Environmental Protection Authority

GOVERNMENT OF WESTERN AUSTRALIA

EPA REFERRAL FORM PROPONENT

Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the *Environmental Protection Act 1986*.

PURPOSE OF THIS FORM

Section 38(1) of the *Environmental Protection Act 1986* (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPAôs *General Guide on Referral of Proposals* [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) of the EP Act by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats ï hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

CHECKLIST

Before you submit this form, please check that you have:

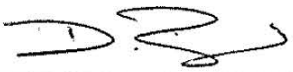
	Yes	No
Completed all the questions in Part A (essential).	✓	
Completed all applicable questions in Part B.	✓	
Included Attachment 1 ï location maps.	✓	
Included Attachment 2 ï additional document(s) the proponent wishes to provide (if applicable).	✓	
Included Attachment 3 ï confidential information (if applicable).		✓
Enclosed an electronic copy of all referral information, including spatial data and contextual mapping but excluding confidential information.	✓	

Following a review of the information presented in this form, please consider the following question (a response is optional).

Do you consider the proposal requires formal environmental impact assessment? ☐ Yes ☒ **No** ☐ Not sure
If yes, what level of assessment? ☐ Assessment on Proponent Information Review ☐ Public Environmental

PROPONENT DECLARATION (to be completed by the proponent)

I, **Dominic Boyle** declare that I am authorised on behalf of Main Roads WA (MRWA) (being the person responsible for the proposal) to submit this form and further declare that the information contained in this form is true and not misleading.

Name	**Dominic Boyle**
Position	**Project Manager**
Company	**Main Roads WA**
Signature	
Date	6th October 2014

PART A - PROPONENT AND PROPOSAL INFORMATION
(All fields of Part A must be completed for this document to be treated as a referral)

1 PROPONENT AND PROPOSAL INFORMATION

1.1 Proponent

Name	**Main Roads Western Australia (MRWA)**
Joint Venture parties (if applicable)	N/A
Australian Company Number (if applicable)	ABN: 50 860 676 021
Postal Address	Head Office (Don Aitken Centre) PO Box 6202 East Perth WA 6892
Key proponent contact for the proposal: • name • address • phone • email	**Dominic Boyle** **Project Manager** **Infrastructure Delivery Directorate (IDD)** **Main Roads Western Australia** PO Box 6202 East Perth WA 6892 (08) 9323 4225 dominic.boyle@mainroads.wa.gov.au
Consultant for the proposal (if applicable): • name • address • phone • email	**Denise True** **Environment and Heritage Manager** **NorthLink WA** GPO Box 2776 Cloisters Square Perth WA 6850 (08) 9269 6200 denise.true@northlinkwa.com.au

1.2 Proposal

Title	**Tonkin Highway Grade Separation**
Description	Main Roads Western Australia (MRWA) proposes to grade separate three intersections on Tonkin Highway, being Benara Road, Morley Drive and Collier Road, within the City of Bayswater, Western Australia (the project; Figure 1). This proposal also allows for the upgrading of this length of Tonkin Highway to include additional traffic lanes. The project area is 5.1 kilometres (km) in length and encompasses 75.09 hectares (ha), including existing infrastructure and cleared areas.

Extent (area) of proposed ground disturbance.	The project area is approximately 75.09 ha. Only 31.9 ha of vegetation (consisting of both remnant and rehabilitated native vegetation), occurs within the project area and will be impacted by the project (Figure 2). This vegetation is primarily degraded due to being historically cleared for construction of Tonkin Highway, revegetation, or heavily weed infested due to lack of understorey and ground cover species.
Timeframe in which the activity or development is proposed to occur (including start and finish dates where applicable).	Construction will commence on receipt of all necessary approvals. MRWA anticipates having the project ready to begin construction in 2015.
Details of any staging of the proposal.	N/A.
Is the proposal a strategic proposal?	No.
Is the proponent requesting a declaration that the proposal is a derived proposal?	No.
Please indicate whether, and in what way, the proposal is related to other proposals in the region.	This project is related to the following other proposals: • Perth Darwin National Highway (Swan Valley Bypass section currently being assessed under both State and Federal Public Environmental Review process- PER report currently in draft). • Malaga Drive / Reid Highway grade separated interchange.
Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?	The project area is currently reserved for primary and other regional road purposes (Figure 3), and is in MRWA ownership.
What is the current land use on the property, and the extent (area in hectares) of the property?	The project area is comprised of four to six lanes of bitumen road (Tonkin Highway), median strip, footpaths and road verge. Numerous elements associated with road management and utility providers are located within or adjacent to the road reserve including: • A road overpass (Broun Avenue) and pedestrian overpass (between Benara Road and Reid Highway). • A Principal Shared Path (PSP) is constructed along the eastern edge of the road between Guildford Road and

	Collier Road. • Noise bunds. • Signal boxes. • Lighting infrastructure. • Several access hatches for infrastructure (i.e. telecommunications and water supplies). • Three drainage sumps. • Stormwater drains. • Fencing associated with the road itself and with domestic properties adjacent to the site. The project area is approximately 75.09 ha.

1.3 Location

Name of the Shire in which the proposal is located.	City of Bayswater.
For urban areas: • street address; • lot number; • suburb; and • nearest road intersection.	The proposal includes the following road intersections as depicted on Figure 1: • Tonkin Highway and Collier Road. • Tonkin Highway and Morley Drive. • Tonkin Highway and Benara Road.
For remote localities: • nearest town; and • distance and direction from that town to the proposal site.	N/A.
Electronic copy of spatial data - GIS or CAD, geo-referenced and conforming to the following parameters: • GIS: polygons representing all activities and named; • CAD: simple closed polygons representing all activities and named; • datum: GDA94; • projection: Geographic (latitude/longitude) or Map Grid of Australia (MGA); • format: Arcview shapefile, Arcinfo coverages, Microstation or AutoCAD.	Please see enclosed CD.

1.4 Confidential Information

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	No.
If yes, is confidential information attached as a separate document in hard copy?	N/A.

1.5 Government Approvals

Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.	No, the land is already reserved for the purpose of road infrastructure under the Metropolitan Regional Scheme (Figure 3).
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, please complete the table below.	Yes.

Agency/ Authority	**Approval required**	**Application lodged Yes / No**	**Agency/Local Authority contact(s) for proposal**
Federal Department of the Environment (DOE).	*Environment Protection and Biodiversity Conservation Act 1999* - Approval to impact Matters of National Environmental Significance.	In progress.	Application/referral in prep.
Department of Aboriginal Affairs.	*Aboriginal Heritage Act 1972* - Approval to disturb heritage sites.	No.	MRWA has recently commissioned a heritage assessment. Consultation with the Department of Aboriginal Affairs (DAA) and the application for any necessary Section 18 approval to disturb sites will be undertaken following completion of surveys and prior to any disturbance.
Department of Water (DOW).	*Rights in Water and Irrigation Act 1914* - Approval to install a well and/or abstract water.	No.	DOW will be consulted throughout the planning process to determine any licencing requirements.

PART B ï ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, by answering the questions contained in Sections 2.1-2.11:

2.1 flora and vegetation;
2.2 fauna;
2.3 rivers, creeks, wetlands and estuaries;
2.4 significant areas and/ or land features;
2.5 coastal zone areas;
2.6 marine areas and biota;
2.7 water supply and drainage catchments;
2.8 pollution;
2.9 greenhouse gas emissions;
2.10 contamination; and
2.11 social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

(a) the source of the information; and
(b) the currency of the information.

2.1 Flora and Vegetation

2.1.1 Do you propose to clear any native flora and vegetation as a part of this proposal?

[A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act (Environmental Protection (Clearing of Native Vegetation) Regulations 2004)]. Please contact the Department of Environment and Conservation (DEC) for more information.

(please tick) ✓ **Yes** **If yes**, complete the rest of this section.

☐ No **If no**, go to the next section

2.1.2 How much vegetation are you proposing to clear (in hectares)?

A total of 31.9 ha of vegetation (mapped as being within excellent to degraded condition) will be cleared within the project area (Figure 2).

2.1.3 Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

☐ Yes ✓ **No** **If yes**, on what date and to which office was the application submitted of the DEC?

MRWA anticipates that the proposed clearing can be managed under Part V of the EP Act and the EPBC Act. The project is only likely to be at variance to one of the 10 clearing principles, principle (b) ï Native vegetation should not be cleared if it comprises, the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia. The value of habitat within the project area is discussed briefly in Section 2.2.2.

If this proposal is not assessed MRWA will seek approval to use its state-wide clearing permit to complete these works.

2.1.4 Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

✓ **Yes** ☐ No

If yes, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

An Environmental Impact Assessment (EIA) was conducted for the project, which included a Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a). The results of this survey are provided as Attachment 2a.

Following this survey the project area was revised and it was identified that a small area of land, between Tonkin Highway and Harvest Road had not been surveyed. To address this gap a site investigation was conducted on the 15 August 2014 to identify the flora, vegetation and fauna values within this area (Coffey, 2014; Attachment 2b).

2.1.5 Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site?

✓ **Yes** ☐ No

If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

The Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) included searches of the following databases:

- Department of Parks and Wildlife (DPAW) Threatened Flora (previously referred to as Declared Rare Flora, DRF) and Priority Flora database.
- DPAW Threatened Ecological Community (TEC)/ Priority Ecological Community (PEC) database.
- Department of the Environment (DOTE) Protected Matters Search Tool.

2.1.6 Are there any known occurrences of rare or priority flora or threatened ecological communities on the site?

☐ Yes ✓ **No**

If yes, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

The database searches identified 16 Threatened flora taxa and 15 Priority flora taxa previously recorded in the vicinity of the project area. Despite these

listings, no Threatened flora pursuant to the EPBC Act and/or the WC Act or priority flora were recorded during the Level 1 survey or the subsequent gap survey (See Attachment 2a and Attachment 2b).

2.1.7 If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site?

☐ Yes	✓ **No**	**If yes**, please indicate which Bush Forever Site is affected (site number and name of site where appropriate).

The nearest Bush Forever Site is Lightning Swamp Bushland (307), which occurs approximately 200 m northwest of the project area and is an ESA (ID 2908) (Figure 4; City of Bayswater, 2013).

2.1.8 What is the condition of the vegetation at the site?

The Level 1 flora, vegetation and fauna survey and the follow-up site investigation recorded and mapped vegetation condition within the project area (see Figure 5 of Attachment 2a and Figure 1 of Attachment 2b). Vegetation condition ranged from Completely Degraded to Excellent, with the majority of the site considered Degraded or worse.

A high percentage of areas were mapped as Completed Degraded within the project area. These contained non-endemic species and were not recognised as naturally occurring vegetation communities (360 Environmental, 2014a).

Areas of natural regeneration were mapped as Degraded due to a low diversity of species and a high frequency of weeds (360 Environmental, 2014a).

There were a few areas of remnant native vegetation which was mapped as being in Good to Excellent condition (360 Environmental, 2014a).

2.2 Fauna

2.2.1 Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick)	✓ **Yes**	**If yes**, complete the rest of this section.
	No	**If no**, go to the next section.

2.2.2 Describe the nature and extent of the expected impact.

A habitat assessment was undertaken as part of the Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) and identified five broad habitat types, including:

- Scattered trees/woodlands.
- Eucalyptus/Banksia Woodland.
- Shrublands.
- Constructed Wetlands.
- Damplands.

All habitats within the project area generally have a high level of disturbance associated with the presence of weeds, introduced fauna, rubbish and

infrastructure (i.e. roads, rail lines and power lines) (360 Environmental, 2014a).

A targeted Black Cockatoo assessment was conducted (360 Environmental, 2013; Attachment 2c) and was supported by the Coffey (2014) follow-up site investigation (Attachment 2b). These surveys determined that the project area contained and was likely to impact 14.27 ha of suitable foraging habitat for the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and the Carnabyôs Cockatoo (*Calyptorhynchus latirosris*). Foraging habitat consisted largely of the following vegetation communities and was mapped as naturally occurring, rehabilitated/planted, or a mixture of both natural and rehabilitated vegetation (Figure 5):

- Eucalypt Woodland including Marri, Jarrah, Coastal Black Butt River Red Gum.
- Proteaceous Heath/Woodland including *Banksia menziesii* and *B. attenuata*.

The targeted Black Cockatoo assessment (360 Environmental, 2013; Attachment 2c) also recorded the presence of 106 potential Black Cockatoo breeding trees within the project area (i.e. trees with a Diameter at Breast Height (DBH) of greater than 500 mm). The majority were young Marri (*Corymbia calophylla*) that had been planted along existing road verges (Figure 5). Out of these 106 potential breeding trees, 20 had a DBH greater than 800 mm, and none had obvious hollows at the time of observation. No potential breeding trees were identified in the follow up survey of the additional alignment area (Coffey, 2014; Attachment 2b).

The proposed development is unlikely to disrupt other fauna assemblages of the survey area as the fauna are generally common and widespread throughout the region and are not dependent upon habitat within the survey area, which is largely degraded (as discussed in Section 2.1.8).

2.2.3 Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

✓ **Yes**	☐ No	If yes, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s). If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

As discussed in Section 2.1.4 and Section 2.2.2, a Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) and a targeted Black Cockatoo assessment (360 Environmental, 2013; Attachment 2c) was undertaken.

Following these surveys the project area was revised and it was identified that a small area of land, between Tonkin Highway and Harvest Road had not been surveyed. To address this gap a site investigation was undertaken on

the 15 August 2014 to identify the flora, vegetation and fauna values within this area (Coffey, 2014; Attachment 2b).

2.2.4 Has a search of DEC records for known occurrences of Specially Protected (threatened) fauna been conducted for the site?

✓ **Yes** ☐ No

The Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) included searches of the following databases:

- DPAW Threatened and Priority Species database.
- DPAW NatureMap online database.
- DOTE Protected Matters Search Tool.

These searches are provided as Attachment 2e.

2.2.5 Are there any known occurrences of Specially Protected (threatened) fauna on the site?

✓ **Yes** ☐ No **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

A total of 30 conservation significant species were identified as potentially occurring within the project area during the desktop review of the above-mentioned database searches. The Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) considered that of the 30 species identified, nine species are considered as õPossiblyô occurring, four species are considered as õLikelyôto occur and two species were positively õRecordedô within the project area. The Red-tailed Black Cockatoo was recorded during the Level 1 flora, vegetation and fauna survey (360 Environmental, 2014a; Attachment 2a) and the Carnabyõs Cockatoo was recorded during the Black Cockatoo Assessment (360 Environmental, 2013; Attachment 2c). (Table 1).

Table 1. Conservation significant fauna potentially occurring in the project area (compiled results from Attachments 2a and 2c)

Taxa	Conservation Status[1]	Likelihood
Reptiles		
Carpet Python (*Morelia spilota imbricata*)	S4, P4	Possible
Black-striped Snake (*Neelaps calonotos*)	P3	Possible
Birds		
Australian Black Bittern (*Ixobrychus flavicollis australis*)	P3	Possible
Australasian Bittern (*Botaurus poiciloptilus*)	En	Possible
Bar-tailed Godwit	Ma, Mi	Unlikely
Australian Little Bittern (*Ixobrychus minutus dubius*)	P4	Possible
Grey Plover (*Pluvialis squatarola*)	IA	Possible
Fork-tailed Swift (*Apus pacificus*)	Ma, Mi	Possible
Eastern great Egret (*Ardea modesta*)	Ma, Mi	Likely

Table 1. Conservation significant fauna potentially occurring in the project area (compiled results from Attachments 2a and 2c) (contôd)

Taxa	Conservation Status[1]	Likelihood
Cattle Egret (*Ardea ibis*)	Ma, Mi	Likely
Peregrine Falcon (*Falco peregrinus*)	S4	Possible
Bush Stone-curlew (*Burhinus grallarius*)	P4	Unlikely
Common Sandpiper (*Actitis hypoleucos*)	Ma, Mi	Unlikely
Sharp-tailed Sandpiper (*Calidris acuminata*)	Ma, Mi	Unlikely
Sanderling (*Calidris alba*)	Ma, Mi	Unlikely
Red Knot (*Calidris canutus*)	Ma, Mi	Unlikely
Great Knot (*Calidris tenuirostris*)	Ma,Mi	Unlikely
Curlew Sandpiper (*Calidris ferruginea*)	Ma, Mi	Unlikely
Red-necked Stint (*Calidris ruficollis*)	Ma, Mi	Unlikely
Grey Tailed Tattler (*Tringa brevipes*)	Ma, IA	Unlikely
Common Greenshank (*Tringa nebularia*)	Ma, Mi	Unlikely
Marsh Sandpiper (*Tringa stagnatilis*)	Ma, Mi	Unlikely
Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)	Vu,S1	Recorded
Baudinôs Cockatoo (*Calyptorhynchus baudinii*)	Vu, S1	Likely
Carnabyôs Cockatoo (*Calyptorhynchus latirosris*)	En, S1	Recorded
Wood Sandpiper (*Tringa glareola*)	Ma, Mi	Unlikely
Rainbow Bee-eater (*Merops ornatus*)	Ma, Mi	Likely
Mammals		
Quenda (*Isoodon obesulus fusciventer*)	P5	Unlikely
Western Quoll (*Dasyurus geoffroyi*)	Vu, S1	Unlikely
Water-rat (*Hydromys chrysogaster*)	P4	Possible

Source: 360 Environmental, 2014a (Attachment 2a) and 360 Environmental, 2013 (Attachment 2c).

1. Conservation status definitions:
   En Listed as Endangered under the EPBC Act 1999.
   Vu Listed as Vulnerable under the EPBC Act 1999.
   Mi Listed as Migratory under the EPBC Act 1999.
   Ma Listed as Marine under the EPBC Act 1999.
   S Scheduled under the WC Act 1950.
   P Listed as Priority by the DPAW.

2.3 Rivers, Creeks, Wetlands and Estuaries

2.3.1 Will the development occur within 200 metres of a river, creek, wetland or estuary?

✓ **Yes** **If yes**, complete the rest of this section.

No **If no**, go to the next section.

As shown in Figure 4, no rivers, creeks or estuaries intersect or occur within 200 m of the project area.

Wetlands of the Swan Coastal Plain have been described and mapped by Hill et al. (1996) and assigned a management category that reflects their

condition and environmental value. At the state level, there are three categories that wetlands are assigned depending on their condition and environmental values:

- Conservation Category (CCW).
- Resource Enhancement (REW).
- Multiple Use (MUW).

CCWs are those with the highest level of ecological attributes and functions, followed by REWs then MUWs.

Two MUWs intersect the project area. MUW category wetlands are considered to have few remaining important wetland attributes and functions.

A third MUW occurs within 100 m of the project area to the southwest and a CCW (Lightning Swamp) occurs approximately 400 m northwest of the project area (Figure 4).

2.3.2 Will the development result in the clearing of vegetation within the 200 metre zone?

✓ **Yes** ☐ No **If yes**, please describe the extent of the expected impact.

The project will result in the clearing of vegetation associated with the two MUWs present within the project area, identified in Figure 4.

2.3.3 Will the development result in the filling or excavation of a river, creek, wetland or estuary?

✓ **Yes** ☐ No **If yes**, please describe the extent of the expected impact.

Project construction is likely to require fill and excavation works within the areas of the two MUWs present within the project area, identified in Figure 4.

2.3.4 Will the development result in the impoundment of a river, creek, wetland or estuary?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

2.3.5 Will the development result in draining to a river, creek, wetland or estuary?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

A drainage management plan is currently being development for the project and will ensure that drainage from the road is not directed to any areas of environmental sensitivity.

2.3.6 Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories?

Conservation Category Wetland	☐ Yes	✓ **No**	☐ Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	☐ Yes	✓ **No**	☐ Unsure
Perth's Bush Forever site	☐ Yes	✓ **No**	☐ Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	☐ Yes	✓ **No**	☐ Unsure
The management area as defined in s4(1) of the *Swan River Trust Act 1988*	☐ Yes	✓ **No**	☐ Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA)	☐ Yes	✓ **No**	☐ Unsure

2.4 Significant Areas and/ or Land Features

2.4.1 Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

☐ Yes ✓ **No** **If yes**, please provide details.

Lightning Swamp Bushland, is the nearest A Class Reserve, located approximately 200 m northwest of the project area and is vested with the City of Bayswater (Figure 4; City of Bayswater, 2013).

2.4.2 Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

☐ Yes ✓ **No** **If yes**, please provide details.

The nearest ESA is Lightning Swamp Bushland (ID 2908), which occurs approximately 200 m northwest of the project area and is a recognised Bush Forever Site (307) (Figure 4; City of Bayswater, 2013).

2.4.3 Are you aware of any significant natural land features (e.g. caves, ranges etc.) that will be impacted by the proposed development?

☐ Yes ✓ **No** **If yes**, please provide details.

2.5 Coastal Zone Areas (Coastal Dunes and Beaches)

2.5.1 Will the development occur within 300 metres of a coastal area?

☐ Yes ✓ **No** **If yes**, complete the rest of this section.

If no, go to the next section.

2.5.2 What is the expected setback of the development from the high tide level and from the primary dune?

N/A.

2.5.3 Will the development impact on coastal areas with significant landforms including beach ridge plain, cuspate headland, coastal dunes or karst?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

2.5.4 Is the development likely to impact on mangroves?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

2.6 Marine Areas and Biota

2.6.1 Is the development likely to impact on an area of sensitive benthic communities, such as seagrasses, coral reefs or mangroves?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

2.6.2 Is the development likely to impact on marine conservation reserves or areas recommended for reservation (as described in *A Representative Marine Reserve System for Western Australia*, CALM, 1994)?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact.

2.6.3 Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

☐ Yes ✓ **No** **If yes**, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

2.7 Water Supply and Drainage Catchments

2.7.1 Are you in a proclaimed or proposed groundwater or surface water protection area?

✓ **Yes** No **If yes**, please describe what category of area.

The project area is located within the Perth Groundwater area as proclaimed under the *Rights in Water and Irrigation Act 1914* (DOW, 2013). Any requirement for 26D and/or 5C licences, to install a well and/or take water (dewater), will be applied for in consultation with the Department of Water (DOW).

2.7.2 Are you in an existing or proposed Underground Water Supply and Pollution Control area?

☐ Yes ✓ **No** **If yes**, please describe what category of area.

2.7.3 Are you in a Public Drinking Water Supply Area (PDWSA)?

☐ Yes ✓ **No** **If yes**, please describe what category of area.

2.7.4 Is there sufficient water available for the proposal?

✓ **Yes** ☐ No

Sources for the projectôs construction water have not yet been defined; however, a number of existing water sources are known in the area. The use and abstraction of water from these sources will be undertaken in consultation with the DOW and in accordance with any relevant licencing requirements.

Where water cannot be sourced from existing facilities and in accordance with an existing licence, MRWA will investigate the installation of, and abstraction from, a number of temporary wells, and any associated approval requirements in consultation with the DOW.

2.7.5 Will the proposal require drainage of the land?

✓ **Yes** ☐ No **If yes**, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

Due to the presence of a shallow groundwater table within the project area and the possibility of excavations below the water table, dewatering may be required during project construction. The requirement for dewatering and the associated dewatering volumes and rates will be determined as detailed design of the project progresses.

Any requirement to dewater will need to be licenced under the *Rights in Water and Irrigation Act 1914.* A dewatering management plan will be developed as part of this licensing process in consultation with the DOW.

2.7.6 Is there a water requirement for the construction and/ or operation of this proposal?

✓ **Yes** ☐ No **If yes**, complete the rest of this section.

If no, go to the next section

2.7.7 What is the water requirement for the construction and operation of this proposal, in kilolitres per year?

An estimated 150,000 KL of water will be required for construction.

2.7.8 What is the proposed source of water for the proposal? (E.g. dam, bore, surface water etc.)

See Section 2.7.4 above.

2.8 Pollution

2.8.1 Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

✓ **Yes** ☐ No **If yes**, complete the rest of this section.

If no, go to the next section.

2.8.2 Is the proposal a prescribed premise, under the Environmental Protection Regulations 1987?

☐ Yes ✓ **No** **If yes**, please describe what category of prescribed premise.

2.8.3 Will the proposal result in gaseous emissions to air?

✓ **Yes** ☐ No **If yes**, please briefly describe.

The generation of gaseous emissions associated with this project will be limited to the emissions produced by construction vehicles and machinery. These emissions are not considered to be significant given the relatively short duration of construction activities (18 months) and the current land-use within the project area.

2.8.4 Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

☐ Yes ✓ **No** **If yes**, please briefly describe.

An air quality modelling assessment is currently being commissioned. This assessment will assess both project construction emissions as well as any change in emissions associated with predicted changes in traffic volumes following construction of the project and will inform detailed design.

2.8.5 Will the proposal result in liquid effluent discharge?

✓ **Yes** ☐ No **If yes**, please briefly describe the nature, concentrations and receiving environment.

Liquid waste generated by the project is expected to be minimal and is largely associated with the production of sewage and grey water from portable toilets, during construction activities.

Portable ablutions will be provided within the project area (e.g. trailer mounted facilities). Sewage and grey water will be collected and disposed of at a licensed facility by a licenced waste contractor.

2.8.6 If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

☐ Yes ✓ **No** **If yes**, please describe.

No watercourses or marine environment are within proximity of the project area. A drainage management strategy is currently being developed to manage run-off from the project.

2.8.7 Will the proposal produce or result in solid wastes?

✓ **Yes** ☐ No

The project is likely to generate a variety of domestic and industrial waste products during construction, including; general refuse, non-metal scrap (e.g. containers, pallets, wood, plastic and concrete), office and administration waste, putrescible waste, tyres, batteries and soil**.**

The volume of domestic and industrial waste generated by the project will be relatively small given the short duration of construction activities (18 months) and the size of the project.

2.8.8 Will the proposal result in significant off-site noise emissions?

☐ Yes ✓ **No**

The generation of noise emissions will be limited to the emissions produced by construction vehicles and machinery. These emissions are not considered to be significant given the relatively short duration of construction activities (18 months) and the current land-use within the project area.

A noise modelling assessment is currently being commissioned. This assessment will assess both project construction emissions as well as any change in emissions associated with predicted changes in traffic volumes following construction of the project and will inform detailed design (i.e. requirement for/and location of noise controls).

2.8.9 Will the development be subject to the Environmental Protection (Noise) Regulations 1997?

✓ **Yes**	No	**If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations? No

During construction the project will be subject to the *Environmental Protection (Noise) Regulations 1997*. Design of the road and its predicted noise impacts during operation are also subject to State Planning Policy 5.4, Road and Rail Transport Noise and freight Considerations in Land use Planning.

In accordance with State Planning Policy 5.4, MRWA is currently commissioning a noise assessment, as discussed in Section 2.8.8. This assessment will inform detailed design and the Environmental Management Plan.

2.8.10 Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other ñsensitive premisesò such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?

✓ **Yes**	No	**If yes**, please describe and provide the distance to residences and other ñsensitive premisesò

There are likely to be some short-term air quality impacts related to the generation of dust, gas and noise emissions from vehicle and equipment operation during construction. These impacts will be managed through the development and implementation of an Environmental Management Plan.

Following construction, gaseous emissions and noise will be produced from public road users utilising the upgraded road network. As discussed in Section 2.8.4 and 2.8.8, MRWA is currently commissioning an air quality and noise modelling assessment to support detailed project design and ensure emission impacts are appropriately mitigated and managed.

2.8.11 If the proposal has a residential component or involves ñsensitive premisesò, is it located near a land use that may discharge a pollutant?

☐ Yes No ✓ **Not Applicable**

If yes, please describe and provide the distance to the potential pollution source

2.9 Greenhouse Gas Emissions

2.9.1 Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?

☐ Yes ✓ **No** **If yes**, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.

No assessment of potential greenhouse gas emissions has been undertaken to date. However, it is considered unlikely that the construction of the project will result in more than 100,000 tonnes CO_2 equivalent emissions per annum (expected construction period 18 months) given that the construction of a similar project (New Perth Bunbury Highway) produced emissions of 122,630 CO_2 equivalent per annum over a three year construction period and was over ten times the length of this proposal (70.5 km of dual carriageway).

2.9.2 Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

N/A.

2.10 Contamination

2.10.1 Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?

✓ **Yes** No ☐ Unsure **If yes**, please describe.

A Preliminary Site Investigation (PSI) of contaminated sites, which may affect the project was undertaken (360 Environmental, 2014b; Attachment 2d). The PSI identified seven sites registered as contaminated under the *Contaminated Sites Act 2003* within 500 m of the project area (Figure 6). Three of these contaminated sites, as listed below, have potential source-pathway-receptor linages that could pose a contamination risk to the project:

- Southern portion of project area. This site contains soil contaminated with pyritic cinders and groundwater contaminated with iron, fluoride and manganese.
- Former Cresco/CSBP Site, adjacent to the south-eastern portion of the project area. This site contains groundwater contaminated with heavy

metals, fluoride, chloride and ammonia above the domestic non-potable criteria.

- Former metal recycling facility at the corner of Tonkin Highway and Collier Road. This site contains groundwater contaminated with petroleum hydrocarbons and heavy metals above freshwater and domestic non-potable guidelines.

Contaminated Sites will be managed in accordance with the *Contaminated Sites Act 2003*.

2.10.2 Has any assessment been done for soil or groundwater contamination on the site?

✓ **Yes** ☐ No

See Section 2.10.1 above.

2.10.3 Has the site been registered as a contaminated site under the *Contaminated Sites Act 2003*? (on finalisation of the CS Regulations and proclamation of the CS Act)

✓ **Yes** No

See Section 2.10.1 above.

2.11 Social Surroundings

2.11.1 Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?

✓ **Yes** ☐ No ☐ Unsure **If yes**, please describe.

A search of the DAA Aboriginal Heritage Inquiry System indicates that five registered Aboriginal heritage sites have the potential to be directly impacted by the project (Figure 7; DAA, 2014), including:

- 3178 ï Collier Road (Artefacts /Scatter).
- 3179 ï Clune Street (Artefacts/ Scatter).
- 3326 ï Bayswater 1-3 (Artefacts/scatter/camp).
- 3749 ï Bayswater Camp 1 (Camp).
- 4039 ï Broun Avenue (Artefacts/scatter).

MRWA has commissioned a detailed heritage assessment (including archaeological and ethnographic surveys). Should it be determined that any of these registered sites, or any new sites identified during the heritage surveys) are likely to be impacted by the project, MRWA will consult with the DAA and affected site informants and seek the appropriate approvals under Section 18 of the *Aboriginal Heritage Act 1972*.

2.11.2 Is the proposal on a property, which contains or is near a site of high public interest (e.g. a major recreation area or natural scenic feature)?

✓ **Yes** ☐ No **If yes**, please describe.

No sites of public interest occur within the project area.

The nearest sites of public interest are Lightning Swamp Bushland (Bush Forever Site 307) and neighbouring recreational area, Lightning Park, which are located at the Benara Road and Tonkin Highway intersection, to the north of the project area (Figure 4). While it is unlikely the project will have any direct impact on these sites a drainage management strategy is currently being developed to ensure there are no offsite drainage impacts at either of these sites.

2.11.3 Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?

☐ Yes ✓ **No** **If yes**, please describe.

Construction of the project will require the transport of goods (i.e. road base materials) in and out of the project area, however it is unlikely to result in an impact to the local amenity given the short-term nature of construction activities and current land use within the project area (i.e. as a highway/transport corridor).

3. PROPOSED MANAGEMENT

3.1 Principles of Environmental Protection

3.1.1 Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA website).

1. The precautionary principle.	✓ **Yes**	☐ No
2. The principle of intergenerational equity.	✓ **Yes**	☐ No
3. The principle of the conservation of biological diversity and ecological integrity.	✓ **Yes**	☐ No
4. Principles relating to improved valuation, pricing and incentive mechanisms.	✓ **Yes**	☐ No
5. The principle of waste minimisation.	✓ **Yes**	☐ No

3.1.2 Is the proposal consistent with the EPAôs Environmental Protection Bulletins/ Position Statements and Environmental Assessment Guidelines/Guidance Statements (available on the EPA website)?

✓ **Yes** ☐ No

3.2 Consultation

3.2.1 Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

✓ **Yes** ☐ No **If yes**, please list those consulted and attach comments or summarise response on a separate sheet.

MRWA and its consultants have undertaken, and continue to undertake, a variety of stakeholder and community consultation, since the initiation of the broader NorthLink WA Project (encompassing this project and the Swan Valley Bypass Project, as discussed in Section 1.2), including the establishment of the following committees and reference groups:

- **NorthLink WA Steering Committee:** MRWA, Department of Transport, Department of Planning, Federal Department of Infrastructure and Regional Development and City of Bayswater.
- **Project Enabling Group:** MRWA, Local Government Authorities (including the City of Bayswater, City of Swan and Shire of Chittering), Department of Premier and Cabinet, Department of Transport, Department of Planning, Public Transport Authority, Department of Health and Department of Parks and Wildlife.
- **Community Reference Group:** Three Community Reference Groups have been formed to reflect the local project context and interests of the

broader NorthLink WA Project, one of which is specific to this project. Community members were invited to join this group with all nominees subsequently accepted. In addition relevant social, environmental and economic groups and nearby schools (i.e. Hampton Park Primary School) were invited to join the Reference Groups.

- **Environmental Reference Group:** MRWA, Local Government Authorities (including the City of Bayswater, City of Swan and Shire of Chittering), Department of Parks and Wildlife, Wildflower Society of WA, Eastern Metropolitan Regional Council, Department of Defence, Department of Water, Perth Region NRM, Chittering Landcare/Ellen Brockman Catchment Council, Conservation Council of WA, Western Australian Planning Commission.
- **Freight and Road User Group**: MRWA, Department of Transport, Public Transport Authority, Department of Planning, Local Government Authorities (including the City of Bayswater, City of Swan and Shire of Chittering), Eastern Metropolitan Regional Council, Western Australian Local Government Association, Department of Fire, Emergency Services, RAC, Western Australian Road Transport Association, Freight and Logistics Council WA, Livestock and Rural Transporters Association, WA Pilot Drivers Association and WA Farmers Federation.
- **Drainage Reference Group**: MRWA, Local Government Authorities (including the City of Bayswater, City of Swan and Shire of Chittering), Department of Parks and Wildlife, Eastern Metropolitan Regional Council, Department of Water, Perth Region NRM, Chittering Landcare/Ellen Brockman Catchment Council, Water Corporation, Western Australian Planning Commission.
- **Safe Systems Reference Group**: MRWA, Road Safety Council, RAC, Local Government Authorities (including the City of Bayswater, City of Swan, City of Wanneroo and Shire of Chittering) and Eastern Metropolitan Regional Council.
- **Special Interest Group/s:** Including Hampton Primary School.

Some of the key items raised by the above stakeholders, relevant to this project include:

- Water sensitive urban design.
- Noise and air quality/emission impacts.
- Use of sustainable materials in road construction.
- Identification and assessment of areas impacted by dieback.
- Areas of contamination should be identified and remediated.
- Impacts on the breeding, nesting and foraging habitat of Carnabyôs and Red-tailed Cockatoos.
- Avoid planting foraging species along roadsides to prevent bird strike.

A number of these issues have been addressed, as mentioned throughout this referral.

A heritage assessment is being conducted, which includes undertaking archaeological and ethnographic surveys and obtaining any necessary clearances/approvals under the *Aboriginal Heritage Act 1972*. Consultation and involvement of the Aboriginal community will be managed in accordance with this Act and the Whadjuck Protocol.

MRWA have also had some preliminary consultation with various environmental regulators specific to project approval requirements, including the following meetings:

- Office of the EPA on the 6 March 2014 to discuss the project.

- Federal Department of the Environment (representative: Julie Kennet) on the 3 April 2014 to discuss the project, following submission of a draft EPBC Act Referral. The Department of Environment suggested that the project is likely to be assessed under an Assessment on Referral Information (ARI) level of assessment, but would require upfront information on the proposed offset (location, quality of vegetation and description of proposed tenure/security).

MRWA will continue to consult with relevant stakeholders and the community throughout the detailed design and development of the project.

4. REFERENCES

360 Environmental, 2013. Black Cockatoo Assessment ï Tonkin Highway. Report prepared by 360 Environmental Pty Ltd for Main Roads Western Australia, Perth, WA.

360 Environmental, 2014a. Tonkin Grade Separations ï Flora, Vegetation and Fauna Survey. Report prepared by 360 Environmental Pty Ltd for Main Roads Western Australia, Perth, WA.

360 Environmental, 2014b. Tonkin Grade Separation Project ï Preliminary Site Investigation on Contamination. Report prepared by 360 Environmental Pty Ltd for Main Roads Western Australia, Perth, WA.

City of Bayswater. 2013. Lightning Swamp Bushland. A WWW publication accessed on May 2013 from http://www.bayswater.wa.gov.au/3/222/1/lightning_swamp_bushland.pm

Coffey. Memorandum. 25 August 2014.

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DOW, 2013. Perth Groundwater Atlas, Accessed from http://www.water.wa.gov.au/idelve/gwa/, Department of Water, Perth, WA.

Hill A.L., Semeniuk C.A., Semeniuk V, and Del Macro, A. 1996. Wetlands of the Swan Coastal Plain. Published by Water and Rivers Commission and the Department of Environmental Protection, Perth, WA.

5. ATTACHMENTS

1 Figures:

1) Project area
2) Proposed disturbance
3) Current land use
4) Surrounding environmental values
5) Black Cockatoo habitat
6) Contaminated sites
7) Aboriginal heritage

2 Supporting Studies:

a) Flora, vegetation and fauna survey (360 Environmental, 2014a)
b) Flora, vegetation and fauna habitat mapping gaps analysis memorandum (Coffey, 2014)
c) Black Cockatoo assessment (360 Environmental, 2013)
d) Preliminary site investigation (360 Environmental, 2014b)
e) Flora and fauna database searches