



mainroads
WESTERN AUSTRALIA

Clearing Assessment Report – CPS 818

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Western Australia.*

Auski Intersections and associated
infrastructure

March 2022

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Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
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1 PURPOSE

The purpose of this Clearing Assessment Report (CAR) is to provide a report detailing the assessment of native vegetation clearing that is proposed to be undertaken using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

The CAR outlines the key activities associated with the project, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the project using the ten Clearing Principles, and the strategies used to manage vegetation clearing.

2 SCOPE

2.1 Project Scope

Project Name: Auski Intersections and associated infrastructure

Project Purpose / Components: Scope includes upgrade of the Nanutarra – Munjina Rd & Roy Hill – Munjina Rd intersections with widening for all turning moments, acceleration/ overtaking lane for 1 km south of Roy Hill – Munjina Rd, acceleration/ overtaking lane for 3km north of Nanutarra – Munjina Rd, off-road parking bay with solar lighting on Nanutarra – Munjina Rd near intersection with GNH, upgrade Auski Roadhouse fuel access layout, rehabilitate cleared Main Roads reserve where trucks currently park with dust and noise complaints.

The intersections have been long due for upgrade to current design standards to optimise safety and comply with operational requirements. The Auski Village Resort also serves as a rest area for heavy vehicles and is currently accessed between the two intersections from Great Northern Highway. The access route upgrades to current standards will reduce conflict of traffic joining and leaving the Great Northern Highway between the two intersections. As part of the intersection upgrades, to accommodate design vehicles and improve acceleration, the rest area requires some minor upgrades to its informal driveways.

The proposed clearing undertaking using CPS 818 is : 20 ha

The proposed temporary clearing undertaking using CPS 818 is: 0

Project Location(s): The project area is located on Great Northern Highway, Shire of Ashburton, 1361- 1356.5 as shown in Figure 1.

- MGA reference: Zone 50
- 7,255,560mE 675,079mN

The location of the proposed works is at Figure 1.

2.2 Assessment Report Scope

The study area, see Figure 2, is confined to a local area of a 40 km radius.

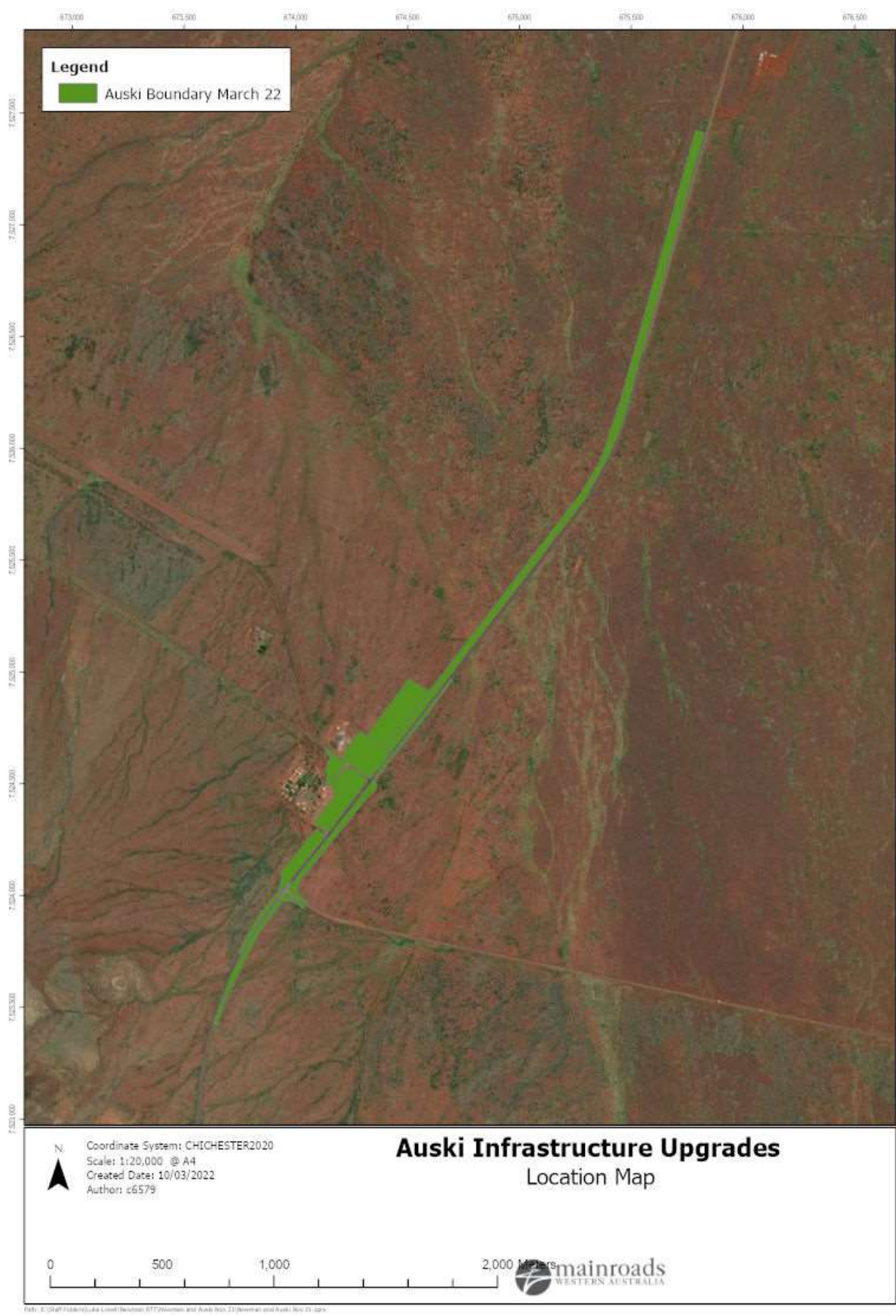


Figure 1. Project Area

Redacted
Figure 2. Study Area

2.3 Alternatives to clearing

No alternatives to clearing were identified. The existing arrangement poses an unacceptable risk to road users and proposed clearing is therefore considered essential.

2.4 Measures to Avoid, Minimise, Reduce and Manage Project Clearing Impacts

The design and management measures implemented to avoid and minimise the clearing impacts by the project are provided in Table 1. In addition, the following measures have been adopted to minimise environmental impacts:

- Areas that have been pre-cleared or largely comprise disturbed vegetation will be utilised in preference to uncleared areas for proposed works.
- Design has been adapted to avoid clearing within the adjacent Karijini National Park.

Table 1. Measures undertaken to Avoid, Minimise, Reduce and Manage the Project Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Due to the traffic volumes, vehicle type and posted speeds these batters cannot be changed significantly.
Installation of safety barriers	Road safety barriers may be required depending on the extent of culvert headwalls. This will be determined during detailed design.
Alignment to one side of existing road	Not applicable
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas	Not applicable
Installation of kerbing	Not applicable
Simplification of design to reduce number of lanes and/or complexity of intersections	The scope of works cannot be further simplified whilst retaining the necessary safety benefits.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	No side tracks will be implemented the existing road will be utilised with traffic management during construction to regulate traffic safely.
Drainage modification	There are 2 culvert structures situated within the scope of works allowing the natural hydrology to be unaffected.

2.5 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), Main Roads has also had regard to the below instruments.

Other Legislation of relevance for assessment of clearing and planning/other matters

- Biodiversity Conservation Act 2016 (WA) (BC Act)
- Conservation and Land Management Act 1984 (WA) (CALM Act)
- Country Areas Water Supply Act 1947 (WA) (CAWS Act)
- Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)
- Planning and Development Act 2005 (WA) (P&D Act)
- Soil and Land Conservation Act 1945 (WA)
- Rights in Water and Irrigation Act 1914
- Aboriginal Heritage Act 1972 (WA)
- Town Planning and Development Act 1928

Environmental Protection Policies

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Other Relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DEC, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

3 SUMMARY OF SURVEYS

3.1 Biological Survey

The Auski intersection Biological Survey was conducted on The Auski intersection upgrades proposed project area by Pilbara Environmental (2020). Section 3.1.1 contains the summary of the survey.

3.1.1 Summary of Biological Survey

Pilbara Environmental was commissioned by Main Roads to undertake a biological assessment of the development footprint (Project area). The purpose of the assessment was to delineate key flora, vegetation, fauna, soil and hydrology values within the survey area (23.48 ha).

Key Results

- The survey area is dominated by *Acacia* tall open shrublands over *Triodia* spp. low open hummock grassland. *Eucalyptus gamophylla* low open mallee woodlands are also present with *Acacia* tall open shrubland in part of the survey area. The vegetation associations are not representative of any Commonwealth or State listed TECs or PECs.
- The vegetation condition ranged from 'Very Good' to 'Completely Degraded' across the survey area. Parts of the survey area were cleared and contained no vegetation. Much of the survey area was impacted by infrastructure including Great Northern Highway and the Auski Roadhouse.
- 78 flora species representing 21 families and 48 genera were recorded from within the survey area during the field survey. This total comprised 75 native taxa and three introduced taxa. No conservation significant flora was recorded or considered likely or possible to occur.
- No Declared Pests or Weeds of National Significance were recorded.
- No fauna species of conservation significance were recorded during the field surveys within the survey area however the assessment identified nine species of conservation significance that may possibly, or are likely to occur within the survey area:
 - *Dasyurus hallucatus* (Northern Quoll) – En
 - *Macrotis lagotis* (Bilby) – Vu
 - *Trichosurus vulpecula* subsp. *arnhemensis* (Northern Brushtail Possum) – Vu
 - *Apus pacificus* (Fork-tailed Swift) – IA
 - *Falco peregrinus* (Peregrine Falcon) – S
 - *Ctenotus uber* subsp. *johnstonei* (Spotted Ctenotus) – P2
 - *Dasycercus blythi* (Brush-tailed Mulgara, Ampurta) – P4
 - *Leggadina lakedownensis* (Northern Short-tailed Mouse) – P4
 - *Pseudomys chapmani* (Western Pebble-mound Mouse) – P4

Due to the small and narrow size of the survey area, abundance of analogous, contiguous habitat in the surrounding area and previously impacted nature of much of the survey area, it is considered highly unlikely the survey area represents key habitat for these fauna species.

3.2 Area Outside Biological Survey

An additional adjacent 2.58 ha of area outside the biological survey area was identified as required for the project. From street view and aerial imagery, the majority of this vegetation in these extended areas is in degraded condition (Figures 3 and 4). Revised database searches were conducted on these new areas with no significant flora likely to occur within the extended areas. No flora of conservation significance flora was identified as potentially occurring within the extended areas which has not already addressed within the biological survey. As per the greater survey, due to the

degraded and fragmented condition of the vegetation it is considered highly unlikely the extended areas represents key habitat for native fauna species.





4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

The project area is dominated by Acacia tall open shrublands over *Triodia* spp. low open hummock grassland. *Eucalyptus gamophylla* low open mallee woodlands are also present with Acacia tall open shrubland in part of the survey area. The vegetation associations are not representative of any Commonwealth or State listed TECs or PECs.

The 2.58 ha part of the project area outside the biological survey area with 2.28 ha identified using imagery as being mixed Acacia shrubland over *Triodia* hummock grassland in degraded condition and the remaining veg identified as *Eucalyptus gamophylla* low open mallee woodland over *Acacia inaequilatera*, *Hakea lorea* tall open shrubland over *Triodia pungens*, *Triodia basedowii* low open hummock grassland

Table 2. Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 111 described as Hummock grassland with scattered shrubs or mallee <i>Triodia</i> spp. <i>Acacia</i> spp., <i>Grevillea</i> spp. <i>Eucalyptus</i> spp	Clearing of up to 20 ha intersection upgrades	Very Good to completely degraded (Pilbara Environmental 2020)	Vegetation description and condition determined from Biological report by Pilbara Environmental 2020.

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 111	Statewide	762,963.55	762,326.22	99.92	9.49
	IBRA Bioregion Pilbara	550,286.99	550,232.45	99.99	6.87
	IBRA Sub-region PIL 2 Fortescue	454,784.97	454,730.43	99.99	8.24
	Local Government Authority Shire of Ashburton	66,773.93	66,719.39	99.92	20.49

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the ten Clearing Principles (Environmental Protection Act 1986, Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation' and other relevant CPS Decision Reports prepared by DWER.

The proposed clearing 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.

Proposed clearing is not likely to be at variance to this Principle

The project area is within the mapped Beard vegetation association 111 which is described as hummock grasslands and shrub steppe dominated by Twin-leaf Mallee (*Eucalyptus gamophylla*) over hard spinifex (*Triodia* spp.) (Beard 1975). Approximately 99% of the pre-European extent of the vegetation association remains uncleared at both the state and bioregional level.

The project area is dominated by Acacia tall open shrublands over *Triodia* spp. low open hummock grassland. *Eucalyptus gamophylla* low open mallee woodlands are also present with Acacia tall open shrubland. The vegetation condition ranged from 'Very Good' to 'Completely Degraded' across the project area. Parts of the project area were cleared and contained no vegetation. Much of the survey area was impacted by infrastructure including the Great Northern Highway and the Auski Roadhouse.

78 flora species representing 21 families and 48 genera were recorded from within the project area during the field survey. This total comprised 75 native taxa and three introduced taxa. The majority of priority flora identified in the desktop study are associated with permanent water or specific habitats associated with the Hamersley Plateau, including gorge walls, hill slopes and summits. These habitats are not present within the survey area. The likelihood of occurrence assessment considered previous flora records, habitat requirements, efficacy of the survey, intensity of the survey, flowering times and ambiguous nature of species. No Threatened species are considered likely to occur, based on both the distribution of the three species listed for the Pilbara and the habitats present in the project area (Pilbara Environmental, 2020).

The three weed species recorded from the project area (Buffel Grass (**Cenchrus ciliaris*), Birdwood Grass (**Cenchrus setiger*) and *Aerva javanica** (Kapok)) were common in disturbed areas. None of these species are listed as Weeds of National Significance or Declared Plants under the Biosecurity and Agriculture Management Act 2007.

ArcMap and the EPBC PMST database searches did not identify any Commonwealth or State listed TECs or PECs within the study area. No Commonwealth or State listed TECs or PECs were identified within the project area during the field survey either.

Only one fauna habitat was identified for the project area; tall open shrubland over *Triodia* hummock open grassland on stony plain. A total of 346 vertebrate fauna species were identified through the desktop assessment as having the potential to occur in the project area, however only a subset of these would be expected to actually occur, given the habitats present, small size of the project area and location adjacent to busy lineal infrastructure. It is considered highly unlikely the project area would comprise key habitat for significant species (Pilbara Environmental 2020).

The Bilby, which has a status of Threatened, has been recorded within 10 km of the project area. No burrows were observed within the survey area, however suitable habitat exists (hummock grasslands on plains). It is likely that at times this species may forage within the survey area. Due to the small size of the survey area, abundance of analogous, contiguous habitat in the surrounding area and proximity of the survey area to Great Northern Highway it is considered unlikely the survey area represents key foraging habitat for this species.

The vegetation and fauna habitat types identified in the project area are common locally and regionally. Due to previous disturbance associated with the existing road and roadhouse, the biodiversity values of the project area are likely to be lower than those of the surrounding areas.

Based on the above, the clearing for the project is not likely to be at variance to this principle.

Methodology

Pilbara Environmental (2020)

DBCA shapefiles

Main Roads GIS Shapefiles

NatureMap (Accessed 9/3/2021)

(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.

Proposed clearing is not likely to be at variance to this Principle

One fauna habitat was identified for the project area; tall open shrubland over *Triodia* hummock open grassland on stony plain. This habitat type is common locally and regionally.

A total of 1067 native fauna species and 6 introduced species were recorded as occurring within the 40 km study area, however only a subset of these would be expected to actually occur, given the habitat present and the small size of the project area.

No evidence of any significant fauna species was observed during the field survey. A total of 10 taxa of conservation significance were identified as potentially occurring through the desktop assessment. Of these, eight taxa were assessed as "Likely to occur" within the project area, while a further two taxa "May occur":

- Likely to occur:

- o Bilby (*Macrotis lagotis*) – Vulnerable
- o Grey Falcon (*Falco hypoleucos*) – Vulnerable (state level only)
- o Fork-tailed Swift (*Apus pacificus*) – Migratory IA
- o Peregrine Falcon (*Falco peregrinus*) – Other Specially Protected Fauna
- o Brush-tailed Mulgara (*Dasycercus blythi*) – DBCA Priority 4
- o Spotted Ctenotus (*Ctenotus uber* subsp. *Johnstonei*)
- o Northern Shorttailed Mouse (*Leggadina lakedownensis*) Priority 4
- o Western Pebble-mound Mouse (*Pseudomys chapmani*) Priority 4

- May occur:

- o Northern Brushtail Possum *Trichosurus vulpecula* ssp. *Arnhemensi* - Threatened
- o Northern Quoll (*Dasyurus hallucatus*) – Endangered

Based on the habitat type available, small and narrow size of the survey area, abundance of analogous, contiguous habitat in the surrounding area and previously impacted nature of much of the survey Area, all of the above species would only be expected to utilise the project area for foraging or as transient visitors.

Considering the fauna habitat types present in the project area are widespread locally and regionally and the project area is already subject to disturbance from existing road and rail, the vegetation proposed to be cleared is unlikely to comprise significant habitat for fauna in the local context.

Based on the above, the clearing for the project is not likely to be at variance to this principle.

Methodology

Pilbara Environmental (2020)
DBCA Shapefiles

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Proposal is not likely to be at variance to this Principle

There are no known records of Threatened flora within the study area (GIS Database). A Biological survey of the project area did not record any species of Threatened flora and a likelihood of occurrence assessment determined none are considered likely or possible to occur. Therefore, the project is not expected to impact on any Threatened flora.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

DBCA shapefiles
Florabase (Accessed 9/03/2021)
Pilbara Environmental (2020)

(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.

Proposed clearing is not at variance to this Principle

There are no known state listed Threatened Ecological Communities (TECs) located within or in close proximity to the project area (GIS Database).

A flora and vegetation survey of the project area did not identify any vegetation associations considered representative of a TEC (Pilbara Environmental, 2020).

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

DBCA shapefiles
Pilbara Environmental (2020)

(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.**Proposed clearing is not at variance to this Principle**

The project area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99.6% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2018). The project area is broadly mapped as Beard vegetation association 111: hummock grasslands and shrub steppe dominated by Twin-leaf *Mallee* (*Eucalyptus gamophylla*) over hard spinifex (*Triodia* spp.) (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2018). The 20 ha of the Fortescue Valley 111 vegetation unit within the project area equates to 0.8% of the mapped extent of this vegetation unit within the 40 km study area.

Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 111	Statewide	762,963.55	762,326.22	99.92	9.49
	IBRA Bioregion Pilbara	550,286.99	550,232.45	99.99	6.87
	IBRA Sub-region Pil 2	454,784.97	454,730.43	99.99	8.24
	LGA Shire of Ashburton	66,773.93	66,719.39	99.92	20.49

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Government of Western Australia (2017)

Pilbara Environmental (2020)

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**Proposed clearing is not at variance to this Principle**

There are no watercourses or wetlands within the area proposed to clear. No riparian vegetation was recorded in the project area as per biological surveys conducted by Pilbara Environmental in 2020.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

DWER and DBCA shapefiles
Pilbara Environmental (2020)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**Proposed clearing is not likely to be at variance to this Principle**

The project area lies within the Boolgeeda land system (GIS Database). This land system has been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Boolgeeda land system is described as stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands. This land system is not generally susceptible to erosion (van Vreeswyk et al. 2004).

The project area contains 20 ha of this land system, equating to 0.0025% of the mapped extent of the Boolgeeda total mapped extent of the land system (774800.0 ha). The great majority of this land system remains vegetated in the local area.

Overall, the clearing for proposed works is unlikely to cause appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

DWER and DBCA shapefiles
Pilbara Environmental (2020)
Van Vreeswyk et al. (2004)

(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.**Proposed clearing is not likely to be at variance to this Principle**

Karijini National Park is adjacent to the project area (GIS Database) as the vegetation is predominantly degraded, does not represent a PEC or TEC and is locally abundant in similar or better condition clearing is unlikely to impact on the environmental values of any conservation area.

The project proposes to clear 20 ha of vegetation adjacent to the northern edge of the National Park. This area is predominantly degraded and within the existing road reserve (infrastructure corridor) and therefore clearing is unlikely to break any ecological linkages within the national park. Main roads will implement

weed management measures to ensure the construction does not impact the biodiversity values of the adjacent park inclusive of vehicle hygiene checks and cleans being done off site.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

DBCA shapefiles

Pilbara Environmental (2020)

(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.

Proposed clearing is not likely to be at variance to this Principle

There are no Public Drinking Water Source Areas (PDWSA) within or in close proximity to the project area (GIS Database). The nearest PDWSA is approximately 75 km to the west of the project area (Southern Fortescue and Marandoo water reserves). There are no permanent watercourses or wetlands within the project area. Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall.

The proposed intersection upgrade is unlikely to result in significant changes to surface water flows or quality with no significant hydrological features noted at the site. The proposed clearing is unlikely to cause deterioration in the quality of groundwater as there is no abstraction, dewatering or deep excavation being proposed. The areas surrounding the proposed clearing areas will remain largely vegetated, which also minimises the risk of water quality deterioration.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Pilbara Environmental (2020)

DWER and DBCA shapefiles

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be at variance to this Principle

The climate of the region is arid, with a low average rainfall of approximately 473.8 millimetres per year (BOM, 2021). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BOM 2021).

Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. There are no permanent watercourses or waterbodies within the project area (GIS Database). The proposed linear clearing within the project area is unlikely to cause or exacerbate the incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Bom (2020)

Pilbara Environmental (2020)

6 ADDITIONAL ACTIONS REQUIRED

Table 5 summarises what further pre-clearing impact assessment and vegetation management is required in accordance with CPS 818.

Table 5. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
<p>1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.</p> <p>Where the clearing is at variance or may be at variance to Clearing Principle (f) and no other Clearing Principle, and the area of the proposed clearing is less than 0.5 hectares in size and the Clearing Principle (f) impacts only relate to:</p> <ul style="list-style-type: none"> (i) a minor non-perennial watercourse(s); (ii) a wetland(s) classed as a multiple use management category wetland(s); and/or (iii) a wetland that is not a defined wetland; <p>the preparation of an Assessment Report, as required by condition 6(e), is not required.</p>	N	No further action required.
<p>2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding.</p>	N	No further action required.
<p>3. The project involves clearing for temporary works (as defined by CPS 818).</p>	N	No further action required.
<p>4 a. Project is within Region that:</p> <ul style="list-style-type: none"> - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for uninfested areas to be impacted 	N	

Impact of Clearing	Yes/No or NA	Further Action Required
4b. Does the proposed works require clearing within or adjacent to DBCA estate in non-dry conditions?		No further action required.
5. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback		No further action required.
6. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	N	Standard Main Roads Vehicle and Plant management measures will be implemented inclusive of PEMR's and Vehicle and Plant Hygiene Checklists.

7 STAKEHOLDER CONSULTATION

Stakeholder consultation not required in accordance with CPS 818/15 Condition 8.

8 REFERENCES

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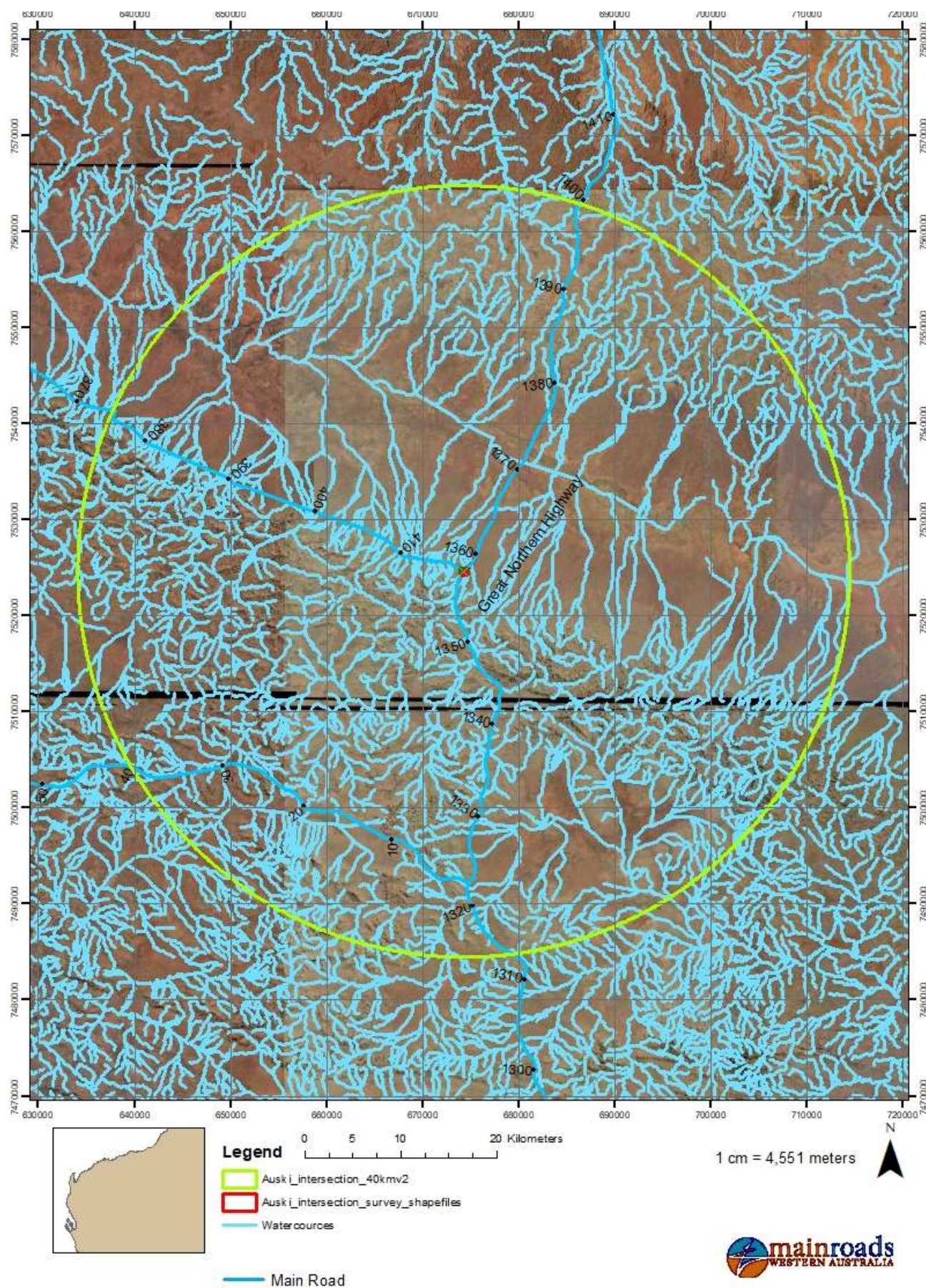
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9 APPENDICES

Appendix	Title
Appendix 1	DBCA Threatened Flora and Fauna Database Searches
Appendix 2	PEMRS

Appendix 1: DBCA Threatened Flora and Fauna, and DWER Hydrological Database Searches

Redacted



Appendix 2: PEMRS

Principal Environmental Management Requirements (PEMR's)

Table 1: Clearing PEMR**STANDARD MANAGEMENT ACTIONS**

STANDARD MANAGEMENT REQUIREMENTS
PRE WORKS <ol style="list-style-type: none">1. The Contractor must prepare, implement and maintain processes to ensure that the movement of all vehicles, plant and machinery does not occur outside of the Limits of Vegetation Clearing. This must include all turnaround areas.2. The Contractor must minimise vegetation clearing and the area of disturbance on ground by utilising existing cleared area where possible.
DURING WORKS <ol style="list-style-type: none">1. The Contractor must report any damage to vegetation beyond the Limits of Vegetation Clearing as an Environment Incident.2. The Contractor must ensure Movements are confined to the Limits of Vegetation Clearing during the works3. The Contractor must undertake the clearing in accordance with the Fauna PEMR.
POST WORKS <ol style="list-style-type: none">1. NIL

Table 2: Erosion and Sedimentation

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must develop, implement and maintain processes and procedures to ensure that: <ul style="list-style-type: none"> • The Contractor is responsive to and addresses incidents of erosion and sedimentation within and adjacent to the work areas. • Prevent water and wind soil erosion within and adjacent to the works areas. • Prevent the sedimentation and siltation of watercourses located within and adjacent to the works area. • Ensure that sedimentation and siltation of drainage lines due to the removal of riparian vegetation is avoided, minimised and mitigated. • Ensure that loose surfaces and recently cleared areas are protected from wind and soil erosion. • Minimise exposed soil working surfaces or protect them from stormwater erosion. • Ensure material such as gravel, crushed rock and excavated material is stockpiled away from drainage paths and covered to prevent erosion. • Ensure that water quality monitoring is undertaken when turbidity and sedimentation is an issue.
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. Implement, monitor and adhere to the sedimentation and erosion processes developed to address the requirements in the pre-works.
<p>POST WORKS</p> <ol style="list-style-type: none"> 1. If required, the Contractor must continue to monitor water quality until the turbidity/sedimentation dissipates. 2. The Contractor must ensure that disturbed areas are stabilised as soon as is practicable after construction activities are completed.

Table 3: Fauna

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must ensure that fauna management requirements are communicated to the crew undertaking the clearing works during the induction and pre-start meeting. 2. Where active nests, burrows or dens are identified, works must not proceed until the Contractor obtains the Superintendents approval of the management of active nests, burrows or dens adheres to the Superintendents advice.
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must undertake the clearing in the following manner to allow fauna to move out of the clearing area; <ol style="list-style-type: none"> i. Prior to the clearing activities commencing, use machinery to tap large trees with habitat hollows to encourage any animals evacuate. ii. Undertake the clearing in one direction and towards areas of native vegetation to allow the animals to escape to adjacent habitat. 2. The Contractor must ensure that all onsite personnel undertake visual monitoring and are vigilant to the presence of fauna. Any sightings of fauna, including injury or fatality, must be reported as an Environmental Incident. 3. The Contractor must ensure that; <ol style="list-style-type: none"> i. No pets, traps or firearms are brought into the project area. ii. Fauna are not fed iii. Fauna are not intentionally harmed or killed iv. Fauna that venture into the work area are encouraged to leave in a manner that does not harm the animal or operator (loud noise, slowly approaching in a vehicle etc.) 4. The Contractor must ensure that in the event that sick, injured or orphaned native wildlife are located on the project site, the WILDCARE Helpline ((08) 9474 9055) will be contacted for assistance. The Contractor must maintain records of any animal taken to a wildlife carer.
<p>POST WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must provide any records of fauna impact to the Superintendent.

Table 4: Machinery and Vehicle Management

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must ensure that all areas associated with the storage, parking, servicing, wash down and refuelling of all vehicles, plant and machinery is located within the Limits of Clearing and approved by the Superintendent. 2. The Contractor must ensure that all vehicles, machinery and plant are clean on entry (i.e. free of all soil and vegetation material) and comply with the requirements of 204.B.32. 3. The Contractor must ensure that vehicle servicing and refuelling will be undertaken at designated areas approved by the Superintendent. 4. The Contractor must ensure that all staff suitably qualified and competent to undertake works, especially refuelling activities.
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must maintain records of checking all vehicles, machinery and plant are clean on entry.
<p>POST WORKS</p>

Table 5: Mulch and Topsoil Management

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must ensure that the movement of soil and vegetation is only undertaken in dry conditions unless otherwise approved and / or directed by the Superintendent. 2. The Contractor must ensure that poor quality topsoil and mulched vegetation does not contaminate the good quality topsoil and vegetation.
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must ensure that all machinery used in the removal of weed-infested topsoil must be cleaned down before and between operations to prevent the introduction and spread of weeds. 2. The Contractor must ensure the movement of large equipment over topsoil materials is avoided to minimise compaction. 3. The Contractor must ensure that Dieback and weed infected topsoil and mulch vegetation must be handled separately to minimise the risk of spreading dieback and weed species across the site and stockpiles. 4. The Contractor must ensure that stockpiling operations must occur in a manner to ensure that the properties of the topsoil are not degraded and the topsoil made unsuitable for use in revegetation.
<p>POST WORKS</p>

Table 6: Pegging and Flagging

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. Pegging must be done in accordance with the requirements detailed in Specification 301. 2. The Contractor must clearly communicate, either at the pre-start meeting or equivalent, to the crew undertaking the clearing works, through clear maps and other additional means, what the Pegging represents.
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. The Contractor must peg the Limits of Clearing by PINK flagging tape. 2. The Contractor peg/demarcate vegetation proposed to be retained is demarcated by WHITE flagging tape. 3. The Contractor must ensure that the vegetation demarcated with PINK and WHITE flagging tape is consistent with the approved clearing areas.
<p>POST WORKS</p> <ol style="list-style-type: none"> 1. The Contractor remove and dispose of appropriately any demarcation, pegging or flagging once project works are completed.

Table 7: Water Drainage

<p>PRE WORKS</p> <ol style="list-style-type: none"> 1. Use pollution control and containment strategies for project activities in Public Drinking Water Source Areas (PDWSAs) / Underground Water Pollution Control Areas (UWPCAs) and liaise with the DWER where necessary
<p>DURING WORKS</p> <ol style="list-style-type: none"> 1. Existing natural drainage paths and channels along the road or the vicinity of the project area will not be unnecessarily blocked or restricted. 2. Temporary drainage systems may be installed to carry surface water away from the areas where excavation and foundation construction work is taking place or from any other area where the accumulation of water could cause delay or damage to the work. 3. Maintain these drainage systems in proper working order at all times. 4. Runoff from disturbed areas must be managed to minimise adverse impacts on surrounding vegetation, watercourses and properties. 5. Booms and silt fences must be used when working over or adjacent to areas of surface water in order to protect the quality of surface water from construction impacts.
<p>POST WORKS</p> <ol style="list-style-type: none"> 1. Water quality monitoring to be undertaken (if turbidity/ sedimentation is an issue).

2. Prior to backfilling the completed pipe work certify that the entire system is flushed clean and tested
3. Disturbed areas will be stabilised soon after construction activities are completed.
4. Culvert and drainage structures will be free of all grass, weeds, silt and debris

Table 8: Weed Management

PRE WORKS

1. The Contractor must remove or kill any weeds growing in project area that are likely to spread and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.
2. The Contractor must develop, implement and maintain procedures to identify and control declared and invasive weed species within the Contract areas, to the satisfaction of the Superintendent.
3. The Contractor must prepare a weed control program, for nominated weed species for control and disposal, to the satisfaction of the Superintendent.
4. The Contractor must undertake weed management in Stockpiles as directed by the Superintendent.

DURING WORKS

1. The Contractor must implement the weed control procedures and management plan and record and manage records of its implementation.
2. The Contractor must treat nominated weed infestations as many times as necessary to control and eradicate the weed species in accordance with the approved weed control program
3. The contractor must ensure that no known weed, pest or diseased affected soil, mulch, fill or other material is brought into the Site.

POST WORKS

1. The relevant [Vegetation Maintenance Record Sheets](https://www.mainroads.wa.gov.au/BuildingRoads/Contracting/Pages/ReportingForms.aspx) available at: <https://www.mainroads.wa.gov.au/BuildingRoads/Contracting/Pages/ReportingForms.aspx> must be completed and sent to the Superintendent.