



Title of Proposal - Eliwana Railway Project

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Mining

1.2 Provide a detailed description of the proposed action, including all proposed activities.

Fortescue Metals Group Ltd (Fortescue) is proposing to develop the Eliwana Railway Project (the Project) in the Pilbara region of Western Australia. Fortescue currently owns and operates a number of mining and infrastructure projects in the Pilbara; including the Cloudbreak, Solomon and Christmas Creek iron ore mines along with the Fortescue rail network and the Anderson Point port facility.

The Project comprises the construction of the Eliwana Railway: a 120 km railway corridor linking the Proposed Eliwana Iron Ore Mine (the subject of a separate referral) with the existing Fortescue rail network.

While preliminary planning for the location of these components and associated infrastructure has been undertaken, detailed design of the Eliwana Railway Project is still underway. To accommodate refinements in Project layout during the design process, the Project area has been defined through the use of a development envelope. Fortescue proposes clearing of up to 3,960 ha of native vegetation from within the 57,000 ha Rail Development Envelope. As a component of the referred Project, approximately 1,500 ha of disturbance will be rehabilitated following the completion of construction activities.

Proposed infrastructure to be constructed within the Rail Development Envelope is listed below.

- rail loop
- train loadout
- railway and associated embankment
- crossing/passing loops
- banker sidings
- railway overpass
- borrow areas
- ballast quarries
- rail maintenance track
- access roads
- bridges
- culverts
- signalling infrastructure
- gas and water pipelines



- power transmission lines
- construction and potable water supply borefield, infrastructure and water storage facilities
- communications infrastructure (including towers and fibre optic cables)
- fuel storage
- wastewater treatment plants
- construction camps.

The Eliwana Railway Project specifically excludes the following activities:

- Ongoing operation of the Eliwana Railway Project - justification for this exclusion including an assessment of likely impacts to matters of national environmental significance (MNES) resulting from ongoing operation of the Eliwana Railway Project is provided in the impact assessment sections of this referral.
- Development of the Eliwana Iron Ore Mine Project (the subject of a separate EPBC Act referral)
- Construction of the Frederick Rail Spur including bulk earthworks (embankment) and rail formation. Note - the footprint for this infrastructure lies within the Railway Development Envelope but it will be constructed under existing Solomon Mine approvals and the proposed disturbance area for the Eliwana Railway Project does not include any allocation for this activity.
- Sterilisation drilling beneath prospective railway infrastructure.
- Mining exploration activities associated with Exploration tenements underlying the Railway Development Envelope.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

| Area | Point | Latitude | Longitude |
|-----------------|-------|------------------|-----------------|
| Approximate RDE | 1 | -22.410380852037 | 116.74616318961 |
| Approximate RDE | 2 | -22.404032827409 | 116.75989609977 |
| Approximate RDE | 3 | -22.404032827409 | 116.79422837516 |
| Approximate RDE | 4 | -22.39768451282 | 116.92743760367 |
| Approximate RDE | 5 | -22.374828180435 | 117.0620201232 |
| Approximate RDE | 6 | -22.346887565327 | 117.15403062125 |
| Approximate RDE | 7 | -22.336725952351 | 117.24192124625 |
| Approximate RDE | 8 | -22.334185433388 | 117.32294541617 |
| Approximate RDE | 9 | -22.360858573518 | 117.40671616813 |
| Approximate RDE | 10 | -22.35450828892 | 117.53168565055 |
| Approximate RDE | 11 | -22.331644868145 | 117.53443223258 |
| Approximate RDE | 12 | -22.298613310435 | 117.59623032828 |
| Approximate RDE | 13 | -22.27192827237 | 117.7033470275 |
| Approximate RDE | 14 | -22.245238143215 | 117.81046372672 |
| Approximate RDE | 15 | -22.216000261225 | 117.88187485953 |
| Approximate RDE | 16 | -22.179126419246 | 117.88187485953 |
| Approximate RDE | 17 | -22.176583038819 | 117.93268662711 |
| Approximate RDE | 18 | -22.152418630033 | 117.93817979117 |



| Area | Point | Latitude | Longitude |
|-----------------|-------|------------------|-----------------|
| Approximate RDE | 19 | -22.123161425354 | 117.93405991813 |
| Approximate RDE | 20 | -22.124433604095 | 117.98349839469 |
| Approximate RDE | 21 | -22.162593623947 | 118.010964215 |
| Approximate RDE | 22 | -22.174039612369 | 117.97937852164 |
| Approximate RDE | 23 | -22.213457548575 | 117.97388535758 |
| Approximate RDE | 24 | -22.216000261225 | 117.91895371695 |
| Approximate RDE | 25 | -22.27192827237 | 117.91895371695 |
| Approximate RDE | 26 | -22.288448182265 | 117.85440903922 |
| Approximate RDE | 27 | -22.318941347881 | 117.78711777945 |
| Approximate RDE | 28 | -22.318941347881 | 117.71982651969 |
| Approximate RDE | 29 | -22.337996194477 | 117.65390855094 |
| Approximate RDE | 30 | -22.348157714866 | 117.60447007438 |
| Approximate RDE | 31 | -22.395145105811 | 117.57563096305 |
| Approximate RDE | 32 | -22.402763187686 | 117.49872666617 |
| Approximate RDE | 33 | -22.401493536365 | 117.44928818961 |
| Approximate RDE | 34 | -22.406572072059 | 117.38611680289 |
| Approximate RDE | 35 | -22.391335908337 | 117.35865098258 |
| Approximate RDE | 36 | -22.382447375159 | 117.26801377555 |
| Approximate RDE | 37 | -22.398954198932 | 117.20621567985 |
| Approximate RDE | 38 | -22.415459062925 | 117.11008530875 |
| Approximate RDE | 39 | -22.426884358595 | 117.04142075797 |
| Approximate RDE | 40 | -22.438308714041 | 116.96588975211 |
| Approximate RDE | 41 | -22.451001339125 | 116.84916001578 |
| Approximate RDE | 42 | -22.451001339125 | 116.76676255484 |
| Approximate RDE | 43 | -22.43577004966 | 116.74067002555 |
| Approximate RDE | 44 | -22.410380852037 | 116.74616318961 |

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The proposed Eliwana Railway runs between Eliwana (located approximately 90 km west-north-west of Tom Price) and the existing Solomon Iron Ore Mine.

The Rail Development Envelope is primarily located within Fortescue-managed Exploration and Miscellaneous tenure.

An application for an investigation authority pursuant to the *Land Administration Act 1997* (LAA) will be submitted to provide access for surveying and other investigations for a rail corridor during the development phase.



Fortescue is currently preparing a proposal pursuant to the *Railway and Port (The Pilbara Infrastructure Pty Ltd) Agreement 2004* (TPI State Agreement) to develop a railway spur from the existing Special Rail Licence L1SA.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

120 km Railway, including up to 3,690 ha of land disturbance within a Rail Development Envelope of 57,000 ha.

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Cannot be described by lot/address. Refer to shapefiles attached.

1.8 Primary Jurisdiction.

Western Australia

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 04/2019

End date 06/2044

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Primary environmental approval for the Project will be sought under Part IV of the *Environmental Protection Act 1986* (EP Act). The Project was formally referred under the EP Act on 7/7/2017. Secondary approvals will be required under Part V of the EP Act, along with the TPI State Agreement and *Rights in Water and Irrigation Act 1914* (RIWI Act).

The Eliwana Iron Ore Mine is the subject of separate referrals under both the EP Act and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).



1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Pre-referral consultation has been undertaken with several regulatory agencies including:

- Office of the Environmental Protection Authority (OEPA, now Department of Water and Environment Regulation (DWER)) - regular meetings plus specific project information session on 2/6/2017
- Department of the Environment and Energy (DoEE) - regular meetings plus specific project consultation on 19/5/2017
- Department of Water (DoW, now DWER) - 17/5/2017.

Preliminary Project information was provided to Department of Parks and Wildlife (DPaW, now Department of Biodiversity, Conservation and Attractions (DBCA)).

Consultation with native title groups has commenced and is ongoing. A project specific information package was presented to the Puutu Kunti Kurrama Pinikurra (PKKP) working group during a regular working group meeting held on 23 March 2017. Fortescue holds a Land Access agreement with PKKP. A Working Group Meeting with Eastern Guruma (Wintawari Guruma) is currently scheduled for 28 August.

Fortescue undertakes regular consultation with pastoral leaseholders. Consultation specifically relating to the Project has included discussions regarding infrastructure location and interaction with pastoral infrastructure, access for biological and other surveys and investigation works.

Regulatory and public consultation will be ongoing as the Project progresses. There is limited public interest in the Project due to its considerable distance from towns/localities.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

The Project was referred under Part IV of the EP Act on 7/7/2017. The EP Act referral incorporates both the construction and operation of the Project.

Secondary approvals will be required under Part V of the EP Act, along with the TPI State Agreement and RIWI Act.

Previous exploration along portions of the Rail Development Envelope has been conducted under various Programmes of Work issued under the Mining Act and associated approvals for construction of wells and water supply under the RIWI Act. Construction of the Frederick Rail Spur (part of the Solomon Mine) will be undertaken under existing Solomon environmental approvals.



Copies of these approvals are available on request but have not been appended due to the large number which apply.

As the project is only at the referral stage, formal environmental impact assessment is yet to occur. A copy of the EP Act referral document is provided for information as it contains a preliminary environmental impact assessment.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

Yes

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).

The Project is associated with Fortescue's existing approved Port, Railway and the Solomon Iron Ore Mine, and the proposed Eliwana Iron Ore Mine.

Ore from the proposed Eliwana Mine (the subject of separate referrals under both the EP Act and EPBC Act) will be transported via the Eliwana Railway to the Frederick Rail Spur (part of the approved Solomon Iron Ore Mine) and onto the existing Fortescue Rail network (MS 690/ MS 707/ EPBC 2010/5513/ EPBC 2012/6314) to the Port facility (MS 690) for export.



Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The [interactive map tool](#) can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

- [Profiles of relevant species/communities](#) (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- [Significant Impact Guidelines 1.1 – Matters of National Environmental Significance](#);
- [Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies](#).

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

| Species | Impact |
|---|---|
| Calidris ferruginea (Curlew Sandpiper): | Species listed in Protected Matters Search Tool |



| Species | Impact |
|--|---|
| Critically Endangered | as 'may occur within area'. This species has not been recorded within the Project Area and based on the description of suitable habitat (coastal and estuary along with some inland ephemeral lakes), it is not expected to occur. As such no impacts to the species or species habitat are expected during the construction or operational phases of the Project. |
| Pezoporus occidentalis (Night Parrot): Endangered | Species listed in Protected Matters Search Tool as 'may occur within area'. This species has not been recorded within the Project Area and based on the available description of suitable habitat, it is not expected to occur. The nearest known records are west of Cloudbreak Mine near the Fortescue Marsh and a recent record near Broome. No impacts to the species or species habitat are expected during the construction or operational phases of the Project. |
| Rostratula australis (Australian Painted Snipe): Endangered | Species listed in Protected Matters Search Tool as 'may occur within area'. This species has not been recorded within the Project Area and based on the description of suitable habitat (shallow terrestrial freshwater/brackish wetlands, including temporary and permanent lakes, swamps and claypans), it is not expected to occur. As such no impacts to the species or species habitat are expected during the construction or operational phases of the Project. |
| Dasyurus hallucatus (Northern Quoll): Endangered | Species listed in Protected Matters Search Tool as 'species or species habitat known to occur within area'. Several records of the species exist in proximity to the Solomon Mine, some of which occur in close proximity to the Rail Development Envelope. Suitable habitat including ridgelines, gorges and gullies exists within the Rail Development Envelope. Targeted baseline survey work for this species is currently being undertaken. Impacts to the species are predicted to be minimal, based on limited presence within the Project Area. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. During construction, potential impacts to this species may occur through |



| Species | Impact |
|---|---|
| | clearing/removal of potential habitat, alteration of potential habitat and direct mortality through vehicle or machinery interaction. Following construction of the Project, very limited ongoing impacts to the species are expected aside from isolated incidences of direct mortality through train or vehicle interaction. In over 9 years of operation of the existing Fortescue railway at a run cycle of up to 13 trains per day, 5 incidences of direct mortality of this species have been recorded. |
| Macroderma gigas (Ghost Bat): Vulnerable | Species listed in Protected Matters Search Tool as 'breeding known to occur within area'. This species has been recorded from within the Rail Development Envelope. Targeted baseline survey work for this species and in particular, identification of potential roost caves is currently being undertaken. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. During construction, potential impacts to this species may occur through clearing/removal of potential habitat, alteration of potential habitat and direct mortality through vehicle or machinery interaction. Following construction of the Project, very limited ongoing impacts to the species are expected aside from isolated incidences of direct mortality through train or vehicle interaction. Fortescue has not recorded any incidences of direct mortality of this species associated with the operation of its existing railway operations. |
| Macrotis lagotis (Greater Bilby): Vulnerable | Species listed in Protected Matters Search Tool as 'species or species habitat likely to occur within area'. This species has not been recorded within or in close proximity to the Rail Development Envelope. Impacts to the species during the construction and operation of the Project are predicted to be minimal, based on lack of presence within the Project Area. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. |
| Rhinonicteris aurantia (Pilbara Leaf-nosed Bat): Vulnerable | Species listed in Protected Matters Search Tool as 'species or species habitat known to occur within area'. This species has been recorded |



| Species | Impact |
|---|---|
| | <p>from within the Rail Development Envelope. Targeted baseline survey work for this species and in particular, identification of potential roost caves is currently being undertaken. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. During construction, potential impacts to this species may occur through clearing/removal of potential habitat, alteration of potential habitat and direct mortality through vehicle or machinery interaction. Following construction of the Project, very limited ongoing impacts to the species are expected aside from isolated incidences of direct mortality through train or vehicle interaction. Fortescue has not recorded any incidences of direct mortality of this species associated with the operation of its existing railway operations.</p> |
| Lepidium catapycnon: Vulnerable | <p>Species listed in Protected Matters Search Tool as 'species or species habitat likely to occur within area'. This species has not been recorded within or in close proximity to the Rail Development Envelope, despite targeted survey effort. Impacts to the species during the construction and operation of the Project are predicted to be minimal, based on lack of presence within the Project Area. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work.</p> |
| Liasis olivaceus barroni (Pilbara Olive Python): Vulnerable | <p>Species listed in Protected Matters Search Tool as 'species or species habitat likely to occur within area'. This species has been recorded from within the Rail Development Envelope. Targeted baseline survey work for this species is currently being undertaken. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. During construction, potential impacts to this species may occur through clearing/removal of potential habitat, alteration of potential habitat and direct mortality through vehicle or machinery interaction. Following construction of the Project, very limited ongoing impacts to the species are expected aside from isolated incidences of direct mortality through</p> |



| Species | Impact |
|---------|---|
| | train or vehicle interaction. Fortescue has not recorded any incidences of direct mortality of this species associated with the operation of its existing railway operations. |

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

| Species | Impact |
|---|---|
| Apus pacificus (Fork-tailed Swift): Migratory Marine | Species listed in Protected Matters Search Tool as 'species or species habitat likely to occur within area'. This species has been recorded within the Rail Development Envelope, in close proximity to the Solomon Mine. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on limited presence within the Project Area and largely aerial habit. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. |
| Hirundo rustica (Barn Swallow): Migratory Terrestrial | Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and largely aerial habit. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. |
| Motacilla cinerea (Grey Wagtail): Migratory Terrestrial | Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. |



| Species | Impact |
|--|---|
| Motacilla flava (Yellow Wagtail): Migratory Terrestrial | <p>Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and largely aerial habit. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work.</p> <p>Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and largely aerial habit. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work.</p> |
| Actitis hypoleucos (Common Sandpiper): Migratory Wetland | <p>Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and wetland habitat preference. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work.</p> |
| Calidris acuminata (Sharp-tailed Sandpiper): Migratory Wetland | <p>Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and wetland habitat preference. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work.</p> |
| Calidris ferruginea (Curlew Sandpiper): Migratory Wetland; Critically Endangered | Refer to impact table in Section 2.4.1 above. |
| Calidris melanotos (Pectoral Sandpiper): Migratory Wetland | <p>Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area.</p> |



| Species | Impact |
|---|--|
| Charadrius veredus (Oriental Plover): Migratory Wetland | Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and wetland habitat preference. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. Species listed in Protected Matters Search Tool as 'species or species habitat may occur within area'. This species has not been recorded within or in close proximity to the Project Area. Impacts to the species during construction and operation of the Project are predicted to be minimal, based on the large distribution, lack of presence within the Project Area and wetland habitat preference. A full environmental impact assessment is yet to be undertaken following the completion of baseline survey work. |

2.5.2 Do you consider this impact to be significant?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?



No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No



Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

FLORA & VEGETATION

The receiving environment in the Project Area is generally well understood. Fortescue has conducted extensive mineral exploration activities in the area and significant survey effort was undertaken to support these exploration activities. The most relevant previous survey relating to flora and vegetation is the Western Hub Rail Link Level 2 Flora and Vegetation Survey (ecoscape 2014).

Vegetation

The Project is located within the Hamersley subregion of the Pilbara IBRA bioregion. Vegetation systems occurring within the Project Area, as mapped by Beard (DAFWA 2012) include:

- * 29 – Sparse low woodland; mulga, discontinuous in scattered groups
- * 567 – Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex and *Triodia basedowii*.

Mapping of vegetation types within portions of the Project Area from previous surveys has resulted in a significant amount of pre-existing data which will be verified and consolidated as part of the current flora and vegetation surveys.

The condition of vegetation within the Project Area ranges from Completely Degraded/Cleared to Excellent, with the majority falling within the Very Good – Excellent categories.

Significant Vegetation

Vegetation representing the 'Themeda grasslands on cracking clays (Hamersley Station)' Threatened Ecological Community (TEC) and the associated 'Brockman Iron cracking clay communities of the Hamersley Ranges' Priority Ecological Community (PEC) is known to exist near the north-eastern end of the Rail Development Envelope.

Vegetation considered to represent a Groundwater Dependent Ecosystem (GDE) or potential GDE is known to occur within the Project Area.

Flora



No Threatened Flora as listed under the EPBC Act or the *Wildlife Conservation Act 1950* are known to exist within the Project Area.

A number of Priority flora species have been recorded within the Project Area.

Fortescue is currently undertaking further flora and vegetation surveys in the Eliwana Area to support this Project and provide adequate and up-to-date data to support EIA. Following completion of the current surveys, a consolidated flora and vegetation report for the Project Area will be prepared.

FAUNA

The most relevant previous survey relating to terrestrial fauna is the *Western Hub Rail Link Fauna and Habitat Assessment* (ecoscape 2015). This survey incorporated opportunistic observations, trapping (pit traps/drift fence, Elliott traps, funnel traps and cage traps), acoustic recording and motion cameras.

Fauna Habitat

Broad fauna habitat types known to occur within the Project Area include:

- * Hills, ranges and plateaux
- * Plain-stony
- * Drainage Line/River/Creek
- * Gorges and gullies
- * Plain-shrubland.

Fauna habitat is affected to some extent by grazing and trampling by cattle and feral donkeys in localised areas, but generally is considered to be in good condition.

Despite targeted searches, no significant roost caves supporting the Pilbara Leaf-nosed Bat are known from within the Project Area.

Mapping of habitat types within portions of the project area from previous surveys has resulted in a significant amount of pre-existing data which will be verified and consolidated as part of the current terrestrial fauna surveys.

Significant Fauna

Several threatened fauna species, pursuant to the EPBC Act, have previously been recorded from within the Project Area:

- * Vulnerable: Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*)



* Vulnerable: Ghost Bat (*Macroderma gigas*)

* Vulnerable: Pilbara Olive Python (*Liasis olivaceus barroni*).

In addition, there are several records of Northern Quoll in close proximity to the Project Area.

Fortescue is currently undertaking further terrestrial fauna surveys incorporating general and targeted searches and delineation of fauna habitat in the Project Area to support this Proposal and provide adequate and up-to-date data to support EIA. Following completion of the current surveys, a consolidated terrestrial fauna report for the Project Area will be prepared. In addition, specifically targeted surveys for Pilbara Leaf-nosed Bats and Ghost Bats are also being undertaken.

3.2 Describe the hydrology relevant to the project area (including water flows).

The south-west portion of the Project Area falls within the Ashburton River catchment and the Duck Creek subcatchment (which encompasses Caves Creek and Boolgeeda Creek). Duck Creek, Caves Creek and Boolgeeda Creek flow west to the Ashburton River, which runs north-west and reaches the coast just west of Onslow.

The north-east portion of the Project Area falls within the Lower Fortescue River Catchment and the Weelumurra Creek subcatchment. The Project Area intersects the headwaters of Duck Creek and Caves Creek, in addition to Weelumurra Creek, Zalamea Creek and tributaries to the Lower Fortescue River near the Solomon Mine.

Fortescue is currently investigating the water supply potential for rail construction. The eastern section of the rail alignment is characterised by relatively productive aquifers of the Wittenoom Formation and Marra Mamba Formation. The western section is characterised by relatively low yielding aquifers of the Jeerinah Formation and Bunjinah Formation. Aquifer permeability and groundwater flow is expected to be enhanced by weathering and local and regional geological structures.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Major soil types in the Project Area include:

* 544: red loamy earths

* 522: red shallow loams

* 705: river bed soils

* 602: self-mulching cracking clays

* 622: red-brown non-cracking clays



* 203: stony soils.

These are typical of the soils across the Hamersley biogeographical subregion.

Vegetation characteristics are described above in the flora and fauna section (section 3.1).

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The Project Area does not host any outstanding natural features. Features are typical of the Hamersley biogeographical subregion.

3.5 Describe the status of native vegetation relevant to the project area.

Large portions of the Project Area are used for pastoral grazing and substantial mineral exploration has been undertaken in localised areas. The condition of vegetation within the Project Area ranges from Completely Degraded/Cleared to Excellent, with the majority falling within the Very Good – Excellent categories.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

Elevation ranges from 330 m AHD to 1020 m AHD. Gradient varies from open, flat topography to areas of steep hills, gorges, and gullies.

3.7 Describe the current condition of the environment relevant to the project area.

Large portions of the Project Area are used for pastoral grazing and mineral exploration has been undertaken in localised areas. Existing mining operations are located in relatively close proximity (including Fortescue's Solomon Mine, Rio Tinto's Silvergrass and Brockman/Nammuldi operations). The condition of vegetation within the Project Area ranges from Completely Degraded/Cleared to Excellent, with the majority falling within the Very Good – Excellent categories.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

N/A

3.9 Describe any Indigenous heritage values relevant to the project area.



Fortescue is currently in the process of conducting heritage surveys across the Project Area.

Fortescue will manage sites of indigenous heritage significance in accordance with current processes and in the legislative context of the *Aboriginal Heritage Act 1972*.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The Rail Development Envelope is primarily located within Fortescue-managed Exploration and Miscellaneous tenure.

An application for an investigation authority pursuant to the LAA will be submitted to provide access for surveying and other investigations for a rail corridor during the development phase.

Fortescue is currently preparing a proposal pursuant to the TPI State Agreement to develop a railway spur from the existing Special Rail Licence L1SA.

3.11 Describe any existing or any proposed uses relevant to the project area.

Large portions of the Project Area are used for pastoral grazing and mineral exploration has been undertaken in localised areas. Private railways, along with some private and public roads are present within the Project Area.



Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

As a full environmental impact assessment is yet to be undertaken, this section includes preliminary measures which will be undertaken in order to avoid or reduce impacts.

FLORA AND VEGETATION

Fortescue has applied the mitigation hierarchy to the Project in relation to flora and vegetation.

Mitigation measures include:

Avoidance

Fortescue is currently undertaking flora and vegetation surveys which will identify flora and vegetation of significance which may be able to be avoided during the detailed design of the Project footprint.

Fortescue has worked to actively avoid unnecessary impacts to TEC/PEC vegetation when developing the rail alignment (refer to Section 8: Proposed Alternatives).

Disturbance will be managed using Fortescue's Land Use Certificate system (superseding the Ground Disturbance Permit system) to avoid unauthorised clearing of vegetation.

Minimisation

Clearing and direct disturbance will be minimised where possible.

Disturbance will be managed using Fortescue's Land Use Certificate system in order to minimise clearing of vegetation.

Surface water modelling will be undertaken to identifying any impacts to sheetflow-dependent vegetation, impacts to sheetflow dependent vegetation will be minimised should any be identified in the current survey.



Rehabilitation/Revegetation

Fortescue will rehabilitate disturbed areas at the end of their serviceable or operational life. These activities will be undertaken progressively during the operating life of the infrastructure.

Offset

Fortescue will develop an offset strategy, including offsets for disturbance of vegetation in good – excellent condition, in consultation with DBCA (DPaW), DWER (OEPA) and DoEE.

TERRESTRIAL FAUNA

Fortescue has applied the mitigation hierarchy to the Project in relation to terrestrial fauna.

Mitigation measures include:

Avoidance

Fortescue is currently undertaking terrestrial fauna surveys (incorporating targeted searches) which will identify terrestrial fauna and supporting habitat of significance which may be able to be avoided during the detailed design of the Project footprint.

Disturbance will be managed using Fortescue's Land Use Certificate system (superseding the Ground Disturbance Permit system) to avoid unauthorised clearing of vegetation.

Clearing of critical habitat for the Northern Quoll, Pilbara Leaf-nosed Bat, Ghost Bat and Pilbara Olive Python will be avoided where possible.

Minimisation

Where it cannot be avoided, clearing of critical habitat for the Northern Quoll, Pilbara Leaf-nosed Bat, Ghost Bat and Pilbara Olive Python will be minimised where possible.

Clearing and direct disturbance will be minimised where possible.

Disturbance will be managed using Fortescue's Land Use Certificate system in order to minimise clearing of fauna habitat.

Vehicle speed limits will be enforced.

Rehabilitation/Revegetation

Fortescue will rehabilitate disturbed areas at the end of their serviceable or operational life. These activities will be undertaken progressively during the operating life of the infrastructure.

Offset



Fortescue will develop an offset strategy, including offsets for disturbance of critical fauna habitat, in consultation with DBCA (DPaW), DWER (OEPA) and DoEE.

HYDROLOGICAL PROCESSES

Fortescue has applied the mitigation hierarchy to the Project in relation to hydrological processes. Mitigation measures include:

Avoidance

The broad project footprint avoids interaction with significant surface water features such as major rivers and major creeks where possible.

Where possible, infrastructure and landforms will be placed to avoid interaction with minor surface water features.

Impacts from groundwater abstraction will be assessed to avoid impacts to groundwater dependent ecosystems where possible.

Minimisation

Fortescue is undertaking surface water modelling in order to allow impacts to be quantified.

Surface water management measures such as culverts and drains will be used to minimise disruption to surface water flows, where practicable.

Rehabilitation/Revegetation

Fortescue will rehabilitate disturbed areas at the end of their serviceable or operational life. These activities will be undertaken progressively during the operating life of the infrastructure.

Offset

Fortescue will develop an offset strategy, including offsets for disturbance to significant hydrological aspects as required, in consultation with DBCA (DPaW), DWER (OEPA) and DoEE.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The Proposal has the potential to impact two matters of national environmental significance:

- * threatened species or species habitats
- * migratory species or species habitats.



As outlined in the previous sections, impacts to threatened species are expected to be limited.

Baseline survey work is still ongoing and the results of these surveys will inform management measures to be implemented in relation to each species which may be impacted as a result of the Project. The environmental objective is that no significant impacts to threatened species or species habitats will occur as result of the Project.

As outlined in the previous sections, no impacts are expected to occur to migratory species.

Baseline survey work is still ongoing and the results of these surveys will inform any management measures to be implemented in relation to each species which may be impacted as a result of the Project. The environmental objective is that no significant impacts to migratory species or species habitats will occur as result of the Project.



Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No



5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

As outlined in previous sections, baseline surveys to support a full environmental impact assessment are currently being completed. Previous survey work indicates that while there are known or likely occurrences of MNES (threatened and migratory species) within the Project Area, the limited occurrence of these species and their critical habitats, together with the management measures proposed to avoid, minimise, rehabilitate or offset impacts will not result in a significant impact to any matters of national environmental significance. As such, the construction of the Project would not constitute a controlled action.

The potential for the operation of the Project to result in significant impacts to MNES has also been assessed as part of the justification for excluding this action from the Project being referred to the DoEE. Potential impacts to MNES during the operation of the Project are very limited. Ongoing impacts to MNES associated with the long term operation of a railway line (or similar linear infrastructure) are very limited, well understood and can be adequately regulated within the EP Act process.



Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Fortescue currently operates three iron ore mines (and a fourth joint venture is under development), in addition to a railway network and iron ore port facility. All infrastructure is regulated under the EP Act, and the majority is also regulated under the EPBC Act. Fortescue's environmental record is publically available as reported in Annual Environmental Reports which address each site, and incorporate a statement of compliance status with each condition of approval.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

There are no past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Proponent.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Fortescue operates under an Environment Policy (attached).

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes



6.4.1 EPBC Act No and/or Name of Proposal.

2014/7275: Solomon Iron Ore Project Expansion (under assessment)

2013/7055: Christmas Creek Iron Ore Mine Expansion Project

2013/6945: Nyidinghu Iron Ore Project (under assessment)

2012/6689: North Star Magnetite Project

2012/6314: Additional Rail Infrastructure

2010/5706: Christmas Creek Water Management Scheme

2010/5696: Expansion of Cloudbreak Iron Ore Mine

2010/5567: Pilbara Iron Ore and Infrastructure Project: Solomon Mine

2010/5513: Additional Rail Infrastructure

2005/2205: Cloudbreak Mine

2004/1897: Stage B Pilbara Iron Ore and Infrastructure Project

2004/1562: Stage A Pilbara Iron Ore and Infrastructure Project



Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

| Reference Source | Reliability | Uncertainties |
|---|---|---|
| Protected Matters Search Tool Maintained by DoEE. | Reliable. | Nil. |
| Beard, J. S., Beeston, G.R., Harvey, J.M., Hopkins, A. J. M. and Shepherd, D. P. 2013. The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. Conservation Science Western Australia 9: 1-152. Data available via DAFWA (2012). | Reliable and well used source of pre-European vegetation. Mapping data managed by DAFWA. | Nil. |
| Western Hub Rail Link Fauna and Habitat Assessment (ecoscape 2015) | Reliable data, based on Level 2 survey undertaken in accordance with current EPA guidance material at the time of the survey. | Data does not cover entire Project Area and survey data is fairly aged. Used as a basic reference, not intended to be used to inform the full Project EIA - this will utilise baseline survey work currently being undertaken. |
| Western Hub Rail Link Level 2 Flora and Vegetation Survey (ecoscape 2014). | Reliable data, based on Level 2 survey undertaken in accordance with current EPA guidance material at the time of the survey. | Data does not cover entire Project Area and survey data is fairly aged. Used as a basic reference, not intended to be used to inform the full Project EIA - this will utilise baseline survey work currently being undertaken. |



Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

An options evaluation of the preferred rail route has been undertaken. A number of alternative routes have been considered. The current (preferred) route was selected based on the following criteria:

- * minimisation of direct impacts to TEC and PEC vegetation
- * minimisation of cut and fill earthworks (hence minimisation of disturbance area)
- * avoidance of Karijini National Park
- * crossing third party infrastructure within designated crossing areas.

8.1 Select the relevant alternatives related to your proposed action.

- Locations
- Activities

8.3 What is the extent and location of your proposed alternative action?

| Area | Point | Latitude | Longitude |
|-------------------------|-------|------------------|-----------------|
| please see attached PDF | 1 | -22.271505502514 | 117.80746569745 |
| please see attached PDF | 2 | -22.312166507207 | 117.70034899823 |
| please see attached PDF | 3 | -22.312166507207 | 117.70034899823 |
| please see attached PDF | 4 | -22.271505502514 | 117.80746569745 |



8.4 Provide a brief physical description of the property on which the alternative proposed action will take place and the project location (e.g. Proximity to major towns, or for off-shore projects, shortest distance to mainland).

A number of different routes were considered between Eliwana and Solomon. Generally these were in the same area, with the same proximity to towns etc.

8.5 What is the size of the development footprint or work area of the alternative?

No significant difference

8.6 Is the alternative proposal a street address or lot?

Lot

8.6.2 Describe the lot number associated with the alternative proposal.

Cannot be described by lot/street address.

8.7 Is there a different local government area and council contact for the alternative?

No

8.8 Provide details of the context, planning framework and State/Local Government requirements.

No difference

8.9 Describe any public consultation that has been, is being or will be undertaken (including with Indigenous stakeholders).

Alternative routes have been discussed during all consultation undertaken to date.

8.10 Describe any environmental impact assessments that have been, is being or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project for the alternative.

No complete EIA has been undertaken for an alternative route. EIA factors and aspects were



considered in route selection.

8.11 Is the alternative activity part of a staged development or a component of a larger project?

No

8.12 Nominate any matters of National Environmental Significance that are likely to be impacted by this alternative proposal by ticking the relevant checkboxes.

8.13 Describe any impacts on the flora and fauna relevant to the alternative proposal.

Generally the same area of disturbance associated with all alternative routes considered.

Preferred route minimises direct impacts to TEC and PEC vegetation (likely <1ha). Other options incorporated up to 50 ha of disturbance to these communities.

8.14 Describe the hydrology relevant to the alternative proposal (including water flows).

No significant difference.

8.15 Describe the soil and vegetation characteristics relevant to the alternative proposal.

No significant difference

8.16 Describe any outstanding natural features and/or unique values relevant to the alternative proposal.

No outstanding natural features or unique values are applicable to the preferred alignment or the alternative alignments

8.17 Describe the remnant native vegetation relevant to the alternative proposal.

No significant difference.

8.18 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the alternative proposal.

No significant difference.



8.19 Describe the current state of the environment relevant to the alternative proposal.

No significant difference.

8.20 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the alternative proposal.

No significant difference.

8.21 Describe any Indigenous heritage values relevant to the alternative proposal.

No significant difference.

8.22 Describe any other important or unique values relevant to the alternative proposal.

No significant difference.

8.23 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the alternative proposal.

No significant difference.

8.24 Describe the existing uses of the area relevant to the alternative proposal.

No significant difference.

8.25 Identify any proposed uses of the area relevant to the alternative proposal.

No significant difference.

8.26 What are the proposed measures for any alternative action to avoid or reduce impact?

Proposed measures relating to an alternative route would be consistent with those described for the preferred route.

8.27 Do you have another alternative?



No



Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Group Manager, Environment

9.2.2 First Name

Brett

9.2.3 Last Name

McGuire

9.2.4 E-mail

bmcguire@fmgl.com.au

9.2.5 Postal Address

PO Box 6915
East Perth WA 6892
Australia

9.2.6 ABN/ACN

ACN

002594872 - FORTESCUE METALS GROUP LTD

9.2.7 Organisation Telephone

6218 8888



9.2.8 Organisation E-mail

reception@fmgl.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... N/A Date: N/A

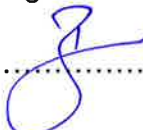
9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

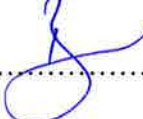
9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Brett McGuire, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:.....  Date: 22.8.17

I, Brett McGuire, the person proposing the action, consent to the designation of Fortescue Metals Group Ltd. as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:.....  Date: 22.8.17

9.3 Is the Proposed Designated Proponent an Organisation or Individual?



Organisation

9.5 Organisation

9.5.1 Job Title

Group Manager, Environment

9.5.2 First Name

Brett

9.5.3 Last Name

Mcguire

9.5.4 E-mail

bmcguire@fmgl.com.au

9.5.5 Postal Address

PO Box 6915
East Perth WA 6892
Australia

9.5.6 ABN/ACN

ACN

002594872 - FORTESCUE METALS GROUP LTD

9.5.7 Organisation Telephone

6218 8888


9.5.8 Organisation E-mail

reception@fmgl.com.au

Proposed designated proponent - Declaration

I, Brett McGuire (Fortescue Metals Group Ltd), the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.



Signature:.......... Date:22.8.17.....

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Group Manager, Environment

9.8.2 First Name

Brett

9.8.3 Last Name

McGuire

9.8.4 E-mail

bmcguire@fmgl.com.au

9.8.5 Postal Address

PO Box 6915
East Perth WA 6892
Australia

9.8.6 ABN/ACN

ACN

002594872 - FORTESCUE METALS GROUP LTD

9.8.7 Organisation Telephone

6218 8888


9.8.8 Organisation E-mail

reception@fmgl.com.au

Referring Party - Declaration



I, Brett McGuire, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:.......... Date: 22.8.17.....



Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 170323_pkkp_wg_presentation.pdf
2. 170323_pkkp_working_group_meeting_outcomes.pdf
3. 170519_doe_presentation_new_projects.pdf
4. 170703_eliwana_referral_uid_70791_r.pdf
5. alternative_routes.pdf
6. doee_meeting_170519.pdf
7. ecoscape_2015_flora_wh-as-en-0003_part_1.pdf
8. ecoscape_2015_flora_wh-as-en-0003_part_2.pdf
9. ecoscape_2015_flora_wh-as-en-0003_part_3.pdf
10. ecoscape_2015_wh-as-en-0004_part_1.pdf
11. ecoscape_2015_wh-as-en-0004_part_2.pdf
12. eliwana_rail_development_envelope.pdf
13. eliwana_railway_project_location.pdf
14. environment-policy-2016.pdf
15. epa_presentation_170607.pdf
16. protected_matters_170713.pdf
17. rail_development_envelope_170731.zip