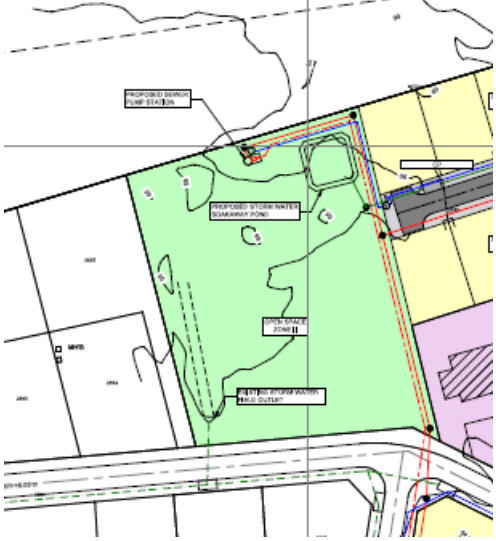
The ECO will undertake the following tasks:

- **Ensure that the relevant approvals are in place for each activity to be undertaken (building plan approval, NFA (where applicable) etc.);**
- Ensure **compliance** with the EMPr at all times during the **pre-construction and construction phases;**
- Ensure compliance with relevant management **conditions** of the EA (to be issued) during the **pre-construction and construction phases;**
- Meet with the contractors to set out the environmental parameters within which they must work (pre-construction and construction phase);
- Provide an **Environmental Induction (Environmental Education)** with all contractors **prior** to the commencement of any work;
- Indicate where all no-go areas are to be demarcated and to ensure adherence to these delimitations at the induction session **BEFORE** any construction associated with the development commences (pre-construction phase);
- Indicate where **plant rescue** may be necessary, and what species should be rescued on this site (pre-construction phase);
- Indicate where **erosion protection and siltation prevention measures** are required or need to be supplemented and to ensure correct implementation;
- Advise on **rehabilitation requirements** according to the different areas;
- Check up on general environmentally friendly construction practices (e.g. no littering, safe and secure environment, contamination risks, etc.);

- Ensure that the correct earthworks practices are adhered to, e.g., no encroachment into the surrounding vegetation, separation of topsoil and subsoil, correct stockpiling and stripping of topsoil).
- Provide a report back at site meetings (during the pre-construction and construction phase(s)) to report on and assess the success of the environmental control and to determine any further environmental control measures which may be necessary;
- The ECO should visit the site **every second week** during the **civil construction phase(s)** and rehabilitation thereof. The ECO is to be available at any time as required by the contractors, resident engineer or authorities;
- The ECO should conduct a **monthly** inspection of the **rehabilitation phase** following civil construction to ensure success until the area is suitably reinstated and secure – anticipate 3 months;
- **Monthly monitoring reports** must be submitted to the Municipality and DEADP during the **civil construction phase**;
- The ECO is to submit a **completion report** to the competent authority (**DEADP- George Office**) and **applicant** at the following stage:
 - upon completion of the civil construction phasethis reports need to be submitted **before** the EA lapses;
- The ECO has the discretion to undertake more frequent visits if he/she feels this is justified due to the actions of the contractors and to make ad hoc visits in order to ensure compliance;
- The ECO is to keep a site diary; a photographic record of activities taking place on site as well as copies of all monthly reports submitted to the Department, a schedule of current site activities including the monitoring of such activities and complaints register of all public complaints and the remedies applied to such complaints;
- It must be noted that the **ECO HAS THE AUTHORITY TO SUSPEND WORK ON SITE FOR ANY ACTION BEING UNDERTAKEN THAT DOES NOT COMPLY WITH THE ENVIRONMENTAL REQUIREMENTS OF THE SITE**. Such a stop order has immediate effect and will be communicated through the resident engineer to the contractor responsible.

6 MANAGEMENT OUTCOMES AND OBJECTIVES FROM THE BASIC ASSESSMENT REPORT (BAR)

Table 1: Impacts, actions and outcomes

Environmental / Social Aspect	Impact Management Objective	Mitigation / Management Measures	Impact Management Outcome (Performance Indicator)
Vegetation clearance and habitat disturbance	Minimise loss of indigenous vegetation and disturbance to natural areas Limit disturbance to protected trees	- Restrict clearing to the minimal during construction. - Retain and protect the southern vegetated buffer area on Erf 2667. Only approved service installation allowed within this area. Demarcate this area during construction - Rehabilitate disturbed areas within the corridor with indigenous vegetation. - Apply for a Section 15 NFA licence for the disturbance, pruning, removal and / or transplant of protected Milkwood and Cheesewood trees. Try to avoid and incorporate into design first	No unnecessary clearing; buffer retained; disturbed areas rehabilitated with indigenous vegetation; low residual impact. Unnecessary disturbance to protected trees
Soil erosion and sedimentation Increased stormwater runoff	Prevent soil erosion and sediment transport from disturbed areas Prevent runoff Prevent pollution	- Install temporary silt fences and berms. - Stabilise slopes immediately after construction. - Schedule earthworks in dry periods. - ECO to inspect after heavy rain. - Implement stormwater management plan - Implement infiltration and attenuation measures  Extract from stormwater management plan showing soakaway pond position – note, recreational facility final design need to take the stormwater pond and services into account - Maintain stormwater system	No visible erosion or sedimentation; stable slopes; compliance in ECO reports. Functioning stormwater management system Runoff infiltrates naturally rather than causing concentration
Nuisance impacts during construction	Dust and noise as a result of construction activities	Implement mitigation measures contained in EMPr – dust suppression measures when required (water spraying), construction to be undertaken according to normal working hours. Demarcation to keep the construction.	Managed potential nuisance impacts

Traffic and access management	Ensure safe and efficient movement of vehicles and pedestrians	- Implement recommendations made in the TIA (UDS Africa) - Use existing access roads. - Provide flagmen during material delivery.- - Avoid peak traffic hours. - Maintain safe access for local residents.	No road safety incidents; uninterrupted access; positive ECO/contractor compliance reports.
Visual impact	Ensure visual integration of the development with surroundings	Implement visual specialist recommendations - Planting of medium sized/ wind hardy indigenous shrubs and trees in the POS along the R102. The entrance to Toekoms should also include some feature trees to soften the entrance into the residential area. To ensure that the trees survive, a 2-year maintenance plan should be implemented by the municipality. Trees that do not survive, should be re-planted. As municipal infrastructure is located within the area, the discretion of the Environmental Control Officer (ECO) should be applied when selecting and positioning trees. Care must be taken to ensure that root systems do not compromise or damage underground or surface infrastructure, such as pipelines, cables, and paving. - Along the buffer area, the existing vegetation should be retained to allow for immediate visual screening. - The areas adjacent to the R102 are currently single-storey. This is likely to change as the general height restriction is 8m. The row of houses along the R102 should not be higher than 8m.	Development visually integrated with Toekoms context; landscaped areas maintained; buffer intact.

7 SPECIFICALLY REQUIRED ENVIRONMENTAL MANAGEMENT PRACTICES

7.1 PRE-CONSTRUCTION PHASE

7.1.1 VISUAL MITIGATION MEASURE TO IMPLEMENT DURING DESIGN

The areas adjacent to the R102 are currently single-storey. This is likely to change as the general height restriction is 8m.

The row of houses along the R102 should not be higher than 8m – municipal building plan approval to ensure compliance.

7.1.2 APPROVALS TO BE IN PLACE

The following must be in place before commencement of activities and the contractor must ensure that he has a copy of the approval on-site and implements all conditions in addition to this EMPr:

1. Environmental authorization (EA)
The EA is likely to request commencement notification
2. Building plan approvals
3. **National Forest Act (NFA) licence:** the property has **protected** Cheesewood and Milkwood trees as indicated on the plan below. The construction phase will require the disturbance, removal, transplant and / or pruning of some of the trees that will be located within a house erf. A NFA licence from Department of Forestry **MUST** be in place prior to any activities undertaken with regards to the trees. A licence application can only be made once the EA and Building Plan Approvals are in place.
It will be the Municipality's responsibility to comply with any conditions set out in the licence.

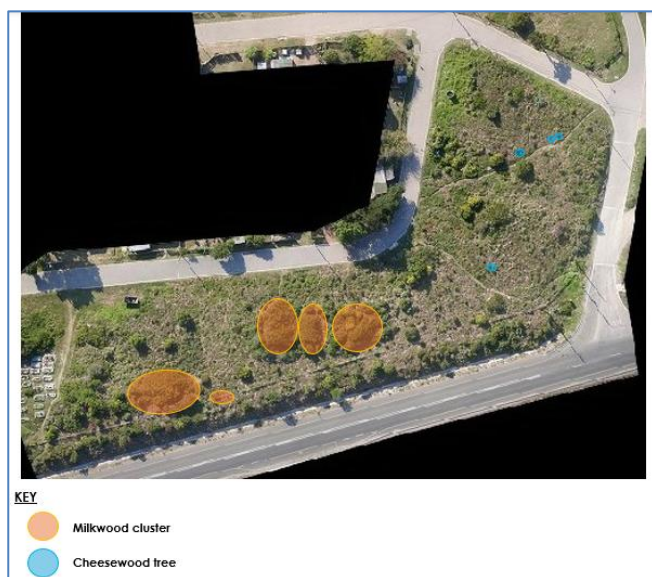


Figure 11: Plan showing the location of the protected trees.

7.1.3 ENVIRONMENTAL INDUCTION

- All construction staff **must** be briefed by the ECO in an environmental education programme regarding the environmental status and requirements of the site, **prior** to any activities commencing on site. This will include providing general guidelines for minimizing

environmental damage during construction, as well as education with regards to basic environmental ethics, such as prevention of littering, the lighting of fires, etc. Records of environmental training (attendance register and training content) must be kept. Please refer to Annexure D of this EMPr.

- Induction required for **all contractors** prior to them commencing on site.

7.1.4 METHOD STATEMENT

- When requested by the ECO, before the contractor(s) begins each construction activity the contractor and Site Agent shall, **prior to the commencement** of such activity involving construction, maintenance or rehabilitation, give the ECO a written plan setting out the following:
 - Location of the construction camp
 - Storage of construction materials and hazardous substances (if any)
 - Location of any stockpile sites for topsoil
 - Location of any stockpile sites for subsoil
 - Solid waste
 - Wastewater
 - Erosion and sedimentation control
 - Fire control
 - Protection of natural features/ open space
 - Cement and concrete batching

The ECO is to approve the method statement **before** the works may commence. A pro-forma method statement showing what is required is attached in Annexure E.

7.1.5 PLANT RESCUE AND VEGETATION CLEARING

The clearance of vegetation of all development areas, marked red on the plan below, except southern open space area (green on plan below) will be required.

Within the open space area along the road, only approved construction activities such as installation of services as described on services plans may be undertaken. When work in this area is require, it must be done by hand and a narrow working area of approximately 1-2m will be allowed.

It should be noted that vegetation pruning of the R102/Helderkruin Avenue intersection will be required and are to be maintained in order to provide sufficient line of sign (both directions).

It is recommended, planting vegetation that can be maintained at an appropriate height and form to preserve adequate sight distance. This will include pruning trees up so that they do not obstruct the view when seated in a vehicle near the entrance.

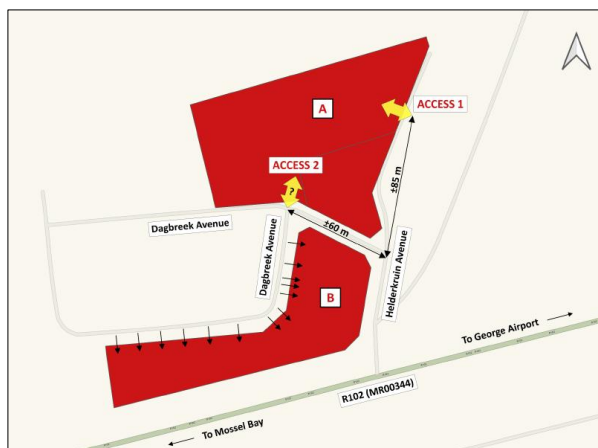


Figure 12: Plan to show R102 / Helderkrui Avenue intersection

All areas outside of the property boundary's will be regarded as no-go areas. When no work is to be undertaken in the open space green area, it will be regarded as a sensitive no-go area.

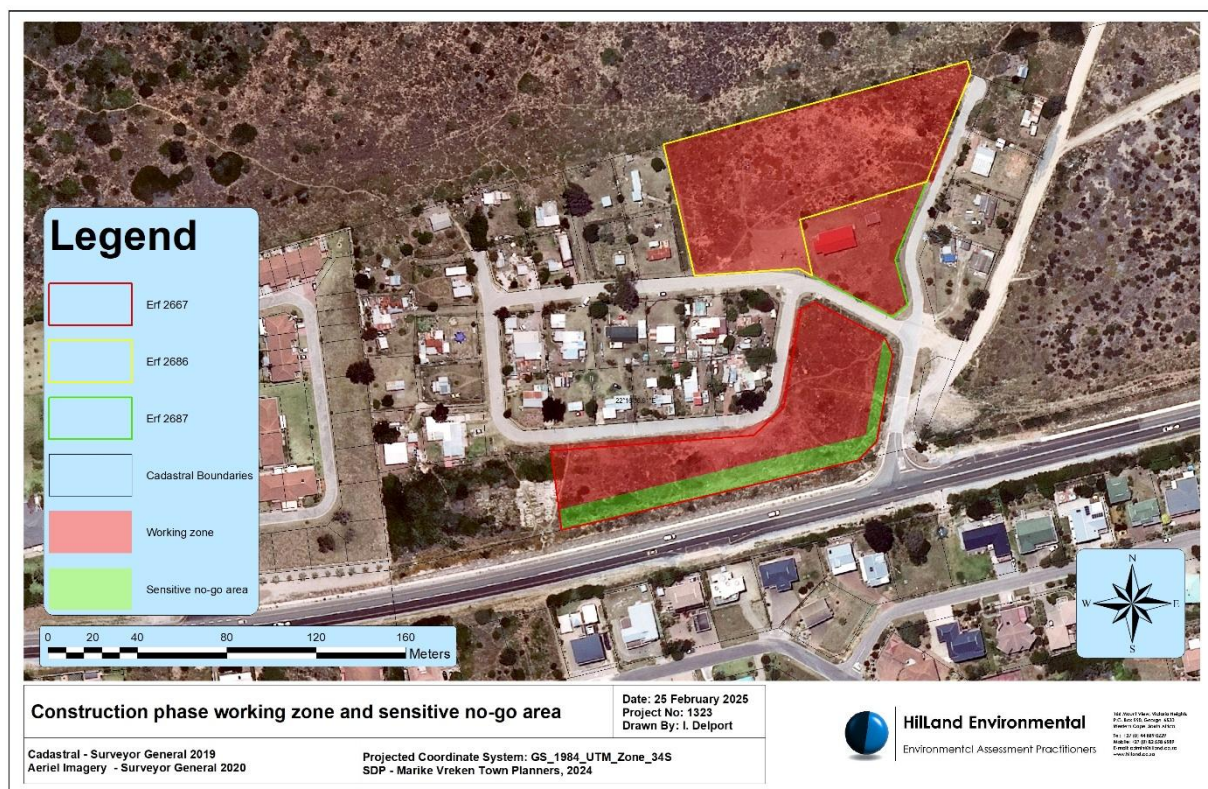


Figure 13: Construction phase working zones and open space areas where only ECO approved activities may be undertaken

The working areas **must** be demarcated.

The working areas must be inspected by the ECO and contractor to identify any potential plants that needs to be rescued and/ or avoided.

A record of rescued plant is to be retained (please refer to the attached table that should be filled out in Annexure F).

Any transplantable species (shrubs, succulents, geophytes etc.) which occur within the construction areas should be either stored in an **on-site nursery** for later use in the landscaping phase or directly transplanted into the surrounding open space conservation area.

For successful transplant a sod including the desired plant with its roots intact should be removed and replanted. Plants that are to be kept within the temporary nursery should be planted into black plastic bags and watered (as required).

All cut vegetation shall be chipped and used as mulch or disposed of off-site at an approved disposal site. Stockpiling of cut vegetation shall only be permitted in areas indicated by the ECO. No cut vegetation shall be burnt on site.

The pruning, removal, transplant and / or disturbance of **protected plant and tree species** be required, the relevant permit or licence must be in place prior to such activity taking place. The ECO is to advise should such plant or tree be present and what procedure must be followed. All conditions contained in such a permit/licence must be implemented and adhered to by the Municipality / contractor (as the case may be).

During construction it is the contractor's responsibility to remove any alien seedlings that emerge due to construction activities.

7.1.6 PROTECTION OF FAUNA (ANIMALS)

- The removal, damage or disturbance of animals must be avoided. An animal search and rescue prior to the commencement of construction will be required.
- Should movement be required the ECO should be requested to assist (e.g., relocate snake in the construction trench etc.)
- The contractor(s) shall be responsible for ensuring all employees are aware of the need to prevent any harmful effects on wildlife on or around the construction site as a result of their activities.
- The contractor(s) shall ensure that no hunting, trapping, shooting, poisoning or otherwise disturbance of any fauna takes place.
- **Prior** to the clearing of vegetation or use of equipment on areas that could be considered habitats or movement corridors for small animals (i.e., grassy verges, clumps of shrubs, trees), animal rescue of small, slow-moving species is to be conducted in conjunction with the ECO. Any rescued animals including tortoises and other reptiles are to be safely relocated to a nearby undisturbed natural area that does not form part of the construction area.

7.1.7 TOPSOIL RESCUE

- As topsoil is a valuable resource, it must be stripped from civil construction areas **before work commences in that specific area.**
- Disturbance of vegetation and topsoil is only to take place according to a programme in approved construction areas as the work in that area is due to begin – this is to avoid large areas being exposed to erosion risk when work is not taking place in that area.
- The topsoil must be stockpiled for use in rehabilitation and landscaping and must **not** be contaminated with other building materials and / or subsoil.
- Topsoil can only be removed from the site with the written approval of the ECO.
- Topsoil stockpile sites must be approved by the ECO before they are used.
- The vegetation roots are to be removed together with the topsoil and are to be stockpiled for use during the rehabilitation phase.
- The stockpiles must be protected against erosion including wind.

- Vegetation can be permitted to grow on the stockpile to keep it secure and prevent wind movement. No alien invasive plants may grow on the stockpile and will need to be removed regularly before they can set seed.
- The soil removed for construction of **services** (which will all be underground such as the sewage / water network, stormwater outlet structures etc.) must not be removed, but placed to the side of the trench, while the sub-soil is placed to the other side. The soil is returned in the same order with the vegetated topsoil closing the trench and stimulating re-growth.
- No topsoil stripping is to take place prior to the completion of the plant rescue programme.
- Any surplus subsoil that needs to be stockpiled for cut and fill operations must be stockpiled in an approved stockpile area as agreed to by the ECO.
- Stockpiles must be screened and protected from wind and water erosion.
- Silt fencing needs to be installed before construction works commence to ensure that there is limited movement of silt on site. ECO to advise where this will be required.

7.1.8 DISCOVERY OF HERITAGE RESOURCES

Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape (HWC) must be notified without delay. The HWC Chance Finds Procedure and Accidental Finds Procedure must be implemented – see Annexure I

7.2 CONSTRUCTION PHASE

7.2.1 ACCESS, TRAFFIC CONTROL AND CONTRUCTION OF ENTRANCE

Access to the property will be gained from the R102, Helderkrui and Dagbreek Avenue. Internal roads are indicated on the SDP.

Movement of construction vehicles must be restricted to the existing roads and roads/driveways as indicated on the SDP – no additional temporary access road may be created.

Access to the area is to be monitored during construction. Constant regard must, therefore, be taken to safety. If applicable, dangerous areas must be adequately cordoned off to prevent accidental injury.

The contractor(s) will ensure that vehicles leaving the site are clean and, wherever possible, **do not** deposit mud, any other earth material and concrete on the surface. **Where this is unavoidable, it must be cleaned on a daily basis.**

During the construction phase, it is essential that traffic flow is correctly managed. This implies **appropriate** signage and visible demarcation of the work area and the areas which traffic must adhere to (if applicable).

7.2.2 SITE AGENT

The contractor shall appoint a responsible agent to ensure that they comply with this EMP and all its conditions. This party is to report directly to the ECO and will need to attend the induction and be briefed on the requirements by the ECO.

7.2.3 LOCAL LABOUR

It is strongly recommended that local labour is used for the construction phase of this project. "Local" implies people within the Mossel Bay area.

7.2.4 DEMARCATION OF NO-GO AREAS

All people working on site must be made aware of the boundaries in which work is to be done (as described under Section 7.1.5.).

Southern open space area – only approved activities such as service installation to be undertaken. ECO to be notified and to approve the work prior to being undertaken within this area. If no work is being undertaken within this open space area, it will be regarded as a no-go area in addition to areas outside of the property boundaries, where no work is to be undertaken, that will also be regarded as no-go areas.

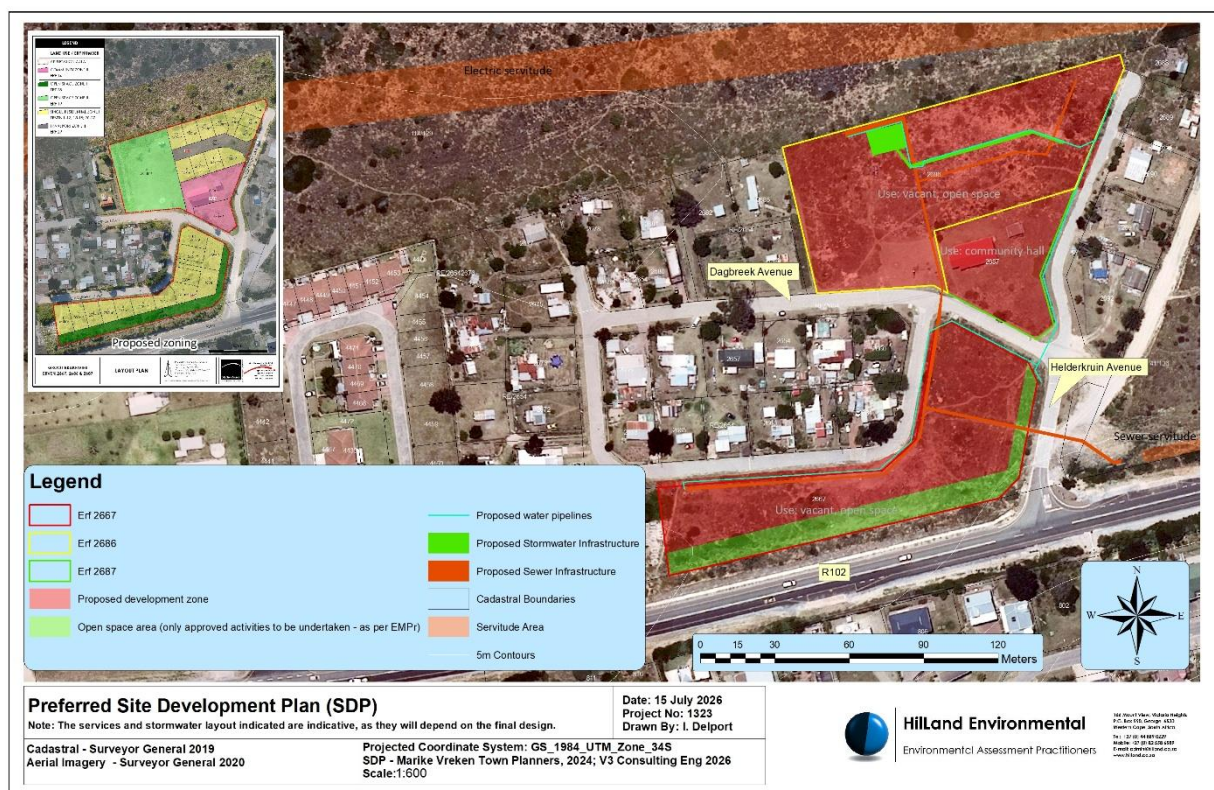


Figure 14: Plan showing the working areas (red), southern open space that will be regarded as no-go areas for unauthorised activities

The following applies:

- **All contractors** - all areas **outside** that of the defined works is deemed a no-go area.
- Development areas (where work are being undertaken at a given time) fenced off for the entire period of the construction phase. This is to prevent unnecessary disturbance to the surrounding vegetation. All areas outside of the demarcated working areas will be regarded as **no-go areas**.
- Disturbance within the work area is to be kept to the minimum, as all disturbed areas will require rehabilitation (placing topsoil and re-seeding to ensure vegetative cover) on completion of the work by the contractor.
- All construction activities must be **restricted** to the demarcated areas to ensure that no further

disturbance into the surrounding vegetation.

- No encroachment or activities may take place outside the work areas.
- Storage sites for construction material and access must be approved by the ECO prior to commencing (to be located within erf boundaries, or agreed to disturbed area, only and areas will require rehabilitation after use).
- No-Go areas will be required to be demarcated by the contractor to ensure that they are visible at all times, to all personnel.
- Methods of demarcation will be agreed with the ECO and may include danger tape, rope, fencing, shade cloth, mulch bags, wire fencing etc.
- In light of the above, should access be required through a no-go area, permission must be obtained from the ECO in writing prior to the use of such an area.
- **Existing and newly created driveways/roads are to be used, no creation of additional roads.**
- The areas of special consideration may relate to the external service lines entering and leaving the property and / or to be installed within the southern open space area, e.g. the sewage line (if applicable). **All such activities must first be approved by the ECO prior to the commencement of activities.** Special conditions will be applied to each of these cases.
- Adjacent properties to the construction site may not be entered by any construction staff if permission is not granted by the owner.
- The ECO should monitor adherence to the No-Go area policy.
- Access into the No-Go areas by personnel is strictly forbidden (i.e. Work breaks such as lunch are not permitted outside the defined work area - no entry into the neighbouring properties or open space areas). A spot fine will be imposed against the contractor in the event of contravention of the no-go policy up to a maximum of R5 000 per incident).

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Demarcation of no-go areas and protection of southern open space area	Development of the Toekoms site	The contractors is to comply with the requirements of the EMPr Visual screening and demarcation of working areas is required by means of shade netting (around development zones) and danger tape / netting (for any trenches) Existing and newly created driveways/roads must be used, no additional roads may be created	During the construction of the development as per the SDP	ECO and contractor to continually monitor compliance during construction	ECO to conduct inspections of construction works	Contractor to implement no-go demarcation ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report

7.2.5 CONSTRUCTION SITE CAMP

- If a campsite is to be set up during construction, the area must be indicated and approved by the ECO and municipality (through the submission of the **method statement** by the contractor).
- Ablution facilities (chemical toilets) are to be provided at the campsite for use of the staff (one toilet per 15 people).
- A **fenced-off** area must be created within the campsite for refuse and waste management. **Refuse** is to be collected in two separate containers, one for recyclable materials (glass, metal, paper and plastic) and the other for non-recyclable materials. These are to be disposed of at the various approved waste disposal sites.
- **No** accommodation with the exception of a night watchman (if applicable) is permitted on site by contractors or their staff during the construction period.
- **No open fires are permitted.**
- Storage of all materials required for the contract must occur within this campsite, or otherwise approved area (by the ECO).
- **Any concrete batching plant areas** are to be approved by the ECO prior to utilisation and must be equipped with suitable settling ponds and trapping mechanisms to ensure that contaminated water does not leave the restricted area.
- No ready-mix trucks are permitted to rinse their tanks on site or along the access roads to and from the site. **Any spillage is to be immediately cleaned by the responsible contractor / supplier.**
- Adequate signage must be erected at the construction site to ensure that safety regulations are adhered to.

7.2.6 STORAGE OF CONSTRUCTION MATERIAL

The following must be adhered to:

- All stockpile sites to be approved by the ECO, **prior** to the commencement of stockpiling. To be within the development area. No storage permitted in open space area (south).
- **No** construction material is to be stored outside of the development area of the properties without written permission from the owner and ECO.
- All stockpile sites to be properly demarcated with silt-fences and/or danger tape, where necessary (if located outside of the development area subsequent to approval from the ECO).
- Silt protection measures around stockpile sites may be required.
- No hazardous materials to be stored on-site like diesel, petrol etc. without written approval by DEADP.

7.2.7 FIRE PROTECTION

The contractor should take all reasonable and active steps to avoid increasing this risk of fire (especially to prevent damage to surrounding properties and vegetation). **No** open fires or naked flames for heating or cooking shall be allowed anywhere on site. The contractor shall ensure that all personnel are aware of the fire risk and the need to extinguish cigarettes before disposal. Cigarettes may **not** be disposed of onsite and must be disposed of properly in receptacles for this purpose.

No burning of waste on ANY PART of the site should be permitted.

The contractor shall identify the authorities responsible for fighting fires in the area and shall liaise with them regarding procedures should a fire start. The contractor shall ensure that his staff are aware of the fire danger at all times and are aware of the procedure to be followed in the event of a fire. The

contractor shall also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency. The contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it.

7.2.8 WASTE PROTECTION

It is recommended that an integrated waste management approach must be used that is based on waste minimisation and must include reduction, recycling, re-use and disposal where appropriate. Only approved waste disposal methods are allowed. The contractor shall ensure that all site personnel are instructed in the proper disposal of all waste. The contractor shall ensure that **sufficient disposal facilities** are available on site.

Recycling must be encouraged on-site and recycling bins must be provided and clearly marked.

Disposal of all waste materials must be done at suitable facilities. **No dumping** of any waste material on or off-site is permitted.

The contractor shall ensure that the site is maintained in a **neat and tidy** condition and kept **free of litter (entire development area)**. Measures must be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work, the contractor shall provide **litter bins, containers** and **refuse collection facilities** for later disposal. Litter to be removed from the site on a **daily** basis (through daily litter picking before the site is closed for the day). Rubbish bins must be provided on-site and regularly cleaned / emptied.

Solid waste may be temporarily stored on-site in a **designated area** approved by the ECO prior to collection and disposal. Solid waste must be removed on a **weekly basis** to a licensed municipal waste site.

Waste storage **containers** shall be covered, tip-proof, weatherproof and scavenger proof. The **waste storage area** shall be **fenced off** to prevent wind-blown litter.

The contract staff must be clearly briefed on the 'no litter policy'. **The site is to be kept clean of litter, even if it is not caused by the contractor staff.**

No burning, on-site burying or dumping of waste shall occur. Used (empty) **cement bags** shall be collected and stored in **weatherproof containers** to prevent windblown cement dust and water contamination. Used cement bags may **not** be used for any other purpose and shall be disposed of on a **weekly** basis via the solid waste management system. No illegal dumping of construction material may take place.

Any hazardous waste shall be disposed of at an approved **hazardous landfill site**. The contractor shall provide **disposal certificates** to the ECO.

The construction site must be kept clear of litter (Including off-cut construction material, wire, cement bags, lunch packs etc.) at all times. No unused construction material may be left on site.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Construction of buildings, associated infrastructure and their associated waste	Development of Toekoms	Waste management should be done in accordance with the EMPr	During the construction of the development	ECO and contractor to continually monitor the site during construction	ECO to conduct inspections of construction works	Contractor to implement sound waste management ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report

7.2.9 HEALTH AND SAFETY

- The Occupational Health and Safety Act (Act number 85 of 1993) must be complied with.
- The H&S Officer is to copy the ECO in on his/her reports for record purposes.

7.2.10 ABLUTION FACILITIES

Contractors must provide chemical ablution facilities for all construction personnel working on the site. The number of chemical toilets required must adhere to the H&S requirements applicable at the time of the contract.

Toilets shall be of a **neat** construction and shall be provided with doors and locks and shall be secured to prevent them from blowing over.

Sanitation provision and servicing shall be to the satisfaction of the environmental control officer (ECO).

The contractor shall ensure that the toilet(s) are emptied **regularly** and also **before** weekends and public holiday periods.

Failure to use the chemical toilet provided and making use of the vegetation either on or off-site **will result in maximum penalty fine being awarded in addition to requiring the contractor to clean up.**

7.2.11 SOIL EROSION AND STORMWATER MANAGEMENT

- Stringent mitigation measures must be imposed during construction to minimise runoff, possible silt run-off and contamination of water leaving the site, with the use of silt-fencing, rows of onion bags, mulch, brushwood, sandbags and deflection berms (the choice depending on the situation). These mitigation measures are essential in all exposed areas.
- Areas requiring erosion control mechanisms are to be identified by the contractor and ECO. Instructions by the ECO are to be given to the contractor as required.
- In the event of erosion damage or silt movement, the contractor will be liable for a fine and is responsible for the clean-up and required to reinstate the conditions to normal as determined by the ECO.
- To decrease the risk of water pollution, all construction materials must be secured (e.g. only stockpiling at a pre-determined site, around which there must be a silt protection boundary) so that there is no wash away.
- In the case of contaminated water run-off, silt can be stopped by means of sandbags and following the rain the contaminated area(s) should be cleaned. All measures must be taken to

avoid contaminated water entering any water bodies or open space conservation area in any way.

- It is the responsibility of the **contractor** working inside any trench at any specific time to ensure that their works are protected from damage which may be caused through runoff of rainwater inside the trench. The use of sandbags, mulch bags or any other appropriate methods of slowing down the flow of water within a trench is required.
- Stormwater from the proposed Development will be directed to the north and discharged into the Public Open Space, where it will soak into the natural permeable soil. Provision is made for a stormwater detention pond on the Public Open Space erf.

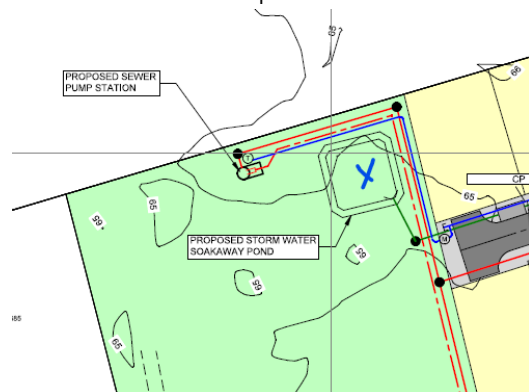


Figure 15: Plan to show the proposed stormwater soakaway pond marked by the blue cross (V3 Consulting Engineers, 2025)

– note the recreational facility will take the pond and services into account

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Potential erosion during the construction of the proposed SDP	Development of Toekoms	The contractor is to comply with the EMPr requirements regarding erosion prevention. Emergency erosion protection materials (sandbags, geotextile fabric, shade cloth and/or biddum) are to be kept on-site to treat erosion area as soon as it appears	During the construction of the development as per the SDP	ECO and contractor to continually monitor the site during construction for signs of potential erosion	ECO to conduct inspections of construction works	ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report.

7.2.12 CONCRETE AND CEMENT WORKS

- Mixing areas must be defined on-site and **clearly** demarcated.
- Cement powder has a high alkalinity pH rating, which can contaminate and affect both soil and water pH dramatically. A shift in pH can have serious consequences on the functioning of the soil, water organisms and plants.
- All concrete must be mixed on trays / on thick plastic and not on the soil.

- **Bunding** through the use of sandbag walls around any mixing areas is recommended.
- When using Readymix concrete, care must be taken to prevent spills from the trucks while offloading.
- **Cement contaminated water may not enter any areas adjacent outside of the development areas.**
- The contractors and sub-contractors need to ensure that the used cement bags do not create a litter problem.
- Where cement is placed directly on the ground, the contaminated soil must be removed and disposed of appropriately.
- Excess or spilt concrete should be disposed of at a suitable registered landfill site.
- No water for the mixing of cement may be sourced from any river system/dam etc.
- **No** construction equipment may be cleaned near a water body (in a designated cleaning area that is well bunded only).
- **No** mixing to be done outside the development areas. **No mixing to be done in or close to environmentally sensitive areas – southern open space area.**

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Cement and concrete works	Development of Toekoms	Cement and concrete works are to comply with the EMPr Appropriate bunding and mixing on impermeable surfaces must be implemented	During the construction of the development as per the SDP	ECO and contractor to continually monitor the site during construction	ECO to conduct inspections of construction works	Contractor to implement mitigation measures as per the EMPr ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report

7.2.13 NUISANCE MEASURES (NOISE, DUST)

The construction phase should comply with the normal Municipal building control requirements.

Dust mitigation should not be an issue on site- spraying of water when dust mitigation is required or covering areas with mulch.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Construction phase of the development	Development of Toekoms	Contractor to comply with SANS 10400 regulations pertaining to noise creation. Implement dust mitigation measures when required	During the construction of the development and associated activities	ECO and contractor to continually monitor the site during construction	ECO to conduct inspections of construction works	Contractor to implement mitigation measures as per the EMPr ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report

7.3 REHABILITATION PHASE OF COMPLETED CONSTRUCTION WORKS

- **Stabilization of disturbed area as a result of civil construction** must be rehabilitated to the satisfaction of the ECO. This will include, but is not limited to the following:
 - use of sandbags, mulch bags as erosion ministration measures, seeding of bare areas with an indigenous grass seed mixture / the use of indigenous grass sods (ECO to advice) etc.
- The ECO is to advise on the rehabilitation measure that should be implemented as it will be case specific.
- No bare or exposed areas are to be left for a period of more than 2 months (if construction is due to commence on that exposed are within 2 months no rehabilitation is required, if construction is to commence after a 2-month period, the area must be immediately rehabilitated and must remain stabilized until the future construction works commence).
- Rehabilitation at the stormwater system can be done through the installation on additional silt-fencing and re-vegetation. All stormwater outlets must be protected against erosion at all times and continual maintenance thereof will be required.
- Any silt traps need to be cleared on a weekly basis during the construction phase to ensure that silt traps remain effective.
- Contractor to keep control of any alien seedlings emerging in their work areas due to soil disturbance.

Any damage to areas outside of the development areas must be reinstated to the state it was before construction commenced and must be done to the satisfaction of the ECO.

Rehabilitation of all damaged areas will include, but is not limited to the following;

- All building rubble must be completely removed and disposed of at an approved landfill site;
- Compacted topsoil must be raked loose;
- Contaminated soil must be disposed of at an approved landfill site;
- Removal of any alien seedlings;
- Indigenous grass seed can be sowed within required areas (as indicated by the ECO);
- Implementation of additional erosion control methods as required.

7.4 SOUTHERN OPEN SPACE AREA MANAGEMENT

Rehabilitation of the open space area needs to be done through removal of alien invasive vegetation and planting of additional shrubs and trees as recommended by the visual specialist as part of the end of the civil construction phase:

"Planting of medium sized/ wind hardy indigenous shrubs and trees in the POS along the R102. The entrance to Toekoms should also include some feature trees to soften the entrance into the residential area. To ensure that the trees survive, a 2-year maintenance plan should be implemented by the municipality. Trees that do not survive, should be re-planted. As municipal infrastructure is located within the area, the discretion of the Environmental Control Officer (ECO) should be applied when selecting and positioning trees. Care must be taken to ensure that root systems do not compromise or damage underground or surface infrastructure, such as pipelines, cables, and paving" (VRM Africa).

Table 2: Specialist recommended species to plant (VRM Africa)

Scientific Name	Common Name	Notes / Description
<i>Osyris compressa</i>	Cape sumach	Small evergreen tree with glossy leaves and reddish fruit; found in coastal forests and thickets.

<i>Diospyros dichrophylla</i>	Poison star-apple	Shrub or small tree with shiny green leaves and edible fruit; found in coastal and forest margins.
<i>Grewia occidentalis</i>	Crossberry	Hardy shrub or small tree with purple star-shaped flowers and four-lobed edible fruits.
<i>Pittosporum viridiflorum</i>	Cheesewood	Evergreen tree with fragrant flowers and sticky orange seed capsules; used ornamentally.
<i>Searsia crenata</i>	Dune Crowberry	Dense shrub common in coastal areas; produces small berries and is used for dune stabilization.
<i>Searsia glauca</i>	Blue Kuni-bush	Shrub with bluish foliage; drought-resistant and suitable for coastal gardens.
<i>Pterocelastrus tricuspidatus</i>	Candlewood	Medium tree with aromatic leaves and orange-brown bark; important for coastal forest structure.
<i>Tarchonanthus littoralis</i>	Coastal Camphor Bush	Grey-green aromatic shrub/tree with woolly white flower heads; tolerant of wind and salt spray.
<i>Sideroxylon inerme</i>	White Milkwood	Evergreen tree with a dense canopy and milky sap; culturally and ecologically significant along the coast.
<i>Osteospermum moniliferum</i>	Bitou bush	Evergreen flowering shrub

The vegetation at the R102 and Helderkrui will need to be regularly pruned in order to have an adequate line of sight for traffic safety. Pruning to a height where they do not obstruct the view when seated in a vehicle near the entrance.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Rehabilitation phase							
Rehabilitation of damaged areas	Development of Toekoms	Rehabilitation measures should be implemented as per the EMPr All building rubble must be completely removed and disposed of at an approved landfill site; Compacted topsoil must be raked loose; Contaminated soil must be disposed of at an approved landfill site Maintain adequate line of sight	Upon completion of the construction phase	Contractor to implement mitigation measures ECO and contractor to monitor rehabilitation phase	ECO to conduct inspection following rehabilitation and advise accordingly (and should any additional inspection be required). Successful rehabilitation must then be signed off by the ECO	Contractor to implement mitigation measures ECO and contractor to monitor rehabilitation phase	ECO to monitor during rehabilitation phase. ECO to submit final compliance monitoring report upon completion of construction and rehabilitation and sign-off environmental compliance. To be included within compliance report.

8 MONITORING REQUIREMENTS AND REPORTS

- An **induction** meeting with the ECO and all contractors to ensure that they are aware of the requirements of this EMPr and the EA before the commencement of the construction phase (home building, access, driveways and associated pipeline installation). Induction registers to be kept for all contractors on site.
- The ECO must inspect work areas prior to civil construction commencing and demarcate no-go areas or indicated areas of sensitivity.
- ECO to issue immediate instructions for remedial work where necessary.
- The ECO should visit the site **every second week** during the **civil construction phase(s)** and rehabilitation thereof. The ECO is to be available at any time as required by the contractors, resident engineer or authorities;
- The ECO should conduct a **monthly** inspection of the **rehabilitation phase** following civil construction to ensure success until the area is suitably reinstated and secure – anticipate 3 months;
- **Monthly monitoring reports** must be submitted to the Municipality and DEADP during the **civil construction phase**;
- The ECO is to submit a **completion report** to the competent authority (**DEADP- George Office**) and **applicant** at the following stage:
 - upon completion of the civil construction phasethis report needs to be submitted **before** the EA lapses;

9 AUDIT REQUIREMENTS

The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the relevant management plan, must adhere to the following programme:

- Auditing of the non-operational aspects of the proposed development
- **the final construction phase Environmental Audit Report(s) must be submitted to the Competent Authority within ninety (90) days of completion of construction activities; If the construction phase exceeds 12 months, then an annual construction audit must be submitted in addition to the final construction phase audit at the end of the civil construction phase.**
- be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or EAP who conducted the EIA process.

10 PENALTIES FOR NON-COMPLIANCE

Penalties in terms of Chapter 9 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, are applicable for any action, which leads to damage to the natural environment.

In addition to the penalties in terms of the Act (NEMA), spot fines up to a maximum value of R10 000 per offence can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMPr and EA (FINES ISSUED WILL INCREASE EXPONENTIALLY FOR REPEAT OFFENCES).

In the event of damage being caused, the contractor will be responsible for the cost of cleanup, repair or rehabilitation as necessary, as well as being liable for the fine.

A trust fund is to be established for the collection of fines, and the spending of this fund is to be at the discretion of the ECO for environmental rehabilitation of the area and must be documented.

11 OPERATIONAL PHASE

The Municipality is bound by their general Duty of Care, as stated in Section 28 of the National Environmental Management Act, 1998 (as amended).

11.1 ONGOING ALIEN INVASIVE CLEARING AND FOLLOW-UP

Ongoing systematic clearing of alien invasive vegetation must continue in the Open Space even as per the standard municipal open space management maintenance protocols.

No beneficiaries/landowners may grow listed alien invasive species on their properties in accordance with NEMBA.

The following listed alien invasive species were noted by the botanical specialist prior to development commencement and are likely to be present within open space area or emerge following construction. The table further provides control methods that may be implemented to remove these species.

Table 3: Alien invasive species noted, and clearing methods

Species and common name	Accepted control methods	Herbicides recommended (trade names)	Visual representation of the plant species
<i>Acacia cylvops</i> Rooikrans	Seedling – hand pull or foliar spray Young/adult – cut and apply herbicide	- Confront, Astra - Tomahawk - Garlon 4, Garlon 480 EC, Nuvogon 480EC, Tribel 480 EC, Triclon, Viroaxe, Vulture 480 EC - Confront super - Garlon max - Stumpout	 Source:environment.co.za
<i>Anredera cordifolia</i> Maderia vine	All – foliar spray	- Confront 360 SL - Plenum 160 ME, Gladiator 160 ME	 Source:environment.co.za

<i>Datura stramonium</i> Common thorn apple	All – hand pull or foliar spray	• 2,4-D amine • Extreme, Nikanor • Springbok • Glyphosate 500, Kilo, Muscle up • Glyphosate 180		Source:environment.co.za
<i>Kalanchoe delagoensis/</i> <i>Bryophyllum delagoense</i> Chandelier plant	All – hand pull	None		Source:environment.co.za
<i>Opuntia monacantha</i> Drooping prickly pear	Hand pull or stem injection	• Glyphosate 360, Springbok		Source:environment.co.za
<i>Ricinus communis</i> Castor oil plant	All – hand pull or cut and herbicide application	• Confront, Astra • Plenum • Chopper, Hatchet		Source:environment.co.za

11.2 STORMWATER MANAGEMENT

The municipality must ensure that the stormwater management infrastructure is maintained and that the system remains free of litter and that detention ponds are maintained in a functional state.

11.3 HOME BUILDING

Home building by beneficiaries will need to comply with the standard municipal building plan and building control requirements.

11.4 FACILITY BUILDING

The municipality will need to comply with their standard municipal building plan and building control requirements when installing the communal facilities and recreational facilities planned for the area.

11.5 EROSION PREVENTION AND CONTROL

The development and open space areas must be regularly monitored by the Municipality during the operation to identify areas susceptible to erosion. The required erosion control measures include (but not limited to); sandbags, mulch filled orange bags, swales, geotextile fabric, bidim, brush layering, replanting should be used etc.

12 CONCLUSION

This EMPr is binding on the Municipality and all contractors on site working on behalf of the Municipality and constitutes Best Practice for construction activities.

This EMPr may be updated with specific conditions required by the Environmental Authorisation (EA), once issued.

The Construction phase EMPr is applicable to initial civil construction.