



DRAFT BASIC ASSESSMENT REPORT

THE PROPOSED UPGRADE AND EXPANSION OF THE BURGERSDORP CORRECTIONAL FACILITY, WALTER SISULU LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE

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Department:
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Prepared by:

TERRATEST (PTY) LTD

PORT ELIZABETH

P.O. Box 27308

Greenacres

6057

Tel: 041 390 8730

Email: brentk@terratest.co.za

Project Leader: Kim Brent



VERIFICATION PAGE

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CARRIED OUT BY: TERRATEST (PTY) LTD PO Box 27308 Greenacres 6057 Tel: 041 390 8730 Email: brentk@terrartest.co.za			PREPARED FOR: BVi CONSULTING ENGINEERS (PTY) LTD on behalf of THE NATIONAL DEPARTMENT OF PUBLIC WORKS Corporate Place 3 rd Floor 66 Ring Road Greenacres Tel: 041 373 4343 Email: as1@bviec.co.za	
AUTHOR: Kim Brent			CLIENT CONTACT PERSON: Armand Scheepers	
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By Author	Senior Environmental Scientist	Kim Brent		July - August 2019
Checked by	Associate	John Richardson		July 2019
Authorised by	Executive Associate	Magnus van Rooyen		September 2019
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EXECUTIVE SUMMARY

Terratest (Pty) Ltd has been appointed by BVi Consulting Engineers Eastern Cape (Pty) Ltd, on behalf of the National Department of Public Works (DPW), to undertake the necessary environmental services required for the proposed upgrade and expansion of the existing Burgersdorp Correctional Facility, located within the Walter Sisulu Local Municipality, Eastern Cape.

As per GNR. 982 of the Environmental Impact Assessment (EIA) Regulations (2014, as amended in 2017) a Basic Assessment (BA) Process must be undertaken in such a manner that the environmental outcomes, impacts and residual risks of the proposed Listed Activities being applied for are noted in the BAR and assessed accordingly by the Environmental Assessment Practitioner (EAP).

The proposed project involves the upgrade and expansion of an existing facility. The proposed activities are therefore located on the same property, adjacent to the existing facilities. It is important to note that the only infrastructure that requires Environmental Authorisation is the new Agricultural field, the road crossing the river, the 2 new soccer fields and the new Bachelor Housing buildings.

The public participation process undertaken to date involves consultation with the relevant authorities, non-government organisations (NGO's), neighbouring landowners, community members and other identified Interested and Affected Parties (I&APs). An initial newspaper advertisement was published at the onset of the project to inform the general public of the Basic Assessment (BA) Process. The newspaper advertisement was published in English on 22 March 2017 in The Herald. Three (3) site notice boards (size 60cm x 42cm) were placed on site. In addition, A Background Information Document and Notification letters were emailed to identified Key Stakeholders and hand delivered to surrounding landowners in 2017. On 6 September 2019 the Background Information document was recirculated via email. Stakeholders and I&APs will be notified of the availability of the Draft Basic Assessment Report via email (where emails are available) and the placement of a newspaper advertisement. Hard copies of the report will be couriered to the decision-making authority (DEA). In addition, a hard copy of the documents will be placed at the Mzamomhle Public Library in Burgersdorp for general viewing. A complete copy of the report will also be uploaded onto the Terratest (Pty) Ltd website (www.terratest.co.za) for public review.

In terms of specialist input a Vegetation and a Wetland and Impact Assessment were conducted by Mr Magnus van Rooyen of Terratest, while a Heritage Impact Assessment was conducted by Paleo Services.

The findings of each specialist assessment are included in the table below.

VEGETATION IMPACT ASSESSMENT	WETLAND IMPACT ASSESSMENT	HERITAGE IMPACT ASSESSMENT
<p>During a site visit, it was noted that all indigenous vegetation occurring in the “currently active areas” bounded by the northern boundary of the property, the Buitendagspruit River, the existing facility and the eastern boundary of the property, has been removed and replaced with manicured lawns and gardens or the vegetable gardens. The remaining indigenous vegetation occurs outside of these “currently active areas”.</p> <p>Portions of proposed expansion of the Burgersdorp Correctional Facility will occur within this previously disturbed footprint. However, other portions will occur outside of this footprint and will require the clearance of indigenous Eastern Upper Karoo vegetation.</p> <p>The vegetation that occur on the site is dominated by a grass component. The grass component has a very limited species diversity which indicates to a high level of previous disturbance of the area, mainly as a result of overgrazing. As such the grasses on the site are dominated by the presence of <i>Aristida</i> species which are natural invading grasses. These consist of <i>Aristida congesta</i> (Tassel Three-awn Grass) and <i>Aristida diffusa</i> (Iron Grass) on the shallower rock areas. Other grasses such as <i>Themeda triandra</i> (Red Grass), <i>Sporobolus fimbriatus</i> (Bushveld Dropseed Grass) and <i>Elionurus muticus</i> (Wire Grass). The woody vegetation primarily consists of low shrubs consisting of <i>Asphalatus acicularis</i> subsp. <i>planifolia</i> (Peul Kapok), <i>Rosenia humilis</i> (Blouperdekaroobossie) and <i>Eriocephalus cinereum</i> (Kriedoring). The herbaceous vegetation on the site is characterised by small shrubs and low growing succulents. These species include, <i>Moraea pallida</i> (Yellow Tulip), <i>Arctotheca calendula</i> (Cape Marigold), <i>Chrysocoma ciliate</i> (Bitter Bush), <i>Drosanthemum lique</i></p>	<p>The NFEPA database indicated the presence of a single wetland area within the 500 m radius of the study area – an artificial wetland.</p> <p>The artificial wetland area has been created by the construction of a dam in the tributary of the Buitendagspruit Rivier. This artificial wetland area is located to the northwest and upstream of the proposed development site. The site visit has confirmed the presence of this wetland area as well as the presence of second wetland area (Figure 14) that passes between the area that has been identified as the new agricultural area and the new facility footprint – a natural channelled valley bottom wetland. Both of these wetland areas are directly associated with the Buitendagspruit River.</p> <p>Neither of these development areas directly impact on this wetland area. A river crossing over the natural wetland will be constructed to provide access to the new agricultural area.</p> <p>The Channelled Valley Bottom wetland area associated with the study area has undergone severe fragmentation as a result of the high levels of erosion associated with the wetland and the tributary of the Buitendagspruit. This is as a result of the highly erodible Duplex soils present in the area. Irrespective of the occurrence of the fragmentation of the wetland area, the wetland will provide a service with regards to the storing of nutrients (nitrates and phosphates) and toxicants from the catchment as well as play a role in flood attenuation. The fragmentation will however significantly reduce the level of provision of these services.</p>	<p>The study area has been divided into two areas for investigation –</p> <ul style="list-style-type: none"> • The proposed expansion of the existing prison infrastructure (Area 1) • The proposed new site demarcated for agricultural purposes (Area 2) • Low-level river crossing over the Buitendagspruit River to allow prison staff to access the new vegetable gardens (Area 2). <p>The chances of palaeontological impact resulting from the proposed development are considered to be improbable because of the nature of the underlying geology. As far as the palaeontological heritage is concerned, the proposed development affecting Area 1 and 2, as well as the river crossing area may proceed with no further palaeontological assessments required. If, in the unlikely event that localized fossil material is discovered within the alluvial overburden near the spruit during the construction phase of the project, it is recommended that a professional palaeontologist be called in to record and rescue the fossils where necessary.</p> <p>Both study areas are located within a region that has previously yielded ample archaeological as well as historical evidence of the early movement and settlement of Khoi herders and San hunter-gatherers along the Orange River during the last 2000 years. However, the proposed development footprint is located on fairly degraded terrain resulting from previous and ongoing prison operations. Areas 1 and 2, as well as the river crossing area, are not considered archaeologically vulnerable, and there are no major archaeological grounds to suspend the proposed development, provided that all excavation activities are confined to within the</p>

<p>(Doublaarvygie) and <i>Helichrysum luciliodes</i> (Bergkerriebos). Little or no alien floral species occur on the site. The majority of these are located within the grounds of the current correctional facility and consist of <i>Pinus</i> species and other ornamental garden plants.</p> <p>For the consideration of sensitive areas, areas classified as Critical Biodiversity Areas (CBAs) in the Eastern Cape Biodiversity Conservation Plan (2007) and Protected Areas as defined in the National Environmental Management: Protected Areas Act (Act No. 57 of 2003) have been considered.</p> <p>In this regard, the site is not located in any area of conservation importance in accordance with the Eastern Cape Biodiversity Conservation Plan (2007). An informal Nature Reserve – The Mountain Nature Reserve, is located within 5 km from the study area, however, this Reserve is not a formally protected area in terms of the National Environmental Management: Protected Areas Act (NEMPA, Act 57 of 2003, as amended).</p>	<p>The results of the Level 1 assessment of the WET-Health model has indicated that the PES classification of the Channelled Valley Bottom wetland is a Class D, which is based on the impacts that has occurred within the catchment upstream of the wetland area that has affected the natural hydrology and geomorphology of the wetland area. The presence of a stock dam and to a lesser extent a road bridge immediately upstream of the wetland area has resulted in a significant impact on the nature (volume and velocity) of the hydrology in the wetland. Similarly, the stock dam and to a lesser extent a road bridge has also impacted on the geomorphology of the wetland as the sediment flow through the wetland has been significantly affected.</p> <p>The impact on the two wetland drivers mentioned above has in turn impacted on the vegetation in the wetland which has resulted in high levels of erosion in the wetland area. Large areas within the wetland have eroded to the bedrock which has caused the fragmentation of the wetland area. The overall combined Present Ecological State (PES) score as the wetland has been classified as a Category C wetland (Moderately Modified). Further to the PES score of the wetland area, it is believed that the impacts on the hydrology and geomorphology will persist and potentially increase which will result in a gradual degradation of the wetland. Based on the findings of the WET-Health and WET-EcoServices models, it is considered that the EIS of the wetland area is of medium to low importance to the local ecology.</p> <p>Based on the nature and level of the ecosystem services provided by the wetland and the PES and EIS classification, it is considered that a 15 m buffer from the edge of the wetland will be sufficient to ensure that the current services and PES and EIS classification will not be</p>	<p>confines of the development footprints. All the study areas considered to be of low archaeological significance and is assigned a site rating of Generally Protected C.</p>
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	<p>impacted upon. As such the downstream benefactors of the ecosystem services will also not be impacted.</p> <p>No part of the new expanded facility will impact on the buffer apart from the proposed road and pipeline crossing. These features however, are considered to be acceptable infrastructure as they will make provision for hydrological drainage. If the proposed pipeline cannot be incorporated in the design of the road bridge, it is suggested that the pipe crossing be designed to make provision for a pipe-bridge structure elevated above the banks of the tributary of the Buitendagspruit River.</p>	
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Several impacts associated with the listed activities triggered has been identified and assessed. These include:

- Planning and Design Phase impacts
 - Permitting
- Construction phase impacts
 - Air emissions
 - Noise Pollution
 - Site contamination
 - Solid waste pollution
 - Construction traffic and road safety
 - Visual and aesthetics
 - Socio-Economic impacts
 - Vegetation impacts
 - Soil impacts
 - Wetland impacts
 - Archaeological and Palaeontological impacts
- Operation phase impacts
 - Socio-Economic impacts
 - Vegetation impacts
 - Wetland impacts
 - Surfacewater impacts

The preferred alternative for the proposed development has numerous negative impacts associated with it, however these impacts are primarily of moderate negative significance, as indicated in the table above. In addition, the majority of these impacts can be reduced to low or insignificant negative significance with the implementation of the identified mitigation measures. Furthermore, several benefits are associated with the proposed development. The no-go alternative (current status quo) has a few negative impacts associated with it and the no-go alternative will result in the loss of the potential benefits associated with the development.

The careful implementation of the proposed mitigation measures is likely to significantly reduce the overall significance of the negative impacts as well as enhance the overall significance of the positive impacts (where recommendations have been provided). The location and the scale of the activity is unlikely to pose significant environmental impacts provided that the mitigation measures listed above, as well as those listed in the Environmental Management Programme (EMPr), are adequately adhered to.

Based on the findings of this Basic Assessment (BA) process, it is the opinion of the EAP that the proposed Burgersdorp Prison Facility Upgrade and Expansion should receive a positive authorisation provided that the Applicant (and those employed by the Applicant) complies with the mitigation measures listed in the report as well as those listed in the EMPr.

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CONTENT OF BASIC ASSESSMENT REPORTS

This Basic Assessment Report (BAR) has been produced in accordance with the requirements set out in Regulation 19 as well as Appendix 1 of the EIA regulations (2014 as amended in 2017), which clearly outlines the content of a BAR, and Regulations 39-44 which cover the activities necessary for a successful Public Participation Process (PPP).

The table below outlines the requirements of the BAR as set out in the EIA regulations (2014 as amended in 2017). According to Appendix 1 (3) of these Regulations, “a basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include” the following -

REQUIREMENT	RELEVANT REPORT SECTION
(a) Details of – (i) The EAP who prepared the report; and (ii) The expertise of the EAP, including a curriculum vitae.	Section 1.2 and Appendix 1
(b) The location of the activity, including: (i) The 21 digit Surveyor general code for each cadastral land parcel; (ii) Where available, the physical address and farm name; (iii) Where the required information in terms of (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	Section 1.4
(c) A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; Or if it is – (i) A linear activity, a description and coordinates of the corridor in which the proposed activity is to be undertaken; or (ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Figure 4, 5, 6 and Appendix 2
(d) A description of the scope of the proposed activity, including – (i) All listed and specified activities triggered and being applied for; and (ii) A description of the activities to be undertaken including associated structures and infrastructure.	Section 1.7
(e) A description of the policy and legislative context within which the development is proposed including – (i) An identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to the activity and have been considered in the preparation of the report; and (ii) How the proposed activity complies with and responds to the legislation and policy	Section 3

REQUIREMENT	RELEVANT REPORT SECTION
context, plans, guidelines, tools, frameworks and instruments.	
(f) A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location.	Section 4
(g) A motivation for the preferred site, activity and technology alternative.	Section 6
<p>(h) A full description of the process followed to reach the proposed preferred alternative within the site, including –</p> <ul style="list-style-type: none"> (i) Details of all the alternatives considered; (ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) The environmental attributes associated with the alternatives focussing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – <ul style="list-style-type: none"> (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives. (vii) Positive and negative impacts that the proposed activity and its alternatives will have on the environment and on the community that may be affected focussing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) The possible mitigation measures that could be applied and level of residual risk; (ix) The outcome of the site selection matrix; (x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and 	Sections 2, 5, 6, 7 and 8

REQUIREMENT	RELEVANT REPORT SECTION
(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity.	
(i) A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.	Section 7

ABBREVIATIONS

BID	- Background Information Document
CBA	- Critical Biodiversity Area
DCS	- Department of Correctional Services
DEA	- Department of Environmental Affairs
DBAR	- Draft Basic Assessment Report
DPW	- Department of Public Works
DWS	- Department of Water and Sanitation
EA	- Environmental Authorisation
EAP	- Environmental Assessment Practitioner
ECO	- Environmental Control Officer
EIA	- Environmental Impact Assessment
EMPr	- Environmental Management Programme
FBAR	- Final Basic Assessment Report
Ha	- Hectare
IAP	- Interested and Affected Party
IDP	- Integrated Development Plan
NEMA	- National Environmental Management Act, 1998 (Act 107 of 1998)
NEMBA	- National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004)
NWA	- National Water Act, 1998 (Act 36 of 1998)
PES	- Present Ecological State
PPP	- Public Participation Process
SDF	- Spatial Development Framework

GLOSSARY OF TERMS

Alternatives – in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –

- (i) The property on which or location where it is proposed to undertake the activity;
- (ii) The type of activity to be undertaken;
- (iii) The design or layout of the activity;
- (iv) The technology to be used in the activity; and
- (v) The operational aspects of the activity;

Applicant – means a person who has submitted an application for an environmental authorisation to the competent authority and has paid the prescribed fee;

Best Practicable Environmental Option – means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long terms as well as in the short term;

Bioregional plan – means the bioregional plan contemplated in Chapter 3 of the National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004);

Competent Authority – in respect of a listed activity or specified activity, means the organ of state charged in terms of the NEMA with evaluating the environmental impact of that activity and, where appropriate, with granting or refusing an environmental authorisation in respect of that activity;

Development – means the building, erection, construction or establishment of a facility, structure or infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, but excludes any modification, alteration or expansion of such facility, structure or infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint;

Development footprint – means any evidence of physical alteration as a result of the undertaking of any activity;

Ecosystem – means a dynamic system of plant, animal and micro-organism communities and their non-living environment, interacting as a functional unit;

Environment – The surroundings within which humans exist and that are made up of –

- (i) The land, water and atmosphere of the earth;
- (ii) Micro-organisms, plant and animal life;
- (iii) Any part or combination of (i) and (ii) and the interrelationships between them; and
- (iv) The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing;

Environmental Authorisation – the authorisation by a competent authority of a listed activity;

Environmental Assessment Practitioner – the person responsible for planning, management and co-ordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instrument introduced through regulations;

Environmental Impact – an environmental change caused by some human act;

Environmental Impact Assessment – means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes Basic Assessment and Scoping and EIA;

Independent – in relation to an EAP [or] a specialist ...means –

- (a) that such person has no business, financial, personal or other interest in the activity or application in respect of which that EAP [or] specialist...is appointed in terms of these Regulations; or
- (b) that there are no circumstances that may compromise the objectivity of that EAP [or] specialist...in performing such work;

excluding -

- (i) normal remuneration for a specialist permanently employed by the EAP; or
- (ii) fair remuneration for work performed in connection with that activity [or] application...

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;

Interested and Affected Party – includes any person, group of persons or organisation interested in or affected by an operation or activity, and any organ of state that may have jurisdiction over any aspect of the operation or activity;

Mitigation – means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible;

NEMA EIA Regulations – The EIA Regulations means the regulations made under the National Environmental Management Act (Act 107 of 1998) (Government Notice No. R 324, R 325, R 326 and R 326 in the Government Gazette of 7 April 2017 refer);

No go alternative – the option of not proceeding with the activity, implying a continuation of the current situation / status quo;

Public Participation Process – in relation to the assessment of the environmental impact of any application for an environmental authorisation, means a process by which potential interested and affected parties are given opportunity to comment on, or raise issues relevant to, the application;

Registered IAP – in relation to an application, means an interested and affected party whose name is recorded in the register opened for that application;

Sustainable Development – means the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations;

Urban areas – means areas situated within the urban edge (as defined or adopted by the competent authority), or in instance where no urban edge or boundary has been defined or adopted, it refers to areas situated within the edge of built-up areas;

Watercourse – means -

- (a) A river or spring;
- (b) A natural channel in which water flows regularly or intermittently;
- (c) A wetland, pan, 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 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.

SECTION 1: PROJECT INFORMATION

1.1. INTRODUCTION

Terratest (Pty) Ltd has been appointed by BVi Consulting Engineers Eastern Cape (Pty) Ltd, on behalf of the National Department of Public Works (DPW), to undertake the necessary environmental services required for the proposed upgrade and expansion of the existing Burgersdorp Correctional Facility, located within the Walter Sisulu Local Municipality, Eastern Cape.

As per GNR. 982 of the Environmental Impact Assessment (EIA) Regulations (2014, as amended in 2017) a Basic Assessment (BA) Process must be undertaken in such a manner that the environmental outcomes, impacts and residual risks of the proposed Listed Activities being applied for are noted in the BAR and assessed accordingly by the Environmental Assessment Practitioner (EAP). In this regard, the requirements of the BA Process are noted in the EIA regulations (2014 as amended in 2017), Listing Notice 1, Appendix 1 of GNR 982 and are consequently adhered to in this report (please refer to Table 1-1 of the Executive Summary).

Ultimately, the outcome of the BA Process is to provide the Competent Authority, the National Department of Environmental Affairs (DEA), with sufficient information to provide a decision on the Application in terms of Environmental Authorisation (EA), in order to avoid or mitigate any detrimental impacts that the activity may have on the receiving environment.

1.2 DETAILS AND EXPERTISE OF THE EAP

Terratest (Pty) Ltd has been appointed by BVi Consulting Engineers Eastern Cape (Pty) Ltd on behalf of the National Department of Public Works (DPW), to undertake the environmental services required for the construction works associated with this Application. Details of the qualified EAPs involved in undertaking the BA Process are included in Table 1 and the Curriculum Vitae (CV) of the relevant EAP's attached as Appendix 1.

Table 1: Details of the EAP

COMPANY: TERRATEST (PTY) LTD			
EAP	Qualifications & professional affiliations	Experience	Contact details
Mr M. van Rooyen Executive Associate	BSc, BSc Hons, MPhil. (Environmental Management), Pr. Sci. Nat, IAIAAsa	15 years	Tel: (033) 343 6789 Email: vanrooyenm@terratest.co.za
Ms K. Brent Senior Environmental Scientist	BSc, BSc Honours (Botany), Pr. Sci. Nat, IAIAAsa, SAAB	8 years 7 months	Tel: (041) 390 8700 Email: brentk@terratest.co.za

1.3 ACTIVITY BACKGROUND

The existing Burgersdorp Correctional Facility, which is owned by the National Department of Public Works (DPW) and operated by the Department of Correctional Services (DCS), was constructed during 1973 and was designed to accommodate 150 inmates.

Since its construction, almost 45 years ago, the prison structure has, as a result of poor maintenance, become increasingly dilapidated. In addition, due to increased demand for prison space, the facility has also become increasingly overcrowded, and is home, at present, to 334 inmates. Existing service

infrastructure has been unable to meet the increased demand of the overcrowded prison, with the result that the facility periodically experiences water and electricity outages, and sewer overflows.

The DPW and DCS therefore identified a need to both upgrade and expand the prison facility, so as to sustainably meet the demand for prison space going forward. A Project Team was therefore assembled to undertake the design and implementation of the required upgrade and expansion project. The make-up of this Project Team is set out in Table 2.

Table 2: Project team

PROFESSIONAL SERVICE	SERVICE-PROVIDER
Architect / Principle Agent	Tomane Moteane Architects
Civil Engineer	BVi Consulting Engineers
Structural Engineer	Royal Haskoning DHV
Electrical Engineer	RNA Consulting
Mechanical Engineer	Evans Consulting
Quantity Surveyor	FWJK
Environmental Assessment Practitioner	Terratest (Pty) Ltd

1.4 LOCATION OF THE ACTIVITY

The proposed project involves the upgrade and expansion of an existing facility. The proposed activities are therefore located on the same property, adjacent to the existing facilities. The relevant property details are presented in Table 3.

Table 3: Property Information

PROPERTY DESCRIPTION	Portion 0 of Erf 1262, Burgersdorp
21-DIGIT SG CODE	C003000010000126200000
EXTENT	85.6532 ha
CENTRE CO-ORDINATE (approx.)	30° 59' 48.75" S & 26° 18' 25.64" E
REGISTERED OWNER	National Government of the Republic of South Africa (Department of Public Works)
LOCAL MUNICIPALITY	Walter Sisulu Local Municipality
DISTRICT MUNICIPALITY	Joe Gqabi District Municipality

The property is located on the western side of the town of Burgersdorp and is accessible off the R58 National Road. Locality maps, labelled as Figures 1 and 2, are provided below.

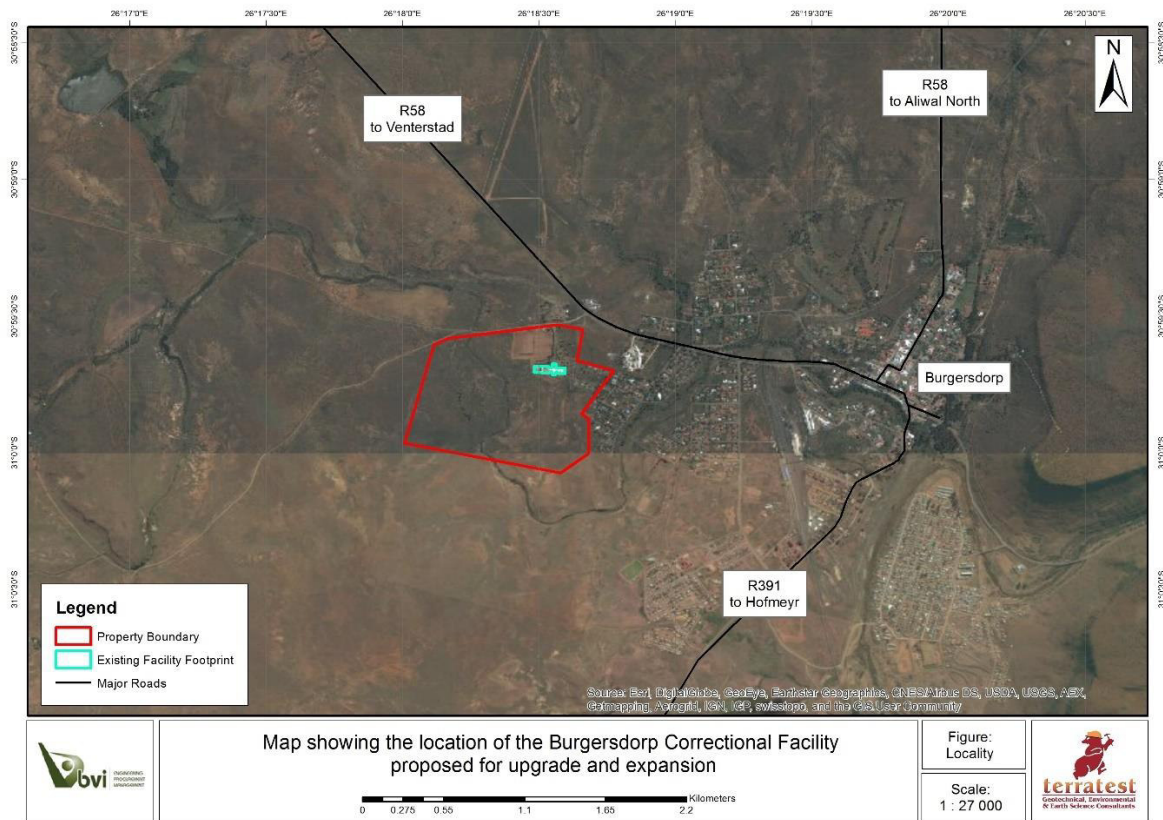


Figure 1: Map showing the location of the property on which the activity is proposed (the extent of the existing facility is indicated).

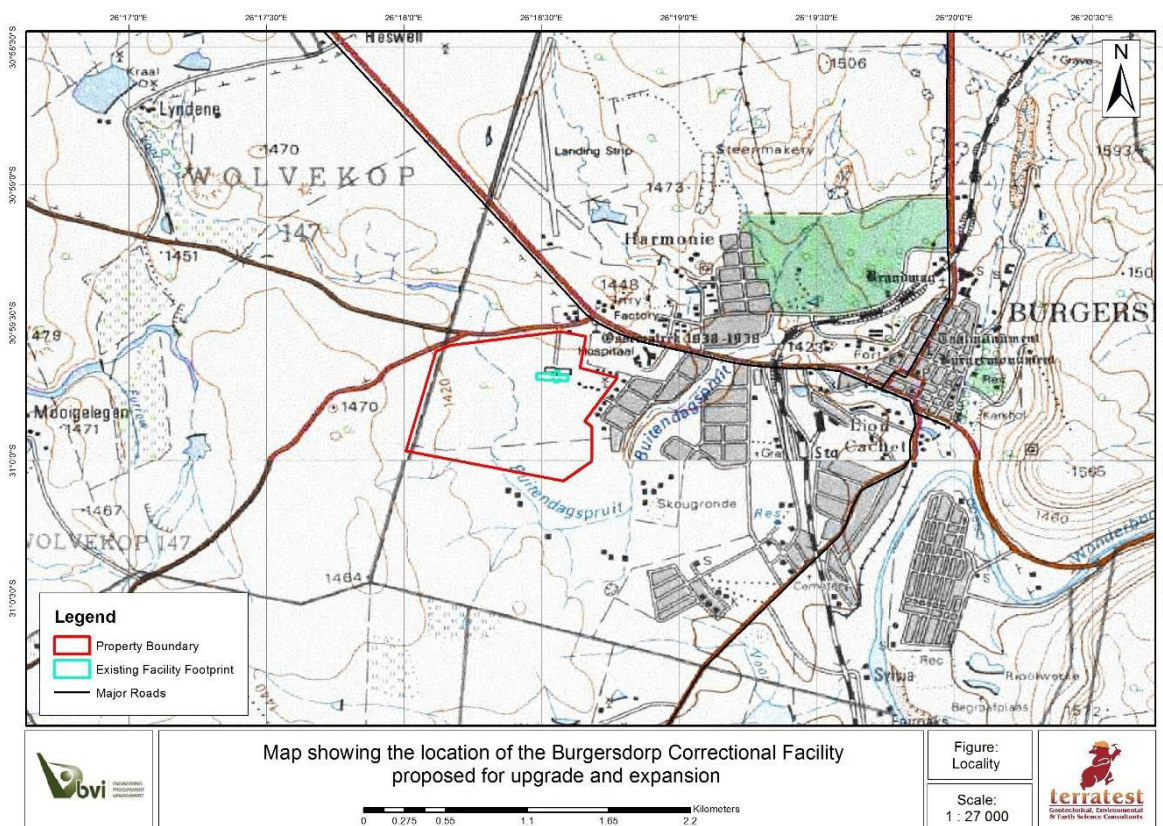


Figure 2: Topographic map showing the location of the property on which the activity is proposed (the extent of the existing facility is indicated).

1.5 STATUS QUO OF THE CORRECTIONAL FACILITY

Before describing the proposed upgrade and expansion, it is necessary to provide a description of the current facility.

1.5.1 Water Reticulation

Municipal Supply

The Burgersdorp Prison is supplied by a 200 mm Ø municipal main. The erf connection is connected to a 70 kℓ pump sump. Potable water is pumped from the sump to a 40 m³ (= 40 kℓ) elevated water tank by means of two electrical duty pumps and one standby diesel pump, via a 42-year-old rising main pipeline. From this elevated tank, potable water gravitates into the reticulation network by means of a 150 mm Ø pipe.

Numerous leaks have been noted from the internal water pipelines of the facility, in particular in the vicinity of Courtyard D, where water has been seeping through the southern walls of the structure. The need for maintenance works on the water reticulation system is therefore urgent.

1.5.2 Boreholes

Two boreholes are located on the property. The first is located approximately 200 m west of the stream, and the second in the open field within the residential area east of the existing prison. The location of these boreholes is shown in Table 4 and Figure 3.

Table 4: Location of the boreholes

BOREHOLE	SOUTH	EAST
Borehole 1 (west of stream)	30° 59' 44.26" S	26° 18' 13.31" E
Borehole 2 (in residential area)	30° 59' 43.04" S	26° 18' 40.78" E

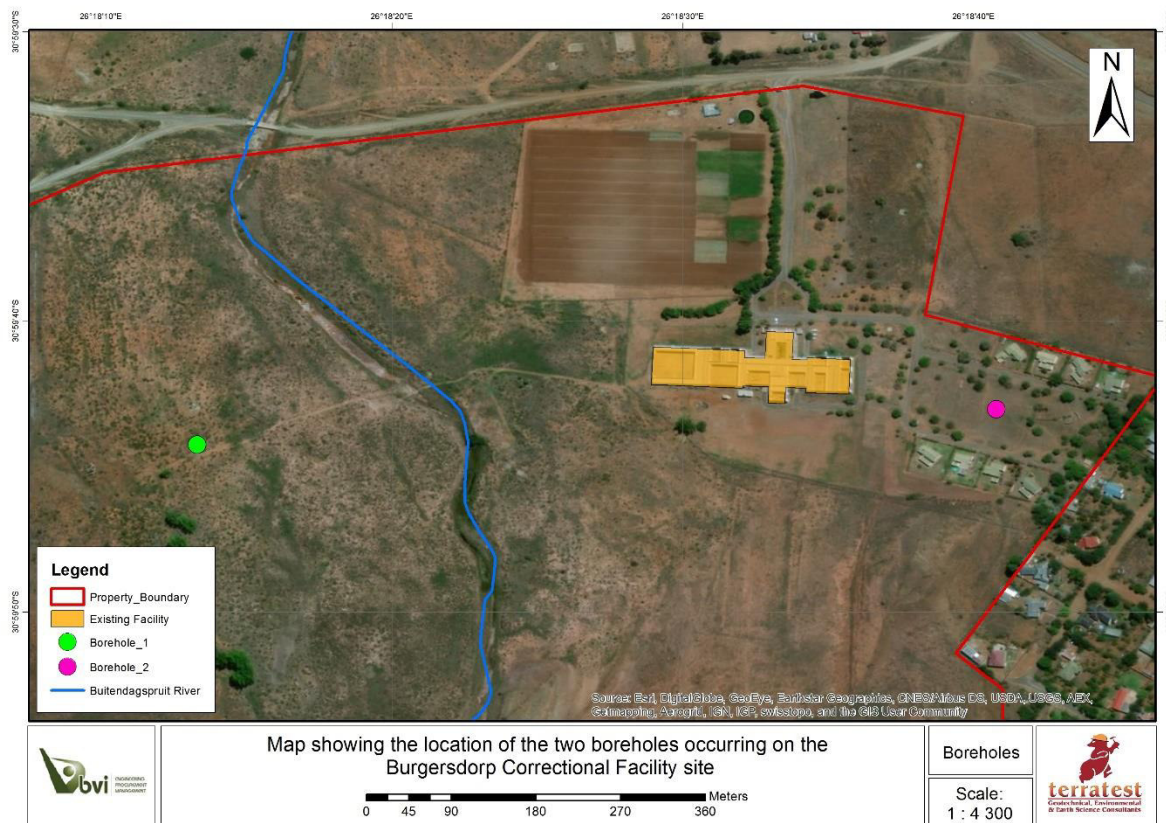


Figure 3: Location of the existing two boreholes.

Water from the first borehole (in the western part of the property) is not potable and is utilised for irrigation of the vegetable gardens, crossing the Buitendagspruit River via and above-ground 80 mm galvanised steel pipe and being stored in a ground reservoir. This pipe, as well as the borehole top structure and motor, are in a poorly maintained condition.

Water from the second borehole is potable, and is utilised, on rare occasions, as an emergency, back-up water supply to the prison facility. Neither one of these boreholes have been registered with the Department of Water and Sanitation (DWS) for irrigation or domestic uses.

1.5.3 Sewer Reticulation

The existing facility is serviced by a 150 mm internal sewer reticulation system which connects to the 200 mm \emptyset municipal sewer line. The condition of this sewer line is unknown, although it is known that the infrastructure is old.

1.5.4 Electricity Supply

Electrical supply is provided to the prison facility by the Walter Sisulu Local Municipality, via 500 kVA, 22 kV/400 V indoor transformer which appears to be in a good condition. Based on the Municipality maximum demand records this transformer has a spare capacity of 60%.

In addition, the existing facility has an indoor 175 kVA 3-phase, diesel-powered standby generator.

1.5.5 Stormwater Management

The existing stormwater management system discharges into the nearby Buitendagspruit River, located to the west of the existing prison facility, via a headwall situated on the south-western side of the existing prison complex. An inspection of these stormwater pipes revealed that most of them are blocked.

Stormwater in the existing prison courtyards is drained through a grid inlet, where after it is conveyed to the main reticulation, running beneath the prison building. The grid inlet chambers are also blocked with sand. The courtyards also contain standpipes which discharge excess water onto the concrete slabs. As some of the joints between concrete slabs have failed, this water seeps through and erodes the founding material, causing the slabs to weaken and fail over time.

1.5.6 Access Roads

Existing access roads within the prison facility as well as the layer works in the parking areas are in very poor condition and have failed.

1.6 DESCRIPTION OF THE PROJECT

The proposed project comprises of two main parts, namely the expansion of the prison facility (i.e. construction of new structures and infrastructure) and secondly, the upgrade and refurbishment of the existing facility (i.e. old building). Each of these project components is described in detail below.

1.6.1 Proposed New Structures

The scope of expansion works at the Burgersdorp Prison consists of the establishment of the following new structures, as indicated in Figure 4 and Figure 5:

A	-	Pre-Processing Facility	429.00 Square meters
B	-	Administration Office	460.00 Square meters
C	-	Central Visitors Facility	318.60 Square meters
D	-	Admissions Processing Facility	350.20 Square meters
E	-	Medical Services	801.00 Square meters

F	-	Food Services	315.00 Square meters
G	-	Chefs & Cooks	109.00 Square meters
H	-	Building Maintenance Workshop	156.00 Square meters
I	-	General Logistics Store	473.00 Square meters
J	-	Garage for State Vehicles	372.00 Square meters
K	-	Inmate Housing	3125.80 Square meters
L	-	Segregation Unit	228.00 Square meters
M	-	Central Laundry	165.00 Square meters
N	-	Vocational Training	191.00 Square meters
O	-	Education	529.00 Square meters
P	-	Multi-Purpose Hall	320.00 Square meters
R	-	Building Services	253.40 Square meters
S	-	Visitors Ablutions & Bus Shelter	38.00 Square meters
T	-	Agricultural Store	73.00 Square meters
U	-	Field Ablutions	31.00 Square meters
V	-	Flammable Stores & Medical gas	10.00 Square meters
W	-	Control Rooms on the Street	26.00 Square meters
Y	-	Bachelor Housing	840.00 Square meters

In addition, it is proposed to construct new surfaced access roads and associated parking areas, as well as a gravel patrol road. Two new sports fields are also proposed for establishment. The vegetable gardens will be relocated to an area located west of the Buitendagspruit River, with a formal access road proposed to be created to allow access to this agricultural area.

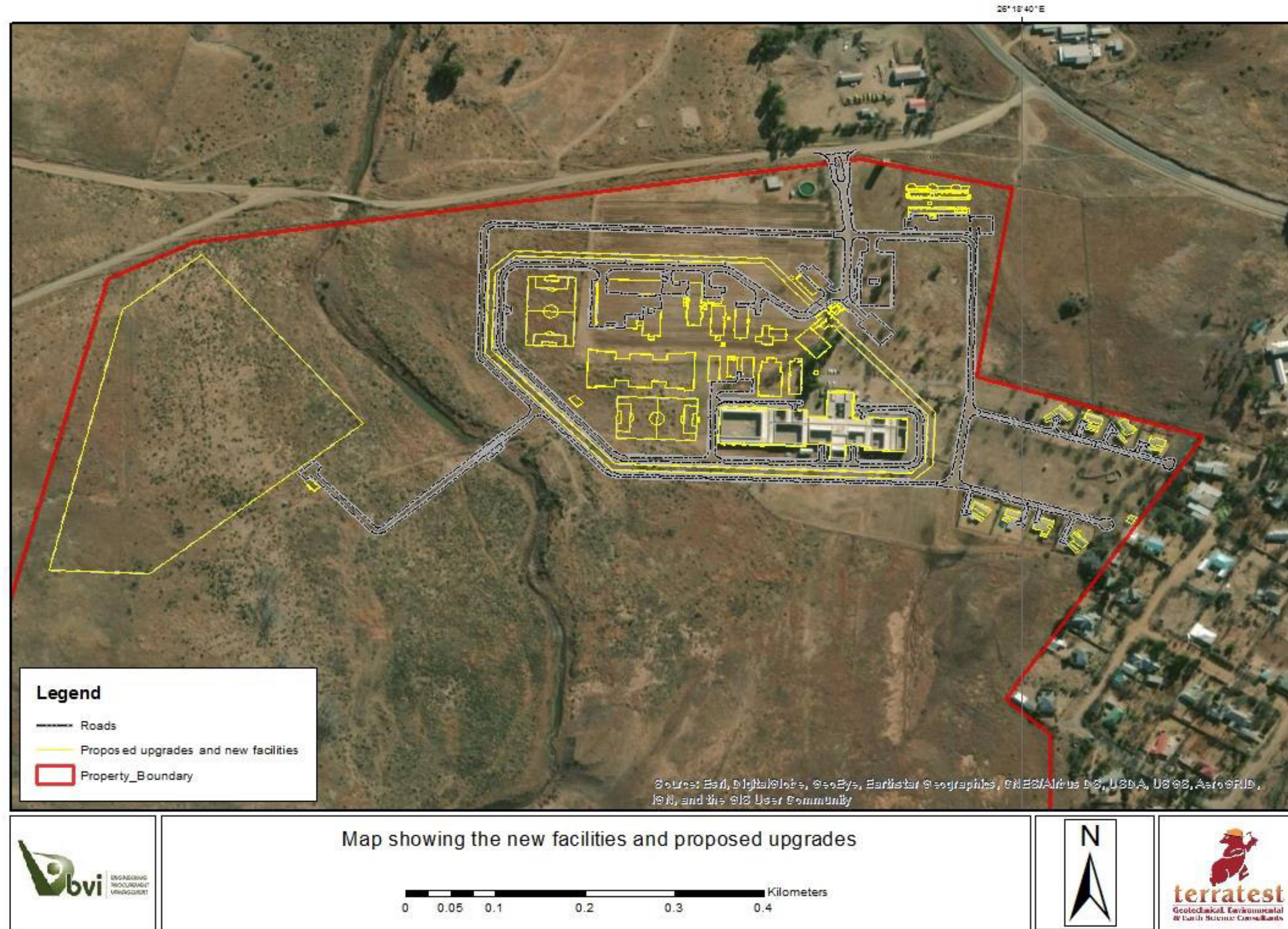


Figure 4: Map showing the proposed layout of the upgraded and expanded Burgersdorp Correctional Facility.



Figure 5: Master layout of the upgraded and expanded Burgersdorp Correctional Facility. An A1 copy of this layout is attached in Appendix 2 inclusive of a sensitivity map.

1.7 Proposed Service Infrastructure Upgrades

1.7.1 Water Reticulation

Municipal Supply

The 42-year-old rising main running between the pump sump at the erf connection and the elevated water tanks is proposed to be decommissioned and replaced with a new 160 mm Ø uPVC class 12 rising main.

The existing concrete ground reservoir, which is currently utilised to store irrigation water for the vegetable gardens, is proposed to be refurbished. Such refurbishment will comprise a relining of the structure and the construction of a new roof to cover the reservoir. The pump main from the erf connection will be directed into this refurbished reservoir, which will act as a balancing tank.

It is proposed to install a second, galvanised steel elevated water storage tank, with a storage capacity of 570 m³ (= 570 kℓ), adjacent to the existing storage tank. Water will be pumped from the refurbished ground reservoir to these two elevated tanks, from where it will gravitate to the existing and expanded facility. It is proposed to install a 160 mm Ø uPVC potable water ring main and a 200 mm Ø uPVC fire water ring main, on separate networks, both supplied from the elevated tanks, to supply the existing and expanded facility.

The Engineering Layout of the water supply infrastructure is attached in Appendix 3.

Potable water demand, and the associated design of the potable water supply infrastructure, has been calculated for the expanded facility, on the assumption that it will house a population of 680 inmates. Such demand and storage requirements are summarised in Table 5 below.

Table 5: Burgersdorp Correctional Facility Potable Water Demand

WATER USE	NO	DESIGN VALUE	AVE DAILY WATER DEMAND (ℓ/day)
Prisoners	680	200 ℓ/prisoner/day	136 000
Administration	150	70 ℓ/person/day	10 500
Kitchen and Dining	680	90 ℓ/person/day	61 200
Clinic	33	250 ℓ/bed/day	8 250
Laundry	680	15 ℓ/prisoner/day	10 200
Visiting	38	20 ℓ/visitor/day	760
State vehicle wash	18	200 ℓ/car	3 600
Residential housing	8	900 ℓ/erf/day	7 200
Single quarters	92	400 ℓ/unit/day	36 800
Educational	265	45 ℓ/student/day	11 925
Vocational	12	100 ℓ/trainee/day	1 200
Canteen	460	60 ℓ/10m ² /day	2 760
<i>Subtotal A</i>			290 395
Maintenance	1	1.5% of Subtotal A	4 356
Vegetable irrigation		N/A	0
Sports grounds		N/A	0
<i>Subtotal B</i>			4 356
WATER DEMAND TOTAL			294 751 ℓ/day
			294.75 kℓ/day
			12.281 kℓ/hour
Required Storage: 24 hours			295 kℓ (rounded)

The fire water flow and storage requirements calculated for the expanded facility, and upon which the fire system designs have been based, are set out in Tables 6 and 7.

Table 6: Burgersdorp Correctional Facility Fire Water Demand

TYPE	NO	DESIGN VALUE	DEMAND (ℓ/s)
Fire hydrants	2	20 ℓ/s	40 ℓ/s
Hose reel	6	0.5 ℓ/s	3 ℓ/s
TOTAL			43 ℓ/s

Table 7: Burgersdorp Correctional Facility Fire Water Storage

TYPE	HRS	DEMAND (ℓ/s)	STORAGE (kℓ)
Storage	2	43	312 (rounded)
TOTAL			312 kℓ (rounded)

From these figures, it can be seen that, for the supply of potable water and fire water to the expanded Burgersdorp Correctional Facility, a total of 607 kℓ of storage capacity is required. The shortfall in storage capacity is proposed to be made up through the construction of the new elevated tank. These calculations are summarised in Table 8.

Table 8: Burgersdorp Correctional Facility Total Water Storage Requirements

TYPE	DEMAND (kℓ)
Storage Required: Potable Water	295 kℓ
Storage Required: Fire Water	312 kℓ
<i>Subtotal</i>	<i>607 kℓ</i>
Existing Storage: elevated tank	40 kℓ
Additional storage required	570 kℓ (rounded)

Confirmation has been received from the Joe Gqabi District Municipality, which is the Water Services Provider for the area, that there is adequate bulk water supply infrastructure to cater for the additional water demands of the upgraded and expanded Burgersdorp Correctional Facility. Such confirmation letter is attached, together with the Civil Engineer's Preliminary Design Report, in Appendix 4.

1.7.2 Boreholes

As can be seen from Figure 4 and 5, the existing vegetable gardens will need to be relocated in order to make way for the development of the new facilities. It is proposed to move the vegetable gardens to an area located closer to the existing irrigation borehole (Borehole 1), to the west of the Buitendagspruit River. Such a move would require the construction of a new 50 m³ ground storage tank in proximity to this borehole, and that the existing galvanised pipe which crosses the stream be redirected into this reservoir, to store water for the purposes of irrigating the new agricultural area. In addition to this work, the top structure of Borehole 1 is proposed to be refurbished.

A Pump Test was conducted on both boreholes, dated October 2017. The results of the tests indicate that the boreholes can safely yield 0.3 ℓ/s each, over 12 hours (= 25 000 ℓ/day). It was noted, however, that Borehole 1, in particular, required a long recovery period. For this reason, it was recommended that water be stored, to limit the need for daily pumping.

Furthermore, the specialists recommended that dipper tubes be installed and that static water levels be measured weekly, with data being submitted to the specialist. Monthly rainfall too should be measured, and the changes to the static water level noted.

A copy of the Pump Test Report is attached in Appendix 5.

1.7.3 Sewer Reticulation

As described previously, the existing sewer infrastructure is old. It is therefore the recommendation of the Civil Engineers to replace all sewer lines around the existing building with 160 mm Ø uPVC pipeline. The new sewer lines will be constructed at an offset of 2 m from the existing sewer lines.

Sewer lines located beneath the existing building will be internally relined to ensure their longevity.

A new 160 mm Ø uPVC sewer line will be installed to service the expanded facility.

The proposed layout for sewer infrastructure at the upgraded and expanded facility is shown in the engineering layout attached in Appendix 6.

All sewage waste generated on the property (with the exception of that generated at the agricultural store (labelled T in Figure 5) which will be connected to a septic tank), will be directed into the municipal sewer system, for treatment and disposal at the Burgersdorp Wastewater Treatment Works.

The design of the sewer infrastructure is based on an anticipated inmate population of 680. The sewer flows, as calculated by the Civil Engineers, are summarised in Table 9.

Table 9: Burgersdorp Correctional Facility Sewage Flows

SOURCE	NO	DESIGN VALUE	AVE DAILY VOLUME (ℓ/day)
Prisoners	680	180 ℓ/prisoner/day	122 400
Administration	150	66.5 ℓ/person/day	9 975
Kitchen and Dining	680	81 ℓ/person/day	55 080
Clinic	33	225 ℓ/bed/day	7 425
Laundry	680	14.3 ℓ/prisoner/day	9 724
Visiting	38	19 ℓ/visitor/day	722
Residential Housing	8	900 ℓ/erf/day	7 200
Single Quarters	92	360 ℓ/unit/day	33 120
Educational	265	42.8 ℓ/student/day	11 342
Vocational	12	70 ℓ/trainee/day	840
Canteen	460	57/10m ² /day	2 622
<i>Subtotal A</i>			<i>260 450</i>
Maintenance	1	1.35% of Subtotal A	3 516
<i>Subtotal B</i>			<i>263 966</i>
50 % Addition	1	50% of Subtotal B	131 983
SEWER FLOW TOTAL			395 949 ℓ/day
			4.58 ℓ/s
			395.95 kℓ/day
			16.49788 kℓ/hour

Confirmation has been received from the Joe Gqabi District Municipality, which is the Sanitation Services Provider for the area, that there is adequate bulk sanitation infrastructure to cater for the additional sewer

flows to be generated by the upgraded and expanded Burgersdorp Correctional Facility. Such confirmation letter is attached, together with the Civil Engineer's Preliminary Design Report, in Appendix 7.

1.7.4 Electricity Supply

The Electrical Engineers have calculated the estimated diversified total electrical load of the upgraded and expanded facility to be 896 kVA. A breakdown of this load is provided in Table 10.

Table 10: Schedule of calculated loads and distribution boards

DISTRIBUTION BOARD	CONNECTED LOAD (kVA)	DEMAND FACTOR	DIVERSIFIED LOAD (kVA)
Block A – Pre-Processing Facility	56	50%	28
Block B – Administration Office Building	197	49%	79
Block C – Central Visitors Facility	15	45%	6
Block D – Admissions Processing Facility	35	46%	16
Block E – Medical Services	246	39%	96
Block F & G – Food Services, Chefs & Cooks	415	48%	198
Block H & I - Building Maintenance Workshop & General Logistics Store	45	50%	22
Block K – Inmate Housing	188	50%	94
Block L – Segregation Unit	18	50%	9
Block M – Central Laundry	360	32%	115
Block N – Vocational Training	43	50%	21
Block O – Education	38	56%	21
Block P – Multi-Purpose Hall	23	50%	12
Existing Prison	344	48%	164
DK-SL	15	100%	15
TOTAL	2 038		896

In order to meet this demand, an application will be made to the Electricity Supply Authority to upgrade the existing electricity to 1 MVA. Confirmation has been received from the Walter Sisulu Local Municipality, as the Electrical Supply Authority, of the availability of the required electricity supply for the project. such confirmation is attached, together with the Electrical Engineers Preliminary Design Report, in Appendix 8.

1.7.5 Stormwater Management

As described previously, the current stormwater management system employed in the courtyards of the existing prison structure is putting the structural integrity of the concrete slabs at risk. It is therefore proposed, as part of the upgrade of the existing facility, to construct concrete v-drains within the courtyards, which will convey excess water from the standpipes to the grid inlets. The courtyard grid inlets will be fitted with a locknut for security purposes. All the existing stormwater pipes running below the existing prison building will be pressure jetted clean, inspected and repaired as necessary.

It is proposed to replace all existing stormwater pipes surrounding the existing prison building. The existing manholes and grit inlet chambers will be refurbished and will be covered by a solid concrete slab. The existing pipework will be replaced with 375 mm diameter pipe. A manhole will be constructed just inside the secure area, with multiple 225 mm diameter (smaller) pipes connecting this manhole to the headwall at the stream.

The stormwater infrastructure for the new facilities will comprise 225mm Ø pipes, draining the courtyards. Multiple 225 mm Ø pipes will be placed together in order to convey larger flows, where required. This smaller diameter pipe is proposed for use for security reasons.

The concrete aprons surrounding the existing prison building will be replaced and new aprons will be constructed around the new buildings in order to convey stormwater away from the building walls. These aprons will, additionally, act as walkways around buildings. Aprons are proposed to be 800 mm wide, accompanied by stormwater v-drains ranging from 600 – 1 000 mm in width.

The amount of stormwater pipework will be kept to a minimum and concrete v-drains, equipped with stone pitching to prevent erosion, will be constructed to convey stormwater, which will be discharged in close proximity to the sports fields. Earth berms will be constructed around the lower parts of the sports fields in order to promote stormwater retention.

Stormwater from surfaced roads will be conveyed by means of pre-cast barrier kerbs and 300 mm wide channels. An earth drain will be constructed on the northern and eastern side of the site in order to intercept overland flow as well as the road drainage.

An existing pump station located on the eastern side of the prison complex is constructed in a low point, with multiple stone-pitched stormwater channels draining directly in its direction. These channels will need to be redirected away from the pump station building, and additional stormwater control features will need to be implemented.

The engineering layout of the stormwater infrastructure is attached in Appendix 9.

1.7.6 Access Roads

As described previously, all existing internal access roads are in a poor condition and have failed. As such, all internal roads are proposed to be reconstructed. The design of internal access roads has been based on an assumed speed limit of 30 km/hour, and low expected traffic volumes.

All roads within the secured area will measure 6 m in width and are proposed to consist of asphalt surfaced roads, while the main access road outside of the secure area, measuring 6.8 m in width, will be constructed of permeable paving blocks. A 6 m wide gravel patrol road is proposed to be constructed outside of the secure area and will surround the entire prison complex.

As can be seen from Figure 4 and 5, the existing vegetable gardens will need to be relocated in order to make way for the development of the new facilities. It is proposed to move the vegetable gardens to an area located closer to the existing irrigation borehole, to the west of the Buitendagspruit River. Such a move would require the establishment of a low-level river crossing to allow prison staff to safely cross the river and access the new vegetable gardens and existing borehole. This road will comprise a 6 m wide gravel road. The proposed crossing will be approximately 18 m in length and will be comprised of eight precast rectangular concrete portal culverts, laid in rows, end to end, on a 450 mm thick concrete base and a 75 mm thick G7 layer, and overlain by a 200 – 250 mm thick concrete slab. Gabion structures will be constructed upstream and downstream of the structure in order to prevent erosion. The preliminary design for this crossing is attached in Appendix 10.

With respect to parking areas, as described previously, the layer works in all these areas have failed and require reconstruction. All parking areas located within the secure area will be surfaced with asphalt, whilst the parking areas outside the secure area will be paved with permeable blocks.

1.7.7 Other

Currently, there are no existing diesel/fuel tanks on site. A new diesel storage tank is proposed and will not exceed a capacity of 20 000 litres (20 m³).

Note: It is important to note that the only infrastructure that requires Environmental Authorisation is the new Agricultural field, the road crossing the river, the 2 new soccer fields and the new Bachelor Housing buildings – See Figure 6 below.

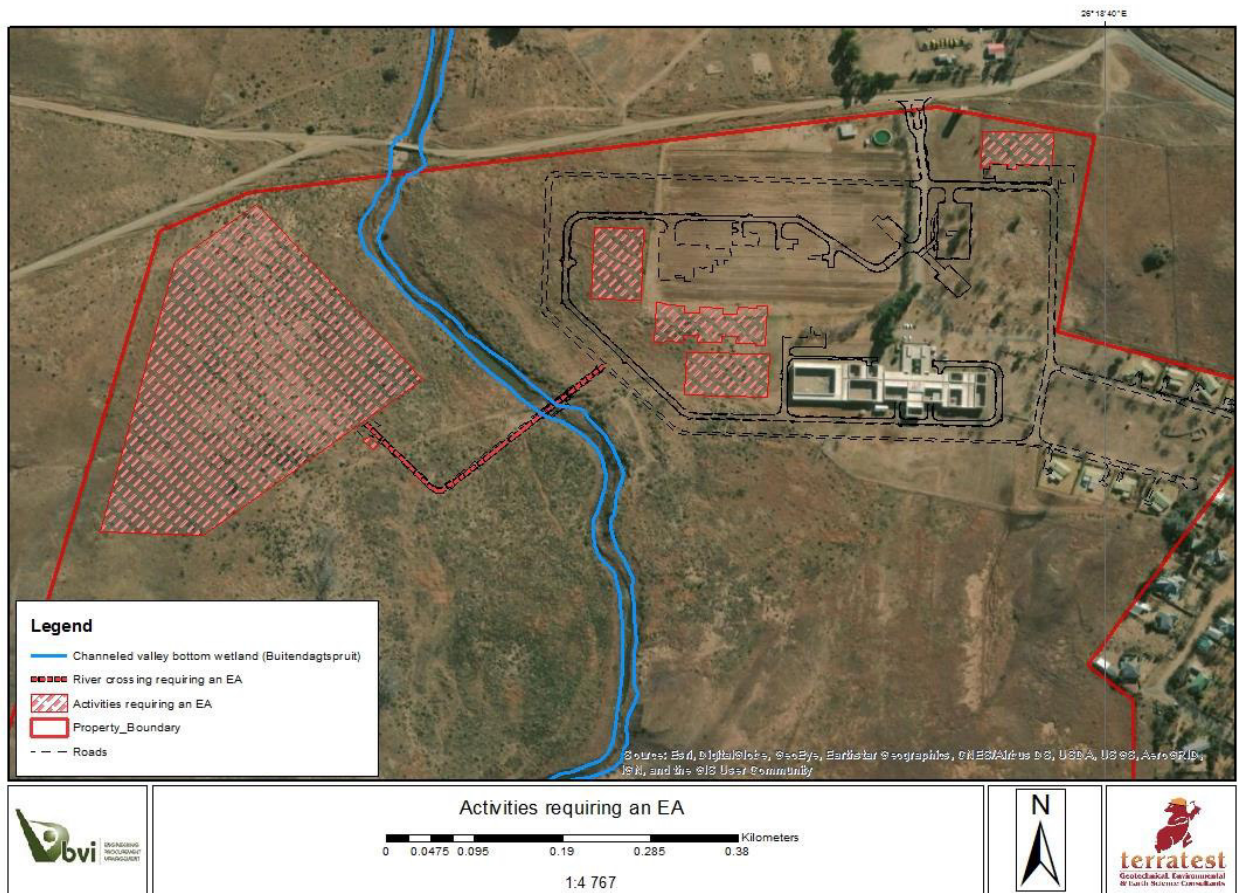


Figure 6: Development components that trigger listed activities thus requiring an EA.

SECTION 2: DESCRIPTION OF THE RECEIVING ENVIRONMENT

The sections to follow provide an overview of the biophysical as well the socio-economic environment within which the upgrade and expansion of the Burgersdorp Correctional Facility proposed to be undertaken.

Two specialist studies conducted to date, have informed sections of this chapter, namely an Aquatic/Wetland Assessment and a Vegetation Assessment.

2.1 CLIMATE

The Burgersdorp area receives an average of 482 mm of rain per year. Lowest rainfall occurs during July (winter) and highest rainfall is received during February (summer). The average midday temperatures for the region range from a minimum of 15.1°C in June to a maximum of 28°C in January

(https://www.meteoblue.com/en/weather/forecast/modelclimate/burgersdorp_south-africa_1014653) (Figure 7).

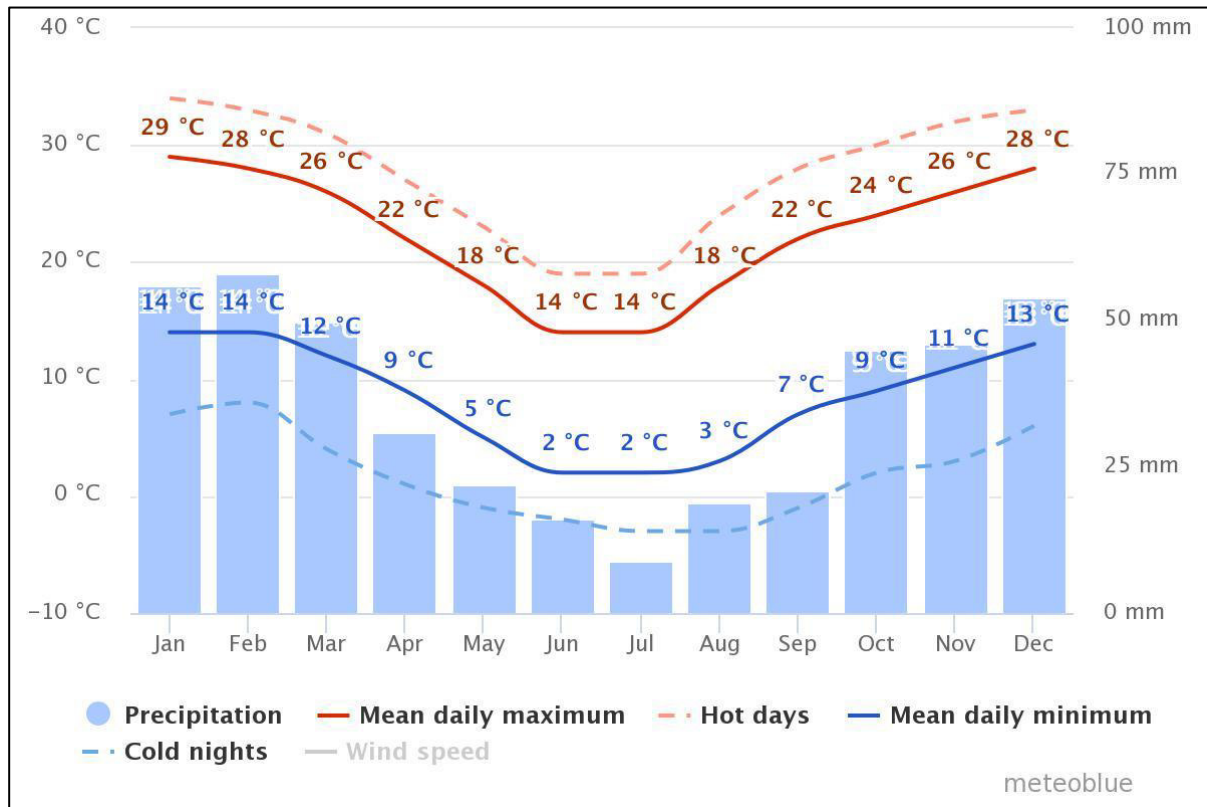


Figure 7: Historical climate data for the town of Burgersdorp (Source: Meteoblue, 2019).

2.2 GEOLOGY AND SOILS

The Council for Geoscience Geological Series Maps for the area suggest that the site is underlain by mudstones and sandstones of the Beaufort Group (including both Adelaide and Tarkastad subgroups). Less prominent Jurassic dolerites (Karoo Dolerite Suite) also occur.

According to Mucina and Rutherford (2006) the site is predicted to support soils with marked textural contrast through clay enrichment (Da land type) as well as some shallow Glenrosa and Mispah soils (Fb and Fc land types). Land types are detailed in Table 11 below.

According to the Department of Agriculture Forestry and Fisheries (DAFF) Agricultural GIS (AGIS) database on land capability, the area identified for the relocation of the vegetable gardens is non-arable and should, preferably, be utilised for grazing purposes (see Figure 8).

While this classification is noted, it must be stated that the vegetable gardens, both the existing gardens and the proposed relocated gardens, are not maintained primarily for the purposes of supplementing food supply to the prison, nor for the purposes of income generation (through commercial sale of the vegetables). Rather, the DCS has highlighted the value of the vegetable gardens as being that they provide inmates with useful skills which can be utilised upon release, as well as a peaceful means to pass the time whilst incarcerated at the facility. Any vegetables produced by the gardens are simply a bonus over and above these benefits. Therefore, the non-arable nature of the soils is not of great concern.

It is also worth noting that the existing vegetable gardens too, are located within an area defined by the DAFF Land Capability database as non-arable. These gardens, however, enjoy moderate success, producing

sufficient vegetables to supplement the diet of the inmates from time to time. The soils in this area have, obviously, been well fertilised and tended over the years, to become productive. It is recommended therefore that, prior to the commencement of construction over the existing vegetable gardens, that this soil be excavated and relocated to the new vegetable garden area, to facilitate establishment of the new vegetable gardens.

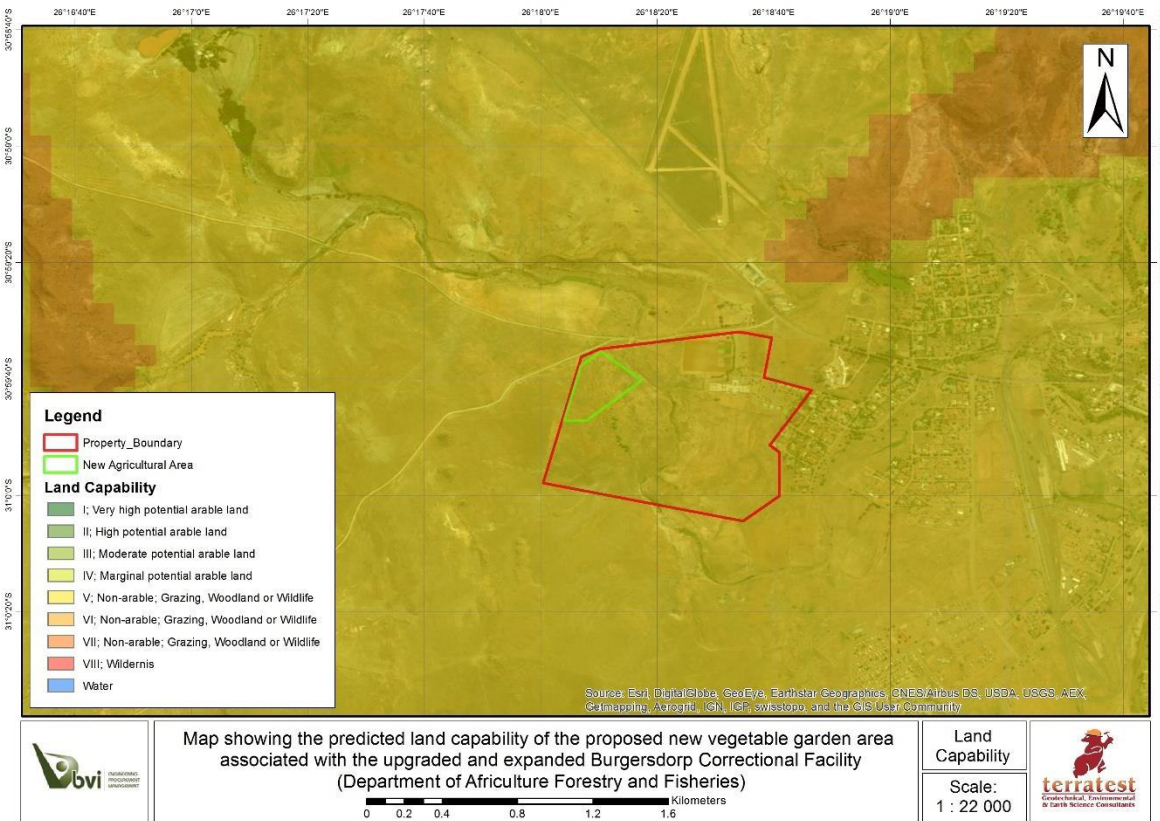


Figure 8: Map showing the land capability of the area to which the vegetable gardens are proposed to be relocated (DAFF).

2.3 TOPOGRAPHY

According to the 20 m contour information available for the area, the proposed development site slopes gently downwards from its western boundary, to its lowest point on the Buitendagspruit Stream (at approximately 1 415 masl), where after it slopes upwards again, relatively more steeply, towards the east, reaching its highest point on the eastern boundary at approximately 1 432 masl.

From north to south, the site generally decreases in elevation, from a height of 1 422 masl on the northern boundary, down to approximately 1 412 masl on the southern boundary.

In terms of the surrounding area, it can be seen from Figure 8 that the area is relatively flat but steepens sharply in the area to the east of the town of Burgersdorp, to an elevation of approximately 1 560 masl.

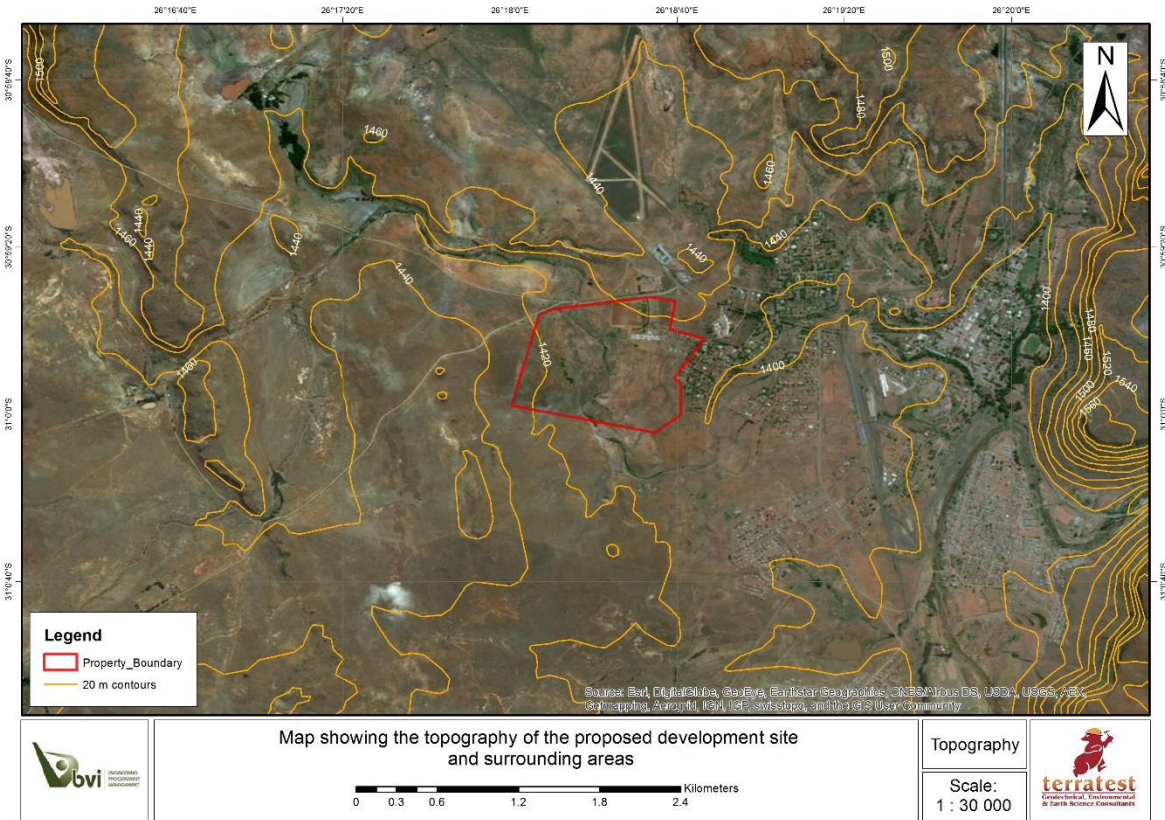


Figure 9: Map showing the topography of the site and its surrounds.

2.4 VEGETATION

2.4.1 Vegetation Type

According to Mucina and Rutherford (2006, as amended by Grobler et al., 2018), the historic vegetation of the proposed development site is classified as Eastern Upper Karoo vegetation (Figure 10). This vegetation type is characteristically dominated by dwarf microphyllous shrubs and “white” grasses of the genera *Aristida* and *Eragrostis*.

Surrounding vegetation is identified as Besemkaree Koppies Shrubland which is dominated, in the lower, closed canopy layers, by dwarf, small-leaved shrubs and abundant grasses and, in the upper, loose canopy layers, by tall shrubs such as *Rhus erosa*, *R. burchellii*, *R. ciliata*, *Euclea crispa* subsp. *ovata*, *Diospyros austroafricana* and *Olea europaea* subsp. *africana*.

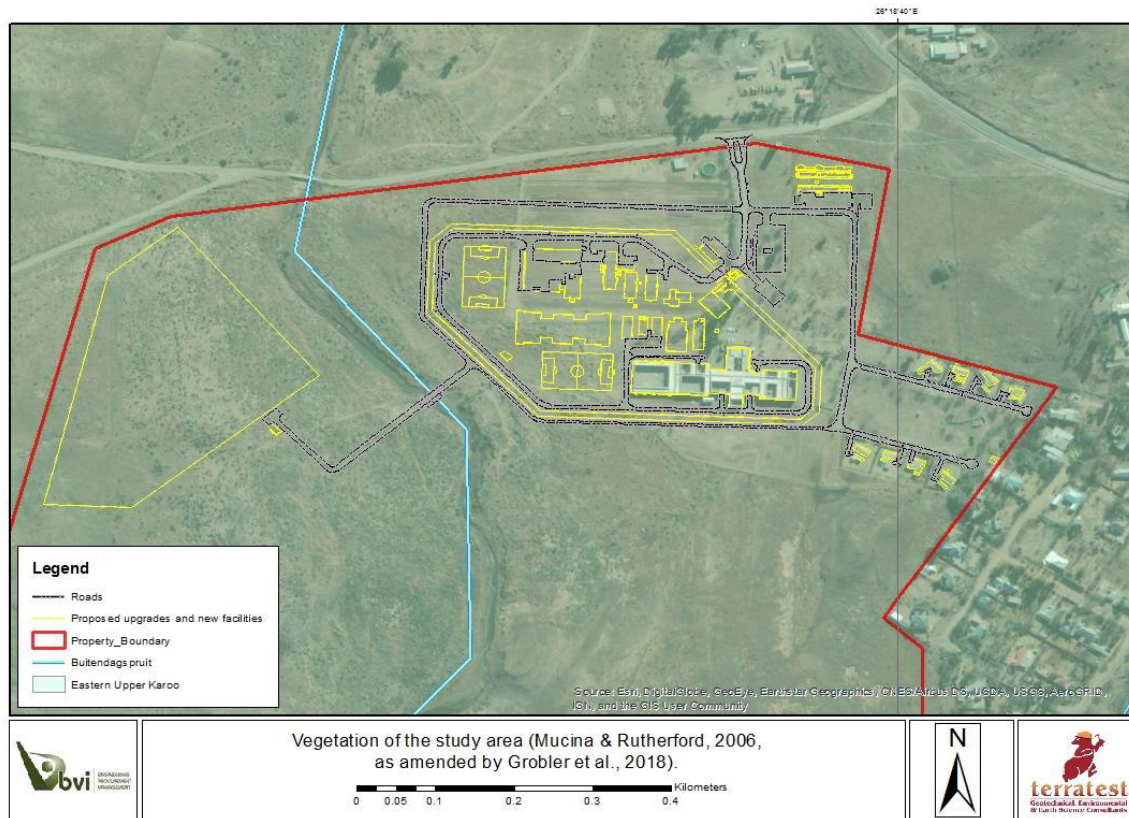


Figure 10: Map showing the vegetation of the proposed development site and surrounds.

2.4.2 Conservation Status

A conservation target of 21% has been set for Eastern Upper Karoo vegetation. At present, this vegetation type is statutorily conserved in a number of Protected Areas, including the Mountain Zebra and Karoo National Parks, as well as in the Oviston, Commando Drift, Rolfontein and Gariep Dam Nature Reserves.

The Eastern Upper Karoo vegetation type is listed as *Least Threatened* in terms of the National Spatial Biodiversity Assessment, 2004 (NSBA) and is not listed in the National List of Threatened Ecosystems, published in GN 1002 of 9 December 2011, in terms of the NEMBA.

It is estimated that approximately 2 % of this vegetation type has been transformed as a result of the construction of dams.

2.4.3 Critical Biodiversity Areas

The Eastern Cape Biodiversity Conservation Plan, 2007 (ECBCP) is a spatial plan that shows terrestrial and aquatic features that are critical for conserving biodiversity and maintaining ecosystem functioning. These areas are referred to as Critical Biodiversity Areas (CBA's) and Ecological Support Areas (ESA's). These CBAs are allocated the following management categories:

- CBA 1 = Maintain in a natural state
- CBA 2 = Maintain in a near-natural state
- CBA 3 = Other natural areas: Functional landscapes

In the case of the proposed development site, no portion of the site is identified as a CBA, as shown in Figure 11. The closest CBAs are located approximately 5 km from the proposed development site and will not therefore be adversely impacted by the proposed development.

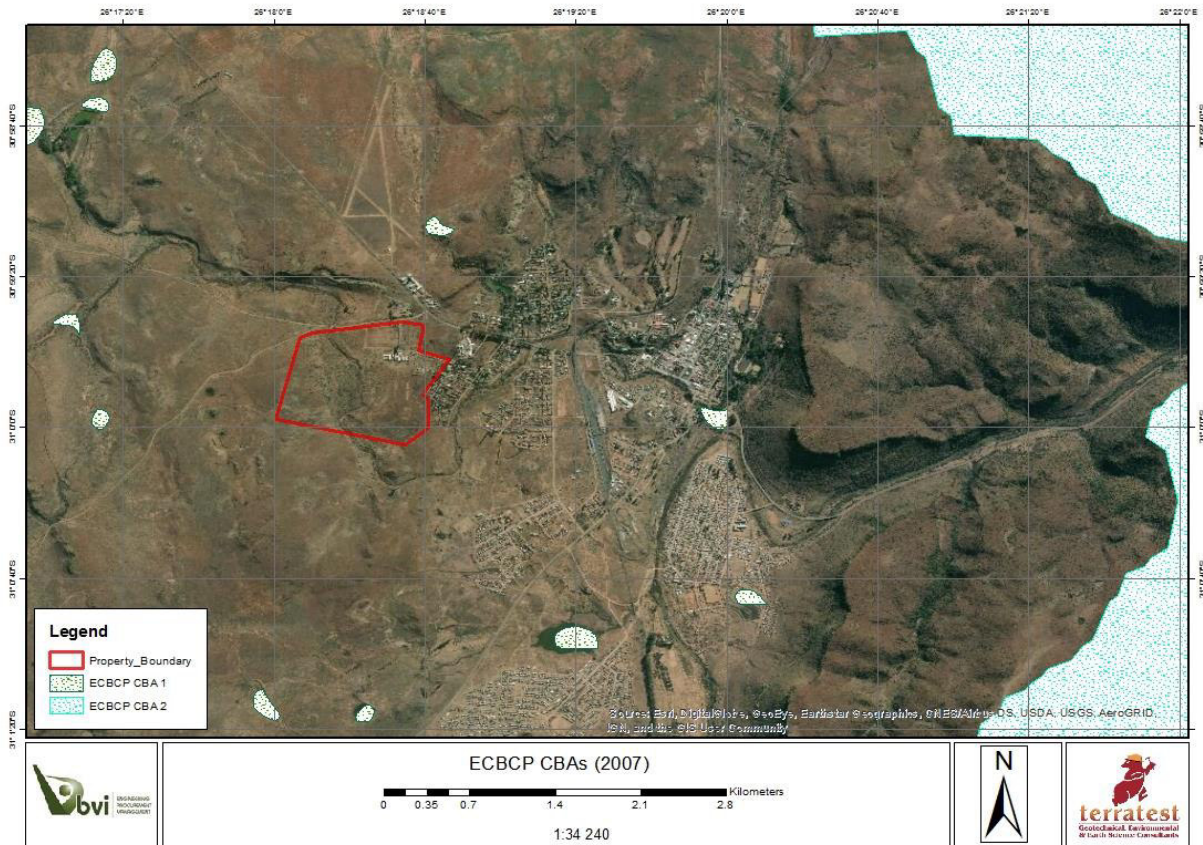


Figure 11: Map showing the CBAs occurring in proximity to the proposed development site (ECBCP, 2007).

2.4.4 Vegetation Specialist Assessment

Terratest (Pty) Ltd was appointed to conduct an assessment of the vegetation that is present on the site associated with the expansion of the existing Burgersdorp Correctional Facility in the Eastern Cape Province.

Summary of the onsite findings

During a site visit, it was noted that all indigenous vegetation occurring in the “currently active areas” bounded by the northern boundary of the property, the Buitendagspruit River, the existing facility and the eastern boundary of the property, has been removed and replaced with manicured lawns and gardens or the vegetable gardens. The remaining indigenous vegetation occurs outside of these “currently active areas”.

Portions of proposed expansion of the Burgersdorp Correctional Facility will occur within this previously disturbed footprint. However, other portions will occur outside of this footprint and will require the clearance of indigenous Eastern Upper Karoo vegetation.

The vegetation that occur on the site is dominated by a grass component. The grass component has a very limited species diversity which indicates to a high level of previous disturbance of the area, mainly as a result of overgrazing. As such the grasses on the site are dominated by the presence of *Aristida* species which are natural invading grasses. These consist of *Aristida congesta* (Tassel Three-awn Grass) and *Aristida diffusa* (Iron Grass) on the shallower rock areas. Other grasses such as *Themeda triandra* (Red Grass), *Sporobolus fimbriatus* (Bushveld Dropseed Grass) and *Elionurus muticus* (Wire Grass). The woody vegetation primarily consists of low shrubs consisting of *Asphalatus acicularis* subsp. *planifolia* (Peul Kapok), *Rosenia humilis* (Blouperdekarroobossie) and *Eriocephalus cinereum* (Kriedoring). The herbaceous

vegetation on the site is characterised by small shrubs and low growing succulents. These species include, *Moraea pallida* (Yellow Tulip), *Arctotheca calendula* (Cape Marigold), *Chrysocoma ciliate* (Bitter Bush), *Drosanthemum ligue* (Doublaarvygie) and *Helichrysum luciliodes* (Bergkerriebos). Little or no alien floral species occur on the site. The majority of these are located within the grounds of the current correctional facility and consist of *Pinus* species and other ornamental garden plants (Plates 1 – 5). Table 11 provides a list of the floral species found within the study area.



Plate 1: View of the vegetation in the immediate vicinity of the correctional facility.



Plate 2: View of the agricultural field used for the growing of vegetables.



Plate 3: View of the vegetation to the west of the current correctional facility, looking in a south-easterly direction.



Plate 4: View of the vegetation to the west of the current correctional facility, looking in a north-easterly direction.



Plate 5: View of the vegetation to the west of the current correctional facility, looking in a southerly direction.

Table 11: List of floral species found within the study area.

Scientific Name	SANBI Red Data List	PNCO	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Department of Agriculture, Forestry and Fisheries' List of Protected Trees
<i>Aristida congesta</i>	Least threatened	-	-	-
<i>Aristida diffusa</i>	Least threatened	-	-	-
<i>Arctotheca calendula</i>	Least threatened	-	-	-
<i>Asphalatus acicularis</i> subsp. <i>planifolia</i>	Least threatened	-	-	-
<i>Chasmatophyllum rouxii</i>	Least threatened	-	-	-
<i>Chrysocoma ciliate</i>	Least threatened	-	-	-
<i>Drosanthemum lique</i>	Least threatened	-	-	-
<i>Elionurus muticus</i>	Least threatened	-	-	-
<i>Eriocephalus cinereum</i>	Least threatened	-	-	-
<i>Helichrysum luciliodes</i>	Least threatened	-	-	-

<i>Hertia cluytiifolia</i>	Least threatened	-	-	-
<i>Moraea pallida</i>	Least threatened	-	-	-
<i>Phymaspermum scoparium</i>	Least threatened	-	-	-
<i>Rabiea albinota</i>	Least threatened	-	-	-
<i>Rosenia humilis</i>	Least threatened	-	-	-
<i>Salsola tetrandra</i>	Least threatened	-	-	-
<i>Selago persimilis</i>	Least threatened	-	-	-
<i>Selago walpersii</i>	Least threatened	-	-	-
<i>Sporobolus fimbriatus</i>	Least threatened	-	-	-
<i>Themeda triandra</i>	Least threatened	-	-	-

For the consideration of sensitive areas, areas classified as Critical Biodiversity Areas (CBAs) in the Eastern Cape Biodiversity Conservation Plan (2007) and Protected Areas as defined in the National Environmental Management: Protected Areas Act (Act No. 57 of 2003) have been considered.

In this regard, the site is not located in any area of conservation importance in accordance with the Eastern Cape Biodiversity Conservation Plan (2007). An informal Nature Reserve – The Mountain Nature Reserve, is located within 5 km from the study area, however, this Reserve is not a formally protected area in terms of the National Environmental Management: Protected Areas Act (NEMPA, Act 57 of 2003, as amended).

For more details, a copy of the Vegetation Specialist Assessment can be viewed in Appendix 11.

2.5 SURFACE WATER FEATURES

The Buitendagspruit River runs through the Burgersdorp Correctional Facility property, before flowing through the town of Burgersdorp and joining with the Wonderboomspruit River at a point located to the north-east of the town (Figure 12).



Figure 12: Map showing the location of surfacewater features within close proximity to the study area.

2.5.1 National Freshwater Ecosystems Priority Areas, 2011

Surfacewater features (watercourses, wetlands, etc.) is identified by the National Environmental Management Act (Act 107 of 1998): Environmental Impact Assessment Regulations (2014), as amended and the National Water Act (Act No. 36 of 1998) as sensitive environments.

The National Freshwater Ecosystem Priority Areas (NFEPA) programme provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supports sustainable use of water resources. These priority areas are called Freshwater Ecosystem Priority Areas, or FEPAs. Wetland ecosystem types are used by NFEPA for representing natural examples of the diversity of wetland ecosystem types across South Africa. Wetlands of the same ecosystem type are expected to share similar functionality and ecological characteristics. Information used to classify FEPAs included:

- Representation of ecosystem types and flagship free-flowing rivers;
- Maintenance of water supply areas in areas with high water yield;
- Identification of connected ecosystems;
- Representation of threatened and near-threatened fish species and associated migration corridors; and
- Preferential identification of FEPAs that overlapped with:
 - Any free-flowing river
 - Priority estuaries identified in the National Biodiversity Assessment 2011
 - Existing protected areas and focus areas for protected area expansion identified in the National Protected Area Expansion Strategy.

According to the NFEPA database (2011-2014) and 1:50 000 topographic maps (2016), a NFEPA River – the Buitendagspruit River traverses the property. One (1) NFEPA wetland occurs within 500 m of the property, namely an artificial channelled valley bottom wetland.

2.5.2 Desktop PESEIS Assessment, 2014

According to the Desktop Assessment undertaken by the Department of Water and Sanitation (DWS) in 2014¹ the Buitendagspruit River has a Present Ecological State (PES) rating of **D**, an Ecological Importance (EI) rating = **Moderate** and an Ecological Sensitivity (ES) rating = **Moderate**.

Present Ecological State

The PES rating is intended to describe the condition river according to ecological status or health compared to natural conditions. Six metrics are considered in the determination of PES, namely:

- Instream habitat continuity modification;
- Riparian / wetland zone continuity modification;
- Potential instream habitat modification;
- Riparian / wetland zone modification;
- Potential flow modification activities; and
- Potential physico-chemical modification activities.

A six-point system (A – F) is utilised to report on the PES of a river or drainage line. Details of the PES categories are provided in Table 12. As per the score assigned, the Buitendagspruit River is in a Largely Modified condition, implying that a large loss of natural habitat, biota and basic ecosystem functioning has already occurred.

Table 12: Present Ecological State Categories

PRESENT ECOLOGICAL STATE CATEGORIES	GENERAL DESCRIPTION
A: Natural	Unmodified, natural
B: Largely natural, with few modifications	A small change in natural habitats and biota may have taken place, but the ecosystem functions are essentially unchanged
C: Moderately modified	A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are predominantly unchanged
D: Largely modified	A large loss of natural habitat and biota and basic ecosystem functions has occurred
E: Seriously modified	The loss of natural habitat, biota and basic ecosystem functions are extensive.
F: Critically modified	Modifications have reached a critical level and the system has been modified completely, with an almost complete loss of natural habitat and biota. In the worst instances, the basic ecosystem functions have been destroyed and the changes are irreversible.

According to the comments contained in the Desktop Assessment, the four metrics in the section of the Buitendagspruit River under investigation were scored in the following ways, giving rise to the PES score:

¹ Department of Water and Sanitation. 2014. A Desktop Assessment of the Present Ecological State, Ecological Importance and Ecological Sensitivity per Sub Quaternary Reaches for Secondary Catchments in South Africa. Compiled by RQIS-RDM: <https://www.dwa.gov.za/iwqs/rhp/eco/peseismodel.aspx> accessed on 20/07/2018.

- Instream habitat continuity: seriously modified with habitat quality, diversity, size and variability along the entire length adversely affected.
- Riparian / wetland zone continuity: largely modified with a clearly detrimental impact on habitat quality, diversity, size and variability.
- Flow modification: high intensity flow modification occurring.
- Physico-chemical: activity limited.

Ecological Importance and Ecological Sensitivity

Ecological Importance of a river is an expression of its importance to the maintenance of ecological diversity and functioning on local and wider scales. Ecological Sensitivity (or fragility), on the other hand, refers to a systems ability to resist disturbance and its capability to recover from disturbance once it has occurred (resilience). An estimation of EI and ES requires consideration of the following ecological aspects:

- The presence of rare and endangered species, unique species (i.e. endemic or isolated populations) and communities, intolerant species and species diversity for both the instream and riparian component of a river;
- Habitat diversity (e.g. pools, riffles, runs, rapids, waterfalls, riparian forests, etc.);
- Biodiversity in general;
- The importance of a particular river or stretch of river in providing connectivity between different sections of river (i.e. whether it provides a migration route or corridor for species);
- The presence of conservation or relatively natural areas along the river section; and
- The sensitivity (or fragility) of the system and the resilience (i.e. the ability to recover following disturbance) of the system to environmental changes.

Generally, a four-point (1 to 4) scoring system is used to assess EI and ES. A description of the categories is provided in Table 13. Take note, the Buitendagspruit River, running through the proposed development site, was scored as having **Moderate** EI and ES.

Table 13: Ecological Importance and Ecological Sensitivity categories

ECOLOGICAL IMPORTANCE AND SENSITIVITY CATEGORIES	GENERAL DESCRIPTION
Very high	Quaternaries that are considered to be unique on a national or even international level, based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only small capacity for use.
High	Quaternaries that are considered to be unique on a national scale due to biodiversity (habitat diversity, species diversity, unique species, rare or endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases, may have substantial capacity for use.
Moderate	Quaternaries that are considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare or endangered species). These rivers (in terms of biota and habitat) are usually not very sensitive to flow modifications and often have a substantial capacity for use.
Low / marginal	Quaternaries that are not unique at any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have a substantial capacity for use.

2.5.3 Aquatic Specialist Assessment

Terratest (Pty) Ltd was appointed to undertake a Wetland Identification and Assessment of all wetlands and drainage lines associated with the expansion of the existing Burgersdorp Correctional Facility in the Eastern Cape Province.

Summary of the onsite findings

The NFEPA database indicated the presence of a single wetland area within the 500 m radius of the study area – an artificial wetland (Figure 13).

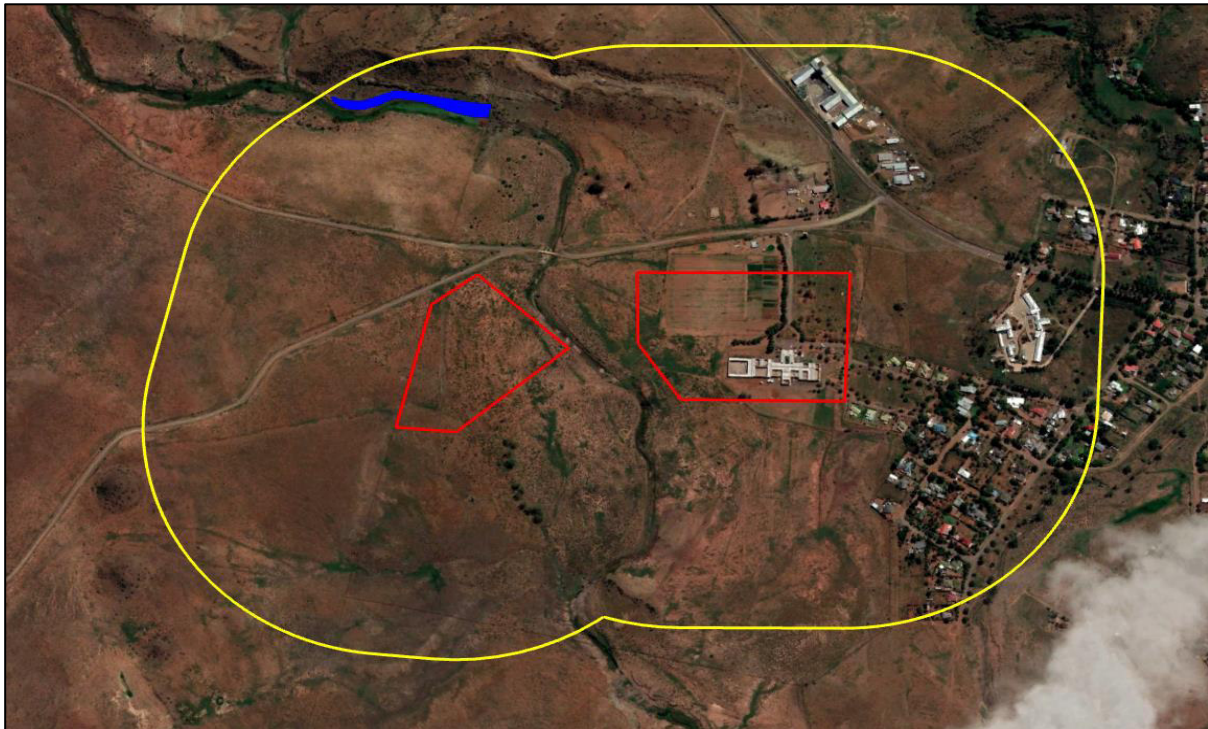


Figure 13: Extent of the 500m radius (in yellow) around the proposed development site (in red).

The artificial wetland area has been created by the construction of a dam in the tributary of the Buitendagsspruit Rivier. This artificial wetland area is located to the northwest and upstream of the proposed development site. The site visit has confirmed the presence of this wetland area as well as the presence of second wetland area (Figure 14) that passes between the area that has been identified as the new agricultural area and the new facility footprint – a natural channelled valley bottom wetland. Both of these wetland areas are directly associated with the Buitendagsspruit River.

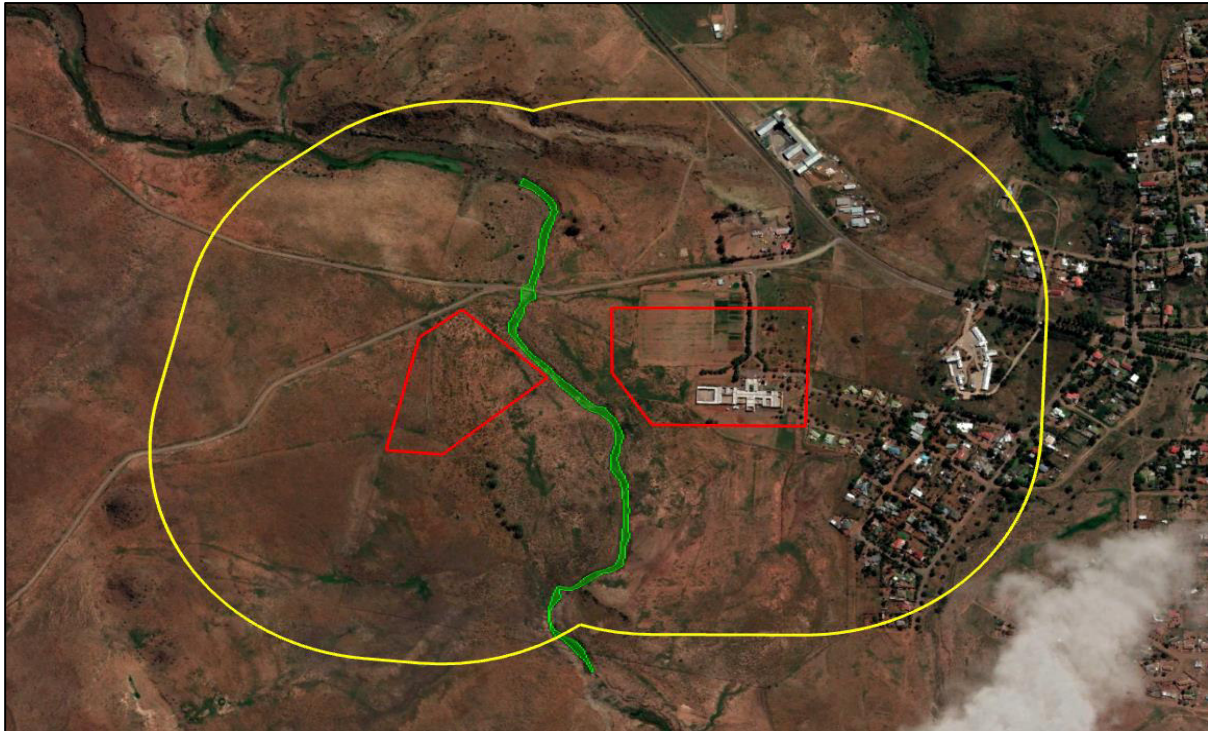


Figure 14: Location of the wetland identified during the site assessment.

Neither of these development areas directly impact on this wetland area. A river crossing over the natural wetland will be constructed to provide access to the new agricultural area.

Table 14: Findings of the Wetland Assessment

Wetland Unit Identification	<p>As mentioned above, the wetland area indicated in the NFEPA Database relates to a stock dam that has been built in the tributary of the Buitendagspruit. The HGM unit associated with the natural wetland area that crosses the site, is a Channelled Valley Bottom wetland. This wetland area is approximately 2 ha in size with the start, middle and end coordinate of this HGM unit is provided below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d3d3d3;">Wetland chainage</th> <th style="background-color: #d3d3d3;">Latitude</th> <th style="background-color: #d3d3d3;">Longitude</th> </tr> </thead> <tbody> <tr> <td>Start</td> <td>30° 59' 25.00"</td> <td>26° 18' 15.04"</td> </tr> <tr> <td>Middle</td> <td>30° 59' 41.79"</td> <td>26° 18' 19.60"</td> </tr> <tr> <td>End</td> <td>30° 00' 03.08"</td> <td>26° 18' 20.75"</td> </tr> </tbody> </table>	Wetland chainage	Latitude	Longitude	Start	30° 59' 25.00"	26° 18' 15.04"	Middle	30° 59' 41.79"	26° 18' 19.60"	End	30° 00' 03.08"	26° 18' 20.75"
Wetland chainage	Latitude	Longitude											
Start	30° 59' 25.00"	26° 18' 15.04"											
Middle	30° 59' 41.79"	26° 18' 19.60"											
End	30° 00' 03.08"	26° 18' 20.75"											
Wetland unit setting and description	<p>The Channelled Valley Bottom wetland is directly associated with the seasonal tributary of the Buitendagspruit River that drains the study area in a southerly direction.</p> <p>The channel of the tributary show signs of severe erosion which has resulted in the fragmentation of the valley bottom wetland. The erosion of the channel is attributed to the highly erodible nature of the Duplex soils in the area, the overgrazing of the vegetation along the banks of the tributary and the</p>												

	violent nature of the rainfall events that is typical of the area.
Wetland soils	The need for soil augering was considered to be unnecessary as the wetland fragments are clearly directly related to the tributary of the Buitendagspruit and did not extend outside of the macro channel of this tributary.
Description of the wetland Type	Channelled Valley Bottom wetlands resemble floodplains. However, they are characterised by less active deposition of sediment and an absence of oxbows and other floodplain features such as natural levees and meander scrolls. They tend to be narrower and have somewhat steeper gradients and the contribution from lateral groundwater input relative to the main stream channel is generally greater.
General Functional Description of Wetland Types	From a functional point of view, intact Channelled Valley Bottom wetlands contribute less towards flood attenuation and sediment trapping but would supply these benefits to a lesser extent. Some nitrate and toxicant removal potential would be expected, particularly from the water being delivered from the catchment.

The Channelled Valley Bottom wetland area associated with the study area has undergone severe fragmentation as a result of the high levels of erosion associated with the wetland and the tributary of the Buitendagspruit. This is as a result of the highly erodible Duplex soils present in the area. Irrespective of the occurrence of the fragmentation of the wetland area, the wetland will provide a service with regards to the storing of nutrients (nitrates and phosphates) and toxicants from the catchment as well as play a role in flood attenuation. The fragmentation will however significantly reduce the level of provision of these services.

The results of the Level 1 assessment of the WET-Health model has indicated that the wetland area have the following classifications:

- The PES classification of the Channelled Valley Bottom wetland is a Class D. This means that a large change to the ecosystem processes has occurred which has resulted in a loss of the natural habitat and biota as well as an impact on the ecological functioning of the wetland.
- This PES classification is based on the impacts that has occurred within the catchment upstream of the wetland area that has affected the natural hydrology and geomorphology of the wetland area. The presence of a stock dam and to a lesser extent a road bridge immediately upstream of the wetland area has resulted in a significant impact on the nature (volume and velocity) of the hydrology in the wetland. Similarly, the stock dam and to a lesser extent a road bridge has also impacted on the geomorphology of the wetland as the sediment flow through the wetland has been significantly affected.

The impact on the two wetland drivers mentioned above has in turn impacted on the vegetation in the wetland which has resulted in high levels of erosion in the wetland area. Large areas within the wetland have eroded to the bedrock which has caused the fragmentation of the wetland area. The overall combined Present Ecological State (PES) score as the wetland has been classified as a Category C wetland (Moderately Modified. A moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact). Further to the PES score of the wetland area, it is believed that the impacts on the hydrology and geomorphology will persist and potentially increase which will result

in a gradual degradation of the wetland. Based on the findings of the WET-Health and WET-EcoServices models, it is considered that the EIS of the wetland area is of medium to low importance to the local ecology.

Based on the nature and level of the ecosystem services provided by the wetland and the PES and EIS classification, it is considered that a 15 m buffer from the edge of the wetland will be sufficient to ensure that the current services and PES and EIS classification will not be impacted upon. As such the downstream benefactors of the ecosystem services will also not be impacted.

The figure below makes provision for the implementation of the proposed 15 m buffer around the Channelled Valley Bottom wetland area. No part of the new expanded facility will impact on the buffer apart from the proposed road and pipeline crossing. These features however, are considered to be acceptable infrastructure as they will make provision for hydrological drainage. If the proposed pipeline cannot be incorporated in the design of the road bridge, it is suggested that the pipe crossing be designed to make provision for a pipe-bridge structure elevated above the banks of the tributary of the Buitendagspruit River.

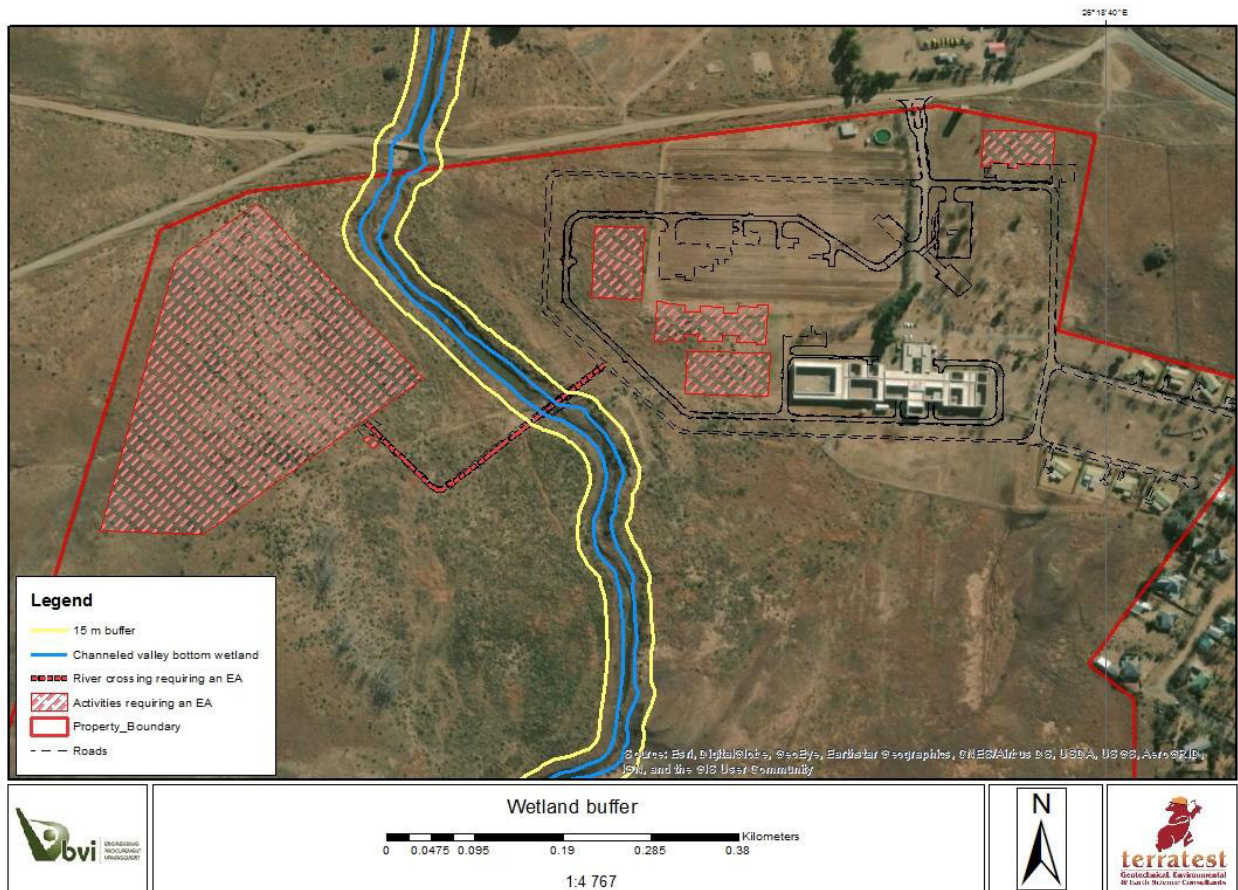


Figure 15: Provision of a 15m buffer (in yellow) around the Channelled Valley Bottom wetland.

For more details, a copy of the Wetland Specialist Assessment can be viewed in Appendix 12.

2.6 SOCIO-ECONOMIC ASPECTS

The Walter Sisulu Local Municipality (WSLM) is a Category B municipality, covering an area of approximately 13 269 km², located in the west of the Joe Gqabi District in the Eastern Cape Province, south of the Orange River and Gariep Dam. The municipality is the largest of the three municipalities in the district, making up half of its geographical area. It was established by the amalgamation of the Gariep and Maletswai Local

Municipalities in August 2016. Five main towns exist within this municipality namely Aliwal North, Jamestown, Burgersdorp, Steynsburg and Venterstad (WSLM IDP, 2017-2022). The WSLM is made up of 11 wards. According to Stats SA (2011), the total population stood at 77 477 with majority of the municipality made up of black Africans (79.9%), followed by coloureds (11.9%) and whites (7.5%).

The main economic sectors present in the municipality include:

- Community services (33%);
- Trade (19%);
- Finance (16%);
- Manufacturing (11%);
- Construction (4%);
- Electricity (1%);
- Transport (9%); and
- Agriculture (7%)

With a GDP of R 5.27 billion in 2016 (up from R 1.84 billion in 2006), the Walter Sisulu Local Municipality contributed 50.48% to the Joe Gqabi District Municipality GDP of R 10.4 billion in 2016 increasing in the share of the Joe Gqabi from 47.56% in 2006. The Walter Sisulu Local Municipality contributes 1.56% to the GDP of Eastern Cape Province and 0.12% the GDP of South Africa which had a total GDP of R 4.34 trillion in 2016 (as measured in nominal or current prices). It's contribution to the national economy stayed similar in importance from 2006 when it contributed 0.10% to South Africa (WSLM IDP, 2017-2022).

In 2015/2016, the WSLM had the highest overall crime rate of the sub-regions within the overall Joe Gqabi District Municipality with an index value of 137 compared to bordering municipalities with 75 and 89.

Table 15 provides an overview of the demographic information for the WSLM from 2011 to 2016.

Table 15: Demographic information related to the Walter Sisulu Local Municipality (Municipalities of South Africa, 2018).

DEMOGRAPHIC INFORMATION	2016	2011
Population	87 263	77 477
Age Structure		
Population under 15	35.5%	32.1%
Population 15 to 64	60.8%	62.0%
Population over 65	3.7%	6%
Dependency Ratio		
Per 100 (15-64)	64.6	61.4
Sex Ratio		
Males per 100 females	90.8	92.2
Population Growth		
Per annum	2.7%	n/a
Labour Market		

DEMOGRAPHIC INFORMATION	2016	2011
Unemployment rate (official)	n/a	n/a
Youth unemployment rate (official) 15-34	n/a	n/a
Education (aged 20 +)		
No schooling	7.4%	12.5%
Matric	24.8%	19.2%
Higher education	7.9%	8.5%
Household Dynamics		
Households	23 706	21 874
Average household size	3.7	3.4
Female headed households	42.4%	42.4%
Formal dwellings	89.3%	90.2%
Housing owned	60.9%	47.9%
Household Services		
Flush toilet connected to sewerage	83.0%	72.1%
Weekly refuse removal	83.4%	82.1%
Piped water inside dwelling	48.1%	45.4%
Electricity for lighting	87.4%	87.0%

2.7 CULTURAL HERITAGE SITES

Ten of the Eastern Cape's provincial heritage sites are located in Burgersdorp, the closest town to the study area. They include the Christ Church, the Coetzee House, the De Bruin House, the Jubilee Fountain, the Old Goal, the Old Reformed Church Parsonage, the Old Reformed Church Theological Seminary, the Dutch reformed church, the Anglo Boer blockhouse and the Dutch language monument. The Dutch Reformed church was declared a provincial heritage site in 1996. A Second Boer War blockhouse overlooking the town, commonly known as the Sentinel was declared a provincial heritage site in 1939. The Dutch Language monument, built in 1893, depicts a woman pointing her finger at a book in her hands. This monument was declared a provincial heritage site in 1937.

2.7.1 Heritage Specialist Assessment

Palaeo Field Services was appointed to undertake a Phase 1 Heritage Impact Assessment for the expansion of the existing Burgersdorp Correctional Facility in the Eastern Cape Province. The assessment findings have been summarised below.

The study area has been divided into two areas for investigation –

- The proposed expansion of the existing prison infrastructure (Area 1)
- The proposed new site demarcated for agricultural purposes (Area 2)
- Low-level river crossing over the Buitendagspruit River to allow prison staff to access the new vegetable gardens (Area 2).

The chances of palaeontological impact resulting from the proposed development are considered to be improbable because of the nature of the underlying geology. As far as the palaeontological heritage is concerned, the proposed development affecting Area 1 and 2, as well as the river crossing area may proceed with no further palaeontological assessments required. If, in the unlikely event that localized fossil material is discovered within the alluvial overburden near the spruit during the construction phase of the project, it is recommended that a professional palaeontologist be called in to record and rescue the fossils where necessary.

Both study areas are located within a region that has previously yielded ample archaeological as well as historical evidence of the early movement and settlement of Khoi herders and San hunter-gatherers along the Orange River during the last 2000 years. However, the proposed development footprint is located on fairly degraded terrain resulting from previous and ongoing prison operations. Areas 1 and 2, as well as the river crossing area, are not considered archaeologically vulnerable, and there are no major archaeological grounds to suspend the proposed development, provided that all excavation activities are confined to within the confines of the development footprints. All the study areas considered to be of low archaeological significance and is assigned a site rating of Generally Protected C.

SECTION 3: LEGAL CONTEXT

3.1 APPLICABLE LISTED ACTIVITIES

In terms of the Environmental Impact Assessment (EIA) Regulations (2014, as amended in 2017), promulgated in terms of the National Environmental Management Act (Act 107 of 1998 (NEMA), certain Listed Activities are specified for which either a Basic Assessment (GNR. 983 and GNR. 985) or a full Scoping and EIA (GNR 3984) is required.

The following Listed Activities in Government Notice 983 (Listing Notice 1) are applicable to the proposed development. No listed activities in Government Notice 985 (Listing Notice 3) are applicable.

Table 16: Applicable Listed Activities in terms of the NEMA EIA Regulations (2014, as amended in 2017).

LISTING NOTICE & ACTIVITY	LISTED ACTIVITY AND TRIGGER AS PER THE PROJECT DESCRIPTION
GNR 983 (Listing Notice 1), as amended: Activity 12(ii)(c):	<i>"The development of – (ii) infrastructure or structures with a physical footprint of 100 square meters or more, where such development occurs – (c) within 32 meters of a watercourse, measured from the edge of the watercourse"</i> The establishment road crossing the Buitendagtspruit River is proposed to take place within 32 meters of the edge of a watercourse running through the property. The start and end coordinates of this road is: 30°59'40.95"S, 26°18'22.53"E and 30°59'43.06"S, 26°18'14.16"E.
GNR 983 (Listing Notice 1), as amended: Activity 19:	<i>"The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from – (a) A watercourse;"</i> The construction of an access road across a watercourse located on the property, will require the excavation and infilling of in excess of 10 m ² of material within the watercourse.
GNR 983	<i>"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>

(Listing Notice 1), as amended: Activity 27	<i>(i) the undertaking of a linear activity...</i> An area of indigenous vegetation, exceeding 1 ha in extent, will need to be cleared to make way for the proposed expansions and construction of the – <ul style="list-style-type: none"> a. Soccer field 1 (Central coordinate: 30°59'37.57"S, 26°18'22.97"E) b. Soccer field 2 (Central coordinate: 30°59'41.36"S, 26°18'26.67"E) c. Building 1 (Central coordinate: 30°59'39.67"S, 26°18'26.12"E) d. Building 2 (Central coordinate: 30°59'33.43"S, 26°18'36.92"E)
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Based on the above proposed activities, a Basic Assessment (BA) Process is required. An organogram of the BA Process is provided in Figure 15 for reference purposes.

3.2 DEA PRE-APPLICATION MEETING

A Pre-Application Meeting was not required with the Department of Environmental Affairs.

3.3 THE NATIONAL WATER ACT (Act 36 of 1998)

Section 21 (a) – (k) contained within the National Water Act (NWA, Act 36 of 1998, as amended) describes activities defined as a water use under the Act. These activities may only be undertaken subject to the application for, and issue of, a Water Use License (WUL) or General Authorisation (GA). The Competent Authority in this regard is the Department of Water and Sanitation (DWS). Section 21 water uses include -

SECTION 21 WATER USES AS DEFINED BY THE NATIONAL WATER ACT	
Section 21 (a)	taking water from a water resource
Section 21 (b)	storing water
Section 21 (c)	impeding or diverting the flow of water in a watercourse
Section 21 (d)	engaging in a stream flow reduction activity contemplated in section 36
Section 21 (e)	engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)
Section 21 (f)	discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit
Section 21 (g)	disposing of waste in a manner which may detrimentally impact on a water resource
Section 21 (h)	disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process
Section 21 (i)	altering the bed, banks, course or characteristics of a watercourse
Section 21 (j)	removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people
Section 21 (k)	using water for recreational purposes

A Water Use Authorisation (WUA) is required for any construction activity within the extent of a watercourse (i.e. riparian and instream habitat (or within 100 m of the watercourse or drainage line) or the 1:100 year floodline; whichever is the greatest) or within 500 m of a wetland in terms of the following triggers from the National Water Act (No. 36 of 1998), in terms of Section 21 (c) and/or (i). The relevant WUA must be obtained from the Department of Water and Sanitation (DWS) prior to commencement of construction via the e-WULA system and must be made in accordance with the provisions of sections 40 and 41 of the Act.

Terratest (Pty) Ltd, has been appointed to conduct the applicable WUA application on behalf of the applicant. The following water uses will be applied for:

- Section 21 (c) - impeding or diverting the flow of water in a watercourse
- Section 21 (i) - altering the bed, banks, course or characteristics of a watercourse.

The above water uses are associated with the upgrading and expansion of the prison facility.

3.4 NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999) (NHRA)

The NHRA aims to provide for the integrated and interactive management and conservation of the national heritage resources in South Africa so that they may be bequeathed for future generations.

Section 38 lists categorised development processes which require the South African Heritage Resources Agency (SAHRA) to be notified and furnished with an archaeological and palaeontological study of a proposed project area in order to obtain project authorisation. The following development processes are triggered during the construction and operational phases of the proposed project:

- 1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as –*
 - (a) *any development or other activity which will change the character of a site -*
 - (i) *exceeding 5 000m² in extent...*

The South African Heritage Resources Agency (SAHRA) has a mandate, in terms of the NHRA, to enforce the conditions of the NHRA, and hence oversees the management of heritage resources together with provincial heritage agencies. The Eastern Cape Provincial Heritage Authority (ECPHRA) is the competent authority for all Heritage aspects in the Eastern Cape and will be the applicable stakeholder in terms of this project.

3.5 OTHER LEGISLATION, POLICIES AND GUIDELINES

Table 17 provides a list of all the applicable legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA Regulations (2014, as amended in 2017).

Table 17: Applicable legislation, policies and/or guidelines

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	ADMINISTERING AUTHORITY:	DATE:
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) – for protection of agricultural resources and for control and	National Department of Agriculture	1983

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	ADMINISTERING AUTHORITY:	DATE:
removal of alien invasive plants		
Environmental Conservation Act (Act 73) – for potential environmental degradation	Department of Environmental Affairs	1989
National Environmental Management Act (Act 107 of 1998) – for its potential to cause degradation of the environment (Section 28)	Department of Environmental Affairs	1998
National Water Act (Act 36 of 1998) – for potential to cause pollution of water resources defined under the Act (Section 19 and 21)	Department of Water and Sanitation	1998
The National Heritage Resources Act (Act No 25 of 1999 as amended) – for the identification and preservation of items of heritage importance	SAHRA Eastern Cape Provincial Heritage Authority	1999
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993): Asbestos Regulations, 2001	Department of Labour	2002
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) – for protection of biodiversity and permit applications	Department of Environmental Affairs Department of Economic Development, Environmental Affairs and Tourism	2004
Guideline 4: Public Participation in support of the EIA Regulations (2005)	Department of Environmental Affairs and Tourism	2006
Guideline 7: Detailed Guide to Implementation of the Environmental Impact Assessment Regulations (2006)	Department of Environmental Affairs and Tourism	2007
Environmental Conservation Act, 1989. Regulations for the prohibition of the use, manufacturing, import and export of asbestos and asbestos containing materials	Department of Environmental Affairs and Tourism	2008
Department of Environmental Affairs (2017), Public Participation guidelines in terms of NEMA EIA Regulations	Department of Environmental Affairs, Pretoria, South Africa	2017
Integrated Environmental Management Guideline; Guideline on Need and Desirability (2017)	Department of Environmental Affairs, Pretoria, South Africa	2017
Walter Sisulu Local Municipality By-Laws	Local Municipality	Updated accordingly

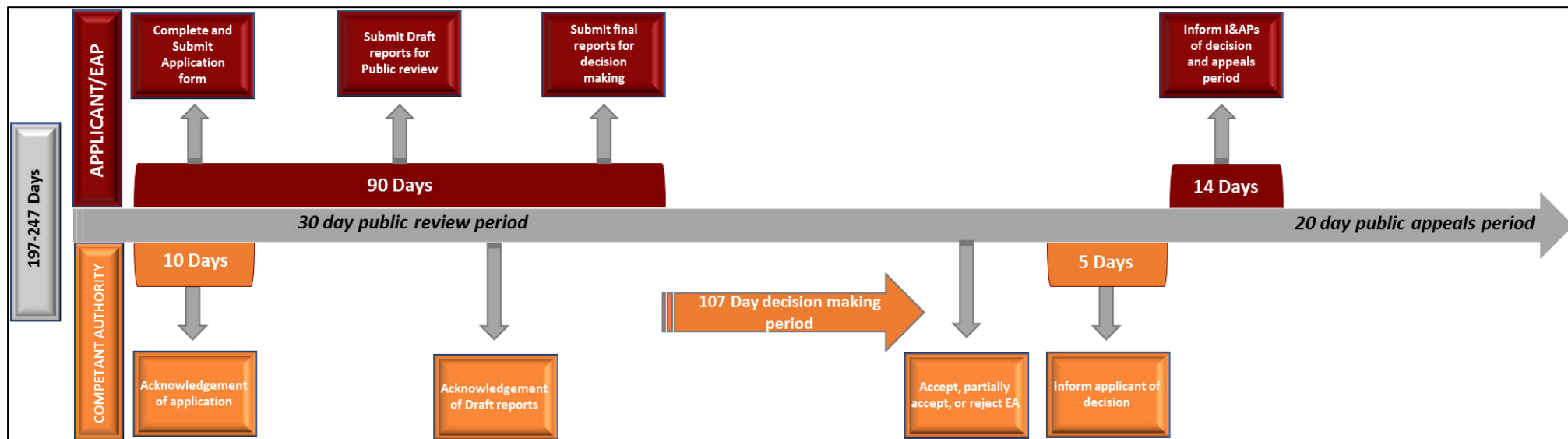


Figure 16: Basic Assessment Process diagram.

SECTION 4: NEED AND DESIRABILITY

4.1 NEED AND DESIRABILITY

The existing Burgersdorp Correctional Facility, which is owned by the National Department of Public Works (DPW) and operated by the Department of Correctional Services (DCS), was constructed during 1973 and was designed to accommodate 150 inmates.

Since its construction, almost 45 years ago, the prison structure has, as a result of poor maintenance, become increasingly dilapidated. In addition, due to increased demand for prison space, the facility has also become increasingly overcrowded, and is home, at present, to 334 inmates. Existing service infrastructure has been unable to meet the increased demand of the overcrowded prison, with the result that the facility periodically experiences water and electricity outages, and sewer overflows.

The DPW and DCS therefore identified a need to both upgrade and expand the prison facility, so as to sustainably meet the demand for prison space going forward. This project is considered as a key priority by The DCS which had the following initial needs:

- a. Pre-processing Unit, Administrative Building, and Central Visitors Facilities;
- b. Admission Processing Facility, Housing for 240 inmates and Segregation Unit;
- c. Chef/Cook section for 20 inmates, Medical Services and Food Services;
- d. Educational, Vocational and Central Laundry;
- e. Multi-purpose Hall, General Logistics and Garages for State Vehicles;
- f. Building Maintenance Workshop, Building Services Platform and Repair and Renovation to Existing Facilities; and
- g. Agricultural store, Sports field and Site Development.

The benefits of this upgrade for the local communities and society in general are summarised below:

- a. Reduce overcrowding;
- b. Create space for more inmates;
- c. Promote humane treatment;
- d. To comply with relevant standards and specifications;
- e. A security upgrade will result in safer working conditions for staff and it will increase the safety of the Burgersdorp town; and
- f. Inmates could be reformed and once released, they could contribute towards the growth of the community.

4.2 PLANNING INITIATIVES

4.2.1 *National Development Plan – 2030 (NDP)*²

A critical action within the National Development Plan for 2030 is to build safer communities. One of the key points in achieving this action is for “The criminal justice system to have a single set of objectives, priorities and performance measurement targets. Further implementation of the seven-point plan will receive greater inter departmental coordination”. One of the five (5) priorities in achieving a crime free South Africa is “increasing the rehabilitation of prisoners and reducing recidivism”.

² National Planning Commission of SA. National Development Plan 2030 - Our Future-make it work. ISBN: 978-0-621-41180-5.

Successful reintegration of released prisoners into society is largely dependent upon the quality of rehabilitation programmes and conditions into which they are released. Correctional Services play a vital role in rehabilitating prisoners and reducing recidivism by preventing prisoners from relapsing into criminal activity and in so doing, putting the safety of the community at risk (NDP 2030).

Another priority is to reduce overcrowding. It was found that placing more prisoners in the same number of cells creates harsher conditions that ignite and promote violence and increase gang power. Warder-to inmate ratios are affected negatively, and supervision of inmates decreases as a result. These conditions increase the prisoners' propensity to violence and decrease the prospects for effective rehabilitation.

By upgrading the prison facility to allow for more holding cells and more space, to provide more humane conditions, and providing agricultural fields to the prisoners this project seeks to pursue this vision.

4.2.2 Walter Sisulu Local Municipality SDF

The WSLM currently does not have an adopted Spatial Development Framework (SDF). The SDFs of the former Gariep Local Municipality is a draft that was developed and tabled to council in 2008 and the SDF of former Maletswai Local Municipality was adopted by Council in 2012 respectively. A recommendation for the adoption of the District SDF which was reviewed in 2016 has been made. It was proposed that the review process for the WSLM would be completed in the 2017/18 financial year subject to availability of funds (WSLM IDP, 2017-2022). To date this has not yet been completed.

The WSLM IDP (2017-2022) makes mention of an SDF and provides draft proposals, however not much has been concluded on these proposals. The Burgersdorp Prison has been labelled as an "Authority" site and there is no indication of what the area has been earmarked for.

The proposed development site is located inside the urban edge, as per the Walter Sisulu IDP (2017 – 2022).

SECTION 5: PUBLIC PARTICIPATION

To fulfil the necessary public participation required as part of the BA Process, the following methods of stakeholder engagement were conducted by the EAP, as outlined below.

5.1 NEWSPAPER ADVERT

A newspaper advertisement was published at the onset of the project to inform the general public of the BA Process. An advertisement was published in English in the Public Notices section of The Herald newspaper on 22 March 2017. A copy of the advertisement is included as Figure 17 and in Appendix 13 of this report. Once the Draft report is available for public review an additional advert will be placed, and proof thereof included in the Final BAR.

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 / 24 March 2017

writing and reading skills.
 Experience is essential,
 with contactable
 references.
STRICTLY NO
CHANGERS!
 If you match the criteria,
 please fax CV to:
 086-530-0792.

HALF DAY
RECEPTIONIST / PA
 Required for a dynamic
 Architectural firm. Experi-
 ence / qualification with
 Microsoft and at least 2
 years' experience in a
 similar position is essential.
 Experience in the building
 industry and Pastel advan-
 tages. Drivers' license
 and own car essential. To
 start immediately. Please
 send CV and recent head
 and shoulders photo to
reception.pa.jobadvert01@gmail.com

LOGISTICS/
ADMIN CLERK
 Permanent position
 available at a Food
 manufacturing company
 in Port Elizabeth.
 Minimum requirements:
 1) Three to five years
 corporate working
 experience in Logistics
 environment,
 2) Grade 12 certificate
 with mathematics
 3) Knowledge of MS
 Office, Word, advanced
 Excel, including pivot
 tables
 4) Highly detail-orient-
 ed, organized and able to
 handle multiple projects
 at once
 5) Good communica-
 tion skills in English
 and telephone skills are
 required. The opportunity
 exists to develop within a
 small growing company.
 Candidates must have
 contactable references.
 Qualifying candidates
 can email their CV to:
 info@
kandfindustries.co.za
 Short-listed candidates
 will be contacted for
 an interview.

Medium Size
CONSTRUCTION
COMPANY
Port Elizabeth
REQUIRE:
2 x FOREMEN,
1 x HEALTH & SAFETY
OFFICER, 1 x BUYER
 * 3 years' experience
 * One year contract
 position
 * Driver's License
 preferable
 Preference will be given
 to candidate who has
 worked in construction
 industry before.
Fax CV 086-582-0516
 or email to
johnlindsay04@gmail.com

TEXTILE INDUSTRY
OPPORTUNITY
ASSISTANT
TO THE

any long unperformed
 for 2/3/5 days or sleep in.
 Lives all house work
 Handworking and honest.
 Please call 082-154-4638.

LEGAL NOTICES



NOTICE OF ENVIRONMENTAL AUTHORIZATION PROCESSES

APPLICATION FOR ENVIRONMENTAL AUTHORIZATION: PROPOSED UPGRADE AND EXPANSION OF THE BURGERSDORP CORRECTIONAL FACILITY, EASTERN CAPE PROVINCE
 Notice is hereby given in terms of Regulation 41(2)(c) of the Environmental Impact Assessment (EIA) Regulations (2014) promulgated in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), and published in Government Notice (GN) R 982 (4 December 2014) of the intent to make application for Environmental Authorization for the above-mentioned proposed development.

The proposed development triggers Activities 12(xii)(c), 13, 19(i) and 27 of GN R 982, as well as activities 4(b) (i)(gg) and 14(x)(c)(ii) (iii) of GN R 982, and is therefore subject to a Basic Assessment Process for Environmental Authorization. The Applicant, Department of Public Works, has appointed Terratest (Pty) Ltd to provide the required environmental services.

In accordance with Regulation 41(2) of the aforementioned legislation, the public are hereby notified of the application and are invited to submit a written request for registration as an Interested and Affected Party to the EAP listed below. Please include your name and contact details as well as a disclosure of your interest in the project. Upon registration, additional information pertaining to the proposed development shall be forwarded to you.
Contact: Sarah Baxter
Terratest (Pty) Ltd
Post: P.O. Box 27308,
Greenacres, Port Elizabeth, 6057
Tel: (041) 360 8730
Fax: (041) 363 1922
Email: baxlers@terratest.co.za

NOTICE

Kindly take notice that a Court Order was granted in the High Court, Port Elizabeth, under case number 620/2017 in terms of:

by Metropolitan Municipality (NMBMM), hereby calls for interested parties to submit a proposal for the provision of engineering services in relation to the derelict Telkoms Park, Happy Valley Precinct. Request for Proposal (RFP) documents, will be available at the offices of the MBDA.

The Request for Proposal documents, outlining the Scope of Work and require available at the offices of the MBDA, Corner Lower Valley Road & South Union Floor, Tramways Building, Central, Port Elizabeth on payment of a non-refundable fee of R 250.00 from **Wednesday 22 March 2017** after 10h00. Our office hours are between 08h00 to 16h30.

Payment must be made either by cheque, payable to 'Mandela Bay Developer' by direct deposit into the following bank account:

Bank: NedBank Limited
 Branch: Business Banking Eastern Cape
 Account No: 1084853833
 Branch Code: 126317
 Account Name: Mandela Bay Development Agency
 Reference: MBDA TP 01/17- (followed by bidder's name)

A compulsory briefing session will take place at the MBDA offices on Monday 20 March 2017 at 10h00.

Proposals shall be subject to the meeting of certain functionality requirements thereafter to be evaluated on 80/20 preference points system in accordance with the Management Directives of the MBDA.

Five (5) copies, 3 hard copies and 2 on compact disk (CD) of the proposal must be placed in a sealed envelope and clearly marked "PROFESSIONAL ENGINEERING SERVICES IN RELATION TO THE DEMOLITION OF TELKOM PARK, HAPPY VALLEY PRECINCT (Contract No: MBDA TP 01/17)" and are to be placed in the MBDA on the 1st Floor, Tramways Building, Corner Lower Valley Road & South Union Floor, Central. The closing date and time for submissions is Friday 07 April 2017 thereafter proposals will be publicly opened.

Late and incomplete Proposals will not be accepted. The only or lowest Proposal necessarily be accepted and the MBDA reserves the right to accept the whole or a part of a Proposal, or not to make an appointment.

For further information contact Dorelle Sapere during office hours at tel. 041 81 041 562 5235 or email publictenders@mbda.co.za (please quote ref. no. MB on subject line).



SUPPLY CHAIN MANAGEMENT (SCM)

Tenders are invited for the following:

Documents for the following tenders can be obtained at the applicable **non-refundable** a Supply Chain Management Tender Office, Harrower Road North End, Port Elizabeth 6001, I tel. 041 506 7531, or by prior notification from the Uitenhage Supply Chain Management Office 17 Sellick Street, Uitenhage, tel. 041 994 1111

This after payment has been made in Port Elizabeth at the cashiers, Mfanasekhaya G (formerly Eric Tindale Building), Govan Mbeki Avenue or in Uitenhage at the Treasurer Street.

When payment is made, please quote the following information:

On cash/cheque payment: Vole 1001547769
 On bank transfer payment: Bank account number: 4079633826, Code 632005
 Account name: N.M.B.M. – Deposit Account/Primary
 Bank: ABSA Bank P.E.
 Reference: Vole 1001547769

Proof of payment must be provided.

TRI-ANNUAL TENDERS	
Period: Tenders are invited for a 12 – 36 months' period.	
SCM No.	Services/ Goods/ Other – Value exceeding R1 000 000, including VAT

Figure 17: Newspaper advertisement placed.

5.2 NOTICE BOARDS

The purpose of the site notices was to inform neighbours and community members of the proposed BA Application. The details of the EAP were also provided should any member of the public require additional information or wish to register as an I&AP in the Application. Three (3) site notice boards, measuring 60 x 42 cm, were placed at the following locations in 2017:

LOCATION	SOUTH	EAST
Poster 1 - On the proposed development site, at the entrance to the existing facility.	30° 59' 40.28" S	26° 18' 33.41" E
Poster 2 - At the intersection of the DR02672 and the R58 (Daantjie van der Heever Road).	30° 59' 29.20" S	26° 18' 40.57" E
Poster 3 - Intersection of Taylor and Smit Street.	30° 59' 44.29" S	26° 19' 51.46" E

The notice boards were written in English. Figure 18 provides a copy of the relevant site notice, while Plates 6 to 8 provide proof of notices on site.

NOTICE OF ENVIRONMENTAL AUTHORISATION PROCESS

PROPOSED UPGRADE AND EXPANSION OF THE BURGERSDORP CORRECTIONAL FACILITY

Notice is hereby given in terms of Regulation 41(2)(a) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), published in Government Notice (GN) R 982 (4 December 2014) of the intent to carry out an application for Environmental Authorisation for the above-mentioned proposed development.

The proposed development triggers Activities 12(ciii)(c), 13, 19(i) and 27 of GN R 983 (Listing Notice 1) and activities 4(b)(ii)(gg) and 14(xii)(c)(ii)(hh) of GN R 985 (Listing Notice 3) of the Environmental Impact Assessment (EIA) Regulations (2014) and is therefore subject to a **Basic Assessment** process.

Proponent: Department of Public Works
Environmental Assessment Practitioner: Terratest (Pty) Ltd

Public Engagement: In accordance with Regulation 41(2) of the aforementioned legislation, the public are hereby notified of the application process for Environmental Authorisation. Persons wishing to have input into or remain informed about the project are invited to submit a written request for registration as an Interested and Affected Party (IAP) to the representative listed below. All IAPs are requested to submit their name, full contact details, a disclosure of their interest in the project and any initial concerns or queries they may have regarding the proposal. Upon registration, additional information pertaining to the proposed project shall be provided.

Contact: Sarah Baxter
Terratest (Pty) Ltd
Physical Address: 1st Floor, Block 5, Greenacres Office Park, Second Avenue, Newton Park, Port Elizabeth, 6045
Postal Address: P.O. Box 27308, Greenacres, 6057
Tel: (041) 390 8730
Fax: (041) 363 1922
Email: baxters@terratest.co.za






Figure 18: Copy of the site notice placed.

Due to the period of time that passed between the initial placement of the Site notices and now, additional site notices were placed on site in September 2019. Proof of these will be included in the Final Basic Assessment Report.

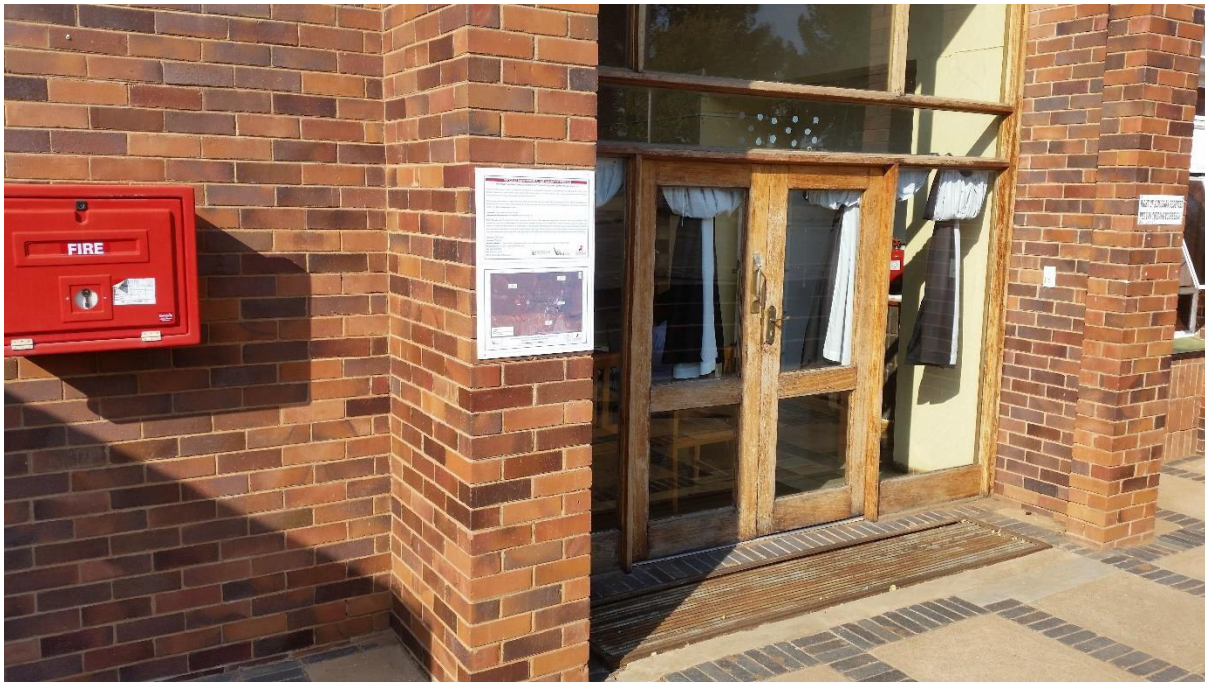


Plate 6: Proof of placement of Poster 1 - On the proposed development site, at the entrance to the existing facility.



Plate 7: Proof of placement of Poster 2 - At the intersection of the DR02672 and the R58 (Daantjie van der Heever Road).



Plate 8: Proof of placement of Poster 3 -at the intersection of Taylor and Smit Street.

5.3 WRITTEN NOTIFICATIONS TO AFFECTED PARTIES, AUTHORITIES AND LANDOWNERS

5.3.1 Interested and Affected Parties (I&APs)

A register of I&APs was compiled as per Section 42 of the EIA Regulations, 2014 (as amended). This included all relevant authorities, Government Departments, the Local Municipality, the District Municipality, relevant conservation bodies and non-governmental organisations (NGO's), as well as neighbouring landowners and the surrounding community. This register was updated throughout the process as details of I&AP's / Stakeholders changed, or additional I&AP's / Stakeholders registered. A copy of the I&AP Register is included as Appendix 13 of this report.

5.3.2 Landowners

Landowner Notification letters were hand delivered to landowners surrounding the proposed study area in 2017. Due to the period of time that passed between the initial placement of the Site notices and now, additional landowner letters were hand delivered in September 2019.

The intention of the letters was to notify landowners directly of the proposed upgrading and expansion of the Burgersdorp Prison Facility, as well as opening up direct communication channels between the EAP and landowners. A copy of the letters and proof of delivery are included as Appendix 13 of this report.

5.3.3 Government entities and NGOs

A Notification letter was circulated to all identified government entities and NGOs via email in 2017. The intention of the letter was to notify these parties directly of the proposed upgrading and expansion of the Burgersdorp Prison Facility, as well as opening up direct communication channels between the EAP and any potential I&APs. A copy of the letter and proof of delivery has been included as Appendix 13 of this report.

5.4 BACKGROUND INFORMATION DOCUMENT

A Background Information Document (BID) was compiled in English and circulated to all affected landowners and identified I&APs and stakeholders by letter drop and email in 2017 as part of the pre-application Public Participation Process (PPP). The purpose of the BID was to provide preliminary information regarding the project and its location. Furthermore, the BID invited preliminary comments from I&APs and requested those notified to provide details of other potential I&APs which they may be aware of. Due to changes in the project description and competent authority, this BID was recirculated in 2019. A copy of the BID is included as Appendix 13 of this report.

5.5 COMMENTS RECEIVED

Following the publication of the newspaper advertisement, placement of on-site notice boards and distribution of Notification Letters, the following comments as per Table 18 have been received by I&APs to date. Please refer to Appendix 13 for original comment.

Table 18: Initial comments received.

DATE	I&AP	COMMENT	RESPONSE
12/04/2017 received via email	Ms Nomsa Moya– Department Agriculture, Forestry and Fisheries (DAFF)	The proposed upgrade and expansion may result in vegetation and soil disturbances, leading to soil erosion and disturbance to the watercourse. Therefore, construction should be undertaken in a manner that have no or minimal impacts on natural resources. This office requests that a Vegetation and Soil Survey be conducted, and reports be incorporated in the BAR and EMPr.	Please note that the project involves the upgrade and expansion of an existing facility. The building footprints does not trigger any listed activities and the only area where natural vegetation will be cleared is for the new agricultural field and the road over the River connecting the Prison to the agricultural field. Vegetation and Wetland Impact Assessments have been conducted as part of the BA process and address <i>inter alia</i> the wetland, soil management, and vegetation impacts associated with the development proposal.
04/04/2017 received via email	Mr. Stompie Lourens – Joe Qgabi District Municipality – Municipal Health Services division.	Please register the Joe Qgabi District Municipality – Municipal Health Services division as an I&AP for this project. Please lead me in this process.	Please note that you have been registered as an I&AP on the database. All future correspondence regarding this project will be sent to all registered I&APs. The next step in the process is that the EAP will produce a Draft Basic Assessment Report. This document will contain detailed information about the proposed development, as well as an identification of the potential environmental impacts arising from the proposed development. Recommendations for the mitigation and control of these impacts will also be included in the report. You will be informed when this report is available. It will be

DATE	I&AP	COMMENT	RESPONSE
			<p>made available to registered parties for a period of 30 days. During this time, you can review the document and raise any comments or queries you may have regarding the proposed development and its impacts.</p> <p>Once the 30-day comment period ends, a final version of the document will be prepared, which addresses any comments or queries you / anyone else may have submitted. This document will be submitted to the National Department of Environmental Affairs (DEA). The DEA is the competent authority responsible for reviewing the information and making a decision on whether or not to grant environmental authorisation for the project.</p> <p>Whatever decision the DEA reaches, we will inform you of that decision, and offer you the opportunity to view the decision notice. Should you wish to appeal any decision taken, I will also, at that time, be able to advise you of how to proceed.</p> <p>This is a very brief overview of the authorisation process. Should you require additional info, or if you have any specific questions, please do not hesitate to contact us.</p>

5.6 CIRCULATION OF THE DRAFT BAR FOR PUBLIC REVIEW

Stakeholders and I&APs will be notified of the availability of the Draft Basic Assessment Report via email (where emails are available) and the placement of a newspaper advertisement. Hard copies of the report will be couriered to the decision-making authority (DEA). In addition, a hard copy of the documents will be placed at the Mzamomhle Public Library in Burgersdorp for general viewing. A complete copy of the report will also be uploaded onto the Terratest (Pty) Ltd website (www.terratest.co.za) for public review.

It is to be noted that in terms of the NEMA: EIA Regulations (2014), GNR 982 43(2) as amended, all State Departments that administer a law relating to a matter affecting the environment, specific to the Application, including the DEA, must submit comments within 30 days to the EAP as per the request of the EAP. Should no comment be received within the 30-day commenting period, it has been assumed that the relevant State Department has no comment to provide.

5.7 PUBLIC MEETING

A public meeting will not be held due to limited interest in the proposed upgrade. Should the need arise to conduct a public meeting during the public review period, such a meeting will be arranged and communicated to all registered I&APs.

SECTION 6: ALTERNATIVES CONSIDERED

The proposed development triggers Listing Notice 1 (GNR 983), Activities 12, 19 and 27 of the EIA Regulations, (2014, as amended).

As per GNR 982, Appendix 1(2)(b), alternatives for the proposed development are to be identified and considered. Chapter 1 of the EIA Regulations (2014, as amended) provides an interpretation of the word “alternatives”, which is to mean -

“in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the -

- a) Property on which or location where the activity is proposed to be undertaken;*
- b) Type of activity to be undertaken;*
- c) Design or layout of the activity;*
- d) Technology to be in the activity; or (N/A to this application)*
- e) Operational aspects of the activity. (N/A to this application)*

And includes the option of not implementing the activity.”

Based on the above, the following alternatives are presented for the proposed upgrading and expansion of the Burgersdorp Prison Facility.

6.1 PREFERRED SITE AND TYPE OF ACTIVITY ALTERNATIVE

The preferred site for the proposed activity is the current site of the existing Burgersdorp Correctional Facility, namely Erf 1262, Burghersdorp, in the Walter Sisulu Local Municipality. The property measures approximately 85 ha in extent and is located along the R58 Provincial Road, just outside the town of Burgersdorp. The current landuse of the site is largely the existing prison facility surrounded by undeveloped / vacant land covered in indigenous vegetation. In addition, the property is owned by the State (The DPW). The components applicable to this authorisation, the agricultural field and the river crossing is also directly dependant on the current locality of the existing facility and as such it is not feasible to place this infrastructure on another property.

Therefore, as the proposed activity constitutes the upgrade and expansion of an existing facility, it would be neither feasible nor reasonable to investigate an alternate site for the undertaking of the activity. This site alternative is therefore the only site alternative which can meet the need and desirability of the Application and as such, no alternate sites have been investigated.

6.2 PREFERRED LAYOUT ALTERNATIVE

Between 2003 and 2008 various design and layout options were considered by the DPW and the DCS in order to meet the requirements of the facility. Given that the site is already existing and that the activity involves the upgrade and expansion of the existing facility, the applicant did not have many layout options as the

expansions are bound to the location and design of the existing buildings. It should be noted that the existing building expansions and associated upgrades do not require an EA from the Competent Authority (DEA). The only aspects of the development that triggers listed activities are the activities required for the development of the Soccer fields, Bachelor Housing, Agricultural field and road crossing the river.

The location of the agricultural field within the property has been based on the location of one of the existing boreholes for which water will be used to irrigate the lands. It is preferred to have the agricultural field as close as practically possible to this borehole in order to reduce the length over which area water has to be transported for the abovementioned use. In addition, the low-level stream crossing the Buitendaghtspruit River, has been placed as close as possible to the informal stream crossing currently available onsite. A return period of 1:10 was used for design purposes. The low-level river crossing will consist of 8 precast rectangular portal concrete culverts. Gabion structures will be constructed upstream and downstream of the structure in order to prevent erosion.

The site layout alternatives provided are practical site alternatives which can meet the need and desirability of the Application.

6.3 NO-GO ALTERNATIVE

The EIA Process is obligated to assess the status quo (i.e. the “no-go” alternative) of the development. The no-go alternative provides the assessment with a baseline against which predicted impacts resulting from the proposed development can be compared.

The no-go alternative assumes the site remains in its current state, i.e. a dilapidated and overcrowded facility with undeveloped/vacant and agricultural land. Should the development not proceed in its entirety, the current dilapidated state of the buildings will increase. In addition, the facility will continue to experience, overcrowding, water and electricity outages, and sewer overflows. In order to upgrade the facility, it is required to move the existing vegetable garden (agricultural area) and as such the development of the latter is directly dependant on the upgrading and expansion of the facility. Should the development not proceed, the sustainability of the facility will be jeopardised and will not be in accordance with the NDP objectives.

It should be noted that the agricultural area is required in order to teach inmates useful skills which can be utilised upon release, as well as a peaceful means to pass the time whilst incarcerated at the facility. This is a very cost-effective method in order to provide skills development to inmates. Should this agricultural area not be developed, there will be a need to develop other skills development programmes, many of which may not be affordable or feasible to the applicant, given the demographic of the inmates. In order to make the agricultural area feasible and in order to provide safe access to the fields, the low-level river crossing is required. Should this low-level crossing not be constructed, the inmates will be required to cross the river directly which will not only be unsafe but will also result in erosion of the rivers beds and banks and trampling of riparian vegetation.

The benefits of this upgrade for the local communities and society in general are summarised below:

- a. Reduce overcrowding;
- b. Create space for more inmates;
- c. Promote humane treatment;
- d. To comply with relevant standards and specifications;

- e. A security upgrade will result in safer working conditions for staff and it will increase the safety of the Burgersdorp town; and
- f. Inmates could be reformed and once released, they could contribute towards the growth of the community.

The no-go alternative will not meet the above need and is thus not the preferred alternative.

The no-go alternative will be used as a baseline throughout the assessment process against which potential impacts will be compared, in an objective manner, and assessed in this report.

SECTION 7: ENVIRONMENTAL IMPACT ASSESSMENT

7.1 IMPACT ASSESSMENT METHODOLOGY

Impacts identified were assessed according to the criteria outlined below. Each impact was ranked according to the nature, extent, duration, magnitude, probability, irreplaceable loss of resources and reversibility. These criteria are based on the Department of Environmental Affairs and Tourism (DEAT) (now the Department of Environmental Affairs) Guideline Document to the EIA Regulations (1998). A significance rating was calculated as per the methodology outlined below.

The significance rating of each identified impact / effect was further reviewed by the EAP and/or specialist by applying professional judgement. Where possible, mitigatory measures were recommended for the impacts identified.

NATURE OF THE IMPACT		
The environmental impacts of an activity are those resultant changes in environmental parameters, in space and time, compared with what would have happened had the activity not been undertaken. It is an appraisal of the type of effect the activity would have on the affected environmental parameter. Its description includes what is being affected, and how	Negative effect (i.e. at a cost to the environment) (-)	
	Positive effect (i.e. a benefit to the environment) (+)	
	Neutral effect on the environment – No impact	
EXTENT OF THE IMPACT		
This addresses the physical and spatial scale of the impact.	Site – The impact area extends only as far as the activity – i.e. within the boundaries of the development site.	1
	Local - The impacted area extends slightly further than the actual physical disturbance footprint and could affect the whole, or a measurable portion of adjacent areas (within approx. 5 km of the development site).	2
	Landscape - The impact could affect all areas generally visible to the naked eye, as well as those areas essentially linked to the site in terms of ecosystem functioning	3
	Regional - The impact could affect the site including the neighbouring areas, transport routes and surrounding towns etc.	4
	Ecosystem - The impact could affect areas essentially linked to the site in terms of significantly impacting ecosystem functioning.	5

	National - The impacted area extends beyond provincial boundaries.	6
	International - The impacted area extends beyond national boundaries.	7
DURATION OF IMPACT		
This describes the predicted lifetime / temporal scale of the predicted impact.	Short term - Quickly reversible. Less than the project lifespan. The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than any of the project phases or within 0-5 years.	1
	Medium term – Some mitigation will be required to reduce the duration of the impact – 6-15 years.	3
	Long term - the impact will cease when the operation stops.	5
	Permanent - no mitigation measure will reduce the impact after construction.	7
MAGNITUDE OF THE IMPACT		
This provides a qualitative assessment of the severity of a predicted impact / effect.	None - where the aspect will have no impact on the environment	0
	Minor - The affected environment is altered, but natural function and process continue.	1
	Low - where the impact affects the environment in such a way that the natural, cultural and social functions / processes are slightly affected.	2
	Moderate - where the affected environment is altered but natural, cultural and social functions / processes continue, albeit in a modified way	3
	High - natural, cultural or social functions / processes are altered to the extent that they will temporarily cease.	4
	Very High - natural, cultural or social functions / processes are altered to the extent that they will permanently cease.	5
PROBABILITY OF OCCURRENCE		
The likelihood of the impact actually occurring.	Remote possibility / unlikely	0
	Possibility	1
	Low probability / anticipated	2
	Medium probability / strongly anticipated	3
	High probability / to be expected	4
	Absolute certainty / will occur	5
IRREPLACEABLE LOSS OF RESOURCES		
Environmental resources cannot always be replaced; once destroyed, some may be lost forever. It may be possible to replace, compensate for or reconstruct a lost resource in some cases, but substitutions are rarely ideal. The loss of a resource may become more serious later, and the assessment must take this into account.	Short-term – Quickly recoverable. Less than the project lifespan. The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span shorter than any of the project phases, or in a time span of 0 to 5 years.	1
	Loss of an ‘expendable’ resource - one that is not deemed critical for biodiversity targets, planning goals, community welfare, agricultural production, or other criteria.	2
	Medium term – The resource can be recovered within the lifespan of the project. The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years.	3

	Loss of an 'at risk' resource - one that is not deemed critical for biodiversity targets, planning goals, community welfare, agricultural production, or other criteria, but cumulative effects may render such loss as significant.	4
	Long term – The loss of a non-renewable / threatened resource which cannot be renewed / recovered with, or through, natural process in a time span of over 15 years, but can be mitigated by other means.	5
	Permanent – The loss of a non-renewable / threatened resource which cannot be renewed / recovered with, or through, natural process in a time span of over 15 years, or by artificial means.	7
REVERSIBILITY / POTENTIAL FOR REHABILITATION		
The distinction between reversible and irreversible impacts is a very important one and the irreversible impacts not susceptible to mitigation can constitute significant impacts in an EIA (Glasson et al, 1999). The potential for rehabilitation is the major determinant factor when considering the temporal scale of most predicted impacts.	Short term – The impact / effect will be returned to its benchmark state through mitigation or natural processes in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.	1
	Medium term – The impact / effect will be returned to its benchmark state through mitigation or natural processes in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.	3
	Long term - The impact / effect will be returned to its benchmark state through extensive mitigation or natural processes in a time span between 15 and 25 years.	5
	Permanent – The impact/ effect is permanent and will never be returned to is benchmark state	7
IMPACT SIGNIFICANCE		
The overall significance of an impact / effect has been ascertained by attributing numerical ratings to each identified impact. The numerical scores obtained for each identified impact have been multiplied by the probability of the impact occurring before and after mitigation. High values suggest that a predicted impact / effect is more significant, whilst low values suggest that a predicted impact / effect is less significant.		
<i>((Spatial Extent + Severity + Duration + Resource Lost + Reversibility) * Probability) = Significance.</i>		
NEGATIVE	POSITIVE	Overall Score
Insignificant – the impact is meaningless has no influence on the decision to develop	Insignificant – the impact is meaningless has no influence on the decision to develop	< 15
Low – the impact would not have a direct influence on the decision to develop in the area;	Low – the impact would not have a direct influence on the decision to develop in the area;	16 - 35
Medium – the impact could influence the decision to develop in the area unless it is effectively managed / mitigated; and	Medium – the impact could influence the decision to develop in the area unless it is effectively managed / mitigated; and	36 - 65
High - the impact must have an influence on the decision-making process for development in the area.	High - the impact must have an influence on the decision-making process for development in the area.	> 65
MITIGATION		
In terms of the assessment process the potential to mitigate the negative impacts is determined and rated for each identified impact and mitigation objectives that would result in a measurable reduction or enhancement of the impact are taken into account. The significance of environmental impacts has therefore been assessed taking into account any proposed mitigation measures. The significance of the impact “without mitigation” is therefore the prime determinant of the nature and degree of mitigation required.		

7.2 MITIGATION MEASURES

Impact		Mitigation
PLANNING AND DESIGN		
PERMITTING	Non-compliance with the relevant legislation and policies of South Africa, as they pertain to the environment, could lead to damage to the environment, unnecessary delays in planned construction activities, and could potentially result in criminal cases, based on the severity of the non-compliance, being brought against the proponent and their Contractors.	<ul style="list-style-type: none"> All necessary permitting and authorisations must be obtained prior to the commencement of any construction activities; and A suitably qualified Environmental Control Officer (ECO) must be appointed prior to the commencement of the construction phase.
CONSTRUCTION		
AIR EMISSIONS	Dust created as a result of the construction activities, such as vegetation clearance, grading and levelling of the exposed land and the transport of construction materials could be a nuisance to nearby residents, prisoners and staff at the prison, during the construction phase.	<ul style="list-style-type: none"> Any sand or soil that is excavated from the sites or transported to the sites, and not utilised for construction, infill or landscaping purposes, must be removed from the site or covered and no large soil stockpiles must be left behind after construction; Construction vehicles must adhere to speed limits; Exhaust emissions from construction vehicles should be minimised by ensuring that all vehicles are properly equipped and serviced; and If fine building materials/sands are to be transported on the back of trucks, they must be adequately covered.
NOISE	Noise will be created on the site during the construction phase due to the operation of construction equipment, noise generated by construction vehicles both on site and during travel to and from the site as well as noise generated by the construction workers is likely to result in an increase in noise levels and potentially be a nuisance to individuals in proximity to the site.	<ul style="list-style-type: none"> Construction activities, including the movement of heavy construction vehicles, should be restricted to normal working hours (07:00 am – 18:00 pm); All construction vehicles must be in sound working order and meet the necessary noise level requirements; All relevant municipal by-laws, with regards to noise control, must apply; Construction workers must not make use of portable radios, vehicle radios, whistles, etc., which generate excessive noise, while they are on the construction site; and Construction staff must not be housed on site.
SITE CONTAMINATION	The use of inappropriate methods of mixing construction materials, including cement and tar/bitumen, and the use of poorly maintained construction equipment, which could result in oil and fuel spills, during the construction phase, could lead to site contamination, such as the contamination of the soil, surfacewater and/or groundwater.	<ul style="list-style-type: none"> Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) must be adhered to. This applies to solvents and other chemicals possibly used during the construction process; Cement must only be mixed in the area(s) demarcated for this purpose and on impermeable surfaces; Drip trays must be placed under stationary construction machinery to avoid soil contamination;

Impact		Mitigation
		<ul style="list-style-type: none"> • The ECO and/or Contractor must determine the most suitable method of treatment of polluted soil, should soil pollution occur during the construction phase. Depending on the nature of the spill, these methods could involve the application of soil absorbent materials, oil-digestive powders to the contaminated soil or the excavation of the contaminated soil; • If refueling occurs on site, a demarcated area should be established and refueling should only take place within this demarcated area and on impermeable surfaces; • Should fuel be stored on site, it must be stored in a bunded area; • All construction vehicles must be in sound working order to reduce the risk of oil and fuel leaks; and • All hazardous materials that are stored on site must be done under lock and key.
SOLID WASTE POLLUTION	<p>Construction rubble and litter left onsite during the construction phase could encourage the growth of opportunistic alien vegetation, attract vermin, detract from the visual appeal of the area and pollute the surrounding areas. Solid waste pollution is currently insignificant as no solid waste, was observed on the site during the site investigations.</p>	<ul style="list-style-type: none"> • All construction rubble must be disposed of in predetermined, demarcated spoil dumps as instructed by the appointed ECO and/or Contractor; • The ECO should monitor the sanitation of the work sites as well as the Contractor's campsite for litter and waste; • All waste must be removed from the site and transported to the nearest licensed landfill site; • General good house-keeping should be practiced onsite; and • Adequate bins and skips must be made available on site at all times. These must be made scavenger proof and must be emptied on a regular basis.
CONSTRUCTION TRAFFIC AND ROAD SAFETY	<p>During the construction phase of the expansions and upgrades, construction vehicles will be utilizing the existing road-network which could impede traffic flow on the road-network, pose a safety risk to pedestrians and individuals residing in the neighbouring settlements and the construction vehicles could damage the existing roads. Under the no-go alternative, the existing traffic will remain as is and thus this impact will be insignificant.</p>	<ul style="list-style-type: none"> • The delivery of construction materials must be scheduled out of peak hours to avoid traffic, <i>where possible</i>; • Road repairs must be made immediately should construction machinery cause damage to any of the existing roads; • All construction vehicles must be roadworthy and should be serviced regularly; • Flag staff should regularly patrol areas especially on site to prevent onsite incidents; • Construction vehicles must adhere to the relevant speed limits; and • Appropriate signage must be used to indicate the construction site.

Impact		Mitigation
VISUAL AND AESTHETICS	The construction activities associated with the development will result in permanent visual changes to the site, however given that this development is largely the upgrade of an existing facility and that the expansions such as the Agricultural area and soccer fields is developed at ground level, it is anticipated that this will not adversely affect the aesthetic value of the area for individuals residing in proximity to the development.	None
SOCIO-ECONOMIC	Temporary employment opportunities will be created for unskilled and semi-skilled workers during the construction phase of the Development. In addition to the creation of employment opportunities, workers are likely to develop skills and/or gain experience during the construction phase.	None
VEGETATION	Loss of natural vegetation – During the establishment of the new agricultural fields, the area will be cleared of the current stand of natural vegetation.	<ul style="list-style-type: none"> The area that is to be used for the establishment of the new agricultural fields construction footprint must be surveyed and demarcated prior to construction commencing. Areas that have been cleared for the construction purposes must be revegetated with local indigenous grasses during the rehabilitation phase of the project.
	Establishment and spreading of alien invasive vegetation – Even though the presence of alien invasive plant species on the site is relatively low, the threat of alien species establishing and spreading on to the areas cleared for construction, is present.	<ul style="list-style-type: none"> An Alien Invasive Management Plan must be implemented during the construction and rehabilitation phase of the project. This plan must make provision for the regular assessment of the establishment and spreading of any alien vegetation species onto the areas that has been cleared by the construction activities. This assessment must then be followed by the management and control of these species to control the spreading of these species.
	Decreasing grazing capacity – The indigenous invasive grass species will increasingly spread within the site and dominate the other grass species. The less palatable nature of the invasive grasses will decrease the grazing capacity of the site.	None
	Invasion of alien species – The threat of alien invasive species spreading onto the site will decrease the quality of the vegetation on the site.	None
SOILS	The construction of the proposed development will require the clearing of vegetation which will result in exposed soil surfaces. This could result in an increase in soil erosion.	<ul style="list-style-type: none"> Newly cleared and exposed areas must be managed for erosion. Where necessary, temporary stabilization measures must be used until vegetation establishes; Plan for the worst case, that is, for heavy rainfall and runoff events, or high winds;

Impact		Mitigation
		<ul style="list-style-type: none"> • Appropriate erosion control measures must be implemented and a monitoring programme established to ensure that no erosion is taking place. At the first sign of erosion the necessary remedial action must be taken; • Implement a Storm Water Management Plan.
ARCHAEOLOGICAL AND CULTURAL HERITAGE SITES	Construction activities could damage or destroy potential archaeological or cultural heritage sites of significance, should such sites occur on the property.	<ul style="list-style-type: none"> • If, in the unlikely event that localized fossil material is discovered within the alluvial overburden near the spruit during the construction phase of the project, it is recommended that a professional palaeontologist be called in to record and rescue the fossils where necessary; • All excavation activities must remain confined to within the confines of the development footprints; • Should any archaeological or cultural sites or objects be located during the construction of the proposed project, it should immediately be reported to the National Heritage Council and the ECPHRA. Failure to report a site or object of archaeological and/or cultural significance is a contravention of the National Heritage Resources Act (Act No. 25 of 1999).
SURFACEWATER FEATURES	<p>Soil erosion and increased siltation of watercourses –</p> <p>The areas cleared for construction will be susceptible to erosion during high rainfall events which pose a risk to siltation of the unnamed tributary of the Buitendagspruit River.</p>	<ul style="list-style-type: none"> • Provision must be made for adequate management of stormwater on the construction site. A Stormwater Management Plan must be in place for the duration of the construction and rehabilitation phase of the project. This plan must make provision for the collection and controlled release of stormwater from the construction areas.
WETLAND IMPACTS	<p>Risk of impacting on the wetland area by the clearance of vegetation to accommodate the proposed infrastructure -</p> <p>The clearance of vegetation may impact on the biodiversity of the area. The absence of vegetation on the highly erodible soils may also result in an increase in the siltation of the wetland area.</p>	<ul style="list-style-type: none"> • Provision must be made for a Stormwater Management Plan for the construction period associated with the facility expansion. Provision must be made for contouring of the new agricultural area.
	<p>Risk of contamination of the wetland area by leaking plant and equipment –</p> <p>Impact on the water quality in the wetland area, which will negatively impact on the water quality in the system.</p>	<ul style="list-style-type: none"> • No works will be allowed within the identified wetland area. • No plant or equipment will be parked within 20m of the edge of the wetland area. Plant and equipment will be parked at designated parking areas. • All plant and equipment will be checked on a daily basis for leaks, any plant that is found to be leaking will be removed off site for maintenance.
	<p>Risk of contamination of the wetland area by the storage of dangerous goods within the site camp.</p> <p>Impact on the water quality in the wetland area, which will negatively impact on the water quality in the greater system.</p>	<ul style="list-style-type: none"> • The site camp must be located as a minimum 100m away from the edge of the delineated wetland area. • All dangerous goods must be stored in bunded areas providing for 110% of the capacity of the dangerous goods to be stored.

Impact		Mitigation
	Risk of contamination of the wetland area through leakages from the on-site ablution facilities.	<ul style="list-style-type: none"> All ablution facilities (portable chemical toilets) must be located as a minimum 100m away from the edge of the delineated wetland area. The portable chemical toilets must be serviced on a regular basis by a registered service provider.
	Risk of contamination of the watercourses by domestic waste during the construction phase. The domestic waste materials could potentially contaminate the wetland area which could pose a risk to the water quality characteristics of the wetland.	<ul style="list-style-type: none"> Domestic waste must be collected in waste bins that are located on site. The content of these bins must be cleared on a daily basis to a collection point in the site camp from where the waste can be removed on a weekly basis. The collected waste must be disposed of at a municipal landfill facility. A designated eating area must be identified no less than 50m from the delineated edge of the wetland area or within the site camp. This eating area must be used by the labour during their eating breaks. Waste bins must be placed at this designated eating area for use by the labour.
OPERATIONAL		
SOCIO-ECONOMIC	Additional space and improved living conditions for prisoners and staff at the Burgersdorp Prison Facility.	None
VEGETATION	<p>Establishment and spreading of alien invasive vegetation –</p> <p>Even though the presence of alien invasive plant species on the site is relatively low, the threat of alien species establishing and spreading within the agricultural area is a risk.</p>	<ul style="list-style-type: none"> An Alien Invasive Management Plan must be implemented during the operational phase of the agricultural fields. This plan must make provision for the regular assessment of the establishment and spreading of any alien vegetation species onto the areas that has been cleared for the agricultural activities. This assessment must then be followed by the management and control of these species to control the spreading of these species.
SURFACEWATER FEATURES	<p>Soil erosion and increased siltation of watercourses –</p> <p>The operation of the agricultural fields in particular has the potential to increase the run-off potential of the area during periods when the fields are not planted to produce. This increased run-off potential has the risk of increased siltation of the unnamed tributary of the Buitendagspruit.</p>	<ul style="list-style-type: none"> The agricultural fields must be adequately contoured to prevent the release of stormwater/irrigation water from the fields. Irrigation of the fields must be limited to a fixed irrigation plan that has been worked out for the area
	<p>Nitrification of the surrounding water resources –</p> <p>The application of fertilizer on the operational agricultural fields has the potential to result in nitrification of the unnamed tributary of the Buitendagspruit.</p>	<ul style="list-style-type: none"> The application of fertilizer must be conducted in accordance with a formal fertilizing regime determined by a qualified professional based on the soil characteristics and type of produce that will be grown. This will ensure that the correct application rates are employed with little or no fertilizer being present for distribution to the unnamed tributary of the Buitendagspruit.

Impact		Mitigation
WETLAND IMPACTS	Risk of impacting on the wetland area by the clearance of vegetation to accommodate the proposed infrastructure.	<ul style="list-style-type: none"> Provision must be made for a Stormwater Management Plan for the construction period associated with the facility expansion. Provision must be made for contouring of the new agricultural area.
	Risk of leaking sewage pipelines associated with the expanded correctional facility.	<ul style="list-style-type: none"> Provision must be made in the design of the expanded sewage network to ensure that the materials used pose a low risk to leakages. The Operational Management Plan (OMP) must make provision for early leak detection, containment and clean-up protocol.

7.3 IMPACT ASSESSMENT

Impact	Mitigation required	Type	Impact								Significance before mitigation	Significance after mitigation	No-Go Significance	
			Nature	Extent	Duration	Magnitude	ILR	Reversibility	Probability					
PLANNING AND DESIGN PHASE IMPACTS														
PERMITTING	Non-compliance with the relevant legislation and policies of South Africa, as they pertain to the environment, could lead to damage to the environment, unnecessary delays in planned construction activities, and could potentially result in criminal cases, based on the severity of the non-compliance, being brought against the proponent and their Contractors.	Yes	Indirect	Negative	1	5	3	0	0	2	18	LOW	INSIGNIFICANT	NEUTRAL
CONSTRUCTION PHASE IMPACTS														
AIR EMISSIONS	Dust created as a result of the construction activities, such as vegetation clearance, grading and levelling of the exposed land and the transport of construction materials could be a nuisance to nearby residents, prisoners and staff at the prison, during the construction phase.	Yes	Direct	Negative	2	1	3	1	1	5	40	MEDIUM	LOW	NEUTRAL
NOISE	Noise will be created on the site during the construction phase due to the operation of construction equipment, noise generated by construction vehicles both on site and during travel to and from the site as well as noise generated by the construction workers is likely to result in an increase in noise levels and potentially be a nuisance to individuals in proximity to the site.	Yes	Direct	Negative	2	1	3	1	1	5	40	MEDIUM	LOW	NEUTRAL
SITE CONTAMINATION	The use of inappropriate methods of mixing construction materials, including cement and tar/bitumen, and the use of poorly maintained construction equipment, which could result in oil and fuel spills, during the construction phase, could lead to site contamination, such as the contamination of the soil, surfacewater and/or groundwater.	Yes	Direct	Negative	2	3	4	3	3	3	45	MEDIUM	LOW	NEUTRAL
SOLID WASTE POLLUTION	Construction rubble and litter left onsite during the construction phase could encourage the growth of opportunistic alien vegetation, attract vermin, detract from the visual appeal of the area and pollute the surrounding areas. Solid waste pollution is currently insignificant as no solid waste, was observed on the site during the site investigations.	Yes	Direct and Indirect	Negative	3	1	3	1	1	3	27	LOW	LOW	NEUTRAL
CONSTRUCTION TRAFFIC AND ROAD SAFETY	During the construction phase of the expansions and upgrades, construction vehicles will be utilizing the existing road-network which could impede traffic flow on the road-network, pose a safety risk to pedestrians and individuals residing in the neighbouring settlements and the construction vehicles could damage the existing roads. Under the no-go alternative, the existing traffic will remain as is and thus this impact will be insignificant.	Yes	Direct and Indirect	Negative	2	1	2	1	1	4	28	LOW	LOW	NEUTRAL
VISUAL AND AESTHETICS	The construction activities associated with the development will result in permanent visual changes to the site, however given that this development is largely the upgrade of an existing facility and that the expansions such as the Agricultural area and soccer fields is developed at ground level, it is anticipated that this will not adversely affect the aesthetic value of the area for individuals residing in proximity to the development.	None	Direct	Negative	1	1	1	1	1	2	10	INSIGNIFICANT	INSIGNIFICANT	NEUTRAL

	Impact	Mitigation required	Type	Impact							Significance before mitigation	Significance after mitigation	No-Go Significance	
				Nature	Extent	Duration	Magnitude	ILR	Reversibility	Probability				
SOCIO-ECONOMIC	Temporary employment opportunities will be created for unskilled and semi-skilled workers during the construction phase of the Development. In addition to the creation of employment opportunities, workers are likely to develop skills and/or gain experience during the construction phase.	None	Direct and Cumulative	Positive No-Go - Negative	2	1	2	4	1	5	50	MEDIUM	MEDIUM	LOW
VEGETATION	Loss of natural vegetation – During the establishment of the new agricultural fields, the area will be cleared of the current stand of natural vegetation.	Yes	Direct, Indirect and Cumulative	Negative	1	5	3	2	1	5	60	MEDIUM	MEDIUM TO LOW	NEUTRAL
	Establishment and spreading of alien invasive vegetation – Even though the presence of alien invasive plant species on the site is relatively low, the threat of alien species establishing and spreading on to the areas cleared for construction, is present.	Yes	Direct, Indirect and Cumulative	Negative	1	5	2	2	1	3	33	LOW	LOW	NEUTRAL
	Decreasing grazing capacity – The indigenous invasive grass species will increasingly spread within the site and dominate the other grass species. The less palatable nature of the invasive grasses will decrease the grazing capacity of the site.	None	No-Go	Negative	1	5	3	1	1	5	50	NEUTRAL	NEUTRAL	MEDIUM
	Invasion of alien species – The threat of alien invasive species spreading onto the site will decrease the quality of the vegetation on the site.	None	No-Go	Negative	1	5	2	1	1	3	30	NEUTRAL	NEUTRAL	LOW
SOILS	The construction of the proposed development will require the clearing of vegetation which will result in exposed soil surfaces. This could result in an increase in soil erosion.	Yes	Direct and Indirect	Negative	1	1	2	1	5	3	30	LOW	LOW	NEUTRAL
ARCHAEOLOGICAL AND CULTURAL HERITAGE SITES	Construction activities could damage or destroy potential archaeological or cultural heritage sites of significance, should such sites occur on the property.	Yes	Direct	Negative	1	1	1	7	7	1	17	LOW	LOW	NEUTRAL
WETLAND IMPACTS	Risk of impacting on the wetland area by the clearance of vegetation to accommodate the proposed infrastructure – The clearance of vegetation may impact on the biodiversity of the area. The absence of vegetation on the highly erodible soils may also result in an increase in the siltation of the wetland area.	Yes	Direct, indirect and cumulative	Negative	2	1	2	3	3	3	33	LOW	LOW	NEUTRAL
	Risk of contamination of the wetland area by leaking plant and equipment –				3	3	2	1	1	2	20			
	Impact on the water quality in the wetland area, which will negatively impact on the water quality in the system. Risk of contamination of the wetland area by the storage of dangerous goods within the site camp.				3	3	2	1	1	2	20			

Impact	Mitigation required	Type	Impact								Significance before mitigation	Significance after mitigation	No-Go Significance		
			Nature	Extent	Duration	Magnitude	ILR	Reversibility	Probability						
Impact on the water quality in the wetland area, which will negatively impact on the water quality in the greater system.			Negative									20	MEDIUM	MEDIUM	NEUTRAL
Risk of contamination of the wetland area through leakages from the on-site ablution facilities.				3	3	2	1	1	2						
Risk of contamination of the watercourses by domestic waste during the construction phase. The domestic waste materials could potentially contaminate the wetland area which could pose a risk to the water quality characteristics of the wetland.				3	3	2	1	1	2						
OPERATIONAL PHASE IMPACTS															
SOCIO-ECONOMIC	Additional space and improved living conditions for prisoners and staff at the Burgersdorp Prison Facility.	No	Direct	Positive No-Go (negative)	1	5	4	0	2	5	60	MEDIUM	MEDIUM	MEDIUM	
VEGETATION	Establishment and spreading of alien invasive vegetation – Even though the presence of alien invasive plant species on the site is relatively low, the threat of alien species establishing and spreading within the agricultural area is a risk.	Yes	Direct, indirect and cumulative	Negative	1	3	2	2	1	3	27	LOW	LOW	NEUTRAL	
WETLAND IMPACTS	Risk of impacting on the wetland area by the clearance of vegetation to accommodate the proposed infrastructure.	Yes	Direct, indirect and cumulative	Negative	3	3	3	1	1	2	22	LOW	LOW	NEUTRAL	
	Risk of leaking sewage pipelines associated with the expanded correctional facility.														
SURFACEWATER FEATURES	Soil erosion and increased siltation of watercourses – The operation of the agricultural fields in particular has the potential to increase the run-off potential of the area during periods when the fields are not planted to produce. This increased run-off potential has the risk of increased siltation of the unnamed tributary of the Buitendagspruit.	Yes	Direct, indirect and cumulative	Negative	3	3	3	3	3	2	30	LOW	LOW	NEUTRAL	
	Nitrification of the surrounding water resources - The application of fertilizer on the operational agricultural fields has the potential to result in nitrification of the unnamed tributary of the Buitendagspruit.														
DECOMMISSIONING PHASE															
			It is highly unlikely that the Parsons Vlei Mixed-use Development will be decommissioned in the next 30-50 years. However, should the Development be decommissioned, the potential impacts would largely be the same as the impacts that were identified for the Construction Phase in this report.												

SECTION 8: FINDINGS AND RECOMMENDATIONS

8.1 ENVIRONMENTAL IMPACT STATEMENT

The preferred alternative for the proposed development has numerous negative impacts associated with it, however these impacts are primarily of moderate negative significance, as indicated in the table above. In addition, the majority of these impacts can be reduced to low or insignificant negative significance with the implementation of the identified mitigation measures. Furthermore, several benefits are associated with the proposed development.

The no-go alternative (current status quo) has a few negative impacts associated with it and the no-go alternative will result in the loss of the potential benefits associated with the development.

The careful implementation of the proposed mitigation measures is likely to significantly reduce the overall significance of the negative impacts as well as enhance the overall significance of the positive impacts (where recommendations have been provided). The location and the scale of the activity is unlikely to pose significant environmental impacts provided that the mitigation measures listed above, as well as those listed in the Environmental Management Programme (EMPr), are adequately adhered to.

8.2 RECOMMENDATIONS AND OPINION OF THE EAP

Based on the findings of this Basic Assessment (BA) process, it is the opinion of the EAP that the proposed Burgersdorp Prison Facility Upgrade and Expansion should receive a positive authorisation provided that the Applicant (and those employed by the Applicant) complies with the mitigation measures listed above as well as those listed in the EMPr.

Specific conditions, which are deemed to be most important for inclusion in the EA include:

- An independent and suitably qualified Environmental Control Officer (ECO) must be appointed to oversee the implementation of the Environmental Management Programme for the duration of the construction and rehabilitation phases. It is recommended that the ECO undertake monthly site visits and completes one audit report per month, for submission to the Project Team and Competent Authority.
- All legal matters that may pertain to permitting must be completed prior to any clearance of vegetation is to commence.
- Project infrastructure must be designed in such a way as to minimise the impact on the natural vegetation.
- The project construction site must be demarcated prior to the commencement of activities. All areas outside of this demarcation will be considered as No-Go areas during construction.
- If any unidentified Species of Conservation Concern is found, work must cease in that area and the ECO must be notified so the correct procedures can be implemented.
- Provision must be made for the compilation of a Stormwater Management Plan for the construction period of the development and the implementation of this plan during construction.
- Provision must be made for the compilation and implementation of an Alien Vegetation Management Plan during the construction phase.
- Provision must be made for a Stormwater Management Plan for the construction period associated with the facility expansion. Provision must be made for contouring of the new agricultural area.
- Provision must be made in the design of the expanded sewage network to ensure that the materials used pose a low risk to leakages.
- No works will be allowed within the identified wetland area.

- No plant or equipment will be parked within 20m of the edge of the wetland area. Plant and equipment will be parked at designated parking areas.
- All plant and equipment will be checked on a daily basis for leaks, any plant that is found to be leaking will be removed off site for maintenance.
- The site camp must be located as a minimum 100m away from the edge of the delineated wetland area.
- All dangerous goods must be stored in bunded areas providing for 110% of the capacity of the dangerous goods to be stored.
- All ablution facilities (portable chemical toilets) must be located as a minimum 100m away from the edge of the delineated wetland area.
- The portable chemical toilets must be serviced on a regular basis by a registered service provider.
- Domestic waste must be collected in waste bins that are located on site. The content of these bins must be cleared on a daily basis to a collection point in the site camp from where the waste can be removed on a weekly basis. The collected waste must be disposed of at a municipal landfill facility.
- A designated eating area must be identified no less than 50m from the delineated edge of the wetland area or within the site camp. This eating area must be used by the labour during their eating breaks.
- Waste bins must be placed at this designated eating area for use by the labour.

Provided that the above conditions form part of the conditions of approval and that the mitigations as set out in Section 7 of this report, it is the opinion of the EAP that the Application should be granted a positive decision on Environmental Authorisation for the Preferred Site and Layout.

8.3 CONSTRUCTION TIMEFRAMES

Construction timeframes have not been estimated as yet, however, it is assumed that the initial phase of the development (upgrading of the existing buildings) that does not require an Authorisation will take at a minimum 18 months to complete. This process is running parallel with the Application for Environmental Authorisation for the activities which require Approval – the soccer fields, the additional bachelor housing, the river crossing and the agricultural field. The duration of construction for the latter has not yet been determined. As such it is requested that the Environmental Authorisation for construction, if issued by the Competent Authority, be valid for a period of 10 years from the date of signature.

8.4 UNDERTAKING

Terratest (Pty) Ltd hereby confirms that, to the best of our knowledge, the information provided in this report was correct at the time of compilation. Information included in this report was based on the information which was provided to Terratest (Pty) Ltd by the Applicant, the engineers and various specialist reports.

APPENDICES

APPENDIX 1: EAP CV

APPENDIX 2: MASTER LAYOUT

APPENDIX 3: ENGINEERING WATER LAYOUT

**APPENDIX 4: CIVIL DESIGN REPORT AND WATER CONFIRMATION LETTER FROM
MUNICIPALITY**

APPENDIX 5: PUMP TEST REPORT FOR BOREHOLES

APPENDIX 6: SEWER LAYOUT

**APPENDIX 7: SEWER DESIGN REPORT AND SEWER CONFIRMATION LETTER FROM
MUNICIPALITY**

PLEASE REFER TO APPENDIX 4

APPENDIX 8: ELECTRICAL DESIGN REPORT

APPENDIX 9: STORMWATER LAYOUT

APPENDIX 10: RIVER CROSSING DESIGN

APPENDIX 11: VEGETATION IMPACT ASSESSMENT

APPENDIX 12: WETLAND IMPACT ASSESSMENT

APPENDIX 13: I&AP DATABASE AND PPP TO DATE

APPENDIX 14: HERITAGE IMPACT ASSESSMENT

APPENDIX 15: EMPR