



PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

**Marble Bar Road (M030) 210SLK
Material Extraction Pit
May 2012**



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| Revision | Prepared by | Date | Reviewed by | Date |
|----------|--|------------|-------------|------|
| Draft A | Fiona van Rijnswoud - Environment Officer | 14/05/2012 | | |
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SUMMARY

The proposed Borrow Pit on the Marble Bar Road (M030) at SLK 210 is an area that has been identified as having suitable material for proposed sheeting works between SLK 252 and 276 on the Marble Bar Road. The area also appears to have material suitable for use as pavement material should an opportunity arise for sealing in the future. The proposed pit would be used for the sheeting works this year and be available for other sheeting or pavement construction works in the future.

The area is approximately 1ha in size and occurs in the Shire of East Pilbara. The project area is approximately 24kms north of the town of Nullagine, and is accessed by an existing, unsealed track that intersects with Marble Bar Road. The project location is found approximately 2.5km on the track from Marble Bar Road.

The works will require the clearing of native vegetation (1ha) that occurs in the area to access the suitable material. The project area occurs within two Priority Ecological Communities (PEC's) and is adjacent to a minor, non-perennial watercourse. Native vegetation in the area that is to be cleared is not considered riparian vegetation. No registered or pending Aboriginal Heritage sites occur within the project area therefore no further surveys or approvals will be required.

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN MARBLE BAR ROAD MATERIAL EXTRACTION PIT 210SLK

1. DESCRIPTION OF THE PROJECT

The proposed Borrow Pit on the Marble Bar Road (M030) at 210 SLK is an area that has been identified as having suitable material for proposed sheeting works between 252 SLK and 276 SLK on the Marble Bar Road. The area also appears to have material suitable for use as pavement material should an opportunity arise for sealing in the future. The proposed pit would be used for the sheeting works this year and be available for other sheeting or pavement construction works in the future.

The area is approximately 1ha in size and occurs in the Shire of East Pilbara. The project area is approximately 24kms north of the town of Nullagine, and is accessed by an existing, unsealed track that intersects with Marble Bar Road at 209.7 SLK. The project location is found approximately 2.5km on the track from Marble Bar Road, at the following coordinates:

| | |
|------------|------------|
| 120.053036 | -21.689123 |
| 120.051451 | -21.688716 |
| 120.050712 | -21.689894 |
| 120.051993 | -21.690079 |

The works will require the clearing of native vegetation (1ha) that occurs in the area to access the suitable material. The project area occurs within two Priority Ecological Communities (PEC's) and is adjacent to a minor, non-perennial watercourse; however the vegetation in the area is not considered riparian vegetation.

Following Main Roads' corporate Environmental Assessment and Approval process, an initial 'Low Impact Environmental Screening Checklist' was completed for the proposal. The checklist determined the project required further environmental assessment as the project works require clearing of native vegetation outside the maintenance zone. Therefore the preparation of a project specific Preliminary Environmental Impact Assessment (PEIA) and Environmental Management Plan (EMP) are required.

The preliminary environmental assessment will involve a desktop analysis of environmental aspects and impacts, a site investigation, an assessment of native vegetation clearing, stakeholder consultation and consideration of necessary environmental management. The preliminary assessment will determine whether an Environmental Impact Assessment (EIA) is necessary and if referral to State and/or Commonwealth authorities is required.

1.1 Project Location

An overview of the location and boundaries of the study area for the project are shown in Figures 1a – 1b:

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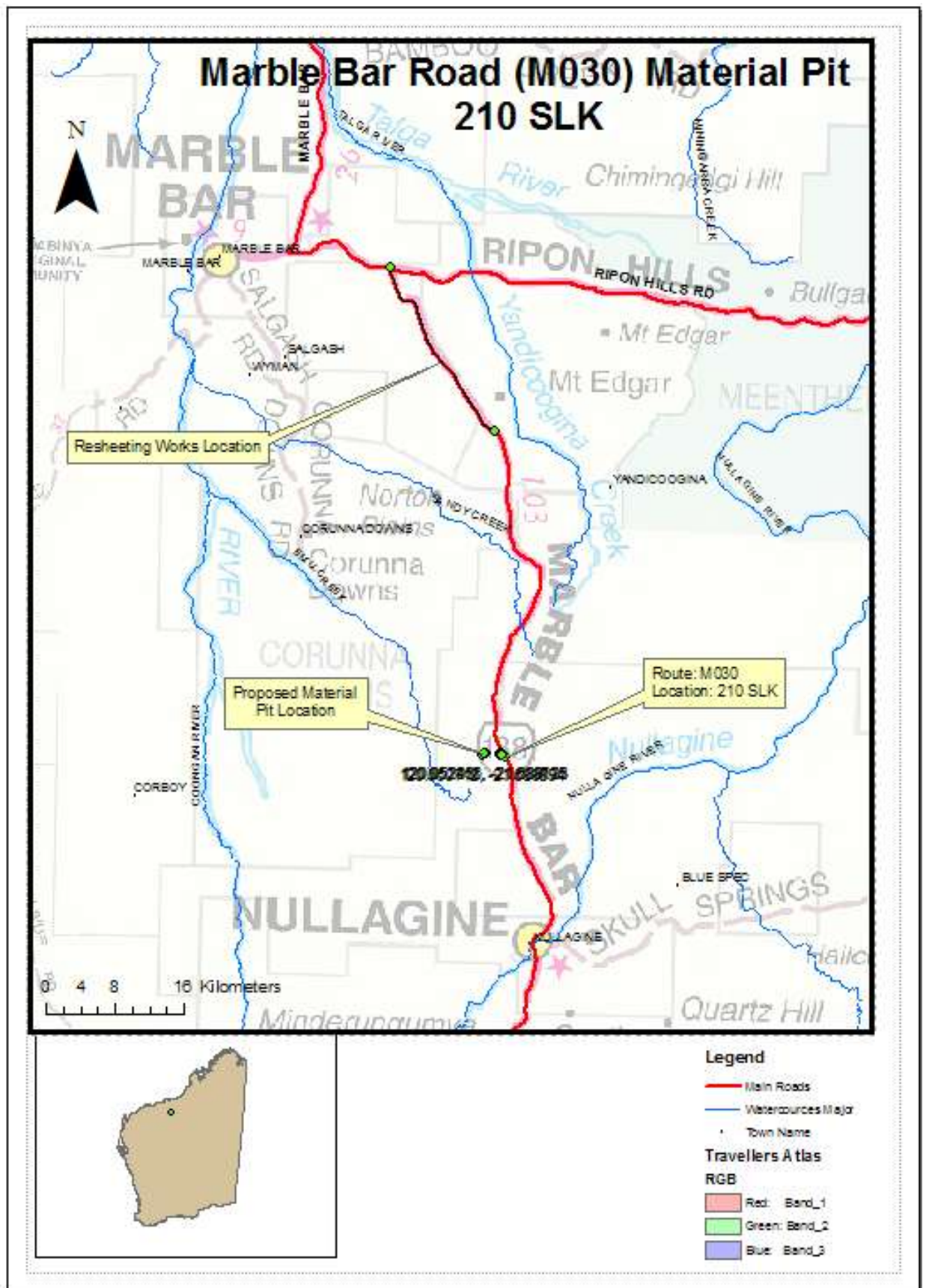


Figure 1a – Project Location and Study Area – Overview

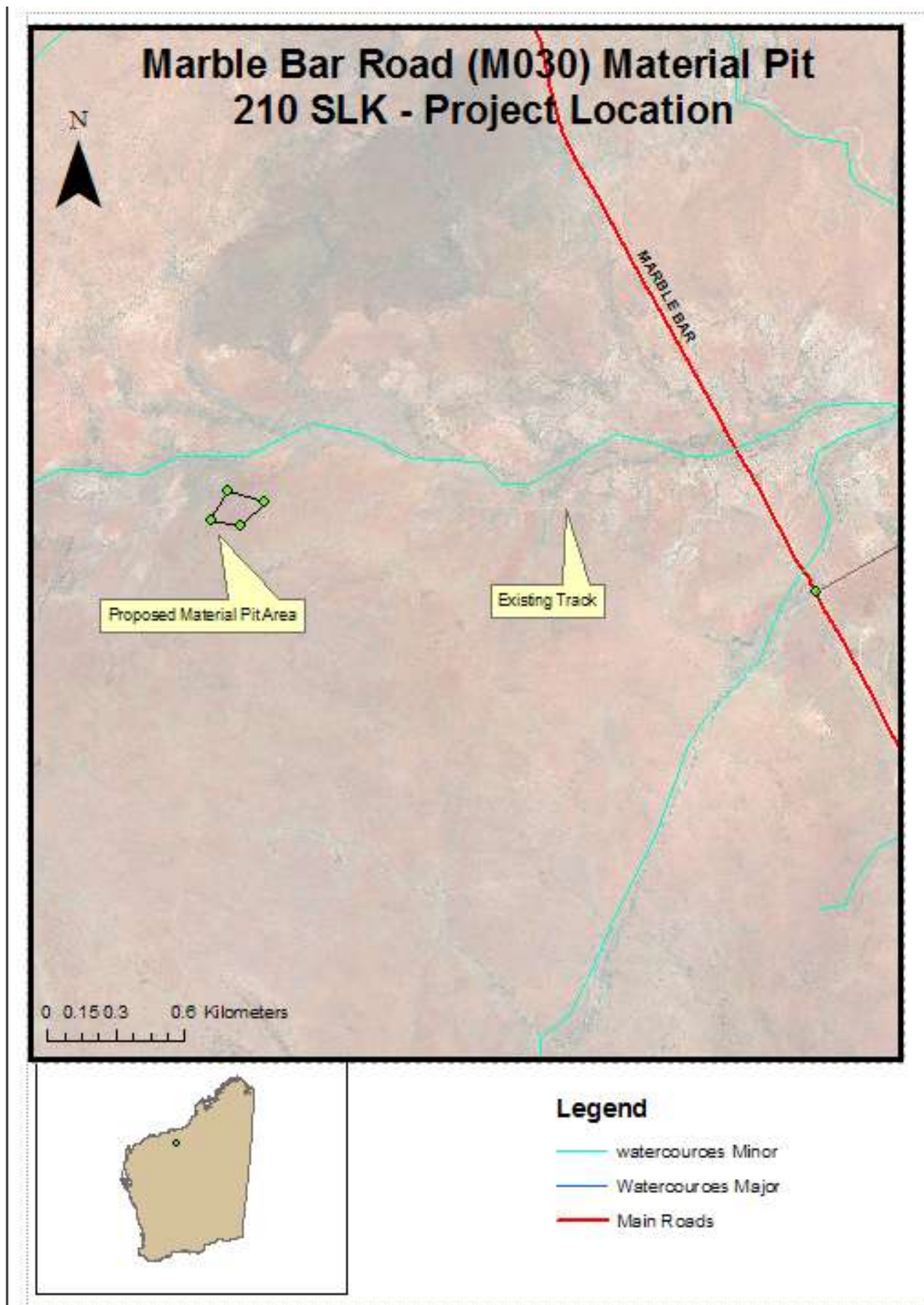


Figure 1b – Project Location and Study Area

2. METHODOLOGY

2.1 Preliminary Desktop Study

A preliminary assessment of the project area and the potential constraints of the proposal was undertaken by reviewing a number of government agency managed databases, viewing GIS shape files and consulting with relevant stakeholders where necessary.

2.1.1 Threatened Flora, Fauna & Communities, Conservation Reserves and ESAs

DEC were contacted and their database was searched for known populations of threatened flora, fauna, Threatened Ecological Communities (TECs) and conservation reserves, refer to Appendix B. An online search of the area was also conducted using the DEC's online mapping tool <http://naturemap.dec.wa.gov.au/default.aspx> (accessed 26/04/2012).

Current GIS shape files provided to Main Roads by the DEC were also examined for known populations of threatened flora, fauna, Threatened Ecological Communities (TECs) or conservation areas located within the vicinity of the works, refer to Appendix B.

2.1.2 Heritage

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (<http://www.environment.gov.au/heritage/places/wa/index.html>), Heritage Council of Western Australia Places Database at <http://register.heritage.wa.gov.au> (accessed 26/04/2012) and the Shire of East Pilbara's local heritage list (previously known as the Municipal Heritage Inventory), refer to Appendix C.

2.1.3 Aboriginal Heritage

A search of the Department of Indigenous Affairs' (DIA's) (<http://dia.wa.gov.au/AHIS/>) database was undertaken to determine whether the project area contains any sites of Aboriginal Heritage, refer to Appendix D.

2.1.4 Sensitive Water Resources

A search of the Department of Water's (DoW's) database was undertaken (<http://www.water.wa.gov.au/idelve/dowdataext/index.jsp>) to determine whether the project area contains any sensitive water resources (including Public Drinking Water Source Areas or Water Pollution Control Areas) or was adjacent to any significant lakes, rivers, wetlands or proclaimed areas, refer to Appendix E.

2.1.5 Wetlands

The locations of any wetlands within the project area was determined using the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) mapping tool, the Department of Environment and Conservation (DEC) "Native Vegetation Map Viewer" mapping tool and by viewing current GIS shape files, refer to Appendix F.

2.1.6 Weeds

The Department of Agriculture and Food Declared Plant database was searched to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area, refer to Appendix H.

http://agspsrv95.agric.wa.gov.au/dps/version02/01_plantsearch.asp (Accessed 27/04/2012)

2.1.7 Dieback

As the project receives <400 mm of rain and is above the 26` parallel, dieback is considered not to be an issue.

2.1.8 Contaminated Sites

A search of the DEC's contaminated sites database was undertaken (<https://secure.dec.wa.gov.au/idelve/css/>) to determine whether the project area contains or is adjacent to any contaminated sites, refer Appendix I.

2.1.9 Acid Sulfate Soils

The DEC's acid sulfate soils maps were reviewed on the Shared Land Information Platform (SLIP - <https://uat2.landgate.wa.gov.au/bmvf/app/waatlas/>) to determine the level of risk the project is exposed to, refer to Appendix J.

2.1.10 Air Quality

The need for a local air quality assessment was determined using the criteria outlined in the MRWA Environmental Guideline, Air Quality.

2.2 Commonwealth Referral

The decision whether to refer the project to the Commonwealth DSEWPC was based upon whether the project would impact Commonwealth land, or may have a significant impact upon matters of national significance, which are protected under the EPBC Act. These are; World Heritage properties, National Heritage places, wetlands of international importance (listed under the Ramsar convention), Commonwealth Marine Areas, migratory species protected under international agreements, nuclear actions, nationally threatened species and ecological communities.

The DSEWPC protected matters search tool was used to determine if the project will impact upon any matters of national significance: (<http://www.environment.gov.au/erin/ert/epbc/index.html>) refer to Appendix G for the results of this search and Section 7 for a discussion on the findings.

2.3 State Referral

The decision whether to refer the project to the State's EPA was based on whether the project would impact on environmental factors significantly enough to require referral under section 38 of the *Environmental Protection Act 1986*.

3. EXISTING ENVIRONMENT

3.1 Description

The area is approximately 1ha in size and occurs in the Shire of East Pilbara. The project area is approximately 24kms north of the town of Nullagine, and is accessed by an existing, unsealed track that intersects with Marble Bar Road at 209.7 SLK. The project location is found approximately 2.5km on the track from Marble Bar Road, at the following coordinates:

| | |
|------------|------------|
| 120.053036 | -21.689123 |
| 120.051451 | -21.688716 |
| 120.050712 | -21.689894 |
| 120.051993 | -21.690079 |

The area at this location is considered somewhat degraded as there are multiple existing vehicles tracks that traverse the area.

The works will require the clearing of native vegetation (1ha) that occurs in the area to access the suitable material. The project area occurs within two Priority Ecological Communities (PEC's) and is adjacent to a minor, non-perennial watercourse; however the vegetation in the area is not considered riparian vegetation.

The vegetation in the area consists of shrub steppe (*Acacia pyrifolia* and *Triodia pungens*) with Hummock (*Triodia Spinifex* sp.) grasslands. The soils in the area are described as red deep sandy duplexes.

3.2 Site Investigation

A site visit was carried out by Bruce Armstrong on 24th April 2012 to examine the general features of the area. The broad vegetation types in the vicinity of the project area were identified. Other issues that were considered included topography, the impacts on creek lines, property access and if further studies are required for noise and vibration impacts (dilapidation). Site photos were taken and are included in Appendix K.

4. CLEARING OF NATIVE VEGETATION

Native vegetation describes all indigenous aquatic and terrestrial vegetation (living or dead). The term does not include vegetation that was intentionally sown, planted or propagated unless it was required under a statutory condition.

Apart from activities that are exempt under the clearing regulation (Section 5 – Prescribed Clearing), typically all Main Roads clearing will be undertaken using a permit and clearing for this project will undertaken using the Main Roads state wide clearing Permit CPS818/6.

4.1 Details of Vegetation Associations to be Cleared

In order to assess the significance of the vegetation proposed to be cleared for Marble Bar Road Material Extraction Pit (210 SLK) the vegetation type, condition and percent of pre-European Extent remaining has been identified. Table 1 describes the location and condition of vegetation associations within the project area and at road building material extraction sites while Table 2 provides further information regarding each vegetation association's representativeness.

Table 1: Vegetation Description, Condition and Percent Remaining

| No. | Description | Start & End SLK | Side of Road (L- left, R - right, RBM -road building materials) | Condition (Keighery 1994)* | Pre-European Extent Remaining (%) ** | Area (ha) |
|------------------------|--|-----------------|---|----------------------------------|---|--------------|
| 173 | Hummock grasslands, shrub steppe; kanji over soft spinifex & Triodia wiseana on basalt | 210 | L | Good | 100 | 1 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Total Area (ha) | | | | | | 1 |

Table 2: Vegetation Percent Remaining

| Pre-European Extent Remaining: Vegetation Association No. 173 Hummock grasslands, shrub steppe; kanji over soft spinifex & Triodia wiseana on basalt | | |
|---|-----------------------|--|
| Regional Context | Location | Pre-European Extent Remaining (%) |
| State-wide | N/A | 100% |
| Bioregional (IBRA Region) | Pilbara (PIL) | 100% |
| Bioregional (IBRA Sub-Region) | Chichester (PIL1) | 100% |
| LGA | Shire of East Pilbara | 100% |

4.2 Assessment Against Clearing Principles

In assessing whether the project is likely to have a significant impact on the environment, the project was assessed against the ten clearing principles (EP Act 1986 Schedule 5). The project is not likely to be at variance with the 10 clearing principles.

| (a) Native vegetation should not be cleared if it comprises a high level of biological diversity. | |
|--|---|
| ASSESSMENT | The project area is not within one of WA's recognised biodiversity hotspots. Priority flora and other significant flora are one measure of biodiversity values that should be considered under this principle. There will be no clearing of native vegetation that is representative of an area of high biodiversity. The clearing of native vegetation that is in good condition is not in better condition than other vegetation of the same ecological communities in the local area. One vegetation type was recorded within the study area. The vegetation type covers 622162.02ha across the Pilbara (Chichester) region and has 100% remaining. Two PEC buffer areas were identified as occurring over the project area, however following consultation with the DEC, it was determined that the project area is in fact, only within the buffer zones and the proposed clearing will not impact on the PEC. |
| METHODOLOGY & REFERENCES | DEC rare and threatened flora database search. ArcGis Dataset search. DEC TEC database search. Consultation with DEC regarding PEC's in the project area. |
| Proposal is not likely at variance to this Principle. | |

| (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia. | |
|---|--|
| ASSESSMENT | A threatened fauna search was conducted over the project area by DEC, which included a 40km buffer zone. Two recordings of threatened fauna species were located nearby to the project area, one being 2.5km away (bird sp.) and one being 8km away (mammal sp.). An EPBC Protected Matters search was conducted over the project area which identified the Mulgara, the Northern Quoll and the Pilbara Leaf Nose Bat as all potentially occurring in the area. DEC's Naturebase was then consulted which did not identify any of these species as having been recorded in the area. The Pilbara Leaf Nose Bat is known to inhabit mine shaft areas, caves and gorges, all which are not associated with this project area, and are therefore highly unlikely to be impacted. The Northern Quoll is known to also require rocky relief, are most abundant in habitats 150km from the coast. The project location was identified as occurring on the fringes of the mapped Mulgara habitat. The clearing of vegetation associated with this project will not result in a reduction of width of remnant vegetation and loss of vegetation will not result in a loss of ecological linkages or limit the support of any breeding populations of species with limited dispersal. |
| METHODOLOGY & REFERENCES | DEC rare and threatened fauna database search. Naturebase ArcGis dataset search. EPBC Species Profile and Threats Database |
| Proposal is not likely at variance to this Principle. | |

| (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora. | |
|--|---|
| ASSESSMENT | There are no known threatened flora species that were identified as occurring within the project area. The nearest threatened flora record was located approximately 10km away from the project location. Areas of vegetation classed as buffer zones necessary to maintain ecological processes and functions for rare flora will also not be cleared. |
| METHODOLOGY & REFERENCES | DEC rare and threatened flora database search and Florabase search. ArcGis dataset search. |

Proposal is not likely at variance to this Principle.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

| | |
|---|---|
| ASSESSMENT | <p>The native vegetation in the project area does not have a bioregional conservation status of depleted or less than 50% representation and is therefore less likely to contain threatened or other significant ecological communities. The buffer area of the vegetation to be cleared also does not have a bioregional conservation status of less than 50%.</p> <p>Whilst the project location was identified as being within the buffer zone of two PEC's, consultation with the DEC's Species and Communities Branch confirmed that the project location does not occur within the actual mapped boundary of the PEC's and is not on the same land system as the PEC's and it was concluded that it was unlikely that the community occurs where our the project location occurs.</p> |
| METHODOLOGY & REFERENCES | <p>DEC Threatened Ecological Communities database search.</p> <p>ArcGis dataset search.</p> |
| Proposal is not likely at variance to this Principle. | |

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

| | |
|---|---|
| ASSESSMENT | <p>The major Vegetation Association system occurring within the project area is not considered remnant and is considered of least concern as there is 100% extent remaining. Native vegetation to be cleared in association with this project is not considered essential native vegetation in the landscape for the maintenance and existence of ecological values. Considering the native vegetation in the project area associated with the vegetation association is at 100% pre-European extent remaining and the clearing required is only 0.7ha it is considered that this area of ecological community will remain well represented after project completion.</p> |
| METHODOLOGY & REFERENCES | <p>SLIP NRM database – CAR Reserve analysis (DEC)</p> <p>Beard (1975)</p> <p>ArcGis Dataset search.</p> |
| Proposal is not likely at variance to this Principle. | |

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

| | |
|---|---|
| ASSESSMENT | <p>The project area is located approximately 150m away from a minor, non perennial watercourse. The watercourse is not considered to provide important linkages between any significant landforms. The watercourse in this area is not identified as supporting the native vegetation that will be cleared in the project area. It is highly unlikely that the vegetation to be cleared will result in changes to water levels or flows of the watercourse.</p> |
| METHODOLOGY & REFERENCES | <p>DSEWPac mapping tool</p> <p>DEC Native Vegetation Map viewer</p> |
| Proposal is not likely at variance to this Principle. | |

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

| | |
|---|--|
| ASSESSMENT | <p>The clearing of 1ha of native vegetation is not likely to cause land degradation as there will still be sufficient native vegetation in the landscape. The area where clearing will occur is considered fairly degraded as there are numerous vehicle tracks that traverse the area. Hydrological balance is not expected to be altered by clearing; therefore salinity is not considered to be an issue. Clearing is not expected to increase wind or water erosion on or off the site due to the relatively small amount of clearing in comparison to similar vegetation surrounding the project area, and current degraded nature of the site.</p> |
| METHODOLOGY & REFERENCES | <p>Desktop assessment</p> <p>ArcGis WA Soils layer</p> |
| Proposal is not likely at variance to this Principle. | |

| (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area. | |
|---|--|
| ASSESSMENT | There are no conservation reserves within or nearby the project area. Fragmentation of landscapes is not likely to occur as a result of these works as the works do not intersect any conservation areas, nor will it contribute to the maintenance or restorability of one or more key ecological processes required to sustain a conservation area. No smaller remnant areas of vegetation (and their basic ecological functions) will be impacted on. |
| METHODOLOGY & REFERENCES | ArcGis maps and Landgate searches were conducted to check for any conservation reserves or areas of conservation value. |
| Proposal is not likely at variance to this Principle. | |

| (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water. | |
|---|---|
| ASSESSMENT | Clearing of native vegetation is not likely to require excavation to (or near to) the water table, therefore groundwater is not likely to be affected. Acid Sulfate soils are mapped as low risk in the area. Surface waters are not likely to be impacted also due to the small scale nature of the proposed clearing. |
| METHODOLOGY & REFERENCES | ArcGis dataset search. DoW Geographic Data Atlas Database search. |
| Proposal is not likely at variance to this Principle. | |

| (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding. | |
|---|---|
| ASSESSMENT | As the project is not considered particularly large scale clearing, and the area is somewhat degraded already due to existing vehicle tracks, it is unlikely the clearing will result in the increase or intensity of flooding. |
| METHODOLOGY & REFERENCES | ArcGis dataset search. |
| Proposal is not likely at variance to this Principle. | |

4.3 Summary of Management Actions

Main Roads attempts to avoid clearing vegetation if possible, where clearing cannot be avoided then this clearing is kept to a minimum. The following actions are proposed to manage and minimise vegetation clearing for the Marble Bar Road Material Extraction Pit 210SLK;

- Select design/locations that minimise adverse impacts on the biological environment,
- Site office and materials storage areas will be located on previously disturbed/ designated area,
- Construction works to be undertaken in summer to reduce the potential for soil erosion impacting adjoining vegetation during heavy rains,
- Control/spray weeds species within the project area prior to construction to limit the amount of propagative material that may be spread during disturbance,
- Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be used during any rehabilitation works and either mulched or respread according to the TDP/Revegetation Plan,
- Implement the Project Revegetation Management Plan and monitor effectiveness of revegetation works and weed control.

The following table summarizes what further assessment and management is required in accordance with MRWA State-wide vegetation Clearing Permit (CPS 818).

Table 3: Summary of Additional Management Actions

| Impact of Clearing | Yes/No or NA | Further Action Required |
|--|---------------------|---|
| 1. Does the assessment indicate that the clearing may be at variance or is at variance with one or more of the principles for clearing? | | No further action required. |
| 2. Does the assessment indicate that the clearing is at variance with one or more of the principles for clearing? | | No further action required. |
| 3. Does the assessment indicate that the clearing is at variance with clearing principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding? | | No further action required. |
| 4. Will the project involve clearing for purposes considered temporary in nature under Condition 13 of CPS818? | | A Revegetation Management Plan (RMP) must be prepared. The RMP must be submitted to the CEO of DEC prior to clearing unless it is; <ul style="list-style-type: none"> - less than ≤0.5 ha - not located in an ESA and - not at variance with one or more of the clearing principles, or - was undertaken within the pastoral regions of WA. |

5. ASSESSMENT OF ASPECTS AND IMPACTS

Table 4: Aspects and Impacts – Marble Bar Road Material Extraction Pit 210 SLK

| Aspect | Evaluation of Potential Impacts |
|-----------------------|---|
| Vegetation – clearing | <p>1ha of native vegetation is proposed to be cleared, the vegetation is described as Vegetation Association number 173; Hummock grasslands, shrub steppe; kanji over soft spinifex & <i>Triodia wiseana</i> on basalt. This Vegetation Association has 100% of preEuropean extent remaining.</p> <p>The native vegetation proposed to be cleared is well represented regionally as it possesses more than 30% of its pre-European extent.</p> <p>According to Keighery, (1994) the condition of the native vegetation to be cleared is described as Degraded/Good.</p> <p>Of the 1ha of native vegetation proposed to be cleared 1ha is temporary clearing.</p> <p>As the project will involve temporary clearing revegetation will be required.</p> |
| Vegetation – TECs/DRF | <p>Two PEC's are present within the project area.</p> <p>The project area lies within the buffer zone of two PEC's. A PEC database search was conducted to identify the name and type of PEC and whether the project area was within the PEC's, or whether they were in the buffer zones only. DEC confirmed that the project area and the works would not impact on the PEC's. See also assessment to Clearing Principle (d) in Section 5.2.</p> <p>Consultation with DEC confirms that the proposal is not going to have a significant impact upon any DRF or PECs.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p> |
| Vegetation – weeds | <p>A search of the Department of Agriculture and Food Declared weed database confirms that there are no declared plants in the project area.</p> <p>There are numerous common weed species that occur throughout the proposed works areas. These species are likely to be widespread within the reserve and general area.</p> |
| Vegetation – dieback | <p>Not an issue given the project area receives less than 400 mm of average annual rainfall or is located above the 26° parallel.</p> |
| Fauna | <p>Two terrestrial fauna species protected by the <i>EPBC Act</i> were identified as potentially occurring within the project area. The Mulgara and the Northern Quoll. Considering the small amount of clearing in an area that is already disturbed, and the requirement for rocky relief for these mammals, it is considered highly unlikely that these species will be impacted by these works. The Pilbara leaf nosed Bat (also protected by the <i>EPBC Act</i>) was identified as potentially occurring in this area. This species inhabits disused mine shafts, caves or gorges. There are none of these present in the project area.</p> <p>Therefore, no significant fauna issues associated with any of the proposed upgrade works. With the generally degraded and exposed nature of the works areas, no significant impacts would be expected on native fauna generally as a result of the proposed works.</p> <p>No known Matters of National Environmental Significance as protected under the EPBC Act (1999) will be impacted (see Table 5).</p> |

Table 4: Aspects and Impacts – Marble Bar Road Material Extraction Pit 210 SLK

| Aspect | Evaluation of Potential Impacts |
|-------------------------------|---|
| Heritage (non-indigenous) | <p>A search of the Australian Heritage Places Inventory, Heritage Council of Western Australia and the Shire of East Pilbara Municipal Heritage Inventory on-line databases has indicated that there are no known site(s) of heritage significance within the vicinity of the project area.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p> |
| Aboriginal heritage | <p>A search of the DIA's database identified no known site(s) of Aboriginal heritage significance within the vicinity of the project area.</p> <p>No further investigations are required for all aspects of the project.</p> |
| Wetlands | <p>There are no wetlands within the vicinity of the project area. This was confirmed by conducting a database search using the EPBC Protected matters search tool and also the DoW Wetlands database.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p> |
| Surface water/drainage | A search of the DoW's database has confirmed that the proposed works will not disturb or interrupt any natural drainage and surface run-off patterns. |
| Groundwater | No dewatering nor drainage modifications are required, hence no change to groundwater level or quality. |
| Reserves / Conservation areas | There are no conservation areas or reserves adjacent to the project area. |
| Air quality | <p>Not relevant to the proposed works. Local air quality assessment is not required for the project since:</p> <ul style="list-style-type: none"> the predicted traffic flow is less than 10,000 vehicles per day (in urban areas) or 15,000 vehicles per day in rural areas; residential and other sensitive receptors are not within 200 meters of the road centre. |
| Dust | Likely to be a minor issue during earthworks. No major sensitive receivers adjacent to the proposed works, but excessive dust could impact vegetation. This is likely to be easily managed by standard construction dust management techniques. |
| Noise and vibration | No major sensitive local receivers. Construction works is not expected to significantly contribute to noise levels at the nearest sensitive receivers, provided works are limited to normal working hours. The requirements of the Shire of East Pilbara must be met in respect of noise management and construction working hours. |
| Visual amenity | The proposed works will result in minor and short-term visual impacts during construction. |
| Public safety and risk | Provided traffic management and signage to Main Roads standards is employed, none of the proposed works present any significant hazards to public safety. The proposed works will serve to enhance public safety by improving local road and pedestrian conditions. |
| Hazardous substances | Not relevant to the proposed works, the project requires no hazardous substances to be used. |
| Contamination | A search of the DEC's contaminated sites database indicates there are no identified contaminated site(s) within the project area. |
| Salinity | There were no visual signs of salinity observed in the project area. Given the nature and scale of the project the impact is considered not relevant. |
| Acid Sulfate Soils | The SLIP database indicates that the area is classified as low risk, as there is no dewatering or excavation below the water table planned no further investigations are required. |
| Statutory Land Use Planning | As the proposed works are likely to take place outside the existing road reserve, prior to construction, development approval from the Western Australian Planning Commission should be sought. |

Table 5: Commonwealth Aspects and Impacts – Marble Bar Road Material Extraction Pit 210 SLK

| Aspect | Evaluation of Potential Impacts |
|--|--|
| World Heritage properties | The project will not impact any World Heritage properties i.e. <u>Shark Bay</u> |
| National Heritage places | A search of the Australian Heritage Places Inventory Database located no site(s) within the vicinity of the project. |
| Wetlands of international importance (Ramsar) | A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no Ramsar Wetland(s) within the vicinity of the project. |
| Nationally threatened species or ecological communities | A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no threatened ecological communities, 4 threatened species and no listed marine species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species and the marine species are listed as “over fly” with the vegetation present unlikely to be habitat for these species. |
| Migratory species protected under international agreements | A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located 8 migratory species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species as the vegetation present is unlikely to be habitat for these species. |
| Commonwealth marine areas | The project will not impact any Commonwealth marine area or marine protected area i.e. <u>Ningaloo Marine Park</u> |
| Commonwealth lands | The project is not located on and will not impact any Commonwealth lands. |
| Nuclear Actions | Not relevant to the proposed works. |

6. DECISION TO REFER

6.1 Referral to the Department of Sustainability, Environment, Water, Population and Communities

The preliminary impact assessment determined the project does not, will not, or is not likely to have a significant impact on Matters of National Environmental Significance or impact Commonwealth land as outlined in Table 5 of the report. For this reason the project does not require referral to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities.

6.2 Referral to the Environmental Protection Authority

Due to the small scale of the project, the low significance of its impacts to the surrounding environment and that it is unlikely the project will generate significant public interest; the project does not require referral to the WA Environmental Protection Authority.

7. STAKEHOLDER CONSULTATION

Table 6: Project Consultation

| Name | Agency | Date | Comments |
|-------------|------------------------------------|------------|--|
| Gemma Grigg | DEC Species and Communities Branch | 01/05/2012 | DEC confirmed that TEC's present in area will not be impacted by proposed works. |

8. OTHER APPROVALS/PERMITS/LICENCES

No further approvals, permits or licences are required for the Marble Bar Road Material Extraction Pit at 210 SLK.

9. REFERENCES

Beeston, G.R., Hopkins, A.J.M. and Shepherd, D.P. (2002). Land-use and vegetation in Western Australia. Department of Agriculture, Western Australia, Resource Management Technical Report 250.

Keighery, B. J. 1994. *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Appendix A

Low Impact Environmental Screening Checklist

Form No. 6707/001/01

Checklist - Low Impact Screening Checklist

The Low Impact Screening Checklist is part of the environmental assessment and approval process, refer to in Figure 2 in the Main Roads environmental guideline Environment Assessment and Approvals. It should be noted that the checklist does not address Aboriginal heritage issues. Please refer to Main Roads guideline, *Aboriginal Heritage* for the heritage assessment process.

All projects are to be screened to identify those that are Low Impact.

Projects that have "No" to all items are classed as Low Impact and should be implemented using standard contract clauses in the Tender Document Process.

Projects that have "Yes" to any item will require further environmental assessment and will be implemented using an Environmental Management Plan.

Tick "Yes" or "No" for every item.

MATERIAL EXTRACTION PIT

Project Name M30 Marble Bar Rd Resheeting 2012 - 210SLK

| ITEM NO. | ITEM | Y | N |
|----------|---|-------------------------------------|-------------------------------------|
| 1 | New road or road reserve to be created or expansion of existing road reserve. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 | Works require clearing of native vegetation outside the maintenance zone. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 | Works require clearing of native vegetation that is older than 10 years old within the maintenance zone. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 | Works to occur outside normal working hours. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 | Passes over, adjoins or drains directly into a wetland or sensitive watercourse. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6 | Local natural drainage regime / hydrology will be changed. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7 | Dewatering, or a new water bore required. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8 | Known potential source of hazardous materials within or adjoining project area. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9 | Buildings will require demolition. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

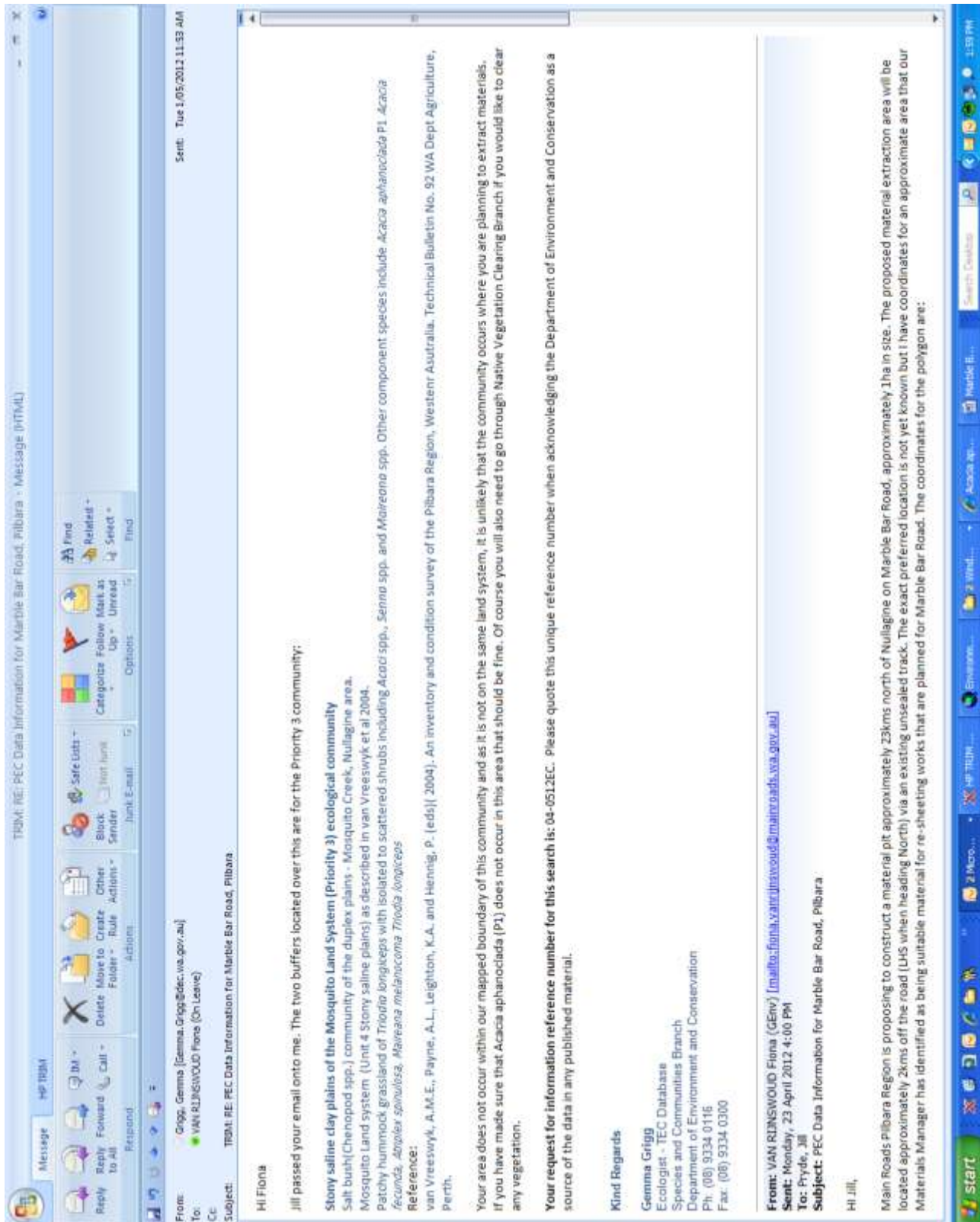
Completed By: Signature Bruce Armstrong Date 26/4/12
Name Bruce Armstrong Title Material Manager P.1/bara

To be reviewed by a Main Roads Environment Officer Signature Fiona van Rijswoord Date 27/4/2012
Name Fiona van Rijswoord Title ENVIRONMENT OFFICER

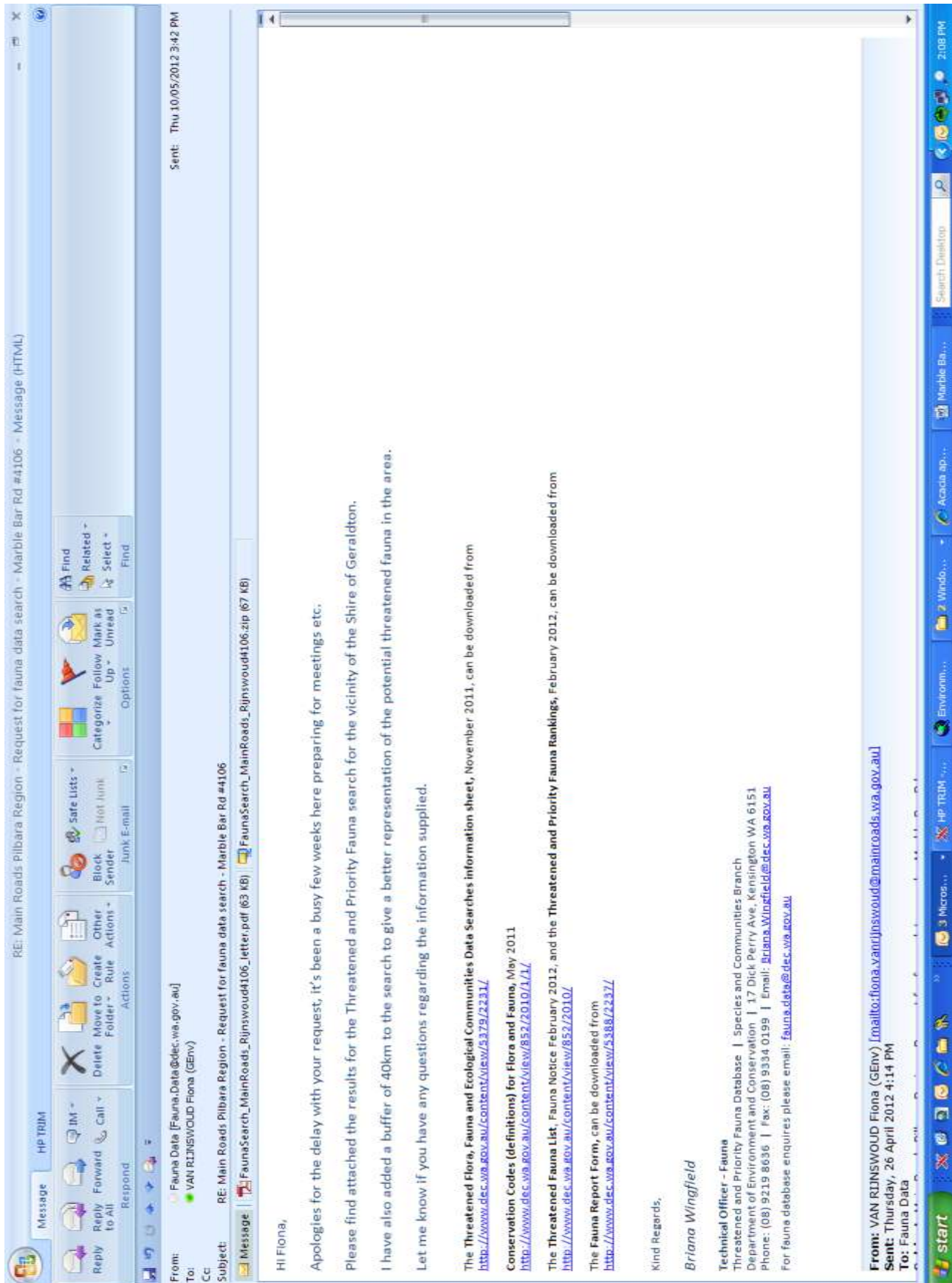
Comments: Clearing is required for material extraction purposes at 210SLK.
Clearing area is p. 7ha and is situated approximately 1.5km
off Marble Bar Road.
Material will be used for resheeting purposes on Marble Bar Road
between 252SLK - 276 SLK

Appendix B

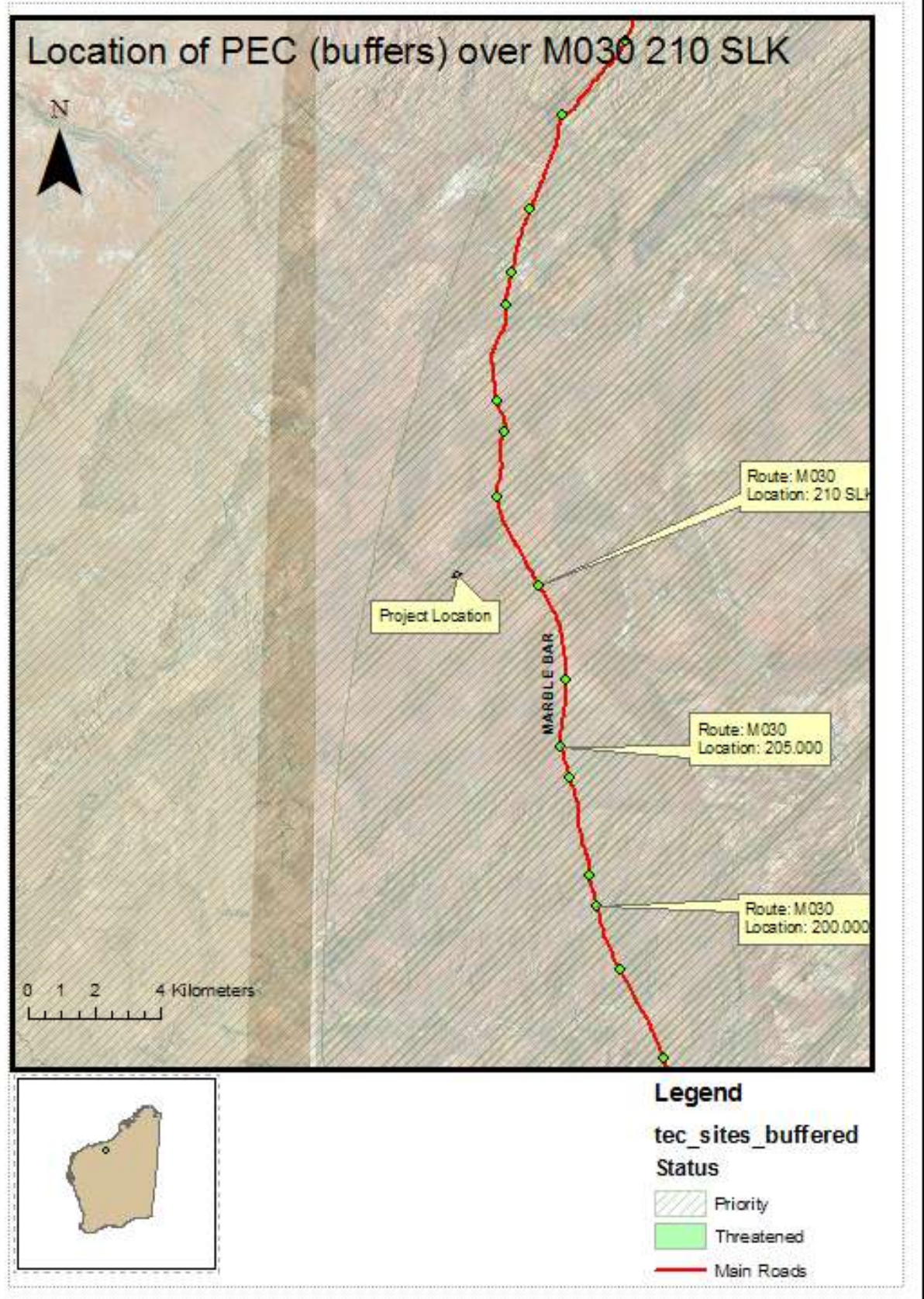
DEC Threatened Flora and Fauna Database Searches



Liaison with the DEC regarding TEC in project location



Liaison with the DEC regarding Threatened Fauna search in project location



Location of PEC (buffer areas) over project area

TRIM: RE: PEC Data Information for Marble Bar Road, Pilbara - Message (HTML)

Sent: Tue 1/05/2012 11:53 AM

From: Grigg, Gemma [Gemma.Grigg@dec.wa.gov.au]
 To: VAN RIJNSWOLD Fiona (On Leave)
 Subject: TRIM: RE: PEC Data Information for Marble Bar Road, Pilbara

Hi Fiona

Jill passed your email onto me. The two buffers located over this are for the Priority 3 community:

Stony saline clay plains of the Mosquito Land System (Priority 3) ecological community
 Salt bush(Chenopod spp.) community of the duplex plains - Mosquito Creek, Nullagine area.
 Mosquito Land system (Unit 4 Stony saline plains) as described in van Vreeswyk et al 2004.
 Patchy hummock grassland of *Triodia longiceps* with isolated to scattered shrubs including *Acacia* spp., *Senna* spp. and *Maireana* spp. Other component species include *Acacia aphanoclada* P1, *Acacia fecunda*, *Atplex spinulosa*, *Maireana melanocoma*, *Triodia longiceps*

Reference:
 van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (eds) (2004). An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92 WA Dept Agriculture, Perth.

Your area does not occur within our mapped boundary of this community and as it is not on the same land system, it is unlikely that the community occurs where you are planning to extract materials. If you have made sure that *Acacia aphanoclada* (P1) does not occur in this area that should be fine. Of course you will also need to go through Native Vegetation Clearing Branch if you would like to clear any vegetation.

Your request for information reference number for this search is: 04-0512EC. Please quote this unique reference number when acknowledging the Department of Environment and Conservation as a source of the data in any published material.

Kind Regards

Gemma Grigg
 Ecologist - TEC Database
 Species and Communities Branch
 Department of Environment and Conservation
 Ph: (08) 9334 0116
 Fax: (08) 9334 0300

From: VAN RIJNSWOLD Fiona (GENV) [mailto:fiona.vanrijnswood@mainroads.wa.gov.au]
 Sent: Monday, 23 April 2012 4:00 PM
 To: Pryde, Jill
 Subject: PEC Data Information for Marble Bar Road, Pilbara

Hi Jill,

Main Roads Pilbara Region is proposing to construct a material pit approximately 23kms north of Nullagine on Marble Bar Road, approximately 1ha in size. The proposed material extraction area will be located approximately 2kms off the road (LHS when heading North) via an existing unsealed track. The exact preferred location is not yet known but I have coordinates for an approximate area that our Materials Manager has identified as being suitable material for re-sheeting works that are planned for Marble Bar Road. The coordinates for the polygon are:

Liaison with DEC Species & Communities Branch regarding PEC's in project area

Appendix C

Australian Heritage Places Inventory, Heritage Council of Western Australia and the Municipal Heritage Inventory Database Searches

Heritage Council of WA - Places Database : Search Results - Microsoft Internet Explorer provided by MRWA...

http://register.heritage.wa.gov.au/search_results.html

File Edit View Favorites Tools Help

Geographic/UMN Coordinates ...

Heritage Council of WA Home

Quick Search

Advanced Search

Results List

Location Report

Save Data

What Is The State Register?

Other Heritage Lists

Home | Site Map | Privacy | Disclaimer | Copyright | FAQs | Links | Contact Us | Places Database

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Last updated: 19/01/2010

WA.GOV.AU

heritage

A future of place

Site Map | Contact Us | Accessibility

Search WA Government

Places Database

Home » Places Database » Search Results

Displaying results: [1-2] of 2

hide selected hide unselected

☐ Nulagine Cemetery (14235)

Marble Bar Rd, Nulagine

☐ Roy Hill Homestead, from Post Office, General Store & Directional Beacon (14228)

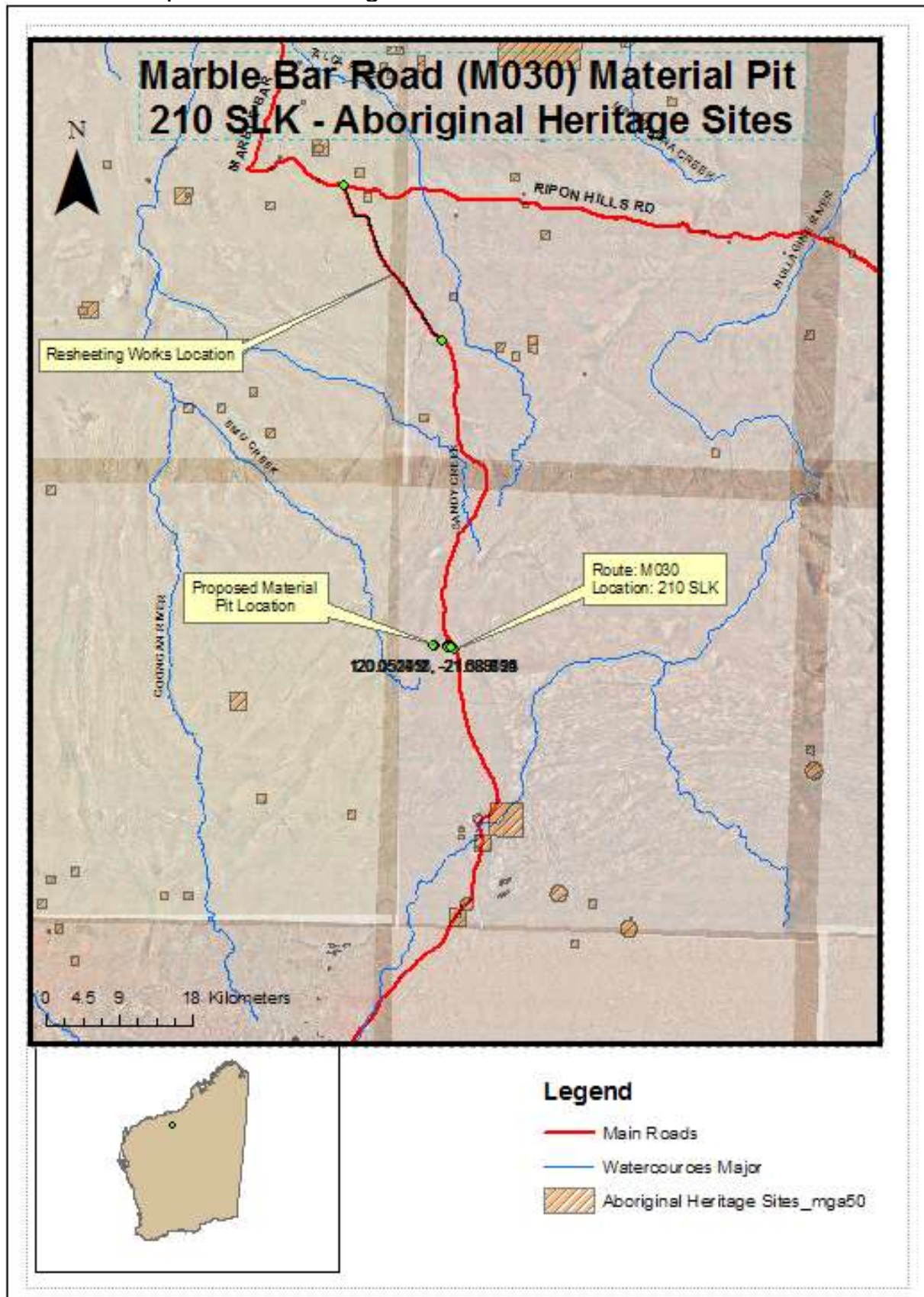
Roy Hill-Marble Bar Rd, Nulagine

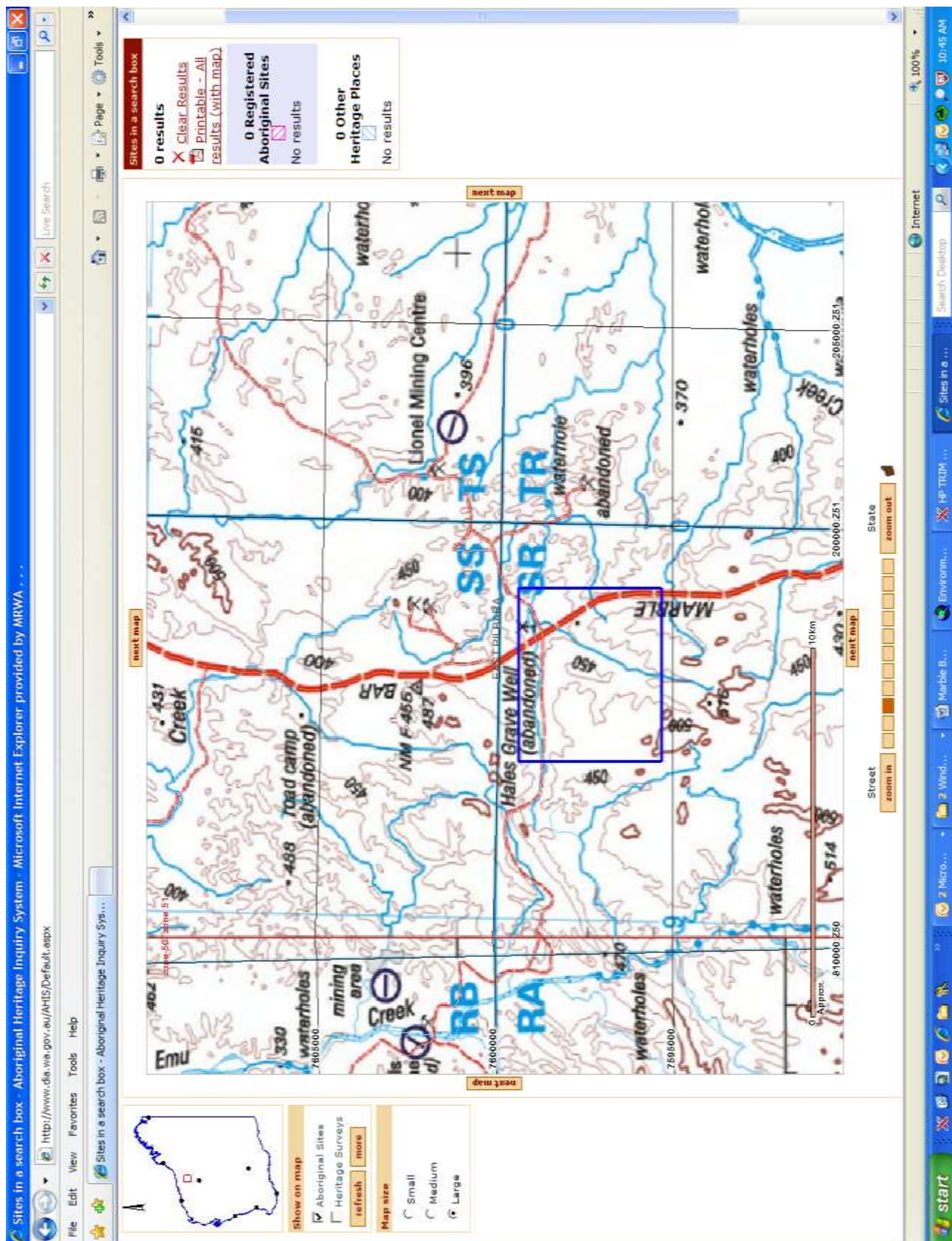
hide selected hide unselected

Perform a new: [QUICK PLACES DATABASE SEARCH](#) | [ADVANCED PLACES DATABASE](#)

Help

Appendix D
Department of Indigenous Affairs Database Search





Appendix E

DoW Geographic Data Atlas Database Search

Department of Water - Geographic Data Atlas - Microsoft Internet Explorer provided by MRWA . . .

http://www.water.wa.gov.au/delive/downloadtext/index.jsp

File Edit View Favorites Tools Help

Geographic Data Atlas

Government of Western Australia
Department of Water

Water Demand Regions
Local Government Authorities - DL
Environment
FPM South River and Tibbs - 100 yk
RIMW Groundwater Areas
Management Plan Status
Draft
Final
Under Review
To be developed

Groundwater Subareas
RIMW Surface Water Areas
RIMW Irrigation Districts
RIMW Rivers
Metropolitan Water Supply Sewerage
Public Drinking Water Source Areas
Protection Area - P1
Protection Area - P2
Protection Area - P3
Protection Area - Not Assigned
Surface Water Allocation Subareas
Surface Water Allocation Areas
Waterway Management Zones
Water Management Zones

Geoscientific Information
Inland Waters
Hydrographic Catchments - Divisic
Hydrographic Catchments - Basins
Hydrographic Catchments - Catch
Indian Ocean
South West
Timor Sea
Western Plateau
Hydrographic Catchments - Subar
Farm Dams
with Sites

Zoom in tool. Click and drag a rectangle.

Geographic Data Atlas

Welcome Search Download Metadata Map Help

Welcome

The Geographic Data Atlas is an interactive web mapping tool that allows you to freely view and download DoW geographic data.

Note that some datasets belong to other government agencies and are provided for viewing purposes only. These are identified in the theme selector by an agency acronym (eg: DLI).

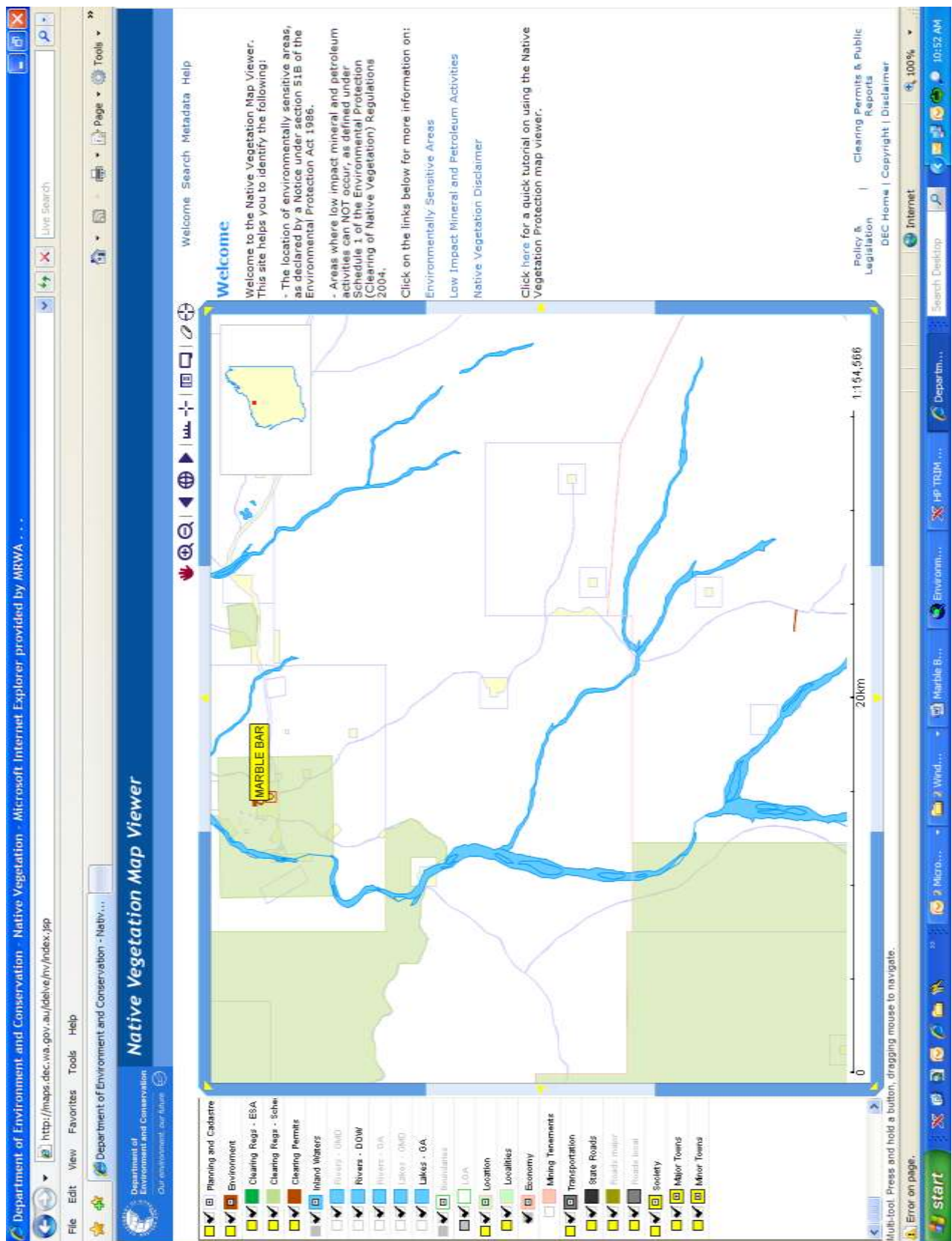
All downloads of geographic data are subject to a standard licence agreement for data transfer. Data downloaded is in ESRI shapefile format with symbology and metadata bundled together in a zip file.

Click [here](#) for a quick introduction to using the Geographic Data Atlas mapping interface.

Click [here](#) to contact us or provide feedback on the site.

Appendix F

DEC Native Vegetation Map Viewer Database Search



Appendix G

DSEWPC Database Search



Australian Government
Department of Sustainability, Environment,
Water, Population and Communities

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Report created: 26/04/12 18:45:44

[Summary](#)

[Details](#)

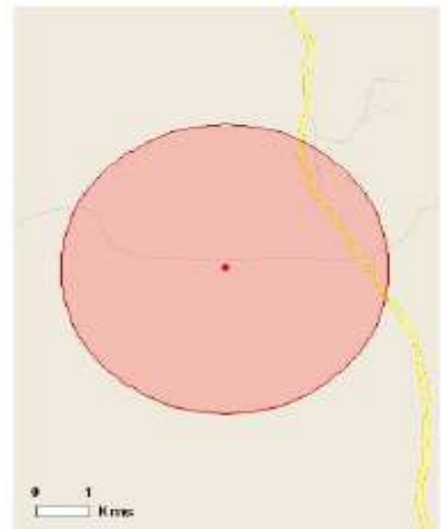
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)
Buffer: 3.0Km



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>

| | |
|--|------|
| World Heritage Properties: | None |
| National Heritage Places: | None |
| Wetlands of International | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Areas: | None |
| Threatened Ecological Communities: | None |
| Threatened Species: | 3 |
| Migratory Species: | 8 |

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov>.

| | |
|---|------|
| Commonwealth Lands: | None |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 6 |
| Whales and Other Cetaceans: | None |
| Critical Habitats: | None |
| Commonwealth Reserves: | None |

Extra Information

This part of the report provides information that may also be relevant to the area you have

| | |
|--|------|
| Place on the RNE: | None |
| State and Territory Reserves: | None |
| Regional Forest Agreements: | None |
| Invasive Species: | 4 |
| Nationally Important Wetlands: | None |

Details

Matters of National Environmental Significance

| Threatened Species | | [Resource Information] |
|--|------------|--|
| Name | Status | Type of Presence |
| MAMMALS | | |
| Dasycercus cristicauda | | |
| Mulgara [328] | Vulnerable | Species or species habitat likely to occur within area |

| Name | Status | Type of Presence |
|---|------------|--|
| Dasyurus hallucatus Northern Quoll [331] | Endangered | Species or species habitat likely to occur within area |
| Rhynonictis aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790] | Vulnerable | Species or species habitat likely to occur within area |

Migratory Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

| Name | Threatened | Type of Presence |
|--|------------|--|
| Migratory Marine Birds | | |
| Apus pacificus Fork-tailed Swift [878] | | Species or species habitat may occur within area |
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |

Migratory Terrestrial Species

| | | |
|---|--|--|
| Haliaeetus leucogaster White-bellied Sea-Eagle [943] | | Species or species habitat likely to occur within area |
| Merops ornatus Rainbow Bee-eater [870] | | Species or species habitat may occur within area |

Migratory Wetlands Species

| | | |
|--|--|--|
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |
| Charadrius veredus Oriental Plover, Oriental Dotterel [882] | | Species or species habitat may occur within area |

Other Matters Protected by the EPBC Act

Listed Marine Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

| Name | Threatened | Type of Presence |
|--|------------|--|
| Birds | | |
| Apus pacificus Fork-tailed Swift [878] | | Species or species habitat may occur within area |
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |

| Name | Threatened | Type of Presence |
|--|------------|--|
| Charadrius veredus Oriental Plover, Oriental Dotterel [882] | | Species or species habitat may occur within area |
| Haliaeetus leucogaster White-bellied Sea-Eagle [943] | | Species or species habitat likely to occur within area |
| Merops ornatus Rainbow Bee-eater [670] | | Species or species habitat may occur within area |

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit,

| Name | Status | Type of Presence |
|---|--------|--|
| Mammals | | |
| Felis catus Cat, House Cat, Domestic Cat [19] | | Species or species habitat likely to occur within area |
| Oryctolagus cuniculus Rabbit, European Rabbit [128] | | Species or species habitat likely to occur within area |
| Vulpes vulpes Red Fox, Fox [18] | | Species or species habitat likely to occur within area |
| Plants | | |
| Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213] | | Species or species habitat likely to occur within area |

Coordinates

-21.69002 120.05102

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various

Appendix H


Department of Agriculture & Food Advice on Declared Weeds

Declared Plants - Microsoft Internet Explorer provided by MRWA ...

http://agper55.agric.wa.gov.au/dpa/version0301_plantsearch.asp

File Edit View Favorites Tools Help

Declared Plants



Declared Plants Search

Find a Plant

Plant Name:

Region: Classes: Search

Generate Report

Declared plants list

| Name | Classes | Regions | View | Printable |
|--|---------|---------|-------------------|-------------------|
| Acacia (Acacia spp., all species not native to Australia (except Acacia farnesiana)) | P1, P2 | 142 | Q | Q |
| African dog (Paganum farnesiana) | P1, P2 | 142 | Q | Q |
| African thistle (Berthia rigida) | P1, P3 | 142 | Q | Q |
| Alligator weed (Alternanthera philoxeroides) | P1, P2 | 142 | Q | Q |
| Australian plants (all types) | P1 | 142 | Q | Q |
| Acrothamnus (Sagittaria montana) | P1, P3 | 142 | Q | Q |
| Antitoxic thistle, dandelion (Cynara cardunculus) | P1, P3 | 142 | Q | Q |
| Asian lily (Zantedeschia aethiopica) | P1, P4 | 142 | Q | Q |
| Black alga (Tamarix aphylla) | P1 | 142 | Q | Q |
| Bathurst burr (Xanthium spinosum) | P1 | 254 | Q | Q |

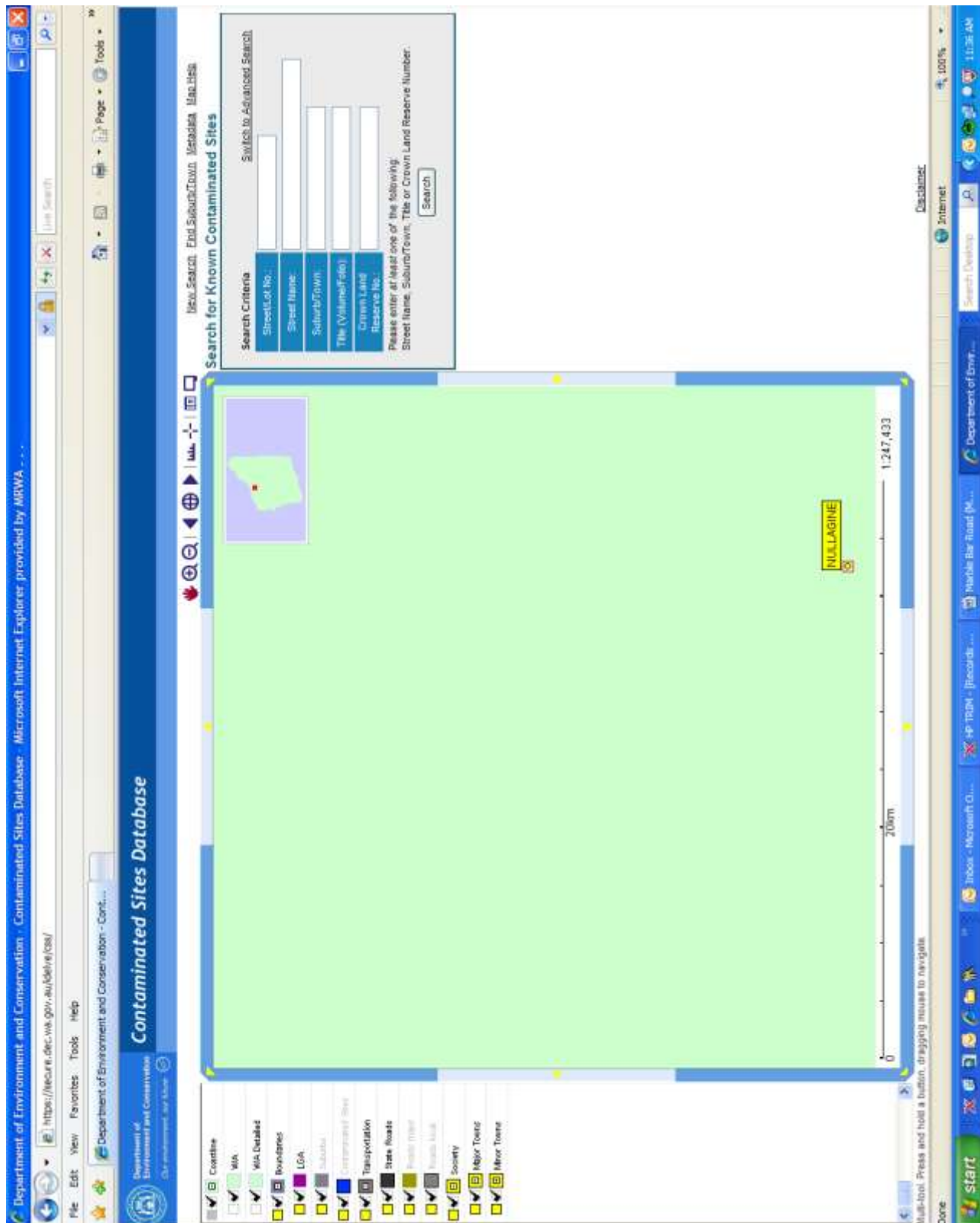
page 1 of 9

MAIN ROADS Western Australia
PEIA & EMP - Marble Bar Rd (M030) - Material Extraction Pit - 210SLK

34 of 44
May 2012

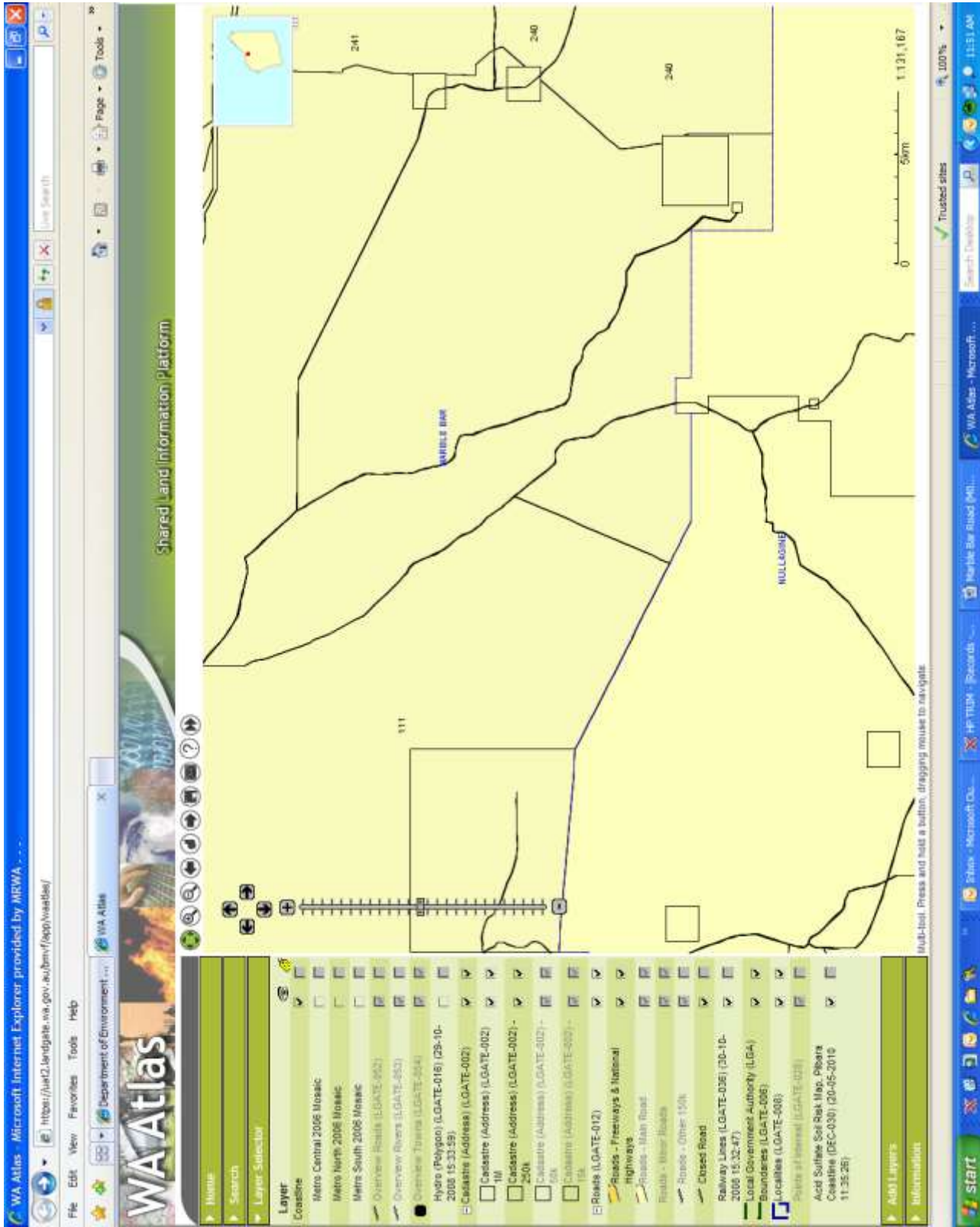
Appendix I

DEC Contaminated Sites Database Search



Appendix J

Acid Sulfate Soils Mapping



Appendix K Site Photos





Appendix L

Environmental Management Plan

Environmental Management Plan

MARBLE BAR ROAD MATERIAL EXTRACTION PIT 210SLK

Introduction

This Environmental Management Plan (EMP) has been developed for the project area following the completion of the Preliminary Environmental Impact Assessment (PEIA) report. The aim of this EMP is to minimise the environmental impacts associated with the proposed works as well as to identify areas of responsibilities required for the implementation of management strategies.

This EMP addresses specific issues that were identified during the PEIA. The project management measures identified within this EMP are in addition to the standard environmental management contract specifications used for Category 2 projects. Main Roads' standard environmental contract specifications (Specifications 203, 204, 301, 302 and 304) are to be adhered to where appropriate.

The areas that require special management will be addressed in terms of:

- the timing of the various management actions;
- the topic (e.g. vegetation);
- the objectives for each area;
- the actions that are necessary to minimise the impact;
- the responsible party for implementing the action; and
- whether the action arose from external advice or is a Main Roads requirement.

Communication Plan

Environmental issues specific to the project will be communicated as follows

| Method | Frequency | Participants | Reference | Record |
|--|---------------|--|---|--------------------|
| Project Site | | | | |
| Induction | Prior to Work | All personnel and subcontractors | EMP and Contractor Environmental Policy | Induction Meeting |
| Toolbox Meetings | Weekly | Project Personnel | Contractor Safety Plan | Minutes of Meeting |
| Contract Meetings | As required | Main Roads' Project Manager and Contractor Project Manager | EMP | Minutes of Meeting |
| Authority Consultation | | | | |
| Department of Environment and Conservation | As required | Main Roads' Project Manager and Contractor Project Manager | - | Minutes of meeting |

External Communication and Complaints

A complaints register shall be maintained by the contractor. All complaints received shall be forwarded to the Main Roads' Project Manager for action. Serious complaints shall be investigated within 24 hours of the complaint being received.

Monitoring

After project completion and project handover, the Asset manager should develop a monitoring program to monitor for those aspects that have been identified as requiring monitoring.

Contingency Measures

Due to the scale and nature of the project, no contingency measures are identified as the inherent environmental risks are small.

Auditing

Due to the scale and nature of the project, there is no requirement for auditing the implementation of the EMP as the environmental risks are small.

| ENVIRONMENTAL MANAGEMENT PLAN | | | | | |
|-------------------------------|---|--|--|-------------------|------------|
| Timing | Topic | Objective | Action | Responsible Party | Advice |
| All phases of Construction | Vegetation Clearing - Record-keeping | All projects should maintain the required records relating to clearing native vegetation under the purpose permit. | Clearing: <ul style="list-style-type: none"> a copy of the PEIA & EMP (Minor projects) for small projects; a map showing the location where the clearing occurred, recorded in an ESRI Shapefile the size of the area cleared (in hectares); and the dates on which the clearing was done. | Project Manager | DEC |
| | | | Revegetation and rehabilitation of areas: <ul style="list-style-type: none"> a copy of each Revegetation Plan; a map showing the location of any area revegetated and rehabilitated recorded in an ESRI Shapefile; a description of the revegetation and rehabilitation activities undertaken; and the size of the area revegetated and rehabilitated (in hectares). | Project Manager | DEC |
| All phases of Construction | Vegetation Clearing - Record-keeping | All projects should maintain the required records relating to clearing native vegetation under the purpose permit. | Control of weeds, dieback and other pathogens: <ul style="list-style-type: none"> a copy of any management plan prepared; and for any pathogen other than dieback, the appropriate steps taken. | Project Manager | Main Roads |
| Pre - Construction | Visual Amenity | Ensure that road blends into environment. | Develop design documentation to meet project requirements as identified in the visual impact assessment. | Project Manager | Main Roads |
| Pre - Construction | Revegetation and Landscape planning | To revegetation site. | Prepare a Project Revegetation Plan to meet project requirements as identified. | Project Manager | Main Roads |
| Pre-Construction | Vegetation Clearing | Ensure that the overall objectives of the alignment and construction works are compatible with maintaining and, where possible, enhancing the biological integrity of the surrounding environment and minimising vegetation loss and degradation; and Ensure the retention of as many habitat trees, shrubs and vegetated corridors for fauna as possible, particularly where associated with riparian zones. | Selection of designs/locations that minimise adverse impacts on the biological environment. | Project Manager | Main Roads |
| | | | Construction works to be undertaken in Winter to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains. | Project Manager | Main Roads |
| | | | Control/spray weeds species within the project area prior to construction to limit the amount of propagative material that may be spread during disturbance. | Contractor | Main Roads |
| | | | Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be used during any rehabilitation works and either mulched or respread according to the TDP/Revegetation Plan. | Contractor | Main Roads |

| ENVIRONMENTAL MANAGEMENT PLAN | | | | | |
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| Timing | Topic | Objective | Action | Responsible Party | Advice |
| Pre - Construction | Vegetation Clearing - CPS 818/4 management requirements | Compliance with management conditions of purpose permit. | If clearing is pursuant to Main Purpose Permit (CPS818) ensure compliance with Section 14 of the permit relating to Dieback, other pathogen and weed control. | Contractor/Project Manager | DEC |
| Pre-Construction | Surface Drainage | Maintain the hydrological regime that exists prior to the construction of the proposal. | Stormwater drainage shall be treated and disposed of in accordance with DEC requirements. | Project Manager | DEC |
| Construction | Noise, Vibration and Dust | Ensure that the construction of the proposal does not become a nuisance to the public. | Access to private property and appropriate traffic management measures should be planned and implemented prior to the construction of works. | Contractor | Main Roads |
| | | | Pedestrian public access should be should be planned and implemented prior to the construction of works. | Contractor | Main Roads |
| | | | Any complaints regarding dust will be attended to as soon as possible. | Contractor/Project Manager | Main Roads |
| | | | Where it is found that trucks leaving the site are carrying excessive material onto sealed surfaces, these areas will be swept to reduce dust generation and maintain traffic safety. | Contractor | Main Roads |
| | | | Watering, the use of hydromulch or other forms of mulching to protect loose surfaces shall be used as mitigation measures. | Contractor | Main Roads |
| Construction | Pollution and Litter | Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment. | The designated servicing area will be bunded to contain any spills or leaks and shall not be located in an area adjacent to any drainage areas or watercourses or will drain into a temporary sump. | Contractor | Main Roads |
| | | | Temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands. Precoating of aggregate will only occur in approved areas. | Contractor | Main Roads |
| | | | Emergency cleanup procedures shall be implemented in the case of any spillage. These will include control of spilled material and removal of contaminated soil to an approved site. The contractor shall ensure appropriate equipment is available at all times and shall notify the Superintendent's Representative of a spill. | Contractor | Main Roads |
| | | | All waste oil will be collected for recycling and any empty fuel/oil containers, used filters and waste hydraulic parts to be collected and stored in an allocated area then removed to an approved site. | Contractor | Main Roads |
| | | | The project areas, including hardstand areas, will be kept in a tidy manner at all times. | Contractor | Main Roads |
| Construction | Fire | Ensure that the fire risk associated with the construction of the proposal is minimised. | No fires shall be lit within the project area. | Contractor | Main Roads |
| | | | Machinery will be fitted with approved spark arresting mufflers. | Contractor | Main Roads |
| | | | A water tanker/fire fighter unit will be on site at all times. | Contractor | Main Roads |
| Construction | Fauna | Avoid unnecessary impacts to fauna and damage to | Fauna are not to be fed or intentionally harmed. | Contractor | Main Roads |
| | | | No pets or firearms permitted on site. | Contractor | Main Roads |

| ENVIRONMENTAL MANAGEMENT PLAN | | | | | |
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| Timing | Topic | Objective | Action | Responsible Party | Advice |
| | | fauna habitat. | The WILDCARE Helpline is to be contacted, 9474 9055, in the event of sick, injured or orphaned native wildlife on the site. | Contractor | Main Roads |
| Construction | Site Management | Ensure that the site is managed to ensure that construction of the proposal will have minimal impact upon the surrounding environment. | Site office and materials storage areas will be located on previously disturbed/ designated area. | Contractor | Main Roads |
| Construction | Rehabilitation | Rehabilitate the project area to meet project commitments. | Implement the contract specifications for rehabilitation of the site. | Contractor | Main Roads |
| | | | All waste materials from the development are to be completely removed from the site upon completion of the project. Final clean-up shall be to the satisfaction of the Project Manager and the Site Superintendent. | Contractor | Main Roads |
| Construction | Revegetation | Meet project commitments for revegetating and landscaping. | Implement the Project Revegetation Plan. | Contractor | Main Roads |
| Construction | Revegetation and rehabilitation requirements | Compliance with revegetation and rehabilitation requirement of purpose permit. | If revegetation and rehabilitation is pursuant to Purpose Permit (CPS 818/4) ensure compliance with Condition 13 Revegetation and Rehabilitation) and Condition 14 (Dieback, other pathogen and weed control) of the permit. | Contractor/Project Manager | Main Roads |
| Post - Construction | Monitoring | Meet project revegetation commitments. | Monitor effectiveness of revegetation works and weed control. | Contractor/Project Manager | Main Roads |