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NorthLinkWA

Perth-Darwin National Highway

Condition Environmental Management Plan

Amenity (Noise)

Perth–Darwin National Highway (Swan Valley Section)

NOVEMBER 2018





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Document Control					
Revision	Date	Description	Prepared	Reviewed	Approved
A	23/09/2016	Draft (Coffey v1)	M. Holliday	E. Waterhouse	D. Morley
0	10/10/2016	Final for submission to OEPA (Coffey v2)	T. Vu	E. Waterhouse	D. Morley
1	21/12/2016	Addressed OEPA comments (Coffey v3)	M. Holliday	D. Morley	D. Morley
2	25/01/2017	Addressed OEPA comments (Coffey v4)	D. Morley	D. Morley	D. Morley
3	30/01/2017	Addressed final OEPA comment (Coffey v5)	D. Morley	D. Morley	D. Morley
4	28/11/2018	Amended following annual review (ELA v6)	D. Morley	J. Longstaff	J. Longstaff

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1 SUMMARY

This Condition Environmental Management Plan (Condition EMP) (this plan) is submitted in accordance with Ministerial Statement No. 1036 conditions 7-1 and 15-1 for the Perth–Darwin National Highway (Swan Valley Section) by Main Roads Western Australia. It is a revision of the previous version approved by the former Office of the Environmental Protection Authority (OEPA) on 1 February 2017 (reference NLWA-03-EN-RP-0062 / Rev 3).

This document presents the environmental management actions to manage the potential impacts of the proposal on amenity (noise).

Table 1 presents the environmental management targets to measure achievement of the conditioned environmental objective that must be met through implementation of this plan.

Table 1 Amenity (Noise) – Condition EMP summary

Item	Details
Title of proposal	Perth–Darwin National Highway (Swan Valley Section)
Proponent name	Commissioner for Main Roads Western Australia
Ministerial Statement No.	1036
Purpose of this Condition EMP	The Amenity (Noise) – Condition EMP is submitted to fulfil the requirements of conditions 7-1 and 15-1 of the above Statement.
EPA’s environmental objectives for the key environmental factors	To ensure that impacts to amenity are reduced as low as reasonably practicable.
Condition environmental objectives	To ensure that impacts to the noise amenity of existing sensitive receptors delineated in Figure 7 of Schedule 1 [of the statement] and defined by geographic coordinates in Schedule 2 [of the statement], as a result of the ongoing operation of the proposal are minimised as low as reasonably practicable. To ensure that the impacts to the noise amenity of existing sensitive receptors, are consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road.
Management targets	Management target 1: Affected landowners delineated in Figure 7 of Schedule 1 of the Ministerial Statement have been provided with property-specific noise mitigation packages as negotiated and agreed to by the landowner and MRWA. Management target 2: Outdoor noise for properties south of Maralla Road during operation is below 60 dB(A) $L_{Aeq(Day)}$ during the day (6.00 a.m. to 10.00 p.m.) and below 55 dB(A) $L_{Aeq(Night)}$ at night (10.00 p.m. to 6.00 a.m.) as prescribed in section 5.3 of State Planning Policy 5.4.



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2 CONTEXT, SCOPE AND RATIONALE

2.1 Description of the Proposal

Main Roads Western Australia (MRWA) proposes to construct a new 38 km long section of the Perth–Darwin National Highway (PDNH) (Figure 1) between Malaga and Muchea, in Western Australia (the proposal). The proposal is a dual carriageway highway and will connect the intersection of Tonkin Highway and Reid Highway in the south with Great Northern Highway and Brand Highway in the north.

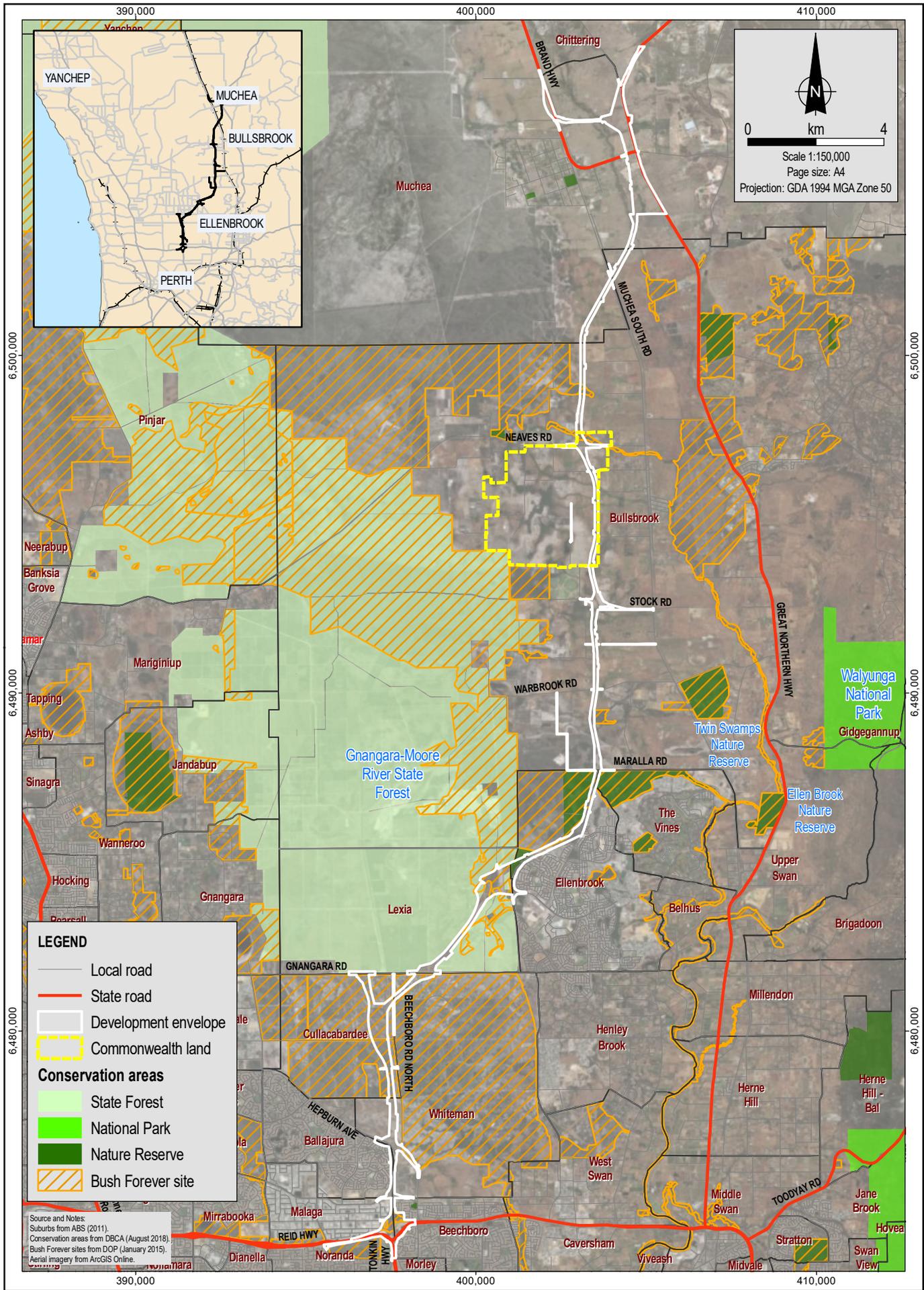
2.2 Key Environmental Factors

This plan specifically addresses the amenity (noise) environmental factor, which is part of the People theme. The relevance of this environmental factor to the proposal is presented in Table 2.

Table 2 Environmental aspects of the proposal for amenity (noise)

Environmental aspect of the proposal	Sensitive receptors	Impact	Activity
Road traffic noise	<p>Residents at sensitive receptors (properties) near the proposal south of Maralla Road.</p> <p>Residents at properties delineated in Figure 7 of Schedule 1 of the Ministerial Statement:</p> <ul style="list-style-type: none"> • 458 Maralla Road, Bullsbrook. • 547 Warbrook Road, Bullsbrook. • 595 Warbrook Road, Bullsbrook. • 25 Raphael Road, Bullsbrook. • 41 Raphael Road, Bullsbrook. • 207 Raphael Road, Bullsbrook. • 32 Stock West Road, Bullsbrook. • 464 Raphael Road, Bullsbrook. • 614 Raphael Road, Bullsbrook. • 654 Raphael Road, Bullsbrook. • 667 Raphael Road, Bullsbrook. • 144 Strachan Road, Bullsbrook. • 47 Davidson Street, Bullsbrook. • 190 West Road, Bullsbrook.* • 591 Muchea South Road, Muchea. • 3599 Brand Highway, Muchea. 	Noise disturbance to residents at existing sensitive receptors (properties) along the alignment.	Traffic movements during operation of the proposal.

* No longer residential premises – property is intended to be demolished by owner (see Section 5).



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LEGEND

- Local road
- State road
- Development envelope
- Commonwealth land

Conservation areas

- State Forest
- National Park
- Nature Reserve
- Bush Forever site

Source and Notes:
Suburbs from ABS (2011).
Conservation areas from DBCA (August 2018).
Bush Forever sites from DOP (January 2015).
Aerial imagery from ArcGIS Online.

2.3 Requirements of the Condition

This plan is submitted in accordance with Ministerial Statement No. 1036, conditions 7-1, 15-1 and 15-2 for the proposal.

As required under condition 5-1, this plan will be made publicly available for the life of the proposal.

The requirement of these conditions and where they are addressed in this plan are described in Table 3.

The former OEPA was replaced by the Department of Water and Environmental Regulation (DWER) EPA Services Division on 1 July 2017. References to OEPA in this plan have been changed to DWER except for historical usage and direct quotations of the condition text from Ministerial Statement No. 1036.

Table 3 Summary of conditions

Condition No.	Condition	Section of this plan
7-1	Prior to the commencement of ground disturbing activities, or as otherwise agreed in writing by the CEO, the proponent shall prepare and submit Condition Environmental Management Plans to satisfaction of the CEO to demonstrate that the environmental objectives in condition 15-1 will be met.	This plan
7-2	The Condition Environmental Management Plans shall:	Section 3.2
	1. Prioritise risk-based management actions that will be implemented to meet the environmental objectives in condition 15-1.	
	2. Specify measurable management targets for determining the efficacy of the risk-based management actions.	Section 1 Section 3.3
	3. Specify monitoring to be conducted to measure the efficacy of management actions against management targets.	Section 3.4
	4. Specify, in the event that the management targets are not achieved a procedure for revision of management actions and changes to proposal activities. The procedure shall include an investigation to determine the cause of the management targets being exceeded.	Section 3.5
	5. Provide the format and timing for annual reporting required by condition 4-6 for: a) Verification of the implementation of management actions to demonstrate that condition 15-1 has been met for the reporting period. b) Reporting on the efficacy of management actions against management targets.	Section 3.6
6. Provide for reporting when management actions are not implemented.	Section 3.6	
7-3	After receiving notice in writing from the CEO that the Condition Environmental Management Plans satisfies the requirements of condition 7-2 for condition 15-1, the proponent shall prior to the commencement of ground disturbing activities:	This plan
	1. Implement the provisions of the approved Condition Environmental Management Plan.	
	2. Continue to implement the approved Condition Environmental Management Plan until the CEO has confirmed by notice in writing that the proponent has met the relevant objectives specified in the approved Condition Environmental Management Plan and no longer needs to implement that particular Condition Environmental management Plan.	Section 4.2

Condition No.	Condition	Section of this plan
7-4	<p>In the event that monitoring, tests, surveys or investigations indicate that management actions specified in a Condition Environmental Management Plan are not implemented or that management targets specified in a Condition Environmental Management Plans [sic] are exceeded, the proponent shall:</p> <ol style="list-style-type: none"> 1. Report the exceedance or failure to implement management actions in writing within 7 days of identification. 2. Investigate to determine the cause of the management actions not being implemented and/or management targets being exceeded. 3. Investigate to provide information for the determination by the CEO of potential environmental harm or alteration of the environment that occurred due to the failure to implement management actions. 4. Provide a report to the CEO within 60 days of the reporting required by condition 7-4(1). The report shall include: <ol style="list-style-type: none"> a) Cause for failure to implement management actions and/or management targets exceeded. b) The findings of the investigation required by conditions 7-4(2) and 7-4(3). c) Details of revised and/or additional management actions to be implemented to prevent exceedance of the management targets and/or ensure implementation of management actions. d) Relevant changes to proposal activities. e) Measures to prevent, control or abate the environmental harm which may have occurred. 	<p>Section 3.6</p> <p>Section 3.5</p> <p>Section 3.5</p> <p>Section 3.6</p>
7-5	The proponent may review and revise the Condition Environmental Management Plans, or as otherwise specified by the CEO.	Section 4
7-6	The proponent shall implement the latest revision of the Condition Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 7-2.	Section 4
15-1	<p>The proponent shall construct the proposal to meet the following environmental objectives:</p> <ol style="list-style-type: none"> 1. To ensure that impacts to the noise amenity of existing sensitive receptors delineated in Figure 7 of Schedule 1 [of the Ministerial Statement] and defined by geographic coordinates in Schedule 2 [of the Ministerial Statement], as a result of the ongoing operation of the proposal are minimised as low as reasonably practicable. 2. To ensure that the impact to the noise amenity of the existing sensitive receptors, are consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road. <p>Through implementation of the Amenity (Noise) – Condition Environmental Management Plan approved by the CEO.</p>	<p>Section 1</p> <p>Section 1</p>
15-2	<p>The Amenity (Noise) – Condition Environmental Management Plan shall include management actions for:</p> <ol style="list-style-type: none"> 1. The design of noise mitigation measures, including but not limiting to noise attenuation barriers and noise walls. 	Section 3.2

Condition No.	Condition	Section of this plan
2.	The procedures to monitor the effectiveness of noise mitigation measures.	Section 3.2
3.	The procedures to consult with the affected landowners delineated in Figure 7 of Schedule 1 [of the Ministerial Statement] and defined by geographic coordinates in Schedule 2 [of the Ministerial Statement], regarding additional noise mitigation measures.	Section 3.2
4.	The procedures for noise complaint management and a response framework.	Section 3.2

2.4 Rationale and Approach in Meeting the Environmental Objective

The results of the noise modelling and assessment inform the management approach for meeting the environmental objectives stated in Section 1. The identified management actions, management targets and proposed review and revision of management actions are aligned with the overall management approach.

2.4.1 Results of Noise Modelling and Assessment

Monitoring of noise was undertaken at 20 locations to quantify the current noise levels and to calibrate the noise model. The monitoring was undertaken in accordance with Australian Standard 2702:1984 Acoustics – Methods for the Measurement of Road Traffic Noise. Tonkin Highway and locations in rural areas were not used in the calibration as they did not replicate traffic conditions of the proposal (Lloyd George Acoustics, 2015). All instruments used in the noise monitoring complied with the Australian Standard 2702:1984 Acoustics – Methods for the Measurement of Road Traffic Noise.

Noise modelling for the operation of the proposal used the computer program SoundPLAN 7.3 and incorporated Calculation of Road Traffic Noise (CoRTN) algorithms, modified to reflect Australian conditions.

A noise assessment was undertaken in accordance with State Planning Policy 5.4 (SPP 5.4) by Lloyd George Acoustics to consider the likely traffic noise resulting from the proposal on sensitive receptors. The noise assessment is contained in the Response to Submissions, Appendix I, Revised Transportation Noise Assessment (Coffey, 2015). Based on the predicted traffic volume for 2040, the noise assessment found that the SPP 5.4 limit of 60 dB $L_{Aeq (Day)}$ can be met at all noise sensitive receptors south of Maralla Road, using noise barriers ranging from 2.4 to 5 m high.

For rural properties north of Maralla Road, the noise assessment concluded that noise mitigation measures (in accordance with SPP 5.4 implementation guidelines) would be needed to achieve acceptable noise levels, which were defined as the level at which most people find the noise acceptable for the environment and not intrusive (Lloyd George Acoustics, 2015).

2.4.2 Key Assumptions and Uncertainties

The key assumptions and uncertainties within this plan include:

- Predicted traffic volume for 2040 is correct.
- Daytime traffic noise levels will be more than 5 dB above the night time traffic levels.
- Constructing noise walls to a maximum of 5 m in height adjacent to noise sensitive premises will ensure noise levels do not exceed the noise limit of $L_{Aeq (Day)}$ 60 dB(A) and $L_{Aeq (Night)}$ 55 dB(A) south of Maralla Road.

- 
- Outdoor noise limits are not practicably achievable at all rural properties north of Maralla Road as very long barriers would be required to protect a small number of properties.
 - Subject to landowner agreement, additional noise mitigation will reduce the indoor noise to acceptable levels at existing sensitive receptors north of Maralla Road.

2.4.3 Management Approach

The management approach has been informed by SPP 5.4 and best practice.

2.4.4 Rationale for Choice of Management Targets

The rationale for the choice of management targets to achieve the environmental objectives for amenity (noise) is described below.

Management target 1: Affected landowners delineated in Figure 7 of Schedule 1 of the Ministerial Statement have been provided with property-specific noise mitigation packages as negotiated and agreed to by the landowner and MRWA.

This management target focuses on reducing the indoor noise levels as low as reasonably practicable to existing noise sensitive properties north of Maralla Road. Outdoor noise limits are not practicably achievable at all rural properties north of Maralla Road as very long barriers would be required to protect a small number of properties.

Properties delineated in Figure 7 of Schedule 1 of the Ministerial Statement 1036 will be offered noise mitigation packages specific to their property based on negotiations between the landowner and MRWA. Negotiations will commence as soon as practicable following the approval of this plan. The negotiations will be informed by specialist acoustic assessments undertaken at each dwelling.

Treatments will be installed at each property as specified in the property-specific noise mitigation package following receipt by MRWA of the record of resolution or agreement signed by the landowner and MRWA. In accordance with SPP 5.4, the minimal noise mitigation package would include the implementation of treatments such as upgraded glazing, sealing of air gaps (doors and windows), ceiling insulation and mechanical ventilation. The final treatments installed at each property may vary, depending on the findings of the specialist acoustic assessment and negotiations with the landowner.

Management target 2: Outdoor noise for properties south of Maralla Road during operation is below 60 dB(A) L_{Aeq} (Day) during the day (6.00 a.m. to 10.00 p.m.) and below 55 dB(A) L_{Aeq} (Night) at night (10.00 p.m. to 6.00 a.m.) as prescribed in section 5.3 of State Planning Policy 5.4.

The Public Environmental Review (PER) identified changes in noise levels for local communities as a predicated impact of the proposal. Noise levels exceeding 60 dB during operation of the proposal is a key risk at noise sensitive properties south of Maralla Road.

This management target focuses on limiting the noise level to 60 dB during the day for these properties, as per SPP 5.4. Noise levels will be reduced by the construction of noise walls adjacent to sensitive receptors along the alignment south of Maralla Road. Noise modelling was used to determine where noise walls should be built to reduce the noise level to below the limit of 60 dB.

3 CONDITION EMP PROVISIONS

3.1 Condition Environmental Objective

Condition 15-1 sets out the environmental objectives to be met during the ongoing operation of the proposal:

- To ensure that impacts to the noise amenity of existing sensitive receptors delineated in Figure 7 of Schedule 1 [of the Ministerial Statement] and defined by geographic coordinates in Schedule 2 [of the Ministerial Statement], as a result of the ongoing operation of the proposal are minimised as low as reasonably practicable.
- To ensure that the impacts to the noise amenity of existing sensitive receptors, are consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road.

3.2 Management Actions to be Implemented

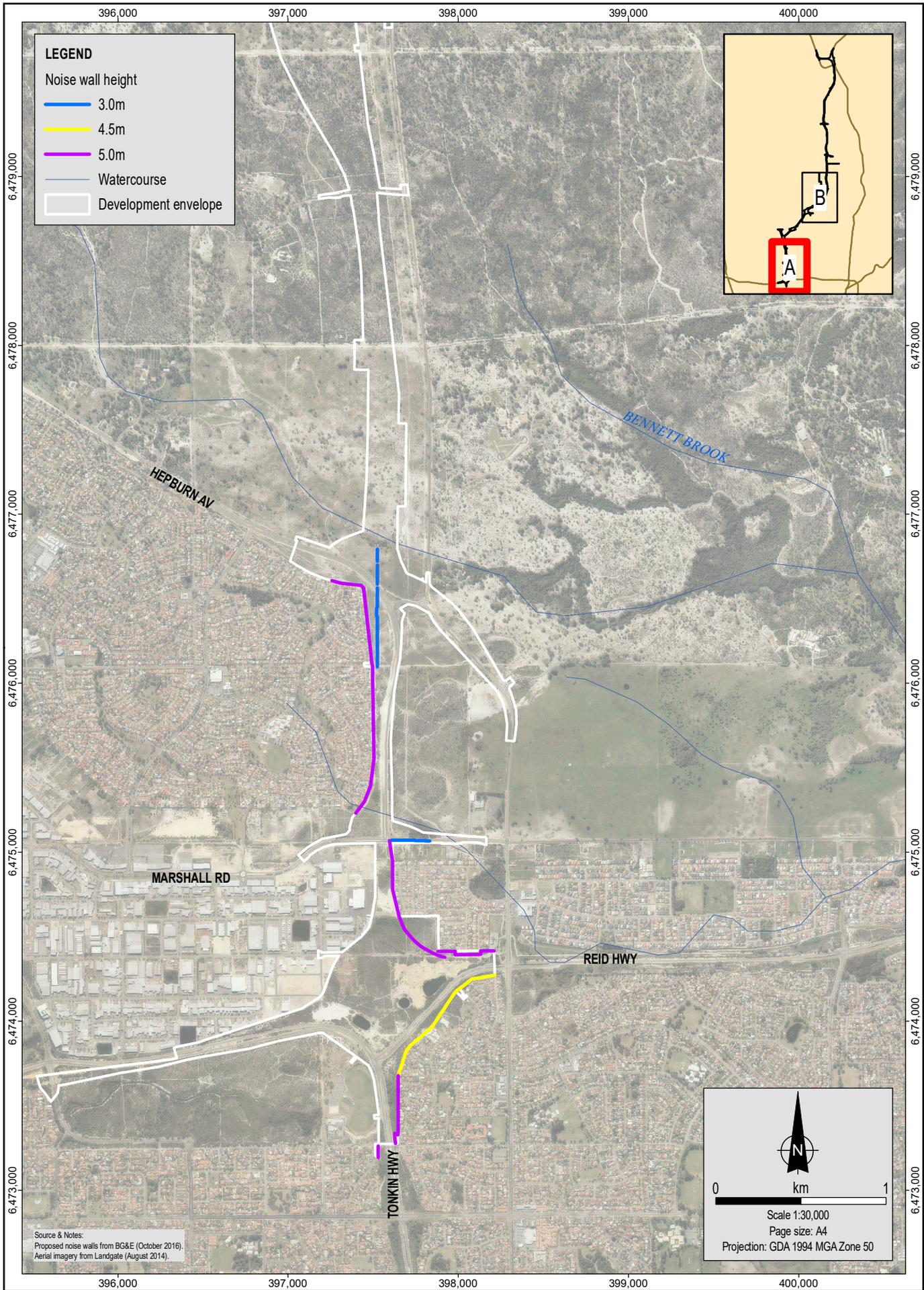
Risk-based management actions have been identified and prioritised to achieve the condition environmental objective (Table 4). These management actions focus the greatest management effort on reducing the noise levels at noise sensitive receptors along the alignment.

Table 4 Management actions to be implemented to achieve the environmental objectives

Risk and key impact	Management actions	Risk-based priority
Noise disruption to existing sensitive receptors along the alignment and reduction in amenity.	Noise mitigation including but not limited to noise attenuation barriers and noise walls will be designed and constructed to the following specifications: <ul style="list-style-type: none"> • Noise walls will be a maximum height of 5 m adjacent to noise sensitive properties south of Maralla Road (Figure 2). • Noise walls will be made from a material with a surface density exceeding 15 kg/m² to achieve the noise limit of 60 dB L_{Aeq (Day)}. • Screening walls will be a maximum height of 2.4 m at noise sensitive properties north of Maralla Road, where they are within 100 m of the road. • Noise walls and screening walls will be installed as part of construction works. 	High
	A noise monitoring program will be implemented within six months of the opening of the proposal to determine the effectiveness of noise mitigation for properties south of Maralla Road. Specifically the program will: <ul style="list-style-type: none"> • Confirm the as-built and operating highway achieves the SPP 5.4 noise limit (L_{Aeq (Day)} 60 dB(A) and L_{Aeq (Night)} 55 dB(A)) at properties south of Maralla Road. • Assess the accuracy of the pre-construction road traffic noise modelling predictions that were used to determine road traffic noise 	High

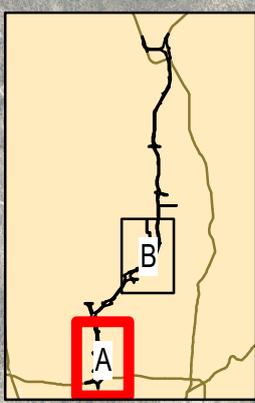


Risk and key impact	Management actions	Risk-based priority
	<p>reduction treatments south of Maralla Road prior to the opening of the proposal.</p> <ul style="list-style-type: none"> • Include locations for monitoring that will all be representative of sensitive receptors exposed to road traffic noise along the alignment south of Maralla Road. 	
	<p>Affected landowners delineated in Figure 7 of Schedule 1 of the Ministerial Statement and defined by geographic coordinates in Schedule 2 of the Ministerial Statement will be consulted regarding proposed noise mitigation relevant to their properties, prior to construction of any mitigation.</p>	High
	<p>Noise mitigation, as set out in the Implementation Guidelines for SPP 5.4, will be offered at properties north of Maralla Road. The mitigation to be applied will be discussed and agreed with by MRWA and each affected property owner, prior to the construction of the proposal.</p>	High
	<p>Noise complaints during operation will be managed by MRWA through a specific procedure that includes:</p> <ul style="list-style-type: none"> • A framework for receiving and responding to noise-related complaints (e.g., free call number, online form). • A noise complaints register where details of the complainant and nature of the complaint are recorded. • Timeframes and protocols for MRWA to contact and liaise with the complainant to establish gather further information and to identify the nature and source of the complaint. • The process for further investigation of the complaint (if required). • Details of how the results of the investigation will be recorded and communicated to the complainant. • Details of how any changes in mitigation measures will be identified and implemented as a result of the investigation. 	Medium



LEGEND

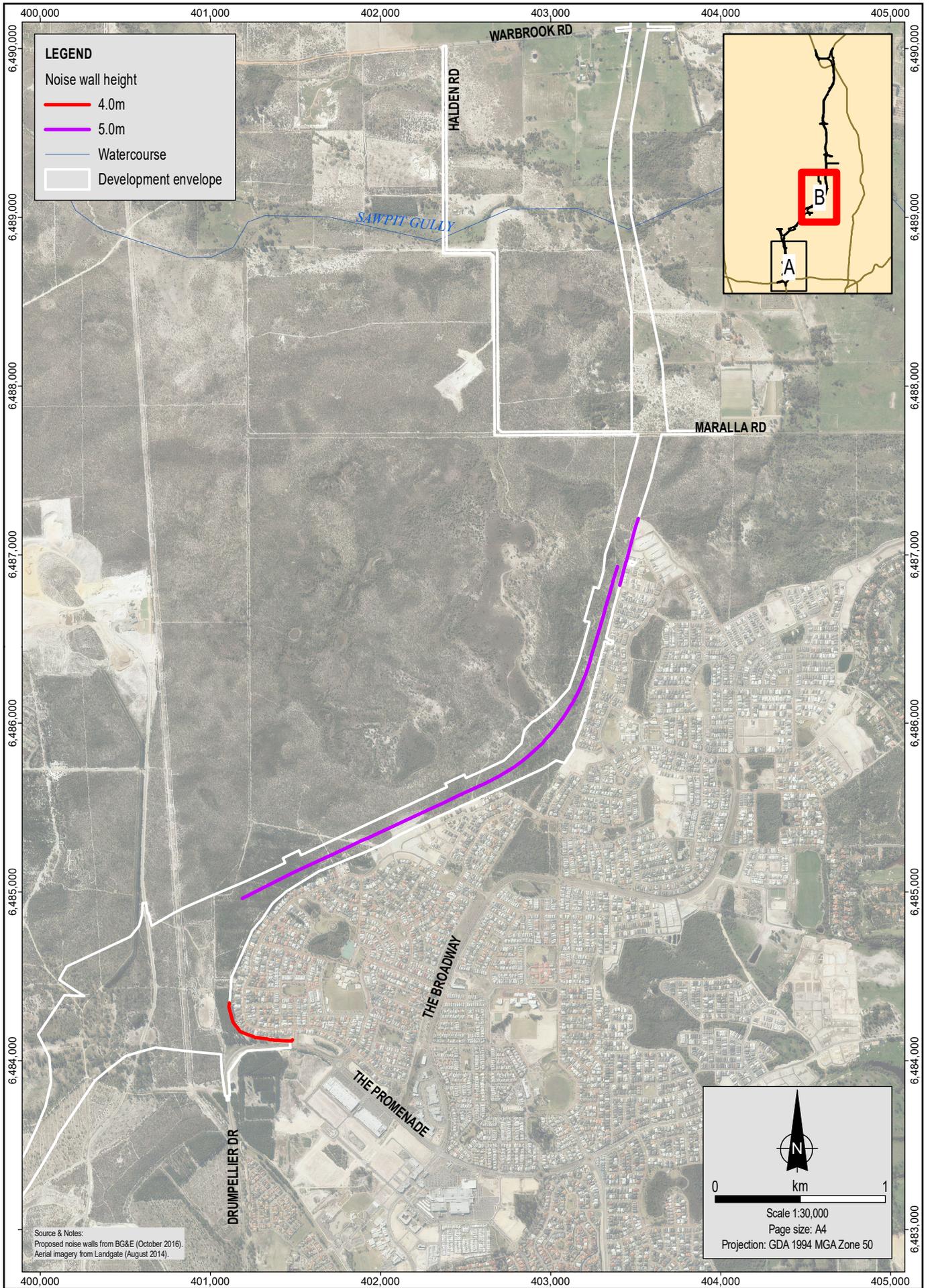
- Noise wall height
- 3.0m
- 4.5m
- 5.0m
- Watercourse
- Development envelope



North arrow pointing up.

Scale 1:30,000
Page size: A4
Projection: GDA 1994 MGA Zone 50

Source & Notes:
Proposed noise walls from BG&E (October 2016).
Aerial imagery from Landgate (August 2014).



LEGEND

- Noise wall height
- 4.0m
- 5.0m
- Watercourse
- Development envelope

North Arrow

0 km 1

Scale 1:30,000
Page size: A4
Projection: GDA 1994 MGA Zone 50

Source & Notes:
Proposed noise walls from BG&E (October 2016).
Aerial imagery from Landgate (August 2014).

3.3 Management Targets

Management targets will be used to measure and report against the success of the environmental objectives (Table 5).

Table 5 Management targets to measure the efficacy of management actions relative to the environmental objectives

Item	Detail
Condition environmental objective 1	To ensure that impacts to the noise amenity of existing sensitive receptors delineated in Figure 7 of Schedule 1 [of the Ministerial Statement] and defined by geographic coordinates in Schedule 2 [of the Ministerial Statement], as a result of the ongoing operation of the proposal are minimised as low as reasonably practicable.
Management target 1	Affected landowners delineated in Figure 7 of Schedule 1 of the Ministerial Statement have been provided with property-specific noise mitigation packages as negotiated and agreed to by the landowner and MRWA.
Condition environmental objective 2	To ensure that the impacts to the noise amenity of existing sensitive receptors, are consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road.
Management target 2	Outdoor noise for properties south of Maralla Road during operation is below 60 dB(A) $L_{Aeq} (day)$ during the day (6.00 a.m. to 10.00 p.m.) and below 55 dB(A) $L_{Aeq} (night)$ at night (10.00 p.m. to 6.00 a.m.) as prescribed in section 5.3 of State Planning Policy 5.4.

3.4 Monitoring

The purpose of monitoring is to inform, through the management targets, if the condition environmental objectives are being achieved and when management actions need to be reviewed and revised. This section describes how MRWA will undertake monitoring to determine whether the management targets are being achieved.

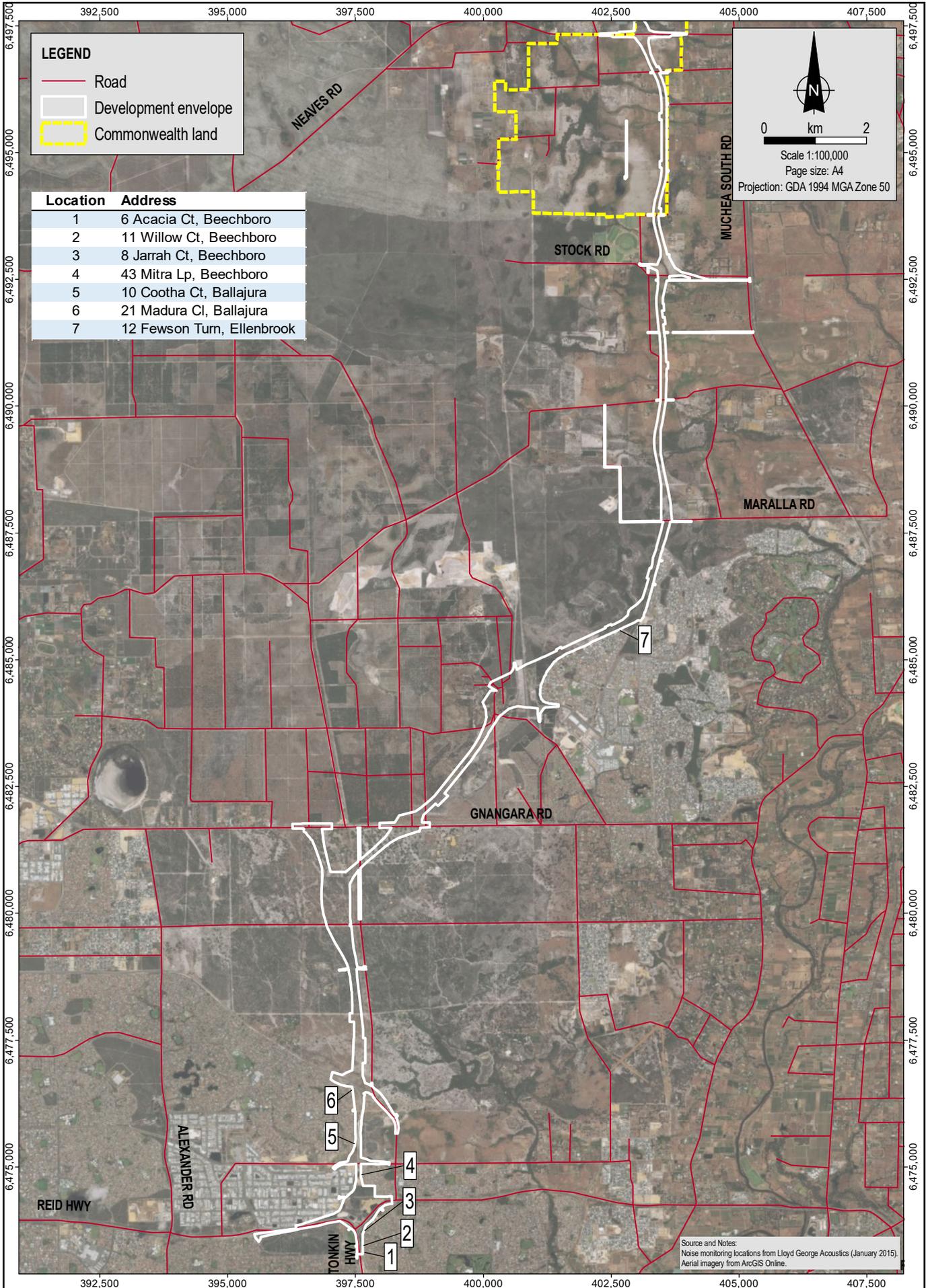
A noise monitoring program aimed at detecting changes in the noise levels at existing noise sensitive premises south of Maralla Road will be developed. The monitoring results will provide information to determine how effective the management actions have been in achieving the management targets.

Noise monitoring will be undertaken south of Maralla Road as detailed in Table 6. Monitoring sites have been selected based on the pre-construction noise assessment. The location of each monitoring site is presented in Figure 3.

Table 6 Monitoring to measure the efficacy of management actions against the management targets

Indicator	Method	Location	Parameters	Timing	Early warning indicator
Effectiveness of noise walls.	Noise monitoring will be conducted in accordance with AS 2702:1984 'Acoustics – Methods for measurement of road traffic noise' and SPP 5.4 Implementation Guidelines Appendix C – Guidelines for measurements and on-site verification.	Existing noise sensitive properties located south of Maralla Road.	Below limit of $L_{Aeq (Day)}$ 60 dB(A) and $L_{Aeq (Night)}$ 55 dB(A) at noise sensitive properties south of Maralla Road.	Once in each 12-month period following the opening of the proposal, for a total of 5 years. The first monitoring event will be within 6 months of opening the proposal.	Noise monitoring for properties south of Maralla Road records noise levels of $L_{Aeq (Day)}$ 55 dB(A) or $L_{Aeq (Night)}$ 50 dB(A).
	The monitoring will include: <ul style="list-style-type: none"> Record noise levels at existing noise sensitive properties located south of Maralla Road. Compare levels against SPP 5.4 limit criteria. Compare against modelled noise predictions. 	Existing noise sensitive properties located south of Maralla Road from which a complaint has been received during the first 6 months of operation. (Note that monitoring at affected properties is subject to landowner permission.)		Within 1 month of receiving complaint.	

Indicator	Method	Location	Parameters	Timing	Early warning indicator
Affected landowners.	Consult with affected landowners and record the outcomes of consultation.	Premises north of Maralla Road as shown in Figure 7 of Schedule 1 of Ministerial Statement No. 1036.	All affected landowners defined in condition 15-2(3) have been consulted regarding additional noise mitigation measures.	At least once with each affected landowner during the first 12 months of construction. At least once with each affected landowner during the first six months of operation of the proposal.	Six months after commencement of construction there are one or more landholders who have not been consulted.
Noise complaints.	Address noise complaint in a timely manner. Record number of complaints in the noise complaints register.	Existing noise sensitive properties along alignment.	Noise complaints to be closed out within 30 days. Number and location of complaints.	During the first five years of operation of the proposal.	Complainant has not been contacted by MRWA within 7 days of complaint being recorded.





3.5 Review and Revision of Management Actions

Where the management target is not met or where a management action is not implemented, MRWA will investigate the reasons for the management target not being met or the management action not being implemented, review and revise the management actions (see Table 4) as required, and develop additional management actions where necessary.

Additional management/remedial actions likely to be considered include:

- Investigate the cause.
- Additional monitoring.
- Additional noise reduction treatment.
- Review of noise complaint procedure including the response times and approach to investigations.

Management actions will be reviewed and revised as required.

3.6 Reporting Provisions

3.6.1 Annual Compliance Assessment Report

The annual compliance assessment report (CAR) will include a summary of compliance against the management actions detailed in Table 4. The results of the monitoring detailed in Table 6 will be included in appendices to the CAR and will include the following information:

- Demonstration of compliance with maintenance of noise walls.
- Documentation of noise monitoring undertaken.
- Comparison of monitoring results against the management targets.
- Management actions undertaken, including revised or additional actions.

The CAR will also include information on the achievement or not of the environmental objective (Table 7). If the environmental objective has not been achieved during the reporting period, the CAR will include a description of revised and/or additional management actions to be implemented to achieve the targets, and an analysis of trends.

The CAR will be submitted in accordance with condition 4-6.

Table 7 Environmental management plan reporting table

Key environmental factor: Amenity (noise) (Ministerial Statement No. 1036, conditions 15-1 and 15-2)		
Condition environmental objective and management target set in the Condition EMP	Reporting on the management objectives and management targets annually, commencing 12 months from the date of issue	Status¹
<p>Conditional environment objective 1:</p> <p>To ensure that impacts to the noise amenity of existing sensitive receptors delineated in Figure 7 of Schedule 1 [of the Ministerial Statement] and defined by geographic coordinates in Schedule 2 [of the Ministerial Statement], as a result of the ongoing operation of the proposal are minimised as low as reasonably practicable.</p>	<p>Impacts from operational noise to existing sensitive receptors north of Maralla Road were minimised as low as reasonably practicable.</p> <p>Management target 1 has been met.</p>	Yes/No
<p>Conditional environment objective 2:</p> <p>To ensure that the impacts to the noise amenity of existing sensitive receptors, are consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road.</p>	<p>Impacts from noise to existing sensitive receptors were consistent with section 5.3 of State Planning Policy 5.4 for properties south of Maralla Road.</p> <p>Management target 2 has been met.</p>	Yes/No
<p>Notes:</p> <p>1. The status of achievement of the condition environmental objectives is indicated as follows: Yes - condition environmental objective achieved. No - condition environmental objective not achieved.</p>		

3.6.2 Reporting on Management Actions not Implemented or Exceedance of the Management Targets

In the event that the management target is exceeded (or not met), the CEO of the DWER will be advised in writing within seven days of identification of the exceedance.

A report will be provided to the CEO of the DWER within 60 days of a management target not being met including details on:

- The cause for failure to implement management actions and/or management targets to be exceeded.
- Findings of the investigation to determine potential environmental harm or alteration of the environment that occurred due to failure to implement management actions.
- Details of revised and/or additional management actions to be implemented to prevent exceedance of the management targets and/or ensure the implementation of management actions.
- Relevant changes to the proposal activities.
- Measures implemented to prevent, control or abate environmental harm which may have occurred.



4 ADAPTIVE MANAGEMENT AND REVIEW OF THE EMP

4.1 Adaptive Management

MWRA will implement adaptive management to respond to any issues identified in the implementation of management measures, monitoring and evaluation against the management targets, to more effectively meet the environmental objectives.

Potential adaptive management actions (south of Maralla Road only) include:

- Monitor noise and remodel using calibration from monitoring.
- Reassess actual traffic volumes against modelled volumes.
- Where modelling indicates that noise sensitive premises will be in excess of the SPP 5.4 limit in 2040 (target year) determine additional noise mitigation measures (provided this does not include noise walls in excess of 5 m).

4.2 Review of Plan

This plan will be reviewed as required to determine if management actions require revision. Potential reasons or triggers for revising management actions include:

- Trigger of early warning indicators (see Table 6).
- New or revised information becoming available.

The implementation of this plan will be audited.

The latest version of this plan shall be implemented once the CEO has confirmed in writing that it satisfies the requirements of condition 7-2.

The plan will continue to be implemented until directed otherwise by the CEO in accordance with condition 7-3(2).



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5 STAKEHOLDER CONSULTATION

No consultation specifically in relation to this plan had taken place at the time of issue.

All residents directly impacted by the construction of noise walls will be consulted on the proposed design, height and location prior to their construction.

All affected landowners north of Maralla Road (as delineated on Figure 7 of Schedule 1 of Ministerial Statement No. 1036) will be consulted in regard to proposed noise mitigation. All consultation will be commenced within 12 months of the commencement of construction of the proposal.

Department of Defence advised MRWA on 12 December 2016 that its residential premises at 190 West Road, Bullsbrook will be demolished and will not require noise mitigations.



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6 GLOSSARY

Table 8 **Abbreviations**

Abbreviation	Definition
CAR	Compliance Assessment Report
CEO	Chief Executive Officer
CoRTN	Calculation of Road Traffic Noise
DWER	Department of Water and Environmental Regulation
EMP	Environmental Management Plan
MRWA	Main Roads Western Australia
OEPA	Office of the Environmental Protection Authority
PDNH	Perth–Darwin National Highway
SPP 5.4	State Planning Policy 5.4



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7 REFERENCES

Coffey. 2015. Perth-Darwin National Highway: Response to Submissions. Report prepared for Main Roads Western Australia by Coffey Environments Australia Pty Ltd. Burswood, Western Australia.

Lloyd George Acoustics. 2015. Revised Transportation Noise Assessment: Perth–Darwin National Highway Project. December. Report prepared for NorthLink WA by Lloyd George Acoustics Pty Ltd, Hillarys, Western Australia.

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