OAKAJEE PORT & RAIL

Rail Development
DRAFT Operations
Environmental Management Plan
Noise & Vibration Management

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SYNOPSIS

This report has been prepared on behalf of and for the exclusive use of Oakajee Port & Rail Pty Ltd and their contractors.

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PROJECT 301012-01054-2000-EN-PLN-0011

REV	DESCRIPTION	ORIG	REVIEW	REVIEW OWNER	DATE	APPROVED	DATE
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OEMP-Rail-00X	Issued for Internal Review	ecologia	T Carpenter	S Pickard	22-Feb-10	P Holmes	

Table of Contents

LIST OF ACRONYMS & ABBREVIATIONS

AER	Annual Environmental Report
AS/NZS	Australia Standard/New Zealand Standard
dBA	Weighted sound pressure level
DEC	Department of Environment and Conservation
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Authority
OPR	Oakajee Port and Rail Pty Ltd
NVMP	Noise and Vibration Management Plan (this document)
NWCH	North West Coastal Highway
PER	Public Environmental Review
ISO	International Standards Organisation
WAPC	Western Australian Planning Commission
SPP5.4	State Planning Policy 5.4

1. INTRODUCTION

1.1 Scope & Objective

This document details the management strategies to be implemented by Oakajee Port and Rail Pty Ltd (OPR) to ensure that noise and vibration generated by the operation of the OPR Rail Development (the Project) is managed in an appropriate manner and in accordance with relevant guidelines.

The objective of this Noise and Vibration Management Plan (NVMP) is:

1. To provide guidance to minimise noise impacts resulting from Project operation.
2. To minimise the impacts on sensitive receptors (including residences and terrestrial fauna).
3. To outline monitoring programs and reporting to be implemented.
4. To provide for a community consultation and communication process.
5. To ensure OPR operations comply with regulatory requirements with respect to noise and vibration; and
6. To enable optimisation of operation phase works taking cognisance of item 1 to 5 above.

The NVMP will be managed via the OPR Environmental Management System (EMS) ensuring all commitments are effectively disseminated across the project team and operation supervisors. The structure of the EMS is detailed in Appendix A. The NVMP details requirements to minimise noise and vibration impacts during the operation phase. The policies, monitoring, review and auditing of the NVMP are elements of the broader EMS framework under which the operation of the Project will be managed. The EMS enables the NVMP commitments to be cross referenced with other management plans and regulatory approval documents via a series of databases and registers.

Commitments detailed in the Project Draft Public Environmental Review (PER) have been incorporated into Section 6 of the NVMP. The PER and NVMP will be reviewed in coordination by the Department of Environment and Conservation (DEC) and other Decision Making Authorities. Following final approval of the PER, conditions regarding noise and vibration management may be placed on the Project. This NVMP incorporates relevant requirements to comply with those potential conditions, and will be updated as necessary to ensure continued compliance.

1.2 Background/Project Description

OPR is seeking to develop and operate a new deepwater port at Oakajee, 24 kilometres north of Geraldton on Western Australia's mid west coastline. The port will be supported by a new 570km rail network linking the port to iron ore mines to the east. The port will comprise a large breakwater sheltering two Cape size berths, a third berth for Panamax or Cape size vessels, a tug and work boat harbour and associated land based facilities including ship loaders, conveyors, stockpile yard, stackers and reclaimers.

Construction of the Project is scheduled to commence in 2011 with current forecasts having the Project operational by 2014. Iron ore exports from Oakajee Port are expected to be nominally 45 million tonnes per annum.

The broader Oakajee Development, has three key project areas:

- Port Marine;
- Port Terrestrial; and

- Rail Development.

This EMP relates to the Rail Development which extends in a north-easterly direction from the North West Coastal Highway at Oakajee (NWCH) to Jack Hills mining operations. There will be two spur lines to Westnet (Mullewa) line and Weld Range (Figure 1-1). The Project comprises the following features:

- Approximately 570 km of rail formation and track (including two spur lines), with a typical final disturbance width of 50 m to 80m
- Watercourse/drainage channel crossings including an estimated nine bridges, multi-barrel culverts for major drainage channels and additional culverts for environmental flows
- NWCH Bridge providing grade separation of train and vehicular traffic
- Supporting infrastructure during the operation phase include
    - up to two quarries and numerous borrow pits to meet on ongoing maintenance requirements
    - numerous groundwater production bores retained for maintenance requirements
    - power and bore water for maintenance including the accommodation camp
    - accommodation camps, to accommodate maintenance personnel
    - vehicle access tracks
    - mine loops at Jack Hills and Weld Range
    - track maintenance depot (located within track construction depot site), rolling stock maintenance yard and small mobile workshop facilities at rail loops
- Up to 18 train movements a day.

1.3 Description of Key Works

Operational Phase

The project entails the use of trains of up to 2.2 km in length, comprising up to 200 wagons with tow standard gauge locomotives. The locomotives will be diesel electric units.

It is anticipated that approximately 20,000 tonnes will be carried per fully-laden train.

The rail line will operate 24 hours a day, 7 days a week, with up to 18 train movements a day. The highest number of movements will be in the western portion of the rail from Oakajee to the potential Mullewa spur.

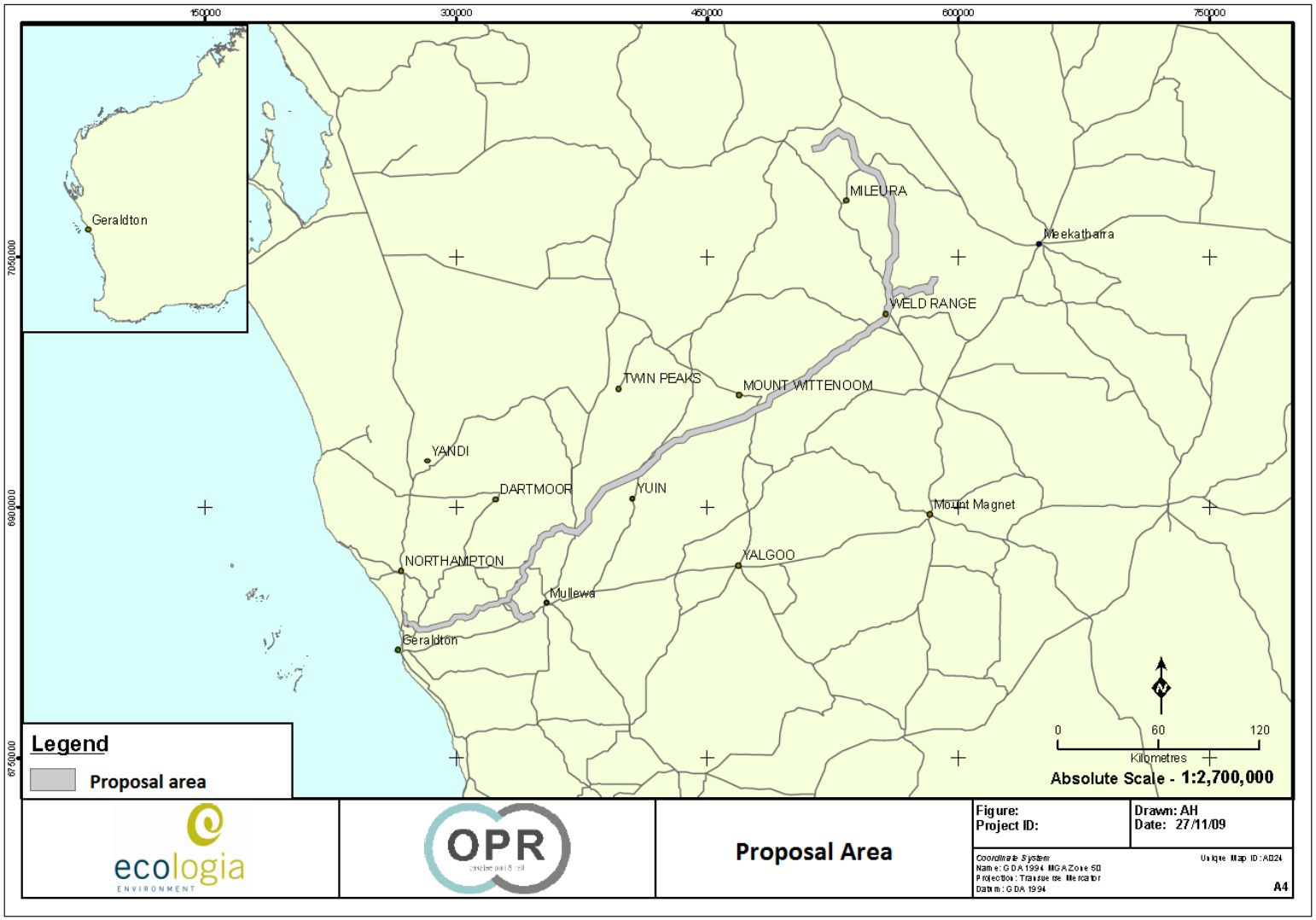


Figure 1-1: OPR Rail Alignment from Great Eastern Highway to Jack Hills

1.4 Key Environmental Legislation/Standards

Table 1-1 identifies the key legislation and standards relevant to noise and vibration management.

Table 1-1: Key Legislation and Standards Relevant to the Management Aspect

Legislation/Standards	Responsible Government Authority / Organisation	Aspect
Commonwealth Legislation		
Nil	N/A	N/A
State Government Legislation		
Environmental Protection (Noise) Regulations 1997	DEC	Sets out clear methods for environmental noise assessment and control for construction sites and blasting, however not applicable to rail operation.
Land Administration Act 1997	Department of Regional Development and Lands	The main statute governing the administration of State land in Western Australia
Guidance Statements		
Guidance Statement No. 8 (Draft) Environmental Noise	Environmental Protection Authority (EPA)	The draft guidance deals with the assessment of environmental noise emissions, where those emissions come under the Environmental Protection (Noise) Regulations 1997, or other relevant acceptable standards.
Preliminary Draft Guidance Statement No. 14 – Road and Rail Transport Noise	DEC	The objectives of the draft EPA Guidance No. 14 are - (i) that the noise levels inside noise-sensitive premises associated with the proposed traffic should meet acceptable levels, or that the degree of increase in noise levels should be of low significance; and (ii) that the noise emissions of the vehicles associated with a specific proposal should comply with "best practice".
State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land Use Planning (2009).	Western Australian Planning Commission (WAPC)	Sets out clear methods and target and limit noise criteria for environmental noise associated with rail operation.
Australian Standards		
AS/NZS 2436-1981		Guide to Noise control on Construction, Maintenance and Demolition Sites.

Legislation/Standards	Responsible Government Authority / Organisation	Aspect
AS/NZS 2107:2000		Acoustics - Recommended design sound levels and reverberation times for building interiors.
AS 2670.2:1990		Evaluation of Human Exposure to Whole Body Vibration
OPR		
OPR EMS	OPR	Provides the framework for environmental management in compliance with *Australian Standard/New Zealand Standard (AS/NZS) International Standards Organisation (ISO) 14001:2004 Environmental Management Systems – Requirements with Guidance for Use*. This EMP is managed under the auspices of the OPR EMS.

Note: The Draft Guidance Statement No. 8 does not apply to road and rail infrastructure but has been used by way of guidance for methodology and to provide criteria to indicate the number of receptors for which train movements will be clearly audible over background noise.

2. EXISTING ENVIRONMENT

Noise can be defined as including vibration of any frequency, whether transmitted through the air or any other physical medium (EP Act).

In order to assess the potential noise impacts associated with the operation of the Project, OPR commissioned Lloyd George Acoustics to undertake preliminary noise investigations along the length of the rail (Lloyd George Acoustics, 2010).

Ambient noise levels were measured at four locations at Oakajee and East Chapman Valley over the period from 14 to 27 November 2009, with the measurements and analysis being conducted in accordance with *Draft Guidance No. 8: Guidance for Environmental Noise* (EPA, 2007). The measured night time noise levels at the four locations varied from L_{A90} 23 - 26 dB, while the day time levels ranged from L_{A90} 27 - 30 dB, indicating relatively low background noise consistent with a rural setting (Lloyd George Acoustics, 2010).

Railway noise was predicted using a modified version of the Nordic Rail Prediction Method (Kilde Rep. 130) algorithm. This algorithm is for generic train types in Europe and required modification to align with measured noise levels of locomotives and wagons used in the Pilbara. In addition, to accurately predict the effect of barriers (hills or buildings), the noise source height of the locomotive was raised from the standard 0.5 metres above the railhead to 4.0 metres (Lloyd George Acoustics, 2010).

3. POTENTIAL IMPACTS

3.1 Impact Assessment Methodology

The basis of this EMP is the risk register developed using the IMS-SF-1 Environmental Risk Register Template and in accordance with the IMS-SP-1 Environmental Risk Management Procedure. The risk evaluation is based on the overall project risk management principles based on AS/NZS 4360: Risk Management and is contained within the Project EMS. The content of the risk register was developed in a workshop where noise and vibration were identified and assessed from an understanding of potential site plans.

3.2 Issues & Threats

Due to the isolated nature and sparse settlement of the pastoral land area, exposure to noise from the Proposal will be by a smaller number of residences and they will generally be further away than those in the freehold area.

In the freehold land area, more residences will be in closer proximity to the rail line and as a result there will be a greater number of sensitive receptors to noise generated. Noise modelling has been completed by Lloyd George Acoustics for the proposed current rail centreline and for two alternative scenarios (2010a). The preferred centreline of the proposed rail is not likely to change significantly unless further site investigations reveal potential obstacles. Hence the preferred centreline represents the most likely scenario for the generation of operational noise.

3.3 Impacts

The modelling results of the rail movements were assessed by Lloyd George Acoustics against both the WAPC's SPP5.4 (WAPC, 2009) and the EPA's Guidance No. 8 (EPA, 2007) and the assessment results are as follows:

- Three receptors would exceed the outdoor Noise Limit criteria at night (> 55 dBA), which refers to a level of outdoor noise exposure that is not generally regarded as acceptable for conventional residential or other noise-sensitive development. An additional three receptors in this category are owned by the WA Land Authority and have lease conditions that mean that they are not considered to be noise sensitive premises.
- Four receptors would be exposed to night-time noise levels above the Noise Target category (50 dBA - 55 dBA), which refers to a level of outdoor noise exposure that would be acceptable for residential and other noise-sensitive development, and may require mitigation. An additional seven receptors in this category are owned by the WA Land Authority and have lease conditions that mean that they are not considered to be noise sensitive premises.
- A total of some 45 receptors (including the 7 mentioned above) are identified for whom the noise levels are expected to comply with SPP4.5 Target criteria, but for whom train movements are expected to be easily audible above background noise.

It should be noted that Guidance Statement No. 8 (Draft) *Environmental Noise* (EPA 2007) does not apply to road and rail infrastructure, and is used here only by way of providing guidance for methodology and to provide criteria to indicate the number of receptors for which train movements will be clearly audible over background noise.

The location of these receptors is shown in Figure 3-1 and Figure 3-2. The assessment has assumed that all significant buildings are noise sensitive receptors.

The impacts of rail noise are expected to be most evident on properties through which the rail traverses and with whom

OPR has commenced consultation with a view to negotiating suitable mitigation packages in relation to use of the land and making consideration of factors such as noise. Properties for which the rail does not directly traverse, but which are exposed to noise levels above the target levels identified in SPP5.4 will also be consulted regarding noise exposure and mitigation options. The consultation process will be used to confirm the building use (residential or otherwise) with landholders. This consultation process and the associated mitigation packages are expected to result in compliance with SPP5.4.

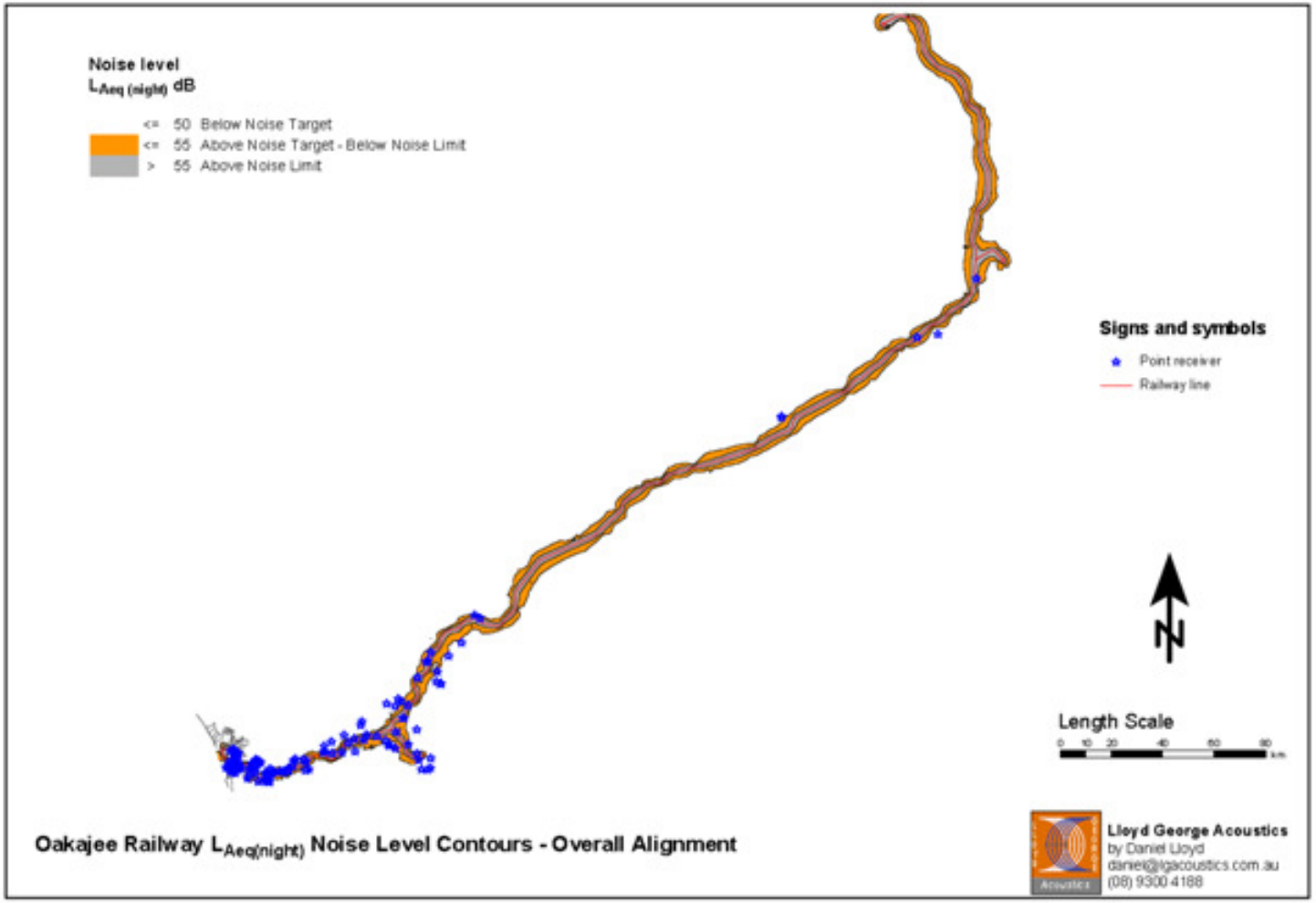


Figure 3-1: Location of potentially noise impacted residences – entire Proposal

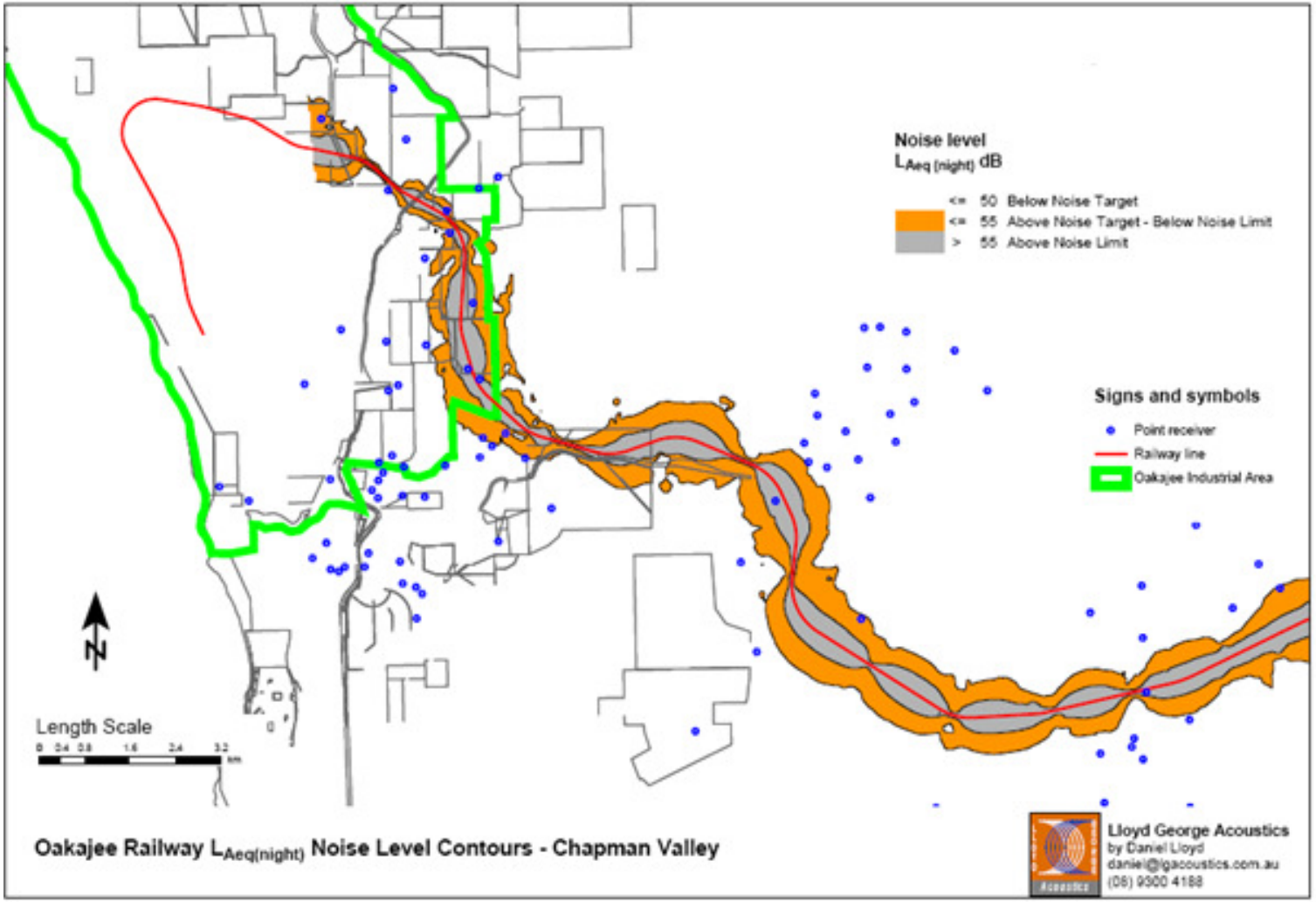


Figure 3-2: Location of potentially noise impacted residences – Chapman Valley

4. ROLES & RESPONSIBILITIES

This section outlines who is responsible for the noise and vibration management aspects of this Noise and Vibration Management Plan (NVMP). Overall responsibility for the implementation of this NVMP rests with the OPR Project Director and Environment Manager. All employees and Contractors shall meet the requirements of this NVMP and associated procedures. Responsibility for some management actions stated in this NVMP may be delegated to specific contractors if appropriate.

Key Project personnel including the Operation Manager, Superintendents and Supervisors shall ensure that all management actions are undertaken to satisfactory standard and that all personnel are aware of their responsibilities.

There shall be dedicated staff to manage health, safety and environment during operation and a general outline of responsibilities in relation to noise and vibration management are provided below. Those responsible for the detailed control measures are presented in Section 6.

Environment Manager

- Overall accountability for auditing and assessment of compliance with this NVMP and to ensure it is maintained on site.
- Provide support to all Project personnel as required to ensure this NVMP is implemented and complied with.
- Provide advice to the Operation Manager and Site Environmental Coordinators to ensure compliance with legal requirements, achievement of environmental objectives and improvement of environmental performance.
- Ensure appropriate resources and personnel are made available to meet the requirements of this NVMP.
- Review the effectiveness and implementation of this NVMP.
- Review and closing out any corrective actions listed in the Incident Register.
- Implement and maintain this NVMP.
- Participate in hazard studies, risk workshops and design reviews to ensure noise and vibration risks and opportunities are identified and managed.
- Report as required to regulating authorities.

Operations Manager

- Overall accountability that this NVMP is implemented, reported and maintained on Site.
- Ensure all personnel attend inductions and are aware of legal requirements, the requirements of this NVMP and related procedures.
- Review reports provided by the Site Environmental Coordinator.
- Provide support to contractors and on site Project personnel required during the operation phase
- Ensure appropriate resources and personnel are made available to meet the requirements of this NVMP.

Site Supervisor

- Ensure the requirements of this NVMP are implemented within their area of responsibility as delegated by the Operations Manager.
- Have a working knowledge of noise and vibration management applicable to their area of responsibility.
- Include any relevant noise and vibration issues when applicable in prestart (toolbox) meetings.
- Conduct audits, inspections and raising corrective actions as required.
- Provide leadership, training and recognition in managing noise and vibration issues within their area of responsibility.

Site Environmental Coordinator

- Provide training and inductions on relevant control measures as outlined in this NVMP.
- Liaise with supervisors to identify noise and vibration issues associated with day-to-day operations.
- Undertake inspections in liaison with Supervisors.
- Prepare reports on noise and vibration management and identify areas of improvement and corrective action.
- Assist with investigating noise and vibration incidents and co-ordinating corrective actions, if required.
- Provide timely and accurate advice to the Operation Manager on noise and vibration management and corrective actions in relation to noise and vibration incidents.
- Report any non-compliance in the EMS Incident and Non-conformance Report Form.
- Maintain all documents (hard copy files, electronic files and emails) for inspection during internal and external audits.
- Maintain an Incident Register and provide the register to the Environmental Manager.
- Maintain the risk register that informs this NVMP.

Public Relations Manager

- Community liaison regarding noise impacts
- Recording and responding to public complaints regarding noise and/or vibration
- Discussions regarding noise mitigation with relevant residents

Contractors

- Support OPR noise and vibration initiatives and culture.
- Comply with all legal requirements and the requirements specified in this NVMP.
- Ensure all personnel are adequately trained in noise and vibration management.
- Seek advice from OPR when in doubt of their requirements.

All Personnel

- Comply with all legal requirements and the requirements of this NVMP.
- Report noise and vibration incidents or complaints to their Supervisor or Site Environmental Coordinator.
- Attend environmental inductions or any other training on noise and vibration management.

Also refer to EMS for further details on general OPR personnel responsibilities.

5. MITIGATION

Impacts from noise and vibration will be minimised by appropriate design where possible. To prevent or minimise the impacts, controls are placed in the order of hierarchy of control principles listed below:

- Elimination of the activity;
- Substitution with a lower risk activity or product;
- Engineering solutions to reduce the impact of the event;
- Implementation of administrative procedures to control the activity; and
- Clean up or remediation measures to mitigate impacts after an event.

The management strategy structure and content follows WA Environmental Protection Authority (EPA) and Department of Environment and Conservation (DEC) guidance.

Management strategies have been developed to meet the EPA's objective "to protect the amenity of nearby residents from noise impacts resulting from activities associated with the proposal by ensuring the noise levels meet statutory requirements and acceptable standards".

The intended mitigation of impacts, determined in accordance with the EPA recommended mitigation hierarchy, is outlined below. The objectives, targets and performance indicators related to noise and vibration management have been developed based upon the management strategies outlined within the Project PER.

Table 5-1: Performance Management targets and indicators for noise and vibration

Potential Impacts	OPR Management Objective	OPR Management Strategy	Target	Performance Indicators
• Receptors being exposed to night time noise levels above the Noise Limit criteria at night (>55 dBA), meaning the level of outdoor noise exposure is not generally regarded as acceptable for conventional residential or other noise-sensitive development. • Receptors being exposed to night time noise levels above the Noise Target category (50 dBA – 55 dBA), meaning the level of outdoor noise exposure would be acceptable for residential and other noise-sensitive development, but may require mitigation. • Receptors exposed to noise levels that comply with the SPP5.4 Target criteria, however for whom train movements are expected to be easily audible above background noise.	• Prevent adverse noise and vibration impacts on sensitive receptors.	• Noise will be managed using a combination of noise reduction methods, and will comply with WAPC's State Planning Policy 5.4 (SPP5.4) at all times.	• Noise and vibration levels at sensitive receptors do not exceed the targets set in SPP5.4.	• Noise monitoring shows compliance with SPP5.4 • Noise incidents logged in OPR's incident register.
• Receptors being exposed to night time noise levels above the Noise Limit criteria at night (>55 dBA), meaning the level of outdoor noise exposure is not generally regarded as acceptable for conventional residential or other noise-sensitive development. • Receptors being exposed to night time noise levels above the Noise Target category (50 dBA – 55 dBA), meaning the level of outdoor noise exposure would be acceptable for residential and other noise-sensitive development, but may require mitigation.	• Prevent adverse noise and vibration impacts on sensitive receptors.	• Consultation programme with affected landholders to discuss mitigation options.	• Noise and vibration levels at sensitive receptors will not exceed the targets set in SPP5.4.	• Noise modelling shows expected compliance with SPP5.4

Potential Impacts	OPR Management Objective	OPR Management Strategy	Target	Performance Indicators
• Receptors exposed to noise levels that comply with the SPP5.4 Target criteria, however for whom train movements are expected to be easily audible above background noise.				
• Receptors being exposed to night time noise levels above the Noise Limit criteria at night (>55 dBA), meaning the level of outdoor noise exposure is not generally regarded as acceptable for conventional residential or other noise-sensitive development. • Receptors being exposed to night time noise levels above the Noise Target category (50 dBA – 55 dBA), meaning the level of outdoor noise exposure would be acceptable for residential and other noise-sensitive development, but may require mitigation. • Receptors exposed to noise levels that comply with the SPP5.4 Target criteria, however for whom train movements are expected to be easily audible above background noise.	• Prevent adverse noise and vibration impacts on sensitive receptors.	• Consultation with the occupants of affected premises will occur regarding any high noise maintenance activities such as, haulage, compacting and pile driving.	• Compliance with the construction section of the Noise Regulations.	• Noise monitoring results (if required).

6. KEY CONTROL MEASURES

A series of control measures have been established to address the potential impacts related to noise and vibration that could arise during the operation of the Project. The control measures directly address the EPA objectives and OPR management strategies set out in the Project PER. The Control measures for noise and vibration are detailed in Table 6-1 below.

As part of the implementation of control measures as detailed in this plan, a number of procedures and systems will be employed in order to govern and manage the requirements during operation. In particular, the following key systems will be utilised for managing on site compliance and monitoring:

- Noise Monitoring Program; and
- Incident Reporting System.

Details of the structure and relationship of these systems is provided in Appendix B.

Table 6-1: Control measures for noise and vibration

Management Objective	Control Measure ID	Control Measures	Responsibility	Timing	Monitoring
Prevent adverse noise and vibration impacts on sensitive receptors.	RON1	• Implement agreed noise mitigation requirements at affected noise sensitive receptors after negotiating with landholders. Noise mitigation measures may include one or more of the following: • solid external noise barriers • double-glazed windows • solid walls and doors • door seals • relocation • land purchase	Operation Manager, Environmental Manager and Public Relations Manager	Prior to operations.	Monitoring report, consultation records.
	RON2	• Implement a community consultation programme with the occupants of all premises that are expected to be able to hear the Project during operation.	Public Relations Manager	Operation	Consultation Records
	RON3	• An OPR point of contact (name and phone number) will be provided for handling enquires and complaints regarding noise and vibration during operations.	Public Relations Manager	Operation	Incident Register
	RON4	• Prior warnings and information will be provided on upcoming high-noise maintenance activities such as: • Heavy haulage • compacting • pile driving	Environmental Coordinator, Operations Manager and Public Relations Manager	Throughout operations.	Consultation Records

Management Objective	Control Measure ID	Control Measures	Responsibility	Timing	Monitoring
	RON5	• Induction training will incorporate noise and vibration related issues.	Site Environment Coordinator Site Supervisor	Operation	Induction attendance records
	RON6	• All equipment used in the Project area shall be maintained in accordance with manufacturers' specifications and relevant standards.	Operations Manager	Operation	Maintenance Records
	RON7	• Locomotive noise levels will be considered when purchasing	Operations Manager	Prior to operation	Purchasing records

7. MONITORING

Monitoring and reporting of performance indicators will be undertaken to determine the impact of the Project on vegetation and flora.

Any incident or public complaint will be managed through OPR EMS incident reporting and investigation protocols.

The monitoring associated with the NVMP will be continuous throughout the operation phase of the Project, with the registers and systems developed and implemented prior to the start of operation. All new contractor packages will need to address the registers and systems detailed within this plan prior to mobilisation with monitoring undertaken continuously in coordination with Site Supervisors and the Operations Manager.

Monitoring requirements are summarised below (Table 7-1).

Table 7-1: Summary of Monitoring

Management Objective	Monitoring Requirement	Responsibility
Prevent adverse noise and vibration impacts on sensitive receptors	Noise modelling will be repeated once the final rail alignment has been determined.	Environment Manager
	Noise monitoring at sensitive receptors will occur during operation to verify modelling results and confirm that mitigation ensures compliance with SPP5.4	Environment Manager
	Noise monitoring at sensitive receptors will be repeated following a significant change to Project operations (including changes in locomotives or equipment), or an alteration to noise mitigation measures	Environment Manager
	Records of consultation with landholders about noise impacts and mitigation will be kept on file for future reference	Public Relations Manager
	Noise complaints will be logged as incidents and stored in OPR's Incident Register	Site Environmental Coordinator
	Project locomotives, vehicles and equipment maintenance records will be recorded to ensure compliance with maintenance schedules	Site Supervisor
	Induction attendance records will be maintained throughout operations	Site Supervisor
	Monitoring will be in accordance with Schedule 4 of the Environmental Protection (Noise) Regulations 1999.	Environment Manager

8. CONTINGENCIES

Through the monitoring requirements and associated systems and registers as defined in Section 7, any actual or potential non-conformances will be detected via regular reviews and inspections. To ensure that noise and vibration controls are effective the following will occur:

- OPR will consult with DEC and noise specialists as to the need to refine the NVMP; and

- The NVMP will be revised as needed and its effectiveness monitored.

Contingency management actions will be initiated where performance indicators have not been met. This will include informing all relevant parties and personnel. Contingency actions may involve supplementary monitoring to identify the source of the non-compliance, and may involve revising existing construction practices to minimise and prevent future occurrences.

Incidents will be reported and recorded using the EMS Incident and Non-conformance Report Form by the Site Environmental Coordinator.

Contingency management actions are summarised in Table 8-1.

Table 8-1: Contingency management actions for noise and vibration

Performance Indicator	Contingency action	Responsibility
Noise monitoring shows compliance with SPP5.4 Noise incidents logged in OPR's incident register.	If noise monitoring shows non-compliance with SPP5.4 or a noise complaint is received, then the following actions will be taken: • Report it as an incident. • Potential causes for the high noise levels will be investigated to confirm whether the Project was the primary source and, in the case of a complaint, to determine whether the Project may have exceeded SPP5.4. • Determine what part of Project operation may have caused the exceedance. • If the Project is confirmed as the source of exceedance, take appropriate action to reduce the noise levels produced from the identified source, or if not possible, increase noise mitigation at the sensitive receptor. • Confirm success of actions taken through further monitoring. • Log the incident in OPR's Incident Register.	Site Environmental Coordinator and Environment Manager
Noise modelling shows expected compliance with SPP5.4	If noise modelling shows that non-compliance with SPP5.4 is expected then the following actions will be taken: • Take appropriate action to reduce the noise levels produced from the expected source, or if not possible, increase proposed noise mitigation at the sensitive receptor. • Confirm success of actions taken through further modelling. • Confirm validity of model during operation.	Environment Manager

For all non-conformances a report will be provided to the Site Supervisor, contractor and Contracts Manager detailing the reason for the non-conformance and resolution adopted.

9. REPORTING

OPR may be required to report on the results of some of the management controls contained in this NVMP as part of the overall Ministerial approval reporting requirements (Table 9.1).

Non-compliance with Ministerial conditions, or the control measures in Section 6, or a public noise complaint, will be reported and recorded using the EMS Incident and Non-conformance Report Form. These forms will be documented in the Incident Register and will be reported to the relevant authorities in OPR's Annual Environmental Report. The report will also include details about the success of rehabilitation and monitoring.

Table 9-1: Summary of Reporting

Report	Details	Reporting Frequency	Responsibility
Annual Environmental Report (AER)	The AER will include the following: • Monitoring results at sensitive receptors • Incidents reported and details of how they were resolved • Community consultation conducted • Results of any additional modelling conducted	Annually to Office of EPA	Site Environmental Coordinator and Operations Manager to prepare. Approved by Environment Manager.
Internal noise Monitoring Report	Monitoring at sensitive receptors, to be conducted by a qualified noise consultant.	Following each monitoring period	Environment Manager
Modelling Report	Additional modelling report by a qualified noise consultant once rail alignment is determined or if significant changes are proposed.	Following modelling	Environment Manager

10. AUDITING & REVIEW

10.1 Auditing

This NVMP will be audited (both internally and externally) in accordance with OPR overall EMS auditing regime. The auditing will ensure compliance with NVMP commitments, the OPR EMS and procedures. Internal auditing will focus on reviewing non-conformance reports, systems and registers and the control measures register (via the EMS). An Audit report will be produced every 6 months detailing the outcomes of the audit including:

- completeness of implementation of systems, databases and registers;
- integration of approvals systems with Procurement, Contracting and Operations;
- compliance with commitments and control measures; and
- recommendations of changed and follow up actions.

10.2 Review & Revision

Any non-conformances identified through the monitoring and auditing procedures will be assessed to determine if changes to the NVMP will be required. The review will follow on from an audit and audit report to determine if any

non-conformances are the result of inadequacy of the management plans and EMS systems and processes. Details of the review program for all EMPs are detailed in the OPR EMS with regular 6 monthly review scheduled to align to the audit schedule.

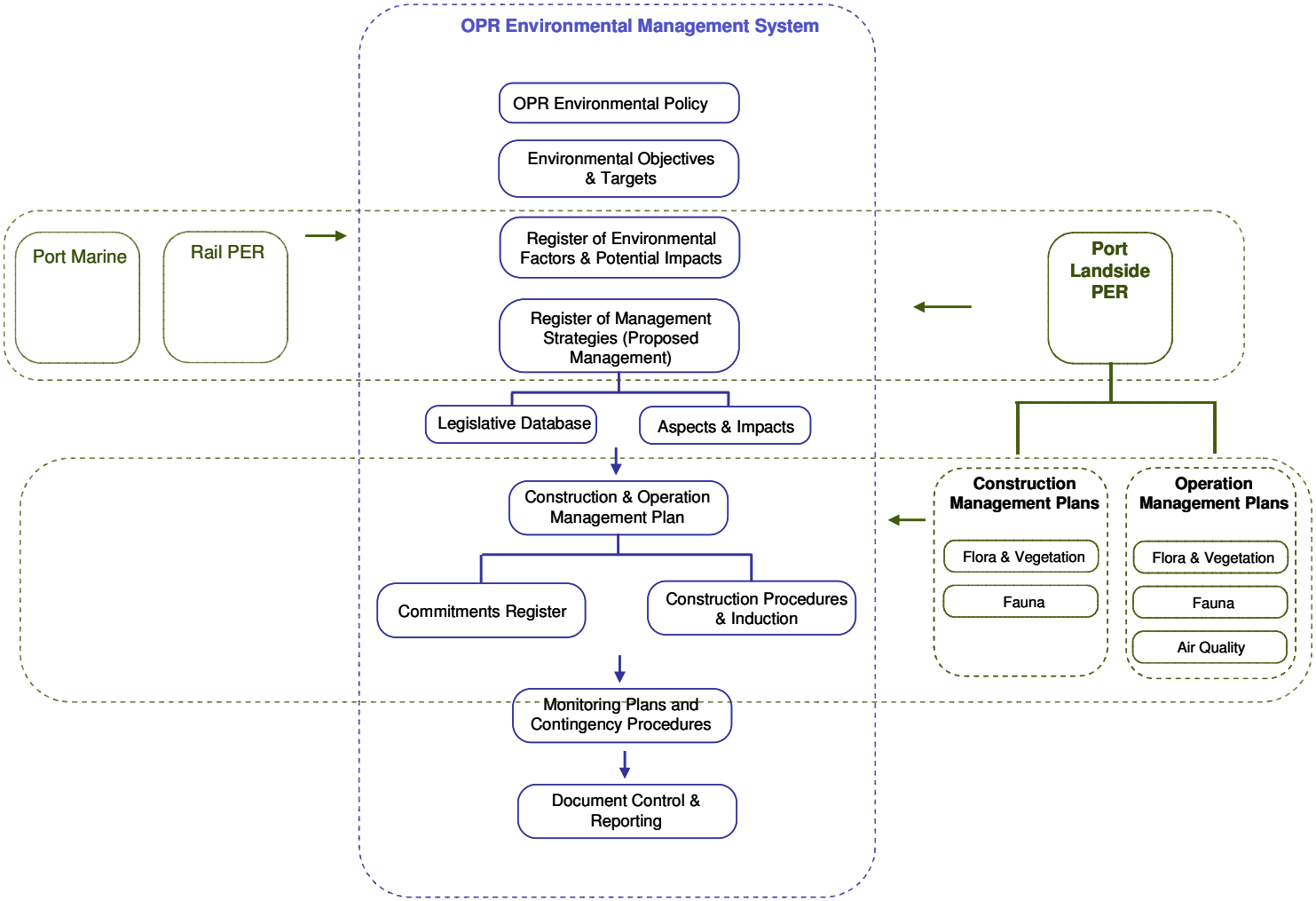
11. REFERENCES

EPA (2007) Guidance for the Assessment of Environmental Factors Draft Environmental Noise Guidance Statement No. 8, Environmental Protection Authority, Western Australia.

Lloyd George Acoustics (2010) *Railway Noise Assessment, Jack Hills to Oakajee*, Perth WA (Reference No. 9091365-01

Western Australian Planning Commission (2009) *Road and Rail Transport Noise and Freight Considerations in Land Use Planning*, Government of Western Australia, Perth.

APPENDIX A: EMS STRUCTURE



APPENDIX B: OPR EMS SYSTEMS & REGISTERS