

## IMPACT ASSESSMENT, MANAGEMENT, MITIGATION AND MONITORING MEASURES

**Please note:** While sections are provided for impacts on certain aspects of the environment and certain impacts, the sections should also be copied and completed for all other impacts.

- (a) Impacts that may result from the planning, design and construction phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the planning, design and construction phase.

### POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS

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| <b>Nature of impact:</b><br>Disturbance to subsurface geological layers   |
| <b>Discussion:</b><br>Construction and excavation activities will affect the underlying geological layers on site to some extent. The depth of the rocks differs throughout the proposed area; therefore, the substrata will be affected differently.   |
| <b>Cumulative impacts:</b><br>It is not anticipated that the impact will be high as most of the excavated substrata will be re-used for infilling and the integrity of the underlying ground structures will thus not be sacrificed.  |
| <b>Mitigation:</b><br>Due to the nature of the impacts, not much can be done to mitigate the impact, only the severity of it can be managed. <ul style="list-style-type: none"> <li>Mitigation and management for affecting geology is to ensure that removal of geological material and hardening are kept to a minimum and only within proposed development areas.</li> <li>Any cumulative impacts due to compaction/hardening of substrata such as damming of storm water elsewhere must be managed according to a site specific storm water management plan.</li> </ul> |

| Criteria                               | Suiderstrand Road Upgrade Alternative 1     |  | No-Go Alternative  |                 |
|--|---|--|--|-----------------|
|  | Without Mitigation                          | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 2   | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5   | 5                                      |  |                 |
| <b>Magnitude</b>                       | 6   | 2                                      |  |                 |
| <b>Probability</b>                     | 5   | 2                                      |  |                 |
| <b>Significance</b>                    | 65-High                                     | 16-Low                                 |  |                 |
| <b>Status</b>                          | High negative significance if not mitigated | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | 100%  |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 2 -Partial loss will occur                  |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 2 - Partly                                  |  |  |                 |

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| <b>Nature of impact:</b><br>Soil erosion   |
| <b>Discussion:</b><br>During construction access roads for construction, workers camps, etc. will cause a disturbance to the soil and the vegetation cover. This disturbance, unless carefully managed, could spread as a result of unnecessary construction of additional access roads or site clearing outside of approved development footprint. Construction camps, if not fenced and restricted in size, could result in unnecessarily large areas being disturbed. Soil erosion could occur due to wind (wind erosion cause dust pollution) or due to overland flow should rains fall during construction. |
| <b>Cumulative impacts:</b><br>Soil erosion due to exposed soil surfaces and clearing of vegetation could lead to further degradation on surrounding indigenous vegetation areas.<br><br>Soil erosion may lead to loss in topsoil and impact environmental processes of adjacent sensitive environments.  |
| <b>Mitigation:</b> <ul style="list-style-type: none"> <li>Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.</li> <li>Personnel should be restricted to the construction camp site and immediate construction areas only.</li> </ul>  |

- Undertake specific erosion monitoring and maintenance throughout the construction phase as and if required.
- Control access to roads and other areas to avoid disturbance of areas outside the development footprint.
- Undertake dust suppression as needed.
- Monitor soil erosion on a regular basis and rehabilitate impacted areas as soon as possible under supervision of appointed ECO.
- Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.
- Should any signs of erosion or artificial recharge be observed the municipality must implement rectification and preventions measures immediately and consult with the appointed ECO before implementing these measures.

| Criteria                               | Suiderstrand Road Upgrade Alternative 1              |   | No-Go Alternative  |                 |
|--|--|---|--|-----------------|
|  | Without Mitigation                                   | With Mitigation                           | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3  | 1   | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5  | 1   |  |                 |
| <b>Magnitude</b>                       | 6  | 2   |  |                 |
| <b>Probability</b>                     | 4  | 2   |  |                 |
| <b>Significance</b>                    | 56 - Medium  | 8 - Low                                   |  |                 |
| <b>Status</b>                          | Medium Negative Significance without Mitigation      | Low Negative Significance with Mitigation |  |                 |
| <b>Reversibility</b>                   | 100%   |   |  |                 |
| <b>Irreplaceable loss of resources</b> | 2-Partial loss of resources but can be rehabilitated |   |  |                 |
| <b>Can impacts be mitigated?</b>       | 1 – Can be completely mitigated                      |   |  |                 |

**Nature of impact:**

Impacts of construction activities on the water quality of surface and underground water resources

**Discussion:**

Construction activities can impact negatively upon the surface and groundwater resources on and adjacent to the site.

Possible chemicals found on site during construction as well as any hydrocarbon spillages will negatively affect the soil and surface or ground water interacting with it. Should the spills not be cleaned up and surface water infiltrate the ground, pollutants may even affect the groundwater resource.

**Cumulative impacts:**

Loss or pollution of surface and ground water resources.

Soil pollution might under extreme circumstances extend to areas outside the area of development. This will lead to higher sediment and solute content of water leaving the area, thus lowering water quality in the area and even pose a threat to human health in extreme circumstances.

**Mitigation:**

- All construction activities and personnel on site to stay within demarcated construction areas.
- Proper waste bins to be provided to construction staff and all waste to be regularly removed to municipal landfill site.
- Monitor for erosion. Should erosion be present, undertake maintenance activities such as planting of vegetation.
- All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- Any oil or diesel spills etc. must be reported to the site manager and rehabilitation measures must be taken immediately and contaminated soil disposed of at a licensed landfill site.
- The construction camp where construction vehicles are parked must be at least 30m away from a watercourse and outside of the 100m from high water mark of the sea as measured from the edge of the watercourse.
- Contaminated runoff i.e. cement mixing water from the construction site(s) should be prevented from entering the environment.
- All potential hazardous materials i.e. fuels, cement etc. should be properly stored and contained within the construction camp.

- Disposal of waste from the site should also be properly managed.
- Construction workers should be given ablution facilities at the construction sites and regularly serviced.
- These measures should be addressed, implemented and monitored in terms of the EMP for the construction phase.
- All construction activities and personnel on site to stay within demarcated construction areas.
- Construction vehicles must be checked for leakages on a daily basis and repaired before allowed to work within watercourses if a leakage is detected.
- The cement mixing area must be within the demarcated area and no seepage of site into the surrounding vegetation may occur.

| Criteria                        | Suiderstrand Road Upgrade Alternative 1                   |  | No-Go Alternative  |                 |
|---------------------------------|---|--|--|-----------------|
|                                 | Without Mitigation  | With Mitigation                        | Without Mitigation   | With Mitigation |
| Extent                          | 2   | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| Duration                        | 5   | 1                                      |  |                 |
| Magnitude                       | 10  | 2                                      |  |                 |
| Probability                     | 5   | 2                                      |  |                 |
| Significance                    | 85- High  | 8 - Low                                |  |                 |
| Status                          | High negative significance if not mitigated               | Low negative significance if mitigated |  |                 |
| Reversibility                   | 100%  |  |  |                 |
| Irreplaceable loss of resources | 1-Will not be lost if mitigation measures are implemented |  |  |                 |
| Can impacts be mitigated?       | 1-Yes   |  |  |                 |

**Nature of impact:**

Increase in and accumulation of storm water runoff

**Discussion:**

Removal of vegetated areas may cause an increase in storm water runoff and excavations may lead to accumulation/damming thereof on the site and surrounds.

**Cumulative impacts:**

Increase in storm water runoff could cause erosion and/or damming of water which may lead to additional negative impacts like further habitat degradation and transformation.

**Mitigation:**

- Implement stormwater management measures during construction to prevent uncontrolled increase in runoff speed and accumulation of stormwater runoff.
- Conduct and complete construction activities as far as possible during the dry summer months.
- Only excavate materials from proposed construction sites as according to approved layout plans.
- Do not remove any plant or soil materials from outside of the development areas.
- Do not create any additional access routes.
- Stabilise and rehabilitate areas disturbed outside of the development footprint areas immediately.
- Monitor impacted areas for erosion and accumulation of water on an ongoing basis and implement mitigation measures as and if required.

| Criteria                        | Suiderstrand Road Upgrade Alternative 1     |  | No-Go Alternative  |                 |
|---------------------------------|---|--|--|-----------------|
|                                 | Without Mitigation                          | With Mitigation                        | Without Mitigation   | With Mitigation |
| Extent                          | 2   | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| Duration                        | 5   | 2                                      |  |                 |
| Magnitude                       | 10  | 6                                      |  |                 |
| Probability                     | 5   | 3                                      |  |                 |
| Significance                    | 85 - High                                   | 27 – Low                               |  |                 |
| Status                          | High negative significance if not mitigated | Low negative significance if mitigated |  |                 |
| Reversibility                   | 100%  |  |  |                 |
| Irreplaceable loss of resources | 2 Partial loss of resources                 |  |  |                 |
| Can impacts be mitigated?       | 2 Partly                                    |  |  |                 |

## POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS

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| <p><b>Nature of impact:</b><br/>Impact of proposed activities on coastal indigenous vegetation and associated fauna and avifauna habitat as part of mapped protected areas, CBAs and ESA's</p>   |
| <p><b>Discussion:</b><br/>On the proposed development area the indigenous vegetation is of low conservation value with no plant species of conservation concern, and the affected road and its verges are not expected to be an important breeding site or habitat for any fauna or avifauna species of conservation concern.</p>  |
| <p><b>Cumulative impacts:</b><br/>Loss of coastal indigenous vegetation and associated fauna and avifauna habitat.</p>   |
| <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>Clearly demarcate the proposed development footprint area before any construction commences and undertake construction (including construction camp and associated stockpiling) only in demarcated development footprint area to minimise edge effects. Demarcation method to be approved by an Environmental Control Officer (ECO).</li> <li>No construction related disturbance should be allowed outside the demarcated areas.</li> <li>Implement site specific erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.</li> <li>The landowner/s must adhere to his/her legal obligations to actively eradicate and manage alien vegetation infestations present on the applicable and surrounding properties.</li> <li>Conduct tortoise search and rescue operations daily while site clearance is underway (before clearance commences on a day to day basis) and move all tortoises to surrounding impacted areas.</li> <li>Rehabilitate all areas that were disturbed outside of the proposed development areas immediately and implement mitigation measures to prevent associated impacts from re-occurring.</li> </ul> |

| Criteria                               | Suiderstrand Road Upgrade Alternative 1       |   | No-Go Alternative  |                 |
|--|---|---|--|-----------------|
|  | Without Mitigation                            | With Mitigation                           | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 2   | 1   | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5   | 5   |  |                 |
| <b>Magnitude</b>                       | 10  | 2   |  |                 |
| <b>Probability</b>                     | 5   | 2   |  |                 |
| <b>Significance</b>                    | 85 - High                                     | 16 - Low                                  |  |                 |
| <b>Status</b>                          | High Negative Significance without Mitigation | Low Negative Significance with Mitigation |  |                 |
| <b>Reversibility</b>                   | 100%  |   |  |                 |
| <b>Irreplaceable loss of resources</b> | 2 Partial loss of resources                   |   |  |                 |
| <b>Can impacts be mitigated?</b>       | 2 Partly                                      |   |  |                 |

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| <p><b>Nature of impact:</b><br/>Introduction of alien and weed plant species</p>   |
| <p><b>Discussion:</b><br/>Declared weeds or alien trees may be transported onto the site and spread to surrounding areas during construction. This may have management and cost impacts on such properties. Introduction of alien plant species via vehicular traffic and import of material is an important aspect that needs to be considered. Alien grass seeds for example may become attached to vehicles and be transported to site or be brought on to site in building materials such as sand. Without monitoring and control this could become problematic.</p> |
| <p><b>Cumulative impacts:</b><br/>Loss of potential biodiversity, ecosystems and natural habitat due to the spread of invader plants.</p>  |

**Mitigation:**

The mitigation measures mentioned below will help reduce the risk of introductions and will ensure that should introductions occur they are controlled timeously:

- Undertake construction activities only in identified and specifically demarcated areas.
- Do not import and use infill material on site containing alien or weed vegetation seeds/plants.
- An important aspect of on-going maintenance is the monitoring of the rehabilitated sites and access road verges for alien plant species.
- Wherever possible rehabilitation of disturbed area should be done with seeds collected from indigenous vegetation in the area during rehabilitation.
- Implement an ongoing alien eradication program for the areas to be rehabilitated.

| Criteria                        | Suiderstrand Road Upgrade Alternative 1  |  | No-Go Alternative  |                 |
|---------------------------------|--|--|--|-----------------|
|                                 | Without Mitigation   | With Mitigation                        | Without Mitigation   | With Mitigation |
| Extent                          | 3  | 2                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| Duration                        | 5  | 1                                      |  |                 |
| Magnitude                       | 6  | 4                                      |  |                 |
| Probability                     | 4  | 3                                      |  |                 |
| Significance                    | 56- Medium   | 21 - Low                               |  |                 |
| Status                          | Medium negative significance if not mitigated  | Low negative significance if mitigated |  |                 |
| Reversibility                   | 100%   |  |  |                 |
| Irreplaceable loss of resources | 1-Will not be lost   |  |  |                 |
| Can impacts be mitigated?       | 1-Yes, by implementing an alien eradication plan and continuing monitoring of alien regrowth |  |  |                 |

**POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS****Nature of impact:**

Increased temporary construction jobs

**Discussion:**

Temporary construction jobs will be created.

**Cumulative impacts:**

- Influx of contract workers due to lack of skills.
- Influx of job seekers due to jobs created.

**Mitigation:**

- Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.
- The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.

| Criteria | Suiderstrand Road Upgrade Alternative 1 |  | No-Go Alternative   |                 |
|----------|---|--|---|-----------------|
|          | Without Mitigation                      | With Mitigation  | Without Mitigation  | With Mitigation |
| Status   | -                                       | Due to the job creation only being of an temporary nature this impact is rated as a medium positive significance | Medium Negative Impact, no construction to take place so no temporary jobs to be created. |                 |

**Nature of impact:**

Traffic impacts due to construction on and along existing roads.

**Discussion:**

Construction to take place at existing road infrastructure will have a temporary impact on existing traffic potentially leading to congestion.

**Cumulative impacts:**

Increase in traffic congestion and higher risk of vehicle accidents within the associated area.

**Mitigation:**

- Site specific traffic management measures to be implemented as and when required.

| Criteria                               | Suiderstrand Road Upgrade Alternative 1       |  | No-Go Alternative  |                 |
|--|---|--|--|-----------------|
|  | Without Mitigation                            | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3   | 2                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5   | 1                                      |  |                 |
| <b>Magnitude</b>                       | 6   | 4                                      |  |                 |
| <b>Probability</b>                     | 4   | 3                                      |  |                 |
| <b>Significance</b>                    | 56- Medium                                    | 21 - Low                               |  |                 |
| <b>Status</b>                          | Medium negative significance if not mitigated | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | 100%  |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 1- No resources will be lost                  |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 2 Partly                                      |  |  |                 |

**Nature of impact:**  
Impact of litter or waste from the construction site on the surrounding communities and tourism activities.

**Discussion:**  
Construction workers and activities on site may cause polluting of surrounding areas with litter and waste from the construction site.

**Cumulative impacts:**  
Litter and waste polluting the surrounding areas.

**Mitigation:**

- Appropriate refuse disposable facilities shall be provided at the proposed construction site
- Daily clearance of construction litter on the site and surrounds shall be undertaken.
- Waste to be disposed of via closed containers/vehicles at the municipal landfill site.

| Criteria                               | Suiderstrand Road Upgrade Alternative 1       |  | No-Go Alternative  |                 |
|--|---|--|--|-----------------|
|  | Without Mitigation                            | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3   | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5   | 1                                      |  |                 |
| <b>Magnitude</b>                       | 6   | 0                                      |  |                 |
| <b>Probability</b>                     | 4   | 2                                      |  |                 |
| <b>Significance</b>                    | 56- Medium                                    | 4-Low                                  |  |                 |
| <b>Status</b>                          | Medium negative significance if not mitigated | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | 100%  |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 1-Will not be lost                            |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 1-Yes.  |  |  |                 |

**POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS**

**Nature of impact:**  
The potential impact of the proposed development on archaeological, paleontological and heritage remains

**Discussion:**  
A Notice of Intent to Develop is to be submitted to the HWC for comments, it is however not expected that the upgrade of the existing road infrastructure will have an significant negative impact on any heritage resources and is expected to have a positive impact on heritage resources as the paved surfaces will make access to these the L'Agulhas Lighthouse and Southernmost Tip of Africa monument easier and aesthetically/visually more pleasing as well.

**Cumulative impacts:**  
None expected.

**Mitigation:**

Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.

| Criteria                               | Suiderstrand Road Upgrade<br>Alternative 1   |  | No-Go Alternative  |                 |
|--|--|--|--|-----------------|
|  | Without Mitigation   | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 2  | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5  | 1                                      |  |                 |
| <b>Magnitude</b>                       | 10   | 0                                      |  |                 |
| <b>Probability</b>                     | 1  | 1                                      |  |                 |
| <b>Significance</b>                    | 17- Low  | 2-Low                                  |  |                 |
| <b>Status</b>                          | Low negative significance if not mitigated   | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | 0% reversibility – once the historical features are destroyed, it cannot be recovered. |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 3- Yes, completely irreplaceable   |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 1-Yes  |  |  |                 |

**POTENTIAL IMPACTS OF NOISE****Nature of impact:**

Noise due to construction machinery

**Discussion:**

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.

**Cumulative impacts:**

Noise due to construction activities may cause temporary disturbance.

**Mitigation:**

- Construction activities should be restricted to weekday working hours.
- 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.

| Criteria                               | Suiderstrand Road Upgrade<br>Alternative 1   |  | No-Go Alternative  |                 |
|--|--|--|--|-----------------|
|  | Without Mitigation   | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3  | 2                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 1  | 1                                      |  |                 |
| <b>Magnitude</b>                       | 4  | 2                                      |  |                 |
| <b>Probability</b>                     | 3  | 2                                      |  |                 |
| <b>Significance</b>                    | 24-Low   | 10-Low                                 |  |                 |
| <b>Status</b>                          | Low negative significance if not mitigated   | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | This will not be a long term impact nor will it have an impact on the natural processes. It is thus 100% reversible. |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 1- No resources will be lost.  |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 2 Partly – Construction noise will occur but it is not expected to be significant                                    |  |  |                 |

## POTENTIAL VISUAL IMPACTS

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| <p><b>Nature of impact:</b><br/>Impact of construction activities on the surrounding land users / owners and tourists visual landscape of the area.</p>  |
| <p><b>Discussion:</b><br/>The surrounding land users/ owners will be exposed to the presence of the construction machinery and sites. It is not anticipated that the visual impact of the construction activities will be very significant as it will only be temporary and must be contained as far as possible.</p>  |
| <p><b>Cumulative impacts:</b><br/>As with all construction activities, the visual impact on the surrounding humans is temporary and will not have a long term effect.</p>  |
| <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>• Limit construction activities to the proposed development footprint areas.</li> <li>• Construction camp must be neatly fenced and construction site must be neat and tidy.</li> <li>• Stockpile construction materials in one specific area at the construction camp</li> <li>• Ensure that demarcation measures are neat and tidy i.e. no excessive use of danger tape.</li> </ul> |

| Criteria                               | Suiderstrand Road Upgrade Alternative 1   |  | No-Go Alternative  |                 |
|--|---|--|--|-----------------|
|  | Without Mitigation  | With Mitigation                        | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3   | 1                                      | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5   | 1                                      |  |                 |
| <b>Magnitude</b>                       | 6   | 2                                      |  |                 |
| <b>Probability</b>                     | 4   | 3                                      |  |                 |
| <b>Significance</b>                    | 56- Medium  | 12-Low                                 |  |                 |
| <b>Status</b>                          | Medium negative significance if not mitigated   | Low negative significance if mitigated |  |                 |
| <b>Reversibility</b>                   | 100%  |  |  |                 |
| <b>Irreplaceable loss of resources</b> | 1- The visual resource will not be lost, merely changed. The surrounding landscape character will remain the same, namely urban area. |  |  |                 |
| <b>Can impacts be mitigated?</b>       | 2 – Partly  |  |  |                 |



- (b) Impacts that may result from the operational/maintenance phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

### **POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS**

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| <b>Nature of impact:</b><br>Soil erosion due to increase in hardened surfaces  |
| <b>Discussion:</b><br>Due to proposed hardening of surfaced stormwater runoff from the site will increase which may lead to erosion of adjacent areas if not mitigated and monitored.  |
| <b>Cumulative impacts:</b><br>Soil erosion may lead to loss in topsoil and impact environmental processes of adjacent sensitive environments.  |
| <b>Mitigation:</b> <ul style="list-style-type: none"> <li>Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.</li> <li>Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.</li> <li>Should any signs of erosion or artificial recharge be observed the municipality must implement rectification and preventions measures immediately and consult with the appointed ECO before implementing these measures.</li> </ul> |

| Criteria                               | Suiderstrand Road Upgrade Alternative 1              |   | No-Go Alternative  |                 |
|--|--|---|--|-----------------|
|  | Without Mitigation                                   | With Mitigation                           | Without Mitigation   | With Mitigation |
| <b>Extent</b>                          | 3  | 1   | Not Applicable (No construction activities to take place during the No-Go Alternative) |                 |
| <b>Duration</b>                        | 5  | 1   |  |                 |
| <b>Magnitude</b>                       | 6  | 2   |  |                 |
| <b>Probability</b>                     | 4  | 2   |  |                 |
| <b>Significance</b>                    | 56 - Medium  | 8 - Low                                   |  |                 |
| <b>Status</b>                          | Medium Negative Significance without Mitigation      | Low Negative Significance with Mitigation |  |                 |
| <b>Reversibility</b>                   | 100%   |   |  |                 |
| <b>Irreplaceable loss of resources</b> | 2-Partial loss of resources but can be rehabilitated |   |  |                 |
| <b>Can impacts be mitigated?</b>       | 1 – Can be completely mitigated                      |   |  |                 |

### **POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS**

|  |
|--|
| <b>Nature of impact:</b><br>Impact of proposed activities on coastal indigenous vegetation and associated fauna and avifauna habitat as part of mapped protected areas, CBAs and ESA's   |
| <b>Discussion:</b><br>During operational/maintenance phase the proposed activities may lead to edge effects on surrounding natural coastal environments.   |
| <b>Cumulative impacts:</b><br>Loss of coastal indigenous vegetation and associated fauna and avifauna habitat.   |
| <b>Mitigation:</b> <ul style="list-style-type: none"> <li>Restrict all operational and maintenance activities to the development footprint area.</li> <li>Implement site specific erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.</li> <li>The landowner/s must adhere to his/her legal obligations to actively eradicate and manage alien vegetation infestations present on the applicable and surrounding properties.</li> <li>During operation/maintenance no areas outside of the proposed development footprint areas may be disturbed and only existing access routes etc. may be used.</li> </ul> |

| Criteria | Suiderstrand Road Upgrade Alternative 1 |                 | No-Go Alternative  |                 |
|----------|---|-----------------|--------------------|-----------------|
|          | Without Mitigation                      | With Mitigation | Without Mitigation | With Mitigation |

|  |   |   |  |
|--|---|---|--|
| <b>Extent</b>                          | 2   | 1   | Not Applicable (No construction activities to take place during the No-Go Alternative) |
| <b>Duration</b>                        | 5   | 5   |  |
| <b>Magnitude</b>                       | 10  | 2   |  |
| <b>Probability</b>                     | 5   | 2   |  |
| <b>Significance</b>                    | 85 - High                                     | 16 - Low                                  |  |
| <b>Status</b>                          | High Negative Significance without Mitigation | Low Negative Significance with Mitigation |  |
| <b>Reversibility</b>                   | 100%  |   |  |
| <b>Irreplaceable loss of resources</b> | 2 Partial loss of resources                   |   |  |
| <b>Can impacts be mitigated?</b>       | 2 Partly                                      |   |  |

### **POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS**

| <b>Nature of impact:</b><br>Expansion and upgrade of existing road infrastructure from L'Agulhas to Suiderstrand.  |   |                            |  |                 |
|--|---|----------------------------|--|-----------------|
| <b>Discussion:</b><br>The proposed activity will result in the expansion and paving of an existing gravel road in-use by residents of the area and tourists to access Suiderstrand, Agulhas National Park and the most Southern tip of Africa monument etc. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF and local Service Delivery Implementation Plan. |   |                            |  |                 |
| <b>Cumulative impacts:</b><br>Positive socio-economic impacts as associated with better services delivery to the local community and tourists to the site.   |   |                            |  |                 |
| <b>Mitigation:</b><br>Maintain services infrastructure as proposed.  |   |                            |  |                 |
| Criteria   | Suiderstrand Road Upgrade Alternative 1 |                            | No-Go Alternative  |                 |
|  | Without Mitigation                      | With Mitigation            | Without Mitigation   | With Mitigation |
| Status   | High Negative Significance              | High Positive Significance | High Negative Significance – will lead to the affected road only being partially paved and expanded. |                 |

### **POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS**

*Refer to potential positive socio-economic impacts as listed above - It is not anticipated that any negative impacts will occur on the cultural-historical aspects of the site during this phase.*

### **POTENTIAL VISUAL IMPACTS**

| <b>Nature of impact:</b><br>Impact of development on the surrounding land users / owners and tourist's visual landscape of the area.  |   |                 |                    |                 |
|---|---|-----------------|--------------------|-----------------|
| <b>Discussion:</b><br>The surrounding land users/ owners will be exposed to the presence of the road expansion and paving.<br><br>It is however expected that this will have a positive visual impact as paving of the road and sidewalk will be an improvement upon the current inconsistent gravel road infrastructure of the site. |   |                 |                    |                 |
| <b>Cumulative impacts:</b><br>It is not expected that the potential visual impact of the proposed development will lead to any additional cumulative impacts.   |   |                 |                    |                 |
| <b>Mitigation:</b><br>Maintain proposed infrastructure and surrounding undeveloped areas and ensure that it is kept clean and clear of illegal waste dumping and debris.  |   |                 |                    |                 |
| Criteria  | Suiderstrand Road Upgrade Alternative 1 |                 | No-Go Alternative  |                 |
|   | Without Mitigation                      | With Mitigation | Without Mitigation | With Mitigation |

|               |   |                            |  |
|---------------|---|----------------------------|--|
| <b>Status</b> | - | High Positive Significance | High Negative Significance – will lead to the affected road only being partially paved and expanded. |
|---------------|---|----------------------------|--|

**(c) Impacts that may result from the decommissioning and closure phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase**

**POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS**

*The decommissioning of the infrastructure developments are not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility.*

**POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS**

*The decommissioning of proposed developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to a near natural state (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed facility*

**POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS**

*Potential decommissioning of the proposed infrastructure developments will mean that the Municipality will not be able to provide certain essential services to the public. Decommissioning is therefore highly unlikely and undesirable.*

**POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS**

*It is not anticipated that any further impact on the cultural-historical aspects of the site will occur during this phase as no further disturbance outside of the already impacted areas will take place during decommissioning.*

**POTENTIAL IMPACTS OF NOISE**

*The impacts and their significance anticipated to occur during this phase will be the same as that of the construction phase. Mitigation measures during this phase will remain the same as for the construction phase.*

**POTENTIAL VISUAL IMPACTS**

*The impacts and their significance anticipated to occur during this phase will be the same as that of the construction phase. Mitigation measures during this phase will remain the same as for the construction phase.*