Appendix F. Impact Assessment and Ranking Methodology

i. ***Nature of Impact***

The nature of an impact indicates whether the impact would have a negative, positive or zero effect on the affected environment. An impact may therefore be negative, positive or neutral.

ii. ***Extent / Scale***

"Extent" defines the physical extent or spatial scale of the impact. The impact could be:

Rating	Description
SITE SPECIFIC	Limited to the site.
LOCAL	Limited to the site and the immediate surrounding area (1 – 10km)
REGIONAL	Covers an area that includes a certain geographic region and / or extends from one region to another.
PROVINCIAL	Impact considered of provincial importance.
NATIONAL	Across national boundaries and could have implications on a national scale.

iii. Duration

"Duration" gives an indication of how long the impact would occur.

Rating	Description
SHORT TERM	0 - 5 years
MEDIUM TERM	5 - 15 years
LONG TERM	Where the impact extends beyond the operational life of the activity, but not permanently.
PERMANENT - mitigated	Mitigation measures of natural process will reduce impact – impact will remain after operational life of project.
PERMANENT – no mitigation	No mitigation measures of natural process will reduce impact after implementation – impact will remain after operational life of project.

iv. Probability of occurrence

"Probability" describes the likelihood of the impact actually occurring.

Rating	Description
IMPROBABLE / UNLIKELY	No impacts expected under normal conditions.
LOW PROBABILITY	Where there is a low likelihood of the impact occurring.
PROBABLE (MEDIUM)	Where there is a distinct possibility that the impact will occur.
HIGH PROBABILITY	Where it is most likely that the impact will occur.
DEFINITE	Where the impact will occur regardless of any prevention measures.

v. Potential for irreplaceable loss of resources

This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.

Rating	Description
NO LOSS	No irreplaceable resources will be lost or impacted.
MARGINAL LOSS	Marginal loss of irreplaceable resources occurs. Resources can be replaced, with effort.
SIGNIFICANT LOSS	Where a significant loss of resources occurs.
COMPLETE LOSS	Where an activity results in the complete loss of resources. There is no potential for replacing a particular vulnerable resource that will be impacted.

vi. Reversibility of an impact

This refers to the degree to which an impact can be reversed.

Rating	Description
IRREVERSIBLE	Where the impact is permanent.
PARTIALLY REVERSIBLE	Where the impact can be partially reversed.
FULLY REVERSIBLE	Where the impact can be completely reversed.

vii. Cumulative impact

This describes the cumulative effect of the impacts on the environmental parameter. A cumulative effect/impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from other similar or diverse activities within the surrounding area. Cumulative impact may be described as **negligible**, **low**, **medium** or **high** impact.

viii. Degree to which impact can be avoided

Impacts can be **fully avoided** (completely avoidable), **partly avoided** (impact is regarded avoidable with moderate light mitigation and/or management) or the impact is **unavoidable** (it cannot be avoided even with the implementation of significant mitigation measures).

ix. Degree to which impact can be mitigated

This indicates the degree to which an impact can be reduced. It can either be **high** (be fully mitigated), **moderate** (be partly mitigated) or **not be mitigated at all** (no change in impact with mitigation).

x. Degree to which impact can be managed

Impacts can by **fully managed** (completely manageable), **partly managed** (impact is manageable with moderate mitigation and / or management) or it is **unmanageable** (impact cannot be managed even with significant mitigation measures.

xi. Consequence of impact

Indicates how the activity will affect the environment, what will happen if the impact occurs.

xii. Indirect impacts

These comprise secondary impacts that usually occur at a different time or place as a result of the direct impact.

xiii. Residual impact

Residual impacts are impacts that remain following the implementation of mitigation measures.

xiv. Significance

"Significance" attempts to evaluate the importance of a particular impact, and in doing so incorporates the above three scales (i.e. extent, duration and intensity).

Rating	Description
VERY HIGH	Impacts could be EITHER: of *high intensity* at a *regional level* and endure in the *long term*; OR of *high intensity* at a *national level* in the *medium term*; OR of *medium intensity* at a *national level* in the *long term.*
HIGH	Impacts could be EITHER: of *high intensity* at a *regional level* and endure in the *medium term*; OR of *high intensity* at a *national level* in the *short term*; OR of *medium intensity* at a *national level* in the *medium term;* OR of *low intensity* at a *national level* in the *long term*; OR of *high intensity* at a *local level* in the *long term*; OR of *medium intensity* at a *regional level* in the *long term.*
MEDIUM	Impacts could be EITHER: of *high intensity* at a *local level* and endure in the *medium term*; OR of *medium intensity* at a *regional level* in the *medium term*; OR of *high intensity* at a *regional level* in the *short term*; OR of *medium intensity* at a *national level* in the *short term*; OR of *medium intensity* at a *local level* in the *long term*; OR of *low intensity* at a *national level* in the *medium term;* OR of *low intensity* at a *regional level* in the *long term.*
LOW	Impacts could be EITHER of *low intensity* at a *regional level* and endure in the *medium term*; OR of *low intensity* at a *national level* in the *short term*; OR of *high intensity* at a *local level* and endure in the *short term*; OR of *medium intensity* at a *regional level* in the *short term*; OR of *low intensity* at a *local level* in the *long term*;

Rating	Description
	OR of *medium intensity* at a *local level* and endure in the *medium term.*
VERY LOW	Impacts could be EITHER of *low intensity* at a *local level* and endure in the *medium term*; OR of *low intensity* at a *regional level* and endure in the *short term*; OR of *low to medium intensity* at a *local level* and endure in the *short term.*
INSIGNIFICANT	Impacts with: Zero to very low intensity with any combination of extent and duration.
UNKNOWN	In certain cases it may not be possible to determine the significance of an impact.

2. Assessment of each impact and risk identified for each alternative

2.1 During Planning & Design Phase:

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Economic and Socio-economic impacts**	
Nature of impact:	Positive.	Positive.
Extent and duration of impact:	Regional. Short term.	Regional. Short term.
Consequence of impact or risk:	Securing income to households	
Probability of occurrence:	Definite	Definite
Degree to which the impact may cause irreplaceable loss of resources:	No loss	No loss
Degree to which the impact can be reversed:	Not required	Not required
Cumulative impact prior to mitigation:	Medium positive	Medium positive
Significance rating of impact prior to mitigation:	Medium positive	Medium positive
Degree to which the impact can be avoided:	Not required	Not required
Degree to which the impact can be managed:	Not required	Not required
Degree to which the impact can be mitigated:	Not required	Not required
Proposed mitigation:	None	None
Residual impacts:	None	None
Cumulative impact post mitigation:	Medium positive	Medium positive
Significance rating of impact after mitigation:	Medium positive	Medium positive

2.1 During Construction Phase

	Alternative 1	No-Go Option

Potential impact and risk:	Loss of vegetation and ecological processes	
Potential impact and risk (description):	Loss of 5.6ha of vegetation and associated ecological functioning	No Impact
Nature of impact:	Negative	
Extent and duration of impact:	Local and permanent	
Consequence of impact or risk:	All vegetation within the development footprint will be lost	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Very Low	
Degree to which the impact can be reversed:	Irreversible	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Very Low	
Significance rating of impact prior to mitigation	Very Low negative	
Degree to which the impact can be avoided:	Unavoidable	
Degree to which the impact can be managed:	Unmanageable	
Degree to which the impact can be mitigated:	No mitigation	
Proposed mitigation:	Avoid drainage lines	
Residual impacts:	None	
Cumulative impact post mitigation:	Very Low negative	
Significance rating of impact after mitigation	Very Low negative	

	Alternative 1	No-Go Option
Potential impact and risk:	**Loss of Terrestrial Species of Conservation Concern**	
NO Species of Conservation Concern were recorded during the Botanical Site Sensitivity Verification thus NO IMPACT on Species of Conservation Concern		

	Alternative 1	No-Go Option
Potential impact and risk:	**Loss of Terrestrial Protected Species**	
NO Terrestrial Protected Species were recorded during the Botanical Site Sensitivity Verification, thus NO IMPACT on any Terrestrial Protected Species.		

	Alternative 1	No-Go Option
Potential impact and risk:	**Impact on drainage lines**	
All drainage lines surrounding the proposed development site are excluded from the development footprint and will remain their status quo. In addition, a 30m buffer is applied to all drainage lines and thus the proposed development will not impact on any of these drainage lines.		

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Proliferation of alien vegetation**	
Nature of impact:	Negative.	Negative.
Extent and duration of impact:	Local to Regional. Short term to Long term.	Local to Regional. Short term to Long term.
Consequence of impact or risk:	Low negative	Low negative
Probability of occurrence:	Highly Probable	Highly Probable
Degree to which the impact may cause irreplaceable loss of resources:	Medium	Medium
Degree to which the impact can be reversed:	Fully Reversible	Fully Reversible
Cumulative impact prior to mitigation:	Very High negative	Very High negative
Significance rating of impact prior to mitigation:	High negative	High negative
Degree to which the impact can be avoided:	High	High
Degree to which the impact can be managed:	High	High
Degree to which the impact can be mitigated:	High	High
Proposed mitigation:	An Alien Vegetation Control programme should be implemented.	An Alien Vegetation Control programme should be implemented.
Residual impacts:	None	None
Cumulative impact post mitigation:	Very Low negative to insignificant	Medium Low negative
Significance rating of impact after mitigation:	Very Low negative to insignificant	Medium negative

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Impact on terrestrial fauna**	
Nature of impact:	The ousting of fauna through anthropogenic activities, disturbance of refuge and general change in habitat.	No impact during construction phase
Extent and duration of impact:	Local. Permanent.	-
Consequence of impact or risk:	Activities can disturb and impact on onsite and surrounding animal species.	-
Probability of occurrence:	Definite	-
Degree to which the impact may cause irreplaceable loss of resources:	Medium	-
Degree to which the impact can be reversed:	Partially Reversible	
Cumulative impact prior to mitigation:	Medium negative	-

Significance rating of impact prior to mitigation:	High negative	-
Degree to which the impact can be avoided:	Moderate	-
Degree to which the impact can be managed:	Moderate	
Degree to which the impact can be mitigated:	Very Low	-
Proposed mitigation:	• Activities must be controlled to ensure that the areas outside the proposed footprint are not negatively impacted. • Undertake activities only in identified and specifically demarcated areas. • Search and rescue for animal species be conducted prior to vegetation clearing and animal species captured (where possible) and relocated to surrounding non-impacted areas.	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Potential noise impact**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	None	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Negligible	-
Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	Low	-
Degree to which the impact can be managed:	Low	-
Degree to which the impact can be mitigated:	Low	-

Proposed mitigation:	• Construction activities should be restricted to working hours. • Construction vehicles should have noise restricting mechanism on them. • A Method Statement must be written and adhered to for measures to control and reduce visual impacts.	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative to insignificant	-
Significance rating of impact after mitigation:	Very Low negative to insignificant	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Potential visual impact**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	None	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Irreversible	-
Cumulative impact prior to mitigation:	Medium negative	-
Significance rating of impact prior to mitigation:	Low negative	-
Degree to which the impact can be avoided:	Low	-
Degree to which the impact can be managed:	Low	-
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	• Construction activities should be restricted to the authorised development footprint(s). • A Method Statement must be written and adhered to for measures to control and reduce visual impacts.	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Low negative	-

	Alternative 1	**No-Go Alternative**

Potential impact and risk:	Dust nuisance due to construction activities	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	None	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Irreversible	-
Cumulative impact prior to mitigation:	Negligible	-
Significance rating of impact prior to mitigation:	Low negative	-
Degree to which the impact can be avoided:	Moderate	-
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	• All exposed soils must be protected for the duration of the construction phase with a suitable geotextile (e.g. Geojute or hessian sheeting) in order to prevent dust generation resulting in vegetation smothering and sedimentation of the watercourses. This is especially important since the surrounding landscape is utilised for harvestable fruits/crops that may be sensitive to excessive dust. • A Method Statement must be written and adhered to for measures to control and reduce visual impacts.	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative to insignificant	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Generation of solid waste**	

Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	If dumped outside the development footprint it may impact negatively on natural vegetation and/or drainage lines.	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	Low	-
Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Very Low negative	-
Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	High	-
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	• Waste and litter drums should be placed at strategic points for use by personnel. The drums should be regularly emptied and removed to the Municipal's landfill site. • All solid waste deriving from the construction process should be responsibly transported and disposed at the nearest registered landfill site. • Illegal dumping of domestic and other waste should not be allowed.	
Residual impacts:	Low	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Generation of sewage**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	If dumped outside the development footprint it may impact negatively on natural vegetation and/or drainage lines.	-

Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	Low	-
Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Very Low negative	-
Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	High	-
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	Appropriate sanitary facilities must be provided for the life of the construction phase and all waste removed to an appropriate waste facility.	
Residual impacts:	Low	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Economic and Socio-economic impacts**	
Nature of impact:	Positive.	Negative from an economic and socio-economic perspective
Extent and duration of impact:	Local. Short Term	-
Consequence of impact or risk:	Contribute to economic vitality	-
Probability of occurrence:	Definite	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Not required	-
Cumulative impact prior to mitigation:	Very High positive	-
Significance rating of impact prior to mitigation:	Very High positive	-
Degree to which the impact can be avoided:	Not needed	-
Degree to which the impact can be managed:	Not needed	-
Degree to which the impact can be mitigated:	Not needed	-
Proposed mitigation:	-	-
Residual impacts:	None	
Cumulative impact post mitigation:	Very High positive	

Significance rating of impact after mitigation:	Very High positive	

2.2 During Operational Phase

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Spread of exotic species into surrounding vegetation**	
Nature of impact:	Negative.	None
Extent and duration of impact:	Local. Short to Long Term	Neutral
Consequence of impact or risk:	Potential habitat degradation.	N/A
Probability of occurrence:	Probable	None
Degree to which the impact may cause irreplaceable loss of resources:	No loss	High
Degree to which the impact can be reversed:	Reversible	Very low
Cumulative impact prior to mitigation:	Very Low Negligible	N/A
Significance rating of impact prior to mitigation:	Very Low negative	Neutral
Degree to which the impact can be avoided:	Low	N/A
Degree to which the impact can be managed:	Low	N/A
Degree to which the impact can be mitigated:	Low	N/A
Proposed mitigation:	• Monitor surrounding areas for spread of exotic species and remove where necessary.	N/A
Residual impacts:	None	N/A
Cumulative impact post mitigation:	Insignificant	N/A
Significance rating of impact after mitigation:	Insignificant	Neutral

	Alternative 1	No-Go Alternative
Potential impact and risk:	**Potential noise impact**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Long Term	-
Consequence of impact or risk:	None	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Negligible	-

Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	Low	-
Degree to which the impact can be managed:	Low	-
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	• ZX	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative to insignificant	-
Significance rating of impact after mitigation:	Very Low negative to insignificant	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Potential visual impact**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	None	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Irreversible	-
Cumulative impact prior to mitigation:	Low negative	-
Significance rating of impact prior to mitigation:	Low negative	-
Degree to which the impact can be avoided:	Low	-
Degree to which the impact can be managed:	Low	-
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	Zx	
Residual impacts:	None	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Generation of waste associated with pack house operation**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-

Consequence of impact or risk:	If dumped outside the development footprint it may impact negatively on natural vegetation and/or drainage lines.	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	Low	-
Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Very Low negative	-
Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	High	-
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	• Waste and litter drums should be placed at strategic points for use by personnel. The drums should be regularly emptied and removed to the Municipal's landfill site. • All solid waste deriving from the construction process should be responsibly transported and disposed at the nearest registered landfill site. • Illegal dumping of domestic and other waste should not be allowed.	
Residual impacts:	Low	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Generation of sewage**	
Nature of impact:	Negative.	No impact during construction phase
Extent and duration of impact:	Local. Short term	-
Consequence of impact or risk:	If dumped outside the development footprint it may impact negatively on natural vegetation and/or drainage lines.	-
Probability of occurrence:	Probable	-
Degree to which the impact may cause irreplaceable loss of resources:	Low	-

Degree to which the impact can be reversed:	Reversible	-
Cumulative impact prior to mitigation:	Very Low negative to Insignificant	-
Significance rating of impact prior to mitigation:	Very Low negative	-
Degree to which the impact can be avoided:	High	-
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	Low	-
Proposed mitigation:	All waste should be removed to an appropriate waste facility.	
Residual impacts:	Low	-
Cumulative impact post mitigation:	Very Low negative	-
Significance rating of impact after mitigation:	Very Low negative	-

	Alternative 1	**No-Go Alternative**
Potential impact and risk:	**Economic impacts.** **Socio-economic impacts.** **Job Creation.**	
Nature of impact:	Positive.	Negative from an economic and socio-economic perspective
Extent and duration of impact:	Local. Short Term	-
Consequence of impact or risk:	Contribute to economic vitality	-
Probability of occurrence:	Definite	-
Degree to which the impact may cause irreplaceable loss of resources:	No loss	-
Degree to which the impact can be reversed:	Not required	-
Cumulative impact prior to mitigation:	Very High positive	-
Significance rating of impact prior to mitigation:	Very High positive	-
Degree to which the impact can be avoided:	Not needed	-
Degree to which the impact can be managed:	Not needed	-
Degree to which the impact can be mitigated:	Not needed	-
Proposed mitigation:	-	-
Residual impacts:	None	-
Cumulative impact post mitigation:	Very High positive	-
Significance rating of impact after mitigation:	Very High positive	-