

In terms of Regulation 19(3) of GN 733 of the NEMA Environmental Impact Assessment Regulations, 2014, the impact assessment for the proposed development are as follows:

Construction phase:

Potential impacts on geographical and physical aspects:	Potential impact on freshwater ecosystems
Nature of impact:	<p>A small ephemeral stream or stormwater drain crosses the site the northern part of the site to the south-east. This stream is currently dry, and only appears to briefly flow during heavy rain or storm events. The stream will be incorporated into the stormwater system of the proposed development.</p> <ul style="list-style-type: none"> - Removal of concrete slabs and bridge structure over the existing canal and discarding of the waste material; - Infilling of the trench once the pipeline is placed (establishment of borrow pits for sourcing material); - Excavation of borrow pits;
Extent and duration of impact:	Local, during construction phase (short-term)
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Likely
Degree to which the impact may cause irreplaceable loss of resources:	Low negative
Cumulative impact prior to mitigation:	Low negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<ul style="list-style-type: none"> • Excess material (and concrete slabs and pipes) should not be dumped into the riparian zones and must be removed from site; • Any exotic trees currently growing in the riparian zones should be cut and the stumps treated with herbicide to prevent re-growth; • Appropriate construction methods should be deployed to ensure the prevention of erosion of the canal
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	negligible

Potential impact on biological aspects:	
Nature of impact:	<p>Loss of vegetation</p> <ul style="list-style-type: none"> - Direct loss of vegetation type and associated habitat due to construction and operational activities.
Extent and duration of impact:	Local, temporary
Probability of occurrence:	Possible
Degree to which the impact can be reversed:	Likely
Degree to which the impact may cause irreplaceable loss of resources:	Unlikely
Cumulative impact prior to mitigation:	Low negative
Significance rating of impact prior to mitigation	Low negative

(Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> • Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible). • All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction. • Once the construction is completed all further movement must be confined to the access tracks to allow the vegetation to re-establish over the excavated areas. • Rehabilitation must be done after construction. • All construction must be done in accordance with an approved construction and operational phase • Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner. • A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and the Biodiversity study recommendations as well as any other conditions which might be required by the Department of Environmental Affairs. • An integrated waste management system must be implemented during the construction phase. • All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site. • All alien vegetation should be removed from all associated footprints within the various construction sites.
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Negligible

Potential impacts on socio-economic aspects:	
Nature of impact:	Temporary jobs will be created in the construction industry during the construction phase.
Extent and duration of impact:	Local. During the construction phase of the activity
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	NA. This is a positive impact
Degree to which the impact may cause irreplaceable loss of resources:	NA
Cumulative impact prior to mitigation:	Low - positive
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low - positive
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	No mitigation measures are required. Temporary jobs will be created during the construction phase
Cumulative impact post mitigation:	Low - positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low - positive

Potential impacts on cultural-historical aspects:	
Nature of impact:	The loss of cultural or historic aspects during construction
Extent and duration of impact:	Local, during construction phase
Probability of occurrence:	Highly unlikely, no cultural or historic aspects of significance were identified on site
Degree to which the impact can be reversed:	N/A
Degree to which the impact may cause irreplaceable loss of resources:	Highly Unlikely
Cumulative impact prior to mitigation:	Very Low – Negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Very low – Negative
Degree to which the impact can be mitigated:	Limited
Proposed mitigation:	<ul style="list-style-type: none"> • If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to SAHRA and must not be disturbed further until the necessary approval has been obtained from SAHRA. • Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency. The ECO and Engineer are also to be informed.
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Negligible

Potential noise impacts:	
Nature of impact:	Noise impact from machinery and plant on the neighbouring properties during construction
Extent and duration of impact:	Local, Duration of construction phase
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	Negligible
Cumulative impact prior to mitigation:	Low – negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium Low – negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<p>The following measures should be implemented amongst others:</p> <ul style="list-style-type: none"> • The Contractor shall endeavour to keep noise generating activities to a minimum.

	<ul style="list-style-type: none"> • Construction only to take place during normal working hours • Compliance with the appropriate legislation with respect to noise shall be mandatory.
Cumulative impact post mitigation:	Low – negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low – negative

Potential visual impacts:	
Nature of impact:	Unsightly views due to construction site.
Extent and duration of impact:	Local, during duration of construction
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Medium – negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium – negative
Degree to which the impact can be mitigated:	Probable
Proposed mitigation:	<p>Visual impact mitigation measures will be dealt with in the EMP The EMP must be enforced and monitored by the ECO.</p> <ul style="list-style-type: none"> • The Contractor shall restrict all his activities, materials, equipment and personnel to within the area specified. • Construction material must be stored in areas designated by the site agent and in a neat and orderly manner. • The Contractor must ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. The construction site must be cleared, and cleaned to the satisfaction of the ECO. • Immediately after the demolition of the camp site, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape.
Cumulative impact post mitigation:	Low – negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low – negative

Operational phase:

Potential impacts on the geographical and physical aspects:	
Nature of impact:	No geographical and/or physical aspects are expected to be impacted during the operational phase
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Potential impact biological aspects:	
Nature of impact:	No biological aspects are expected to be impacted during the operational phase
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Potential impacts on the socio-economic aspects:	
Nature of impact:	Additional housing opportunities will be provided
Extent and duration of impact:	Local, Permanent
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	NA
Degree to which the impact may cause irreplaceable loss of resources:	NA, the impact is a positive impact
Cumulative impact prior to mitigation:	NA
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	NA
Degree to which the impact can be mitigated:	NA, the impact is a positive impact
Proposed mitigation:	No mitigation measures are required

Cumulative impact post mitigation:	Low - Positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low - Positive

Potential impacts on the cultural-historical aspects:	
Nature of impact:	No cultural or historic impacts are expected during the operational phase of this activity.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Potential noise impacts:	
Nature of impact:	The activity is not expected to have noise impacts during the operational phase.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Potential visual impacts:	
Nature of impact:	The activity is not expected to have a visual impact during the operational phase as development is located within the urban edge, and is considered in-fill development.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Decommissioning:

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof is considered irrelevant.