

APPENDIX J – IMPACT TABLES

GEOGRAPHICAL AND PHYSICAL-SOIL EROSION AND DUST

Alternative 1: Road Upgrade (PREFERRED)	Geographical and Physical Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Soil erosion and dust
Nature of impact:	Disturbance to soil which is caused during the construction of the box culvert and establishment of new road surface may lead to erosion of the site and surrounds.
Extent and duration of impact:	Extent 1 (footprint) & Duration 1 (0-1 years)
Consequence of impact or risk:	Clearing and excavation activities can result in erosion and dust.
Probability of occurrence:	2 (Improbable: some possibility, but low likelihood)
Degree to which the impact may cause irreplaceable loss of resources:	2-Resource may be partly destroyed (PR)
Degree to which the impact can be reversed:	Completely reversible (R)
Indirect impacts:	Disturbance to surface area can result in erosion and dust generation
Cumulative impact prior to mitigation:	Exposing soil may lead to erosion and dust generation if not mitigated.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	14 - Low
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:	1-Completely mitigatable (CM)
Proposed mitigation:	<ul style="list-style-type: none"> • The riparian vegetation cover should be disturbed as little as possible during the construction of the drainage line crossing and may not be disturbed at all within the proposed no-go areas. • Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the immediate construction areas only. • Monitor construction areas frequently for signs of erosion and if signs of erosion are detected implement repair and preventative measures immediately. • Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.
Residual impacts:	It is not anticipated that the impact will be high if the mitigation measures are adhered to.
Cumulative impact post mitigation:	It is not anticipated that the impact will be high if the mitigation measures are adhered to.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	7 - Low
OPERATIONAL PHASE	
Potential impact and risk:	Not applicable to operational phase.
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.

SURFACE AND GROUND WATER POLLUTION

Alternative 1: Road Upgrade (PREFERRED)	Geographical and Physical Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impact of construction activities on surface and underground water pollution
Nature of impact:	The site is an Ecological Support Area (watercourse). Construction could result in the pollution of surface water and eventually result in ground water pollution. Construction activities such as excavation and road surfacing and or diesel and oil spills could impact surface and ground water quality.
Extent and duration of impact:	Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)
Consequence of impact or risk:	Degradation of ESA. Possible pollution of surface and ground water.
Probability of occurrence:	4 (most likely)
Degree to which the impact may cause irreplaceable loss of resources:	2-Resource may be partly destroyed (PR)
Degree to which the impact can be reversed:	Partly reversible (PR)
Indirect impacts:	Pollution of water resources. Degradation of ESA.
Cumulative impact prior to mitigation:	Diesel and oil spills affecting ground and surface water quality.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	64 - High
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:	2-Partly mitigatable (PM)
Proposed mitigation:	Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.
Residual impacts:	It is not anticipated that the impact will be high if the mitigation measures are adhered to.
Cumulative impact post mitigation:	Diesel and oil spills affecting ground and surface water quality.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	56 – Medium
OPERATIONAL PHASE	
Potential impact and risk:	Not applicable to operational phase.
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.

ECOLOGICAL AND BIOLOGICAL- IMPACT ON SENSITIVE ENVIRONMENTS (RIVER)

Alternative 1: Road Upgrade (PREFERRED)	Biological Aspect Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impact on sensitive environment specifically the river. Impact on riparian fauna and flora and potential introduction of alien invasive species.
Nature of impact:	Disturbance of an ESA2 watercourse.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 3 (5 – 15 years)
Consequence of impact or risk:	Loss of riparian vegetation and bed/bank modification. Impact on fauna due to construction activities.
Probability of occurrence:	4 (most likely)
Degree to which the impact may cause irreplaceable loss of resources:	2-Resource may be partly destroyed (PR)
Degree to which the impact can be reversed:	Partly reversible (PR)
Indirect impacts:	Loss of habitat.
Cumulative impact prior to mitigation:	Loss of habitat.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	60 – High
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:	2-Partly mitigatable (PM)
Proposed mitigation:	Work within site boundaries with no construction activities outside the boundary of the proposed development.
Residual impacts:	Loss of significantly impacted upon habitat.
Cumulative impact post mitigation:	Possible impact on habitats.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	54 – Medium
OPERATIONAL PHASE	
Potential impact and risk:	Impact on sensitive environments (rivers)
Nature of impact:	Disturbance of an ESA2 watercourse should any operational activities described in the MMP be conducted – for example - removal of Sediment, Debris or Nuisance vegetation growth within the river.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 3 (5 – 15 years)
Consequence of impact or risk:	Minor disturbance to riparian area and vegetation and bed/bank modification.
Probability of occurrence:	4 (most likely)
Degree to which the impact may cause irreplaceable loss of resources:	2-Resource may be partly destroyed (PR)
Degree to which the impact can be reversed:	Partly reversible (PR)
Indirect impacts:	Loss of habitat.
Cumulative impact prior to mitigation:	Loss of habitat.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	60 – High
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:	2-Partly mitigatable (PM)
Proposed mitigation:	Comply with mitigation measures as per MMP.
Residual impacts:	Loss of significantly impacted upon habitat.
Cumulative impact post mitigation:	Possible impact on habitats.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	54 – Medium
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.

SOCIO-ECONOMIC-INCREASE IN JOBS

Alternative 1: (PREFERRED)	Socio-Economic Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Increased jobs
Nature of impact:	Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)
Consequence of impact or risk:	Influx of contract workers due to lack of skills. Influx of job seekers due to jobs created. Littering.
Probability of occurrence:	4 (most likely)
Degree to which the impact may cause irreplaceable loss of resources:	NA – Positive
Degree to which the impact can be reversed:	NA – Positive
Indirect impacts:	NA – Positive
Cumulative impact prior to mitigation:	NA – Positive
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	8 – Low (positive)
Degree to which the impact can be avoided:	NA – Positive
Degree to which the impact can be managed:	NA – Positive
Degree to which the impact can be mitigated:	NA – Positive
Proposed mitigation:	Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference. The local community and local community organizations should be informed of the project and potential job opportunities.
Residual impacts:	NA – Positive
Cumulative impact post mitigation:	NA – Positive
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	8 – Low (positive)
OPERATIONAL PHASE	
Potential impact and risk:	Not applicable to operational phase.
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.

TRAFFIC IMPACTS

Alternative 1: Road Upgrade (PREFERRED)	Socio-Economic Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Traffic Impacts
Nature of impact:	The construction machinery and closure of the road during the upgrade will have a traffic impact.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 1 (0-1 years)
Consequence of impact or risk:	Local residents will have to use alternative routes and will experience traffic delays.
Probability of occurrence:	2 (some possibility, but low likelihood)
Degree to which the impact may cause irreplaceable loss of resources:	1-Resource will not be lost (R)
Degree to which the impact can be reversed:	Partly reversible (PR)
Indirect impacts:	The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.
Cumulative impact prior to mitigation:	The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	16 – Low
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	2-Partly mitigatable (PM)
Proposed mitigation:	Establish alternative route for local residents.
Residual impacts:	The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.
Cumulative impact post mitigation:	The minor increase in travel times for a limited number of local residents, therefore cumulative impact is not significant.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	8 – Low
OPERATIONAL PHASE	
Potential impact and risk:	Traffic Impacts
Nature of impact:	Improved road surface and pedestrian access. Safer road travel.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)
Consequence of impact or risk:	NA – Positive
Probability of occurrence:	5 – Definite
Degree to which the impact may cause irreplaceable loss of resources:	NA – Positive
Degree to which the impact can be reversed:	NA – Positive
Indirect impacts:	NA – Positive
Cumulative impact prior to mitigation:	NA – Positive
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	8 – Low
Degree to which the impact can be avoided:	NA – Positive
Degree to which the impact can be managed:	NA – Positive
Degree to which the impact can be mitigated:	NA – Positive
Proposed mitigation:	NA – Positive
Residual impacts:	NA – Positive
Cumulative impact post mitigation:	NA – Positive
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	8 – Low
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.

NOISE

Alternative 1: Road Upgrade (PREFERRED)	Socio-Economic Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Noise due to construction machinery
Nature of impact:	Noise due to construction machinery during the construction/development phase. Construction machinery may cause noise disturbance to the directly adjacent land users/ owners. It is not anticipated that the noise will be considerable and will only be temporary. Noise due to construction activities is unlikely to cause a nuisance to adjacent residential areas.
Extent and duration of impact:	Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)
Consequence of impact or risk:	Nuisance
Probability of occurrence:	1 (Very improbable (VP))
Degree to which the impact may cause irreplaceable loss of resources:	1-Resource will not be lost (R)
Degree to which the impact can be reversed:	Completely reversible (R) - This will not be a long-term impact nor will it have an impact on the natural processes. It is thus 100% reversible.
Indirect impacts:	Nuisance
Cumulative impact prior to mitigation:	Nuisance
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	9 – Low
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:	1- Completely mitigatable (CM)
Proposed mitigation:	Machinery and vehicles should be regularly maintained to prevent excessive noise. All machinery and work activities must adhere to the requirements of the noise regulations.
Residual impacts:	Nuisance
Cumulative impact post mitigation:	Nuisance
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	7 - Low
OPERATIONAL PHASE	
Potential impact and risk:	Not applicable to operational phase.
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	Same as construction but decommissioning not foreseeable/highly unlikely - road and river crossing for established residential community.