

Contract No. & Work Identifier:	CN12-EN01	Client Contract No.:	10/13	Date:	5/07/2018
Contract Title:	Bindoon Bypass				
То:	Julie Kennett				
Copies:	John Braid; Norm Fox				
From:	Lisa Boulden				
Subject:	EPBC 2017/8035 Bindoon Bypass – Request to Vary Proposed Action				

1. Background

Main Roads Western Australia (Main Roads) referred the Bindoon Bypass to the Department of the Environment and Energy (DoEE) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 1 September 2017. The proposed action as referred by Main Roads is to construct and operate the Bindoon Bypass, which is a new 48 kilometre (km) section of Great Northern Highway (GNH) within the Shires of Chittering and Gingin, WA. The new section of road will bypass the town of Bindoon and ultimately consist of a combination of four-lane dual carriageway, four-lane single carriageway and two-lane single carriageway. The Bindoon Bypass will divert from the existing GNH at the Chittering Roadhouse, run west of Bindoon turning to the east near Wannamal and re-join GNH between Hay Flat Road and Calingiri West Road.

DoEE considered the proposed action and determined it to be a Controlled Action on 29 January 2018 with assessment via Preliminary Documentation. The referral submission defined an application area around the proposed road alignment in order to provide flexibility and allow for minor changes to the alignment design to avoid or minimise environmental impacts.

As a result of baseline environmental surveys and stakeholder consultation conducted after September 2017, alternative alignments have been identified at six locations along the proposed Bindoon Bypass which result in the alignment now being outside of the referred application area and one which results in a reduced application. These revisions to the alignment have generally received greater landowner support than the initial alignment and in some cases have resulted directly from landowner requests. This consultation process has demonstrated a positive project outcome with improved landowner agreement for the proposed Bindoon Bypass.

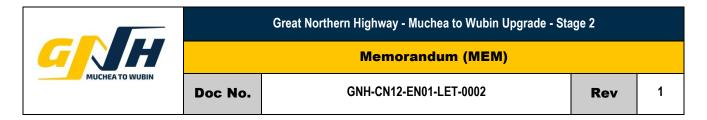
Main Roads has adopted these alignment changes to take forward into land acquisition and detailed design. As these alternative alignments are outside the application area, Main Roads is requesting a variation to the proposed action under Section 156 of the EPBC Act.

Figure 1 shows the current application area (referred to as the Development Envelope) that was submitted with the referral and an overview of the revised road alignment. As noted above, there are five locations where the revised alignment now extends beyond the referred application area:

- Southern Chittering realignment
- Teatree Road
- Wannamal wetland
- Calingiri Road
- Local road to address loss of access to M1465 and M1364 Cullalla Rd, Mooliabeenee
- Local road to address loss of access to Lot 37 Crest Hill Road, Mooliabeenee

These are the subject of this Section 43A submission. The revised application area (Development Envelope) is shown on **Figure 2**.

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A seventh proposed amendment to the application area is a reduction arising from greater design assurance in the vicinity of Lot M1465 Cullalla Rd, Mooliabeenee.

2. Description of the Variation

In most cases, the changes are a result of affected landowner and other stakeholder input. Concerns were expressed on the initial alignment on a variety of matters that include:

- The alignment severs land ownership such that large portions of properties become difficult to access, potentially impacting the economic viability of the property.
- Close proximity of the initial alignment to landowner residences, where realignment could substantially increase separation distance and improve amenity.
- Realignment offers more consolidated land parcels with a better outcome for future management.
- Landowner request for positioning of local roads.

In other cases, baseline environmental surveys have identified constraints within in the application area. The revised alignments proposed have been able to reduce environmental impacts in selected areas, allowing the design to be optimised for beneficial environmental outcomes.

The proposed change to the alignment, and therefore the application area, does not result in increased environmental impacts at any of the specified locations or for the Bindoon Bypass as a whole. Indeed, it is considered the proposed changes are likely to have a reduced environmental impact compared to the initial alignment. The following sections provide further details on the requested changes while the change to the Development Footprint and application area is summarised in **Table 1**.

Table 1: Variation to the Development Footprint

Project Design	Original Proposed Action (ha)	Revised Areas (ha)
Disturbance Footprint	650 ha	625 ha
Application Area (Development Envelope)	3,422 ha	3,407 ha

2.1 Southern Chittering Realignment

2.1.1 Description and Rationale

The original alignment referred to the DoEE required a series of curves along the proposed alignment in order to minimise native vegetation clearing and resulted in severance of Lot 9010 (owned by Odelon Pty Ltd). The zoning of this property is rural residential, and the resulting severance was likely to have negative impacts on the future development potential of the property.

The revised alignment (**Figure 3**) results in improved road geometry and road safety by providing a longer straight, as well as allowing a shorter interchange structure at the southern tie-in. It also avoids impacting two properties additional properties (Lot 61 and Lot 62 Great Northern Highway, Chittering).

2.1.2 Environmental Impacts of the Variation

Figure 3 shows that the original alignment traverses through land with more consolidated remnant vegetation blocks and a greater concentration of Black Cockatoo known nesting trees and potential breeding trees.

The original alignment would result in the clearing of one known nesting tree and four trees with hollows suitable for use by Black Cockatoos. The revised alignment avoids clearing of all known nesting trees but will result in the clearing of two trees with hollows suitable for use by Black Cockatoos (**Table 2**).



Overall, the revised alignment is considered to have a lower environmental impact than the alignment that was originally referred for this location.

Table 2 : Change in Impacts - Southern Chittering Realignment

MNES	Original Proposed Action	Requested Change	
Black Cockatoo Trees	1 hollow with evidence of use	0 hollows with evidence of use	
	4 hollows suitable for use		

2.2 Teatree Road

2.2.1 Description and Rationale

Current Main Roads road safety standards require secondary roads that cross highways do so with a "staggered T" treatment. The current alignment design implements this staggered T at Teatree Road by moving the western intersection to the southern boundary of Lot 1 Teatree Road, Bindoon. This avoided severance of the property, undesirable impacts to the wetland on the eastern side of the Bindoon Bypass and a known occurrence of the Banksia Orange Yellow Sands Priority Ecological Community (PEC) (also considered representative of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community (TEC)) on the western side.

Conversations with the landowner following the initial design period found that moving the intersection to the north and approximately midway through the property represented a better outcome for the landowner and would link in with future development plans for the property (**Figure 4**). The location of the intersection was selected to avoid areas of significant cut or fill, indicated by the white and red boxes on **Figure 4**, which would result in an unsafe intersection due to limited sight distance for vehicles at the intersection waiting to enter the highway. The revised location for the western Teatree Road intersection is at a neutral point between cut and fill, resulting in good sight distances for traffic entering the highway.

2.2.2 Environmental Impacts of the Variation

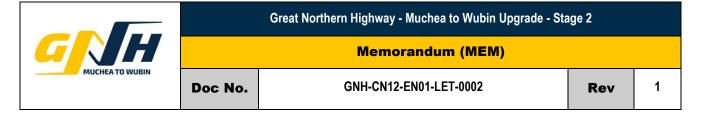
Lot 1 Teatree Road, Bindoon is mostly cleared. The proposed alignment for Teatree Road avoids all trees with hollows used by or suitable for Black Cockatoos (**Figure 4**). No Threatened or Priority flora have been recorded from this area and none of the vegetation has been identified as representative of a TEC. The original alignment for Teatree Road also traversed mostly cleared paddock, avoiding all trees with hollows used by or suitable for Black Cockatoos. There is no change in impacts for this location.

2.3 Wannamal Wetland

2.3.1 Description and Rationale

Main Roads is proposing to change the proposed crossing point of the Brockman River in order to reduce environmental and social impacts. The proposed alignment submitted with the referral had the Bindoon Bypass crossing the Brockman River at its narrowest point. This resulted in large cut and fill requirements, both in terms of length and height/depth, and a bridge height of approximately 13 m. This alignment also passed close to an occupied house (Lot 1 Bindoon-Moora Road, Wannamal) which would be isolated from the remainder of the property. The property would also be severed into two main portions, increasing the complexity of accessing the various portions of the property and ability to farm it as a single entity. The change to the proposed crossing point of the Brockman River is a result of consultations with affected landowners, which identified a number of concerns with the original alignment. A Multi Criteria Analysis (MCA) was undertaken to examine several alternative alignments (**Figure 5**):

White option - current alignment;



- Yellow option;
- · Red option;
- Green option; and
- Blue option proposed alignment.

The MCA considered a range of social, environmental, engineering, constructability and economic factors, scoring each option against these factors to determine the best performing option. The result of the MCA was that the Blue option was the best performing of the five options considered. This option is generally supported by the affected landowners.

The Blue option traverses lower ground through cleared farmland. It will not require the same extent of cut and fill as the White option and requires a much lower bridge across the Brockman River. As a result, the Blue option has a lower construction cost. The Blue option also reduces severance impacts to Lot 1 Bindoon-Moora Road, Wannamal and reduces amenity impacts (noise and visual) when compared to the White option.

The Blue option together with the White option were presented to Robert Huston (District Nature Conservation Program Coordinator - Perth Hills District, Department of Biodiversity, Conservation and Attractions (DBCA)) who did not have any concerns with the alignment of the Blue option or impacts on that portion of the wetland. He did note that DBCA would require any crossing be designed and constructed to avoid changes to water flows and retention times, which could increase salinity upstream of the crossing. Design requirements for the crossing will result in a structure that can comply with these requirements.

2.3.2 Environmental Impacts of the Variation

Ecological surveys undertaken in 2017 confirm that there are no Matters of National Environmental Significance (MNES) within the boundaries of the wetland. From aerial photography, it is estimated there are up to 15 isolated trees within the paddock which will require clearing. Additional survey is required to confirm if these trees contain hollows used by or suitable for use by Black Cockatoos. This additional survey is planned to be undertaken between July and October, in conjunction will follow-up target flora surveys in the area. **Table 3** details the change in impacts between the original proposed action and the requested change for this area.

Table 3: Change in Impacts - Wannamal Wetland Crossing

MNES	Original Proposed Action	Requested Change	
Black Cockatoo habitat	2.25 ha	1.05 ha	
Black Cockatoo Trees	1 hollow with evidence of use	0 hollows with evidence of use	
	8 hollows suitable for use	6 hollows suitable for use*	

^{*} additional survey is required to confirm if isolated trees in the paddock contain hollows used by or suitable for use by Black Cockatoos.

2.4 Calingiri Road

2.4.1 Description and Rationale

The current northern extent of the application area terminates at the GNH/Calingiri road intersection. Since the submittal of the referral, there has been a minor northern extension of the design. This change was made in order to better consolidate highway planning to a more logical boundary (the point where the Bindoon Bypass re-ioins the existing GNH). Other benefits are:

- avoiding duplication of engagement and land acquisition processes with affected owners, in particular the owner of Lot 3246 Great Northern Highway, Wannamal; and
- relocation of a truck stopping bay to a location with less environmental impact.

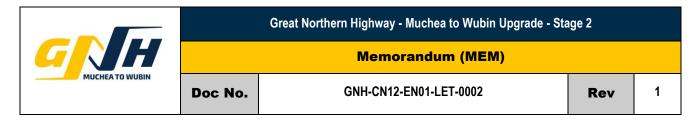


Figure 6 shows the upgraded highway to the west of the existing GNH re-joining at a point approximately 1.6 km north of the Calingiri Road intersection. **Figure 6** shows the alignment extending beyond the current application area, this is to allow connection to the future upgrade of the Calingiri section of the GNH. This section is currently in early planning phases and works in this area will be subject to a separate environmental assessment and approval process.

Including this small extension to the application area into this stage of the project allows for the relocation of a truck stopping bay to an area with lower environmental impact and better safety outcomes. The current design results in the existing truck stopping bay (located on the eastern side of the highway approximately 250 m south of the Calingiri Road intersection) being partially located on a curve. Sight distances for traffic entering GNH from the stopping bay and for traffic traveling north on GNH are limited and non-compliant with the safety requirements for the upgraded GNH. The existing truck stopping bay is also not of an appropriate size for the expected level of future use. In order for the existing truck stopping bay to meet safety and capacity requirements, it would need to be extended north. This in turn would adversely impact two known nesting hollows for Black Cockatoos and a hollow suitable for use by the species along with the surrounding native vegetation. The alternative location for the truck stopping bay (**Figure 7**) is along a straight section of GNH, in a cleared area and does not impact any cockatoo nesting trees.

2.4.2 Environmental Impacts of the Variation

Figure 6 and **Figure 7** show that the proposed alignment and truck stopping bay are largely located in cleared paddock to the west of the existing road. There is very little clearing of native vegetation required at this location. Approximately 0.2 ha of Black Cockatoo habitat is likely to be cleared.

No Threatened or Priority flora or TECs have been recorded from this area. One nesting hollow for Black Cockatoos has been recorded within the current road reserve. This tree will not be impacted by the proposed works. In comparison, upgrading the existing truck stopping bay requires the removal of two trees with hollows used by Black Cockatoos.

2.5 Local road to address loss of access to M1465 and M1364 Cullalla Rd, Mooliabeenee

2.5.1 Description and Rationale

Main Roads has a requirement to provide safe access to all properties impacted by road construction including any severed portions. The proposed Bindoon Bypass will result in the severing of Lots M1465 and M1364 Cullalla Road, Mooliabeenee and loss of access to the eastern portions of these properties (**Figure 8**). To reinstate access to these properties a new access road is proposed from Barn Road, through Lot 1 Barn Road, Mooliabeenee and using an existing local road reserve (**Figure 9**). It is anticipated that detailed design will be able to avoid impacts to any significant trees for this access road.

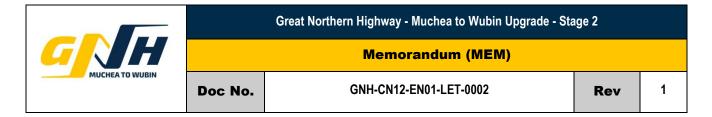
2.5.2 Environmental Impacts of the Variation

Based on the concept design, up to six trees may need to be cleared for the access road. Additional survey will be undertaken to determine if any of these trees contain hollows suitable for or used by Black Cockatoos. If any of these trees are identified to contain hollows used by or suitable for Black Cockatoos, the alignment will be revised during detailed design to avoid the need to clear these trees.

2.6 Local road to address loss of access to Lot 37 Crest Hill Road, Mooliabeenee

2.6.1 Description and Rationale

The current design for the local access road to Lot 37 Crest Hill Road, Mooliabeenee has the road situated along the boundary with the adjacent Bindoon Rifle Range. Main Roads has recently become aware that this



location may bring the road into conflict with the 'danger zone template' of the rifle range. If the 'danger zone template' is impacted by the public road, it may not be acceptable for the maintenance of the safe operation of the rifle range, and has the potential to impact ongoing use of the range for this purpose. Accordingly, Main Roads is reviewing options that consider the needs of the rifle range, including potentially changing the location of the local access road, introduction of safety gates, and signage on the local road for periods of rifle range operation. The change to the development envelope at this location allows for relocation of all or part of the proposed local road to facilitate a workable solution with consultation and input from all affected parties (**Figure 10**).

2.6.2 Environmental Significance

The proposed change to the application area encompasses largely cleared paddock with isolated mature trees. These trees will be surveyed to identify if they contain hollows used by or suitable for use by Black Cockatoos. Any change to the location of the local access road will be designed to avoid these trees. No additional impacts are anticipated as a result of this change.

3. Character of the Proposal

The short description of the proposed action as provided in the original referral is to "to construct a bypass around the town of Bindoon that departs the Great Northern Highway at the Chittering Roadhouse and ties back into the Great Northern Highway near Calingiri West Road, in the Bindoon region, Western Australia". The detailed description provided in the original referral included the following scope of work:

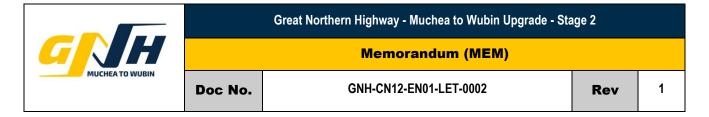
- construction of approximately 33 km of dual carriage way between Chittering Roadhouse and the Bindoon-Moora Road intersection;
- construction of approximately 15 km of single carriageway from the Bindoon-Moora Road intersection to Calingiri West Road intersection;
- new intersections to connect the Bindoon Bypass to existing local roads;
- seven northbound and six southbound overtaking lanes;
- bridge crossing over the Brockman River;
- installation of culverts for minor creek crossings;
- relocation and/or reinstatement of driveways and other works as agreed with individual landowners;
- one northbound and one southbound roadside stopping (rest) areas;
- · local service roads to provide controlled access to properties adjacent to the new highway;

Main Roads considers that the character of the variation is substantially the same as the character of the original proposal and that the additional works are encompassed by both the short description of "to construct a bypass around the town of Bindoon" as well as the more detailed scope of work.

4. Summary and Conclusions

As a result of baseline environmental surveys and stakeholder consultation undertaken following referral of the Bindoon Bypass to DoEE, Main Roads is proposing to alter the alignment in six locations. The revised alignment requires changes to the application area that was submitted as part of the referral. The new application area is shown on **Figure 2** and detailed in **Table 1**.

No additional significant impacts are anticipated due to the requested changes. An additional 0.2 ha of Black Cockatoo habitat will be cleared due to the extension of the application area at Calingiri Road, however this is



counterbalanced by a 0.2 ha reduction in clearing due to the change in alignment at the Wannamal wetland area.

Impacts to Black Cockatoo habitat trees will be reduced in the areas of the revised alignments with the proposal avoiding clearing four trees with hollows suitable for and four trees with hollows showing evidence of use by Black Cockatoos. Additional survey of isolated trees within paddock areas is required to confirm these impacts, though it is expected that any new hollows recorded can be avoided during the detailed design phase.

There is no change to the area of Banksia Woodlands of the Swan Coastal Plain TEC expected to be cleared.

5. Contacts

Should you require any additional information in relation to this change request, the contacts for the proposal are:

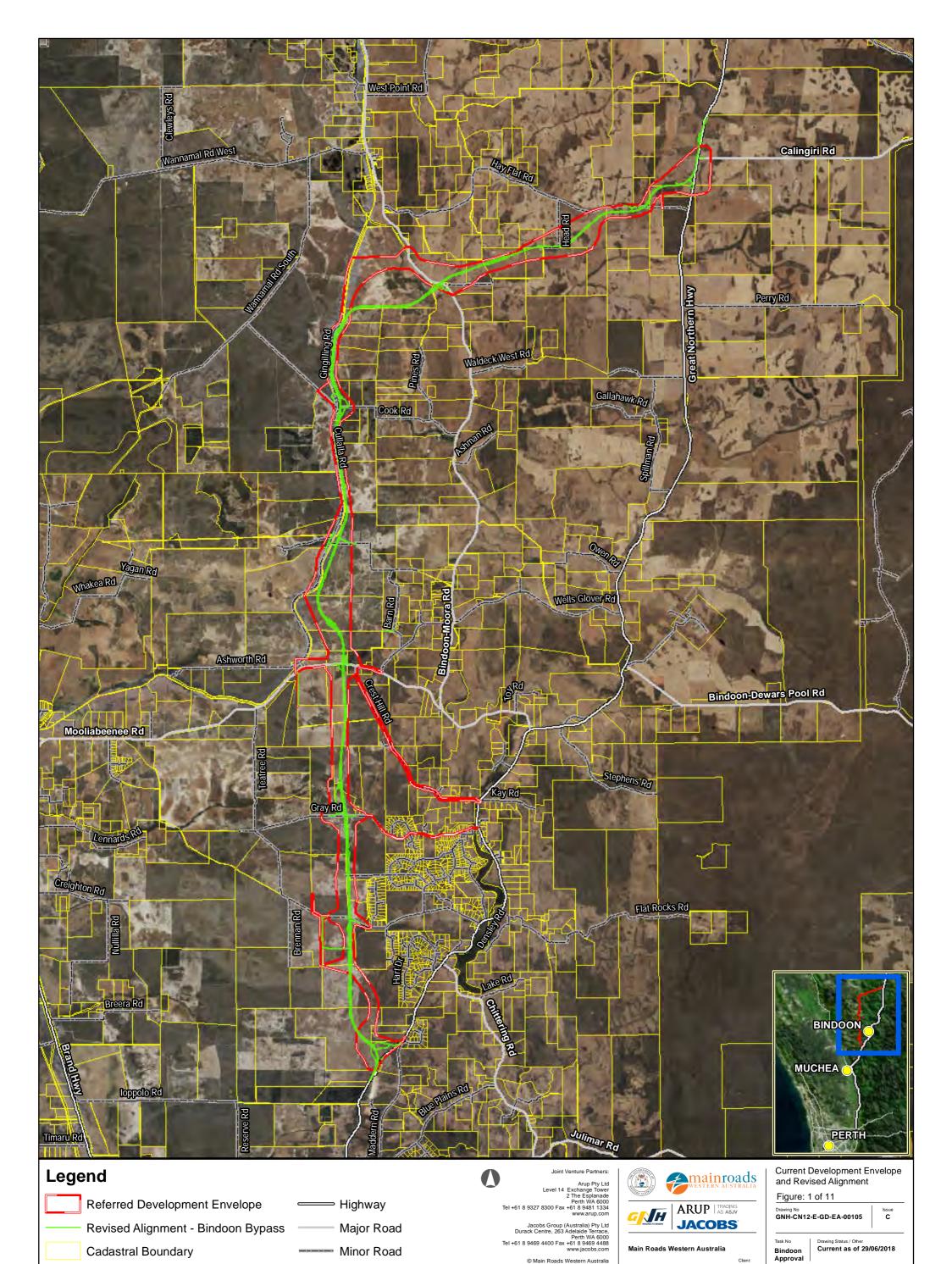
 Lisa Boulden - Senior Environmental Advisor - Great Northern Highway | Muchea to Wubin Upgrade Stage 2 Project

Email: Lisa.Boulden@jacobs.com Telephone: (08) 9469 4667

John Braid - Principal Environmental Advisor - Main Roads WA

Email: john.braid@mainroads.wa.gov.au

Telephone: (08) 9323 6183



Great Northern Highway Bindoon Bypass

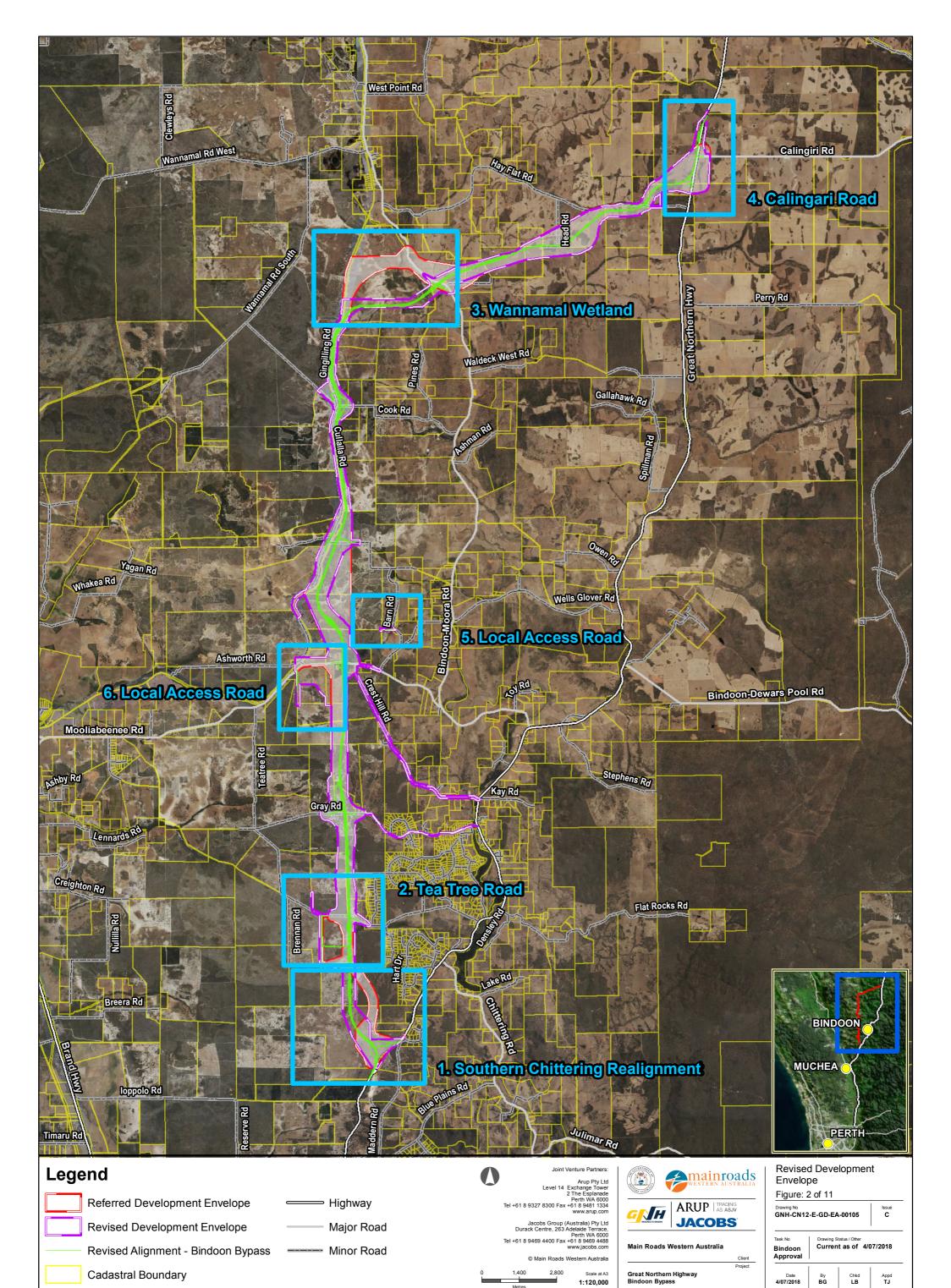
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Scale at A3

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Metres Coordinate System: GDA 1994 MGA Zone 50

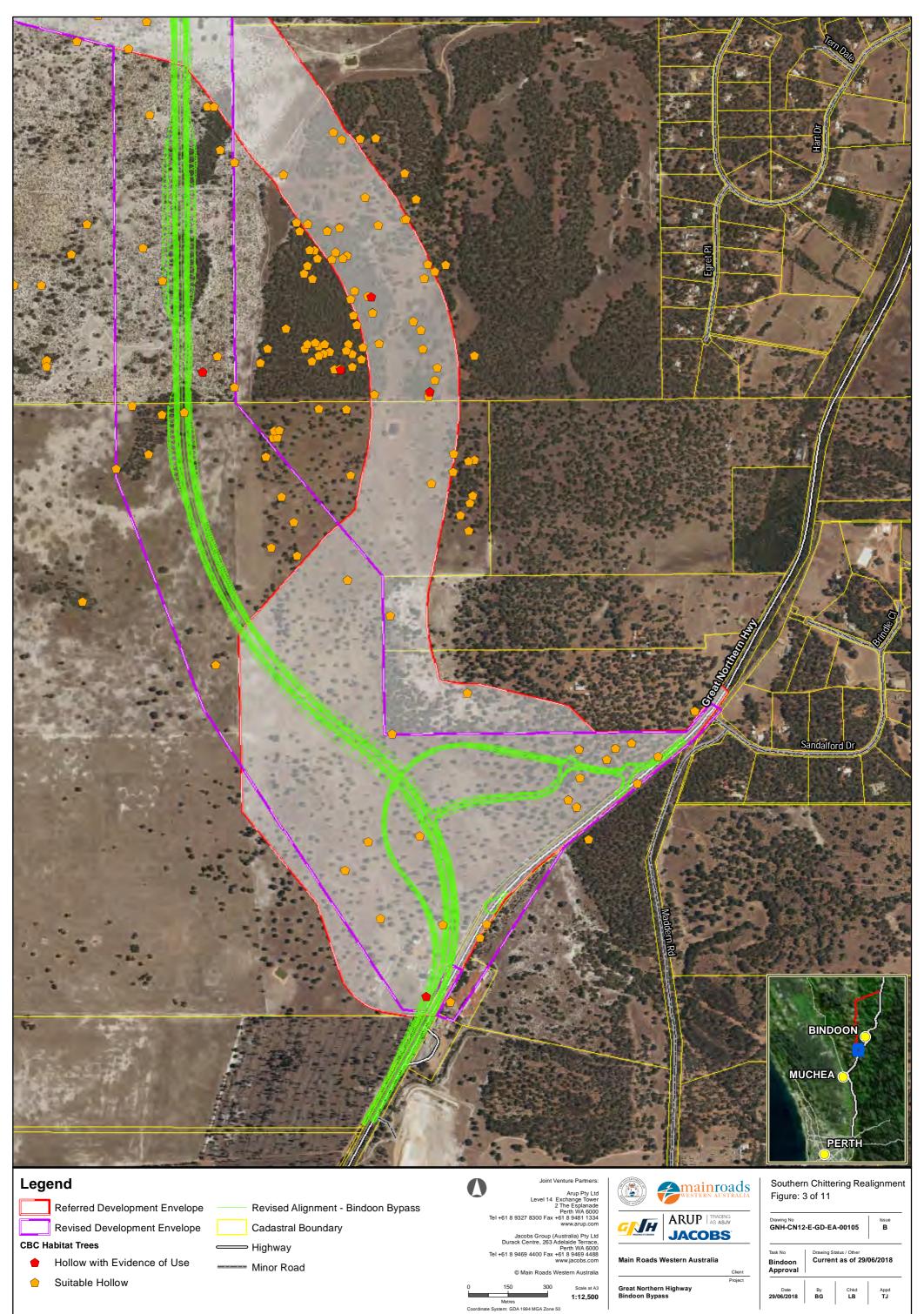


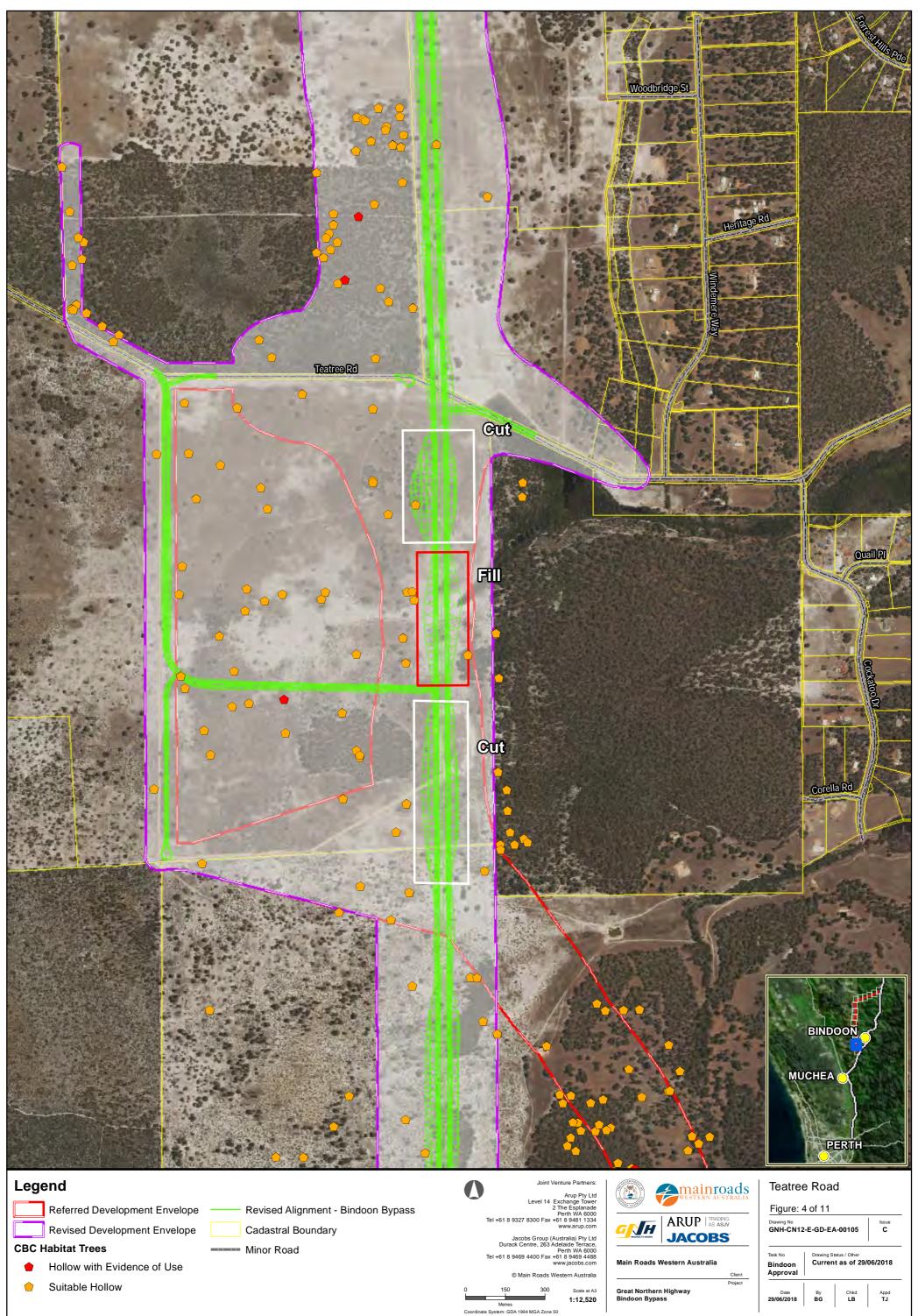


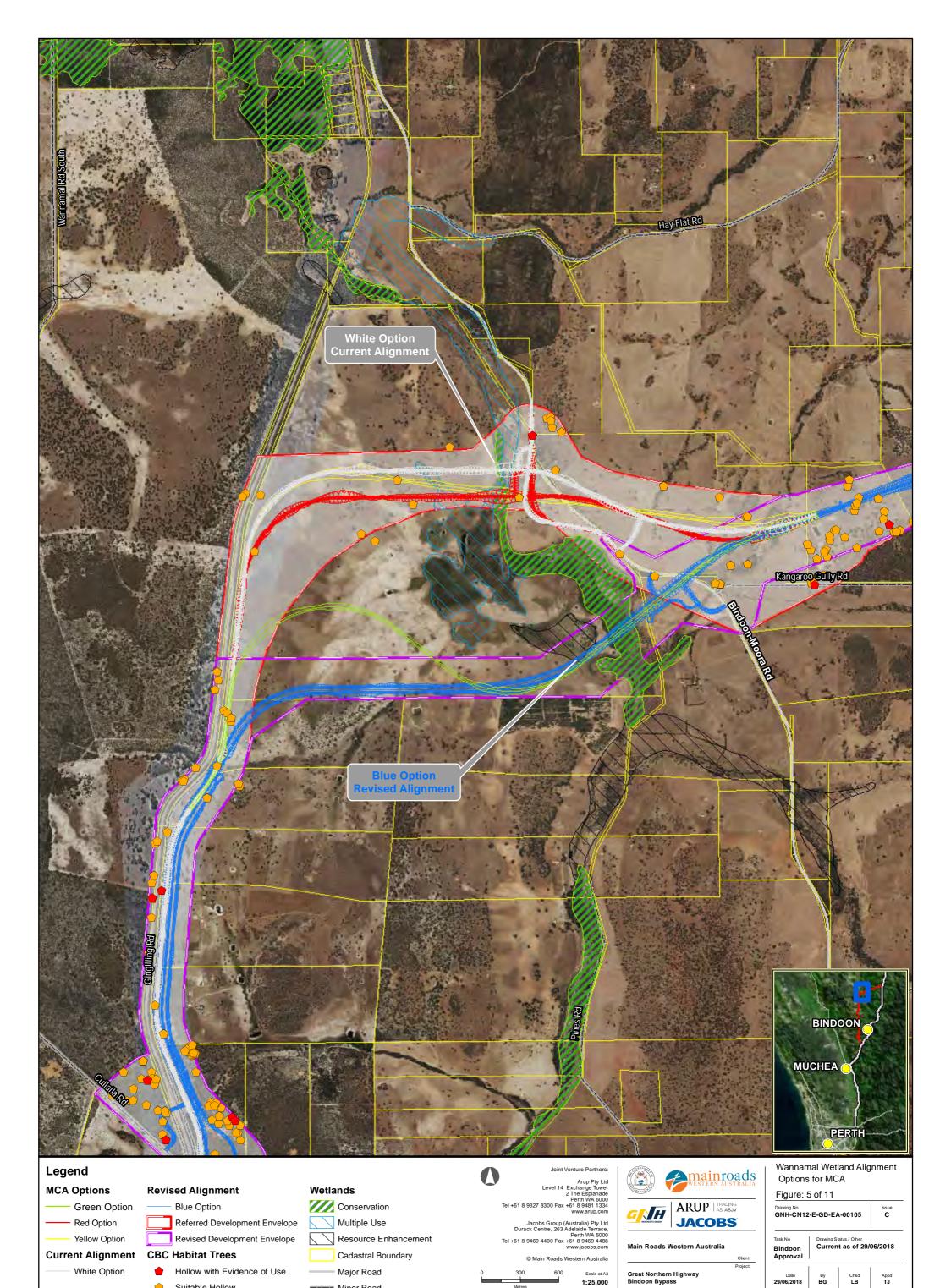
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Coordinate System: GDA 1994 MGA Zone 50



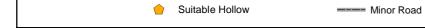






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Revised Alignment Blue Option

Referred Development Envelope Conservation Revised Development Envelope

Hollow with Evidence of Use Suitable Hollow

Cadastral Boundary

Wetlands

Multiple Use Resource Enhancement Arup Pty Ltd
Level 14 Exchange Tower
2 The Esplanace
Perth WA 6000
Tel +61 8 9327 8300 Fax +61 8 9481 1334
www.arup.com

Jacobs Group (Australia) Pty Ltd Durack Centre, 263 Adelaide Terrace, Perth WA 6000 Tel +61 8 9469 4400 Fax +61 8 9469 4488 www.jacobs.com

Scale at A3 1:12,500 Metres Coordinate System: GDA 1994 MGA Zone 50



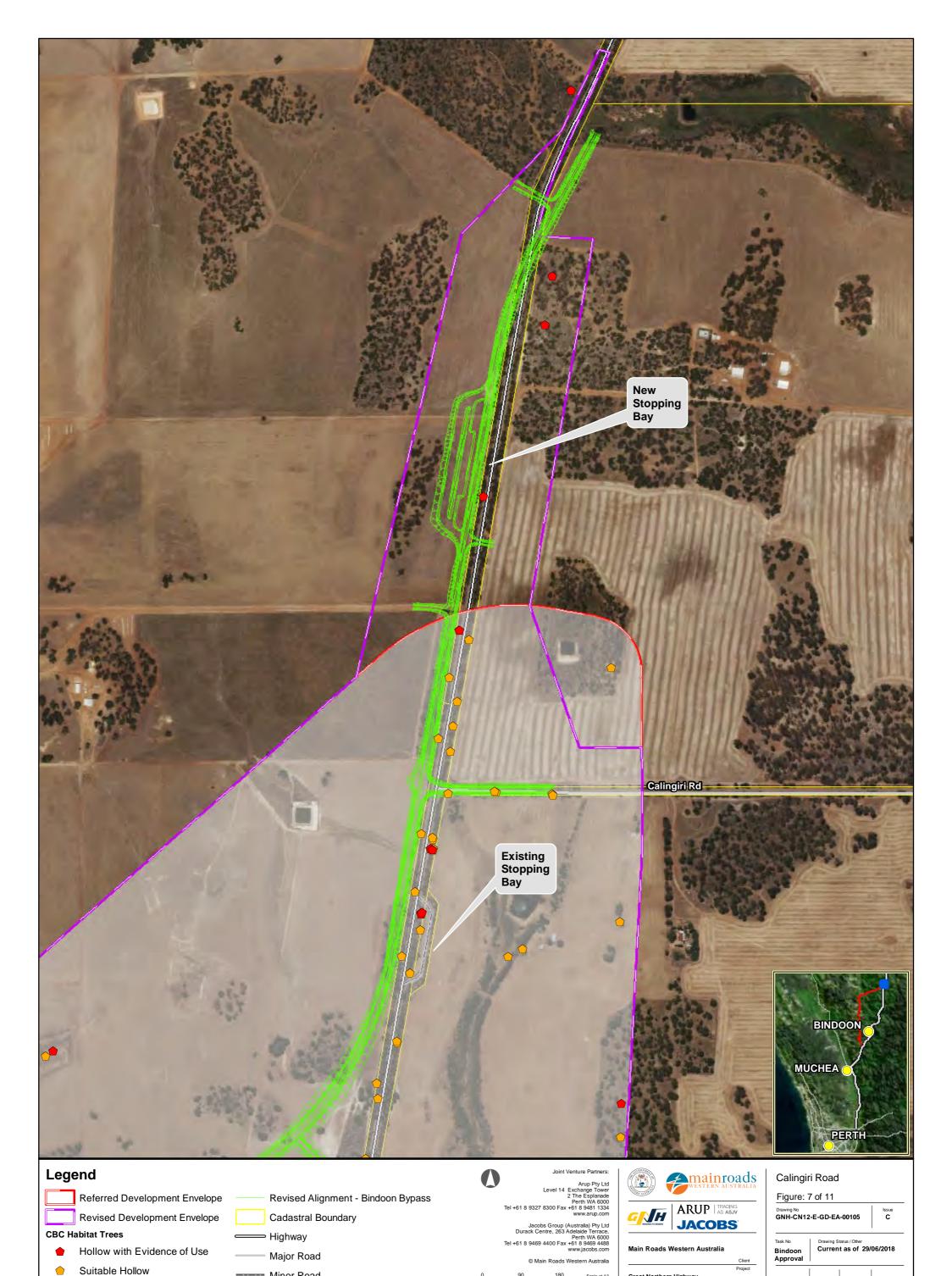
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Great Northern Highway Bindoon Bypass

Figure: 6 of 11

Drawing No GNH-CN12-E-GD-EA-00105

Drawing Status / Other
Current as of 29/06/2018 Bindoon Approval



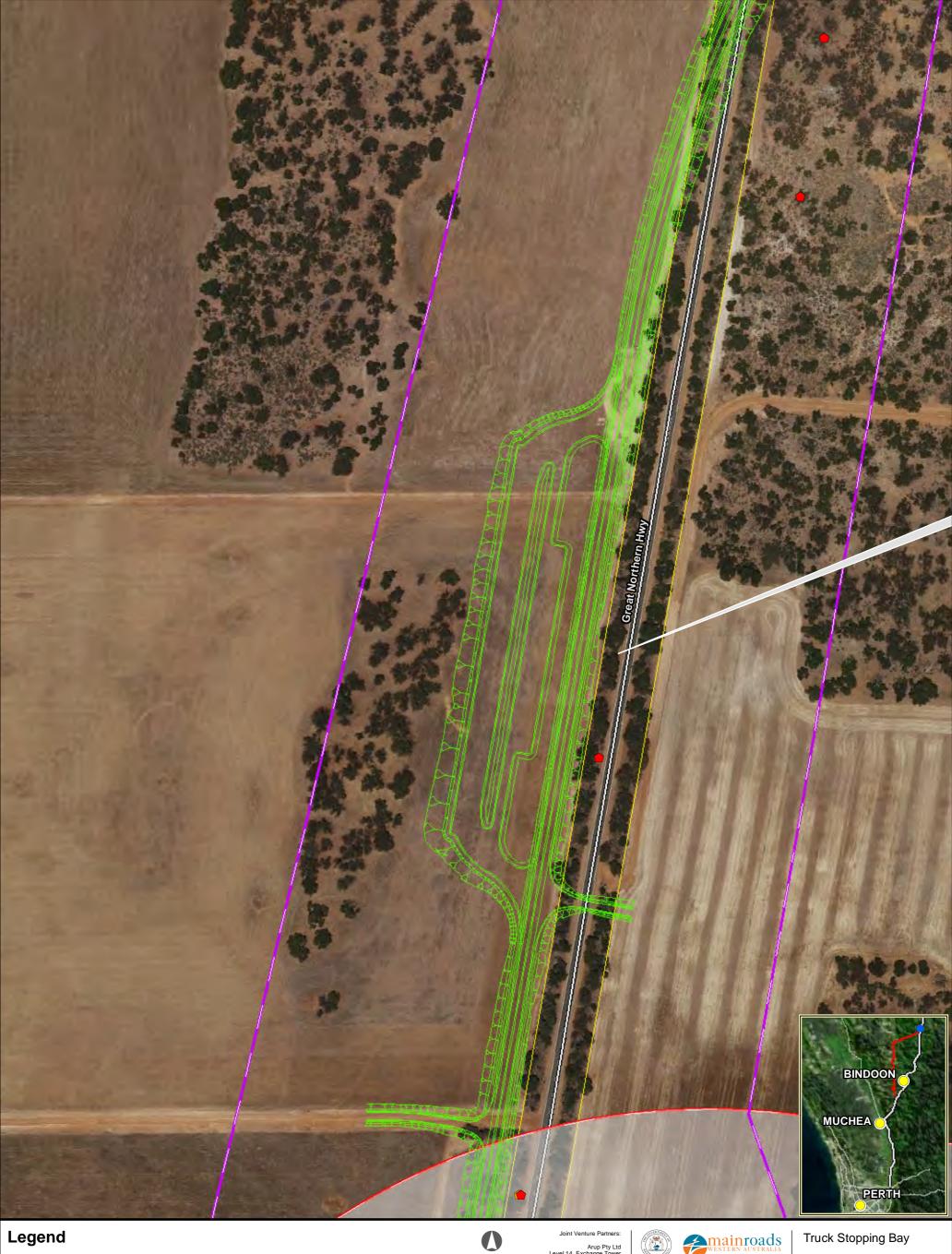
Great Northern Highway Bindoon Bypass

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Metres Coordinate System: GDA 1994 MGA Zone 50



Minor Road



Referred Development Envelope Revised Development Envelope

CBC Habitat Trees

Hollow with Evidence of Use

Suitable Hollow

Revised Alignment - Bindoon Bypass Cadastral Boundary

------ Highway

Arup Pty Ltd
Level 14 Exchange Tower
2 The Esplanace
Perth WA 6000
Tel +61 8 9327 8300 Fax +61 8 9481 1334
www.arup.com

Jacobs Group (Australia) Pty Ltd Durack Centre, 263 Adelaide Terrace, Perth WA 6000 Tel +61 8 9469 4400 Fax +61 8 9469 4488 www.jacobs.com

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Great Northern Highway Bindoon Bypass

Figure: 8 of 11 Drawing No GNH-CN12-E-GD-EA-00105

Drawing Status / Other
Current as of 29/06/2018 Task No Bindoon Approval Appd **TJ**

