

Final report of an Aboriginal Heritage survey of the BORR North and Central Project (Brad Goode & Associates, 2020)



**FINAL REPORT OF AN ABORIGINAL
HERITAGE SURVEY OF THE BUNBURY
OUTER RING ROAD (BORR) NORTH AND
CENTRAL PROJECT: BRUNSWICK TO
NORTH BOYANUP, WESTERN AUSTRALIA**

*A report prepared for BORR Integrated Planning
Team on behalf of Main Roads Western Australia*

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DISCLAIMER

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Warning: This document may contain names, images or material that relates to deceased Aboriginal persons. Permission was sought and granted by the consulted informants to cite this information.

***Note:** This report, in terms of its assessment under Section 5 of the Western Australian *Aboriginal Heritage Act 1972*, should be read in conjunction with the archaeological report by Harris (2018) contained under this coversheet.

***Note:** This report supersedes the draft report from 2018. Since 2018, two more ethnographic consultations have occurred in order to refine bridge designs and to update the GKB in relation to an evolving project.

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MAPPING

Datum Used: GDA 1994 MGA Zone 50. Handheld GPS Unit Garmin 64ST (+/- 10m)

GLOSSARY OF TERMS

The Proponent – Main Roads Western Australia

The Consultant – Brad Goode & Associates Pty Ltd

The Agent – BORR Integrated Planning Team

ACMC – Aboriginal Cultural Material Committee

AHA – Western Australian *Aboriginal Heritage Act 1972*

AHIS – Aboriginal Heritage Inquiry System

BGA – Brad Goode & Associates Pty Ltd

BORR - Bunbury Outer Ring Road

BP – Before Present

CHMP – Cultural Heritage Management Plan

DAA – *former* Department of Aboriginal Affairs

DPLH – Department of Planning, Lands and Heritage

GKB – Gnaala Karla Booja

HIS – Heritage Information Submission

IPT – Integrated Planning Team

Main Roads – Main Roads Western Australia

NSHA – Noongar Standard Heritage Agreement

NTC – Native Title Claim

SLK – Straight Line Kilometre

SWALSC – South West Aboriginal Land and Sea Council

Cultural Monitor – A senior GKB person who conducts rituals at sacred places prior to ground disturbance and who mitigates spiritual issues by communication with the spirit world when sacred places are impacted by development activities

Archaeological Monitor – A member of the GKB engaged to observe ground disturbing activities to identify Aboriginal artefacts or objects as defined by section 5 & 6 of the AHA

EXECUTIVE SUMMARY

The Bunbury Outer Ring Road (BORR) Integrated Planning Team (IPT), acting upon behalf of Main Roads Western Australia (Main Roads), is facilitating planning for the North and Central sections of the BORR which forms a major component of the planned regional road network for the Greater Bunbury area.

The BORR North and Central sections planning corridor begins at the South Western Highway in the south, runs to the north and east across the Boyanup Picton Road, then crosses the South Western Highway near Burekup and terminates on the Forrest Highway at the Brunswick River in the north, a distance of 23.7km or an area of 1068.83 hectares (see Figure 1: Location Map).

Within this planning corridor Main Roads is proposing to construct a new highway to freeway standards to bypass Bunbury. The project also allows for intersection realignments, roundabout construction, and the duplication, widening and upgrade to existing intersecting roads to freeway standards. Several new bridges are required to traverse the Ferguson River, the Preston River and the Collie River (see Figure 3: Map of bridge locations). Culverts are required to traverse small creeks that are crossed by roads that intersect the BORR North and Central.

In order to remain compliant with the Western Australian *Aboriginal Heritage Act 1972* (AHA) BORR IPT, on behalf of Main Roads, commissioned Brad Goode & Associates Pty Ltd (BGA) to conduct an ethnographic and archaeological Site Identification Aboriginal Heritage Survey of the planning corridor.

The Archaeological survey was completed in 2018 as was the initial ethnographic consultation and was reported in draft at the time. Since 2018 further consultations have occurred with the GKB in order to address issues with bridge design and their impacts upon cultural values. These further consultations were required in order for the GKB to be included in the project, to stay informed and to have a say in issues that relate to Aboriginal sites as the project evolves. This report is now the final and takes into account these issues and provides the final advice by the GKB to Main Roads who wish to seek ministerial consent under section 18 of the AHA for consent to use the land that may contain an Aboriginal site in order to construct the BORR North and Central project.

In relation to these surveys a search of the DPLH Aboriginal Heritage Inquiry System (AHIS) conducted on the **2nd October 2018** and again on the **3rd of February 2020** identified **four** registered ethnographic sites and **two** DPLH other heritage places that have extents that intersect the BORR North and Central sections of the planning corridor (see Appendix 1: DPLH Sites and Places Register Search and Table 1).

Archival research has revealed that there is a longstanding Nyungar belief that the Collie, Brunswick, Preston, and Ferguson Rivers are mythologically significant due to their association with the *Ngarngungudditj Walgu* Dreaming narrative about the rainbow serpent and its creative actions to form these waterways (see Goode et al. 2000; also Radcliffe-Brown 1926). The *Ngarngungudditj Walgu* is defined as a Dreaming creation being whose spirit continues to reside in all of these waterways; subsequently the rivers are perceived by the Nyungar community to be part of the same mythological site complex. Previous surveys (see Brown 1984; McDonald, Hales and Associates 1992; Hammond & O'Reilly 1995; Goode et al. 2000; Goode & Harris 2006; Goode et al. 2006; Goode & O'Reilly 2007; Goode et al. 2010 and Goode et al. 2012) have reported that the Nyungar community believe that if the waterways created by the *Ngarngungudditj Walgu* are blocked by developments or infrastructure then the spirit of the *Walgu* will also be blocked, with the Nyungar custodians becoming sick as a consequence of this spiritual disturbance.

In relation to the project archival research has revealed that Site ID 16713 Collie River Waugal, Site ID 19795 Preston River and Site ID 19796 Ferguson River **will be directly impacted upon** where new bridges and culverts are proposed to be constructed across the waterways. As such Main Roads **will** be required to seek ministerial consent under Section 18 of the AHA to proceed.

In relation to Place ID 20057 Howson Drive Lagoon and Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds, it has been determined that the proposed works **will not directly impact** upon these places despite the planning corridor slightly intruding into the DPLH extents. As such the Main Roads **has no further obligations** in relation to Place ID 20057 Howson Drive Lagoon and Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds unless the planned activities change.

In relation to Site ID 17776 Brunswick River there are at present no plans to affect the actual waterway or embankments with activities that relate to the BORR even though the planning corridor slightly intersects the DPLH extent. Should Main Roads in the future be required to upgrade the existing bridges over the Brunswick River or conduct any other activities that will affect the bed or embankments of the river then Main Roads should conduct further consultation with the GKB to seek their views before applying for ministerial consent under Section 18 of the AHA to proceed.

As a result of a series of ethnographic consultations held with ten SWALSC nominated representatives of the Gnaala Karla Boodja (GKB) WC1998/058 NTC group it was determined that there are **no new** ethnographic sites, as defined by sections 5(b) & 5(c) of the AHA, located within the BORR North or Central planning corridor.

In relation to Site ID 16713 Collie River, Site ID 19795 Preston River, Site ID 17776 Brunswick River and Site ID 19796 Ferguson River all those consulted confirmed the significance of the rivers in terms of sacred beliefs held in relation to the actions of the creation being, the Ngarngungudditj Walgu, the local variant of the Rainbow Serpent. The GKB NTC group representatives advised that it is their belief that the Ngarngungudditj Walgu created the waterways and its spirit continues to reside in this interconnected water system and maintains its health. As such placing infrastructure, in particular bridge pylons, in the actual water channels themselves were determined to upset the spirit of the Ngarngungudditj Walgu with the consequences of such a disturbance falling on the GKB who are the caretakers and custodians of this water system.

The rivers and their surrounds were also reported by the GKB NTC group representatives to hold significance as traditional and historical water and food sources, seasonal itinerant camping grounds, and places where customary cultural practices, such as fishing and hunting occurred. In particular it was reported that many Nyungar families had formerly camped along these rivers, in the 1960s were they would catch marron and fish from the waterways. It was reported that the camps often consisted of *mia-mias* or bush humpies for habitation. The waterways were also reported by the GKB NTC group representatives to be traditional pathways along which Nyungar people had formerly habitually travelled.

In relation to the BORR North and Central sections, the GKB NTC group representatives advised that they would support Main Roads applying for consent under section 18 of the AHA to carry out the proposed works within the registered sites, if the proposed bridges do not have pylons situated within the waterways themselves and that cultural monitors are present for any ground disturbing works occurring within the site extent on either side of the rivers in order to propitiate any spiritual disturbances which may arise as a result of the works. Cultural Monitors would conduct rituals prior to ground disturbance and would act as mediums to the spirit world to mitigate any possible deleterious effects from the activities at these places.

It was also requested that the results from the geotechnical and environmental investigations on the waterways be provided to the GKB NTC group representatives at the working party for comment.

During the ethnographic consultation the GKB NTC group representatives also requested that that access to the Collie River, Preston River, Ferguson River, Brunswick River and their tributaries is not restricted as a result of the project as it was reported that Nyungar people still carry out contemporary customary practices along the waterways, such as fishing and gathering traditional bush food and medicinal resources.

In relation to any archaeological material which may be uncovered as a result of the works the GKB NTC group representatives advised that they would like the artefacts recorded and salvaged by an archaeologist assisted by GKB NTC group representatives and relocated to one of the environmental offset properties purchased as part of the project, preferably close to the area in which they were found. Transportation of cultural objects to other locations was defined as being dangerous spiritually to the GKB.

In relation to the aesthetic design of the BORR, the GKB NTC group representatives requested that workshops be held with the landscape design team to incorporate Nyungar cultural values into the project, which included minimising native vegetation loss and retaining any native species wherever possible. The overall natural look of the landscape was defined as an important cultural heritage value by the GKB.

As a result of the consultations it was suggested that the highway be named after Nyungar linguistic associations with the area; the *Wilman/Wadandi* Highway was proposed. It was further requested that the rivers are given Nyungar names with the word *Beelias* in the name which is the Nyungar word for water or river. Here the GKB Working Party could provide names for Main Roads to consider acknowledging the social history of the GKB people whose country that the highway will traverse. It was also requested that an interpretation board be placed at an appropriate place along the highway that tells the Nyungar story about their historical associations with the land and their sacred beliefs in regards to the rivers and wetlands that are crossed by the BORR. Finally, in relation to naming of bridges a key GKB member passed away during the heritage assessment period and as such it was requested that the bridge required over the Ferguson River be named in his honour as it is located in close proximity to the historical camp where this person had been born.

Finally in relation to the project and social issues the GKB NTC group representatives advised that they would like to create Nyungar employment opportunities with Nyungar businesses being considered during the tender process. This included during the rehabilitation works, such as collecting and replanting native seeds. The GKB NTC group representatives discussed the lack of opportunities for Nyungar businesses and people to obtain contracts and jobs for major projects such as the BORR North and Central. During the consultations the GKB have emphasized that assistance with skills development training be provided to build capacity to participate and to address the requirements for upcoming job possibilities. Here it was advised that Indigenous employment policies need to stipulate 'Nyungar' people, as opposed to 'Aboriginal' or 'Indigenous' people to address this issue. The GKB NTC group representatives also discussed the benefits of having a skilled or experienced Nyungar person employed as mentor within Main Roads to act as a translator and provide cultural advice and support for new Nyungar employees. The GKB NTC group representatives suggested that Nyungar people could be employed on a 6 month traineeship basis in which time they could swap between different positions in order to obtain a diversity of skills and experiences. A Nyungar committee was also discussed, with the committee's purpose proposed to assist Main Roads screen Nyungar applicants to find appropriate employees suited to specific jobs. Finally it was suggested that Nyungar companies be given tender preference opportunities or at least tenders should have to

demonstrate engagement plans to facilitate Nyungar GKB people and business participation in order to be successful.

As a result of the ethnographic survey the following recommendations are made in relation to the Western Australian *Aboriginal Heritage Act 1972* (AHA):

It is recommended that Main Roads Western Australia seek consent under section 18 of the AHA in order to carry out the proposed bridge and road works located within the extents for Site ID 16713 Collie River, Site ID 19795 Preston River, and Site ID 19796 Ferguson River, as part of the BORR North and Central project.

It is further recommended that this consent be granted as the Gnaala Karla Booja WC1998/058 Native Title Claim group is supportive of the plans and bridge designs that minimise the effects upon cultural values and beliefs.

It is recommended that should Main Roads Western Australia in the future be required to upgrade the existing bridges over the Brunswick River or conduct any other activities that will affect the bed or embankments of the river, then Main Roads should conduct further consultation with the GKB to seek their views before applying for ministerial consent under Section 18 of the AHA to proceed.

It is further recommended that Main Roads Western Australia give due consideration to the Gnaala Karla Booja WC1998/058 Native Title Claim group representatives' cultural heritage management and associated social issues requests:

- That pylons for the proposed bridges not be situated within the actual water channels of the Preston, Collie and Ferguson Rivers and their tributaries;
- That cultural monitors be present for any ground disturbing works occurring within the extents of the ethnographic sites, and places where it is determined that sacred beliefs are held associated with waterways;
- That apart from the registered sites that these places are determined by an inspection by elders prior to construction and that monitoring terms and duration are then agreed by negotiation within the project limitations and then specified in a CHMP that guides the construction in regards to implementation;
- That any archaeological sites impacted or material discovered during initial ground disturbing activities is relocated to specified artefact keeping places that could be at offset blocks owned by Main Roads or places adjacent to where they were found that will not be affected by future construction activities;
- That the results from geotechnical investigations, environmental and other studies be provided to the GKB NTC working parties for comment and that as the project evolves that Main Roads continues to update the working party in matters that relate to cultural heritage management and social and economic engagement;
- That Nyungar access to the Collie, Preston, Ferguson and Brunswick Rivers and their tributaries be retained post construction;
- That workshops with the landscape design team and the GKB NTC group representatives be held to incorporate Nyungar cultural values into the project;
- That the clearing of native vegetation be minimised wherever possible and native plant species from the local provenance be used in the rehabilitation works;
- That the new bridges and infrastructure be given Nyungar names; and that the state consider naming the BORR as the Wilman/Wadandi Highway;
- That Main Roads consider naming the bridge over the Ferguson river after the GKB member that passed away during the heritage assessment period;

- That employment, business capacity building opportunities and skill development training is provided to the Nyungar community as part of the project social engagement strategy; and
- That contracting companies tendering for project works are required to provide a Nyungar engagement plan to be successful.

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REPORT

Final Report of an Aboriginal Heritage Survey of the Bunbury Outer Ring Road (BORR) North Project: Brunswick to North Boyanup, Western Australia

ISSUE

The Bunbury Outer Ring Road (BORR) Integrated Planning Team (IPT), acting upon behalf of Main Roads Western Australia ('Main Roads'), is facilitating planning for the BORR North and Central sections which forms a major component of the planned regional road network for the Greater Bunbury area.

The proponent wishes to determine if there are any sites or places of Aboriginal heritage significance as defined by Section 5 of the Western Australian *Aboriginal Heritage Act 1972* (AHA) that will be affected by this proposed work thereby fulfilling their obligations under the AHA.

REPORT OBJECTIVES

To report on archival research in order to determine if any previously recorded Aboriginal Heritage sites or places will be affected by the above project proposal.

To report on consultations held with representatives of the Gnaala Karla Booja (GKB) WC1998/058 Native Title Claim (NTC) group in order to determine if any new Aboriginal Heritage sites or places will be affected by the above project proposal.

To report upon management recommendations should any sites or places of significance as defined by Section 5 of the AHA be identified to be located within the project area.

To report upon any recommendations and/or the significance of the sites or places should the proponent be required to make application under Section 18 of the AHA for consent to use the land that may contain an Aboriginal site.

BACKGROUND

On 5th September 2018, Ms Stacey Dorman (Environmental Scientist) from BORR IPT, on behalf of Main Roads, commissioned Brad Goode and Associates Pty Ltd to conduct a Site Identification Ethnographic and Archaeological Aboriginal Heritage Survey for the proposed BORR North and Central alignment in the Greater Bunbury area of Western Australia.

The BORR forms a major component of the planned regional road network for the Greater Bunbury area with the original concept developed by Main Roads and other State Departments in the early 1970s. The BORR comprises of three sections: the Northern, Central and Southern Sections.

The Central Section of the BORR was constructed as part of the Port Access Road (PAR) Stage 2 Project in 2012 and 2013 which connects the South Western Highway in Davenport to Boyanup-Picton Road to the north-east. Changes to the existing BORR Central section include a new interchange with Willinge Drive (PAR Stage 2), and an extension of Willinge Drive to the South Western Highway. The Southern Section of the BORR is yet to be constructed and will provide a highway link between the existing PAR Central Section from South Western Highway to Bussell Highway in Gelorup in the southwest and the BORR Northern section (see Figure 2).

The BORR North and revised Central sections are yet to be constructed and are the subject of this Site Identification Aboriginal Heritage Survey (see Figure 1: Location Map). The northern section of the BORR is a planning corridor that begins at the South Western Highway in the south, runs to the north and east across the Boyanup Picton Road, then crosses the South Western Highway near Burekup and terminates on the Forrest Highway at the Brunswick River in the north, a distance of 23.7km or an area of 1068.83 hectares.

Within this planning corridor, Main Roads is proposing to construct a new highway to freeway standards to reduce local congestion through increasing efficiency for freight vehicles and regional traffic. The highway located within the planning corridor allows for intersection realignments, roundabout construction, and duplication and the widening and upgrade to existing roads to freeway standards. Several bridges are required to traverse the Ferguson River, the Preston River and the Collie River (see Figure 3: Map of bridge locations). Culverts are required to traverse small creeks that are crossed by roads that intersect the BORR.

On 7th May 2018, a preliminary consultation was conducted by Mr Brad Goode and Ms Louise Huxtable (BGA Anthropologists) with eight representatives of the GKB group and three representatives from Main Roads, Mr Neil McCarthy (Senior Environmental officer – South West Region), Mr Owen McLean (Rural Road Planning Manager) and Ms Tammy Mitchell (Community Relations Manager, BORR IPT). The purpose of this preliminary consultation was to inform the GKB group of Main Roads investigations regarding planning an alternative alignment for the BORR Northern Section to meet current and future traffic loads as a result of development that has occurred since the BORR North was planned in 2011.

As a result of the investigations conducted by Main Roads and the findings from the preliminary consultation, the BORR IPT has now been able to delineate the corridor the BORR North and Central section's project.

On the 29th October 2018 BGA consultant anthropologists, Mr Brad Goode and Ms Louise Huxtable conducted ethnographic consultations with nine representatives of the GKB group.

BGA Archaeologists Mrs Jacqueline Harris and Mr Stuart Johnston with the assistance of Mr James Khan, Mr Peter Michael, Mr Gary Bennell and Mr Waylon Hill conducted a Site Identification Archaeological Aboriginal Heritage Survey of the BORR North and Central project area from the 15th to 26th October 2018.

These surveys were reported in Draft in 2018 to inform planning. The reports remained in draft until further ethnographic consultations were conducted by consultant anthropologist Mr Grant Preller on Friday the 22nd November 2019 and again on the 23rd January 2020. These further consultations were required to resolve issues relating to bridge designs that had been identified in the 2018 survey.

This final report now details the results of the original archaeological and ethnographic 2018 surveys and the follow up discussions held in 2019 and 2020.

LOCATION

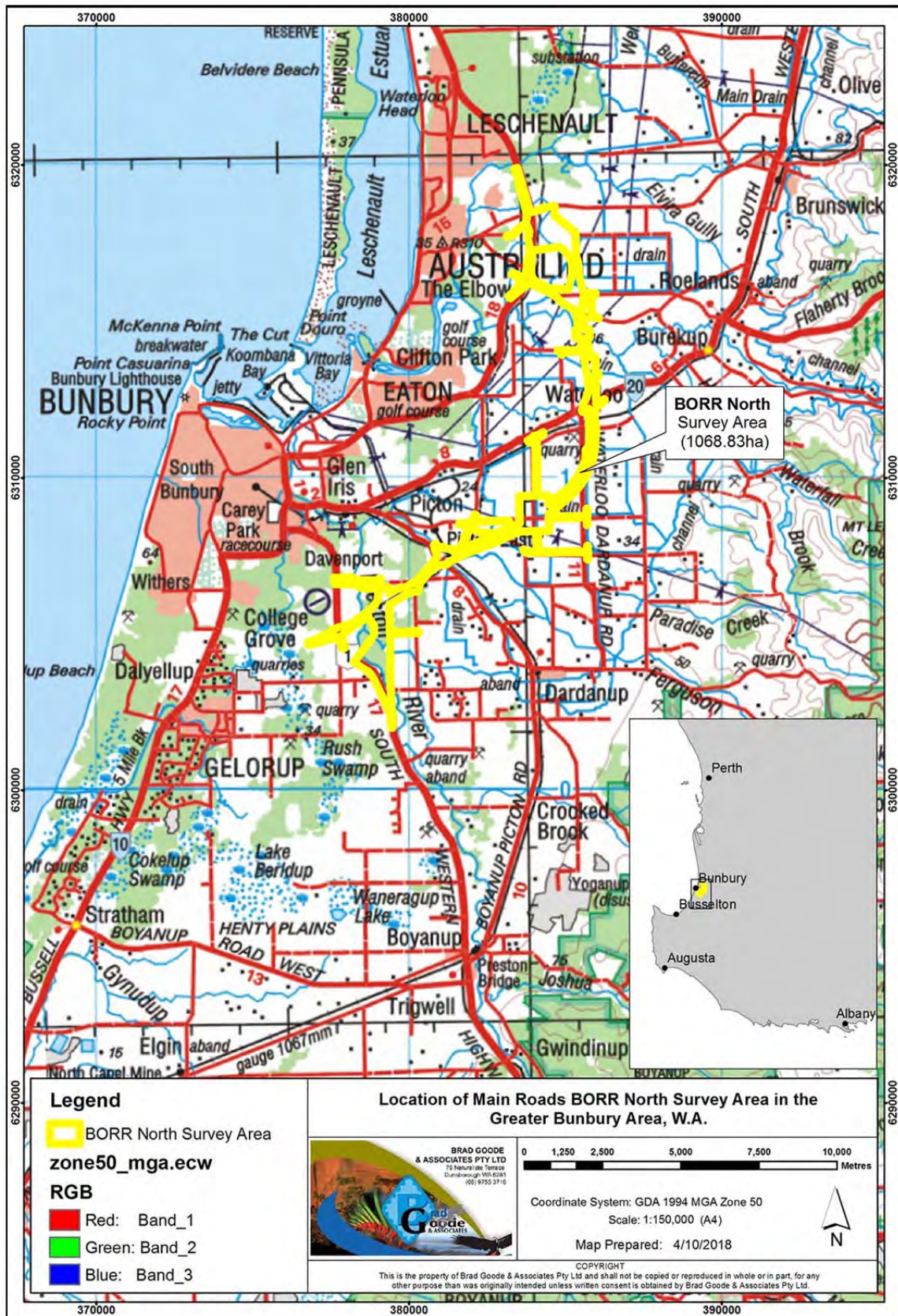


Figure 1: Location of the survey area.

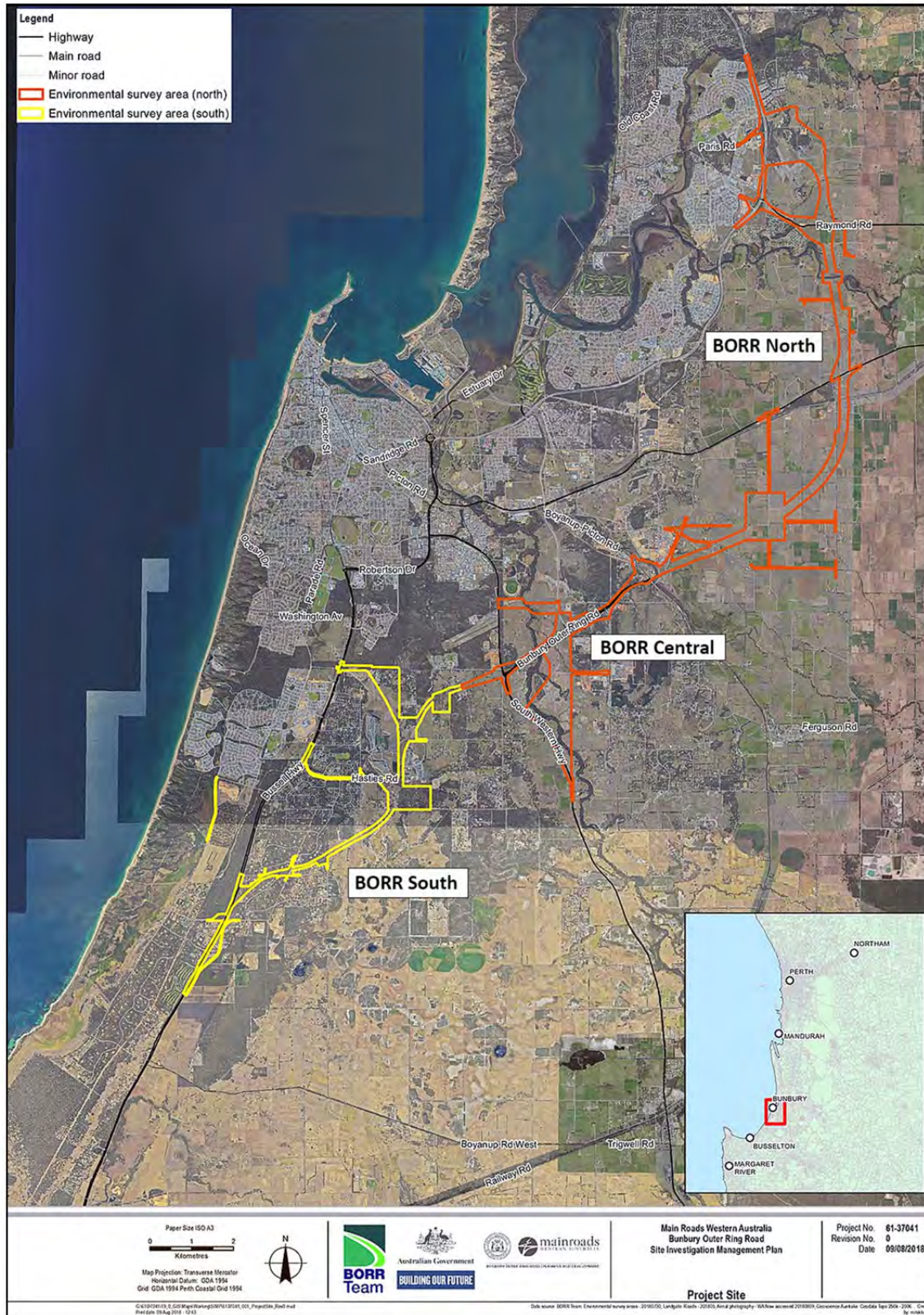


Figure 2: Map of BORR Project; figure from Main Roads BORR Site Investigation Management Plan.

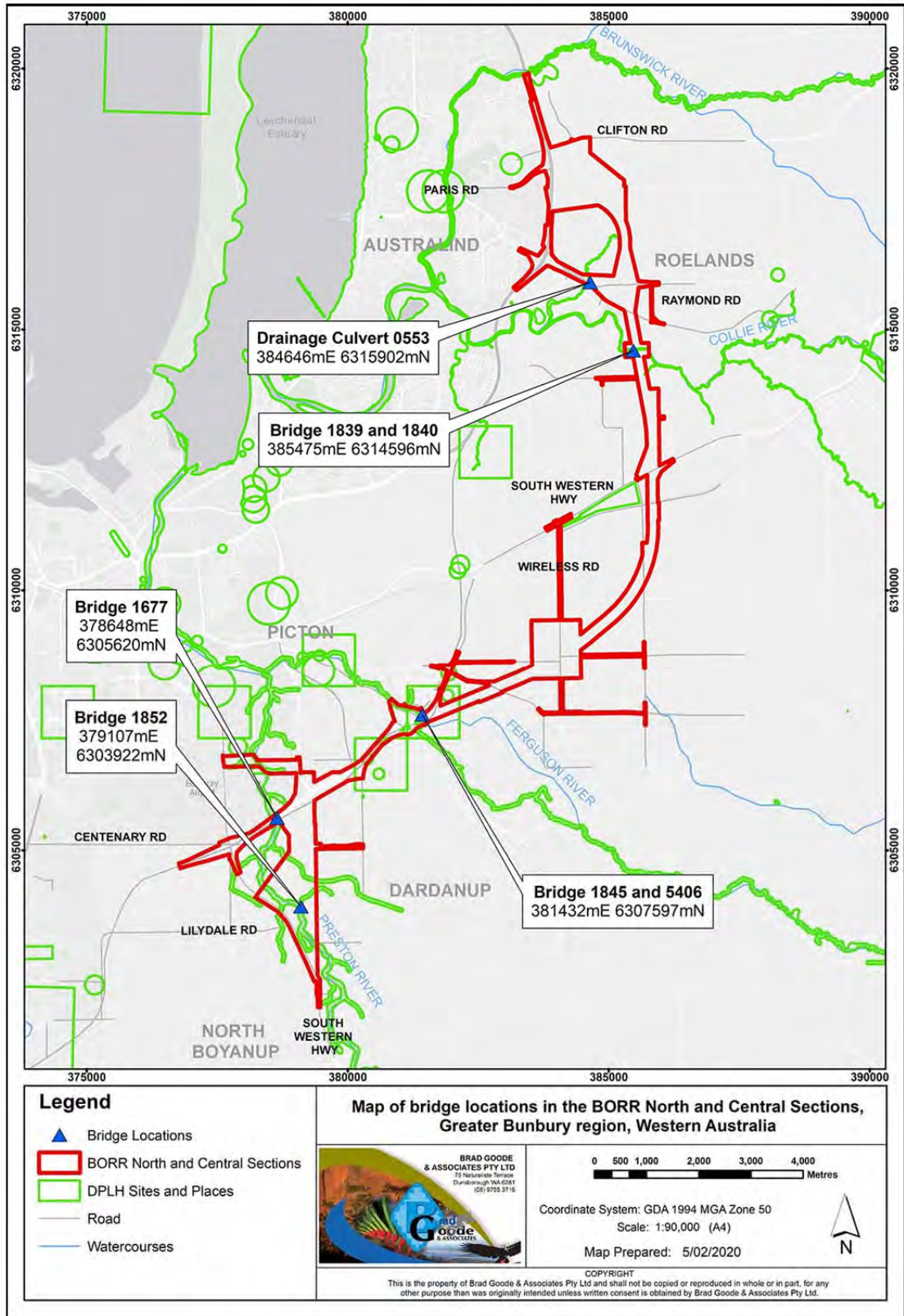


Figure 3: Map of bridge locations within the BORR North and Central sections.

ETHNOGRAPHIC & HISTORICAL BACKGROUND

TRADITIONAL NYUNGAR CULTURE

The south-west of Western Australia is considered to form a distinct cultural bloc defined by the distribution of the *Nyungar* language. Before the word 'Nyungar' was used as a group or linguistic name the south-west people recognised themselves, their language and culture, as *Bibbulmun* (Bates 1985: 46-54). Ethnologist Daisy Bates (1966: 59) writes that the Bibbulmun people were the largest homogenous group in Australia whose land took in everything to the west of a line drawn from Jurien Bay on the west coast to Esperance on the south coast. Within the Bibbulmun area, there were more than 70 groups who were linked by a common language with local variations (Bates 1966: 59-60). She states,

All coastal Bibbulmun were Waddarn-di – sea people, and called them and were called by their inland neighbours, Waddarn-di Bibbulmun. The inland tribes were distinguished by the character of the country they occupied. They were either Bilgur (river people, *beel* or *bil*-river), Darbalung (estuary people), or Buyun-gur (hill people – *buya*-rock, stone, hill), but all were Bibbulmun (Bates 1985: 47).

Norman B. Tindale (1974) identified thirteen 'tribal groups' in the South West area based on socio-linguistic boundaries and minor dialect differences. Bates records the *Kunniung* (west) Bibbulmun people as having occupied the Bunbury area prior to colonization and the dialect of the Bunbury region as *Burrong Wongi* (Bates 1985: 54). To the east were located the *Wilman* people who occupied the territory at Wagin and Narrogin, on the Collie, Hotham and Williams Rivers west of Collie (Tindale 1974: 260).

The Nyungar or Bibbulmun people of the South West were a distinct group in that their initiation practices varied markedly from their desert and semi-desert dwelling neighbours. Unlike their inland neighbours who employed the 'Old Australian tradition' of circumcision (Berndt & Berndt 1980: 81) Nyungars restricted the physical marks of initiation to nasal septum piercing and cicatrization (Bates 1985: 151-158).

The two primary social moieties of the Nyungar were the *Manitchmat* (white cockatoo) and *Wordungmat* (crow) and were the basis for marriage between a further four semi-moieties or clan groups (Bates 1985: 74-75). The semi-moieties *Tondarup* and *Didarruk* were derivatives of the former and *Ballaruk* and *Nagarnook* derivatives of the latter (ibid; Berndt 1979: 82). It was strictly forbidden to marry within one's own moiety with the only lawful marriage being the cross cousin marriage of paternal aunts 'children to the maternal uncles' children (Bates 1966: 24-25). This form of social organization was identical in tribes across all of Western Australia (ibid).

Each socio-linguistic group, sometimes referred to as the 'tribe', consisted of a number of smaller groups. Each of these smaller groups was made up of around 12 to 30 persons, related men, their wives and children, and at times, visiting relatives from other groups. These subgroups could be described as a family, a band or a horde (Green 1984: 9). For every subgroup there was a tract of land with which they most closely identified themselves with. An individual or a group's land was called their *Kalla*, or 'fireplace' (Moore 1884: 39). This referred to an area of land which was used by the group and over which the members of the group exercised the greatest rights to its resources. The group would act as custodians for sacred sites that were special places located upon song lines that cut through these areas. Other groups would also have some rights of access to land and use gained through marriage (Le Souef 1993: 30-43) stating,

Ownership rights to land were held by groups of people linked through common descent; there was definite ownership of land in both social and personal ways. As

well as belonging to a local descent group by birth, each individual simultaneously belonged to an economic or food gathering group (Le Souef 1993: 30).

There are two forms of socially organised relationships to the land, a spiritual association and an economic one. Stanner (1965) uses the terms 'estate' and 'range' to distinguish these two different associations and writes that the 'range' was that land in which the group "ordinarily hunted and foraged to maintain life" (Stanner 1965: 2). The 'estate' refers to the spiritual country and which may be 'owned' by an individual, the group, or part of the group. The relationship to 'estate' is mostly religious; however there is also an economic benefit. The estate can be considered the country or home of a group. It is sometimes referred to as the 'Dreaming Place' and as such includes all religious sites, myths and rituals that occur on or about that land. In this way 'estate' forms part of the Aboriginal ties to Dreaming and place (Stanner 1965: 13). Silberbauer (1994) elaborates,

There is a clear relationship between the individual and the land, which is expressed in a number of ways. There is a direct link between the mythic heroes and spirits of the dreaming and the land. Relationships with these beings, which are transmitted through birth, descent and marriage (to a lesser extent), are a reciprocal arrangement of rights and obligations and they are vital for claiming rights to the land (Silberbauer 1994: 124).

Concerning socio-economic relationships, Machin notes that, "the link between the individual and the land comes from the conception site, where the animating spirit enters the mother and thus there is a direct connection between the land/spirit and identity of the individual" (Machin 1996: 14). This spiritual tie with the land strengthened economic rights, and land usage involved both ritual and social connections (McDonald et al. 1994: 35). Machin (1996) explains,

Rights are recognised through active social relations, a process symbolized through the possession of knowledge. That is, knowledge is only gained through participation in social relations and rights to the land are reliant on the possession of relevant religious knowledge (Machin 1996: 11).

Nyungar people traditionally obeyed a recognized system of rights and obligations, transmitted through birth and marriage, which gave individuals rights to the use of and economic benefits of the land over which they also acted as custodians. These areas were significant because they were associated with specific mythic figures relating to the Aboriginal concept of Dreaming (Silberbauer 1994: 124; Stanner 1965: 13). The Dreaming refers to a period of creation when mythical figures transformed the landscape creating hills, lakes, rivers and animals (Machin 1996: 10).

The basis for Aboriginal spirituality, land use and ownership lies in their Dreaming. In the Dreaming ancestral beings created the world and all within it thereby defining spiritual, social, moral and territorial division for its inhabitants. The spiritual essence of all ancestral beings not only transformed the landscape but also infused it with living spirit. The beings remained in significant sites and so all generations are linked to the Dreaming and to the eternal spiritual beings (Berndt 1979: 15). The Nyungar held one central creator spirit, the *Waugal* (after Moore 1842, Berndt 1979; *woggal* after Bates 1938 & 1985), who created and is still present in all sources of water in the southwest. Bates (1985: 219-221) notes that wherever the *Waugal* stopped or camped was sacred. As a consequence, these places were generally avoided, called *winnaitch* (ibid). It was at these places that it left traces of its journeys, that it metamorphosed and left parts of itself which were transformed into topographic features and other natural features, including hills, rocks, trees, caves, sand dunes, ridges etc. The *Waugal* is associated with many of the major rivers in the Darling Range as well as many of the smaller springs, swamps, pools and lakes located on the Swan Coastal Plain (O'Connor et al. 1989: 46). O'Connor, Quartermaine and Bodney (1989) provide a theoretical explanation of what they term "the ubiquitous *Waugal* myth". The *Waugal*, they explained, is a water creative spiritual

force with a serpentine physical manifestation, which created many of the south west rivers and whose essence remains in such as the Collie and Preston Rivers to this day (ibid: 21). The authors state the imputation of religious significance to water sources is at least as old as recorded human history and that it is not surprising that in an arid country such as Australia it occurs in many totemic forms (ibid). O'Connor et al. note *Waugal* sites of significance at various locations along the Collie River (ibid).

WATER AND ABORIGINAL SIGNIFICANCE

There is no doubt that water, especially fresh water, was of vital importance to traditional Aboriginal people right across Australia. The rivers, pools and wetlands link campsites along walk tracks and are places of mythological and spiritual significance. In the case of the Southwest, rivers also defined the territories or estates of the Nyungar people (Dortch 2002: 8; Hallam 1979).

Various authors, in various regions have recorded specific narratives (Goode 2000; Jackson & de Gand 1996, Toussaint et al. 2005) and generalised narratives (O'Connor 1989, 1995, Villiers 2002, Goode 2003) with regards to the importance and significance of water sources from both a mundane and spiritual position. In a mundane sense, rivers, wetlands, springs and soaks are seen by both traditional and contemporary Nyungar people as important places to camp, fish, hunt, and gather food and resources that are made plentiful by the supply of fresh running water (O'Connor 1989, 1995, Goode 2008).

In regard to the spiritual significance of water across Aboriginal Australia, the Rainbow Serpent is generally deemed as being responsible for both the creation and the ongoing maintenance of the water cycle (Radcliffe-Brown 1926: 19). The Rainbow Serpent as a spirit creature is believed to have excavated and created the beds of the rivers during its travels throughout Australia. It is often the belief that it had reached down from the sky to the waterholes and pools, bringing water to the earth. Throughout Arnhem Land and the Kimberley the Rainbow Serpent is associated with other myths regarding fertility and is sometimes regarded as male and at others as female. Ceremonies and rituals are performed in order to renew species that are associated with Rainbow serpents (Reed 2001: 79-80).

Throughout Western Australia, the Rainbow Serpent is known by various different names by various Aboriginal groups, for example; the *Waugal* (Southwest), the *Beemarra* (Midwest), the *Warlu* (Pilbara), the *Mardjit* (South Coast), the *Marghet* (Great Southern) and the *Norn* (Esperance).

Historically, Bates (1966: 60) recorded that in the Southwest “their only deity was a [*Waugal*] or serpent-god that dominated the earth, the sky, the sea, and punished evil-doers.”

All permanent native waters have legends attached to them, legends of the ‘dream’ time, which go back to the days when birds and animals possessed human attributes, or were human beings, or were groups of which the bird or animal was representative, or were magic animals and birds possessing the power of human speech. The natives cannot say that the ‘founders’ of the various permanent waters were altogether human, although birds or beasts, or half bird half human, but the bird or animal name only is always given in the legend never a human name (Bates 1966: 157).

Bates (1985: 221) also reports that the *Waugal* made all the big rivers of the Southwest and that “wherever it travelled it made a river.” Bates (1985: 219) stated that the *Waugal* was not just seen as responsible for the creation of waterways but also created hills and other features of the landscape. The *Waugal* as a mythic creature was revered and often feared by Nyungar people who would have to offer articles of food or sing and throw sand when approaching pools or places where it was known to live as a form of propitiatory ritual in order that no harm would befall those who approached.

In regards to the current study area Mr Joe Northover, and other Traditional Owners, have provided a modern, contextualized narrative with regards to the creation of the Collie River system (inclusive of the Leschenault Inlet, the Preston, Ferguson, Harris and Brunswick Rivers) in regard to a Dreamtime ancestor known as ‘Ngarngungudditj Walgu’; the hairy faced rainbow serpent.

The ‘Ngarngungudditj Walgu’ came from the north east of Collie where he travelled forming the rivers and creeks resting along the way making waterholes... He came through what we know today as Collie forming the Collie River and as he moved he created hills visiting places in and around Collie he moved towards the coast and came out where Eaton is today as he came to the end he turned his body creating what is the estuary today, as he turned he pushed the land out and then he travelled back up the Collie River he travelled about the Collie area finally he rests at Minninup a well-known swimming place on the Collie River...The old people used to say you can see his spirit in the water late at night during the full moon and his long silvery beard...It is also said that if a stranger to the area comes and wishes to swim in the Collie River or fish he must wipe his armpit and then pick up some sand in the same hand and then throw the sand in the water for the spirit to smell this and he would not be harmed in any way or if he is not welcomed the water will become rough and the weather might change (J. Northover cited in Goode 2000: 35).

Comparative studies of serpent mythologies and the significance of water have been conducted in the Northern Territory and other regions of Australia. In these studies water bodies have almost always had mythic dimensions. Studies by Barber and Rumley (2003: 3), Langton (2002: 43), Toussaint (2001: 39) and Yu (1999: 19-27), state that Aboriginal people, as they do with the land, conceptualize that water sources (rivers, lakes and wetlands) have derived from the Dreaming. These studies emphasise the importance of stories about the actions of mythic beings in the origin and maintenance of such water sources. In these stories cultural affiliations to water are expressed in many ways, through social etiquette, narratives about places, rituals and practices of such rituals (Toussaint, et al. 2001: 39). Water is described as the “living element that creates the defining shape and character of country,” therefore ascribing its sacredness and identity (Jackson 2006: 8).

Modern Nyungar people believe that that as the custodians of the land it is their jural responsibility to “look after water” and not to allow the region’s water sources to be “mucked up by man”. This view of jural responsibility is tied to the view that the Waugal will punish Nyungars who do not respect water and who allow the natural order of things to be changed. Nyungar people from the region take the view that water is there for all the organisms that depend upon it for survival, and that it is not there just for man to use irresponsibly. Failure to respect these core values will ultimately lead to sickness in the Nyungar community (Goode 2008, 2009, McDonald 2002).

In previous surveys conducted upon the Collie and other southwest rivers it has been determined that various activities threaten these Aboriginal cultural values that relate to water sources. Nyungar people have consistently voiced concerns that are in keeping with the findings of research conducted by Villiers (2002) regarding the Swan & Canning Rivers. Villiers found that sites known to contain the Waugal can be threatened by: any below ground work, any work likely to pollute or dirty the water and loud noises or vibrations of the earth (Villiers 2002: 9). Conditions attached to Section 18 applications which impact directly on the rivers tend to be concerned with: ensuring that the river’s flow is not impeded in any way; ensuring that the river bed and embankments are not damaged; ensuring the area is revegetated with the appropriate local native species and that any run-off or drainage water flowing into the rivers is appropriately filtered in order to minimise pollution of the river (Villiers 2002: 5).

Proponents of development which impacts on rivers in the Southwest can use this research to inform themselves regards strategies to minimise the potential affects that their development can have on the cultural values held by Nyungar people for these rivers.

EUROPEAN SETTLEMENT AND SOCIAL DISRUPTION

During his expedition of 1829, Lieutenant Preston, officer on the HMS Sulphur, was accompanied by naval surgeon Dr Collie and set sail from the Swan River Settlement to examine the south-western coast. Passing through the channel between Garden Island and Cape Peron they chartered the water south to Murray River. Following this they travelled on to Port Leschenault and, upon entering the inlet discovered a river about three miles from their camp. They named it the Preston River, after the Lieutenant. On the same day they discovered another river just a few miles downstream of the Preston and named it the Collie River, in honour of the doctor. Collie, the mining town, was also later named in his honour. The explorers reported seeing a group of about 30 Aborigines at the mouth of the Collie River. They found themselves:

In the midst of natives who testified the greatest and most friendly eagerness to be allowed to approach us... carrying green boughs and without any weapons of offence or defence... after a very amicable interview during which we did not admit them close to the tents they returned seemingly very much gratified with what they had seen and with a few trifles which they had gotten. (Martinick 1994: 15)

Surveyor-General Lieutenant Roe followed on from this first party in 1830 to survey the 'very good' land surrounding the Preston and Collie Rivers. He discovered valuable forestland and a range of hills that he named after himself (Sanders 1975: 3). During his explorations around the Preston and Collie Rivers, Lieutenant Roe reported no sightings of Aborigines but noted traces of old habitations that were constructed of boughs and grass. It is thought these may have been the remnants of Nyungars winter camps.

Lieutenant Henry William St Pierre Bunbury formed a post at Pinjarra on the Murray River in 1836 in order to investigate the district and was known for his good relations with the Aborigines. Before his return to England in 1837 he pioneered land exploration between Pinjarra and the emerging district of Vasse. An Aboriginal guide named Monang and others from the Pinjarrup tribe led the party to Leschenault Inlet, where the Collie and Preston Rivers flow into Koombana Bay. Here the Gombarrup people lived well as food was plentiful and the land was rich (Sanders 1975: 99). Bunbury reported his encounters with hundreds of people from differing groups of Aborigines as he travelled from the inlet up the Collie and Preston Rivers and inland from the Preston River (Hallam 1979: 69). Interaction between Aborigines and settlers in the Bunbury region was commonplace by 1840 and was said to have been 'a mixture of cordiality, mutual support and yet underlying suspicion and fear' (Barker & Laurie, 1992: 8).

Before 1890 the South-West region supported only small pockets of agriculture and a young timber industry and both were strained by extreme transport difficulties (de Garis 1993: 110). Although deposits of coal were known to exist at Collie in the 1880's mining did not begin until the 1890s. Completion of the Bunbury harbour works in 1907 and further ongoing development of the southwest railway system opened up greater possibilities for coal export. By the 1920's heavy engines could run coal direct from Collie to Bunbury to be loaded onto ships. The first full cargo of Collie coal bound for South Australia left the Bunbury wharf in 1923 (Barker & Laurie 1992: 171-224). The southwest hardwoods, on the other hand, had already found markets in the eastern colonies and overseas before the 1870's. Before construction of a bridge across the Brunswick River in 1845, milled timber was placed on a lighter (semi submerged raft) and sailed to the port of Bunbury via the Collie River and Leschenault Estuary. A second bridge across the Collie River was built in 1844, and a third over the Preston River in 1848 (O'Brien 1996: 45).

Amidst ongoing tension as indigenous and colonial people jostled to retain their own cultural practices, farmers across Western Australia regularly employed Aborigines as a convenient and cheap source of labour. Heavily relied upon to support the foundation of European farming techniques, Aborigines were generally offered little if any payment for work and were often given goods such as flour, sugar and tobacco in exchange for farm labour and domestic help. Their importance was verbally acknowledged when in 1883 Sir John Forrest said “Colonization would go on with very slow strides if we had no natives to assist us” (Goddard & Stannage 1984: 53). Although some continued to pursue a traditional way of life others worked on homesteads or were involved in the timber industry.

By the turn of the twentieth century over half of the Aboriginal population in the southwest was of mixed race descent (Haebich 1988: 47). Colonial rulers saw children of one British parent as having potential if they could be trained to live as Europeans and the *Industrial Schools Act of 1874* brought their removal to missions where they were prepared for servant hood or menial apprentice work in the European community. Aboriginal parents of these children were afforded no comment in this process. The Depression of the 1930’s saw unemployed Nyungar’s receive a lower sustenance rate than unemployed Europeans. Nyungar people were often employed to clear for farming the land they formerly lived on, enabling them to retain a fragmented connection to their traditional country, however during the depression there was less clearing work available, seriously affecting the Aboriginal people’s abilities to earn a livelihood (Haebich 1988: 227). Living more or less permanently in fringe camps, seeking out seasonal employment and supplementing their diet with game, fish and bush tucker was a lifestyle which predominated for many Aboriginal people until the late 1960’s (Tilbrook 1983: 70).

ARCHIVAL RESEARCH

Archival research involved an examination of the Department of Planning, Lands and Heritage (DPLH) Sites and Places Register, a review of any relevant site and place files, and a review of any unpublished ethnographic reports that relate to the project area.

SITES AND PLACES REGISTER SEARCH

The DPLH Aboriginal Sites and Places Register categorises places reported to be of importance and significance to Indigenous people into two separate categories.

The first category contains sites classified as **‘Registered.’** Registered sites have been assessed by the Aboriginal Cultural Materials Committee (ACMC) as meeting the definition of Section 5 of the AHA and are fully protected under the law. Disturbance to land that contains such sites requires a Section 18 application for ministerial consent should proponents wish to use the land that contain these sites.

‘Other Heritage Places’ is the second category of places contained upon the Aboriginal Sites and Places Register. These types of places include reported places **‘Lodged’** and awaiting ACMC assessment, and places where the information has been assessed but there is **‘Insufficient information’** to make a final determination under Section 5 of the AHA but there is enough information to warrant these places temporary protection in law. Disturbance to land that contains such places requires a Section 18 application for ministerial consent should proponents wish to use the land that contain these places.

Within the category of ‘Other Heritage Places’ the final category is **‘Stored Data.’** Such places have been assessed by the ACMC but fail to meet the definition of Section 5 of the AHA. Places in this category are not sites under the AHA and are not protected in law. Proponents have no further legal requirements for such places should they wish to use the land unless further information is reported which would lead to such a place being reassessed as a site in terms of the definition of Section 5 of the AHA.

In relation to these surveys a search of the DPLH Aboriginal Heritage Inquiry System (AHIS) was conducted on the **2nd October 2018** and again on the **3rd of February 2020**.

As a result there are **four** registered ethnographic sites and **two** DPLH other heritage places that have extents that intersect the BORR North and Central Sections project planning corridor (see Appendix 1: DPLH Sites and Places Register Search and Table 1).

Table 1: A Summary of Aboriginal heritage sites and places with extents that overlay the study area

ID	Name	Status	Access	Restricted	Location (GDA94 Z50)*		Type
					mE	mN	
Registered Aboriginal Sites							
16713	Collie River Waugal	R	O	N	409120	6308049	Mythological, Natural Feature, Water Source
17776	Brunswick River	R	O	N	393377	6321250	Mythological, Natural Feature, Water Source
19795	Preston River	R	O	N	400159	6290621	Mythological
19796	Ferguson River	L	O	N	392945	6300363	Mythological
Other Heritage Places							
20057	Howson Drive Lagoon	L	O	N	383760	6319889	Mythological

ID	Name	Status	Access	Restricted	Location (GDA94 Z50)*		Type
					mE	mN	
17775	Waterloo Brickworks Camp and Hunting Grounds	S	O	N	384818	6311624	Man-Made Structure, Camp, Hunting Place, Meeting Place, Water Source

* Please note: Coordinates are indicative locations that represent the centre of sites as shown on maps produced by the DPLH – they may not necessarily represent the true centre of all sites.

LEGEND

R – Registered Site, I - Insufficient Information, S - Stored Data/Not a Site, L - Lodged awaiting assessment,
O – Access Open, C - Closed Access, N – File Not Restricted.

REVIEW OF RELEVANT SITE FILES

Site ID 17776 Brunswick River

The Brunswick River was first recorded by Mr Brad Goode in 2000 during a survey of the South Western Highway. During the survey the Aboriginal informants advised that the Brunswick River was an avoidance place due to a *Wooditch* living there who steals children who wander away after dark by whistling at them. Here the Brunswick River was also reported to have mythological significance in association with the *Ngarngungudditj Walgu* or the Hairy Faced Serpent as it flows into the Collie River and is therefore a part of the same Dreaming story (Goode & Northover 2000: 31).

In 2003 in an unidentified report in the DPLH site file it was also reported that there was a burial at the “western end along the first bend in the river to the west of the South Western Highway”. It was reported that this area was 10m along the bank of the river by 10m north from the bank. The burial was reported to have been uncovered following a flood in the 1940s with further excavations revealing additional skeletal material which was exhumed and reburied in the grounds of the convent located in Brunswick.

The Brunswick River appears on the DPLH AHIS as a registered site.

In relation to the BORR North and Central project, Site ID 17776 Brunswick River extent intersects the project area along the Forrest Highway at the very northern end of the BORR by 18m. In relation to Site ID 17776 Brunswick River at the time of the surveys there were no plans to affect the actual waterway or embankments with activities that relate to the BORR even though the planning corridor slightly intersects the DPLH extent.

Should Main Roads in the future be required to upgrade the existing bridges over the Brunswick River or conduct any other activities that will affect the bed or embankments of the river then Main Roads should conduct further consultation with the GKB to seek their views before applying for ministerial consent under Section 18 of the AHA to proceed.

Site ID 16713 Collie River Waugal

The Collie River was first recorded to the DPLH in 1995 by Mr Meath Hammond during a survey of the Bunbury Bypass Road for Main Roads. The river was recorded to hold mythological significance to members of the Bunbury and Mandurah Aboriginal community as the water is, “occupied by the Dreaming spirit – the Waugal” (Hammond & O’Reilly 1995: 24).

The Collie River was again reported in 1999 by Mr Hugh Roberts from McDonald, Hales and Associates in a survey for proposed improvements to the Coalfields Highway at Roelands. It was reported that several Aboriginal consultants confirmed the presence of the Waugal in the Collie River and stated that propitiatory rituals must be performed prior to approaching or entering the water for swimming or fishing (McDonald, Hales & Associates 1999: 35). The informants noted that the performance of this ritual identified local Nyungars to the Waugal (ibid). The entire Collie River was reported as significant as the Waugal had swum from Glen

Mervyn where it had created a fresh water spring before returning along the Collie River to Minninup, where it was defined to currently reside (ibid).

Mr Brad Goode further recorded the Collie River in 2000 during a survey for Main Roads along the South Western Highway from Waroona to Bunbury. The entire Collie River system from its source to the Leschenault Inlet inclusive was reported to be the extent of the site and the entire river system was defined as sacred (Goode 2000: 35). Mr Joseph Northover, the primary informant for the river, related a mythological story of the Dreaming ancestor called the *Ngarngungudditj Walgu* or the Hairy Faced Serpent associated with the Collie River (ibid). He reported,

The Ngarngungudditj Walgu came from the north east of Collie where he travelled and formed the rivers and creeks resting along the way making waterholes. He came through what we now know as Collie forming the Collie River and as he moved he created hills, visiting places in and around Collie he moved towards the coast and came out where Eaton is today, as he came to the end he turned his body creating what is the estuary today, as he turned he pushed the land out and then he travelled back up the Collie river, he travelled about the Collie area finally he rests at Minninup, a well-known swimming place on the Collie River.

The old people used to say you can see his spirit in the water late at night during the full moon and his long silvery beard. It is also said that if a stranger to the area comes and he wishes to swim in the Collie River or fish he must wipe his armpit and then pick up some sand in the same hand and then throw the sand in the water for the spirit to smell this and he would not be harmed in any way or if he is not welcomed the water will become rough and the weather might change. Ngarngungudditj Walgu in my language means 'Hairy Faced Serpent' (Mr Joseph Northover pers. comm. cited in Goode 2000: 35-36).

Further information in regards to the site's extent was recorded by Mr Goode in October 2002 during a survey for bridgeworks on the Preston River Bridge in Bunbury. In this survey it was reported by Mr Northover that all watercourses that flow into the Leschenault Estuary should be considered a 'Site Complex' (Goode & Runden 2002: 26).

Consequently the entire Collie River, from its headwaters near the Glen Mervyn Dam, inclusive of the Leschenault Estuary in Bunbury, the Preston River, the Ferguson River, the Brunswick River and the Harris River is considered the extent of the site.

On the 14th December 1999 the ACMC assessed the Collie River and found it to be a site under the definition of Section 5(b) and Section 39.2(a)(b) of the AHA, placing it on the permanent register (Resolution ID 3058).

On the 26th July 2010 the ACMC again assessed the Collie River and found it to meet the definition of a site under Section 5(b) and Section 39.2(a) (b) (c) of the AHA (Resolution ID 6411).

On the 1st June 2011 the ACMC again assessed the Collie River and found it to meet the definition of a site under Section 5(b) and Section 39.2(a) (b) (c) of the AHA (Resolution ID 6643).

Under DPLH Guidelines provided in 2013, an amended interpretation of Section 5 of the AHA resulted in a number of sites becoming de-registered due to their inability to meet the new definition and subsequent threshold test of an Aboriginal 'site'. These Guidelines stated that in order to be recognised as a 'sacred site' a place needs to have been devoted to religious use rather than simply containing mythological stories, songs or beliefs. As a result, in February

2014 the status of the Collie River on the DPLH Aboriginal Heritage Inquiry System (AHIS) changed from registered to 'Stored Data', and the Collie River was accessioned as a 'Other Heritage Place' (Resolution ID 183).

However, in 2015 the *Robinson v Fielding* court case (*Robinson v Fielding* [2015] WASC 108: 38) found that the DPLH Guidelines were inconsistent with the literal definition of Section 5(b) of the AHA. It was reiterated that Section 5(b) of the AHA states 'any sacred, ritual or ceremonial site which is of importance and special significance to people of Aboriginal descent' constitutes an Aboriginal 'sacred site' (ibid: 33). Therefore, the literal definition of an Aboriginal 'sacred site' does not need to demonstrate 'religious use'. As such, through the *Robinson v Fielding* case, it has been clarified that the AHA applies to any Aboriginal site that is of 'importance and significance to persons of Aboriginal descent' and shows 'the existence of relevant stories, songs or beliefs' (ibid).

As a result of the 2013 DPLH Guidelines a number of culturally significant sites around Western Australia, including the Collie River, had their protection withdrawn since the 1st November 2012 on the basis that they no longer fitted the definition of a sacred site. As the Guidelines were overturned in the *Robinson v Fielding* case on the basis that the Guidelines were construed upon a misinterpretation of the definition of an Aboriginal 'sacred site', the DPLH and the ACMC are systematically re-examining those sites which were de-registered during this time, including the 'Collie River Waugal'.

In September 2016 the Collie River Waugal was re-assessed by the ACMC and was subsequently determined to be a place to which the Act applies and was re-registered as a site under Section 5(b) of the AHA. As such DPLH ID 16713 'Collie River Waugal' appears on the database at the DPLH Aboriginal Heritage Inquiry System as a registered site under the AHA.

In relation to the BORR North and Central project, the proposed works **will directly impact upon** Site ID 16713 Collie River Waugal where Bridge 1839 & 1840 is proposed to be constructed 650m south of Treendale Road at Waterloo and where a culvert 0553 is proposed to be constructed across a tributary of the river along Raymond Road.

As such it has been determined that the Main Roads **will** be required to seek ministerial consent under Section 18 of the AHA.

Site ID 19795 Preston River

The Preston River was first reported in April 1995 by Mr M. Hammond and Mr S. O'Reilly during a survey of the Bunbury Bypass Road for McDonald, Hales & Associates. During this survey the Aboriginal informants advised that both the Preston River and Collie River are significant as they are occupied by the Dreaming spirit, called the Waugal (Hammond & O'Reilly 1995: 24). The Waugal was defined to be, "the principle creator spirit of the Nyungar people and is, generally speaking, present in all sources of freshwater in the South-West" (ibid).

The site was again reported by BGA during a survey of the South Western Highway in 2000. The Aboriginal informants reported that the Collie River Waugal is believed to have moved from Glen Mervyn Dam on the upper Preston River and into the Leschenault Estuary before moving along the Collie River to Minninup where it currently rests (Goode 2000: 35). The Aboriginal informants considered the entire length of the Collie and Preston Rivers to have mythological significance in association with the Ngarnungudditj Walgu Dreaming narrative, which describes a 'Hairy Faced Serpent' forming rivers, waterholes, hills and estuaries along his travels to the coast (Goode 2000: 35-36).

In additional ethnographic surveys Mr Goode reported that all rivers that flow into the Leschenault Inlet are perceived by the Aboriginal community to be part of the same mythological site complex (Goode 2002: 1, 22; Goode 2008: 25).

On the 2nd May 2007 the Preston River was registered as a site under Section 5(b) and Section 39.2(a) (b) of the AHA (Resolution ID 5421). On the 2nd May 2011 the Preston River was again assessed and found to be a site under Section 5(b) and Section 39.2(a)(b)(c) of the AHA (Resolution ID 6587).

In relation to the BORR North and Central project, the proposed works will impact upon Site ID 19795 Preston River where new bridges are proposed to be constructed over the river on the Bunbury Outer Ring Road Central section Bridge 1677 and to the south in Davenport Bridge 1852 for the Willagee Drive extension.

As such it has been determined that the Main Roads **will** be required to seek ministerial consent under Section 18 of the AHA.

Site ID 19796 Ferguson River

The Ferguson River was first recorded in 2002 by Mr Brad Goode during a survey for the proposed Bunbury Outer Ring Road and the Bunbury Port Access Road. During the survey it was reported that the river held mythological significance due to its association with the Ngarngungudditj Walgu (Goode 2002: 1, 26). Primary informant Mr Joe Northover reported that the Ferguson River is part of the Ngarngungudditj Walgu site complex, which also includes the Collie River, Preston River and Harris River, stating, “all rivers that flow into the Leschenault inlet are perceived by the Aboriginal community to be part of the same mythological site complex” (ibid: 27). In addition, it was reported that Nyungar families, such as the Calgaret, Lambage and Meares families, camped along the Ferguson River in tin and bush humpies in the vicinity of the Picton-Boyanup Road (ibid: 25). The river was reported to be a water and food source, as well as a travel route (ibid).

On the 10th January 2008 the ACMC assessed the Ferguson River and found that it met the definition of a site under section 5(b) and section 39.2(a) (c) of the AHA (Resolution ID 5652).

In relation to the BORR North and Central project, the proposed works **will directly impact** upon Site ID 19796 Ferguson River where Bridges 1845 & 5406 are proposed to be constructed over the river to the east of the Boyanup Picton Road.

As such the proponent **will** be required to seek ministerial consent under Section 18 of the AHA.

REVIEW OF RELEVANT HERITAGE PLACE FILES

Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds

This heritage place was recorded by Mr Brad Goode in 2000 during a survey for the South Western Highway. During the survey the Waterloo Brickworks Camp and Hunting grounds was identified as a traditional camping and hunting area that continued to be used well into the historic period and later became a reserve where two houses were constructed (Goode 2000: 24). The place was reported to comprise a camp at Waterloo Brickworks where some houses were later built while the Hunting Grounds encompasses an area of remnant vegetation between the railway line and South Western Highway, bounded by Waterloo Dardanup Road to the north and Wireless Road to the south (ibid). Informant Mr Cliff Wallam reported that his father camped at the place whilst doing fencing work on newly cleared farms in the area (ibid). It was reported that the hunting grounds provided turtle eggs, ducks, kangaroo rat (*Queraror*), racehorse goanna (*Kurda*) and rabbits (ibid). Waterloo was reported to be significant to Nyungars as it was one of the few camping and hunting areas left intact near Bunbury (ibid). Nyungar families who lived at the Waterloo camp included the Collard, Hill, Khan, Wallam, Reilly and Davis family members (ibid). In the accompanying archaeological report by Harris (2001) the Waterloo Brickworks Camp was reported to contain the remains of an old building, several European trees and a well-constructed humpy.

In relation to the BORR North and Central project, the proposed works **will not directly impact** upon Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds as the BORR alignment is located to the east of the place.

As such it has been determined that the proponent **has no further obligation** in relation to Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds.

Place ID 20057 Howson Drive Lagoon

Howson Drive Lagoon was first recorded in 1994 by P. Greenfeld, S. O’Reilly and L. Shipley during a survey for a proposed Leschenault Estate in Clifton Close, Australind. During the survey it was reported that Howson Drive Lagoon, a horse-shoe shaped swamp/lagoon located in the southern portion of the proposed development site near the northern end of Howson Drive, was an ethnographic site (Greenfeld et al. 1994: 12). It was reported that the lagoon and the area around the Brunswick River were sacred sites as they contained a Waugal (ibid). However, no specific details were provided.

On the 8th July 1999 the ACMC assessed the Howson Drive Lagoon and found that there was insufficient information for it to meet the definition of a site under the AHA (Resolution ID 4468).

In relation to Place ID 20057 Howson Drive Lagoon the proposed works **will not directly impact** upon the place as whilst the survey area traverses a small section of the DPLH extent of the place, the proposed works to the Forrest Highway as part of the BORR does not impact upon the actual boundary of the place.

As such the proponent **has no further obligations** in relation to Place ID 20057 Howson Drive Lagoon.

REVIEW OF RELEVANT ETHNOGRAPHIC REPORTS

A search for previous Aboriginal heritage surveys lodged with the DPLH revealed that there are 15 ethnographic reports that have occurred within, or in the vicinity of the study area. Nine of these DPLH reports and one other report that has been prepared by the consultant that does not appear on the DPLH AHIS search have been reviewed and are shown in the following table.

Table 2: Previous Aboriginal heritage surveys within, or in the vicinity of, the Main Roads study area

ID	Aboriginal Heritage Surveys	Outcomes
-	<p>Goode, B., O’Reilly, T. and Johnston, S. 2012, <i>An Aboriginal heritage survey of the Proposed Bunbury Outer Ring Road (Stage 2) at Gelorup, Western Australia</i>, a report prepared for GHD Pty Ltd on behalf of Main Roads Western Australia.</p>	<p>The Goode, et al. (2012) survey corridor overlays the BORR North survey area at the South Western Highway in Davenport and extends south west towards Bussell Highway in Gelorup.</p> <ul style="list-style-type: none"> • No new ethnographic sites of significance were identified in the BORR Stage 2 survey area at Gelorup. • During the survey the GKB representatives expressed concerns about the habitat of the Western Ring-tailed possums potentially being impacted by the project (Goode et al. 2012: 24) • The Five Mile Brook was reported as a food source and a pathway to the ocean, however no specific myth or information about its customary use was provided by the GKB group (Goode et al. 2012: 27).

ID	Aboriginal Heritage Surveys	Outcomes
28385	<p>Goode, B., Harris, J. and Johnston, S. 2010, <i>An Aboriginal heritage survey of the Proposed Bunbury Outer Ring Road (Stage 1) and the Port Access Road (Stage 2) at Picton, Western Australia</i>, report prepared for GHD Pty Ltd on behalf of Main Roads Western Australia.</p>	<p>The Goode, Harris & Johnston (2010) survey overlays the BORR North survey area from Boyanup Picton Road to South Western Highway in Davenport.</p> <ul style="list-style-type: none"> • No new ethnographic sites were located within the Stage 1 of the BORR and Stage 2 of the PAR (Goode et al. 2010: 30). • Concerns were expressed by the GKB representatives about the impacts that the road works would have on the rivers in the project area, and they advised that these rivers are important places for Nyungar's as camping areas, paths of migration and as spiritual places (Goode et al. 2010: 27).
22778 22779	<p>Goode, B. and O'Reilly, T. 2007, <i>An Aboriginal heritage survey of the Proposed Fibre Optic Cable Installation from Boyanup Picton Road to Lot 36 Harris Road, Dardanup, Western Australia</i>, report prepared for ABB Australia Pty Ltd on behalf of Telstra.</p>	<p>Goode & O'Reilly (2007) surveyed an optic fibre cable installation in Picton East, which abuts the BORR North survey area near Martin Pelusey Road and Coleman Turn.</p> <ul style="list-style-type: none"> • DPLH ID 19796 Ferguson River was determined to be affected by the proposed optic fibre cable path to be directionally drilled under the river (Goode & O'Reilly 2007: 4). • The GKB representatives supported the section 18 application for this directional drilling as it would cause the least environmental impact and disturbance to the river's bed and embankments (Goode & O'Reilly 2007: 29).
22363	<p>Goode, B., Irvine, C. and Harris, J. 2006, <i>An Aboriginal heritage survey of the proposed South West Yarragadee Water Supply Pipeline Route, Water Treatment Plant, bore field and collection mains, south west of Western Australia</i>, report prepared for the Water Corporation.</p>	<p>The Goode et al. (2006) survey overlays portions of the BORR North survey area from Trendale Road to Harris Road.</p> <ul style="list-style-type: none"> • The GKB representatives were not in support of Water Corporation's proposal to harvest water from the South West Yarragadee Aquifer and reported that it was a site of significance in connection with Site ID 20434 Blackwood River (Goode et al 2006: 62). • The Preston, Collie, Brunswick and Ferguson Rivers were all reported as sites of mythological significance, as well as traditional camping, fresh water and food resource areas (ibid 59, 65).
22189	<p>Goode, B. and Harris, J. 2006, <i>An Aboriginal Heritage Survey for the revised subdivision plan, lot 200 Australind Bypass, Western Australia</i>, report prepared for Thompson McRobert Edgeloe Pty Ltd on behalf of Jobet Nominees.</p>	<p>The Goode & Harris (2006) survey considered a subdivision along the Collie River on the eastern side of Forrest Highway (Australind Bypass) to the south of Raymond Road in Roelands. This survey abuts the BORR North survey area at the Forrest Highway.</p> <ul style="list-style-type: none"> • The GKB representatives confirmed the significance of the Collie River and recommended that TME seek consent under section 18 of the AHA if ground disturbing works were to occur within 30m of the Collie River's high water mark.

ID	Aboriginal Heritage Surveys	Outcomes
106646	<p>Goode, B. and Irvine, C. 2002, <i>Ethnographic survey of the Boyanup Picton Road (M52) and the Boyanup-Capel Road (M61), Southwest, Western Australia</i>, report prepared for Gutteridge Haskins Davey on behalf of Main Roads Western Australia</p>	<p>The Goode (2002) survey comprised of a 100m wide corridor of the Boyanup Picton Road and intersects the BORR North survey area at Picton East and Dardanup West.</p> <ul style="list-style-type: none"> • No new ethnographic sites were identified within this section of Boyanup Picton Road. • The GKB representatives recommended that Main Roads seek consent under section 18 of the AHA for Site ID 19796 Ferguson River and Place ID 17782 Picton River Camps, for any works required at the Ferguson River Bridge crossing in Picton (Goode 2002: 19)
18577	<p>Goode, B., Northover, J. and Irvine, C. 2000, <i>Ethnographic Survey of South Western Highway, Waroona to Bunbury, Western Australia</i>, report prepared for Gutteridge, Haskins and Davey Pty Ltd on behalf of Main Roads Western Australia.</p>	<p>The Goode et al (2000) survey comprised of a 100m wide corridor which crosses the BORR North survey area along the South Western Highway at Waterloo.</p> <ul style="list-style-type: none"> • Place ID 17775 Waterloo Brickworks Camp & Hunting Grounds was recorded during this survey, along with a number of other historical camping areas that dated from the 1930s to the 1970s when Aboriginal people were attracted to the area to work on potato farms. • During this survey the <i>Ngarngungudditj Walgu</i> Dreaming narrative about the rainbow serpent and its creative actions in relation to the formation of the Collie River system was recorded.
19390	<p>Hammond, M. and O'Reilly, S. 1995, <i>Report of an Aboriginal Heritage Survey Bunbury Bypass Road, Bunbury, Western Australia</i>, report prepared by McDonald, Hales and Associates for Halpern Glick Maunsell.</p>	<p>The Hammond & O'Reilly (1995) survey overlays a portion of the BORR North survey area from Boyanup Picton Road to the South Western Highway in Davenport.</p> <ul style="list-style-type: none"> • The Preston and Collie Rivers were reported to be sites of ethnographic significance as they were occupied by a Dreaming spirit called the 'Waugal', the principal creator spirit that is present in all sources of freshwater in the South West. • The Nyungar informants recommended that all proposed river and creek crossings do not disrupt the flow of the water (Hammond & O'Reilly 1995: 27).
104079 104608	<p>McDonald, Hales & Associates 1992, <i>Bunbury-Wellington Regional Planning Study: Working Paper no. 6</i>, prepared for Department of Planning & Urban Development, October 1990, released for public comment in July 1992.</p>	<p>The McDonald, Hales & Associates (1992) survey overlays the entirety of the BORR North survey area.</p> <ul style="list-style-type: none"> • Archival and ethnographic research for this planning study revealed sites to be grouped in clusters in areas around waterways/wetlands associated with Waugal mythology, burial sites and along trails where population movement occurred (McDonald, Hales 1992: 14).

ID	Aboriginal Heritage Surveys	Outcomes
102000	Brown, S. 1984 , <i>A Survey for Aboriginal Sites along the Proposed Australind Bypass Road</i> , report prepared for Main Roads Department.	Brown's (1984) survey comprised of the Australind Bypass (Forrest Highway) and overlays the BORR North survey area from the Forrest Highway in Roelands to the Brunswick River Bridge in Australind. <ul style="list-style-type: none"> • No ethnographic sites were located within the vicinity of the route (Brown 1984: 4) • Two archaeological sites and several isolated finds were recorded on the proposed route – see Harris 2018 for a review of this archaeological report.

OUTCOMES OF ARCHIVAL RESEARCH

In relation to these surveys a search of the DPLH Aboriginal Heritage Inquiry System (AHIS) conducted on the **2nd October 2018** and again on the **3rd of February 2020** identified **four** registered ethnographic sites and **two** DPLH other heritage places that have extents that intersect the BORR North and Central Sections of the project planning corridor (see Appendix 1: DPLH Sites and Places Register Search and Table 1).

Archival research has revealed that there is a longstanding Nyungar belief that the Collie, Brunswick, Preston and Ferguson Rivers are mythologically significant due to their association with the *Ngarngungudditj Walgu* Dreaming narrative about the rainbow serpent and its creative actions to form these waterways (see Goode et al. 2000; also Radcliffe-Brown 1926). The *Ngarngungudditj Walgu* is defined as a Dreaming creation being whose spirit continues to reside in all of the waterways; subsequently the rivers are perceived by the Nyungar community to be part of the same mythological site complex. Previous surveys (see Brown 1984; McDonald, Hales and Associates 1992; Hammond & O'Reilly 1995; Goode et al. 2000; Goode & Harris 2006; Goode et al. 2006; Goode & O'Reilly 2007; Goode et al. 2010 and Goode et al. 2012) have reported that the Nyungar community believe that if the waterways created by the *Ngarngungudditj Walgu* are blocked by developments or infrastructure then the spirit of the *Walgu* will also be blocked, with the Nyungar custodians becoming sick as a consequence of the spiritual disturbance.

In relation to the BORR North and Central project, archival research has revealed that Site ID 16713 Collie River Waugal, Site ID 19795 Preston River and Site ID 19796 Ferguson River **will be directly impacted upon** where new bridges and culverts are proposed to be constructed across the waterways. As such it has been determined that the Main Roads **will** be required to seek ministerial consent under Section 18 of the AHA in relation to carrying out the proposed works.

In relation to Place ID 20057 Howson Drive Lagoon and Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds, it has been determined that the proposed works **will not directly impact** upon these places despite the planning corridor slightly intruding into the DPLH extent of these places. As such the Main Roads **has no further obligations** in relation to Place ID 20057 Howson Drive Lagoon and Place ID 17775 Waterloo Brickworks Camp and Hunting Grounds unless the planned activities change.

In relation to Site ID 17776 Brunswick River there are at present no plans to affect the actual waterway or embankments with activities that relate to the BORR even though the planning corridor slightly intersects the DPLH extent. Should Main Roads in the future be required to upgrade the existing bridges over the Brunswick River or conduct any other activities that will affect the bed or embankments of the river, then Main Roads should conduct further consultation with the GKB to seek their views before applying for ministerial consent under Section 18 of the AHA to proceed.

IDENTIFICATION OF SPOKESPEOPLE

THE RIGHT TO SPEAK ON HERITAGE ISSUES

Various authors have discussed the contemporary problem of who in the Indigenous community has the authority to speak on heritage issues within an area. O'Connor et al (1989: 51) suggests that when this question is posed to people in Indigenous Australia, answers are usually framed by such terms as 'the Traditional Owners', i.e., those people who are defined by place of birth, or descent. Myers (1986) presents a broader and more contemporary view of 'ownership' based upon descent and association,

An estate, commonly a sacred site, has a number of individuals who may identify with and control it. They constitute a group solely in relationship to this estate... Identification refers to a whole set of relationships a person can claim or assert between him/herself and a place. Because of this multiplicity of claims, land holding groups take essentially the form of bilateral, descending kindred. Membership as a recognised owner is widely extended and therefore groups are not a given (Myers 1986: 128).

Myers (1986) further clarifies the current perception of 'ownership' when he states,

....such rights exist only when they are accepted by others. The movement of the political process follows a graduated series of links or claims of increasing substantiality, from mere identification and residual interest in a place to actual control of its sacred association. The possession of such rights as recognised by others, called 'holding' (*kanyininpa*) a country, is the product of negotiation (Myers 1986: 128-129).

While the notion of descent is clearly an important criterion within Myers analysis, it must be seen in terms of the contemporary Nyungar situation. Nyungar tradition in the South West has been seriously eroded since colonisation as lines of descent have been broken and previously forbidden and mixed marriages have interconnected many Nyungar groups who would not have traditionally had a close association (Machin 1993: 20). Consequently, in contemporary times the criteria of historical 'association' may in some cases also be regarded as a 'right to speak' on heritage issues within an area. Machin (1995) elaborates,

Traditional subsistence no longer sufficed to support Aboriginals so they combined this with menial work on farms and over time new relationships to land developed. As a consequence, the more recent history associated with their involvement with European agriculture and labour patterns is often more relevant than the pre-contact mode of attachment to an old way of life and the roots of the identity as original owners of the land. Biographical associations are often tied to post-settlement labour patterns and identification. These can predominate. This is part of a dynamic process of ethnicity, identity and tradition (Machin 1995: 11).

O'Connor et al. (1989) identified several criteria for determining contemporary community spokespeople. A spokesperson must have a long-term association with an area, usually as a young person, and had extensive contact with a member or members of the 'pivotal generation of the culture transmitters'; those people whom, as children themselves, had contact with people who could pass on their traditional knowledge. A spokesperson must also demonstrate knowledge of the region's natural resources, its hunting, fishing and camping grounds, local water sources and flora and fauna. This is important because a person without this knowledge is unlikely to be seen by their fellow Nyungar people as truly being from that country, despite having been born or lived in that area. In some cases, people from outside a specific region have established themselves by political activism. They are accepted by their fellow Nyungars because they may have participated in mainstream pursuits, such as advanced education or legal and political careers, which have empowered them within the broader community. As such, these people are a valuable resource to the local Indigenous community. The people consulted in this survey fulfil at least one of these criteria.

NATIVE TITLE CLAIMS OVER THE SURVEY AREA

Currently lodged with the Register of Native Title Claims and the Schedule of Applications, held by the Commonwealth Native Title Tribunal, there is one registered application that overlays the project area. The Schedule of Applications includes registered applications, unregistered applications and applications still undergoing the registration test.

- **Gnaala Karla Booja WC1998/058 WAD6274/98 (Registered)**

Applicants: Derrick Smith, Franklyn Nannup, Harry Narkle, Joseph Adrian Northover, Joseph Walley, Mervyn Abraham, Peter Michael, Barbara Corbett-Stammner and Lorraine Bellotti.

SELECTION OF SPOKESPEOPLE FOR THIS SURVEY

As the representative body under the *Native Title Act 1993* for the registered Gnaala Karla Booja WC1998/058 Native Title Claim, the South West Aboriginal Land & Sea Council (SWALSC) was engaged by Main Roads Western Australia to select representatives to be consulted with in regards to the project. In line with the terms of the Noongar Standard Heritage Agreement (NSHA), SWALSC provided Main Roads with a list of nominated survey participants (HER.0114).

As a result of this pre-consultation selection process, the following nine representatives were invited to attend the ethnographic surveys on the 29th October 2018, 22nd November 2019 and 23rd January 2020. In some instances a nominated representative was unable to attend and through contact with SWALSC, another GKB representative was nominated as a replacement; hence ten people were consulted over the term of the project.

Mr Gary Bennell was born in Pingelly to his parents Mr Andy Bennell, from Quairading, and Mrs Alice Bennell, from Cuballing. Mr Bennell's paternal grandfather is Mr Ned Bennell, from Brookton, and his maternal grandparents are Mr Charlie Hill, from Bridgetown, and Ms Rachael Abraham, from Narrogin. His apical ancestors are Cleetland and Jenny and Bill Humphries. Mr Bennell completed schooling at Pingelly High School. Mr Bennell is a member of the Gnaala Karla Booja and Ballardong Native Title Claim groups and was nominated by SWALSC to participate in this survey.

Mr Joseph Northover was born in Collie to parents Mr Joe Northover (Snr) and Ms Kathleen Mears. Mr Northover's maternal grandparents are Mr Jack Mears from Roebourne and Ms Phoebe Newell from the Collie/Badjaling area. Ms Phoebe Newell's parents are Ms Rosie Mippy from Collie and Mr Tommy Newell, an Irishman from Collie. Mr Northover's paternal grandparents are Mr Percy Riley of Dumbleyung and Ms Bella Kelly from Collie. Mr Northover is widely recognised as the primary informant of the *Ngarngungudditj Walgu* mythology regarding the creation of the Collie River. Mr Northover is the Director of the Ngalang Boodja Council of Collie and was previously employed as an Aboriginal Heritage Officer with the DPLH in Bunbury. Mr Northover is also a member of the Gnaala Karla Booja Native Title Claim group and sits on the working party at SWALSC. Mr Northover was nominated by SWALSC to participate in this survey.

The late Mr. Hart was born in Bunbury at a historical camp known as the Coca-Cola factory camp on the Preston River at Picton near the rail line. Mr Hart was born in 1956 to his mother Ms Daphne Sheppard Hart, who was born in Williams. Mr Hart's maternal grandparents are Mr Sydney Hart, from Williams, and Ms Topsy Franks from the Murchison area. Mr Hart worked as a heritage consultant for Mr Rory O'Connor and Associates Pty Ltd for over 30 years and also held a number of liaison positions with various government departments in the Perth metropolitan region. Mr Hart was a key member of the negotiating team from SWALSC to secure a Native Title agreement with the state for the Nyungar people. Mr Hart was nominated by SWALSC to participate in this survey. Tragically Mr Hart passed away before the survey

was completed in 2020. BGA acknowledges Mr Hart's substantial contribution to this survey and report.

Mr James Khan was born in Narrogin to parents Mr James Khan (Snr) of Quindanning and Ms Irene Hart of Narrogin. Mr Khan's maternal grandparents are Mr Melbourne Hart, from Collie, and Ms Lula Flox, from Lake Yealering. His paternal grandparents are Mr John Regan, from Bridgetown, and Ms Alice Mary Bolton, from Narrogin. The Khan name originated from Mr Phatta Khan who was an Afghan man legally married to Ms Alice Bolton. Mr Khan has worked for the Ngalang Booja Council in Collie, the South West Aboriginal Medical Service and was an Aboriginal Education Officer at the Collie Senior High School. Mr Khan is a member of the Gnaala Karla Booja WC1998/058 Native Title Claim group and sits on the working party at SWALSC. Mr Khan was nominated by SWALSC to participate in this survey.

Mrs Joyce Dimer was born in Pingelly to parents Mr Thomas (Tom) Thorne of Geeralying and Ms Amy Michael of Williams. Mrs Dimer's paternal grandparents are Mr Billy Thorne from Balladonia and Ms Emily Hart from Collie. Her maternal grandparents are Mr Jack Michael from Narrogin and Ms Eva Humes from Wandering. Ms Dimer undertook primary schooling in Darkin and Williams and attended high school in Darkin, Narrogin and Boddington. Ms Dimer then attended Business College in Perth, Bunbury TAFE, Curtin University, and the ECU before working in Aboriginal Health in the South West. Mrs Dimer is member of the Gnaala Karla Booja Native Title Claim group and was selected by SWALSC to participate in this survey.

Ms Yvonne Garlett was born in Pingelly to parents Mr Clem Collard, from Brookton, and Ms Jane Hill, from Yornaning. Mrs Garlett's paternal grandparents are Mr James Collard and Ms Mabel Bennell. Mrs Garlett's maternal grandparents are Mr Charles Hill and Ms Rachael Abraham. Ms Garlett attended school at Burekup and Bunbury Ms Garlett is a member of the Gnaala Karla Booja WC1998/058 Native Title Claim group and was selected by SWALSC to participate in this survey.

Mr Peter Michael was born in Beverley to parents Mr Jack Michael, from Meckering, and Mrs Ida Michael (nee Hume), from Collie. Mr Michael's maternal grandparents are Mr Jack Humes and Ms Ida Bennell. Mr Michael was the former chairperson of the Bunbury Nyungar Employment Education Development Aboriginal Corporation (NEEDAC), but currently works at the Southwest Aboriginal Medical Service. Mr Michael is an applicant to the Gnaala Karla Booja WC1998/058 Native Title Claim group sits on the working party and was selected by SWALSC to attend this survey.

Mrs Erika Anthony was born in Narrogin to her parents Mr Thomas Thorn, from Geeraling, and Mrs Amy Thorn (nee Michael), from Williams. Her paternal grandparents are Mr Bill Thorn, from Balladonia, and Mrs Emily Hart, from Collie. Mrs Anthony's maternal grandparents are Mr Jack Michael, from Narrogin, and Ms Eva Humes, from Wandering. Mrs Anthony undertook schooling in Darkan, Williams, Narrogin, Boddington, Collie and Wandering. Mrs Anthony is a member of the Gnaala Karla Booja Native Title Claim group and was selected by SWALSC to participate in this survey.

Mr Waylon Mark Hill is a descendant of Mr Joseph Hill. Mr Hill undertook schooling in Bunbury where he currently resides. Mr Hill is a member of the Gnaala Karla Booja WC1998/058 Native Title Claim group and was selected by SWALSC to participate in this survey.

Ms Theresa Graham the daughter of Mr Peter Michael and she was nominated by SWALSC as a replacement for Mr Peter Michael for the January 2020 consultation.

COMMUNITY CONSULTATION

AIMS

- To establish contact with Indigenous people who retain traditional or current knowledge pertaining to the region.
- To determine if there are any sites or places of significance, as defined by Section 5 of the AHA, within the project area.
- To record any ethnographic information provided about identified sites or places.
- To generate consensual recommendations from the Indigenous community representatives in regards to any Section 18 requests and to record management strategies for identified ethnographic and archaeological sites.

METHOD

To arrange the survey the selected informants were contacted by mail and phone with a meeting at the Main Roads office arranged. At the commencement of the meeting the informants were briefed as to the details of the project with the aid of the project plans and previously recorded Aboriginal heritage sites and places overlaid upon a large scale air photo map on a screen, following the meeting a vehicle inspection of the alignment took place.

During the process ethnographic information was recorded in a notebook and photographs of the survey process were taken. GPS coordinates of any cultural features were recorded in the field and transferred to mapping software ArcView V10 where final maps were produced.

COMMUNITY CONSULTATION PROCESS

On the 29th October 2018, BGA Anthropologists Mr Brad Goode and Ms Louise Huxtable met the nominated representatives from the Gnaala Karla Booja NTC group, Mr Gary Bennell, Mr Joe Northover, Mr Hart, Mr James Khan, Ms Yvonne Garlett, Ms Joyce Dimer, Mr Peter Michael, Ms Erika Anthony and Mr Waylon Hill at 10am at the Blackwood Conference Room at the Main Roads offices in Bunbury. Mr Neil McCarthy (Senior Environmental Officer) and Mr Robert Barnsley (Acting Regional Manager) from Main Roads, Dr Fionnuala Hannon (Technical Director - Environment) and Mr Liam Donnelly (Principal Bridge Engineer) from BORR IPT were also in attendance to provide technical details in regards to the project. Mr David Stapleton (Planning Officer) from DPLH also attended the initial briefing.

Mr Goode began the meeting by advising that the purpose of the consultation was to discuss any Aboriginal heritage sites, places, and issues that are located within the planning corridor for the northern and central section of the BORR. Mr Goode advised that the northern and central section of the BORR is a planning corridor that begins at the South Western Highway in the south, runs to the north and east across the Boyanup Picton Road, then crosses the South Western Highway near Burekup and terminates on the Forrest Highway at the Brunswick River in the north, a distance of 23.7km or an area of 1068.83 hectares.

Mr Goode advised that Main Roads was planning to construct a new highway to freeway standards to bypass Bunbury within this planning corridor. The highway located within the planning corridor allows for intersection realignments, roundabout construction, and duplication and the widening and upgrade to existing roads to freeway standards. Mr Goode said that several bridges are required to traverse the Ferguson River, the Preston River and the Collie River. Culverts are required to traverse small creeks that are crossed by roads that intersect the BORR.

Mr Goode advised that prior to this meeting that BGA archaeologists, Ms Jacqueline Harris and Mr Stuart Johnston, had undertaken an inspection of the survey area assisted by GKB NTC

group representatives Mr Gary Bennell, Mr James Khan, Mr Peter Michael and Ms Erica Anthony.

The inspection uncovered several isolated artefacts in the corridor and identified some material at previously recorded archaeological sites (see Harris 2018). This, Mr Goode elaborated, included a cluster of archaeological sites located around Martin Pelusey Road and where the proposed road would cross the the Boyanup Picton Road; however, due to ground visibility, not much archaeological material was observed within the extent of these previously recorded sites. Mr Goode clarified that the lack of artefacts did not mean that they were not present, but rather that the visibility hindered by grasses made artefact identification problematic. As such, Mr Goode advised, there may be some sections in the survey area where previously recorded archaeological sites and places may require monitoring as the artefacts may not be visible until ground disturbance occurs. Mr Goode advised that to construct the highway here and to cross the rivers with bridges and the creeks with culverts that consent under section 18 of the AHA will be required. Mr Goode stated that like in the previous sections artefact relocation to the land where Main Roads is rehabilitating as an environmental offset would be conducted should such material be exposed and identified. Mr Goode enquired if the group would support Main Roads seeking this consent if required.



Figure 4: The ethnographic survey team discussing the BORR project at the Main Roads offices in Bunbury on the the 29th October 2018.

Mr Goode then advised the group that the purpose of the ethnographic survey was to discuss any sacred places, such as water courses, wetlands, and river crossings or places of historical significance that maybe a constraint to planning and where consent under the AHA is required if avoidance is not possible, such as where bridges are required. These would be the focus of the day's field inspections to determine the impacts from bridge construction.

Mr Goode then asked the group to examine the maps to determine if all the known ethnographic sites have already been identified and recorded on the map to which the group responded yes.

Mr Goode then asked for comment in relation to bridge locations and impact to the values held for the water courses.

The group advised that they are all significant regardless of size.

Mr Khan stated,

There are many smaller, local watercourses which run through the whole area. These need to be acknowledged, they have the Waugal spirit too, don't dismiss the smaller watercourses. They are significance to us too and should be part of the monitoring as well.

Following this Mr McCarthy gave a PowerPoint Presentation to the group which gave an overview of the project, including the history of the project and funding arrangements. During the presentation Mr McCarthy advised that there are three different sections of the BORR – the central, northern and southern sections, and that the focus of the current survey was the northern section.

Mr McCarthy explained that there were a number of alignment options which were presented throughout the project, with the northern section of the BORR running from the Forrest Highway to the Boyanup Picton Road. Mr McCarthy pointed out the preferred alignment within the survey corridor as the result of the Northern Section Planning Study, however advised that the indicative alignment within the survey corridor could be subject to change as the project evolved. Mr McCarthy explained that sections along the central section already built maybe modified as the project evolves, so the survey would also consider the area back to the South West Highway at north Boyanup.

Mr McCarthy further advised that the planning criteria for the BORR includes that it is to be to freeway standards; have a minimum four lane dual carriageway with two lanes in each direction; speed limit of 110km/hour; interchange connections and crossroads; an allowance of 6.7m high by 6.5m wide by 30m long roads; provision for 36.5m road trains; a principal shared pathway; control of access; and be fully lit at interchanges.

Mr McCarthy further advised that due to the increased status of the Western Ringtail Possum (*Pseudocheirus occidentalis*) from Endangered to Critically Endangered, an alternative corridor in the southern section of the BORR was being investigated and that further environmental surveys were required (this will be considered later) but was raised for community awareness at the meeting but would not be considered in this survey (See McDonald & Turner 2020, see also Harris 2019, Goode & O'Reilly 2012).

The GKB NTC group representatives then discussed a number of issues which they determined to be applicable to the project. They advised that access to cultural heritage sites and waterways is highly important to the Nyungar community in order to continue carrying out their customary cultural practices and to pass on knowledge to the younger generation. The GKB also requested that landscape architects hold workshops with the Traditional Owners to bring Nyungar culture into the project design and that the Nyungar community could be acknowledged through a tree-planting project which would also have the added benefit of offsetting vegetation clearing. The GKB NTC group representatives clarified that the Traditional Owners in the Bunbury area should be referred to as Wilman or Nyungar, not Aboriginal or Indigenous and requested that bridges or roads be given Nyungar names as another way to acknowledge the community in the project. It was also requested that employment opportunities be given to the Nyungar community during the project and that skills development training be made available to ensure that Nyungar people and businesses are successful in receiving such opportunities (see engagement Plan 2019).

Mr Goode and Mr McCarthy then discussed the survey methodology, advising the group that they will begin the survey in the south and move to the north of the corridor. Mr Goode advised that there are a series of new bridges proposed with the proposed bridge locations needing to be visited so the anthropologists can record the GKB representative's advice in regards to the cultural heritage values which may be impacted upon as a result of the works.

Mr McCarthy advised that the existing bridges over the Preston River at the southern end of the BORR near the Bunbury Speedway are reasonably recent and would be a good place to start the visit as another similar bridge is proposed (1677) to be constructed adjacent to them and that this bridge would be typical of the type of designs used through the project.

Mr McCarthy enquired into whether the GKB would like to visit the places where artefact scatters are present near the Ferguson River crossing as well. Mr Khan advised that he and the other GKB had examined the artefact sites and the river crossing during the archaeological survey. They advised that visibility was constrained due to dense grass. Mr Khan and others added that a number of the sites would not be visible until the ground was disturbed, so no, we would not want to inspect these places or the river crossing as the bridge 1845 & 5406 plan showed that there would be little impact upon the actual waterway. Mr Khan said that the sites should be salvaged by archaeologists and that the GKB assistants would then relocate the artefacts to a keeping place.

Following Dr Hannon, Mr Barnsley and Mr Stapleton then left and the briefing concluded.

The survey team then drove to examine a bridge duplication 1677 required over the Preston River on the already constructed central section of the BORR, stopping at GPS coordinates 378695mE 6305620mN.



Figure 5: Mr Donnelly, right, pointing out the location of the proposed bridge duplication over the Preston River along the central section of the Bunbury Outer Ring Road at GPS coordinates 378695mE 6305620mN; view looking south.

Here Mr Donnelly provided a summary of the proposed works, pointing out the two existing bridges over the Preston River and advising that it is proposed that another bridge be constructed adjacent to the south of the existing bridges. He advised that this new bridge will be located approximately 10m further south and will be very similar to the existing bridges with the same span across the river and the same pylon structures along the embankments.

Mr Northover observed that the existing bridges are approximately 10 years old and enquired into why they could not be used for the BORR to which Mr Donnelly responded that an additional bridge is required to account for an additional ramp from the roundabout located further north-east where a new interchange is proposed.

Mr Donnelly pointed out that the river at this location is on a slight angle so the new bridge may be positioned slightly further back than the other bridges, however the bridges pylons will be the same distance back from the main water channel. He advised that steel tubes will be drilled into the ground to a depth of approximately 20m with fill material removed and replaced with steel and concrete pylons. There will be 4-6 pylons in total which will span the water channel. Mr Donnelly pointed out that access underneath the bridge will still be possible as the new bridge will have accessible embankments like the existing bridges.

Mr Goode enquired into what vegetation clearing will be required to which Mr Donnelly responded that a 10m clearance area around each side of the bridge is required.

Mr Hart stated that he finds the proposed works acceptable, however requested that cultural monitors be present to observe any spiritual disturbances which may arise as a result of the works impacting the embankments of the Preston River which he advised was sacred to the GKB. Cultural monitors mitigate these effects by the conduct of a ritual before work taking place and observe and provide advice as the effect that the activity will have on Nyungar beliefs; in some cases they may suggest ways of minimizing effects on what is sacred to them.

Mr Goode enquired into whether there are any other issues in relation to the proposed bridge to which the group responded no.

The group then drove east down the central section of the BORR before turning south down Moore Road and west along a track to the location of proposed Bridge 1852 across the Preston River, stopping at GPS coordinates 379280mE 6303356mN.

Here Mr McCarthy advised that Main Roads had purchased the land which was a blue gum plantation approximately 8 years ago. He advised that approximately 1-1.5m of sand could be dug out from this location and would be used to build the BORR.

Mr Hart enquired into what would happen to the rest of the land that Main Roads has purchased but will not be using as part of the BORR to which Mr McCarthy responded that it would likely be revegetated and used as an environmental offset site.

Mr Donnelly then pointed out the location of the required bridge and advised that it will appear similar to the bridges that the group had just previously inspected. Mr Donnelly further advised that the exact alignment of the bridge within the design corridor is yet to be fully determined; however it will be located somewhere near where the group was standing. He advised that the pylons will clear the main water channel, as the engineers have tried to get them as far away as possible on either side on the embankments; however they will be located within the flood plain. Mr Donnelly explained that the bridge will be a dual carriageway in both directions, with abutments situated back from the river's embankments. He advised that the bridge will have approximately 10 pylons, with some of the pylons may be required to be situated in a strip or sandbank located in the middle of the waterway itself. Mr Donnelly explained that the engineers have designed the bridge to ensure that the pylons are situated as far back as possible

from the river, with the exception of the pylons required to be situated on the sandbank in the middle of the waterway.

Mr Khan responded, “We don’t want there to be any impact whatsoever in the center of the river. Having pylons outside of the actual river channel is okay, but not in the channel”. Mr Khan then requested that Mr Donnelly re-consult with the group when the actual plans for the bridge are finalized. Mr Donnelly agreed to this request and advised that he could peg out the actual location of the bridge, abutment and pylons for when the group returns so they could get a clearer idea of where the bridge will actually be located. The GKB NTC group representatives all agreed that this would be a good idea.

Mr Goode asked Mr Khan to clarify why the GKB NTC group representatives oppose pylons being situated in the waterway, to which Mr Khan responded,

Pylons disturb it [the river] and the consequence of it being disturbed reflects back on us. The creator of the river is the freshwater serpent, the *Ngarngungudditj Walgu*; we are obligated by that spirit to protect the river. This, to us, is like a passage in a bible. Having as little impact as possible on the river, and on its spirit, means a great deal to us.

Mr Goode observed that engineering aspects and spiritual aspects often are conflicted in the building of infrastructure, such as the proposed bridge. Mr Khan responded that the best outcome for both would be to avoid work within the site extent from either side of the river’s embankments; however, if work is required within this zone then works not occur within the actual water channel itself and cultural monitors should be present for the duration of the works to talk to the spirit world so that problems don’t occur and the GKB don’t get sick as a result of this disturbance.



Figure 6: The ethnographic survey team discussing the proposed Bridge1852 location over the Preston River in Lot 124 Reserve 31866 at GPS coordinates 379280mE 6303356mN; view looking south-west.

Mr Goode enquired into the vegetation clearing which would be required as a part of the works to which Mr Donnelly responded that any vegetation located within 10m of either side of the bridge would be required to be cleared for fire regulation purposes. Mr Michael requested that the clearing area also be pegged out for when the group returned to inspect the area so they could get a better visual idea of what was required.

Mr Hart enquired into whether Main Roads and BORR IPT had obtained bed and banks and clearing permits to which Mr Donnelly responded that the permits will be obtained prior to carrying out any works but at present this was the early stages of the planning process.

Mr Hart was concerned that, “Bridges have previously been built too close to water ways. The run-off from the roads and the infrastructure erodes embankments and impacts the water quality”. Mr Donnelly reiterated that he could peg out the proposed location of the abutment and pylons so when the GKB NTC group representatives revisit the area they can get a clearer understanding of the proposed infrastructure in relation to the waterway. Mr Donnelly further advised that drainage and pollutant traps are a part of the design process and would address such issues.

Mr Hart stated that the most culturally appropriate way of building the bridge would be to not choke the waterways and have abutments to close to the water, to which Mr Donnelly responded that this is also the most preferable way in terms of engineering design, adding that any sort of blockage is undesirable in terms of maintain the rivers flow.

Mr Goode noted that the area where the bridge is proposed is relatively undisturbed to which Mr Khan agreed and added that ‘before’ and ‘after’ photographs should be taken of the site in order for the GKB NTC group representatives to observe the rehabilitation once the works are complete. Mr Goode suggested that the GKB should revisit the site after the bridge was built to be aware of how it affects the river in order that they can provide better advice in future surveys.

Mr Goode enquired into whether this particular place on the Preston River contains any special importance and significance in comparison to other places on the river. Mr Khan responded that the area on the river would have used as a food source, however he was unaware of any burial or ceremonial sites there or any specific places of historical use at this place on the river.

Ms Yvonne Garlett advised that here family had camped in this area, including along this section of the river in the 1960s. The area was customarily important as it where they would catch marron and fish for food. Ms Garlett recalled that the camps often consisted of *mia-mias* or bush humpies, however could not recall camping in the specific location where the bridge was proposed to be located. Ms Garlett added that her family would also hunt for kangaroos when they would come to the river to drink.

Mr Khan added that the river was a traditional and historical pathway which Nyungar people travelled along and added that they could have also stopped and made tools at their camps, however this statement applied generally to the river as a whole.

Here Mr Hart requested that native trees be preserved wherever possible, and that non-native trees be cleared before requiring any native trees to be cleared.

Mr McCarthy enquired into whether there is a Nyungar name for the Preston River to which Mr Khan responded that *Beelias* means river, but he did not have a specific name for the Preston River. Mr Northover advised it was *Yajoomup*.

Mr Goode asked the group if they would support the required approvals under the AHA to which the GKB all advised they agreed but would wish to have cultural monitors present and re-inspect the location once the final design has been determined.

Mr Goode then advised the group that the survey team would now head to the northern section to consider the Bridges 1839 & 1840 over the Collie River proposed to be constructed at coordinates 385475mE 6314596mN. The survey team would enter the location from Clifton Road.

Before heading north Mr Goode once again asked the group if they wished to inspect the artefact sites where the BORR would cut through the Boyanup Picton and Martin Pelusey Roads and the Ferguson River crossing. All advised that they had seen them before and did not wish to inspect them again, especially as there was not much visibility and artefacts could not be seen easily at this time of the year. All advised that when salvaged the artefacts should be put at the keeping place on the lot that is owned by Main Roads as an offset at 380234mE 6306231mN (see Johnston 2013). All advised that the bridge over the Ferguson did not interfere with the river so they had no issue there.



Figure 7: The location of the proposed Bridge 1839 & 1840 over the Collie River accessed via Clifton Road between Lot 121 and Lot 424 at coordinates 385475mE 6314596mN; view looking north-east.

Here Mr Donnelly advised that two new bridges are proposed to be built over the Collie River, approximately 550m northeast of where the group was currently standing. Mr Donnelly provided the group with an explanation of the works, including advising that the bridges are proposed to be approximately 25m wide with pylons located on either side of the river and not within the river itself. Mr Donnelly further advised that prior to designing the bridge that geotechnical drilling either side of the river would be required to inform designers on the geology so that the bridge span and load can be determined.

Mr Goode enquired into whether geotechnical investigations will require drilling into the actual waterbody of the river itself to which Mr Donnelly responded no. Mr Donnelly reiterated that drilling would be conducted on the banks of the river only. Mr Goode asked the group if the geotechnical drilling either side of the river would affect the values held for the site to which Mr Hart advised that it would have little impact upon the river itself but to ensure protection of the heritage values two cultural monitors should be present for the geotechnical investigations. Mr

Hart advised that the group would again support the bridge and consent required under the AHA, however they wish to be re-consulted when the design is final and that cultural monitors be present when construction takes place. Mr Hart further requested that the results from the geotechnical investigations be provided to the GKB NTC group representatives at the working party at SWALSC.

Here Mr Goode enquired into whether the GKB NTC group representatives were aware of any specific heritage places along this section of the Collie River to which Mr Northover responded that he was aware of a traditional and historical intermittent camping ground where Clifford Wallam camped with his family, advising that he thought it was located between where the group was standing and the highway. After a discussion with the group it was clarified that this camp was actually located further south near the Waterloo Roadhouse near the drainage channel located just south of the intersection of Clifton Road and the South Western Highway. Mr Bennell added that Rex Hill also camped at this site. The camp is not within the planning corridor and will not be affected by the proposed road.

Mr Goode then enquired into whether any of the GKB NTC group representatives had any other questions to make in regards to the proposed bridge or alignment at this location to which they responded no.

The group then drove back to the South Western Highway where they continued east before turning north onto Raymond Road and driving along Raymond Road for approximately 5.5km before stopping at GPS coordinates 384977mE 6315846mN to inspect drainage Culvert 0553.

Here Mr McCarthy advised the group that they are unable to get any closer to see where the proposed alignment intersects with the Collie River tributary on Raymond Road due to safety concerns. He advised that at this section of the alignment box or barrel culverts to cross the tributary of the river will be used as well as the existing bend in Raymond Road would be straightened up as part of the BORR project.

Mr Goode asked the GKB if there are any ethnographic sites in the area that he was not aware of or any specific places in this area, with the exception of the Collie River that need consideration. Mr Northover said that the only ethnographic site he was aware of in this immediate area was the river. Here he requested cultural monitoring for work that affects the river.

Further Mr Northover observed that he had previously salvaged and relocated archaeological material from the area as part of other works. Mr Goode enquired if any further archaeological material is found during the BORR project where the GKB NTC group representatives would like it relocated to, noting that there would be an archeological process to follow if material is uncovered. Mr McCarthy responded that Main Roads and the government have offset properties and suggested that the material could be relocated there to which the GKB NTC group responded that this is a good idea.

Mr Michael noted that the existing bends in the alignment on Raymond Road is dangerous, especially as it is lined with trees to which Mr McCarthy reiterated that the curvature of the road is proposed to be straightened as part of the BORR North project.

Following this the group returned to the Main Roads offices to summarize the consultation.

Mr Goode enquired into whether the GKB NTC group representatives had any other questions, comments or issues in relation to the proposed BORR North project.

Mr Northover responded by wishing to clarify that the proposed works would not impact upon the Waterloo Brickworks Camp and Hunting Ground (Place ID 17775). Mr Goode affirmed that it wouldn't. Mr Khan stated that the camp was situated along wetlands, adding that the wetlands

are connected to the other waterways in the area. Mr McCarthy clarified that the BORR North corridor misses the camps completely and that no upgrades are proposed to occur in that area.

Mr Goode enquired into whether the GKB NTC group representatives are confident that there are no other ethnographic sites located within the survey area, other than those which have been previously recorded, to which the group responded yes.

Mr Goode clarified that as the bridge plans evolve the location of the bridges would be pegged, along with the pylon locations and vegetation clearing extent, so that the GKB NTC group representatives can revisit the area for a better look. Mr Michaels agreed and stated, "Pegging it gives us an idea of what it will actually look like and we see the width, area, center and extent of the bridge. When the area is surrounded by vegetation it's more difficult to visualize it".

Mr Goode advised that Main Roads would be required to seek consent under section 18 of the AHA in order to carry out the proposed works within the DPLH registered sites. The GKB said support would be conditional to the GKB NTC group representatives' having cultural monitors present and for the pylons to be situated as far away from the waterways as possible. Mr Goode enquired into whether the GKB NTC group representatives had any other heritage mitigation recommendations to make in regards to the proposed works to which they responded no.

Mr Goode enquired into whether the GKB NTC group representatives had any further questions in relation to the project.

Mr Khan responded by asking whether there is an opportunity for the GKB to provide Nyungar names for the bridges and stated that the names could have something to do with the Nyungar history of the area. Mr Michaels noted that in the previous GKB meeting for the BORR North the name 'Wilman' was suggested for the highway after the traditional Nyungar group who lived in the area.

Mr McCarthy responded that if the GKB NTC group representatives were happy with this name then it could be put forward as a suggestion but that the highway naming was not within the control of the project team. Mr McCarthy added that the bridges over the Collie, Preston and Ferguson Rivers would also need naming and that this would be easier to facilitate if it came as a recommendation from the GKB working party.

Ms Garlett suggested that the names have the word *Beelias* in it, meaning river.

Mr Khan enquired into whether Main Roads would come back to the present GKB group when they need monitors to which Mr Goode responded that SWALSC elected the current GKB NTC group representatives to be the representative group in regards to the BORR North and, as such, they are the decision-makers for the community in regards to heritage matters on this section of the BORR North project.

Mr Goode then read out the recommendations for the BORR North project and asked if they were agreed, to which they were and then thanked the group for their participation and closed the meeting.

On Friday the 22nd November 2019, BGA anthropologist Mr Grant Preller conducted further consultations with the same GKB NTC group representatives as were consulted on the 29th October 2018.



Figure 8: Mr Neil McCarthy (centre in blue) with the aid of plans briefs the GKB BORR North survey team in regards to the bridge design and the days site inspections.

Main Roads Western Australia representatives included Dr Fionnuala Hannon (Environment and Approvals Manager), Mr Neil McCarthy (Senior Environmental Officer) and Mr Matt Swales (Structures Design Engineer). The purpose of this meeting was to re-consult with the GKB NTC group representatives now the actual plans for the bridges over the rivers have been determined.

At the previous meeting the GKB advised that they would wish to make final comment on the bridges designs for the two new bridges over the main channels of the Collie and Preston Rivers when they were completed. The GKB has advised that they did not want pylons in the channel of the rivers or narrow abutments that would chock the rivers. Here the engineers were unsure if this request could be facilitated but had committed to take these values into consideration with the design process as they understood that the GKB valued the rivers as sacred places and that having pylons in the waters and restricting the flow with narrow abutments was seen to have a deleterious effect upon their religious and cultural beliefs.

The second issue that the GKB also wished to have further advice on was the width and level of clearing within the road corridor at the bridge crossings. Here the GKB wished to have the sites in question pegged so that they could understand the impact that the bridges would have upon the rivers riparian zones. Here the GKB advised that customarily the riparian zones provided habit for valued species and provided a natural space for cultural family activities. Here the GKB wished to be assured that the bridges would be of a design type that would enable continued access along the river embankments for such activities.

To begin the briefing Mr Matt Swales provided each participant with the bridge design plans and explained the design details. Mr McCarthy discussed environmental issues and Mr Preller discussed matters relating to the AHA and Main Roads intent to seek consent under section 18 of the AHA once the issues with the bridges were resolved within the projects constraints.

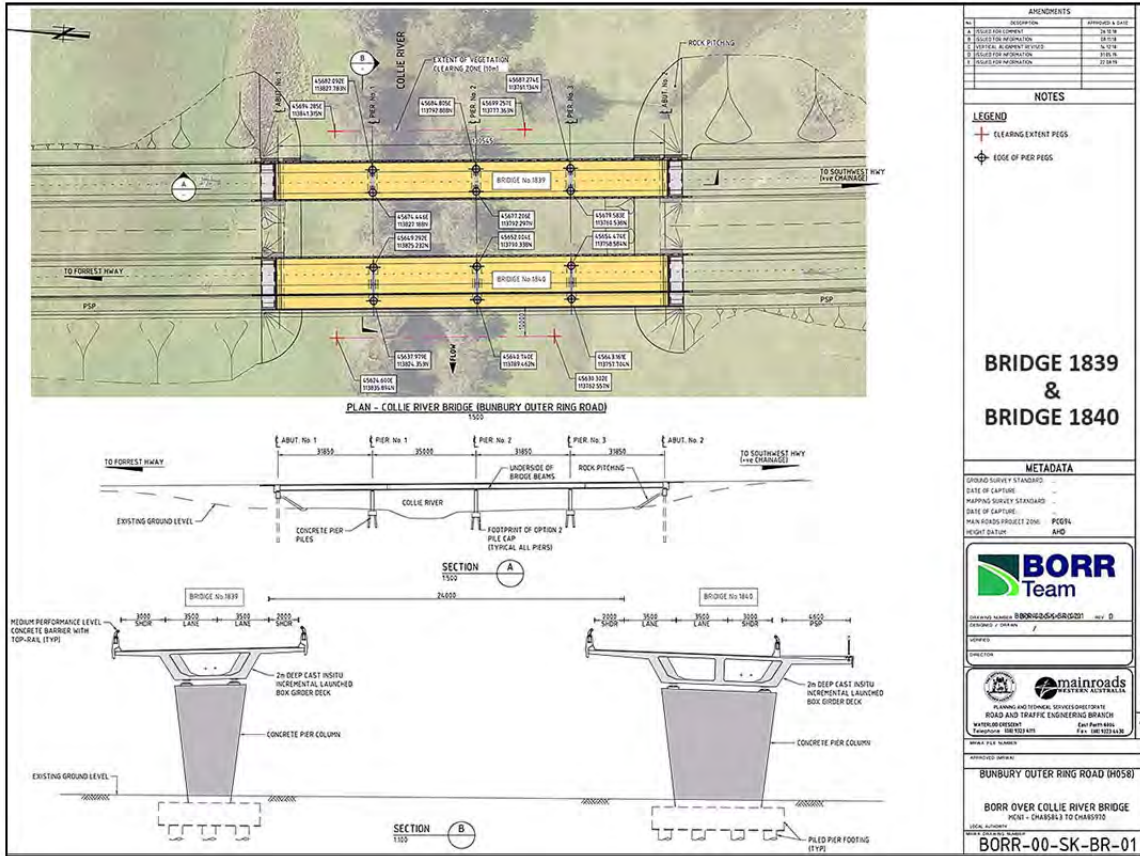


Figure 9: Design drawing for Bridge 1839 & 1840 over the Collie River at 385475mE & 6314596mN.

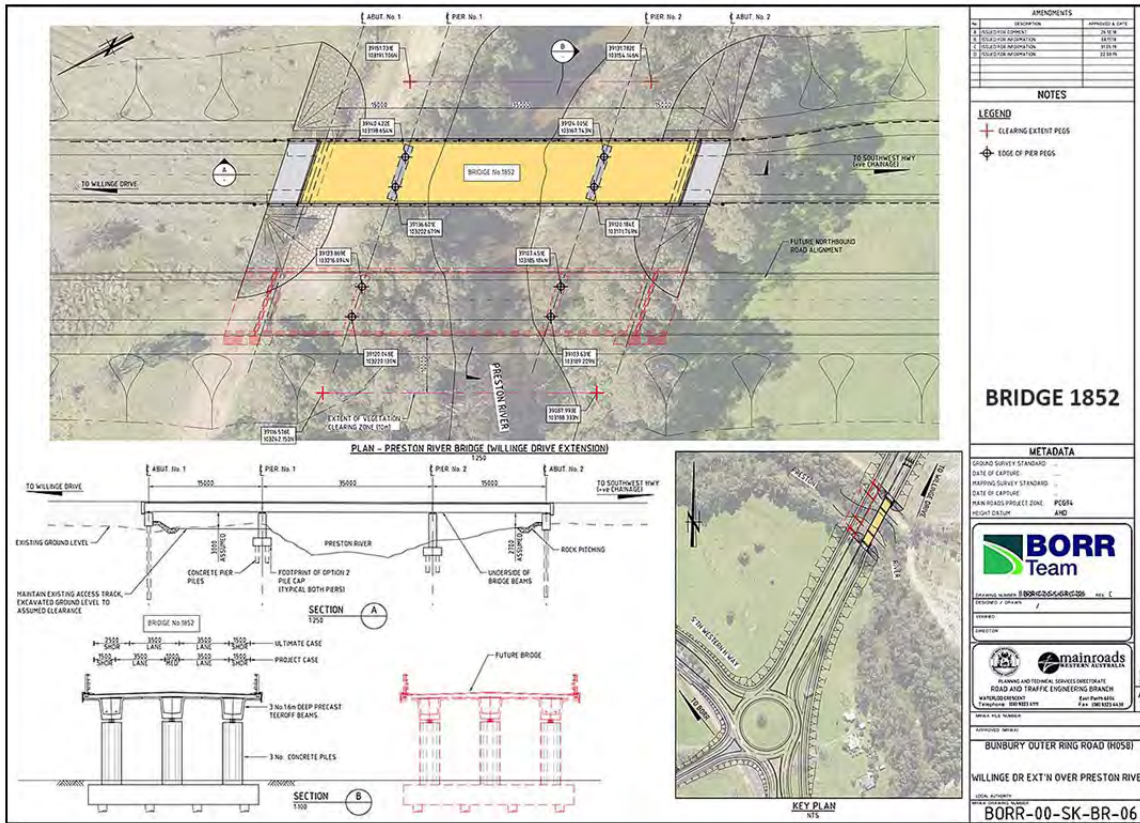


Figure 10: Bridge 1852 over the Preston River at 379107mE & 6303922mN.

At the briefing Mr Matt Swales stated the key objective from an engineering perspective was to determine if the pylon position in the bridge designs were culturally appropriate and to obtain feedback from the GKB representatives that the pegging which indicates piers and abutments locations is sufficiently clear of the embankment and waterway to maintain access to the river for cultural activities.

After this discussion the anthropologist Mr Preller asked the GKB to explain the cultural significance of the rivers and why pylons in the channel were inappropriate so Mr Swales could understand the values that the GKB wished to protect.

Mr Khan responded, explaining that it is their cultural belief, recorded in their Dreamtime stories, that the Waugal, a fresh water snake, created the waterways and that the songlines go right through the area. Mr Khan explained that in addition to the Dreamtime creation story, the rivers were (and still are) traditional food sources that the old people lived off,

“...it (the waterways) is a survival kit for each and every one of us... for future generations... and in the past, and they lived off that... the river systems... and if there is any impact to the river systems that might destroy it, but we are here to look after it... it is our cultural duty”.

Mr Michael explained that for thousands of years the rivers have been free flowing, with no bridges or any other obstacles in the waterways to impede the free flow of fresh water which was essential to Nyungars. Mr Peter Michael continued, explaining that from an environmental side if anything goes into the river or gets too close to the river the waterways start to dry up.

Mr Khan explained that once these waterways are destroyed, they are ‘gone’, adding that this is similar to a blockage in a vein that could be fatal.

Mr Swales explained that the design had taken into account these cultural factors and that whilst these were key design imperatives, the site visit would clarify whether this design had met the recommendations.

The anthropologist Mr Preller then discussed the section 18 consent process and provided the participants with the key recommendations to date for the project and asked each person to sign them if they in fact understood what would be reported and if they supported the request for ministerial consent to affect the rivers now that they had seen the bridge designs (see LOA appendix 3).

Mr McCarthy then asked the group for advice regards naming infrastructure along the alignment, such as bridges, roundabouts and on-and-off ramps with Nyungar names.

Mr Northover stated that it was his view that the whole of the BORR should be named the Wilman / Wadandi Highway to recognize the two language groups of Nyungar people that the BORR runs through. Mr Northover advised that this would be just as the Forrest Highway was named after a prominent Wadjela, so this highway should be named after the Nyungar community groups who occupied the area.

Mr McCarthy advised that he and Main Roads would in principle support this idea but the naming of the highway was not something that was within Main Roads power to grant as this would be done at a higher political level.

Mr Northover advised that he would withdraw his support for the section 18 consent notices if Main Roads would not name the BORR the Wilman / Wadandi Highway.

Following the discussion the entire group left for the field to inspect each bridge location. The first location inspected was at Bridge 1839 & 1840 on the Collie River at 385475mE and 6314596mN



Figure 11: left the pegged corridor south, centre the survey team discuss the work with Mr Preller view east, Right the bridge crossing point, view north.

Here Mr Swales explained that the crossing over this section of the Collie River was proposed to include two bridges to allow for dual carriageway. He said the bridge would be high over the river and the abutments as far back from the embankments as they could be without pylons in the river. The aim was for an access corridor to be free along the river under the bridge. Mr Swales and Mr McCarthy indicated to the locations of the pegs which defined the pylons and the edge of the bridge.

Mr Northover noted that the October 2018 inspection had seen this area inundated with water. Based on this observation, Mr Northover enquired whether the pylons would impact the ground water to which Mr Swales explained that the pylons would extend approximately 1.5 metres into the ground and that the ground water was approximately 60 metres, so no, it would not impede the ground water flow from the flood plain into the river.

Mr Northover concluded that if the ground water was unlikely to be impacted, then he had no issues with the pylons being located where they were proposed.

Mr Swales then explained the construction process. Piers or pylons would be built in situ first after which the beams would be brought in, adding that the width of the span required minimizing impacts to the waterway had created several challenges and that he was keen to hear whether this design met the criteria that had been included in the original recommendations.

The group advised it did as it would span the river, no pylons would be in the bed, the abutments would be a long way back from the river and the deck would be high enough for people to travel under the bridge along the rivers embankments for cultural activities along the river.

The group then discussed the vegetation clearing requirements which Mr McCarthy explained would include the entire pegged area including the large trees. All advised that they understood that this was necessary.

Following from this, Mr McCarthy then explained to the group that the proposed bridges would include footpaths and a possum bridge underneath the bridge structure which was comprised of a rope mesh to allow possums to use rather than the bridge structure. Mr McCarthy added that this possum bridge design had been installed at several other locations in the area and that possums had been recorded using them successfully.

Mr Khan then noted that the GKB representatives were satisfied with this design and that the only thing that was needed for ground disturbing activities to be conducted near the waterway was cultural monitors and rituals to the spirit world before the work started; the survey team noted Mr Northover performing such a ritual while the discussion was taking place.



Figure 12: Mr Joe Northover performs a sand throwing ritual to the *Ngarngungudditj Walgu* or the Hairy Faced Serpent at the Collie River.

Mr McCarthy then asked if the group could determine any Nyungar names for these bridges. Mr Northover provided the traditional name for the Collie River, namely *Mardalup*, as a possible suggestion which the GKB representatives noted but advised that the final decision would need to go before the GKB working party.



Figure 13: left pegs showing the corridor line and abutment location. Right Mr McCarthy and Mr Northover discuss the project with the pegs behind.



Figure 14: Full corridor pegged, view from the south towards the Collie River.

After this discussion the survey team departed and travelled to Bridge 1852 over the Preston River at 379107mE & 6303922mN.

On arrival, Mr Swales explained the design and the construction processes and indicated to the group the locations of the marker pegs that identified the location of the clearing extents and edge of piers adding that the span of this bridge was approximately 35 metres. Mr Swales advised that at this location the design would require a pier or pylon to be located on an embankment where the river channel splits into two; this was required to support the span and height of the bridge over that distance



Figure 15: left Mr Swales explains the bridge plans to the GKB, centre and right the section of river where the current and future bridge will span. Note there is a central bank where a pier is required due to the height and distance of the structure.



Figure 16: Centre peg denotes Pylon location that the GKB requested to be moved higher up the embankment.

Mr Khan enquired why the pegs on the opposite side of river were required to be located on the embankment in the river where the channel splits. Mr Khan advised that these piers or pylons here would be better to be placed higher up the embankment like they were on the side that the group was standing.

Mr Swales explained that this was the design which had to take into account a wide channel, adding that if this was a problem then this could be noted and looked at again as this was the purpose of the consultation.

The anthropologist Mr Preller asked Mr Khan to clarify what the purpose of avoiding the waterway channel was, to which Mr Khan responded, explaining that if a pylon is installed within a channel, that this was effectively impacting the creator of the waterway as it would obstruct the cultural flow of the spirit that is within the Preston River or *Yajoomup* (Mr J. Northover pers. comm. 29/10/2018).

Mr Swales advised that the pier or pylon was not in the channel but on a sand bank between the channels. Mr Khan likened it to blocking an artery, and explained that even though the channel was irregular, it would likely still flood at some time in the future and then the pier or pylon would be in the water. Mr Khan stated the preference of the GKB representatives was for the pylons to be located on higher ground, as far out of the channel as possible.

Mr Swales acknowledged this request to which Mr Khan explained that the other bridge had a design that met all the criteria as both sides of the bridge were located on higher ground and that the request was to try to minimize the impact to the waterway as much as possible, and as such would prefer the piers or pylons to be located further away from the channel at this location.

Mr Swales agreed to have the locations of these piers or pylons further up the embankment if possible and out of the river channel. All advised that they would then have no issue with Bridge 1852 over the Preston River if this could be achieved



Figure 17: Centre left, Mr James Khan explains to Mr Swales the issue with the piers proposed for the western side of Bridge 1852 over the Preston River at 379107mE & 6303922mN.

The group then concluded the onsite inspection and, traveled back to the Main Roads office to consolidate the outcomes and final recommendations.

In summary the GKB was largely supportive of the BORR North project corridor and road design as apart from the rivers the proposed highway would not affect any ethnographic Aboriginal heritage sites as defined by as defined by sections 5(b) & 5(c) of the AHA.

As an outcome all advised that archaeological and cultural monitoring would be required to manage impact to Aboriginal sites intersected by the roads and bridges.

Any archaeological material salvaged should be put at an artefact keeping site on the Main Roads offset blocks adjacent to the BORR or at a location close to where it was found that is not subject to development disturbances. The details in regards to monitoring as a mitigation strategy could be determined after approvals are sought and conditions are known. The monitoring strategy could be then further refined from landscape modelling and by pre-clearing inspection of key areas by the senior GKB to identify places where spiritual mitigation is needed. This could then be documented in a detailed Cultural Heritage Management Plan (CHMP) to guide contractors during construction.

In relation to the river crossings the general theme through both consultations was to construct bridges that do not impede the water flow with piers or pylons in the channel and with abutments right up to the embankments and waters as they would choke the rivers.

The other main issue was building bridges that were wide enough and high enough to allow free access along the embankments to the Nyungar community for access.

As a result of the consultation the GKB advised that Main Roads had taken their advice and that the bridges were of a type that would minimize adverse effects upon cultural values. The GKB representatives, apart from Mr Northover, advised that they would support the section 18 notice required. Mr Northover's objection was on political not cultural grounds, as to support the notice Mr Northover advised that the highway would and should be named the Wilman/Wadandi Highway.



Figure 18: November 2019 from the left, Mr Hart, Mr James Khan, Mr Grant Preller, Mr Neil McCarthy, Mr Garry Bennell, Mr Peter Michael, Mr Matt Swales, Ms Erika Anthony, Ms Yvonne Garlett, Ms Joyce Dimer and Dr Fionnuala Hannon.

On the 23rd January 2020 a final consultation was conducted in order to settle the matter in regards to the pylon locations for Bridge 1852. Here the engineers advised that they had moved the pylon located on a sand bank in a fork in the river channel up the embankment in line with the requests from the GKB made at the meeting in November 2019.

After an inspection of the site showing the both pylon locations pegged the group advised that they were now completely satisfied with the bridge designs and would support the section 18 requested by Main Road to build bridges over the Collie River, the Ferguson River and the Preston River for the BORR North and Central project.



Figure 19: Bridge 1852 pylon locations as indicated by the above pegs (centre picture).

At this final meeting the GKB made a further request that related to naming. Here they advised that in acknowledgement of the contribution Mr Hart had made to the project and to Main Roads over a long career in heritage that Bridges 1845 or 5406 be named 'Hart Bridge', as this was close to the bush camp where he had been born in 1956. The camp was located up stream on the Preston River where the Bunbury Coca Cola factory formerly stood.

The group further resolved that the GKB working party would wish to provide Nyungar names for the other bridges and that if Main Roads provided a map to SWALSC with text boxes that the working party would debate the matter and send back agreed names that could be incorporated into the project to recognize Nyungar culture. Here a further request was made to provide an interpretation board at a suitable location along the BORR that tells the story of the Nyungar history of the area and the details the sacred beliefs held by the GKB for the rivers. Here a final request was made that the BORR be named the Wilman/Wadandi Highway.



Figure 20: the GKB survey team viewing the peg pylon locations at Bridge 1852 Preston River; view south.

COMMUNITY CONSULTATION OUTCOMES

As a result of an ethnographic consultation held with representatives of the Gnaala Karla Boodja WC1998/058 NTC group it was determined that there are **no new** ethnographic sites, as defined by sections 5(b) & 5(c) of the AHA, located within the BORR North survey area.

In relation to Site ID 16713 Collie River, Site ID 19795 Preston River, Site ID 17776 Brunswick River and Site ID 19796 Ferguson River all those consulted confirmed the significance of the rivers in terms of sacred beliefs held in relation to the creation ancestral being the *Ngarngungudditj Walgu*. The GKB NTC group representatives advised that the *Ngarngungudditj Walgu* created the waterways and its spirit continues to reside in the waterways. As such placing infrastructure, in particular pylons, in the actual water channels themselves were determined to upset the spirit of the *Ngarngungudditj Walgu* with the consequences of such a disturbance falling on the Nyungar Traditional Owners who are the caretakers and custodians of the rivers.

The rivers and their surrounds were also reported by the GKB NTC group representatives to hold significance as traditional and historical water and food sources, seasonal itinerant camping grounds and places where customary cultural practices, such as fishing and hunting occurred. In particular it was reported that the Garlett, Wallam and Hill families camped along the rivers, including in the 1960s where they would catch marron and fish from the waterways. It was reported that the camps often consisted of *mia-mias* or bush humpies. The waterways were also reported by the GKB NTC group representatives to be traditional pathways along which Nyungar people travelled.

In relation to the BORR, the GKB NTC group representatives advised that they would support Main Roads applying for consent under section 18 of the AHA to carry out the proposed works within the registered sites. In terms in protecting values they requested that no pylons should be situated within the waterways themselves and that cultural monitors be present for any ground disturbing works in order to observe any spiritual disturbances which may arise as a result of the works.

Table 3: Proposed crossings (from north to south) - design plans in Appendix 4.

ID	Description	Design Plan	Location (GDA94 Z50)	
			Easting	Northing
Drainage Culvert 0553	New drainage on Raymond Road Collie Tributary	BORR-01-DG-DR-0553	384646mE	6315902mN
Bridge 1839 & Bridge 1840	New bridge over the Collie River (650m south of Treendale Road)	BORR-00-SK-BR-0001	385475mE	6314596mN
Bridge 1845 & Bridge 5406	Nicholson Road (Golding Crescent Proposed) new bridge crossing over the Ferguson River	BORR-00-SK-BR-0003	381432mE	6307597mN
Bridge 1677	Duplication of the existing BORR bridge over the Preston River	BORR-00-SK-BR-0007	378648mE	6305620mN
Bridge 1852	Proposed new bridge over the Preston River for Willinge Drive Extension	BORR-00-SK-BR-0006	379107mE	6303922mN

During the ethnographic consultation the GKB NTC group representatives also requested that that access to the Collie River, Preston River, Ferguson River, Brunswick River and their tributaries not be restricted as a result of the project as it was reported that Nyungar people still carry out contemporary customary practices along the waterways, such as fishing and gathering traditional bush food and medicinal resources.

In relation to any archaeological material which may be uncovered as a result of the works the GKB NTC group representatives advised that they would like the artefacts salvaged by an archaeologist assisted by GKB NTC group representatives and relocated to the environmental offset property purchased as part of the project.

In relation to the design of the BORR, the GKB NTC group representatives requested that workshops be held with the landscape design team to incorporate Nyungar cultural values into the project, which included minimising native vegetation clearing and retaining any native species wherever possible. It was suggested that the bridges be named after Nyungar associations with the area which would be determined by providing the working party with a map showing naming opportunities.

The GKB NTC group also suggested that another way to acknowledge and recognise the Wilman Nyungar Traditional Owners is through Main Roads providing trees for Nyungar people to plant around Bunbury.

In relation to the project the GKB NTC group representatives advised that they would like to create Nyungar employment opportunities with Nyungar businesses being considered during the tender process. This included during the rehabilitation works, such as collecting and replanting native seeds. The GKB NTC group representatives discussed the lack of opportunities for

Nyungar businesses and people to obtain contracts and jobs for major projects such as the BORR.

They requested that skills development training be provided to address the requirements for upcoming job possibilities and that Indigenous employment policies need to stipulate 'Nyungar' people, as opposed to 'Aboriginal' or 'Indigenous' people to address this issue.

The GKB NTC group representatives also discussed the benefits of having a skilled or experienced Nyungar person employed as mentor within Main Roads to act as a translator and provide cultural advice and support for new Nyungar employees. The GKB NTC group representatives suggested that Nyungar people could be employed on a 6 month basis in which time they could swap between different positions in order to obtain numerous skills and experiences.

A Nyungar committee was also discussed, with the committee's purpose proposed to help Main Roads screen Nyungar applicants to find appropriate employees suited to specific jobs.

RECOMMENDATIONS

As a result of the ethnographic survey the following recommendations are made in relation to the Western Australian *Aboriginal Heritage Act 1972* (AHA):

It is recommended that Main Roads Western Australia seek consent under section 18 of the AHA in order to carry out the proposed bridge and road works located within the extents for Site ID 16713 Collie River, Site ID 19795 Preston River, and Site ID 19796 Ferguson River, as part of the BORR North and Central project.

It is further recommended that this consent be granted as the Gnaala Karla Booja WC1998/058 Native Title Claim group is supportive of the plans and bridge designs that minimise the effects upon cultural values and beliefs.

It is recommended that should Main Roads Western Australia in the future be required to upgrade the existing bridges over the Brunswick River or conduct any other activities that will affect the bed or embankments of the river, then Main Roads should conduct further consultation with the GKB to seek their views before applying for ministerial consent under Section 18 of the AHA to proceed.

It is further recommended that Main Roads Western Australia give due consideration to the Gnaala Karla Booja WC1998/058 Native Title Claim group representatives' cultural heritage management and associated social issues requests:

- That pylons for the proposed bridges not be situated within the actual water channels of the Preston, Collie and Ferguson Rivers and their tributaries;
- That cultural monitors be present for any ground disturbing works occurring within the extents of the ethnographic sites, and places where it is determined that sacred beliefs are held associated with waterways;
- That apart from the registered sites that these places are determined by an inspection by elders prior to construction and that monitoring terms and duration are then agreed by negotiation within the project limitations and then specified in a CHMP that guides the construction in regards to implementation;
- That any archaeological sites impacted or material discovered during initial ground disturbing activities is relocated to specified artefact keeping places that could be at offset blocks owned by Main Roads or places adjacent to where they were found that will not be affected by future construction activities;
- That the results from geotechnical investigations, environmental and other studies be provided to the GKB NTC working parties for comment and that as the project evolves that Main Roads continues to update the working party in matters that relate to cultural heritage management and social and economic engagement;
- That Nyungar access to the Collie, Preston, Ferguson and Brunswick Rivers and their tributaries be retained post construction;
- That workshops with the landscape design team and the GKB NTC group representatives be held to incorporate Nyungar cultural values into the project;
- That the clearing of native vegetation be minimised wherever possible and native plant species from the local provenance be used in the rehabilitation works;
- That the new bridges and infrastructure be given Nyungar names; and that the state consider naming the BORR as the Wilman/Wadandi Highway;
- That Main Roads consider naming the bridge over the Ferguson river after the GKB member that passed away during the heritage assessment period;
- That employment, business capacity building opportunities and skill development training is provided to the Nyungar community as part of the project social engagement strategy; and
- That contracting companies tendering for project works are required to provide a Nyungar engagement plan to be successful.

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REPORT OF AN ARCHAEOLOGICAL HERITAGE SURVEY OF BUNBURY OUTER RING ROAD (BORR) NORTH AND CENTRAL PROJECT, GREATER BUNBURY AREA, WESTERN AUSTRALIA



Figure 21: Looking at the location where the proposed route transects Collie River from the south west.

*A report prepared for BORR Integrated Planning Team on behalf of
Main Roads Western Australia*

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November 2018

EXECUTIVE SUMMARY

An archaeological investigation for Aboriginal heritage sites was commissioned by Bunbury Outer Ring Road (BORR) Integrated Planning Team (IPT) on behalf of Main Roads Western Australia ('Main Roads') on the Bunbury Outer Ring Road (BORR), a regional road network for the Greater Bunbury area, linking four major highways radiating around Bunbury. The BORR is being developed in three sections (North, Central and South).

The study area is located in the greater city of Bunbury with Bunbury located 172km south of Perth. The proposed route extends some 22km north south extending in width from 50m to 1.5km (see Appendix 3: Maps). The direction of the route is generally north south but changing to east west, south of Picton. It commences at the junction of Brunswick River and Forrest Highway in Leschenault/Wellesley and culminates at the junction of South Western Highway in North Boyanup.

The field survey was undertaken on the 15th to 19th and 22nd to 25th of October 2018 and was conducted by Mrs Jacqueline Harris, senior archaeologist and Mr Stuart Johnston, archaeologist. Gnaala Karla Booja native title claim group representatives as senior field assistants accompanied the survey. These included Mr James Khan, Mr Peter Michael, Mr Gary Bennell and Ms Erika Anthony.

The survey strategy varied for each specific lot within the corridor. Generally a sample survey of the project area to identify any archaeological sites incorporated three persons walking transects spaced at 10-25m apart over sections of the project area or in close proximity on narrow tracks where applicable. It was estimated that the overall percentage coverage of the designated project area was around 30%. Ground visibility was limited throughout at around <20% as the paddocks and road verges were lush with pasture, weeds and grasses throughout the route if not water logged.

There were a number of restrictions that hindered the natural flow of the survey. The proposed corridor route involved a route transecting some 50 landowners' properties. Many landowners required notice by telephone 24 hours in advance. Many of the farms and properties on the route had biosecurity concerns where all visitors had to be free of extraneous sediment or seeds so that the wheels of the tyres had to be cleaned and brushed and the soles of shoes of the survey team washed with a spray of methylated spirits combined with water. Several woodland areas were designated *Phytophthora Dieback* protected areas so that extra precautions were undertaken to ensure that the vehicle and pedestrians were free of bacteria.

The proposed corridor cuts through mostly paddocks, numerous wetlands, rivers and creek crossings, roads and highway verges and former blue gum plantations. There are small pockets of natural woodland dispersed along the route. Because of the nature of the route through private farmland the corridor has been extensively disturbed by wholesale vegetation clearing and associated infrastructure such as transmission lines, gas pipelines, electricity and telephone cabling. A now disused railway line runs through part of the route. At various stages the corridor crosses or lies adjacent to the Collie, Brunswick, Ferguson and Preston rivers and their tributaries.

An online search of the site register at Aboriginal Heritage Division, Department of Planning, Lands and Heritage, was undertaken on 2nd October 2018 in order to determine if there were any archaeological Aboriginal heritage sites or heritage places that would affect the project. The search defined that there were **two** archaeological registered sites, **six** heritage places and **two** stored data places that overlaid the project area.

No new archaeological site, as defined by Section 5 of the *Aboriginal Heritage Act 1972*, was located within or in close proximity to the project area in the course of the survey. One isolated

artefact was located. Two previously recorded archaeological sites, six heritage places and two stored data places were relocated within the boundaries of the study area and therefore it is highly likely the proposed BORR corridor route will impact upon the sites and heritage places.

Site ID 4875 Bunbury 14 and **Site ID 4880 Bunbury 20** are both registered sites, once considered of moderate significance. In 2011 Main Roads was granted conditional consent to disturb these sites during construction of Stage 1 BORR.

If Main Roads wish to disturb these sites, then a Section 18 application should be submitted to the Department of Planning, Lands and Heritage (DPLH) seeking permission. Because of the present condition of both sites due to extensive disturbance, lack of artefacts observed and subsequent reduced scientific research potential, **it is recommended** that permission be granted conditional upon all ground works being monitored by two Aboriginal traditional custodians and any artefacts, if present, collected, measured and reburied in a safe repository.

Place ID 4870 Bunbury 19, **Place ID 4876 Bunbury 15** and **Place ID 4877 Bunbury 16** are heritage places. In 2011 Main Roads was granted permission to disturb the sites during construction of Stage 1 BORR.

If Main Roads wish to disturb these sites, then a Section 18 application should be submitted to DPLH seeking permission to disturb. As these places are no longer extant they are considered of little research potential, **it is recommended** that permission be granted unconditionally to disturb.

Place ID 5168 Natgas 262, **Place ID 5169 Natgas 263** and **Place ID 29334 Picton Isolated Finds** are stored data places and an isolated find respectively. Because they no longer contain any integrity or value if Main Roads wish to disturb these sites it is considered that permission is not required to disturb these places.

Place ID 18885 Bunbury Bypass Archaeological Site 2 and **Place ID 18886 Bunbury Bypass Archaeological Site 3** are heritage places. Both places contain numerous artefacts and are considered to contain some research potential despite previous disturbance. It is a preferred option that these places are avoided from any further impact. If there is no alternative route that bypasses these places and if Main Roads wish to disturb these sites, a Section 18 application should be submitted to DPLH seeking permission to disturb. **It is recommended** that permission be granted conditional upon all ground works being monitored by two Aboriginal traditional custodians and any artefacts if present collected and reburied in a safe repository.

The removal or excavation of large quantities of sediment increases the risk of disturbing archaeological sites that may lie beneath the ground surface. **It is recommended** that Main Roads inform any project personnel of their obligation to report any archaeological material, should this be encountered during earthmoving, as outlined under Section 15 of the *Aboriginal Heritage Act 1972*.

If Main Roads locate an archaeological site in the process of survey or ground excavation, **it is recommended** that work cease in the immediate area. Any skeletal material should be reported to DPLH and the Western Australian Police Service. Any artefactual material should be reported to Heritage and Culture Division, Department of Planning, Lands and Heritage.

INTRODUCTION

PURPOSE

An archaeological investigation for Aboriginal heritage sites was commissioned by Bunbury Outer Ring Road (BORR) Integrated Planning Team (IPT) on behalf of Main Roads Western Australia on the Bunbury Outer Ring Road (BORR), a regional road network for the Greater Bunbury area linking four major highways radiating around Bunbury.

The BORR is being developed in three sections (North, Central and South). The Central section, extending from Boyanup-Picton Road to South Western Highway in Davenport (PAR) was constructed in 2012/13. The alignment for the Northern section extends from Forrest Highway to Boyanup-Picton Road. The Southern section connects South Western Highway and Bussell Highway in Gelorup, and will link with BORR Northern section and PAR central section.

The scope of work was provided in a management plan document to Brad Goode & Associates Pty Ltd by Ms Meranda Toner, Senior Environmental Scientist, BORR IPT.

The objective of the investigation was to establish if any archaeological sites were located in the vicinity of the proposed study area, determine the integrity of any such sites and effects the proposal may have over these sites. A report was required after completion of fieldwork.

STUDY AREA

The study area is located in the greater city of Bunbury with Bunbury located 172km south of Perth. The proposed route extends some 22km north south extending in width from 50m to 1.5km (see Figure 22 and Appendix 3: Maps of the Project Area). The direction of the route is generally north south but changing to east west, south of Picton. It commences at the junction of Brunswick River and Forrest Highway in Leschenault/Wellesley and culminates at the junction of South Western Highway in North Boyanup.

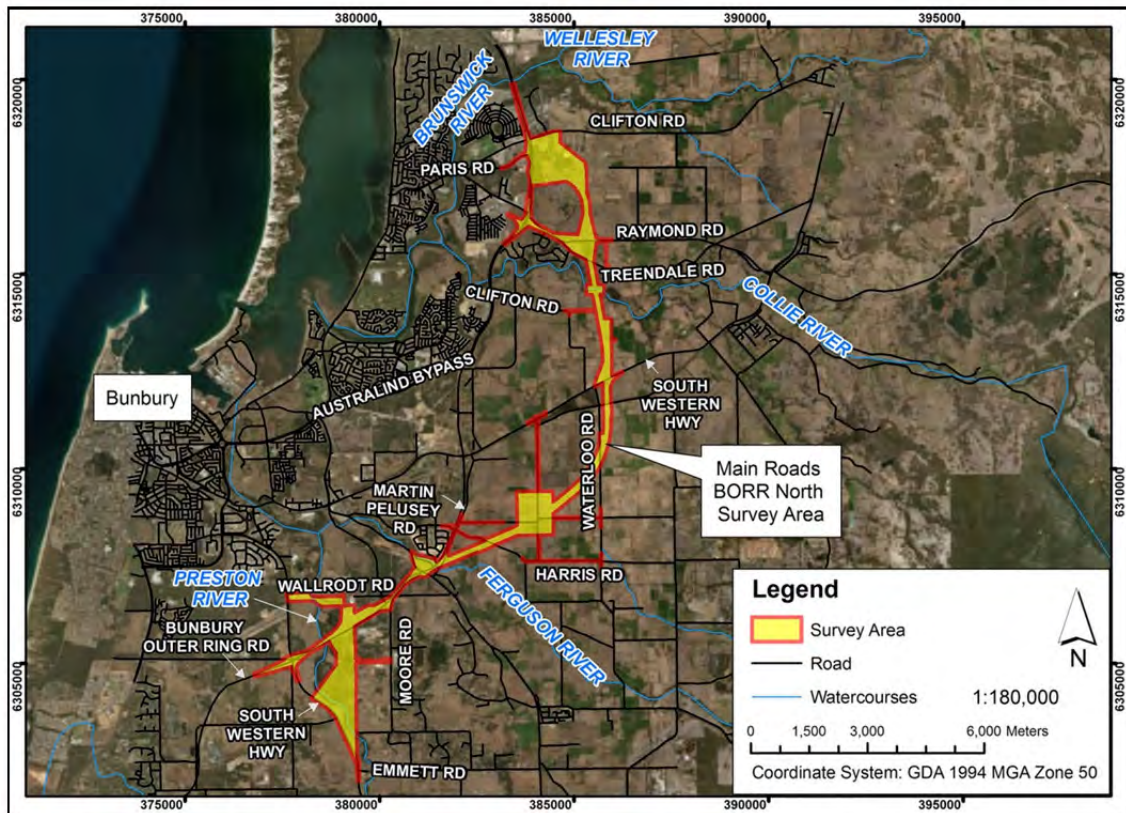


Figure 22: Location of Main Roads BORR North study area.

ENVIRONMENT

Climate

The study area lies within the south-west region of Western Australia which is characterised as a dry Mediterranean climate consisting of hot, dry summers and mild, wet winters. The mean maximum temperature in February is 30°C and mean minimum temperature in July is 7.1°C at Bunbury weather station. The region is a winter rainfall zone with annual rainfall ranges of 726 mm, most of which falls between May and September. Evaporation averages 1400mm per annum. During winter the prevailing winds are the north westerlies and westerlies associated with lows and cold front activity. In summer the winds are from the south east and east in the morning with an afternoon sea breeze from the southwest (www.bom.gov.au, Beard 1981).

Geology and Landform

The study area lies within the Perth Basin, a deep trough filled with Phanerozoic sedimentary rocks with a surface mantle of Quaternary deposits. The route falls mostly within Guildford deposits of the Swan Coastal Plain. These consist of flat plains with medium textured deposits and yellow duplex soils. Swan Deposits transect the route and consists of alluvial terraces with red earths and duplex soils. There is a small sector of Southern River complex at the northern part of the route where a sandplain with low dunes and many intervening swamps, iron and humus podzols, peats and clays occurs. A patch of Dardanup deposits in the southern part of the route consist of alluvial fans with dark brown loamy soil.

Collie, Ferguson, Preston and Brunswick rivers are the main drainage systems with Ferguson and Preston flowing south to north and Collie and Brunswick flowing southeast to northwest direction (Beard 1981).

Vegetation

The dominant Guilford complex comprises a mix of open forest with a tall open forest of marri-wandoo-jarrah and a woodland of wandoo with fringing woodland of *E. rudis*-*E. rhapsiophyllia* along waterways. Where the Swan complex transects the route at Collie, Ferguson, Brunswick and Preston rivers there is low open forest dominated by *C. obesa* and *M. cuticularis*. There is a small sector within the small Southern River complex that consists of an open woodland of marri-jarrah-banksia on elevated areas with a fringing woodland of *E. rudis*-*E. rhapsiophyllia* including some *Agonis flexuosa*. Dardanup complex is a mosaic of the three previously mentioned systems (Churchward & MacArthur 1980).

Integrity

The proposed corridor route proceeds through highways, roads and private farmland and therefore has been extensively cleared and disturbed. It is unusual to find any pristine area along the route despite some small pockets of woodland remaining

ARCHAEOLOGICAL RESEARCH

DESKTOP STUDY

An online search of the site register at Aboriginal Heritage Division, Department of Planning, Lands and Heritage, was undertaken on 2nd October 2018 in order to determine if there were any archaeological Aboriginal heritage sites or heritage places that would affect the project. The search defined that there were two archaeological registered sites, six heritage places and two stored data places that overlaid the study area.

Table 4: Summary of Archaeological Aboriginal Registered Sites & Heritage Places within the study area

ID	Name	Status	Access	Restriction	Location (GDA Zone 50)*		Site Type
					East (mE)	North (mN)	
4875	Bunbury 14	R	O	N	381055	6307314	Artefacts
4880	Bunbury 20	R	O	N	381158	6307353	Artefacts
4870	Bunbury 19	L	O	N	381146	6307406	Artefacts
4876	Bunbury 15	L	O	N	380688	6307067	Artefacts
4877	Bunbury 16	L	O	N	380380	6306751	Artefacts
5168	Natgas 262	S	O	N	381639	6307648	Artefacts
5169	Natgas 263	S	O	N	380639	6306648	Artefacts
18885	Bunbury Bypass Archaeological Site 2	L	O	N	381318	6307434	Artefacts
18886	Bunbury Bypass Archaeological Site 3	L	O	N	381936	6308398	Artefacts
29334	Picton Isolated Finds	L	O	N	380299	6306459	Artefacts

* Please note: Coordinates are indicative locations that represent the centre of sites as shown on maps produced by the DPLH – they may not necessarily represent the true centre of all sites.

LEGEND

R – Registered Site, I - Insufficient Information, S - Stored Data/Not a Site, L - Lodged awaiting assessment,
O – Access Open, C - Closed Access, N – File Not Restricted.

Site ID 4875 Bunbury 14 (S01758) is an artefact scatter. It was recorded by V. Novak, C. Clarke and C. Peck in 1978 as part of a regional Bunbury Survey for the Western Australian Museum. The site was located at an extensive road cutting at the junction of South Western Highway (now called Picton Boyanup Road) and Moore Road.

The site is described as a moderate artefact scatter consisting of numerous quartz chips and flakes, several quartz cores, silcrete and fossiliferous chert flakes and lumps of quartz on yellow sand on the south bank of Moore Road cutting. On the grey sandy northern bank of the road cutting, four quartz artefacts, one core and three retouched flakes were identified. No estimated extent of the site is recorded in the site file. The ACMC have determined that the artefact scatter is a permanent site under section 5a and 39.2c of the *Aboriginal Heritage Act 1972*.

Site ID 4880 Bunbury 20 (S01763) is an artefact scatter. The site was recorded by V. Novak, C. Clarke and C. Peck in 1978 as part of a regional Bunbury Survey for the Western Australian Museum. The site location was described as a disused yellow sand pit on the east side of South Western Highway (now the Picton Boyanup Road) just opposite the Moore Road turn off to the southwest.

The site was described as consisting of hundreds of quartz artefacts of moderate density including flakes (some modified), chips, fossiliferous chert flakes and broken granite and

quartzite grindstones and a piece of schist. No estimate of the site extent is given in the site file. The ACMC have determined that the artefact scatter is a permanent site under section 5a and 39.2c of the *Aboriginal Heritage Act 1972*.

Place ID 4870 Bunbury 19 (S01753) is an artefact scatter. The artefact scatter was recorded by V. Novak, C. Clarke and C. Peck in 1978 as part of a regional Bunbury Survey for the Western Australian Museum. The location was described as two sand pits “at the end of the north turn off Moore Rd”. The heritage place consisted of numerous small quartz flakes and chips with some showing signs of retouch. No estimate of the extent is given in the DPLH file.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as a lodged heritage place in the register.

Place ID 4876 Bunbury 15 (S01759) is an artefact scatter. The artefact scatter was recorded by V. Novak, C. Clarke and C. Peck in 1978 as part of a regional Bunbury Survey for the Western Australian Museum. It was located in pale yellow sand banks of a large road cutting at 0.4km along Moore Road from the junction of South Western Highway (now Picton Boyanup Road). The artefact scatter is described as numerous small quartz flakes and chips located on the southeast embankment and two quartz chips on the northwest embankment. No estimate of the extent is given in the DPLH files.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as a lodged heritage place in the register.

Place ID 4877 Bunbury 16 (S0176) is an artefact scatter. Place ID 4877 was recorded by V. Novak, C. Clarke and C. Peck in 1978 as part of a regional Bunbury Survey for the Western Australian Museum. The location was described as a road cutting 0.9km along Moore Road, south of the junction of South Western Highway (now the Picton Boyanup Road) and Moore Road and at the junction of Moore Road and Wallrodt Road to the west. The artefact scatter was described as consisting of mainly large quartz flakes and several modified flakes and chips. No estimate of the extent is given in the DPLH files.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as a lodged heritage place in the register.

Place ID 5168 Natgas 262 (S01282) is an artefact scatter. Place ID 5168 was recorded by G. Houghton in a survey for State Energy Commission in 1982. The location was described as a sand pit adjacent to Martin Pelusey Road on the east side opposite a Friesian Stud. The artefact scatter consisted of two amorphous flakes of chert and one flake of quartzite in a sand pit. The estimated area of the artefact scatter was recorded to be approximately 50m x 50m.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as stored data in the register.

Place ID 5169 Natgas 263 (S01283) is an artefact scatter. Place ID 5169 was recorded by G. Houghton in a survey for State Energy Commission in 1982. The location was described as “on your right in the face of the second road cutting after turning into Moore Road from South Western Highway” (now the Picton Boyanup Road). This conflicts with the mud map that shows the artefact scatter on the left, the eastern side.

The artefact scatter consisted of quartz chips and flakes eroding out from a sandy interface. The estimated area of Place ID 5169 was 50m x 50m.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as stored data in the register.

Place ID 18885 Bunbury Bypass Archaeological Site 2 is an artefact scatter. This artefact scatter was recorded by Meath Hammond and Steven O'Reilly in 1995 during a heritage survey of Bunbury Bypass Road. The location was described as a railway embankment between the Ferguson River and South Western Highway (Picton Boyanup Road) approximately 200 meters northwest of the intersection with Martin Pelusey Road.

The artefact scatter consisted of a low density of 40 quartz and chert flakes and flake fragments on a yellow sandy railway embankment. The estimated area of Place ID 18885 was 40m x 10m. The authors state that the artefacts of low significance lay within the proposed construction easement and will therefore be impacted.

A further survey in 2007 and 2010 (Goode & Harris 2007, Goode & Harris 2010) relocated the heritage place and revealed that artefacts continued to appear over time despite disturbance from infrastructure. The extent of the place was re-measured in accordance with further artefacts observed eroding from the sands.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as a lodged heritage place in the register.

Place ID 18886 Bunbury Bypass Archaeological Site 3 is an artefact scatter. This artefact scatter was recorded by Meath Hammond and Steven O'Reilly in 1995 during a heritage survey of Bunbury Bypass Road. The location was in ploughed paddocks south of the intersection of Martin Pelusey Road and Harris Street within 20m of a fenceline on both sides of the road.

The artefact scatter consisted of a low density of 10 quartz flakes and chips on yellow sand. The estimated area of the artefact scatter was 20m x 40m. The authors state that the artefacts of low significance lay within the proposed construction easement and will therefore be impacted.

The ACMC have determined that there is insufficient information to establish the accurate location and significance of the artefact scatter under the *Aboriginal Heritage Act 1972* and it is therefore placed as a lodged heritage place in the register.

Place ID 29334 Picton Isolated Finds is an artefact scatter. The isolated artefacts were recorded by Jacqueline Harris during a survey for Stage 1 of the Bunbury Outer Ring Road. Two quartz flakes were located on a yellow sandy embankment which also comprised road building debris suggesting it was used as a dump and/or borrow pit. The quartz core was located 50m further north.

MONITORING OF SITES/HERITAGE PLACES DURING PAR & STAGE 1 BORR

A Section 18 for permission to disturb heritage Sites ID 4875 Bunbury 14 and Site ID 4880 Bunbury 20 in the process of constructing Stage 2 of the Bunbury Port Access Road (Willinge Drive), the Bunbury Port Access Road and Stage 1 BORR Bunbury Outer Ring Road (BORR) was granted to Main Roads on 6th April 2011. A Section 16 was then granted to Main Roads on 10th August 2011 for permission to salvage artefacts from five previously identified archaeological sites/places, and sample from four of these sites/places for analysis. The results were documented in Johnston (2013) and are summarized below.

Site ID 4875 Bunbury 14 is a moderately sized site where artefacts continue to erode out of the dune system. At the salvage collection of all visible artefacts a total of 69 artefacts were collected. The second collection resulted in another 71 eroding out of the dune system. In total 140 quartz artefacts were collected, and 69 artefacts were recorded and analysed. The writer considered that Site D 4875 Bunbury 14 should continue to be monitored in the future, having high potential for subsurface material and should remain on the permanent register at the DPLH.

Place ID 4876 Bunbury 15 is a small heritage place that appears to be a single knapping event. The heritage place exhibits no dominant characteristics, but the assemblage is considered too small for comparable analysis. All 15 artefacts present were collected and recorded during monitoring. Heritage Place ID 4876 Bunbury 15 should now be assessed as 'Stored Data' on the DPLH Sites and Places Register.

Place ID 4870 Bunbury 19 is a heritage place where no artefacts were present on the surface or subsurface. In addition, no artefacts were sighted before, during or after monitoring at this place. Heritage Place ID 4870 should now be assessed as 'Stored Data' on the DPLH Sites and Places Register.

Site ID 4880 Bunbury 20 is a small assemblage with a mixed variety of artefacts. A total of eight artefacts were collected during monitoring. The writer considered the site should continue to be monitored and may require test pitting in the future. Site ID 4880 should remain on the permanent register at the DPLH.

REVIEW OF HERITAGE SURVEY REPORTS

Greenfeld, P. 2003, *Site monitoring for Section 16 Application, Preston River Bridge (No 430), South West Highway, Picton near Bunbury, Southwest Australia*, Prepared for Main Roads Western Australia.

The study area comprised a bridge over the Preston River, South West Highway. Several wooden pylons, having rotted away, were replaced. The soil profile consisted of grey mottled sterile sediment containing little organic or mineral material as a result of flooding activities. No archaeological material was located in the project area.

Brown, S. 1984, *A survey for Aboriginal sites along the proposed Australind Bypass Road*, Prepared for Main Roads Department.

The proposed Australind Bypass Road is 17km in length beginning 4km north/north-east of Australind from Old Coast Road. The proposed Australind Bypass Road lies principally on sand plain which is mostly flat with some low ridges and some intervening swamps.

Two previous investigations have been undertaken in the area. In 1978 Department of Aboriginal Sites, undertook a brief archaeological survey, associated with a National Estate study, within the Bunbury townsite. Five sites were located near the proposed Australind Bypass Road survey area. These are all small sparse open artifact scatters with mostly quartz and some chert artifacts. All are in disturbed areas such as firebreaks, railway cutting and dams. A second survey was carried out by Pearce and Mulvaney (1983) at Kemerton, north of Australind. One of the sites recorded, lies immediately north of the northern end of the proposed bypass road. Finally a few small open artifact scatters were recorded in 1975 by V. Novak and S. Collier in the Australind area. One of these lies 3.5km north of Australind along the Old Coast Road, and on a sand dune cutting through which the road passes. This site was not relocated.

Two sites were recorded during the survey containing 10 - 13 artefacts. All stone pieces were quartz excepting one chert piece and they were found on a sandy hill and a flat plain in white sand on disturbed ground. They were recorded in situ and have no further archaeological

research value. Both are likely to be disturbed and/or damaged by proposed road construction of the Australind Bypass Road. Four isolated finds were located on white/grey sand which has been cleared of vegetation.

McDonald, E., Murphy, A. & Jarvis, A. 1992, *Report of an Archaeological and Ethnographic investigation proposed upgrading of the southwest Highway between Bunbury and Donnybrook*, Prepared for Main Roads Department.

The survey concerned widening of the Southwest Highway between Bunbury and Donnybrook. The survey strategy comprises systematic traverses on foot throughout the study area. Ground cover was higher than 70% in some places so areas of better visibility were given priority. The systematic survey thus became random with clearer patches forming a mosaic within the heavily vegetated road verge.

The area was marginal land away from the major rivers and thus no sites were located. Nevertheless many isolated artefacts that previously have been recorded as sites in the area are deemed to comprise of artefacts as a result of accidental loss, deliberate discard of exhausted artefacts or opportunistic task related stone reduction.

Hammond, M. & O'Reilly, S. 1995, *Report on an Aboriginal Heritage survey Bunbury Bypass Road, Bunbury, Western Australia*, Prepared for Halpern Glick Maunsell.

The study area comprised a proposed bypass road at Bunbury. The survey methodology consisted of systematic transects undertaken at 20m apart along the proposed road easement. Five archaeological sites were located on exposed yellow sand and each contained quartz artefacts. These were deemed to be of low significance. The authors predict that areas most likely to provide favourable campsites locations are elevated, well drained areas close to water and fish and game resources.

Murphy, A., McDonald, E. & Locke, R.G. 1990, *Report of an Archaeological and Ethnographic Survey for Aboriginal Sites Bussell Highway, Bunbury*, A report prepared for Main Roads Bunbury Western Australia.

This survey concerned an area along the easement of the proposed dual carriageway construction on a part of the Bussell Highway. Only two small quartz artefacts were found. Research on the previous sites located demonstrated: that a number of burials have been recorded in the dunes around Bunbury and that all the habitation type sites in the Bunbury area occur within 500 meters of either the Preston or Ferguson Rivers. The survey suggests that both of these landforms in the Bunbury area are likely to contain artefact material or burials.

Goode, B. and Harris, J. 2007, *An Aboriginal Heritage Survey for the Proposed Pipeline Installation Along the South Western Highway and Harris Road, Picton, Western Australia*, A report prepared for GHD Pty Ltd on behalf of Aqwest.

The survey concerned a proposed water distribution pipeline on some 10m width of road reserve on mostly the northern side of the South Western Highway, Boyanup Picton Road and Harris Road. The route extends east from Vittoria Road on South Western Highway and Boyanup Picton Road for 2 kilometres and east along Harris Road for 2.4 kilometres.

The survey design included a total survey of the proposed pipeline route comprising two persons walking abreast, spaced 3m apart. In addition, predictive intensive transects were conducted at firebreaks, devegetated patches, along the river bank where it passes in close proximity and any other area of site potential. No archaeological site was located as a result of a narrow road reserve of less than 10m width within semi industrial zones, railway reserves and semi-rural zones. Further, disturbance to the area is extensive from road construction and infrastructure, drains and industrial developments.

O'Reilly, T. 2007, *Report on an Archaeological Survey of a proposed Telstra Cabling Route at Picton East, Western Australia*, Prepared for Telstra.

The designated survey area is a narrow corridor 50m wide and extending eastwards from the Boyanup Picton Road, across the Ferguson River and a railway line, for approximately 850m to a point just east of the existing Golding Crescent in Picton East. The area was surveyed by walking a series of transects at approximately 20m intervals and aligned in a general east west direction.

No Aboriginal archaeological material or sites were identified. The generally low surface visibility encountered is a possible reason for this result. The thick groundcover of lush grasses that covered the majority of the Telstra Cabling Route survey area made it very difficult to see or find any archaeological material that may have been on the obscured ground surface. However, it should be noted that searches of fence lines, the railway cutting, cleared tracks and their margins as well as other opportunistic exposures with high surface visibility also yielded no Aboriginal archaeological sites or material.

Goode, B. & Harris, J. 2010, *An Aboriginal Heritage Survey of the proposed Bunbury Outer Ring Road (Stage 1) and the Port Access Road (Stage 2) at Picton, Western Australia*, Prepared for GHD on behalf of Main Roads Western Australia.

The study area includes some 11km of proposed roadway extending in width from 20m to 400m allowing for turning lanes. The survey of the proposed route comprised two persons walking abreast in transects, spaced 30m apart in the wider sections or a single person walking transects in the narrow sections. In addition, predictive intensive transects were conducted at firebreaks, devegetated patches, along the river bank where the route crosses on two occasions and any other area of site potential.

No new archaeological site was located. Three isolated artefacts, however, were located. These were located on a yellow sandy embankment comprised of road building debris suggesting it was used as a dump and borrow pit. The proposed highway route will impact six previously registered archaeological sites. Each of these sites lies within unstable sands of embankments and has been previously disturbed by road and rail works. All of the sites are small in extent and density. Presently they are situated in vulnerable states where natural erosion and heavy vehicle traffic serves to further affect the adjacent dunes. As a result of their fragility, disturbance and limited integrity they are considered of limited significance.

SUMMARY OF REPORT RESEARCH

The reports establish that the majority of sites and heritage places were located in 1970s/80s when an expansion in industrial and residential development commenced outside the town centre. Several heritage places (Hammond & O'Reilly 1995) were the exception having been located in mid 1990s. All these sites when revisited in 2010 were observed to be in vulnerable positions as the growth of the township had a substantial impact.

Many of the sites were located on sandy hills and flat plains on white sand in disturbed ground but also in yellow sand that is elevated and well drained but close to a water source. Within the reports the consultants concur that the majority of artefact scatters are generally located in the vicinity of rivers, creeks, lakes, swamps and estuaries, or specifically within 500m of Preston and Ferguson rivers on yellow or grey sands.

The reasons attributed to the lack of sites found subsequent to the 90s is poor visibility, disturbance from housing, industry and farming and the foraging strategies of Aboriginal people that left minimal evidence excepting the occasional isolated artefact. While poor visibility from dense ground cover is the major factor in the location of sites, the disturbance factor is a major handicap depending upon the degree of alterations in the area.

ARCHAEOLOGICAL CONTEXT

A considerable amount of research has been conducted in the southwest corner of Western Australia (see Dortch 1977, Hallam 1986, Ferguson 1985, Pearce 1982) and as a consequence the archaeological patterning of the region is well developed. The study area is located within the coastal sand dunes and sand plains of greater Bunbury.

Ethnographic and archaeological surveys on the Swan Coastal Plain have confirmed the concentration of Aboriginal occupation around wetlands, swamps, rivers and estuaries (O'Connor, et al. 1995). This pattern was originally proposed by Hallam (1986) on the coastal plain around Perth and further enforced by subsequent research. An anomaly to this archaeological patterning, however, was suggested by Veth & Moore (1989), after an extensive survey of the Scott Coastal Plain which failed to locate any archaeological material, suggesting a very low occupation density for the low-lying swampy plain.

A variety of ethno-historical sources describe the activities of Aboriginal people on the coastal plain, their subsistence techniques and semi-permanent camps about wetlands during summer. Several sources have noted that people dispersed in winter to hunt in the forested uplands, yet there is scant information pertaining to this part of the subsistence cycle. On the basis of ethno-historical evidence, Hallam (1979) has proposed that the forest was little exploited and the less dense woodland further inland was targeted by Aboriginal groups.

An alternative model has been proposed by Anderson (1984) and Pearce (1982) based on studies carried out in jarrah forests where they propose that the resources of the forest were widely exploited by highly mobile hunting groups but these groups did not establish large camp sites. Both recorded numerous small artefact scatters, comprised predominantly of quartz tools and debitage. In the South Canning Forest, Anderson estimated a density of 1.7 sites per square kilometre while Pearce found a density of 1 site per square kilometre in Collie. Anderson also noted the particular problems concerning low visibility and poor access inherent in the survey of forests.

Excavations were undertaken in jarrah forests by Pearce (1982) and Anderson (1984) where datable organic material was recovered. A sandy site on the edge of a swamp at Collie established occupation at 5810 ± 330 BP in the deepest part of the forest; a cave at Boddington yielded a date of 3230 ± 170 BP; while Anderson recovered a date of 1280 ± 80 BP at North Dandalup.

One of the earliest sites providing evidence for prehistoric occupation of the South-West of Australia is an alluvial terrace site at Upper Swan, located 25 km north-east of Perth and dated at 38,000 BP years (Pearce and Barbetti, 1981). Two other sites in the south-west have also yielded Pleistocene dates, Devil's Lair near Margaret River and Helena River. The length of occupation at the limestone cave at Devil's Lair ranges from 47,000 years BP to 6,500 years BP while Helena River yields an early date of 29,000 BP years from the basal level as well as a mid-Holocene date of 4,000 BP closer to the surface (Dortch 1977, 2002, Schwede 1990). In addition, Dortch (1975) located a silcrete quarry and manufacturing site on the Darling Plateau at Northcliffe. His excavations revealed extensive use of geometric microliths from prior to 6,000 BP until 3,000 BP.

South of the study area, Lilley (1993) surveyed the coastal plain and forest uplands around Margaret River but failed to find any archaeological material in the forest and few sites on the coastal plain. He concludes that the faint archaeological signature of the region is the result of low population densities caused by a relatively impoverished resource base, particularly in jarrah forests. He considers that the technical problems inherent in the region of low site survival rates, poor access and low surface visibility, while contributing factors in site surveys, nevertheless do not affect the outcome of an actual scarcity of archaeological sites in the area.

Southeast of the study area Ferguson (1985) produced an occupation model for the far southwest predicting extensive use of uplands during earlier times of cooler, drier climate and less dense forest. With increased rainfall and subsequent increase in forest density during the early Holocene, Ferguson proposed sparser occupation in the forest uplands and increased occupation of the coastal plain and interior woodlands.

Research into occupation patterns on the coastal plain, woodland and jarrah forest of the Perth region can be transposed to the lower south-west because of the similar environmental and geomorphic features. A large data base on site locations and assemblages exists as a result of a systematic study of the Swan Coastal Plain undertaken by Hallam (1986) in the 1970s and early 1980s. Hallam's objective was to explain the changing occupation patterns of prehistoric Aboriginal populations. Using numbers and types of sites within ecological zones as a means of comparison, Hallam describes the patterning and nature of archaeological assemblages from the littoral zone, through the coastal sand plain to the foothills and Darling Scarp.

Hallam concludes that Aboriginal occupation was focused around lakes and swamps of the Bassendean Sands and Pinjarra Plains and these occupation sites double numerically in the last few hundred years before European contact. A broad chronology was developed based on the presence of certain indicators within the assemblage. The presence of fossiliferous chert indicates the Early Phase, backed pieces and flat adzes the Middle Phase, quartz chips the Late Phase and glass or ceramic, the Final Phase. Schwede (1990), in a more recent analysis of quartz debitage, finds these chronological markers problematic, in particular, the Late Phase and concludes that all phases were rich in quartz assemblages.

From such research, a predictive model of site type and location can be projected for the study area. There is a high probability that any sites located will be scatters of less than 10 artefacts and manufactured from quartz. These sites will occur in proximity of a water source and be situated in disturbed areas and yellow/white sand dunes. It is necessary, however, to take into account the high level of disturbance caused by intensive farming by European colonists in the C19th and C20th that may have largely obliterated or camouflaged archaeological sites.

SITE SIGNIFICANCE

The significance of an archaeological site is determined by its ability to address regional and site-specific research questions and by its representativeness (Bowdler 1984). Significance is a mutable quality, changing as more sites are recorded, research questions are answered or new research directions arise. Research questions that sites in the Southwest may address include:

- a) the antiquity of colonisation of the southwest zone;
- b) social and technological changes that may have occurred in the mid-Holocene;
- c) specific patterns of occupation in regional zones; and
- d) dating of industrial sequences in the region.

SURVEY METHODOLOGY

The survey was conducted using Garmin GPSmap 60CS on datum GDA and four aerial maps at 1:10,000 scale demarcating the proposed project corridor. Three A3 cadastral maps denoting lot divisions were used to define boundaries of lots along with a 15 page list of approximately 50 landowners denoting the conditions of entry for each property. The survey design was formulated using a combination of predictive, systematic and opportunistic transects throughout the study area with particular emphasis on devegetated areas and water resource locations.

The field survey was undertaken on the 15th to 19th and 22nd to 25th of October 2018 and conducted by Mrs Jacqueline Harris, senior archaeologist and Mr Stuart Johnston, archaeologist. Gnaala Karla Booja native title claim group representatives as senior field assistants accompanied the survey. These included Mr James Khan, Mr Peter Michael, Mr Gary Bennell and Ms Erika Anthony.

The survey strategy varied for each specific lot within the corridor. Generally a sample survey of the study area to identify any archaeological sites incorporated three persons walking transects spaced at 10-25m apart over sections of the study area or in close proximity on narrow tracks where applicable. Predictive intensive transects were conducted at potential areas of interest such as devegetated patches and along banks at water sources. It was estimated that the overall percentage coverage of the designated project area was around 30%. Ground visibility was limited throughout at around <20% as the paddocks and road verges were lush with pasture, weeds and grasses throughout the route if not water logged.

There were a number of restrictions that hindered the natural flow of the survey. The proposed corridor route involved a route transecting some 50 landowners' properties. On the day prior each property had to be checked for their specific requirements on the cadastral map and list before access was considered. Many landowners required notice by telephone 24 hours in advance. Where there were rigid restrictions placed on accessing some landholdings, the traditional owners did not feel confident having to comply with these terms due to historical experiences and these properties were not inspected. In addition each morning and afternoon the survey team checked in each morning and night with BORR IPT to verify our location on/off site for health and safety reasons.

Many of the farms and properties on the route had biosecurity concerns where all visitors had to be free of extraneous sediment or seeds so that the wheels of the tyres had to be cleaned and brushed and the soles of shoes of the survey team washed with a spray of methylated spirits combined with water. Other times the 4WD vehicle had to be washed down at a car wash to remove any foreign material such as sediment, clay, seeds or manure. Several woodland areas were designated *Phytophthora* Dieback protected areas so that extra precautions were undertaken that the vehicle and pedestrians were free of bacteria.

A number of tiger and dugites snakes were sighted in the grass, the result of the weather having just started to warm up and the breeding season had commenced. Ticks abounded in natural woodland, the result of the mob of kangaroos present on many of the properties.

SURVEY AREA

The proposed corridor cuts through mostly paddocks, numerous wetlands, rivers and creek crossings, roads and highway verges and former blue gum plantations. There are small pockets of natural woodland dispersed along the route. Because of the nature of the route through private farmland the corridor has been extensively disturbed by wholesale vegetation clearing and associated infrastructure such as transmission lines, gas pipelines, electricity and telephone cabling. A now disused railway line runs through part of the route.

At various stages the corridor crosses or lies adjacent to the Collie, Brunswick, Ferguson and Preston rivers and their tributaries. Vegetation includes paperbark, peppermints, river gum, acacia, jarrah, marri, Christmas trees, sheoak, grass trees, prickly bush and hakea. A feature of the Outer Picton middle section of the corridor is ditch irrigation alongside the roads and within the properties. Many road and highway verges have been revegetated or contain remnant species of native trees.

FIELD SURVEY RESULTS

No new archaeological sites, as defined by Section 5 of the *Aboriginal Heritage Act 1972*, were located within or in close proximity to the study area in the course of the survey.

One isolated artefact was located.

Two previously recorded archaeological sites, six heritage places and two stored data places were relocated within the boundaries of the survey area. It is considered that the survey techniques employed in the field survey were sufficient to have located any major archaeological site present and visible on the surface.

The one isolated artefact was located at Zone 50 379107mE 630466mN. It was a white quartz lateral broken flake located on a track beside the Preston River. It measures 16mm x 8mm x 2mm. It has 2% cortex, a flaked platform and feather termination (see Figure 23).

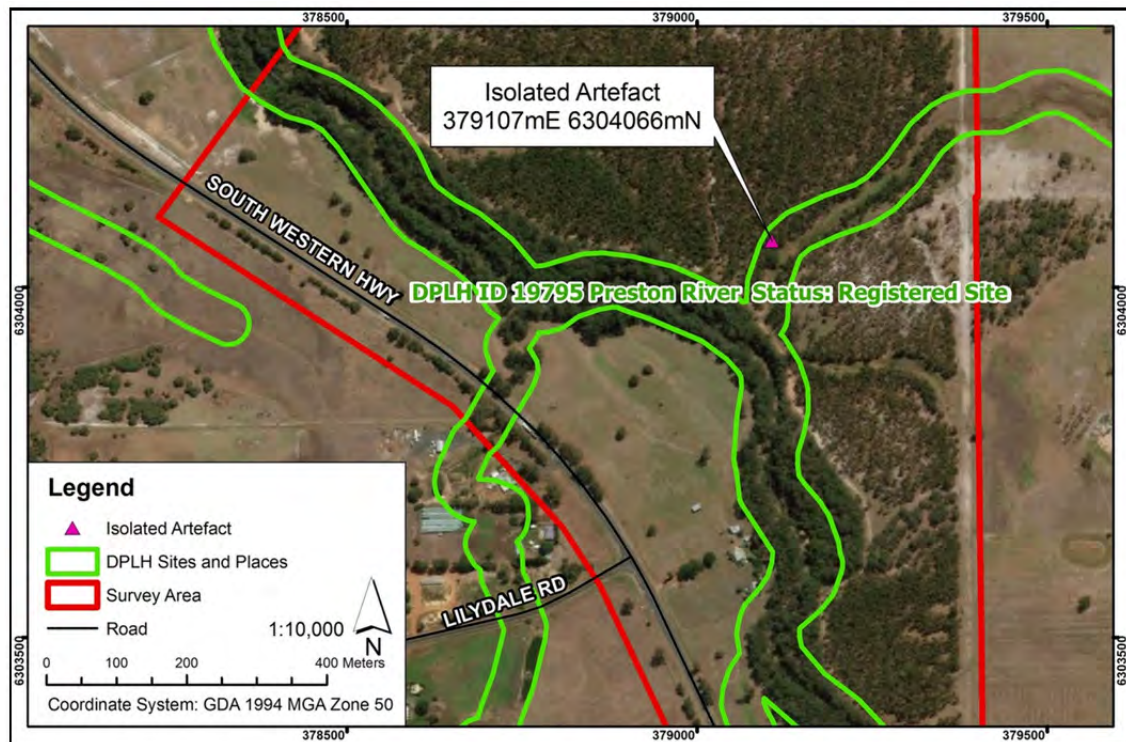


Figure 23: Map of Isolated Artefact located near the South Western Highway in the southern portion of the BORR survey area.

Site ID 4875 Bunbury 14

This artefact scatter, first recorded in 1975, was located at an extensive road cutting at the junction of South Western Highway (now named Picton Boyanup Road) and Moore Road (now Bunbury Outer Ring Road). Following construction of Stage 1 BORR and relocation and renaming of roads, the yellow sand dune is now nestled behind dunes some 50m west of Bunbury Outer Ring Road and 40m south of Boyanup Picton Road.

The site initially was described as containing numerous artefacts of numerous types and diverse lithologies. In 2011/2012 during monitoring 140 quartz artefacts were collected and analysed.

The present status of the site is that of a lower dune than previously noted, at about 1.5m high, perhaps as a result of natural deflation from works in the vicinity or cut into by machinery. It is presently partially covered by lupins, low bushes and weeds. It is possible that the ground surface may have risen from the addition of sediment being spread onto the surrounding area. No artefacts were observed during the survey.

The present writer concedes that the site's potential for subsurface material has been reduced by previous artefact collections and disturbance to the dune and immediate surrounds. Therefore the research potential of the site and any integrity it held prior has diminished substantially. In accordance with the map it is a high likelihood that the final route of BORR will impact upon **Site ID 4875 Bunbury 14**.



Figure 24: Looking SE at Site ID 4875 Bunbury 14.

Site ID 4880 Bunbury 20

This artefact scatter, first recorded in 1978, was located at a disused yellow sand pit on the east side of South Western Highway (now the Picton Boyanup Road) just opposite the Moore Road (now Bunbury Outer Ring Road) turn off to the southwest. Following construction of Stage 1 BORR and relocation and renaming of roads, the sand dune is now situated behind a dam and dumps of sand piles and surrounded by fences some 50m west of Bunbury Outer Ring Road and 25m south of Boyanup Picton Road.

The site initially was described as consisting of hundreds of quartz artefacts and some quartzite grindstones. In 2011/2012 during monitoring eight artefacts were collected and analysed.

The present status of the site is that of a <5m high white sand dune covered in low bushes and grasses surrounded by disturbed earthworks. Debris including laterite, glass, and bitumen is present on the sandy slope and appears to be cascading down from the top of the dune. One quartz chip artefact was observed.

The present writer considers that the site may be depleted of artefactual material from previous artefact collections and adjacent extensive disturbance. Therefore the research potential of the site and any integrity it held prior has diminished substantially. In accordance with the map it is a high likelihood that the final route of BORR will impact upon **Site ID 4880 Bunbury 20**.



Figure 25: Looking NW at Site ID 4880 Bunbury 20.

Place ID 4870 Bunbury 19

This artefact scatter, first recorded by in 1978 was located as two sand pits at the end of the north turn off Moore Road (now Bunbury Outer Ring Road). Following construction of Stage 1 BORR and relocation and renaming of roads, the sand pit is now situated north off and beneath a bund next to a dam, some 35m south of Boyanup Picton Road.

The heritage place was initially described as consisting of numerous small quartz flakes and chips with some showing signs of retouch. In the surveys undertaken by Goode & Harris (2010) no artefacts were observed. In 2011/2012 (Johnston 2013) during monitoring again no artefacts were observed before, during or after monitoring. No artefacts have been noted since the initial find in 1978.

The present status of the heritage place is that the bund covering the original pits is surrounding a dam with the bund the result of sediment excavated from the dam and dumped. The total area is surrounded by a high barbed wire fence. Numerous weeds and grasses cover the bund.

The present writer considers that the heritage place has been extensively disturbed as it was originally when it was two sand pits affected by excavation from a sand mining agent and no longer exists due to extensive disturbance. In accordance with the map it is a high likelihood that the final route of BORR will further impact upon heritage **Place ID 4870 Bunbury 19**.



Figure 26: Looking south at Heritage Place ID 4870 Bunbury 19.

Place ID 4876 Bunbury 15

This artefact scatter, firstly recorded in 1978, was located in pale yellow sand banks of a large road cutting at 0.4km along Moore Road (now Bunbury Outer Ring Road) from the junction of South Western Highway (now Picton Boyanup Road). Following construction of Stage 1 BORR and relocation and renaming of roads, the sand cutting is still adjacent to Bunbury Outer Ring Road on the eastern side but the western side no longer presents as a dune system.

The heritage place was initially described as consisting of numerous small quartz flakes and chips. In the surveys undertaken by Goode & Harris (2010) six small chip artefacts were observed. In 2011/2012 during monitoring 15 artefacts were collected and recorded during monitoring.

The present status of the heritage place is that the eastern cutting is completely covered in woodchip and has been revegetated. No artefacts were observed.

The present writer considers that the heritage place has been extensively disturbed from adjacent road works and no longer contains any integrity. In accordance with the map it is a high likelihood that the final route of BORR will further impact upon heritage **Place ID 4876 Bunbury 15**.



Figure 27: Looking SE at Heritage Place ID 4876 Bunbury 15.

Place ID 4877 Bunbury 16

This artefact scatter, firstly recorded in 1978, was located in a road cutting 0.9km along Moore Road (now Bunbury Outer Ring Road), south of the junction of South Western Highway (now the Picton Boyanup Road) and Moore Road and at the junction of Moore Road and Wallrodt Road to the west.

The heritage place was initially described as consisting of large quartz flakes and several modified flakes and chips.

The present status of the heritage place is that Bunbury Outer Ring Road overlaps the position as described as a result of road construction. It therefore no longer exists. In accordance with the map it is a high likelihood that the final route of BORR will further impact upon heritage **Place ID 4877 Bunbury 16**.

Place ID 5168 Natgas 262

This artefact scatter, recorded in 1982, was located in a sand pit adjacent to Martin Pelusey Road off South Western Highway (now the Picton Boyanup Road). The written description does not agree with the mud map which places the sandpit on the western side of the road rather than the east side.

The stored data place was initially described as consisting of two amorphous flakes of chert and one flake of quartzite in a sand pit. Despite DPLH placing a 2km buffer zone around the area as the position was uncertain, it was located in this survey as described on the data sheet. The grid references of the sand pit were Zone 50:

- SW point 381800mE 6308133mN
- NW point 381811mE 6308159mN
- NE point 381817mE 6308154mN
- SE point 381809mE 6308131mN

The present status of the stored data place is that the pit extends some 25m x 13m and contains shells, laterite and limestone in yellow sand some 20m west of Martin Pelusey Road. Beyond the pit the surrounds have been subject to industrialisation with the erection of fencing and warehouses. A gas pipeline was noted passing on the east side which confirms the position as per the purpose for the original survey. One quartz core artefact was observed.

The present writer considers that the stored data place is a correct classification as the three flakes from the original finding are no longer visible and the one quartz core noted in the present survey suggests the area has been extensively disturbed from removal of sand while the artefact density is minimal. In accordance with the map it is a high likelihood that the final route of BORR will impact upon heritage **Place ID 5168 Natgas 262**.



Figure 28: Looking north at Stored Data Place ID 5168 Natgas 262.

Place ID 5169 Natgas 263

This artefact scatter, recorded in 1982, was located on the right in the face of the second road cutting after turning into Moore Road (now Bunbury Outer Ring Road) from South Western Highway (now the Picton Boyanup Road). This conflicts with the mud map that shows the artefacts on the left or eastern side of the road.

The stored data place was initially described as consisting of quartz chips and flakes eroding out from a sandy interface. DPLH have placed a 2km buffer zone around the area as the position was uncertain.

The location coincides with the sand dune now disturbed of **Place ID 4876 Bunbury 15** heritage place that was located in 1981 in relation to position and content. The present writer considers that the stored data/heritage place has been extensively disturbed from adjacent road works and no longer contains any integrity. In accordance with the map it is a high likelihood that the final route of BORR will further impact upon heritage **Place ID 5169 Natgas 263**.

Place ID 18885 Bunbury Bypass Archaeological Site 2

This artefact scatter, recorded in 1995 was located in a railway embankment between the Ferguson River and South Western Highway (now Picton Boyanup Road) approximately 200 meters northwest of the intersection with Martin Pelusey Road.

The heritage place was described as consisting of a low density of 40 quartz and chert flakes and flake fragments on a yellow sandy railway embankment. A further survey in 2007 and 2010 (Goode & Harris 2007, Goode & Harris 2010) relocated the heritage place and revealed that artefacts continued to appear over time despite disturbance from infrastructure. The present inspection revealed some 50 artefacts of diverse lithologies eroding from the top of the sand dune and cascading down.

The present status of the heritage place remains the same in that it is relatively pristine protected by the adjacent railway line but the residential housing and piggery that were once immediately to the north of the place have been removed. In accordance with the map it is a high likelihood that the final route of BORR will impact upon heritage **Place ID 18885 Bunbury Bypass Archaeological Site 2**.



Figure 29: Looking NE at Heritage Place ID 18885 Bunbury Bypass Archaeological Site 2.

Place ID 18886 Bunbury Bypass Archaeological Site 3

This artefact scatter, recorded in 1995 was located in ploughed paddocks south of the intersection of Martin Pelusey Road and Harris Street within 20m of a fence line on both sides of the road.

The heritage place was described as consisting of a low density of 10 quartz flakes and chips on yellow sand. Some 50 artefacts were noted in the present survey on the western dune only.

The present status of the heritage place remains the same in that the sand dune is still present but the dune on the eastern side of Martin Pelusey Road is covered in pasture with limited visibility and the sand is no longer yellow in colour. On the western side of the road the sand dune has been quarried and used as a rubbish tip. In accordance with the map it is a high likelihood that the final route of BORR will impact upon heritage **Place ID 18886 Bunbury Bypass Archaeological Site 3**.



Figure 30: Looking NW at Heritage Place ID 18886 on SW corner of Martin Pelusey and Harris Roads.

Place ID 29334 Picton Isolated Finds

This artefact scatter, recorded in 2010 was located on a yellow sandy embankment on the corner of Moore Road and Bunbury Outer Ring Road.

The heritage place consisted of three isolated artefacts. The present survey relocated the same two artefacts and a new third flake.

The present status is that the sand dune corner has been disturbed by road building debris suggesting just as previously that it was used as a dump and/or borrow pit. In accordance with the map it is a high likelihood that the final route of BORR will impact upon heritage **Place ID 29334 Picton Isolated Finds**.



Figure 31: Looking east at Heritage Place ID 29334 Picton Isolated Finds.

CONCLUSIONS

DISCUSSION

An archaeological investigation was commissioned by BORR IPT on behalf of Main Roads Western Australia along the proposed Bunbury Outer Ring Road Northern and Central sections extending from Leschenault/Wellesley to North Boyanup transecting farmland and major rivers. The proposed route is planned to encourage light and heavy traffic to avoid the town of Bunbury and its rapidly expanding outer lying suburbs.

Archival research indicates that numerous archaeological sites have been previously recorded in the region. These consisted of small quartz artefact scatters with additional pieces manufactured from silcrete, chert or fossiliferous chert. Artefacts are mostly flakes and chips but included in the assemblages are an occasional backed blade or hammerstone. The contents indicate camping and hunting and gathering forays were undertaken at these locations. All the sites are generally found within yellow sand dunes or sand quarries across the landscape. Each site is located in the vicinity of Ferguson River or near a swamp on high sand dunes. The cluster of sites in the area indicates this tract of land surrounded by water sources is a particularly resource rich area to Aboriginal people.

Substantial excavations conducted by Schwede (1993) some five kilometres towards the coast on a high sand dune have demonstrated that many artefacts are present in yellow sand dunes overlooking swamps. The excavations further revealed that there was limited stratigraphy in the highly mobile sands and that artefacts moved vertically for some 40cms as well as horizontally. As there were minimal artefacts in association with charcoal the research potential is deemed to be limited for similar test pits. For these reasons it is considered that test pitting unstable mobile sands will not add any further knowledge to the scientific research data base.

Prior to European colonisation, the Aboriginal Gnaala Karla Booja people utilised these lands favouring the higher lands of the coastal sand dunes of Bunbury and fertile lowlands for occupation and burials as evidenced by a number of artefact and skeletal material sites located in the region. The wetlands were places of hunting and gathering and proffered rich resources. Beyond wetlands there is evidence of occupation particularly along river systems. Archaeological evidence is often associated with the desired location of the original homesteads of the first European settlers that forced immediate dislocation and restrictions on the occupation and cultural cycle of the Gnaala Karla Booja people.

The writer opines that the lack of cultural material located in the present survey was a result of low surface visibility, limited survey area and extensive disturbance. The majority of the survey areas contained an adjacent major water source. Therefore it was anticipated some evidence would surface revealing Aboriginal occupation. The lack of artefacts suggests that other factors are involved preventing their location. The survey areas have been subject to previous extensive development from farming industry and infrastructure and therefore no single area was in a pristine condition. Whilst the surveys included areas near water sources, it is accepted that traditionally Aboriginal people accessed water sources when required for gathering of plants, hunting of animals and drinking the waters whilst camping some distance away to protect the food source.

In the Bunbury region the artefact scatter is the major site type located after burials. Examples of scarred trees have all but been extinguished as few pockets of natural bushland remain. Much of the surrounding farmlands have the occasional row of trees remaining on its borders, having cleared most of the land. Some original trees however remain beside the road on verges.

RECOMMENDATIONS

Two previously recorded archaeological sites, six heritage places and two stored data places were relocated within the boundaries of the study area and therefore it is highly likely the proposed BORR corridor route will impact upon the sites and heritage places.

Site ID 4875 Bunbury 14 and **Site ID 4880 Bunbury 20** are both registered sites, once considered of moderate significance. In 2011 Main Roads was granted conditional consent to disturb these sites during construction of Stage 1 BORR.

If Main Roads wish to disturb these sites, then a Section 18 application should be submitted to the Department of Planning, Lands & Heritage (DPLH) seeking permission. Because of the present condition of both sites due to extensive disturbance, lack of artefacts observed and subsequent reduced scientific research potential, **it is recommended** that permission be granted conditional upon all ground works being monitored by two Aboriginal traditional custodians and any artefacts, if present, collected, measured and reburied in a safe repository.

Place ID 4870 Bunbury 19, **Place ID 4876 Bunbury 15** and **Place ID 4877 Bunbury 16** are heritage places. In 2011 Main Roads was granted permission to disturb the sites during construction of Stage 1 BORR.

If Main Roads wish to disturb these sites, then a Section 18 application should be submitted to DPLH seeking permission to disturb. As these places are no longer extant they are considered of little research potential, **it is recommended** that permission be granted unconditionally to disturb.

Place ID 5168 Natgas 262, **Place ID 5169 Natgas 263** and **Place ID 29334 Picton Isolated Finds** are stored data places and an isolated find respectively. Because they no longer contain any integrity or value, if Main Roads wish to disturb these sites it is considered that permission is not required to disturb these places.

Place ID 18885 Bunbury Bypass Archaeological Site 2 and **Place ID 18886 Bunbury Bypass Archaeological Site 3** are heritage places. Both places contain numerous artefacts and are considered to contain some research potential despite previous disturbance. It is a preferred option that these places are avoided from any further impact. If there is no alternative route that bypasses these places and if Main Roads wish to disturb these sites, a Section 18 application should be submitted to DPLH seeking permission to disturb. **It is recommended** that permission be granted conditional upon all ground works being monitored by two Aboriginal traditional custodians and any artefacts if present collected and reburied in a safe repository.

The removal or excavation of large quantities of sediment increases the risk of disturbing archaeological sites that may lie beneath the ground surface. **It is recommended** that Main Roads inform any project personnel of their obligation to report any archaeological material, should this be encountered during earthmoving, as outlined under Section 15 of the *Aboriginal Heritage Act 1972*.

If Main Roads locate an archaeological site in the process of survey or ground excavation, **it is recommended** that work cease in the immediate area. Any skeletal material should be reported to DPLH and the Western Australian Police Service. Any artefactual material should be reported to the Heritage and Culture Division, Department of Planning, Lands and Heritage.

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APPENDIX 1: DPLH SITES AND PLACES REGISTER SEARCH

List of Registered Aboriginal Sites

Search Criteria

6 Registered Aboriginal Sites in Shapefile - BORR_North_20180730

Disclaimer

The *Aboriginal Heritage Act 1972* preserves all Aboriginal sites in Western Australia whether or not they are registered. Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at heritageenquiries@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

South West Settlement ILUA Disclaimer

Your heritage enquiry is on land **within or adjacent to** the following Indigenous Land Use Agreement(s): Gnaala Karla Booja People ILUA.

On 8 June 2015, six identical Indigenous Land Use Agreements (ILUAs) were executed across the South West by the Western Australian Government and, respectively, the Yued, Whadjuk People, Gnaala Karla Booja, Ballardong People, South West Boojarah #2 and Wagyl Kaip & Southern Noongar groups, and the South West Aboriginal Land and Sea Council (SWALSC).

The ILUAs bind the parties (including 'the State', which encompasses all State Government Departments and certain State Government agencies) to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas, unless they have an existing heritage agreement. It is also intended that other State agencies and instrumentalities enter into the NSHA when conducting Aboriginal Heritage Surveys in the ILUA areas. It is recommended a NSHA is entered into, and an 'Activity Notice' issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, which are referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

Likewise, from 8 June 2015 the Department of Mines, Industry Regulation and Safety (DMIRS) in granting Mineral, Petroleum and related Access Authority tenures within the South West Settlement ILUA areas, will place a condition on these tenures requiring a heritage agreement or a NSHA before any rights can be exercised.

If you are a State Government Department, Agency or Instrumentality, or have a heritage condition placed on your mineral or petroleum title by DMIRS, you should seek advice as to the requirement to use the NSHA for your proposed activity. The full ILUA documents, maps of the ILUA areas and the NSHA template can be found at <https://www.dpc.wa.gov.au/swnts/South-West-Native-Title-Settlement/Pages/default.aspx>.

Further advice can also be sought from the Department of Planning, Lands and Heritage at heritageenquiries@dplh.wa.gov.au.

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Coordinate Accuracy

Coordinates (Easting/Northing metres) are based on the GDA 94 Datum. Accuracy is shown as a code in brackets following the coordinates.

List of Registered Aboriginal Sites

Terminology (NB that some terminology has varied over the life of the legislation)

Place ID/Site ID: This a unique ID assigned by the Department of Planning, Lands and Heritage to the place.

Status:

- **Registered Site:** The place has been assessed as meeting Section 5 of the *Aboriginal Heritage Act 1972*.
- **Other Heritage Place which includes:**
 - **Stored Data / Not a Site:** The place has been assessed as not meeting Section 5 of the *Aboriginal Heritage Act 1972*.
 - **Lodged:** Information has been received in relation to the place, but an assessment has not been completed at this *stage* to determine if it meets Section 5 of the *Aboriginal Heritage Act 1972*.

Access and Restrictions:

- **File Restricted = No:** Availability of information that the Department of Planning, Lands and Heritage holds in relation to the place is not restricted in any way.
- **File Restricted = Yes:** Some of the information that the Department of Planning, Lands and Heritage holds in relation to the place is restricted if it is considered culturally sensitive. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the informants who provided the information. To request access please contact heritageenquiries@dplh.wa.gov.au.
- **Boundary Restricted = No:** Place location is shown as accurately as the information lodged with the Registrar allows.
- **Boundary Restricted = Yes:** To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the place is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- **Restrictions:**
 - **No Restrictions:** *Anyone* can view the information.
 - **Male Access Only:** Only *males* can view restricted information.
 - **Female Access Only:** Only *females* can view restricted information.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place. This has been replaced by the Place ID / Site ID.

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Aboriginal Heritage Inquiry System

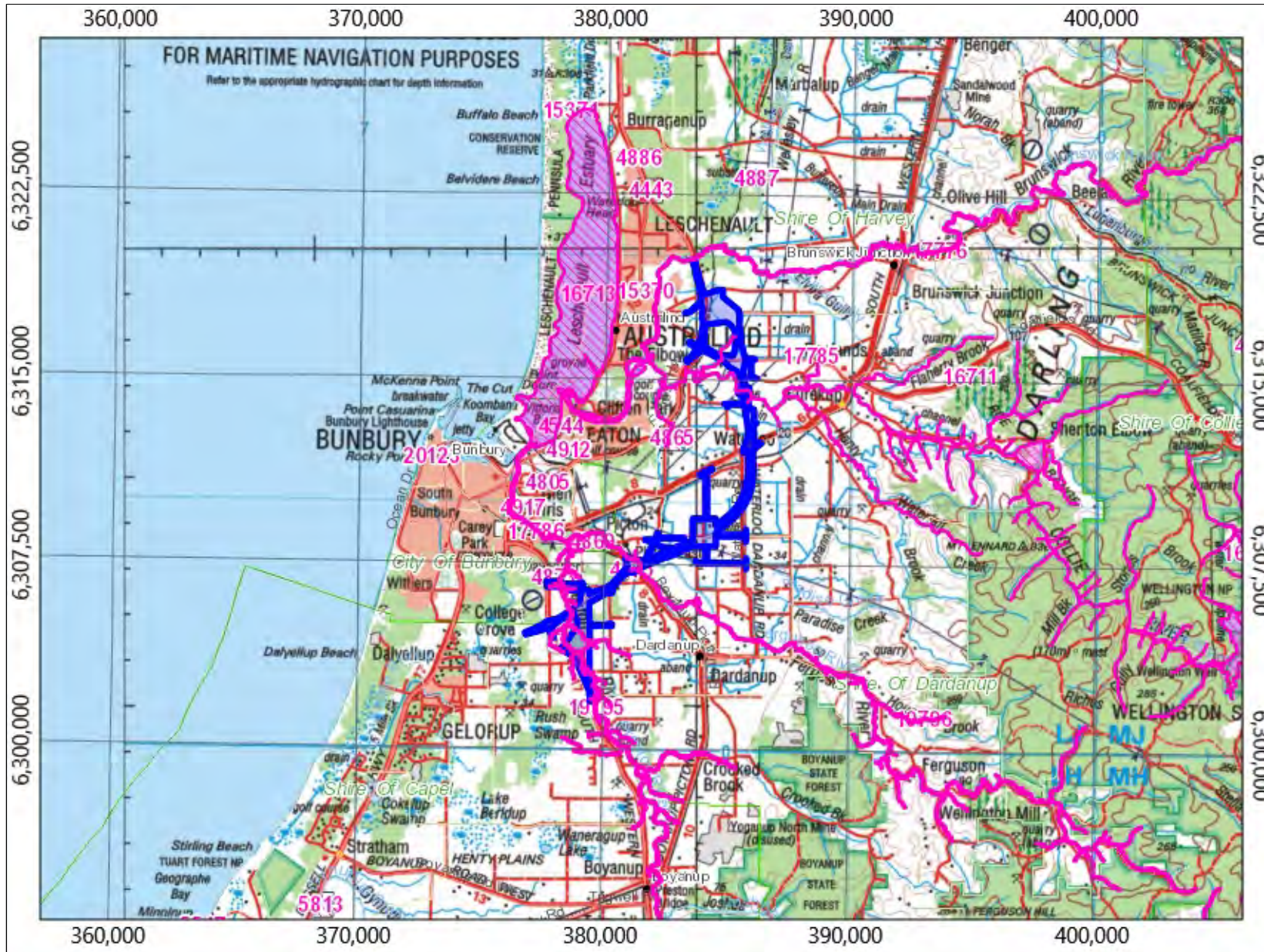
List of Registered Aboriginal Sites

ID	Name	File Restricted	Boundary Restricted	Restrictions	Status	Type	Knowledge Holders	Coordinate	Legacy ID
4875	BUNBURY 14	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381055mE 6307314mN Zone 50 [Reliable]	S01758
4880	BUNBURY 20	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381158mE 6307353mN Zone 50 [Unreliable]	S01763
16713	Collie River Waugal	No	No	No Gender Restrictions	Registered Site	Mythological, Natural Feature, Water Source	*Registered Knowledge Holder names available from DAA	393753mE 6312789mN Zone 50 [Reliable]	
17776	BRUNSWICK RIVER	No	No	No Gender Restrictions	Registered Site	Mythological, Natural Feature, Water Source	*Registered Knowledge Holder names available from DAA	393377mE 6321250mN Zone 50 [Reliable]	
19795	Preston River	No	No	No Gender Restrictions	Registered Site	Mythological	*Registered Knowledge Holder names available from DAA	400244mE 6290592mN Zone 50 [Reliable]	
19796	Ferguson River	No	No	No Gender Restrictions	Registered Site	Mythological	*Registered Knowledge Holder names available from DAA	392945mE 6300363mN Zone 50 [Reliable]	

Aboriginal Heritage Inquiry System

For further important information on using this information please see the
 Department of Planning, Lands and Heritage's Disclaimer statement at
<https://www.dph.wa.gov.au/about-this-website>


Map of Registered Aboriginal Sites



Legend

- Registered Aboriginal Site
- Search Area
- Town
- Road
- River
- Local Government Authority

9.35 kilometres
 Map Scale 1 : 283,000
 MGA Zone 50 (GDA94)



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List of Other Heritage Places

Search Criteria

10 Other Heritage Places in Shapefile - BORR_North_20180730

Disclaimer

The Aboriginal Heritage Act 1972 preserves all Aboriginal sites in Western Australia whether or not they are registered. Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at heritageenquiries@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

South West Settlement ILUA Disclaimer

Your heritage enquiry is on land within or adjacent to the following Indigenous Land Use Agreement(s): Gnaala Karla Booja People ILUA.

On 8 June 2015, six identical Indigenous Land Use Agreements (ILUAs) were executed across the South West by the Western Australian Government and, respectively, the Yued, Whadjuk People, Gnaala Karla Booja, Ballardong People, South West Boojarah #2 and Wagyl Kaip & Southern Noongar groups, and the South West Aboriginal Land and Sea Council (SWALSC).

The ILUAs bind the parties (including 'the State', which encompasses all State Government Departments and certain State Government agencies) to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas, unless they have an existing heritage agreement. It is also intended that other State agencies and instrumentalities enter into the NSHA when conducting Aboriginal Heritage Surveys in the ILUA areas. It is recommended a NSHA is entered into, and an 'Activity Notice' issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, which are referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

Likewise, from 8 June 2015 the Department of Mines, Industry Regulation and Safety (DMIRS) in granting Mineral, Petroleum and related Access Authority tenures within the South West Settlement ILUA areas, will place a condition on these tenures requiring a heritage agreement or a NSHA before any rights can be exercised.

If you are a State Government Department, Agency or Instrumentality, or have a heritage condition placed on your mineral or petroleum title by DMIRS, you should seek advice as to the requirement to use the NSHA for your proposed activity. The full ILUA documents, maps of the ILUA areas and the NSHA template can be found at <https://www.dpc.wa.gov.au/swnts/South-West-Native-Title-Settlement/Pages/default.aspx>.

Further advice can also be sought from the Department of Planning, Lands and Heritage at heritageenquiries@dplh.wa.gov.au.

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Coordinate Accuracy

Coordinates (Easting/Northing metres) are based on the GDA 94 Datum. Accuracy is shown as a code in brackets following the coordinates.

List of Other Heritage Places

Terminology (NB that some terminology has varied over the life of the legislation)

Place ID/Site ID: This a unique ID assigned by the Department of Planning, Lands and Heritage to the place.

Status:

- Registered Site: The place has been assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Other Heritage Place which includes:
 - Stored Data / Not a Site: The place has been assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.
 - Lodged: Information has been received in relation to the place, but an assessment has not been completed at this stage to determine if it meets Section 5 of the Aboriginal Heritage Act 1972.

Access and Restrictions:

- File Restricted = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the place is not restricted in any way.
- File Restricted = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the place is restricted if it is considered culturally sensitive. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the informants who provided the information. To request access please contact heritageenquiries@dplh.wa.gov.au.
- Boundary Restricted = No: Place location is shown as accurately as the information lodged with the Registrar allows.
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the place is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Restrictions:
 - No Restrictions: Anyone can view the information.
 - Male Access Only: Only males can view restricted information.
 - Female Access Only: Only females can view restricted information.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place. This has been replaced by the Place ID / Site ID.

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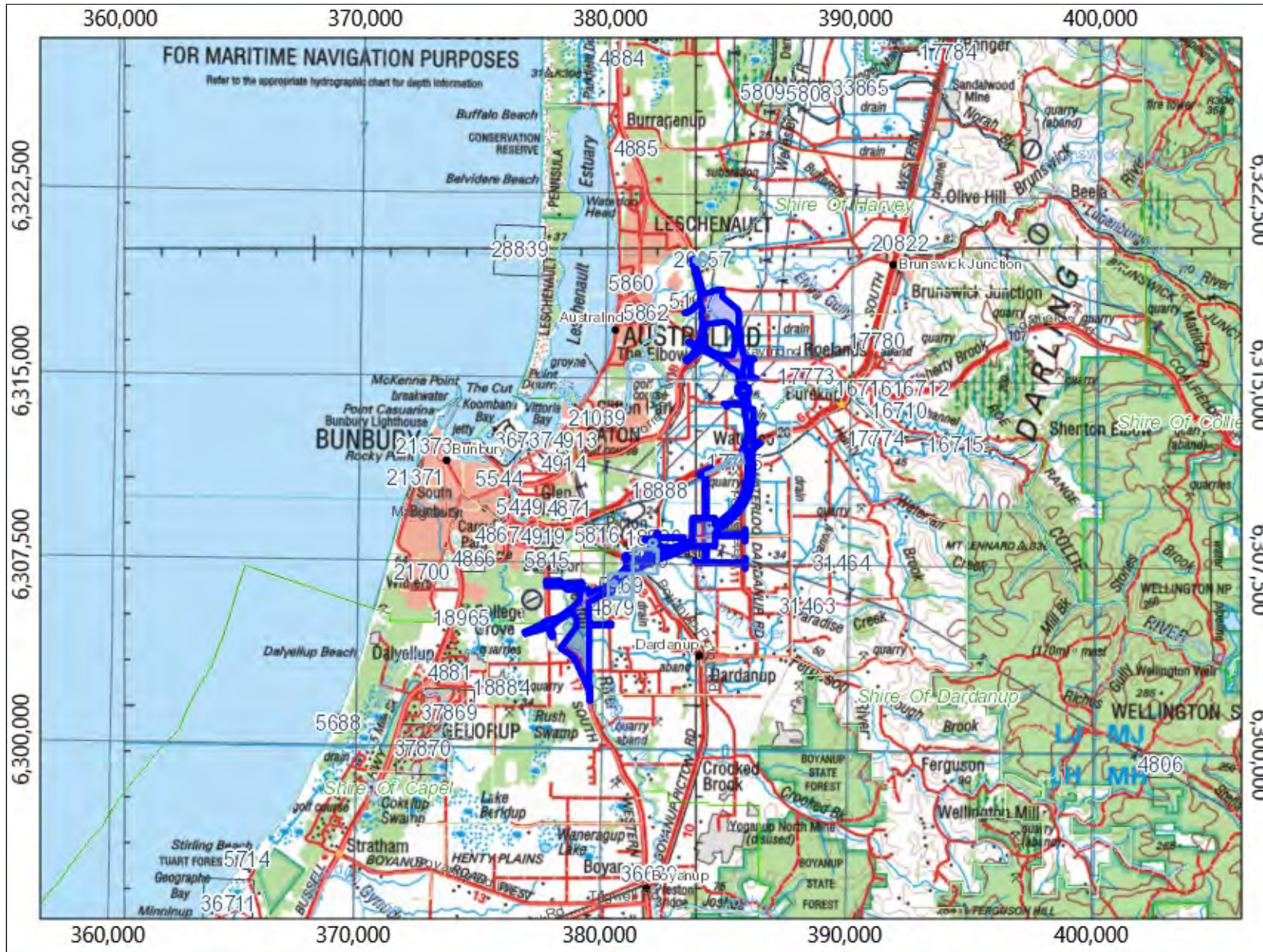
List of Other Heritage Places

ID	Name	File Restricted	Boundary Restricted	Restrictions	Status	Type	Knowledge Holders	Coordinate	Legacy ID
4870	BUNBURY 19	No	No	No Gender Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381146mE 6307406mN Zone 50 [Unreliable]	S01753
4876	BUNBURY 15	No	No	No Gender Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	380688mE 6307067mN Zone 50 [Unreliable]	S01759
4877	BUNBURY 16	No	No	No Gender Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	380380mE 6306751mN Zone 50 [Unreliable]	S01760
5168	NATGAS 262	No	No	No Gender Restrictions	Stored Data / Not a Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381639mE 6307648mN Zone 50 [Unreliable]	S01282
5169	NATGAS 263	No	No	No Gender Restrictions	Stored Data / Not a Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	380639mE 6306648mN Zone 50 [Unreliable]	S01283
17775	WATERLOO BRICKWORKS CAMP & HUNTING GROUNDS	No	No	No Gender Restrictions	Stored Data / Not a Site	Man-Made Structure, Camp, Hunting Place, Meeting Place, Water Source	*Registered Knowledge Holder names available from DAA	384818mE 6311624mN Zone 50 [Reliable]	
18885	Bunbury Bypass Archaeological Site 2	No	No	No Gender Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381318mE 6307434mN Zone 50 [Reliable]	
18886	Bunbury Bypass Archaeological Site 3	No	No	No Gender Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	381936mE 6308398mN Zone 50 [Reliable]	
20057	Howson Drive Lagoon	No	No	No Gender Restrictions	Lodged	Mythological	*Registered Knowledge Holder names available from DAA	383760mE 6319889mN Zone 50 [Reliable]	
29334	Picton Isolated Finds	No	No	No Gender Restrictions	Lodged	Other: 3 Isolated artefacts	*Registered Knowledge Holder names available from DAA	380299mE 6306459mN Zone 50 [Reliable]	



Aboriginal Heritage Inquiry System

Map of Other Heritage Places



Legend

- Other Heritage Place
- Search Area
- Town
- Road
- River
- Local Government Authority

9.35 kilometres

Map Scale 1 : 283,000

MGA Zone 50 (GDA94)

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APPENDIX 2: LETTER OF ADVICE





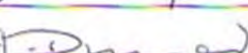




Brad Goode & Associates Pty Ltd
Consulting Anthropologist
Heritage Assessments

79 Naturaliste Terrace
DUNSBOROUGH WA 6281
(08) 9755 3716
bradnlee@westnet.com.au
ACN: 134 732 040
ABN: 41 134 732 040

29th October 2018

We the undersigned have been consulted by Brad Goode & Associates Pty Ltd on behalf of Main Roads regarding the BORR North Project, within the Bunbury Greater Region. We would like to make the following recommendations in relation to the Western Australian Aboriginal Heritage Act 1972:

- * Support Section 18 native to bridge the Collie / Preston Rivers
- * Support S-12 to impact artefacts sites & soldier & relocate material to keeping place
 - All to be monitored
 - Names of bridges in Nyung or
 - Further consult on final bridge design / culverts.

Gnaala Karla Booja WC98/58 native title claim group		
Garry Bennell	29.10.2018	
Joseph Northover	29.10.2018	
Ted Hart	29.10.2018	
James Khan	29.10.2018	
Joyce Dimer	29.10.2018	
Yvonne Garlett	29.10.2018	
Peter Michael	29.10.2018	
Erika Anthony	29.10.2018	
Waylon Mare Hill	29.10.2018	

Brad Goode & Associates Pty Ltd
Consulting Anthropologist
Heritage Assessments



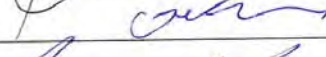

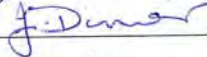
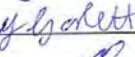

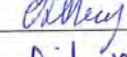
79 Naturaliste Terrace
DUNSBOROUGH WA 6281
(08) 9755 3716
bradlee@westnet.com.au
ACN: 134 732 040
ABN: 41 134 732 040

22nd November 2019

We the undersigned have been consulted by Brad Goode & Associates Pty Ltd on behalf of Main Roads regarding the BORR North Project, within the Bunbury Greater Region. We would like to make the following recommendations in relation to the Western Australian Aboriginal Heritage Act 1972:

- * Support S-18 to bridge Callin & Preston as long as pylons & abutments are as far back from the water as possible to not obstruct flow
- * Request cultural monitors
- * Request working with F213 to dual name infrastructure

* Joe does not support S-19 unless road is named Wilman/Wadandi Hwy.

Gnaala Karla Booja WC98/58 native title claim group		
Garry Bennell	22.11.2019	
Joseph Northover	22.11.2019	
Ted Hart	22.11.2019	
James Khan	22.11.2019	
Joyce Dimer	22.11.2019	
Yvonne Garlett	22.11.2019	
Peter Michael	22.11.2019	
Erika Anthony	22.11.2019	
Waylon Hill	22.11.2019	Did not attend

REPORT OF AN ABORIGINAL HERITAGE SURVEY OF THE BUNBURY OUTER RING ROAD (BORR) NORTH PROJECT BRUNSWICK TO NORTH BOYANUP, WESTERN AUSTRALIA

In relation to any archaeological material which may be uncovered as a result of the works the GKB NTC group representatives advised that they would like the artefacts salvaged by an archaeologist assisted by GKB NTC group representatives and relocated in one of the environmental offset properties purchased as part of the project.

In relation to the design of the BORR, the GKB NTC group representatives requested that workshops be held with the landscape design team to incorporate Nyungar cultural values into the project, which included minimising native vegetation and retaining any native species wherever possible. It was suggested that the bridges be named after Nyungar associations with the area, such as *Wilman* which are the traditional people of the Bunbury area, or *Beeljar* which is the Nyungar word for water or river. The GKB NTC group also suggested that another way to acknowledge and recognise the Wilman Nyungar Traditional Owners is through Main Roads providing trees for Nyungar people to plant around Bunbury.

In relation to the project the GKB NTC group representatives advised that they would like to create Nyungar employment opportunities with Nyungar businesses being considered during the tender process. This included during the rehabilitation works, such as collecting and replanting native seeds. The GKB NTC group representatives discussed the lack of opportunities for Nyungar businesses and people to obtain contracts and jobs for major projects such as the BORR. They requested that skills development training be provided to address the requirements for upcoming job possibilities and that Indigenous employment policies need to stipulate 'Nyungar' people, as opposed to 'Aboriginal' or 'Indigenous' people to address this issue. The GKB NTC group representatives also discussed the benefits of having a skilled or experienced Nyungar person employed as mentor within Main Roads to act as a translator and provide cultural advice and support for new Nyungar employees. The GKB NTC group representatives suggested that Nyungar people could be employed on a 6 month basis in which time they could swap between different positions in order to obtain numerous skills and experiences. A Nyungar committee was also discussed, with the committee's purpose to be to help Main Roads screen Nyungar applicants to find the appropriate employees suited to specific jobs.

As a result of the ethnographic consultations the following recommendations are made in relation to the Western Australian *Aboriginal Heritage Act 1972* (AHA):

It is recommended that Main Roads Western Australia seek consent under section 18 of the AHA in order to carry out the proposed bridge and road works located within Site ID 16713 Collie River, Site ID 19795 Preston River, Site ID 17776 Brunswick River and Place ID 19796 Ferguson River, as part of the Bunbury Outer Ring Road project. This consent is necessary in order to avoid breaching section 17 of the AHA in relation to these registered sites.

It is further recommended that this consent be granted on the provision that Main Roads Western Australia give due consideration to the Gnaala Karla Booja WC1998/058 Native Title Claim group representatives' requests that:

- Pylons for the proposed bridges not be situated within the actual water channels of the Preston, Collie, Ferguson and Brunswick Rivers and their tributaries;
- Cultural monitors be present for any ground disturbing works occurring within the 30m buffer zone on either side of the waterways;
- Main Roads re-consult with the GKB NTC group representatives once the actual plans for the bridges over the Preston and Collie Rivers have been finalised;
- The results from geotechnical investigations be provided to the GKB NTC representatives;
- Nyungar access to the Collie, Preston, Ferguson and Brunswick Rivers and their tributaries be retained;
- Any archaeological material uncovered during the works be salvaged and relocated as directed by the GKB NTC group representatives;

Ms. Nanyin of Highways
at road widening
Section 18
21 November 2011

[Handwritten signatures and initials]
A. Lett
G. B...
P...
D...
D...

Brad Goode & Associates Pty Ltd


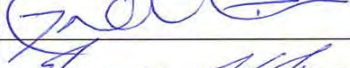
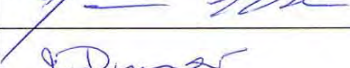
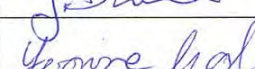
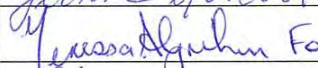

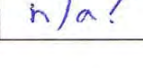
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ABN: 41 134 732 040

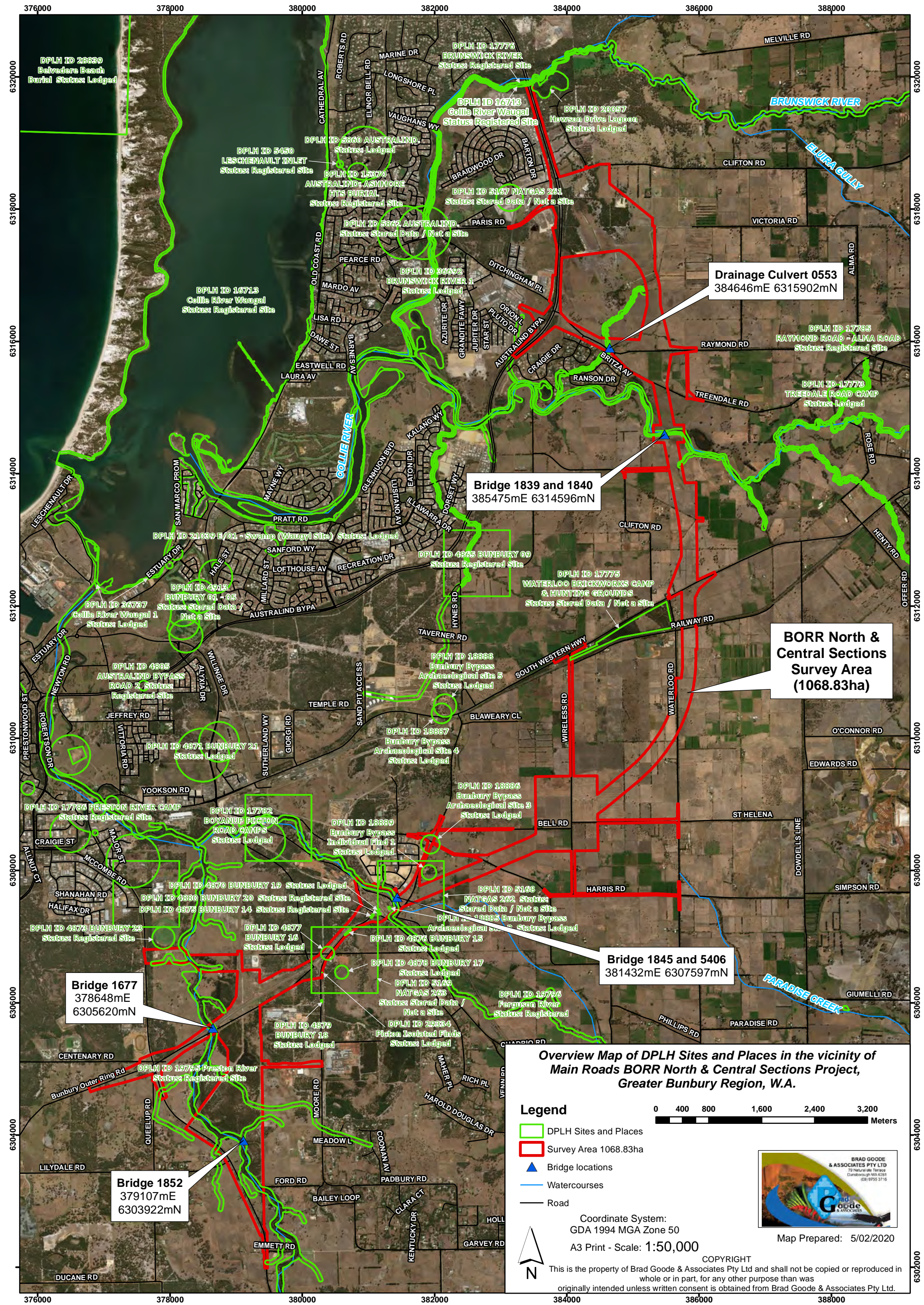
23rd January 2020

We the undersigned have been consulted by Brad Goode & Associates Pty Ltd on behalf of Main Roads regarding the BORR North Project, within the Bunbury Greater Region. We would like to make the following recommendations in relation to the Western Australian Aboriginal Heritage Act 1972:

As previous consultation - 22 November 2019

Gnaala Karla Booja WC98/58 native title claim group		
Garry Bennell	23.1.2020	
Joseph Northover	23.1.2020	
James Khan	23.1.2020	
Joyce Dimer	23.1.2020	
Yvonne Garlett	23.1.2020	
Peter Michael	23.1.2020	 Messadghum For Peter Michael
Erika Anthony	23.1.2020	
Waylon Hill	23.1.2020	n/a!

APPENDIX 3: MAPS OF THE PROJECT AREA IN RELATION TO ABORIGINAL HERITAGE SITES



Drainage Culvert 0553
384646mE 6315902mN

Bridge 1839 and 1840
385475mE 6314596mN

BORR North & Central Sections Survey Area (1068.83ha)

Bridge 1845 and 5406
381432mE 6307597mN

Bridge 1677
378648mE 6305620mN

Bridge 1852
379107mE 6303922mN

Overview Map of DPLH Sites and Places in the vicinity of Main Roads BORR North & Central Sections Project, Greater Bunbury Region, W.A.

Legend

- ▭ DPLH Sites and Places
- ▭ Survey Area 1068.83ha
- ▲ Bridge locations
- Watercourses
- Road

0 400 800 1,600 2,400 3,200 Meters

Coordinate System:
GDA 1994 MGA Zone 50
A3 Print - Scale: 1:50,000

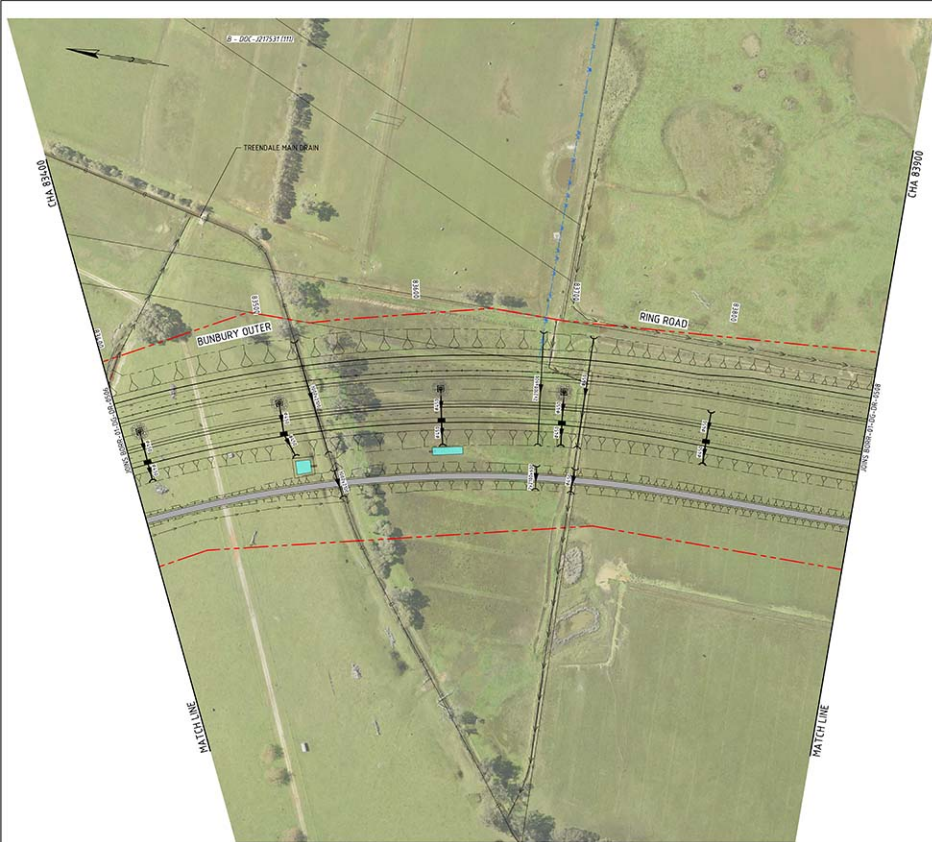
Map Prepared: 5/02/2020

BRAD GOODE & ASSOCIATES PTY LTD
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Cunderbungh WA 6250
(08) 9795 3176

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APPENDIX 4: DESIGN PLANS FOR PROPOSED BRIDGES

Bridge Number	Design Plan
Culvert 0507 – Drainage over Treendale Main Drain (man-made)	BORR-01-DG-DR-0507
Culvert 0553 – Drainage on Raymond Road	BORR-01-DG-DR-0553
Bridge 1839 and Bridge 1840	BORR-00-SK-BR-0001
Bridge 1845 and 5406	BORR-00-SK-BR-0003
Bridge 1677	BORR-00-SK-BR-0007
Bridge 1852	BORR-00-SK-BR-0006



REVISIONS	
No	DESCRIPTION
1	ISSUED FOR REVIEW

NOTES

- ALL DIMENSIONS AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
- CADASTRAL BOUNDARIES ARE INDICATIVE ONLY AND NEED TO BE VERIFIED BY SURVEY.

LEGEND

	PROPOSED GDRS BOUNDARY
	EXISTING GDRS BOUNDARY
	CADASTRAL BOUNDARY
	EASEMENT BOUNDARY
	DRAINAGE CULVERTS
	EXISTING DRAINAGE CULVERTS
	PROPOSED DRAINAGE PIPE
	PROPOSED DRAIN
	EXISTING SWALE
	WATER CORPORATION DRAINS
	HARVEY WATER IRRIGATION CHANNEL
	GULLY
	MANHOLE
	KERB OPENING
	DRAINAGE PIT
	TO BE REMOVED
	Basin OUTLET/OVERFLOW
	PROPOSED DRAINAGE BASIN
	STANDING WATER SURVEY

METADATA

GROUND SURVEY STANDARD:
 DATE OF CAPTURE:
 MAPPING SURVEY STANDARD:
 DATE OF CAPTURE:
 MAIN ROADS PROJECT ZONE: PCGR4
 HEIGHT DATUM: AHD

ORIGINATOR NUMBER: BORR-01-DG-DR-0507
 DRAWING NO: BK / E.T
 VERSION:
 SHEET NO:

PLANNING AND TECHNICAL SERVICES DIRECTORATE
 ROAD AND TRAFFIC ENGINEERING BRANCH
 WATERLOO GREEN
 PERTH WA 6000
 Phone: 08 9224 4411 Fax: 08 9224 4438

APPROVED SHEET:

BORR NORTH PROJECT CASE
 BUNBURY OUTER RING ROAD (DS50)
 CLIFTON RD TO SOUTH WEST HWY (SOUTH)
 DRAINAGE
 SHEET 7

LOCAL AUTHORITY:
BORR-01-DG-DR-0507

23/08/2019 4:39:47 PM
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AMENDMENTS		
No.	DESCRIPTION	APPROVED & DATE
A	ISSUED FOR REVIEW	23/08/2019

- NOTES**
- ALL DIMENSIONS AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
 - CADASTRAL BOUNDARIES ARE INDICATIVE ONLY AND NEED TO BE VERIFIED BY SURVEY.

LEGEND

	PROPOSED GBRS BOUNDARY
	EXISTING GBRS BOUNDARY
	CADASTRAL BOUNDARY
	EASEMENT BOUNDARY
	DRAINAGE CULVERTS
	EXISTING DRAINAGE CULVERTS
	PROPOSED DRAINAGE PIPE
	PROPOSED DRAIN
	EXISTING SWALE
	WATER CORPORATION DRAINS
	HARVEY WATER IRRIGATION CHANNEL
	GULLY
	MANHOLE
	KERB OPENING
	DRAINAGE PIT
	TO BE REMOVED
	BASIN OUTLET / OVERFLOW
	PROPOSED DRAINAGE BASIN
	STANDING WATER SURVEY

METADATA

GROUND SURVEY STANDARD:
 DATE OF CAPTURE:
 MAPPING SURVEY STANDARD:
 DATE OF CAPTURE:
 MAIN ROADS PROJECT ZONE: PCG94
 HEIGHT DATUM: AHD

BORR Team

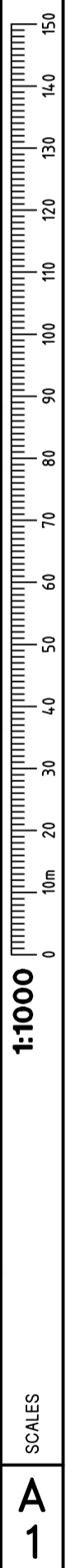
DRAWING NUMBER BORR-01-DG-DR-0553 REV A
 DESIGNED / DRAWN B.K / E.T
 VERIFIED
 DIRECTOR

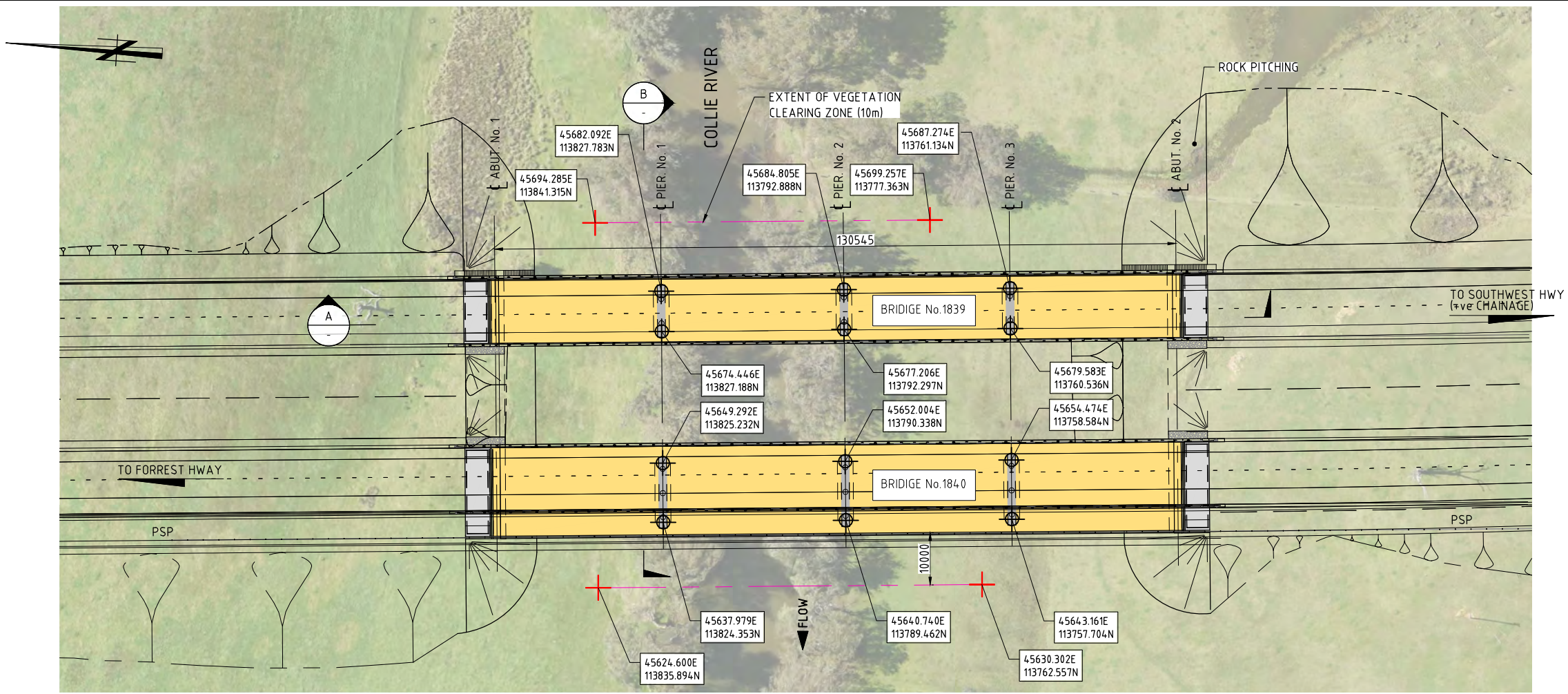
mainroads WESTERN AUSTRALIA

PLANNING AND TECHNICAL SERVICES DIRECTORATE
 ROAD AND TRAFFIC ENGINEERING BRANCH
 WATERLOO CRESCENT East Perth 6004
 Telephone (08) 9323 4111 Fax (08) 9323 4430

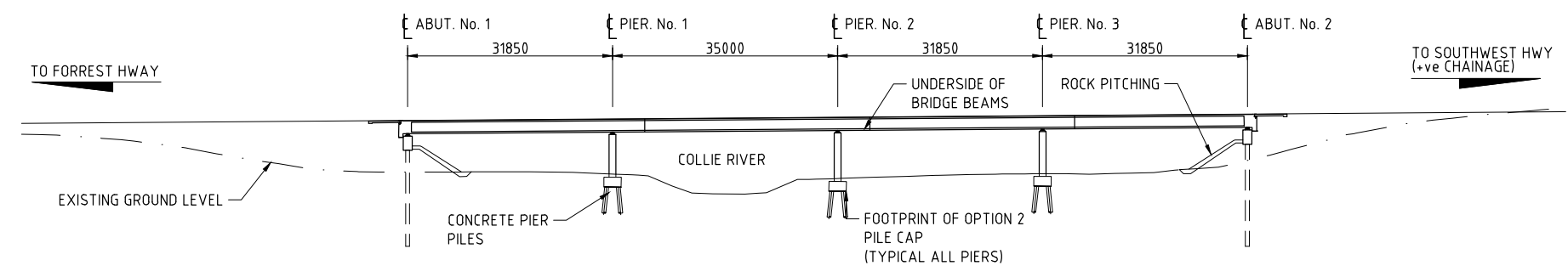
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 APPROVED (MRWA)
BORR NORTH PROJECT CASE
 BUNBURY OUTER RING ROAD (H058)
 CLIFTON RD TO SOUTH WEST HWY (SOUTH)
DRAINAGE
 SHEET 53

LOCAL AUTHORITY
 MRWA DRAWING NUMBER
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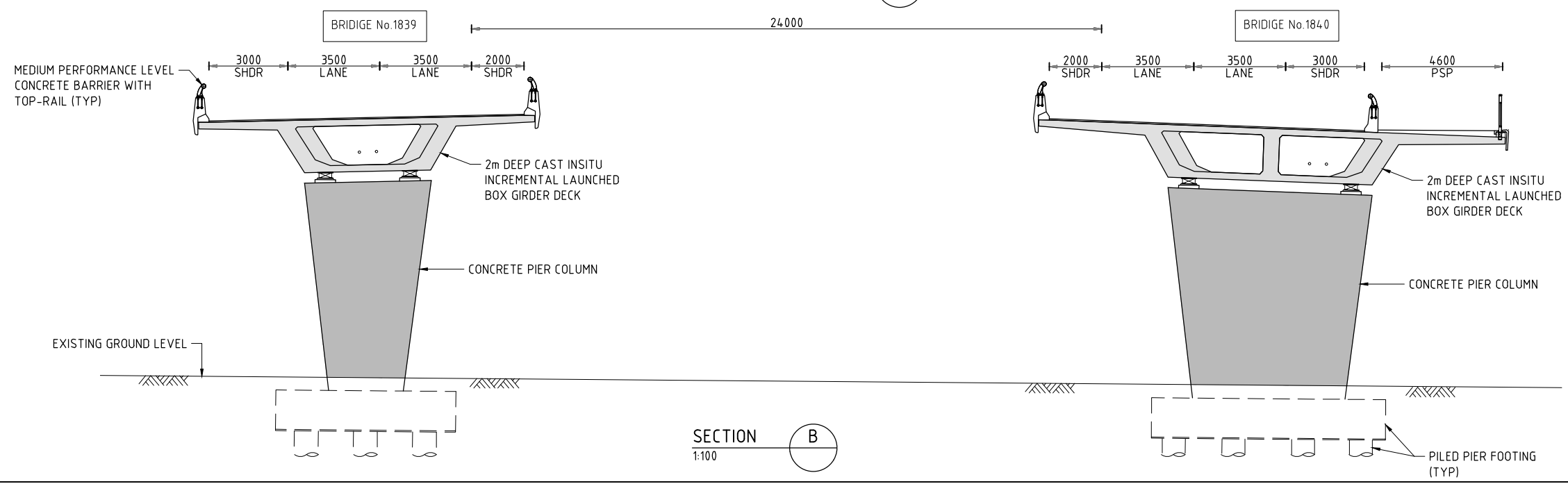




PLAN - COLLIE RIVER BRIDGE (BUNBURY OUTER RING ROAD)
1:500



SECTION A
1:500



SECTION B
1:100

AMENDMENTS		
No.	DESCRIPTION	APPROVED & DATE
A	ISSUED FOR COMMENT	26.10.18
B	ISSUED FOR INFORMATION	08.11.18
C	VERTICAL ALIGNMENT REVISED	14.12.18
D	ISSUED FOR INFORMATION	31.05.19
E	ISSUED FOR INFORMATION	22.08.19

NOTES	
LEGEND	
+	CLEARING EXTENT PEGS
⊕	EDGE OF PIER PEGS

METADATA	
GROUND SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAPPING SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAIN ROADS PROJECT ZONE:	PCG94
HEIGHT DATUM:	AHD

BORR Team

DRAWING NUMBER: BORR-00-SK-BR-01 REV D
DESIGNED / DRAWN: /
VERIFIED: /
DIRECTOR: /

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WATERLOO CRESCENT Telephone (08) 9323 4111 East Perth 6004 Fax (08) 9323 4430

MRWA FILE NUMBER: /
APPROVED (MRWA): /
BUNBURY OUTER RING ROAD (H058)
BORR OVER COLLIE RIVER BRIDGE
MCN1 - CHA85843 TO CHA85970
LOCAL AUTHORITY: /
MRWA DRAWING NUMBER: **BORR-00-SK-BR-01**

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SCALES
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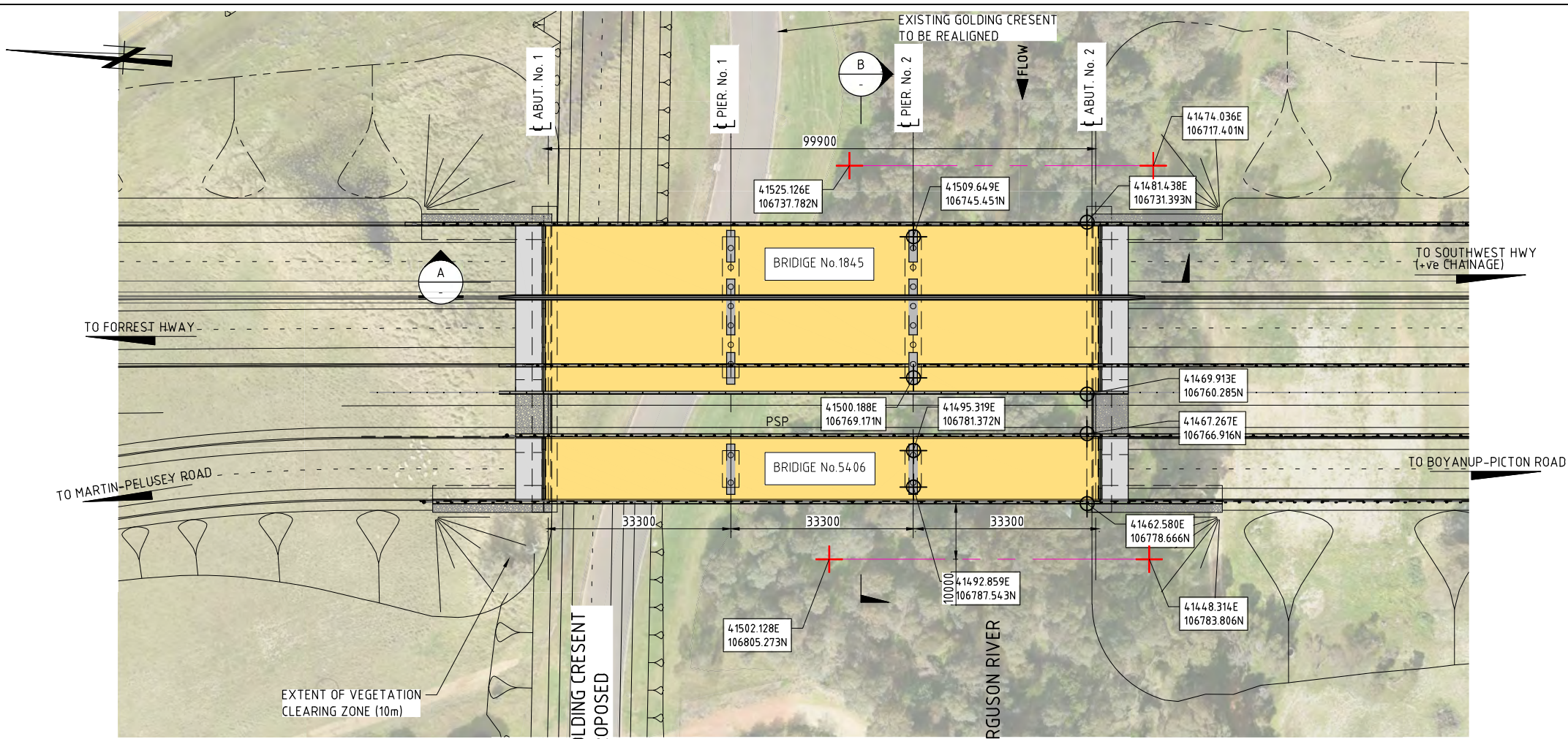
AMENDMENTS		
No.	DESCRIPTION	APPROVED & DATE
A	ISSUED FOR COMMENT	26.10.18
B	ISSUED FOR INFORMATION	08.11.18
C	ISSUED FOR INFORMATION	31.05.19
D	ISSUED FOR INFORMATION	22.08.19

NOTES

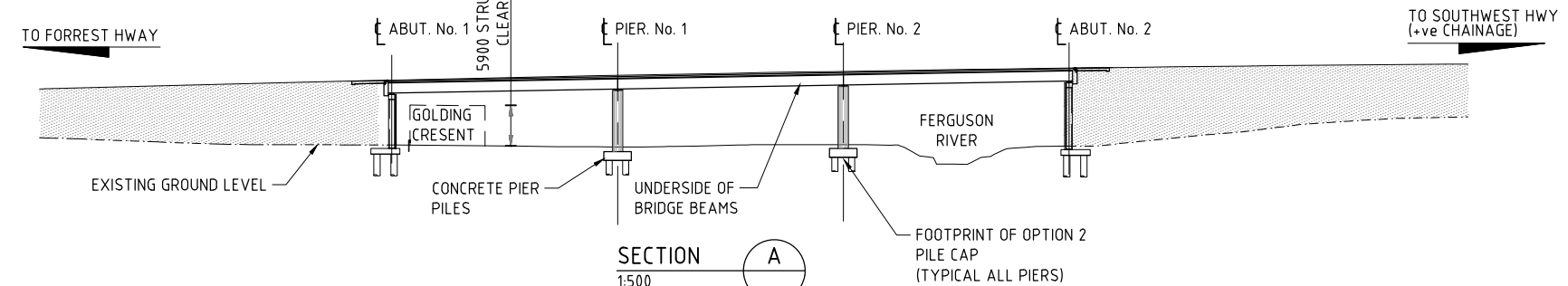
LEGEND

✚ CLEARING EXTENT PEGS

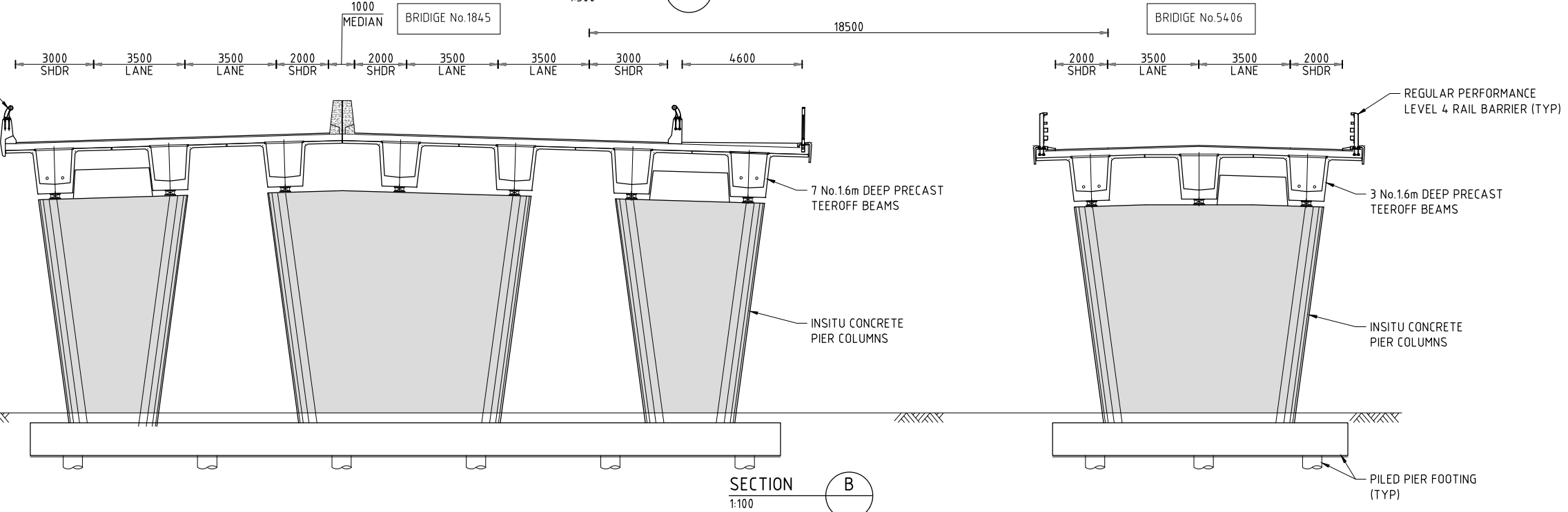
⊕ EDGE OF PIER PEGS



PLAN - FERGUSON RIVER BRIDGES
1:500



SECTION A
1:500



SECTION B
1:100

METADATA	
GROUND SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAPPING SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAIN ROADS PROJECT ZONE:	PCG94
HEIGHT DATUM:	AHD

BORR Team

DRAWING NUMBER: BORR-00-SK-BR-03 REV C

DESIGNED / DRAWN: /

VERIFIED: /

DIRECTOR: /

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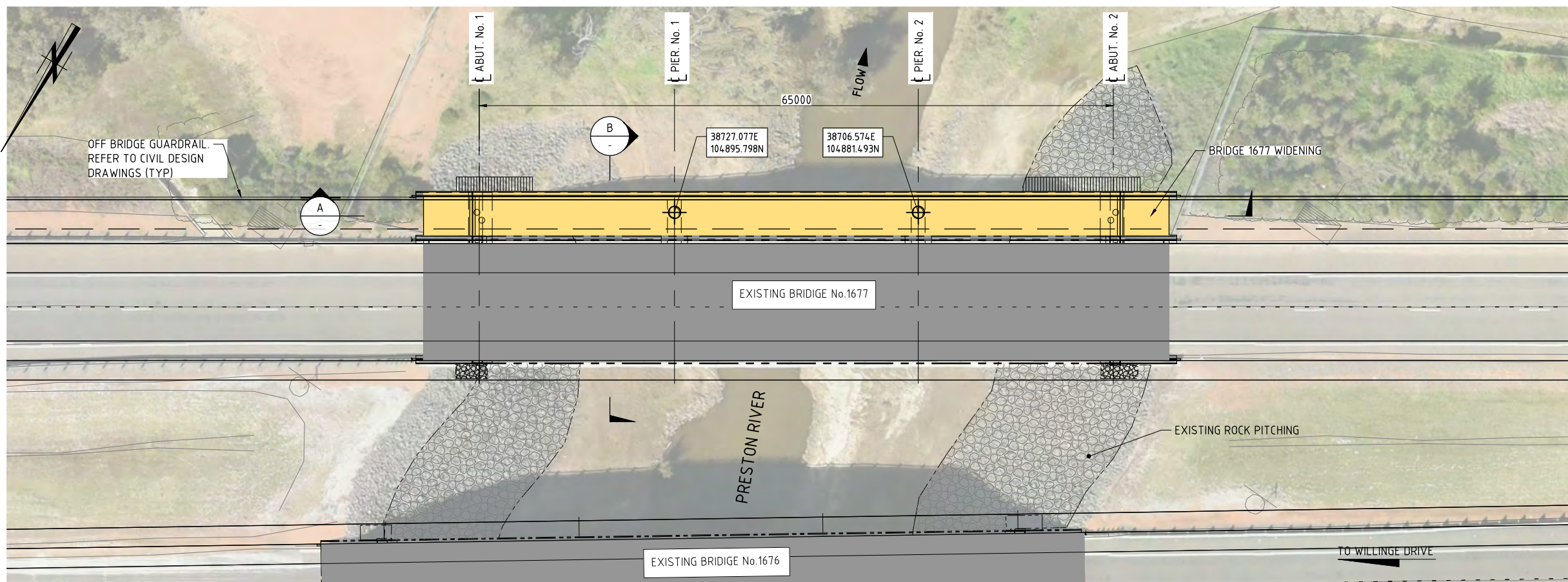
PLANNING AND TECHNICAL SERVICES DIRECTORATE
ROAD AND TRAFFIC ENGINEERING BRANCH

WATERLOO CRESCENT Telephone (08) 9323 4111 East Perth 6004 Fax (08) 9323 4430

MRWA FILE NUMBER	
APPROVED (MRWA)	
BUNBURY OUTER RING ROAD (H058)	
BORR & MARTIN-PELUSEY OVER FERGUSON RIVER BRIDGES	
LOCAL AUTHORITY	
MRWA DRAWING NUMBER	BORR-00-SK-BR-03

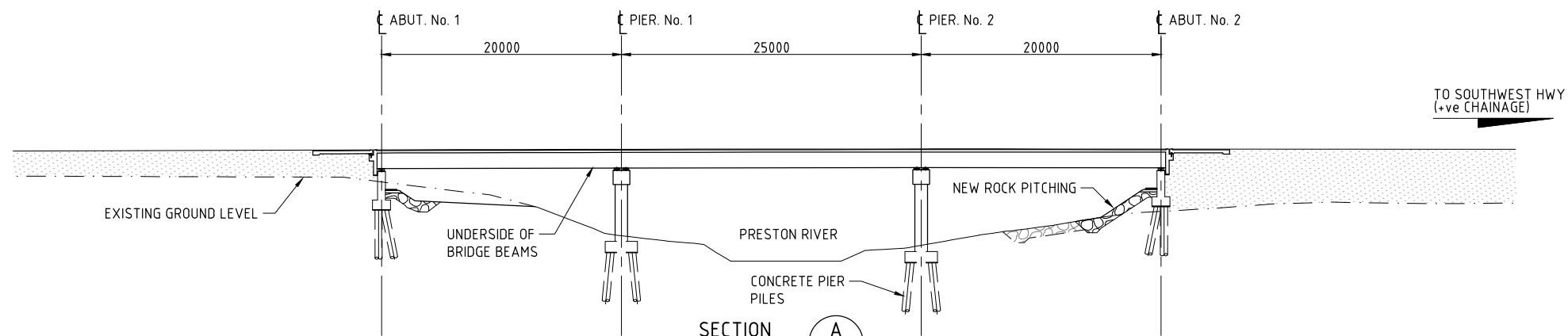
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SCALES
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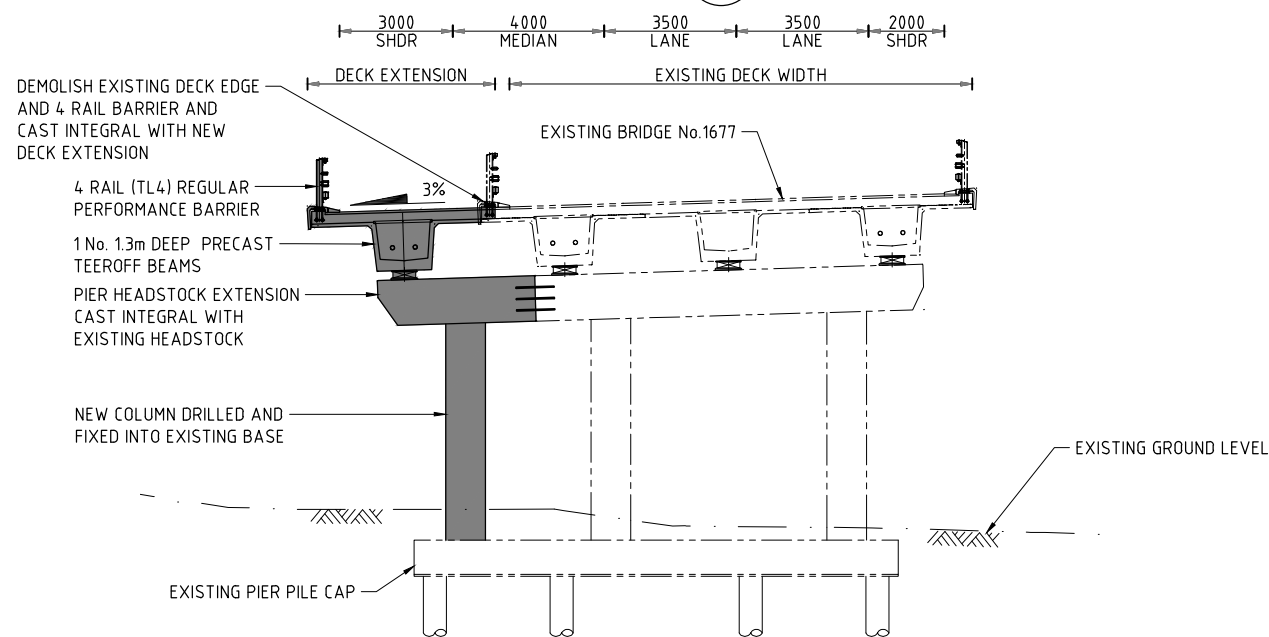
PLAN - PRESTON RIVER BRIDGE (BORR RAMP)

1:250



SECTION A

1:100



SECTION B

1:100

AMENDMENTS		
No.	DESCRIPTION	APPROVED & DATE
A	ISSUED FOR INFORMATION	22.08.19

NOTES

LEGEND

- ⊕ CENTRE OF PIER PEGS

METADATA

GROUND SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAPPING SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAIN ROADS PROJECT ZONE:	PCG94
HEIGHT DATUM:	AHD

BORR Team

DRAWING NUMBER: BORR-01-SK-BR-07 REV B
DESIGNED / DRAWN: /
VERIFIED: /
DIRECTOR: /

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Telephone (08) 9323 4111 Fax (08) 9323 4430

MRWA FILE NUMBER

APPROVED (MRWA)

BUNBURY OUTER RING ROAD (H058)

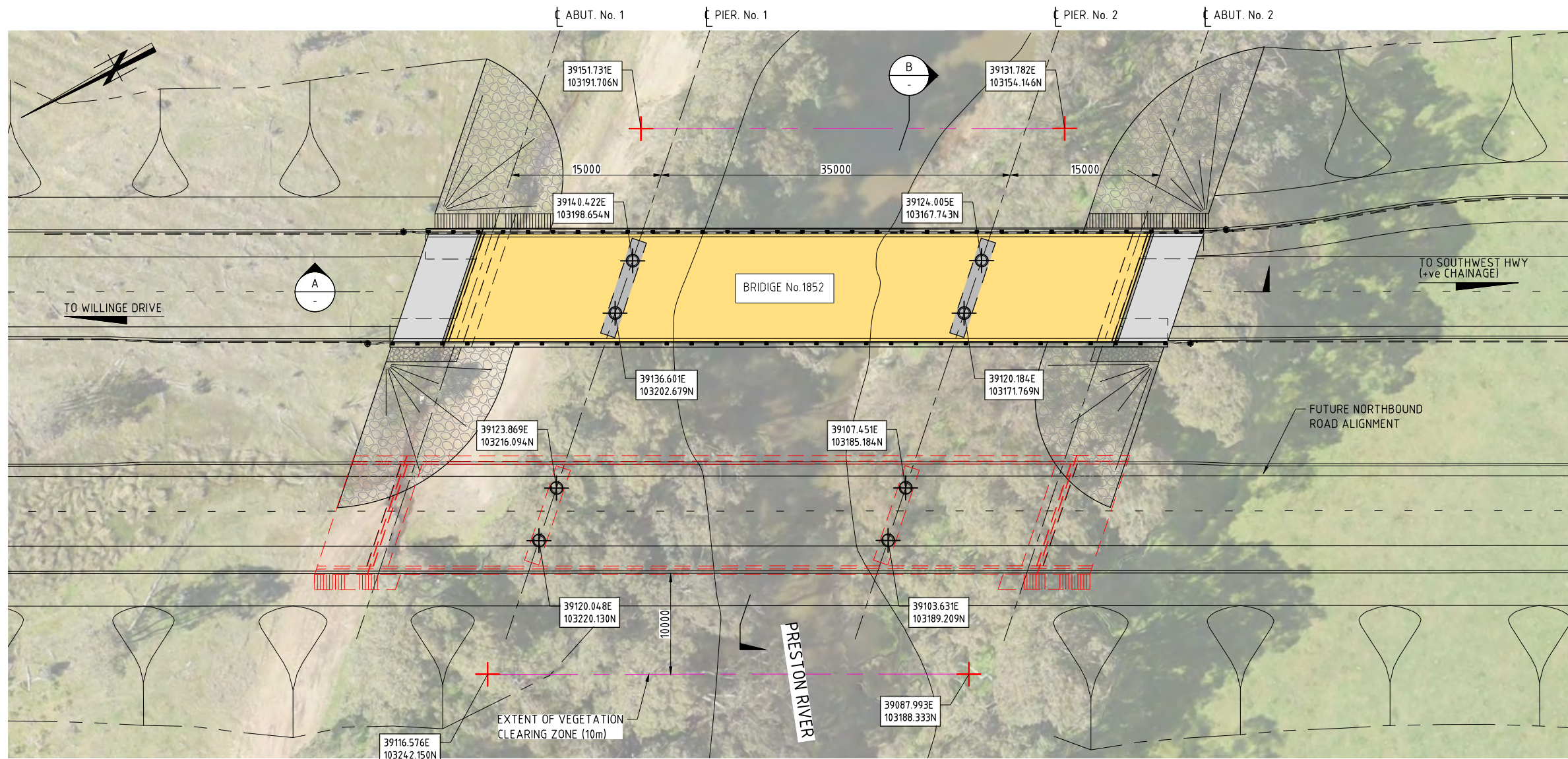
BRIDGE 1667 WIDENING
BORR SOUTHBOUND RAMP OVER
PRESTON RIVER

LOCAL AUTHORITY

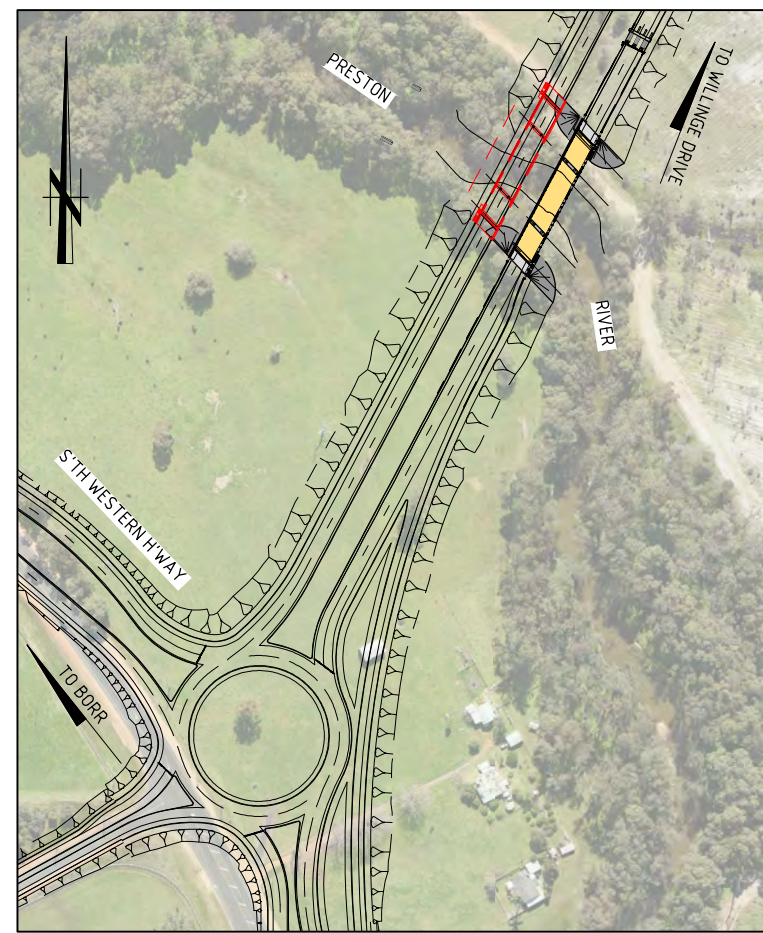
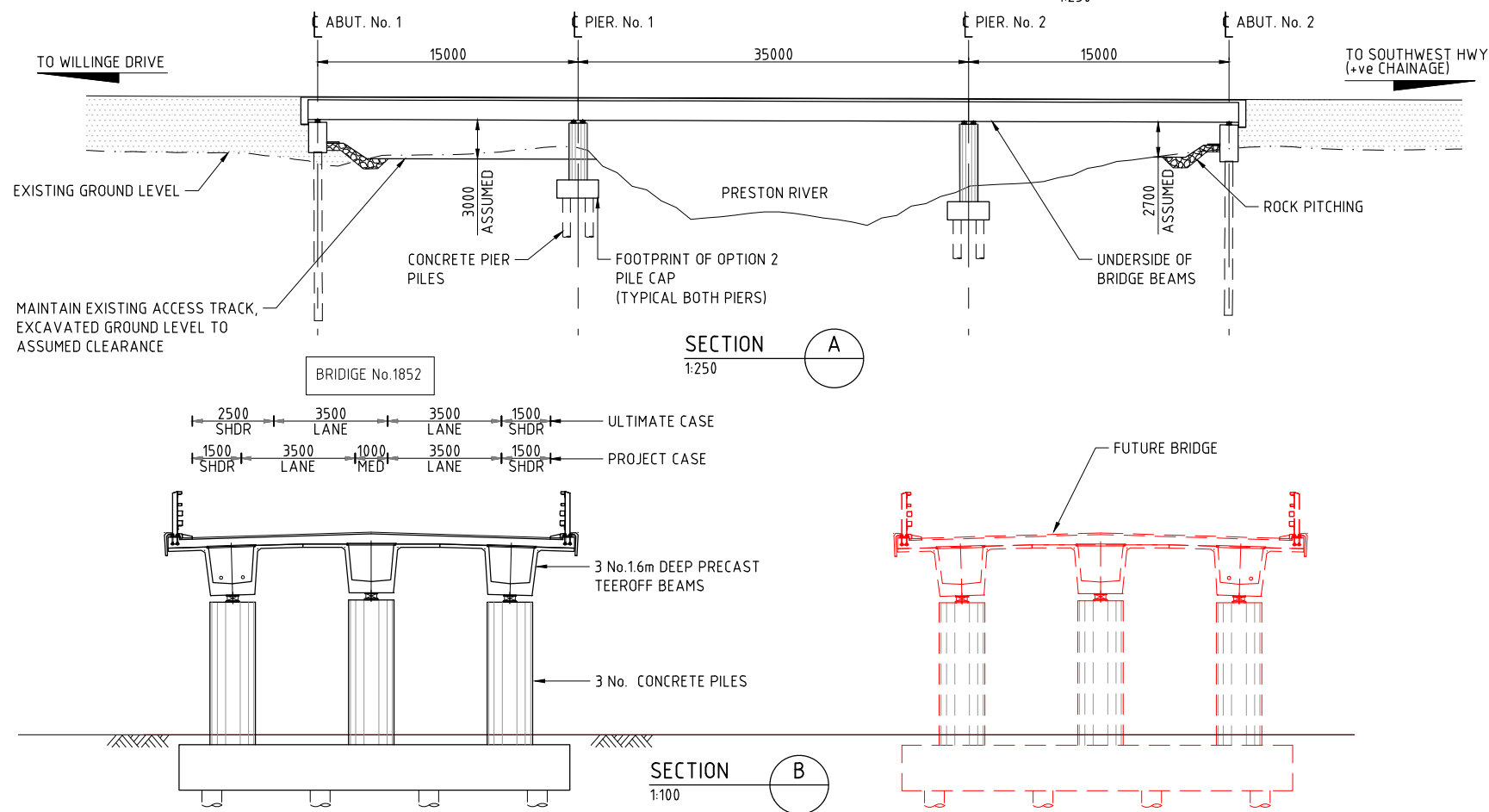
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1:100
1:250
A
1



PLAN - PRESTON RIVER BRIDGE (WILLINGE DRIVE EXTENSION)
1:250



AMENDMENTS		
No.	DESCRIPTION	APPROVED & DATE
A	ISSUED FOR COMMENT	26.10.18
B	ISSUED FOR INFORMATION	08.11.18
C	ISSUED FOR INFORMATION	31.05.19
D	ISSUED FOR INFORMATION	22.08.19

NOTES

- LEGEND
- + CLEARING EXTENT PEGS
 - ⊕ EDGE OF PIER PEGS

METADATA	
GROUND SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAPPING SURVEY STANDARD:	...
DATE OF CAPTURE:	...
MAIN ROADS PROJECT ZONE:	PCG94
HEIGHT DATUM:	AHD

BORR Team

DRAWING NUMBER: BORR-00-SK-BR-06 REV C

DESIGNED / DRAWN: /

VERIFIED: /

DIRECTOR: /

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PLANNING AND TECHNICAL SERVICES DIRECTORATE
ROAD AND TRAFFIC ENGINEERING BRANCH

WATERLOO CRESCENT East Perth 6004
Telephone (08) 9323 4111 Fax (08) 9323 4430

MRWA FILE NUMBER	
APPROVED (MRWA)	
BUNBURY OUTER RING ROAD (H058)	
WILLINGE DR EXT'N OVER PRESTON RIVER	
LOCAL AUTHORITY	
MRWA DRAWING NUMBER	BORR-00-SK-BR-06

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