



Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
 - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
 - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act)**. If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from <http://www.gbrmpa.gov.au/> or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379

Townsville QLD 4810

AUSTRALIA

Phone: + 61 7 4750 0700

Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in blue text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I pay for my referral?

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the [Department's website](#).

Payment of the referral fee can be made using one of the following methods:

- **EFT Payments can be made to:**

BSB: 092-009
Bank Account No. 115859
Amount: \$7352
Account Name: Department of the Environment.
Bank: Reserve Bank of Australia
Bank Address: 20-22 London Circuit Canberra ACT 2601
Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

The Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

- **Credit Card**

Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: in order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

How do I submit a referral?

Referrals may be submitted by mail or email.

Mail to:

Referrals Gateway
Environment Assessment Branch
Department of Environment
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park*," p.2, for more details).

For more information

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site <http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999>

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title:

Great Northern Highway: Muchea to Wubin Upgrade Project Stage 2 –
Walebing to Wubin.

1 Summary of proposed action

1.1 Short description

Main Roads Western Australia (Main Roads) proposes to upgrade, rebuild and/or partially relocate discrete sections of Great Northern Highway (GNH) between straight line kilometre (SLK) 147 (Walebing) to SLK 256.8 (Wubin).

1.2 Latitude and longitude

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds

Refer to Appendix A of the Supporting Information Document for Approval Boundary Coordinates.

1.3 Locality and property description

The proposed action is located within the Shires of Moora and Dalwallinu in the State of Western Australia. The proposed action will be constructed between SLK 147 (approximately 145 km north east of Perth) and SLK 256.8 (approximately 220 km north east of Perth).

The land to be impacted is a mixture of the existing GNH road reserve, local road reserves managed by the relevant Shire, railway reserve, unallocated crown land, and various leasehold, freehold and Crown land parcels. The proposed action is within an agricultural landscape with fragmented patches of remnant native vegetation, and some areas which have been revegetated with not locally indigenous species.

1.4 Size of the development footprint or work area (hectares)

Approval Boundary – 845 ha
Development footprint – 275 ha within the Approval Boundary, of which 68.5 ha is native vegetation, 49.5 ha has been previously cleared and revegetated with non-native, or not locally indigenous vegetation, and 157 ha is pasture/paddock, cleared land or road.

1.5 Street address of the site

Great Northern Highway, Western Australia

1.6 Lot description

The proposed action is within the existing GNH road reserve, local road reserves managed by the relevant Shire, and various land parcels as detailed in Section 2.2 of the Supporting Information Document.

1.7 Local Government Area and Council contact (if known)

Shires of Moora and Dalwallinu

1.8 **Time frame**

Construction is proposed to begin in late 2016 and be completed by late 2020.

1.9	Alternatives to proposed action		No
		X	Yes, you must also complete section 2.2
1.10	Alternative time frames etc ?	X	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	State assessment		No
		X	Yes, you must also complete Section 2.5
1.12	Component of larger action		No
		X	Yes, you must also complete Section 2.7
1.13	Related actions/proposals		No
		X	<p>Yes, provide details:</p> <p>The proposed action is related to the following actions/proposals:</p> <ul style="list-style-type: none"> • Muchea North (Old Gingin Road to Chittering Roadhouse. A referral was submitted on 1 March 2016. The referral was determined to be a controlled action with assessment via Preliminary Documentation. • Miling Straight (EPBC 2015/7584). A referral was submitted on 19 October 2015. It was decided on 12 November 2015 that the proposal was not a controlled action. • New Norcia Bypass (EPBC 2015/7523). A referral was submitted on 20 July 2015. It was decided on 31 August 2015 that the proposal was not a controlled action. • Upgrade and realignment the GNH between Batty Bog and Walebing (2014/7129). A referral was submitted on 10 February 2014. It was decided on 6 March 2014 that the proposal was not a controlled action. • Upgrade and realignment the GNH between Bindi Bindi and Lyons East Road (2012/6700). A referral was submitted on 2 January 2013. It was decided on 23 January 2013 that the proposal was not a controlled action.
1.14	Australian Government funding		No
		X	<p>Yes, provide details:</p> <p>Sections of the proposed action have received funding from both the State and Commonwealth governments. Federal Government funding will make up 80% of the total project funding requirements.</p>
1.15	Great Barrier Reef Marine Park	X	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

Main Roads Western Australia has established the Muchea to Wubin Integrated Project Team (M2W Team), comprising Main Roads and industry partners Jacobs and Arup to conduct a comprehensive planning review of the full Muchea to Wubin link along the GNH. As part of the wider project, Main Roads proposes to upgrade, improve and realign a number of discrete sections along the existing GNH between approximate straight line kilometre (SLK) 147 and SLK 256 (Walebing to Wubin) as briefly summarized below:

- Walebing (SLK 147.7 to SLK 165.6)
 - Improvements to horizontal and vertical geometry
 - Intersection upgrades
 - Seal widening and construction of overtaking lanes
- Miling Bypass (SLK 177.6 to SLK 186.9)
 - Construction of a new road bypassing the town
 - Replacement of the existing floodway with a low level crossing
 - Intersection improvements and construction of new town entrances
- Pithara (SLK 207.4 to SLK 223.4)
 - Improvements to horizontal and vertical geometry, including realignment of section of the road
 - Construction of overtaking lanes
 - Access and parking improvements in the town of Pithara
- Dalwallinu to Wubin (SLK 223.4 to SLK 256.5)
 - Construction of a new road bypassing Wubin
 - New town entrances at Wubin
 - Improvements to horizontal and vertical geometry
 - Seal widening and construction of overtaking lanes

A planning review of the current GNH and feedback from community consultation has identified a number of deficiencies along the Highway between these two SLKs. These deficiencies include:

- Narrow and substandard road width. The original GNH was constructed with an 8 m wide seal on a 10 m formation. Current Main Roads standards require at least a 9 m seal on an 11 m formation, with a 10 m seal on 12 m formation adopted for the proposed action;
- Areas with non-compliant horizontal and vertical geometry. To allow vehicle to travel safely at the posted speeds of 110 km/h (100 km/h for heavy vehicles), these geometry issues require rectification;
- A number of intersections with poor sight distance or inadequate turning provisions; and
- Insufficient clear zone.

A detailed description of the works to be undertaken is provided in Section 2 of the Supporting Information Document.

2.2 Alternatives to taking the proposed action

Overview

A number of alternatives have been considered during the planning phase of the Great Northern Highway: Muchea to Wubin Stage 2 Upgrade Project. These can be broadly grouped into the following category of options:

- Do nothing: No works undertaken to upgrade the existing GNH;
- Upgrade on the existing alignment; and

- Construct new carriageway along a new alignment. This includes the consideration of bypass options.

The objectives of the proposed action are to upgrade the GNH in order to improve safety for both road users and local communities, to improve freight efficiency and to allow 53.5 m long vehicles to travel between Wubin and Muchea at a design speed of 100 km/h (except in towns). Not undertaking the proposed action would result in these objectives not being achieved and continued degradation of the road surface and underlying formation, causing increasingly unsafe conditions. As such, not undertaking the works was not considered a viable alternative.

Walebing

Options along the portion of the GNH between SLK 147.7 and SLK 151.5 (the Walebing Curve) are highly constrained by significant heritage values either side of the highway. Walebing Reserve, on the western side, is highly significant to the Traditional Owners (the Yued people) as a traditional camping ground and safe place during the early 1900's. On the eastern side of the GNH is Walebing Homestead. This property is listed on the State Heritage Register and is of historical importance due to its association with the Lefroy family, and the generally good condition of the buildings. As a result of these constraints, the alignment is required to stay within the existing road reserve through this portion of the works.

Two options were considered for the intersection of Midlands Road with GNH. The first option was to upgrade the existing intersection, however this would have resulted in a requirement to lower the existing road, cutting into the current land surface and an undesirable risk of disturbing Aboriginal burial sites. The alternative option, which has been taken forward into detailed design, is to realign Midlands Road to the north of Walebing Reserve.

The portion of the GNH between SLK 151.5 and 165.6 has previously been upgraded by Access Alliance. As such it was determined that the only works required is the provision of overtaking lanes and installation of road safety barriers.

Miling Bypass

A number of options were considered for the bypass at Miling, consisting of four western options and two eastern options as shown on **Figure 1**. The eastern options were preferred over the western options for the following reasons:

- The eastern bypass options achieved the desired speed of 100 km/h for heavy vehicles while the western options could only achieve a maximum speed of 80 km/h.
- The eastern bypass options completely removed the need for large trucks to pass through Miling town.
- The western bypass options would have resulted in greater noise and vibration impacts to residents due to their proximity to town.
- The eastern bypass option closest to town (Option 6) received the most support from the community.

Pithara

Four alignment options were considered as part of the design review process. These were online widening, offline construction of new carriageway adjacent to the existing GNH, and two offline realignment options (Figures 2 - 6). A combination of offline realignment with online upgrades (Option 4 on Figures 2 - 6) was selected as the preferred option for the following reasons:

- The existing carriageway is narrow and in poor condition. As such, there is little cost saving achieved in widening the existing alignment.

- Offline construction allows for reduced interruption of traffic during the construction phase.
- Construction adjacent to the existing road, where practicable, reduces the land resumption requirements and minimises the risk of excising highly productive agricultural land.
- Online widening would have resulted in clearing of the established vegetation within the road reserve. Much of this vegetation has been identified as breeding and foraging habitat for Carnaby's Black Cockatoo. Offline construction options reduce the clearing required of this habitat.
- Realignment of the GNH allows environmentally sensitive areas, such as Crown Reserve 4248 to be avoided.
- The portion of the GNH south of Pithara (SLK 217.5 to SLK 220) passes through reserve land managed by the Water Corporation. This reserve contains native vegetation in a good to very good condition. In order to reduce the need to clear vegetation in the reserve, the preferred option is to undertake upgrade works within the existing road reserve through this area.
- Ground conditions to the north of Pithara are unstable and therefore unsuitable for offline realignment and construction of a new road.

Dalwalinu to Wubin

The current Dalwallinu Bypass has a sharp bend at Clinch Road. Three options were considered to improve this bend:

- Realignment of the GNH to the west, following the alignment of the rail line, on the western side of the CSBP facilities.
- Realignment to the east.
- Realignment to the west, east of the CSBP facilities.

The third option was selected as the preferred option for the following reasons:

- Resumption of land on the eastern side would have undesirable, negative impacts on the Landmark property.
- Realignment to the west of the CSBP facilities results in issues with stacking of road trains at the rail crossing on Clinch Road.

Currently, 53.5 m road trains traveling to Perth have to stop at the road train assembly area in Wubin to distribute their trailers between smaller road trains before traveling further south. The planned upgrades to GNH aim to remove this requirement and allow 53.5 m road train to continue past Wubin to Muchea. Three options were considered at Wubin, consisting of two bypass options and one option which retains truck traffic through the town. Both bypass options are to the east of Wubin with one skirting the remnant vegetation surrounding the town and the other approximately 800 m further east. The bypass option closer to Wubin was selected as the preferred option for the following reasons:

- Both bypass options provide an improved safety outcome as road trains are removed from the town.
- The bypass options are likely to result in reduced noise and/or vibration impacts to residents as truck traffic is moved further away.
- The bypass option closer to town results in less impact to the surrounding farms.
- Following slight revision of the bypass option closer to town to increase the number of access points into Wubin, the local community favoured this option over the more eastern bypass.

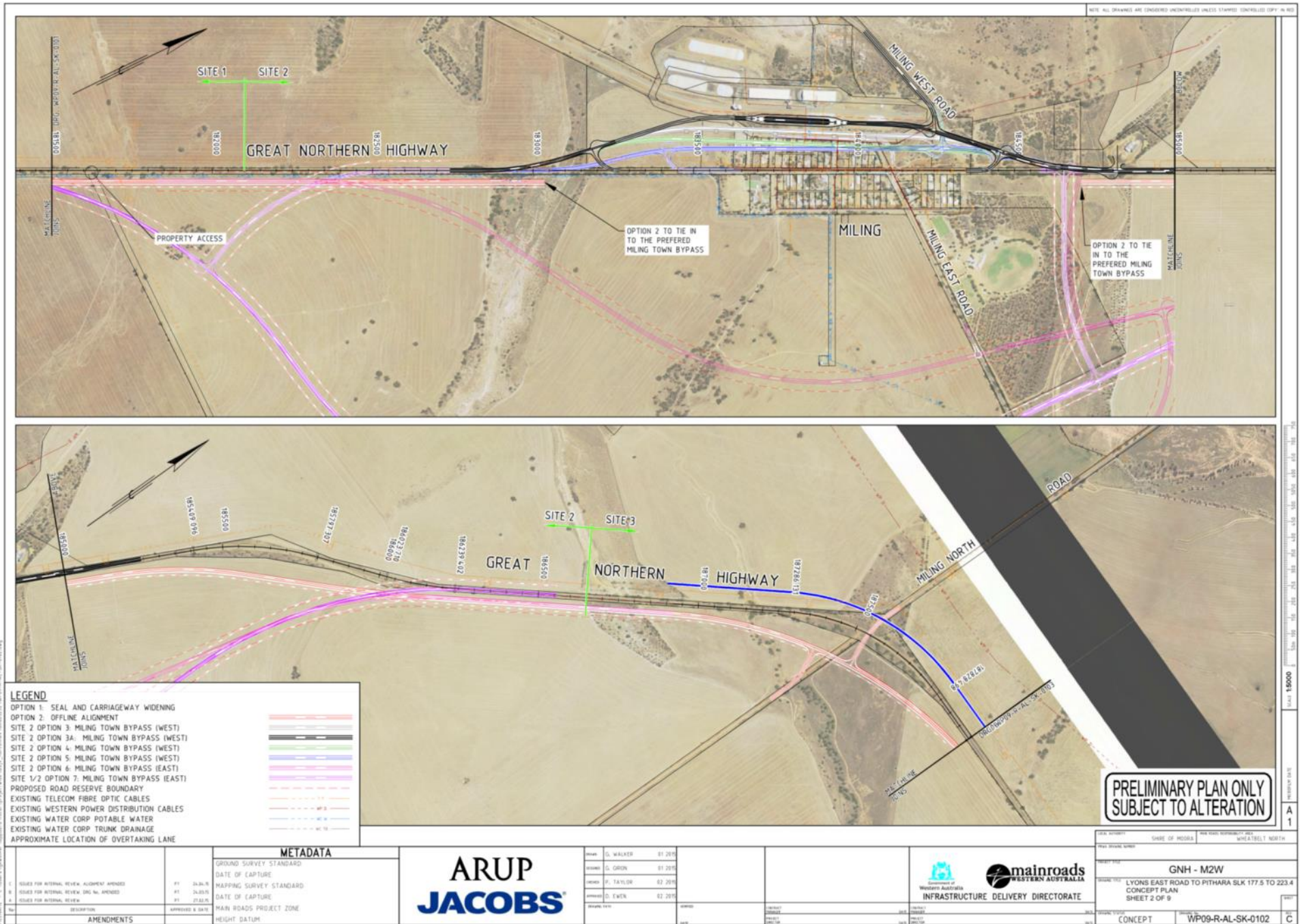


Figure 1: Miling Bypass Options

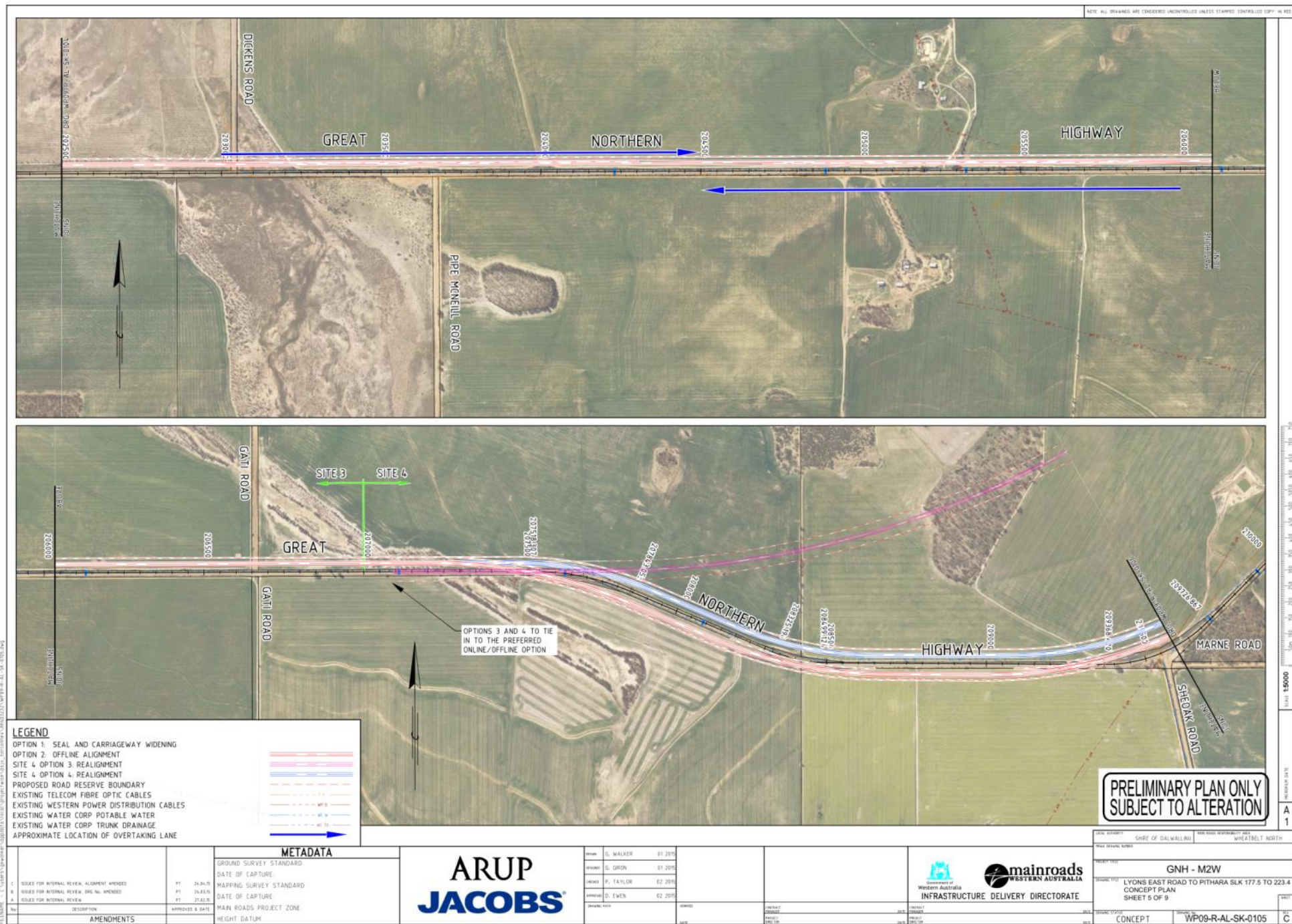


Figure 2: Pithara Upgrade Options Sheet 1

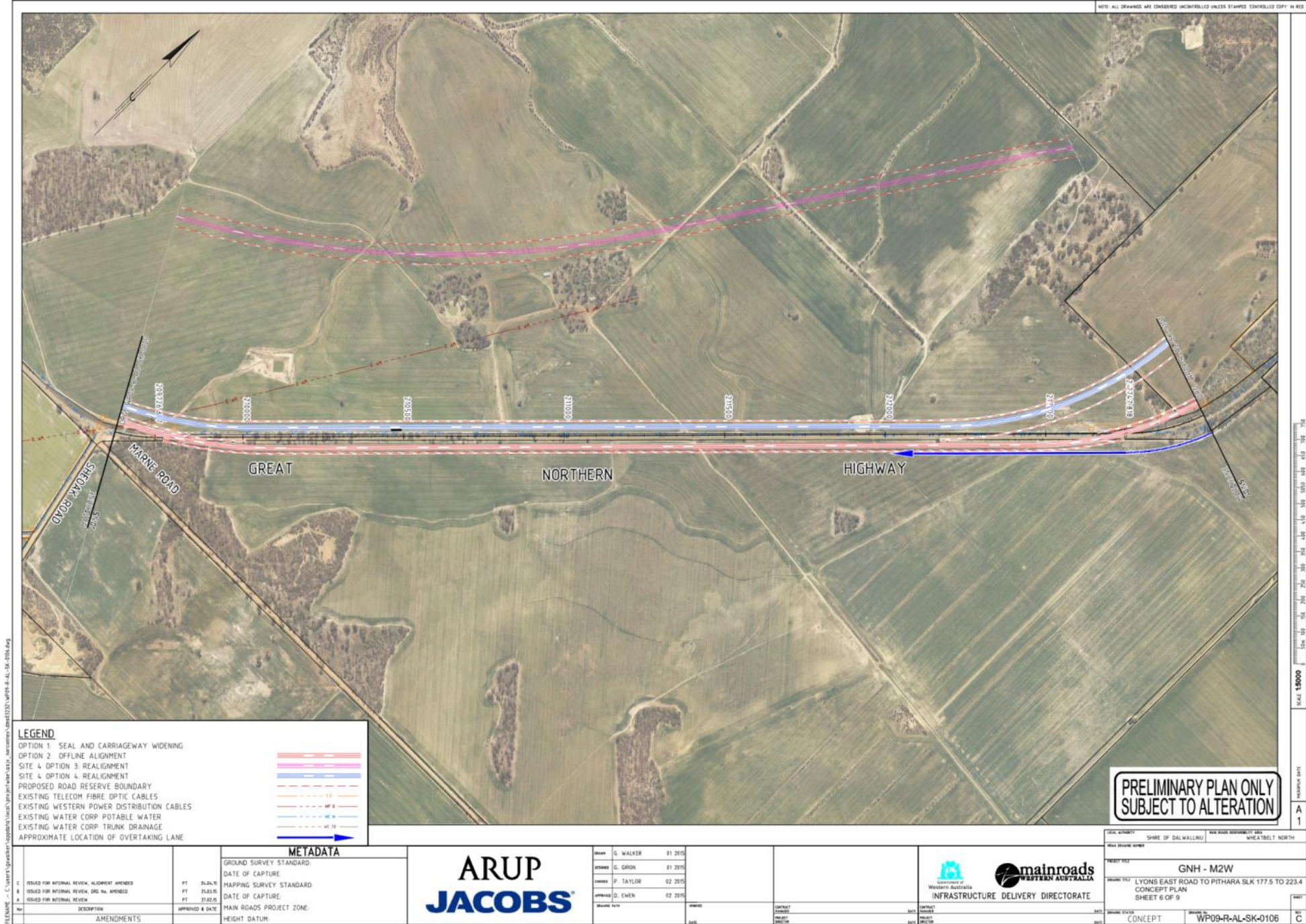
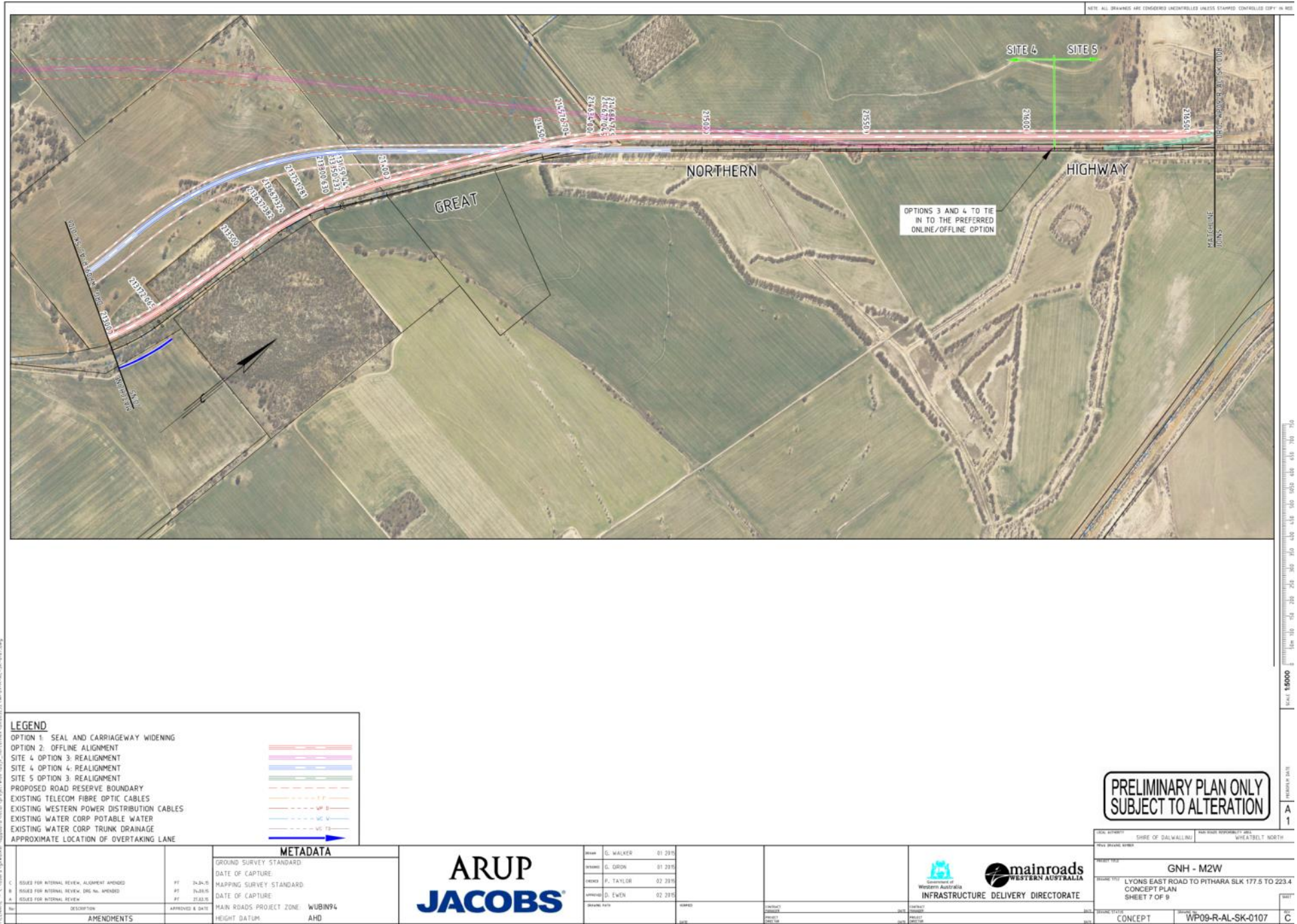
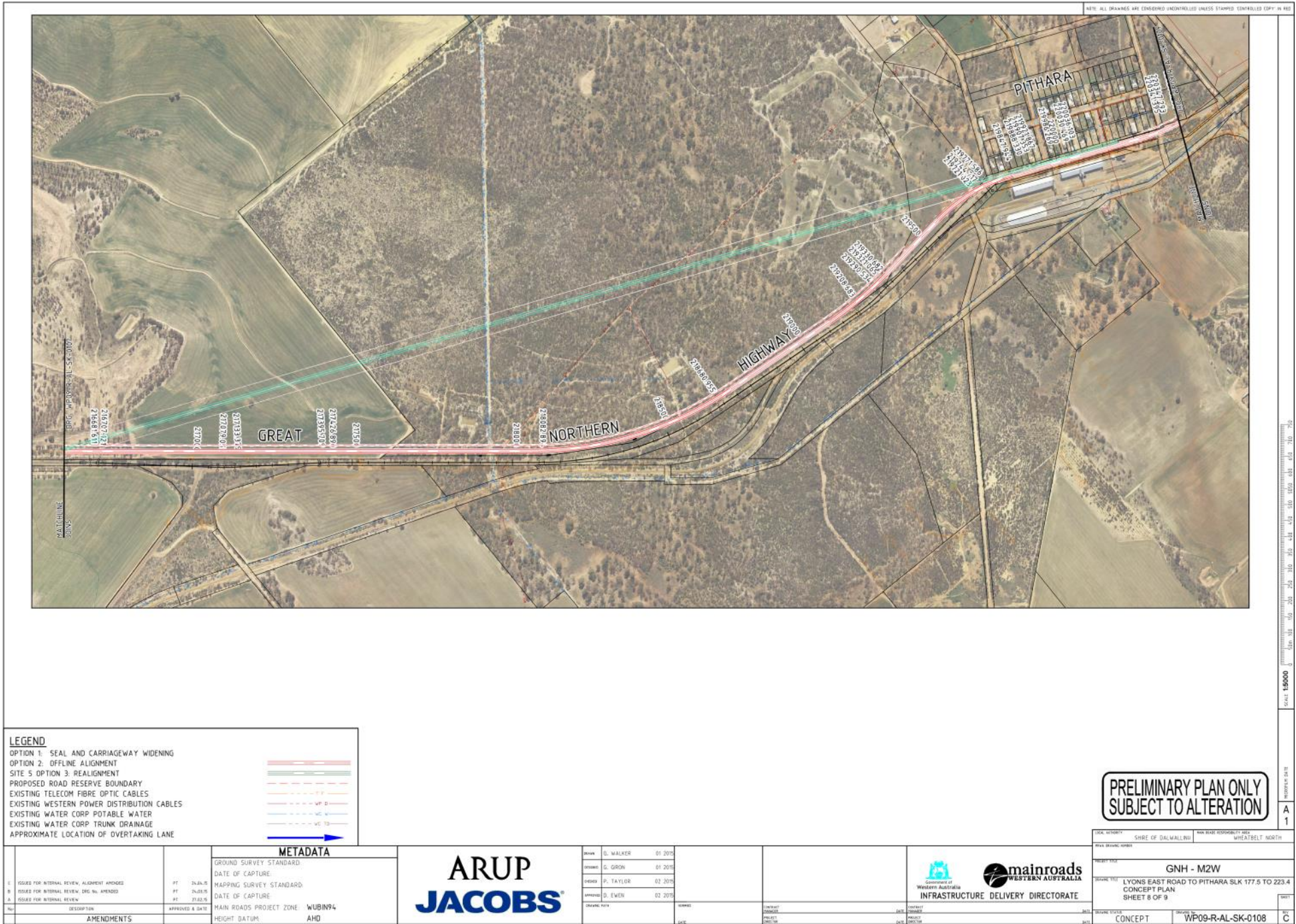


Figure 3: Pithara Upgrade Options Sheet 2





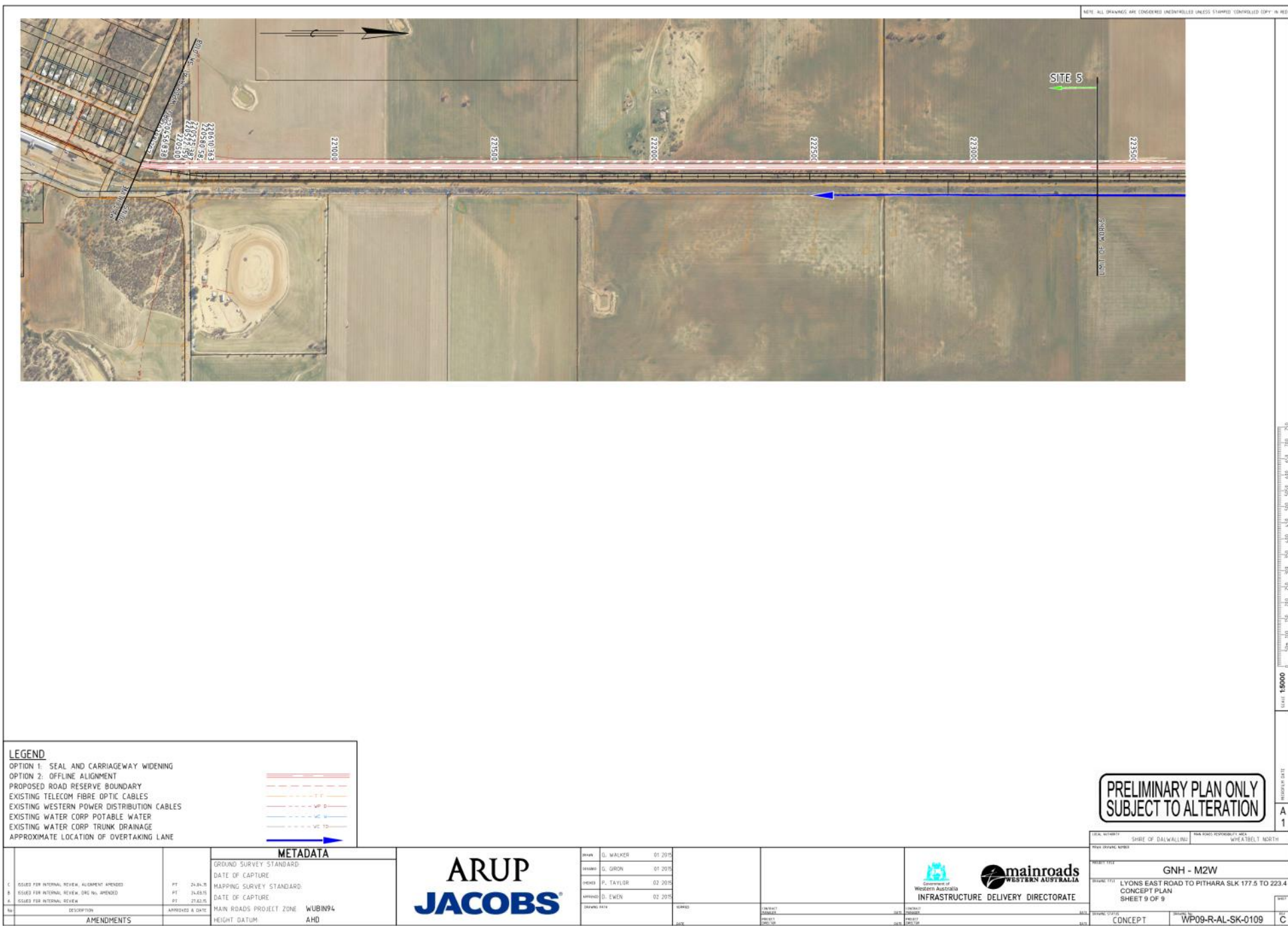


Figure 6: Pithara Upgrade Options Sheet 5

2.3 Alternative locations, time frames or activities that form part of the referred action

No alternative locations, timeframes or activities form part of this referral.

2.4 Context, planning framework and state/local government requirements

The proposed action will be subject to the regulatory framework outlined below:

- Environmental Protection Act 1986 (WA);
- Environmental Protection (Noise) Regulations 1997 (WA);
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA);
- Aboriginal Heritage Act 1972 (WA);
- Heritage of WA Act 1990 (WA);
- Rights in Water and Irrigation Act 1914 (WA);
- Wildlife Conservation Act 1950 (WA); and
- Environmental Protection and Biodiversity Conservation Act 1999 (Cth).

The proposed action will require the following approvals and permits:

- Clearing for the proposed action will be managed under the provisions of Part V of the *Environmental Protection Act 1989* (WA) (EP Act). A permit to clear native vegetation will be applied for in accordance with these provisions.
- Works which interfere with the bed or banks of watercourses within the boundaries of areas proclaimed under the *Rights in Water and Irrigation Act 1914* will require a permit under Section 17 of the Act.
- Approval under Section 18 of the *Aboriginal Heritage Act 1972* will be required for works within the boundary of any known Aboriginal heritage sites.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

The EP Act requires all proposals that are likely to have a significant impact on the environment be assessed by the Environmental Protection Authority (EPA) to determine whether the proposal can be managed to meet the EPA's environmental objectives and whether conditions should be placed on a proponent to provide an added level of certainty that appropriate environmental management will be undertaken.

Preliminary Environmental Impact Assessments (PEIAs) were undertaken for the areas related to the proposed action. These PEIAs assessed the proposed alignment against publically available environmental and heritage information, together with the results of ecological surveys undertaken specifically for the project. These PEIAs determined that potential impacts were largely related to clearing of native vegetation. These impacts can be managed under the clearing provisions of Part V of the EP Act and as such, referral to the EPA was not required. This approach was confirmed during a meeting with the Office of the EPA (OEPA) on 19 May 2015, at which it was agreed that approval under Part V of the EP Act, via the Native Vegetation Clearing provisions, would be the appropriate approval pathway for the project.

Approval of the works associated with proposed action under Part V of the EP Act will be through an application for a Purpose Permit to clear native vegetation. This application will be submitted to the Western Australian Department of Environment Regulation (DER) and will include a detailed impact assessment in relation to flora, vegetation and fauna habitat values as well as an assessment of the clearing for the proposed action against the Clearing Principles under Schedule 5 of the EP Act.

Where an action is likely to have a significant impact on Matters of National Environmental Significance (MNES) it is required to be referred to the Department of the Environment (DoE) under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) for approval. The proposed action may impact on Carnaby's Black Cockatoo (listed as Endangered under the EPBC Act) and as such has been referred to DoE to determine if the proposed action is to be considered a Controlled Action (this document). If it is determined that the action is a Controlled Action, it is proposed that assessment will be undertaken under the provisions of the bilateral agreement via an application to the DER for a Purpose Permit to clear native vegetation.

2.6 Public consultation (including with Indigenous stakeholders)

From the commencement of alignment studies associated with the proposed action, consultation has been undertaken with various parties including:

- The Shires of Moora and Dalwallinu;
- OEPA;
- DoE;
- DER;
- Local communities of Miling, Pithara, Dalwallinu and Wubin;
- Landowners, tenants and lease holders;
- Department of Aboriginal Affairs (DAA); and
- Traditional Owners (TOs) of the Yued Noongar dialect group and the Widi Mob. These TOs were present during the Aboriginal heritage surveys.

Further consultation will take place as the proposed action progresses.

2.7 A staged development or component of a larger project

The proposed action represents the largest component of the Great Northern Highway: Muchea to Wubin Upgrade Project Stage 2. Five smaller sections have been previously referred under the EPBC Act as follows:

- Muchea North (Old Gingin Road to Chittering Roadhouse (EPBC 2016/7656). A referral was submitted on 1 March 2016. It was decided on 10 May 2016 that the proposal was a controlled action, with the controlling provision being Threatened Species and Communities (namely Carnaby's Black Cockatoo). Assessment will be via Preliminary Documentation.
- Miling Straight (EPBC 2015/7584). A referral was submitted on 19 October 2015. It was decided on 12 November 2015 that the proposal was not a controlled action.
- New Norcia Bypass (EPBC 2015/7523). A referral was submitted on 20 July 2015. It was decided on 31 August that the proposal was not a controlled action.
- Upgrade and realignment the GNH between Batty Bog and Walebing (2014/7129). A referral was submitted on 10 February 2014. It was decided on 6 March 2014 that the proposal was not a controlled action.
- Upgrade and realignment the GNH between Bindi Bindi and Lyons East Road (2012/6700). A referral was submitted on 2 January 2013. It was decided on 23 January 2013 that the proposal was not a controlled action.

Batty Bog to Walebing and Bindi Bindi to Lyons East Road were undertaken as separate projects, not under the control of the M2W team. The remaining three sections have been submitted separately to this referral for the following reasons:

- **Schedule** – The three sections referred separately are on aggressive construction schedules and as such it would not have been possible to obtain environmental approvals within the required timeframe if they were included within this referral.

- **Baseline data availability** – Ecological surveys for the sections that form part of this referral were completed in Spring of 2015. Including the three previously referred sections in this referral would have resulted in schedule delays due to the timing of the surveys and subsequent availability of data
- **Alignment design** – Concept designs for the sections included in this referral were not available until early 2016.

A final section between Chittering Roadhouse and the start of the New Norcia Bypass will be referred at a future date. The final alignment along this section of the GNH is yet to be determined and will be subject to detailed ecological, geotechnical and heritage surveys as well as multicriteria options assessment to determine a final alignment, and business case development.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

There are no World Heritage Properties located adjacent to or within the area of the proposed action.

Nature and extent of likely impact

N/A

3.1 (b) National Heritage Places

Description

There are no National Heritage Places adjacent to or within the area of the proposed action.

Nature and extent of likely impact

N/A

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

There are no Wetlands of International Importance (declared Ramsar wetlands) located in, adjacent to or downstream of the area of the proposed action.

Nature and extent of likely impact

N/A

3.1 (d) Listed threatened species and ecological communities

Description

Threatened Flora

No flora species listed under the EPBC Act were recorded during surveys of the Approval Boundary for the proposed action. Refer to Section 4.3 of the Supporting Information Document for further information regarding Threatened Flora.

Threatened Ecological Communities

The Critically Endangered ecological community Eucalypt Woodlands of the Western Australian Wheatbelt occurs in the Wheatbelt Bioregion, within which the proposed action is located. This TEC was listed under the EPBC Act in November 2015, after completion of the Spring survey campaign. Analysis of quadrats surveyed by Phoenix (2015; 2016) indicate that there are occurrence of this TEC within the Approval Boundary.

It has been estimated that 78.9 ha of native vegetation within the Approval Boundary is potentially representative of this TEC, much of which (49.7 ha) is in a degraded condition. The DoE approved conservation advice estimates the total extent of this TEC at approximately 940,000 ha. Further information is provided in Section 4.3 of the Supporting Information Document.

Threatened Fauna

The desktop review identified nine conservation significant fauna species (excluding migratory species) that may occur in the vicinity of the proposed action. A likelihood of occurrence assessment for these species and has been included in Table 4-5 of the Supporting Information Document.

Based on the field investigations and likelihood of occurrence assessment, the Endangered Carnaby's Black Cockatoo was the only Threatened fauna species recorded or likely to occur within the Approval Boundary for the proposed action. Carnaby's Black Cockatoo (EPBC Act - Endangered) was directly recorded in the Approval Boundary on numerous occasions.

A total of 1,039 potential breeding trees for Black Cockatoos were recorded during the Phoenix (2015; 2016) surveys with 16 confirmed to have hollows suitable for use by Carnaby's Black Cockatoo and 12 of these showing signs of use by the species.

A total of 163.3 ha of Carnaby's Black Cockatoo habitat was mapped during the surveys undertaken by Phoenix (2015; 2016). All of this was mapped as "Low Value" habitat.

Additional information in relation to Threatened fauna species is provided in Section 4.3 of the Supporting Information Document.

Nature and extent of likely impact

Threatened Flora

No impacts are anticipated as there has been no EPBC Act listed Threatened Flora or Ecological Communities recorded within or in proximity to the Approval Boundary.

Threatened Ecological Communities

Clearing will be required within vegetation identified as potentially representative of the Eucalypt Woodlands of the Western Australian Wheatbelt TEC, listed as Critically Endangered under the EPBC Act. It has been estimated that up to 13 ha of vegetation potentially representative of the TEC is likely to be cleared. This equates to 0.001% of the current estimated extent of this TEC.

Road construction activities are unlikely to result in extensive excavation within the root systems of the trees that are the dominant species of this TEC. Some excavation may be required for services relocations, however, long term adverse impacts on this TEC are not expected, as evidenced by existing buried services within areas of very good to excellent woodland vegetation.

Further detailed information regarding impacts to this TEC is provided in Section 5 of the Supporting Information Document.

Threatened Fauna

It is estimated that up to 130 potential breeding trees for Carnaby's Black Cockatoo will be cleared as a result of the proposed action. No known nesting trees (those that show evidence of use by Carnaby's Black Cockatoo) or trees with hollows suitable for use by the species will be cleared.

It is estimated that approximately 30 ha of Low Quality habitat is required to be cleared for the proposed action. Inspection of recent aerial photography for the wider area suggests that approximately 32,590 ha of suitable habitat occurs within 15 km of the proposed action. Based on this assessment, the area of habitat impacted by the proposed action is less than 0.1% of potential suitable habitat within 15 km of any one section that makes up the proposed action.

Further detailed information regarding impacts to black cockatoos is provided in Section 5 of the Supporting Information Document.

3.1 (e) Listed migratory species

Description

There is the potential for terrestrial migratory bird species such as the Fork-tailed Swift (*Apus pacificus*), Eastern Great Egret (*Ardea modesta*), Cattle Egret (*Ardea ibis*), Common Sandpiper (*Tringa hypoleucos*) and the Rainbow Bee-eater (*Merops ornatus*) to transit or forage in the area. Several Rainbow Bee-eaters were observed in remnant native vegetation adjacent to the Pithara section

Nature and extent of likely impact

No significant impacts on any migratory species are expected as a result of the implementation of the proposed action.

The Fork-tailed Swift is almost exclusively aerial and found to occur in the majority of Australia over inland plains however; this species does not breed in Australia (Department of the Environment, 2016a). The species may potentially fly and forage over the proposed action area however, it is unlikely that this species will exclusively use habitat within the proposed Approval Boundary and any impacts will be negligible.

The Rainbow Bee-eater is a common and widespread bird found to inhabit the majority of Australia (Department of the Environment, 2016b). The species may utilise habitat within the Approval Boundary

for the proposed action area however, any impacts are expected to be minor due to the limited amount of disturbance to preferred habitat required and presence of additional habitat within the local area.

The Eastern Great Egret and Cattle Egret are known to use a variety of habitats including swamps and marshes; margins of rivers and lakes; damp or flooded grasslands, pastures or agricultural lands, salt pans and salt lakes; salt marshes; estuarine mudflats, and temperate grasslands (Department of the Environment, 2016c, 2016d) while the Common Sandpiper uses a range of coastal and some inland wetlands (Department of the Environment, 2016e). These habitats will not be significantly impacted as a result of the proposed action.

Table 5-6 of the Supporting Information Document provides an assessment against the significant impact criteria for Migratory species.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

The proposed action does not occur within a Commonwealth marine area.

Nature and extent of likely impact

N/A

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

The proposed action does not occur on Commonwealth land.

Nature and extent of likely impact

N/A

3.1 (h) The Great Barrier Reef Marine Park

Description

The proposed action does not occur within the Great Barrier Reef Marine Park.

Nature and extent of likely impact

N/A

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

The proposed action is not related to a coal seam gas or large coal mining development.

Nature and extent of likely impact

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	Is the proposed action a nuclear action?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Other important features of the environment

3.3 (a) Flora and fauna

Flora

The desktop and literature review identified a total of 126 conservation significant flora species likely to occur in the vicinity of the Approval Boundary for the proposed action, of which 23 are listed as Threatened under the EPBC Act and 35 species are listed under the Wildlife Conservation Act 1950 (WC Act) (including all of the EPBC Act listed species) (Phoenix Environmental Services, 2015; 2016).

A further 91 species are listed as Priority flora by Department of Parks and Wildlife (DPaW) (17 Priority 1, 12 Priority 2, 48 Priority 3 and 14 Priority 4).

The field surveys undertaken by Phoenix (2015; 2016) did not record the presence of any flora species listed under the EPBC Act or WC Act within the Approval Boundary for the proposed action. Known locations of *Eremophila pinnatifida* were visited but the species was not able to be located, suggesting it was no longer present at these locations. Eight flora species listed on the DPaW Priority Flora list were recorded, as detailed in Table 4-1 and shown on Figure 4-1 of the Supporting Information Document.

Fauna

The desktop review identified nine conservation significant fauna species (excluding migratory species) that may occur in the vicinity of the Approval Boundary proposed action. A likelihood of occurrence assessment for these species and has been included in Table 4-5 of the Supporting Information Document.

Nine fauna habitats occur within the Approval Boundary for the proposed action as follows:

- cleared (agriculture, road, infrastructure);
- cleared and revegetated non-native woodland mosaic;
- shrubland (thicket);
- Jarrah, Marri, Wandoo and/or banksia woodland;
- York Gum, Wandoo, Salmon Gum, and/or Gimlet woodland;
- paperbark or sheoak woodland;
- succulent steppe/samphire;
- low heath/scrub shrubland; and
- succulent steppe/samphire with woodland or shrubland.

The majority of the Approval Boundary comprised cleared areas (paddocks, roads and other infrastructure) and cleared and revegetated woodlands. The habitats present varied in quality and suitability for fauna. Most of the native vegetation remnants were of low value as fauna habitat due to a poor or absent native understory, presence of weeds, presence of feral animals, narrowness of the existing habitat, fragmentation from other areas of native vegetation by cleared or highly degraded areas and the lack of native vegetation in the surrounding agricultural landscape (Phoenix Environmental Services, 2016).

3.3 (b) Hydrology, including water flows

The Approval Boundary for the proposed action lies within the Moore River Catchment and the Swan Avon Catchment (Mortlock sub catchment). Surface water flows are generally north and west to the Moore River North Branch, with the exception of the section between SLK 212 and SLK 240, where surface water flows are to the east and south to the Mortlock River North.

The Approval Boundary for the proposed action crosses a number of watercourses as follows:

- Walebing:
 - Yadgena Brook;
 - Numera Brook;
 - Dungaroo Creek; and
 - Indera Creek.
- Miling Bypass:
 - Cordoo Gully; and
 - Un-named tributaries of the Moore River.

- Pithara:
 - Un-named tributaries of Moore River; and
 - Unnamed watercourses that flow into the salt lake system to the east of Pithara and ultimately to the Mortlock Creek.
- Dalwallinu to Wubin
 - No significant crossings. Some drains and overland flows that do not drain to a specific feature.

Groundwater is generally within fractured rock aquifers though surficial aquifers may be found in association with paleochannels or major rivers and salt lake chains (Department of Water, 2016).

3.3 (c) Soil and Vegetation characteristics

Soils

The Approval Boundary for the proposed action lies within the Katanning and Merredin subregions of the Avon Wheatbelt bioregion.

The Merredin subregion is an ancient peneplain with low relief, gently undulating landscape. There is no connected drainage; salt lake chains occur as remnants of ancient drainage systems that now only function in very wet years. Lateritic uplands are dominated by yellow sandplain (Beecham, 2001a). The Katanning subregion is the erosional surface of gently undulating rises to low hills with abrupt breakaways. Colluvial processes are active and soil is formed in colluvium or in-situ weathered rock (Beecham, 2001b)

Vegetation

Vegetation of the Approval Boundary for the proposed action comprises 18 vegetation associations, as detailed in Section 4.3 and Figure 4.3 of the Supporting Information Document. Woodlands and shrublands are the most prevalent. Cleared areas (paddocks, roads, towns and other infrastructure) accounted for over 50% of the Approval Boundary. Vegetation condition ranged from completely degraded to pristine, with areas of excellent and pristine vegetation comprising less than 1% of the Approval boundary each.

3.3 (d) Outstanding natural features

There are no outstanding natural features in the proposed action area.

3.3 (e) Remnant native vegetation

Of the 19 mapped vegetation units, 15 are considered to be “underrepresented” vegetation as their current extent is less than 30% of the pre-European extent. A maximum of 68.5 ha of native vegetation will be cleared for the proposed action, of which 59.5 ha is underrepresented.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The majority of the Approval Boundary is gently undulating with heights ranging between 260 m Australian Height Datum (AHD) at Miling to 370 m AHD at Wubin.

3.3 (g) Current state of the environment

The majority of the land within the proposed Approval Boundary is cleared paddocks and road reserve. The native vegetation present within the proposed Approval Boundary ranged from completely degraded to some small areas of pristine vegetation. Areas recorded as cleared and planted within the proposed Approval Boundary are considered completely degraded to degraded as it was evident that in the past they had been completely cleared or virtually completely cleared with

the subsequent loss of natural values (refer to Section 4.3.1.6 of the Supprotign Information Document).

The Dalwallinu CSBP depot is located at Lot 563, Clinch Road, Dalwallinu and is classified as a potentially contaminated site (investigation required) in accordance with the *Contaminated Sites Act 2003*.

The potential for Acid Sulfate Soils (ASS) to occur has been assessed as low to extremely low for the majority of the proposed action, however a small portion of the Miling Bypass traverses an area of high risk. The M2W team has undertaken testing of this area which found that the soils are neither actually acid forming nor potentially acid forming.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

A search conducted using the EPBC Protected Matters Search Tool identified that no Commonwealth, World Heritage Sites, or National Heritage Sites were listed within the Approval Boundary for the proposed action.

A number of building and facilities within the towns along the GNH are recognised as having heritage values and are listed on local shire municipal heritage lists. There are also a number of other sites between the towns with heritage values related to their use by the original settlers of the area, as stopping points for travellers, or as significant travelling routes (Table 1).

Table 1: Places of Heritage Value

Section	Place Name	Listing
Walebing	Yadgeno Farm	Municipal Inventory
	Site of Walebing Hall	Municipal Inventory
	Site of Aboriginal Camp	Municipal Inventory
	Walebing Farm Buildings (Walebing Homestead)	State Heritage Register
	Indarrie School - Site No 2	Municipal Inventory
	Site of Bindy Bindy Farm & John Joyce's gravesite	Municipal Inventory
Miling Bypass	Original Miling recreation ground	Municipal Inventory
Pithara	Pithara Hall and Supper Room	State Heritage Register
	Western Australian Bank and Quarters (fmr)	Municipal Inventory
	P & K Trading Company (Pithara Farmer's Cooperative)	Municipal Inventory
Dalwallinu to Wubin	Wubin Wheatbin (frm)	State Heritage Register

3.3 (i) Indigenous heritage values

A review of the Department of Aboriginal Affairs (DAA) Aboriginal Heritage Inquiry System (AHIS) database identified two locations to the west of the Pithara section (Site ID: 4,527; Artefacts, scatter and Site ID: 4528; Artefacts, scatter). These sites are classified as "stored data/not a site" in the AHIS and archaeological and ethnographic surveys of these areas with the Traditional Owners failed to find any artefacts.

The Walebing Reserve (Reserve 248; Lot 4310) is recognised as having a high level of significance to the Traditional Owners due to its historic use as a camp ground. There are two known burial sites listed on the AHIS under the single site ID 5881.

3.3 (j) Other important or unique values of the environment

Nugadong Nature Reserve (Class A) borders the Approval Boundary in the Dalwallinu to Wubin section, between SLK 241.32 and SLK 242.17. No construction activities will be undertaken in this reserve.

A search of the WA Environmental Offsets Register did not identify any environmental offset areas occurring within the Approval Boundary or in close proximity. There are two Environmentally Sensitive Areas (ESAs) located within or adjacent to the Approval Boundary. The first is approximately 110 m north of the intersection of Johnston Street and the GNH. The second ESA is alongside the GNH at approximately SLK 240.09. Both ESAs are associated with the Threatened flora species *Eremophila pinnatifida*. Both locations were visited during the Phoenix (2016) surveys but the species was not located at either ESA. It is therefore assumed that this species is no longer present at these locations.

The Dalwallinu to Wubin section is partially within the eastern boundary of the Buntine-Marchagee Recovery Catchment. The main threat to the biodiversity of the wetlands within the catchment is identified as changes in landscape scale hydrological processes (Department of Parks and Wildlife, 2014). The Approval Boundary does not intersect any of the wetlands protected by the recovery catchment and the works required are unlikely to result in landscape scale changes to hydrological processes.

The Approval Boundary does not intersect any wetlands identified as having either a High or Intermediate conservation significance as defined by the Stage 1 assessment of the wetlands of the Wheatbelt Natural Resource Management region (Jones et al., 2008).

The Approval Boundary also passes through a number of other Crown reserves that have been set aside for purposes other than conservation. These are:

- Crown Reserve 248 at the intersection of GNH and Midlands Road. This reserve is managed by the Department of Water for the purpose of water supply;
- Crown Reserve 44484 on the northern side of the town of Miling is managed by the Shire of Moora and set aside for the purpose of parkland; and
- Crown Reserves 24671 and 17626, south of Pithara townsite, are under the management authority of the Minister for Water and Department of Regional Development respectively and managed for the purposes of water supply.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

Land along the preferred alignment is generally freehold land owned by a number of different land owners. The exceptions are areas of Crown Land, to which Native Title may apply. An approximately 60 m wide corridor of land surrounding the alignment will ultimately be acquired by Main Roads from the individual landowners and transferred from freehold land to road reserve. Refer to Section 2.2 of the Supporting Information Document for further details in relation to tenure.

3.3 (l) Existing land/marine uses of area

The major existing land uses are road/transport and horticultural/agricultural/farming land use.

3.3 (m) Any proposed land/marine uses of area

There are no additional proposed land uses of the area.

4 Environmental outcomes

As described in Sections 4 and 5 of the Supporting Information Document , the proposed action is likely to result in:

- the removal of up to 130 potential breeding trees (>500mm diameter at breast height). No known nesting trees or trees with hollows suitable for use by Carnaby's Black cockatoo will be removed; and
- clearing of up to 30 ha of "Low Value" habitat for Carnaby's Black Cockatoo and up to 13 ha of the critically endangered Eucalypt Woodlands of the Western Australian Wheatbelt ecological community.

The extent of clearing has been identified with a high degree of accuracy and reliability through the detailed road design process. The majority of sections that comprise the proposed action have progressed to 15% level of design or higher.

The extent of habitat for Black Cockatoos and location of potential breeding trees has been established through the baseline survey undertaken by Phoenix and detailed in the survey report (Phoenix Environmental Services, 2016) provided in Appendix B of the Supporting Information Document. Outside of the area covered by the baseline survey, the extent of habitat for Black Cockatoo has not been extensively studied. Estimates of regional extent (habitat within 15 km of the Approval Boundary) have been prepared using existing spatial data defining areas of remnant native vegetation and intersecting this with National Vegetation Information System (NVIS) data for the vegetation groups of the area.

The Proponent has worked with specialists to design a project that, where possible, avoids and then minimises impacts to Carnaby's Black Cockatoo.

Based on the existing levels of information, and the conservation objectives identified in the Carnaby's Black Cockatoo Recovery Plan (DPaW, 2013) and conservation summaries (Garnett et al., 2011; Patrick and Brown, 2001) for the species, the following environmental outcome is suggested in relation to the proposed action:

- No nett loss of foraging habitat for Carnaby's Black Cockatoo.

As the listing of the Eucalypt Woodlands of the Western Australian Wheatbelt occurred in November 2015, The extent of this ecological community has been determined through analysis of the quadrats surveyed in 2015 and 2016 and assessment against the diagnostic characteristics defined in the approved conservation advice (Phoenix 2015; 2016). It is proposed to undertake additional surveys in Spring 2016 to further delineate the occurrence of the ecological community within the Approval Boundary.

Based on the existing levels of information, and the conservation actions identified in the approved conservation advice for the ecological community (Threatened Species Scientific Committee, 2015), the following environmental outcomes are suggested in relation to the proposed action:

- Increase the extent of the ecological community present in the Western Australian conservation estate through offsetting.
- Improvement in the condition of the ecological community adjacent to the area of disturbance.

Baseline data in relation to species location(s), population size, habitat/vegetation quality, vegetation type and location of hollows suitable for use as nesting sites has been provided by the ecological surveys undertaken in 2014 and 2015 (Phoenix, 2015; 2016). Accurate locations for hollow bearing trees will be confirmed prior to finalisation of the design and included on design drawings and

additional surveyes to confirm the extent of the Ecualypt Woodlands of the Western Australian Wheatbelt ecological community undertaken in Spring 2016. Milestones, performance criteria, and monitoring and adaptive management will be defined as part of the landscape and revegetation plan developed for the action during the 100% design stage.

5 Measures to avoid or reduce impacts

Impact Avoidance

The initial stages of design took into consideration the location of potential breeding trees and avoided these where practicable. It is not practicable to avoid all potential breeding trees due to other project constraints such as links to existing and proposed roads, road geometry, and the locations of significant heritage sites, existing houses and other structures. The proposed alignment has been selected to minimise impacts to flora and fauna while achieving the project objectives of improved safety and geometry.

In comparison with the proposed action, if upgrades and improvement works were undertaken along the existing alignment (based on a 50 m wide disturbance footprint), up to 45 ha of suitable habitat and 317 potential breeding trees would be cleared, including four known nesting trees and four trees containing hollows suitable for use by Carnaby's Black Cockatoo. By constructing the proposed offline alignments as described in Section 2, the amount of Carnaby's Black Cockatoo habitat cleared has been reduced by 33%. Additionally, there is a 59% reduction in the number of potential breeding trees to be removed, 100% reduction in the number of known nesting trees to be removed, and a 100% reduction in the number of trees with hollows suitable for use by Carnaby's Black Cockatoo.

Environmental Management

Table 2 outlines the management measures proposed to avoid, minimise or mitigate potential impacts to Carnaby's Black Cockatoo. While specific measures have not been proposed for Migratory species that may occur within the proposed Approval Boundary, the measures outlined below will assist in minimising potential impacts to these species. The specific management measures outlined below will be included in the Construction Environmental Management Plan.

Table 2: Proposed Management Measures

Proposed Management Measure	Effectiveness of Measure	Timeframe
Surveys will be undertaken in Spring 2016 to delineate the occurrence of the Eucalypt Woodlands of the Western Australian Wheatbelt TEC within the Approval Boundary.	Provides certainty as to the extent of the TEC within the Approval Boundary and the area required to be cleared. The results of the survey can also be used to identify No Go areas.	Spring 2016 and prior to clearing
Clearing of the Eucalypt Woodlands within areas identified as the Western Australian Wheatbelt TEC will be minimised to that required for a safe construction environment. Areas beyond this will be marked as "no-go" zones on construction drawings and on site	Reduces the risk of loss of Eucalypt Woodlands of the Western Australian Wheatbelt beyond that described in this referral.	All site based activities
Trees within the Approvals Boundary known to contain hollows suitable for use by Carnaby's Black Cockatoo that are not within the proposed disturbance footprint will not be cleared. These trees will be identified as "no-go" zones in the Construction Environmental Management Plan (CEMP) and Construction Drawings.	Hollow bearing trees showing evidence of previous used by Carnaby's Black Cockatoo for breeding are retained and available or use in future breeding seasons. Additional hollow bearing trees identified as suitable for use by the species are also retained. This will minimise potential impacts to breeding success.	Design and construction

Proposed Management Measure	Effectiveness of Measure	Timeframe
<p>The area to be cleared will be accurately pegged/marked on the ground, unless a pegless machine control technology is proposed and approved for use by Main Roads.</p> <p>Where practicable, additional areas required for construction such as laydown areas, stockpile areas and vehicle turn around will be located in cleared areas or areas of non-native vegetation.</p>	<p>Reduces the risk of loss of potential breeding trees and foraging habitat beyond that described in this referral.</p>	<p>Pre-construction, construction, and site rehabilitation/revegetation</p>
<p>Weed and hygiene control measures will be in place during construction. These will include verifying all plant and machinery as clean prior to arrival at site and segregating stripped topsoil according to its weed and disease status.</p>	<p>Hygiene control measures will minimise the potential for spread/introduction of weeds and disease and land degradation associated with this.</p>	<p>Pre-construction, construction, and site rehabilitation/revegetation</p>
<p>During construction, vehicle speed on site will be limited to reduce dust lift off and the risk of vehicle-fauna collisions. Water carts will also be used during construction to reduce dust lift off.</p>	<p>Limiting the speed of vehicles (including mobile plant) will reduce the likelihood and severity of collisions between vehicles/plant and fauna</p>	<p>All site based activities</p>
<p>It is considered unlikely that construction activities will result in injury or death to Carnaby's Black Cockatoo. Any birds injured or killed as a result of construction or rehabilitation/revegetation activities will be reported to the site superintendent (or delegate) who shall determine the necessary steps to be taken, such as reporting deaths to the appropriate regulatory authorities or arranging for transfer of injured animals to wildlife carers.</p> <p>A list of local wildlife rescue organisations and carers will be maintained on site.</p>	<p>Rescue of injured birds will assist in reducing the likelihood of population decline while notifying regulators of Carnaby's Black Cockatoo deaths will assist with tracking population dynamics and overall species statistics.</p>	<p>Construction, and site rehabilitation/revegetation</p>
<p>Topsoil will be stripped and stockpiled separately to vegetation. Where required, topsoil and vegetation stockpiles will be segregated according to their weed status, as per the Topsoil Management Plan for the proposed action.</p>	<p>Reduces the risk of loss of potential breeding trees and foraging habitat beyond that described in this referral.</p>	<p>Construction, and site rehabilitation/revegetation</p>

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

X	No, complete section 6.2
	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

Based on the assessment presented within the Supporting Information document and this referral form, the proposed action is considered unlikely to result in significant impacts to MNES, namely Listed Threatened Species and Ecological Communities.

The proposed action will impact upon suitable foraging and breeding habitat for Carnaby's Black Cockatoo and the Critically Endangered Eucalypt Woodlands of the Western Australian Wheatbelt ecological community. An assessment of the proposed action against the criteria outlined in the EPBC Act Referral Guideline for Three Species of Black Cockatoo and the Significance Impact Guidelines 1.1 was undertaken. This assessment found it is unlikely that the proposed action will result in a significant impact to Carnaby's Black Cockatoo or the Eucalypt Woodlands of the Western Australian Wheatbelt as:

- for the Eucalypt Woodlands of the Western Australian Wheatbelt TEC:
 - the amount of clearing required in vegetation potentially representative of the TEC is estimated at 0.002% of the current total extent of this TEC and 0.01% of the local regional extent mapped by DPaW;
 - the required clearing and works to be undertaken will not result in increased fragmentation or degradation of the TEC, cause a substantial change in the species composition of an occurrence or modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for the TECs survival; and
 - the management measures proposed in Section 5 will further reduce the risk of impacts.
- for Carnaby's Black Cockatoo:
 - no known nesting trees for Carnaby's Black Cockatoo will be cleared;
 - vegetation to be cleared is not quality foraging habitat for Carnaby's Black Cockatoo;
 - approximately 32,590 ha of potentially suitable breeding habitat occurs within 15 km of the Approval Boundary for the proposed action;
 - the clearing required (30 ha of suitable habitat) equates to less than 0.1% of the potentially suitable habitat present within 15 km of the proposed action; and
 - the management measures proposed in Section 5 will further reduce the risk of impacts.

6.3 Proposed action IS a controlled action

Matters likely to be impacted

<input type="checkbox"/>	World Heritage values (sections 12 and 15A)
<input type="checkbox"/>	National Heritage places (sections 15B and 15C)
<input type="checkbox"/>	Wetlands of international importance (sections 16 and 17B)
<input type="checkbox"/>	Listed threatened species and communities (sections 18 and 18A)
<input type="checkbox"/>	Listed migratory species (sections 20 and 20A)
<input type="checkbox"/>	Protection of the environment from nuclear actions (sections 21 and 22A)
<input type="checkbox"/>	Commonwealth marine environment (sections 23 and 24A)
<input type="checkbox"/>	Great Barrier Reef Marine Park (sections 24B and 24C)
<input type="checkbox"/>	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
<input type="checkbox"/>	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
<input type="checkbox"/>	Protection of the environment from Commonwealth actions (section 28)
<input type="checkbox"/>	Commonwealth Heritage places overseas (sections 27B and 27C)

7 Environmental record of the responsible party

	Yes	No
<p>7.1 Does the party taking the action have a satisfactory record of responsible environmental management?</p> <p>Provide details Main Roads has successfully constructed a number of new and upgraded road infrastructure projects in Western Australia while demonstrating responsible environmental management. These include:</p> <ul style="list-style-type: none"> • Bindi Bindi to Lyons East Road, Great Northern Highway Upgrade; • Batty Bog Road to Walebing, Great Northern Highway Upgrade; • Gateway WA - Perth Airport and Freight Access; • Bunbury Port Access Road; and • New Perth to Bunbury Highway. 	X	
<p>7.2 Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</p> <p>If yes, provide details</p>		X
<p>7.3 If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</p> <p>If yes, provide details of environmental policy and planning framework</p> <p>Main Roads has an ISO 14001 accredited Environmental Management System (EMS). This includes an Environment Policy and Sustainability Policy. The Main Roads EMS is applied to all projects and contractors are required to comply with the requirements of the EMS.</p>	X	

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

X

Provide name of proposal and EPBC reference number (if known)

Main Roads has referred over 30 proposals under the EPBC Act since January 2013. The 10 most recent referrals are:

- Toodyay Road Widening and Upgrade (EPBC 2016/7665)
- Narrogin Link Road Stage 3 - North Extension (EPBC 2016/7664)
- Great Northern Highway Muchea to Wubin Upgrade Stage 2 - Muchea North (EPBC 2016/7656)
- Dieback eradication trial, Jarrahdale State Forest (EPBC 2016/7633)
- Wanneroo Road Duplication (EPBC 2015/7626)
- Donnybrook Kojonup Road (M013) widening and associated works (EPBC 2015/7605)
- Albany Highway Gravel Pits (EPBC 2015/7615)
- West's gravel pit development, Cowaramup (EPBC 2015/7586)
- Muchea to Wubin upgrade stage 2 – Miling Straight (EPBC 2015/7584)
- Martagallup and Woogenellup Passing Lanes, Plantagenet Shire (EPBC 2015/7566)

8 Information sources and attachments

(For the information provided above)

8.1 References

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8.2 Reliability and date of information

The information sources used to inform this referral are both recent and reliable. Database searches and field surveys were undertaken in 2014 and 2015. Field surveys followed regulatory requirements set out in published guidance material.

Additional information was sourced from technical publications from recognised experts in the field of study.

8.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Walebing to Wubin EPBC Act Referral - Supporting Information
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Walebing to Wubin EPBC Act Referral - Supporting Information
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)		
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)	✓	Walebing to Wubin EPBC Act Referral - Supporting Information – Appendix B
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Walebing to Wubin EPBC Act Referral - Supporting Information
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

9 Contacts, signatures and declarations

Project title: Great Northern Highway: Muchea to Wubin Upgrade Project Stage 2 – Walebing to Wubin.

9.1 Person proposing to take action

1. Name and Title: Norm Fox
A/ Director Major Projects
2. Organisation (if applicable): Main Roads Western Australia
3. EPBC Referral Number (if known):
- 4: ACN / ABN (if applicable): 50 860 676 021
5. Postal address PO Box 6202
East Perth WA 6892
6. Telephone: 0418 958 828
7. Email: norman.fox@mainroads.wa.gov.au
8. Name of proposed proponent (if not the same person at item 1 above and if applicable):
9. ACN/ABN of proposed proponent (if not the same person named at item 1 above):

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

- I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:
- ☐ an individual; OR
 - ☐ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR
 - ☐ not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

- I would like to apply for a
- ☐ not applicable.

waiver of full or partial
fees under Schedule 1,
5.21A of the EPBC
Regulations. 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:

Declaration

I declare that to the best of my knowledge the information I have given on, or attached
to this form is complete, current and correct.

I understand that giving false or misleading information is a serious offence.

I agree to be the proponent for this action.

I declare that I am not taking the action on behalf of or for the benefit of any other
person or entity.

Signature



Date 27/7/16

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

Name Lisa Boulden

Title Associate Environmental Consultant

Organisation Jacobs Group (Australia) Pty Ltd

ACN / ABN (if applicable) 37 001 024 095

Postal address PO Box H615, Perth , WA, 6001

Telephone (08) 9469 4667

Email Lisa.Boulden@jacobs.com

Declaration

I declare that to the best of my knowledge the information I have given on, or attached
to this form is complete, current and correct.

I understand that giving false or misleading information is a serious offence.

Signature



Date 26/7/16