Council Forum

Notes

14 November 2017

Unconfirmed Notes

These notes were approved for distribution on 15 November 2017.

Stan Scott
CHIEF EXECUTIVE OFFICER

When the Chief Executive Officer approves these Notes for distribution they are in essence "informal notes."

At the next Ordinary Meeting of Council the Notes will be received, subject to any amendments made by the Council.

The "Received" Notes are then signed off by the Presiding Person.

Attachments that formed part of the Program, in addition to those tabled at the Council Forum are put together as attachments to these Notes with the exception of Confidential Items.

Confidential Items or attachments that are confidential are compiled as a separate Confidential Noted Program Item.

Received Notes

These notes were received at an Ordinary Meeting of Council held on 28 November 2017.

Signed: Therese Chitty

Note: The Presiding Member at the meeting at which the notes were received is the person who signs above.

CONTENTS

ATTACHMENTS *with separate index follows Item 14.*

Shire of Toodyay

COUNCIL FORUM – 14 NOVEMBER 2017

NOTES

1. DECLARATION OF OPENING

Cr Rayner, Shire President, declared the meeting open at 4.05pm.

The Shire President welcomed Ms Chileya Luangala as Manager Corporate Services.

2. RECORDS OF ATTENDANCE/APOLOGIES

Cr B Rayner	Shire President
Cr T Chitty	Deputy Shire President
Cr B Bell	
Cr S Craddock	
Cr D Granger	
Cr P Greenway	
Cr E Twine	

Staff

Mr S Scott	Chief Executive Officer
Ms C Luangala	Manager Corporate Services
Mrs T Phillips	Manager People and Projects
Mr G Bissett	Manager Planning & Development
Mr S Patterson	Manager Works and Services
Mrs M Rebane	Executive Assistant
Mrs N Rodger	Finance Coordinator

Visitors

D Andrijich	J Isbill
C Withers	B Byfield

2.1 APOLOGIES

Cr J Dow	
Cr R Welburn	
Mrs A Bell	Manager Community Development

2.2 LEAVE OF ABSENCE

Nil

3. DECLARATIONS OF INTERESTS

The Chairperson advised that no disclosures of interest in the form of a written notice had been received prior to the commencement of the meeting.

4. PRESENTATIONS

4.1 Toodyay Early Years Network

Jenny Isbill, Chairperson, Toodyay Early Years Network addressed Council in respect to the Toodyay Early Years Network.

Correspondence from the Toodyay Early Years Network was tabled to Elected Members prior to the Council Forum (*refer to attachments to these notes).*

Debra Andrijich, Community Development Officer, addressed Council in respect to the Toodyay Early Years Network.

Clare Withers, TDHS Kindergarten Teacher, addressed Council in respect to the Toodyay Early Years Network.

Bree Byfield, Child Health Nurse, addressed Council in respect to the Toodyay Early Years Network.

Questions	*Answers/Responses given*
Do home schoolers take advantage of the TEYN and then become home schoolers?	*It does take me a lot longer to get involved in that community; inroads are being made with home schooling section. It is not a normal practice for the child health nurse to see home schooled children.*
Do you have financial needs as far as the group? Do you access funds from anywhere?	*Not at present but we would be doing a workshop next year that is funded. A lot of the work we want to do, addressing needs in the community, we may have to come to Council in the future seeking financial support.*
What do you perceive to the main causes of recent increase in disadvantaged children in Toodyay?	*There has been a shift with Toodyay. Families come and go from Toodyay. There is a very serious amphetamine issue in Toodyay which has a serious impact on children. Some families' parents take on parenting practices learnt from their own parents. Some families are young and haven't had that support of their parents. They have done what they know. Parents do need support.*
A statement was made as follows: "An expert once said that we could solve adult literacy if we pump enough funding into the early years. I don't think you can underestimate the resources in getting kids right for school. If	*We appreciate Council's support.* *It takes two generations to achieve shifts in behaviour and to make changes.*

Questions	*Answers/Responses given*
they succeed or fail that determines the trajectory of their whole school life. The work the Toodyay Early Years Network does is thoroughly commendable.	
How many people are in the Committee?	*We have twelve members. There are no positions. WA Inclusion agency assisted. Everyone has come from initial set up. No funds means no treasurer or secretary. Have same goal to help kids in Toodyay.*
Funding – is there state funding within the mental health area for younger kids?	*Will be Mental Health workshop through Parenting WA. The group will look for this sort of support to hold workshops. There is support available from other sources. The members are upskilling themselves as well.*
What is Council's role in the group?	*Promotion and giving us support to run the facilities. Using a community venue (e.g. community centre) and down the track funding may be requested.*

Note: Guidance from Elected Members not required.

4.2 RESPONSES TO PREVIOUS PUBLIC QUESTIONS TAKEN ON NOTICE

At the October 2017 Council Forum there were no questions taken on notice.

5. PUBLIC QUESTION TIME

Nil

6. PUBLIC SUBMISSIONS (relating to the contents of the program)

Nil

7. AGENDA FORUM MATTERS

7.1 Heritage Appeal for Toodyay

Points raised as follows:

- Emphasis is not on individual buildings and is flexible enough to do things other than that within the broad scope provided; and
- Using the National Trust system within their guidelines.

Clarification was sought.

Guidance from Elected Members

That a report be presented for consideration by Council at the November 2017 Council Meeting.

7.2 DRAFT State Planning Policy 5.4 – Road and Rail Noise

Clarification was sought.

Points raised as follows:

- Draw from expertise around the table to inform submission which does not require a Council resolution;
- Reference to the Foggarthorpe Working Group and the review of the design guidelines;
- 300 metre buffer impact on subdivisions that may also hinder development in the town;
- Elected Members contributions in respect to the submission and the points being raised;
- Council Officers to make recommendations on what is appropriate and what would be relevant – and these recommendations be put to the November 2017 Council Meeting;
- Bring the Planning Department Expert to liaise with our experts and advise how we apply their document to our town;
- Rail corridor is quite extensive and covers the whole town; and
- Page 11 point (d) – when Toodyay Road is upgraded in the vicinity of Toodyay will there be any implications in that for us?

Guidance from Elected Members

Elected Members will read the discussion paper and relevant attachments and then submit their comments and questions to Mr Graeme Bissett, Manager of Planning and Development, directly via email to mpd@toodyay.wa.gov.au **before 4.00pm on Friday 17 November 2017.**

The Manager Planning and Development will:

- go to Perth to speak with the Department of Planning;
- seek approval for a late submission being permitted; and
- Prepare a report that will be presented for consideration by Council at the November 2017 Council Meeting including in the resolution that Council would not want the buffer to apply to the future proposed bypass.

The Shire President ruled the meeting go behind closed doors.

The Council Chambers were closed to members of the public at 5.03pm.

The CEO provided clarification in respect to the Budget Review.

8. CONCEPT FORUM MATTERS

The Concept Forum Matters listed below are minuted and indexed separately.

8.1 Budget Review

9. CHIEF EXECUTIVE OFFICER'S UPDATE

The CEO provided a verbal update.

10. CONFIDENTIAL MATTERS

The Shire President ruled the meeting go behind closed doors.

The Council Chambers were closed to members of the public at 5.03pm.

The Confidential Matters listed below are minuted and indexed separately.

10.1 Request to purchase part of the Recreation Precinct

10.2 Presentation (Information Briefing) – Integrated Planning and Reporting

10.3 Strategic Community Plan Review (Update)

11. SHIRE PRESIDENT'S UPDATE

The Shire President provided a verbal overview of public engagements, and meetings attended since the last Council Forum.

12. REPRESENTATIVE UPDATES

The verbal updates were minuted and indexed separately.

The Shire President ruled the meeting come from behind closed doors.

The Council Chambers were re-opened to members of the public at 7.14pm.

13. STATUS REPORTS

There was no status report.

14. MEETING CLOSURE

The Shire President declared the meeting closed at 7.14pm.

Attachments to Notes

Council Forum **Tuesday 14 November 2017**

PRESENTATIONS

Attachments that formed part of the Council Forum Program

Attachments to the November 2017 Council Forum Program

Note: These attachments contain their own numbering

Administration Centre
15 Fiennes Street (PO Box 96)
TOODYAY WA 6566

T: 9574 9300
F: 9574 2158
E: records@toodyay.wa.gov.au

Chief Executive Officer

18 April 2017

Dear colleague

Local Governments and Early Years Networks Working in Partnership Resource

The Community Development Roundtable is pleased to release the **Local Governments and Early Years Networks Working in Partnership Resource** aimed at assisting you to update your Community Strategic Plan, to improve outcomes for children in the Early Years in your community.

Local Governments and Early Years Networks can be powerful allies in creating environments in which children thrive through coordinated approaches to planning, delivery and review of services and supports.

The resource provides valuable practical information and tools, including:

1. Information about Early Years Networks, where they are and how they can assist you.
2. How to partner with Early Years Networks to help local governments achieve their goals.
3. Up to date demographic information about children in your communities.
4. Understanding the Australian Early Years Development Census, local results and implications for planning in your community
5. Information about early years resources and local libraries.

Research into child development overwhelmingly supports the view that focusing on early childhood health and wellbeing leads to positive outcomes as children grow older, as well as reduced economic costs to governments and families. The Community Development Roundtable members urge you to draw on this important resource to improve the wellbeing of children in the early years in your community.

Yours sincerely,

Louise Giolitto CEO - WACOSS	**Ricky Burges** CEO - WALGA	**Jennifer Mathews** Director General - DLGC	**Warren Pearce** CEO – Local Government Professionals WA

LOCAL GOVERNMENT & EARLY YEARS NETWORKS

Working in Partnership Resource

WACOSS
WA COUNCIL of SOCIAL SERVICE
Ways to make a difference

Government of **Western Australia**
Department of **Local Government and Communities**

Local Government Professionals
AUSTRALIA WA

WALGA
WORKING FOR LOCAL GOVERNMENT

This resource is available online and in print. The online version is available on the Connecting Early Years Networks Portal at eyn.dropin.org.au and on the following websites:

Local Government Professionals - Community Development Network:

http://www.lgprofessionalswa.org.au/Lgmawa/Branches___Networks/WA_Networks/Community_Development_Network/Lgmawa/Branches___Networks/Networks/Community_Development_Network.aspx?hkey=eecafdc2-c773-476d-a4c5-f6ca7e13d883

Department of Local Government and Communities - Local Government and Early Years Networks Working in Partnership:

https://www.dlgc.wa.gov.au/AdviceSupport/Pages/Early-Years-and-Parenting.aspx

Western Australian Local Government Authority - Early Years:

http://walga.asn.au/Policy-Advice-and-Advocacy/Community-Development.aspx

The printed version is available from WACOSS by contacting eyn@wacoss.org.au

FOREWORD

Connecting Early Years Networks

Research into child development overwhelmingly supports the view that focusing on early childhood health and wellbeing leads to positive outcomes as children grow older, as well as reduced economic costs to governments and families.

Local Government is the closest sphere of government to the community and therefore has enormous potential to influence a community that values and supports children in the early years and their families.

Local Governments play an essential role across a range of areas that can improve the health and wellbeing of young children including Early Childhood Education and Care services; being the largest provider of venues for parent-led playgroups; supported playgroups; children's health and safety; children's recreation and public spaces; library services and planning.

Early Years Networks (EYNs) are voluntary community groups which may be comprised of allied health professionals, such as speech, occupational and physiotherapists, early education and care staff, parents, teachers, librarians, nurses, community members, local government employees, and a range of other community stakeholders, committed to supporting children and their families in the early years. The strengths of Early Years Networks lie in the member's commitment to the philosophy of collaboration and their wealth of collective early years and community knowledge.

Local Governments working together with Early Years Networks can be powerful allies in creating environments in which children in their early years can thrive through coordinated approaches to planning, delivery and review of services and supports within local communities.

The development of this resource was made possible by the WACOSS Connecting Early Years Network Support Project[1], working in partnership with the Department of Local Government and Communities (DLGC); The West Australian Local Government Association (WALGA) and Local Government Professionals.

We also acknowledge the generous support of staff from the Cities of Rockingham, Wanneroo and Gosnells, the Department of Education, the State Library of Western Australia and Early Years Network members across the State of Western Australia.

The Community Development Roundtable members urge you to draw on this resource. It provides valuable information for Local Governments and Early Years Networks about how to improve outcomes for young children in your community.

Louise Giolitto
CEO - WACOSS

Ricky Burges
CEO - WALGA

Jennifer Mathews
Director General - DLGC

Warren Pearce
CEO - Local Government Professionals

[1] The Connecting Early Years Networks Support Project is funded by Lotterywest and was previously funded by Woodside. We wish to acknowledge the important contribution this funding has made to the development of this initiative.

The Purpose of This Resource

This resource has been developed to provide practical information, tools and resources to support partnerships between Local Governments and Early Years Networks to achieve positive outcomes for children and families in local communities.

This resource promotes collaboration by:

- Early Years Networks becoming familiar with Local Government decision making processes and how Local Governments support services and communities.
- Local Governments:

  Understanding the importance of investment in children in the early years;

  Becoming familiar with the role of an Early Years Network;

  Partnering with and providing support to Early Years Networks in their area.

The Importance of Investment in the Early Years

Research demonstrates that what happens from conception to age three influences a person's development throughout their life. This includes brain development, social skills and the ability to learn. By the age of three years, a child's brain has reached 90% of its adult size with research indicating that brain sensitivity to language, numeracy, social skills and emotional control peaking before the age of four. The early years lay down the child's foundation for later life. Improving children's development for this critical period can have a transformative social and economic effect. The quality of a child's earliest environments and the availability of appropriate experiences at specific stages of development are crucial in shaping developmental outcomes. Longitudinal data from international studies demonstrate that children who are developmentally vulnerable at the start of their schooling are likely to continue a life trajectory of poor life outcomes. Early intervention is the most cost effective and effective way to deal with disadvantage. Every dollar invested in quality early childhood development for disadvantaged children produces a 7%-10% return, per child, per year[2].

Child development is influenced by many factors, from the family environment and community, to wider influences such as government policies, environmental conditions and broader social norms, beliefs and attitudes. Local Governments and Early Years Networks are well placed to ensure local communities are nurturing, safe and supported, where children can grow to reach their full potential.

For further information on the importance of investment in the early years and its long term benefits click here.

[2] The Ounce of Prevention Fund 2017

WA Early Years Population Profile 0-9 years

A WA Early Years Population Profile for children aged zero to nine years has been developed by the Department of Local Government and Communities as a resource to provide Early Years Networks and Local Governments with evidence-based information about children living in their communities.

These interactive maps provide accurate and up to date demographic information about children. The maps with a quick start guide can be found by clicking here.

Interactive Maps

To access information about the number of children in the early years in your local area scroll down to the section 'Interactive Maps for the WA Early Years Population Profile 0-9 years'. There are two interactive maps available, a Single Map View and a Double Map View. These can be used as a mapping and data analysis / visualisation tool.

Single Map View

Single Map View is considered more suitable for analysing data for one location or for exploring data for multiple locations at a specific point in time.

Double Map View

Double Map View for comparing data and trends for one or more locations.

What are Early Years Networks?

Early Years Networks support children aged 0 to 8 years and have existed in Western Australia since 2003. In January 2017, there were approximately 50 active Early Years Networks across Western Australia. Early Years Networks play an important role in developing and implementing initiatives, services and activities aimed at improving outcomes for young children and families. They do this by connecting across local communities and working collaboratively. Early Years Networks provide a strong platform to engage with key stakeholders across organisations; increase opportunities to coordinate policies and programs; and respond to evidenced based information about children living in their community through the use of tools such as the Australian Early Development Census (AEDC).

Each Network is unique, with its own culture and set of practices based on its members and the needs of the community.

Early Years Networks provide opportunities to:

1. Share knowledge and experiences collectively to improve communities for children and their families.
2. Engage members to discuss emerging early years issues across their community and advocate solutions to decision makers.
3. Gain insights and perspectives from community representatives to understand what may be influencing early childhood development.
4. Explore the AEDC results together with other information to understand community strengths and areas for improvement in supporting children's development.
5. Foster a variety of short and long term community initiatives to improve local conditions for children and families.
6. Strengthen community understanding about the importance of the early years.
7. Promote early years' initiatives to the community, for example Children's Week and parenting workshops.
8. Form smaller working groups of members to run the early years network's activities/ events as detailed in an action plan.
9. Invite guest speakers and presenters to meetings to introduce or develop ideas, programs or topics relevant to the Early Years Network.

If you want to contact the Early Years Network in your community visit the CEYNSP portal or email the CEYNSP team at WACOSS via eyn@wacoss.org.au.

Broome – Shire of Broome

What are Local Governments and their Role within Communities?

There are 139 Local Governments or Councils in Western Australia of which 30 are metropolitan and 109 are regional.

The type and nature of services delivered by Local Governments varies. Western Australia's growing population has increased the demand for a wide range of services in all areas of the State.

Under the Local Government Act 1995, Local Governments in Western Australia have a general function to provide for the good government of people in their district. These wide powers mean Local Governments have the authority to provide community development and community services, including facilities, as long as they do not inappropriately duplicate services provided by others.

Local Governments have a vital role in our communities including the provision of public spaces and community facilities, planning well-designed communities, providing services targeting social issues and building stronger community ties through events and community engagement.

The services provided by Local Governments generally fall into three categories:

Services to people and the community

Community services and family and neighbourhood support; Early Years Networks; recreation, arts and culture; maintaining sporting grounds, reserves, parks and gardens; provision of public libraries; seniors' services and childcare services.

Services to property

Roads and footpaths; land drainage and development; sewage disposal (in some country areas); refuse disposal and recycling services; litter control; street lighting and underground power; street cleaning; and Emergency Management Services.

Regulatory services

Exercise control to enforce legislation covering health, buildings, signs, goods, litter, planning, parking, fire and traffic hazards.

Why is it Important for Local Governments and Early Years Networks to Partner?

By working effectively with Early Years Networks, Local Governments obtain access to input from key stakeholders and to alternative service delivery models for consideration, including services that could be co-delivered (for example, by pooling resources). Such collaboration facilitates more informed decision making, improved policy and program development and increased engagement with community sector organisations. This enables the development of policy and programs that build community resilience with a focus on achieving community outcomes, which in turn achieves improved outcomes for young children and their families.

The benefits of effective partnerships between Local Governments and Early Years Networks flow on to communities by improving access to streamlined support and services by encouraging community ownership and participation.

Early Years Networks and Local Governments can make use of a range of options to work together including understanding each other's priorities, the challenges faced by their communities, the social, economic and environmental conditions in a community and what services currently exist.

How Can Local Governments and Early Years Networks Partner?

There are a number of ways in which Early Years Networks and Local Governments can work together to improve the wellbeing of children in the early years including:

1. **Building partnerships and working collaboratively;**
2. **Ensuring decision making is informed;**
3. **Examining the Australian Early Years Development Census results;**
4. **Capitalising on local libraries.**

1. Building Partnerships and Working Collaboratively

1.1 What Can Early Years Networks Do to Build Partnerships?

Establishing positive working relationships with Local Government is critical to effective, ongoing engagement and the development of partnerships which help sustain Early Years Networks and improve their effectiveness.

Strong communication is vital between Early Years Networks and Local Governments if the issues, concerns and suggestions of Network members are to be heard by those who have the capacity to influence change and to make a difference for children in the early years. Members of Early Years Networks know what the important issues, challenges and opportunities are in their communities and are well placed to clearly and consistently communicate those issues to Local Government.

Many Local Governments employ Community Development Managers who may have diverse responsibilities such as children and youth services, seniors, sport and recreation, libraries and community events. Sometimes a single staff member has responsibility for community service provision or community development. A targeted approach by Early Years Network members to Local Government by identifying the key contact person opens opportunities for Early Years Networks to build connections, partnerships and relationships. Some practical examples to assist in building connections include:

1. Sending a personal invitation to the CEO, Shire President and Councillors to your events and/or Early Years Network meetings.
2. Ensuring they receive your newsletters.
3. Inviting the editor and photographer of the local paper to all of your events and ensuring you include your Local Government in the publicity.
4. Presenting to council once a year on the key successes or challenges of the Early Years Network during the year.
5. Establishing a standing meeting with the CEO and Community Development Manger every quarter.
6. Actively engage with Local Government decision-making processes, the deadline for information and the time required for decisions to be made.

When planning how you will establish a working partnership with your Local Government, factors to consider are:

1. Clearly articulating what it is that your Early Years Network wants and setting out your objectives in the short-and-longer-term.
2. Goals need to be important and relevant; describe why you want/need and clearly demonstrate why achieving a goal will add value in the community.
3. Is the goal consistent with your Early Years Network Action Plan?
4. Is the goal consistent with your Local Government's Community Strategic Plan? and what the strategic plan aims to achieve for children in the early years in your community.
5. Understanding the budget cycle.
6. Be proactive and consistent in your communication.
7. Prepare quality material with easily digestible facts demonstrating research on the importance of investment in children during their early years.
8. Share success stories illustrating the power of the Early Years Network within your community.

To access the contact details for Local Governments across Western Australia click here

1.2 What Can Local Governments Do to Build Partnerships?

Early Years Networks provide an important link to the early years 'community' in which the Local Government operates. Through their direct connection to community professionals and local families, Early Years Networks are well placed to provide advice to Local Governments and can act as a conduit for two-way communication to inform policy, strategies and services. Early Years Networks can contribute to the development of community programs by participating in planning processes or by responding to requests for feedback.

Local Governments can build partnerships with Early Years Networks by:

1. Becoming familiar with and drawing information from Early Years Networks Strategic Plans and/ or Early Years Networks Action Plans. Examples of Early Years Newtorks plans can be found in the Resource Kit for Starting and Sustaining an Early Years Network.
2. Promoting funding rounds or access to community grants that support positive community development outcomes such as a community playground.
3. Providing administrative support to Early Years Networks, for example support with emailing information, shaping agendas and keeping action registers.
4. Supporting Early Years Networks with access to venues and meetings places e.g. for a venue to hold the network meeting or a support staff member to facilitate the meeting.
5. Inviting Early Years Networks to Council meetings once a year to present on the key successes or challenges of the Network during the year.
6. Ensuring Council's website and Facebook pages promote the work of the Early Years Network and encourage community involvement in the Network.
7. Offering network building opportunities and events to develop further connections with community members, other community sector organisations and government agencies.
8. Providing leadership opportunities and other professional development training to your local Early Years Network.
9. Ensuring Local Government is represented on local Early Years Networks.
10. Identifying opportunities to pool resources to deliver efficient and effective community outcomes.

2. Ensuring Decision Making is Informed

Everyone benefits when there is a shared understanding of how decision-making processes work within Local Government. Partnerships built on a good understanding and knowledge of Local Government roles and responsibilities will be in a strong position to engage with Local Government elected members and staff as well as the community.

Every four years, Local Governments are required to develop Strategic Community Plans (CSP) in line with the Integrated Planning and Reporting (IPR) framework overseen by the Department of Local Government and Communities. The plans purpose is to:

1. Establish the community's vision for the Local Government's future, including aspirations and service delivery expectations;

1. Drive the development of Local Government area/place/regional plans, resourcing and other informing strategies;

2. Drive and inform all other Local Government planning.

Each plan covers a 10-year timeframe and is developed in consultation with the community through various methods of engagement and participation. Early Years Networks can be involved in this process and work with the community and their Local Government to inform and help set future community priorities.

By doing this, Early Years Networks will develop:

- A greater understanding of the communities involved, including how they see themselves in the future and what they see as priorities for families with young children.
- Develop a better understanding of what the community identifies as their strengths and weaknesses and strategies for addressing community needs.
- Shape the focus of Early Years Networks efforts into the future.

Local Governments have to review their strategic community plans and engage with the community at regular intervals. The reviews are an important Local Government decision making process.

Reviews of Strategic Community Plans by each Local Government are required to be completed by June 30 2017. Consequently, now is the time for Early Years Networks to have input into the review of these plans.

In addition to the IPR process, Local Governments have other corporate and community plans that provide information on council priorities and activities. Early Years Networks can contact their Local Government or access the Local Government's website for more information. The plans may include age friendly, children, family and youth, healthy lifestyles, disability access and inclusion and community infrastructure plans. Local Governments may seek consultation and feedback on the plans and this also presents opportunities for Early Years Networks and Local Governments to partner together.

Some Local Governments also have Early Years Strategies. Examples of these can be found by clicking on the links below.

The City of Armadale
Children and Families Strategy

The City of Kwinana
Children Family and Youth Policy

The City of Wanneroo
Early Childhood Strategy

The City of Mandurah
Early Years Strategy

Working in Partnership Resource

3. The Value of the Australian Early Development Census (AEDC)

The Australian Early Development Census (AEDC) provides key data that can assist Local Government in demonstrating evidence to support their long term priorities. When used alongside other community data, knowledge and research the AEDC can also inform their planning and strategic direction.

The AEDC is a population measure of young children's health and development in communities across Australia.

Teachers complete the Early Development Instrument for children enrolled in their first year of full-time school (average age is five years). As a population measure, the results are reported at the group level based on an AEDC community (equivalent to a local government area) and local community (equivalent to a suburb or town) where the child lives.

The primary output of the results is through on-line community maps and profiles of early childhood development measured against five key areas:

- physical health and wellbeing,
- social competence,
- emotional maturity,
- language and cognitive skills,
- communication skills and general knowledge.

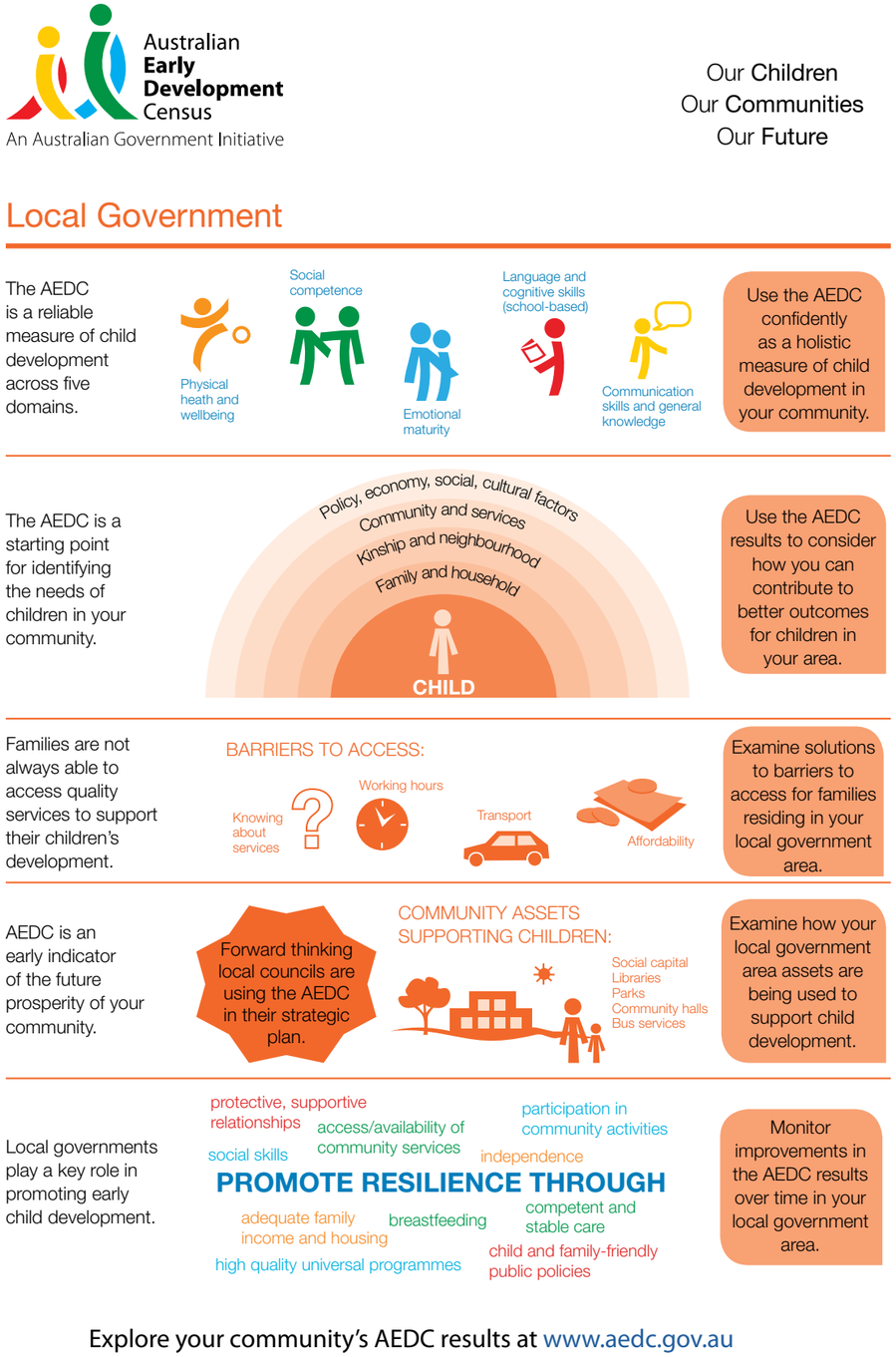
These areas are closely linked to the predictors of good adult health, education and social outcomes.

The AEDC results allow communities to see how local children are doing compared to other children in their community, and across Australia. The information can be used to understand what is working well in the community. It can also highlight what needs to be improved or developed to provide children with safe and nurturing learning environments where they can thrive.

Under the *Integrated Planning and Reporting Framework and Guidelines*, it is recommended Local Government outline their long-term priorities supported by community input, performance data, demographic information and an outline of the social issues.

For further information please click here to access the Local Government User Guide on how to respond to the AEDC data or contact Gail Clark, WA AEDC Coordinator via gail.clark@education.wa.edu.au

Using the AEDC



Explore your community's AEDC results at www.aedc.gov.au

4. Collaborating with Public Libraries

Public libraries are community assets in each Local Government area throughout the State. Libraries are making a significant contribution to supporting the development of literate communities, and can serve as important partners in raising awareness of the important role played by parents and caregivers in a child's early literacy development and learning.

Early Years Networks can collaborate with and involve their local library in their network and activities through initiatives such as the Better Beginnings Family Literacy Program that promotes a whole of community approach to family literacy.

The State Library of Western Australia provides resources and ideas for parents and early years practitioners wanting to engage in quality early literacy activities in the home as well as in early years and community settings. All WA practitioners involved with the early years are welcome to create a login for the Better Beginnings website's Practitioner's Portal to gain access to the full range of resources available.

Partnership between local libraries, incorporating the Better Beginnings resources, Early Years Networks and Local Governments can be a powerful tool for improving outcomes for children in local communities. Contact your local library about how they can contribute to the goals of your Early Years Network for children and their families in your community.

"When we dream alone, it's just a dream. But when we dream together, it's the beginning of reality."
Brazilian proverb

Engaging with Multiple Local Governments

Depending on the project and the geographical area represented, Early Years Networks and Local Governments often partner across jurisdictions. An initiative that can be rolled out across multiple locations may require liaison or buy-in from several Local Governments and multiple Early Years Networks. Local Governments in regional areas often work collaboratively through a regional group. For example, the Pilbara Regional Council represents the five Local Governments in the Pilbara to deliver better outcomes for the community and visitors to the region.

Early Years Networks should identify whether a regional organisation or similar already exists, as this may provide a forum for collaborating with multiple Local Governments on projects that may deliver regional benefits.

If your project could be applied across Early Years Networks, it may also be beneficial to contact the Western Australia Council of Social Service (WACOSS), Connecting Early Years Network Support Project to begin your initial enquiries.

Contact Us

Western Australian Council of Social Service
Connecting Early Years Networks Support Project

Telephone: (08) 9420 7222
Freecall: 1300 658 816
Fax: (08) 9486 7966
Email: eyn@wacoss.org.au
CEYNP Portal
EYN Resource Kit

Department of Local Government and Communities
Centre for Parenting Excellence

Telephone: (08) 6552 1453
Email: info@dlgc.wa.gov.au
Website: www.dlgc.wa.gov.au

State Library of Western Australia.
Better Beginnings Family Literacy Program

Telephone: (08) 9427 3130
Freecall: 1800 198 107 (Country only)
Email: better.beginnings@slwa.wa.gov.au
Website: www.better-beginnings.com.au

Western Australian Local Government Authority

Tel: (08) 9213 2000
Fax: (08) 9213 2077
Email: info@walga.asn.au

Working in Partnership Resource

Stories from the field: Early Years Networks and Local Governments Working Together

Zig Zag Early Years Partnership (ZZEYP) and Shire of Kalamunda

In 2015 an AEDC presentation was made by Local Government staff to all councillors which generated considerable impact. In 2016 ZZEYP felt that greater support was required for the group and the CEO attended a meeting, the main purpose of which was to discuss the possibility of employing an Early Years Coordinator. The ZZEYP presented a case for greater Local Government staff involvement. The CEO stressed the need for the group to prepare rigorous strategic planning which could then be applied to the local government's systematic budget process. With the cooperation of well-experienced ZZEYP members and Shire staff, this process was undertaken. In late 2016 the Youth Officer was given the additional role of Early Years Coordinator for seven hours per week. The group then finalised its Strategic Plan and the ZZEYP continues to benefit from the support of the Youth Officer in coordinating the early years services within the community whilst working alongside residents.

Activities and events for 2017 are in the process of being planned and the group now has the benefit of secretariat support, free rent of a facility to conduct meetings, training and assistance with planning events that promote positive parent/child interactions. 2017 sees ZZEYP well placed to be active within the local community resulting in young children and their families being supported to reach their potential.

Warren Blackwood Early Years Network and Shire of Manjimup

In May 2009, a presentation of the AEDC data for the Bridgetown and Manjimup areas was provided to service providers and community members, outlining developmental vulnerability across all domains of the AEDC for the children in the Manjimup area.

At the initial meeting there was consensus to:

1. Set up a formalised Network across the four Shires of Bridgetown/ Greenbushes, Boyup Brook, Manjimup and Nannup;
2. Develop Terms of Reference using Rockingham and Bunbury Early Years Network's information as a guide;
3. Invite Department of Child Protection staff from Katanning or Albany;

The Shire of Manjimup has been a key stakeholder and driver of the WBEYN since its inception. The early years sits within the Community Development Department and is an assigned portfolio. There are several factors that have made the early years a priority for the Shire including:

1. Industry Changes within the Shire of Manjimup

The Shire of Manjimup has needed to develop new industries and assist in the transition from the area having a strong timber industry to growing and strengthening the horticultural, agricultural and tourism industry sectors. This has seen the Shire need to not only retain the population in the current four towns of Manjimup, Pemberton, Northcliffe and Walpole but also encourage new families to move to the area.

2. Low AEDC scores

The AEDC helps measure how a community is performing and how well its young citizens are progressing to their full potential. The Network was aware that evidence shows that it is far better to intervene early to prevent problems from occurring, or escalating, than to try to address them once they have become entrenched.

3. Low SEIFA scores

The SEIFA scores for the area have continued to decline since the 2001 census and the range of the SEIFA score has also increased showing increasing inequity within the community. The Shire is continually working with the community to improve education outcomes and seeking opportunities to enhance employment opportunities. The needs of the disadvantaged and at risk are now an identified unmet need within the Warren District. There has also been an identified increase in the number of children who have behavioural issues at schools.

4. Passion of the Community Development Team

Key staff who have worked within the Shire for over 20 years saw the need for more support in the early years. As well as being part of the Early Years Network, staff chair with the Education Visions Committee in Manjimup which comprises Principles of Manjimup Schools, Health Department staff lead agencies and community representatives.

The benefits of the Local Government working in partnership with the Warren-Blackwood Early Years Network have been;

1. Secretariat support to the Network
2. Provision of meeting place
3. Provision of promotion for activities
4. Assistance from the Shire to host activities
5. Free printing of brochures/posters/ flyers
6. Members with designated time to devote to the Network and the development of its activities
7. Free transport to trainings/expos/workshops
8. Development of an Early Childhood Strategy for the Shire of Manjimup
9. Assistance from the Shire to develop an Early Years Strategy for the Network
10. Donations for events hosted by WBEYN

Wanneroo and Surrounds Early Years Network (WASEY) and City of Wanneroo

The City of Wanneroo is recognised as the fastest growing Local Government in Western Australia. The City has a population of 198,689 with nearly 17% being children between the ages of 0-11yrs.

The City has committed to providing support to families and communities to ensure young children are given the best chance to learn, develop and achieve good mental and physical health. In order to achieve this, the City of Wanneroo developed their Early Childhood Strategy 2014 - 2016 to provide a framework to guide City actions.

In recognition that it takes 'a village to raise a child,' the City's Early Childhood Strategy recognises the need for collaboration and for actions to be community driven. As such City officers engaged with the Wanneroo and Surrounds Early Years Network (WASEY).

Working in Partnership Resource

WASEY is made up of service providers, parents, teachers, Child and Parent Centre representatives, Child and Adolescent Health nurses, Telethon Kids Institute, Joondalup Health Campus and early education and care staff.

The WASEY provided feedback and approved the City of Wanneroo's Early Childhood Strategy 2014 -2016 as well as the City's Early Childhood Policy. WASEY assisted with the launch of the strategy and additional members of the WASEY Network have created partnerships to achieve outcomes contained within it, such as the City's 'It's all About Play' program.

The City of Wanneroo is now evaluating their 2014 – 2016 Early Childhood Strategy and working on developing a new strategy to continue to guide the City into the future. WASEY's feedback and support of the draft strategy is valued and will be sought when the new strategy is available for public comment.

Rockingham Early Years Network and City of Rockingham

The City of Rockingham is a coastal, metropolitan Local Government with a population of 134,719. Of the 134,719, 16% of the population is made up of children aged 0-11years of age.

The City's Community Development team works closely with the community to identify and address the needs of the Rockingham community as part of the City's aspiration for a 'Strong Community'. One valued community group is the Rockingham Early Years Group (REYG). REYG is a networking group of early years' service providers and professionals.

The partnership between the City and REYG works well as each party contributes through either resources or professional 'specialists' guidance. The City and REYG partnership has created many outcomes for the community including:

- Teddy Bear's Picnic (TBP). TBP is an event created to connect early years' parents and carers to service providers as well as creating a platform to engage early years' parents, carers and service providers.
- Various parenting workshops some facilitated by high profile presenters such as Maggie Dent and Clark Wight.

The City is currently drafting a Children and Young People's Strategy where children 0-11yrs will be consulted and included. As part of the consultation phase of this strategy, REYG has been a vital conduit between the City and community (early years' parents and carers). All REYG members liaised with the City's appointed consultant to assist with the mapping of early years' services and a further four members were identified for a full in depth interview.

Information gathered through the consultation of early year's parents, carers and service providers has been consolidated and has been used to inform the draft strategy.

Armadale Early Years Network and City of Armadale

The City of Armadale has a population of 87,437 with children 0-11years making up nearly 19% of the total population. The Armadale community is comprised of large numbers of families with dependent children.

In 2005, the area received 'Communities for Children' funding to establish an early years network in order to support Armadale families and children. As a result, the Armadale Early Years Network (AEYN) was established. The AEYN is a professional networking group of representatives of early years' service providers.

In April 2010, the City of Armadale's Council endorsed their Children and Families Strategy 2010-2013. The strategy provided a broad framework to guide the City's efforts in engaging and supporting their children and families. The City took a place focussed and partnership approach to identify and create opportunities that optimise the development of children and support their families. As such, City officers engaged with members of the AEYN to assist in informing and endorsing the strategy. Partnerships were then forged through the network to ensure outcomes for the community.

In October 2015, The City commenced its largest community consultation initiative, 'Growing Armadale'. The information gathered during 'Growing Armadale' was used to inform the City's Strategic Community Plan 2016-2031. In recognition of the strong partnership between the City and AEYN, the AEYN was engaged during the consultation phase of the development of the Plan and asked to provide feedback on the draft prior to it being adopted by Council.

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The Council's Connecting Early Years Network Support Project has been supported by:

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Good Afternoon.

My name is Jenny Isbill and I am here today as part of the Toodyay Early Years Network. The Early Years is used to describe the years from 0-8. I have lived in Toodyay for over 20 years, and am the mother of two children, and a grandmother. I am also an Early Childhood Teacher.

The Department of Communities facilitated the formation of EYNs to support families and children 0-8 years old. EYNs have existed in WA since 2003, and there are over 50 active in the State today. I began the Toodyay EYN with the support of the people you see here today, and several others, in March of this year. The WA Council of Social Services assisted us to get the group started.

The Toodyay EYN has over a dozen members and is made up of a diverse range of people. Many are parents, many work directly with young children in Toodyay, and all share a common goal to support young children and their families. We may do this by guiding families to existing support services or when a need is identified, by accessing a speaker, event or workshop to answer the need. We welcome anyone who wishes to support the early years in our community.

Our EYN is unique to Toodyay. We look at the needs of young children and families in our community, and how to meet those needs in ways relevant to Toodyay.

Our first EYN event was a stall at the Toodyay Show where we chatted to families and provided information on what the Toodyay EYN does. Our next event will be an Infant Mental Health Workshop in March 2018. We hope to have many more such events with the support of our members and the Toodyay Shire.

I will hand over to my colleague Debra who will share our goal and vision for the Toodyay Early Years Network.

Debra's presentation - LG

Thank you Jenny

For the benefit of the new Councillors I am the Shire's Community Development Coordinator and I have worked for the Shire of Toodyay for almost 13 years.

I am passionate about my role at the Shire, developing this community and working with groups in a collaborative approach. The Early Years Network is no exception.

My other connections with the community are as Secretary for the School P & C, member of the Tidy Towns committee and I have close relationships with many other Stakeholders and community groups including all sporting groups.

My hardworking husband and I have 2 beautiful healthy children 16 and 25, both who attended TDHS and a Grandson on the way… next month. ☺

As Jenny mentioned, this group was formed in March this year. Jenny spent considerable time personally recruiting a wide group of professionals and parents who she believed could contribute positively to this important group in a shared approach.

Jenny easily convinced me that the Shire of Toodyay had an important role to play in this space, alongside Wheat belt health representatives, Occupational Therapist, Child Health Nurse, Child Care workers, Kindergarten Teacher, and parents passionate about the importance of the early years.

As mentioned, the Department of Communities facilitated interactive planning workshops to assist the group develop a Vision and Mission statement and action plans moving forward.

Our Vision is;

- In Toodyay, kids thrive because of our safe, inclusive, family friendly community.

Our Mission;

- Toodyay Early Years Network nurtures children and families to be happy, healthy and strong through building connections.

The Toodyay Early Years Network have generated a logo designed by a child from a drawing competition at school, developed a pamphlet, opened a Facebook page and produced a resources contact list for Toodyay families.

Local Government working together with Early Years Network can be powerful allies in creating environments that children in their early years can thrive through coordinated approaches to planning, delivery and review of services and support within local communities.

The benefits of effective partnerships between Local Government and Early Years Network flow on to communities, by improving access to streamlined support and services by encouraging community ownership and participation.

Early Years Networks and Local Government can make use of a range of options to work together including understanding each other's priorities, the social, economic and environmental conditions in the community and what services currently exist.

Clare is going to talk about the importance of the Early Years and the effects that stress in their lives can have on children.

Hi my name is Clare Withers. I am the Kindergarten Teacher at TDHS. I am also a (single) mum with 2 daughters. Prior to teaching, I had a 20 year career as a nurse.

I am passionate about the importance of Early Childhood Education. Hand in hand with this comes a deep caring about the social well being and development of all young children in our community.

Most of the students in Toodyay enjoy a happy and balanced childhood, however some children don't.....

- These are the children who are not supported enough by the system, or not supported in an effective manner.
- These are the children that start life at a disadvantage, some even in utero ;
- They suffer road blocks and hardships in their lives over which they have no control,
- They are wise to the world in ways that young children should never be

These children and the families of these children are those that I hope the Toodyay Early Years Network can have the greatest impact on.

In my 11 years of teaching at TDHS I have observed a quiet yet ever gradual shift in the very early years- in the school readiness of students.

When a child starts school they have many differing abilities, skills and experiences. This doesn't mean that they need to know how to read and write, it's more about social and adaptive behaviours. School readiness means that the students are ready for the demands of starting school. A couple of examples: *They can listen to and follow a simple request or an instruction from an adult, 'please sit on the mat.' Or 'its time to come inside' - without running away. They are toilet trained.*

The process of school readiness begins at home- it comes from structure, routine, good sleep patterns, healthy diet, exercise and positive parental expectations of their children. Unfortunately these basic needs are not always afforded to all students.

Studies have shown that:

Financial stress and poverty have been found to influence children's behaviour problems due to the effect on parent's emotional health, marital relationships and parenting practices.

In our community we have high pockets of family stressors.

- We have a high rate of FIFO families, with less home support for the mothers . Changing rules, changing family support structures... all this has. a massive flow on effect to the students.
- We have single parents doing it tough
- We have families experiencing financial stress.
- We have children living with their grandparents or other relations as their parents are unable to care for them.
- Some parents are isolated socially, and emotionally detached from their children. They may suffer from social and mental health difficulties and drug dependence.
- Some of these parents need constructive support from their friends and family.

- And sadly some parents are really lost and they don't know how to access any support.

I believe that the Toodyay Early Years Network is a very timely support for all parents of young children in Toodyay community. The TEYN can increase awareness and profile in the community of support services available for families with young children.

In my time at TDHS, I have experienced a change in parental engagement in their children's early years education. In the past, parents were falling over each other to provide help and support in the early years classrooms. One of my colleagues said he would have 2 or 3 parents in **every morning** to help with reading. Now he is grateful to see **the same Mum** once a week who takes time off from work to support her child's education.

Community views towards the value of education are shifting, and I believe that the high level of parental stress in the home is a contributing factor.

I, and many other people who work with young children, believe that play is one of the most important ways that children learn and interact with their world and events. Through play children learn to express emotions and release tension. The importance of play cannot be over emphasised as I witness an increase in anxiety and stress in my young students.

From an educational, social, emotional and health perspective, play is the best way for young children to be in touch with their world.

When I talk about games and play at school you would be correct to think of games such as chasey, making a tunnel in the sand pit or even playing 'cops'. When I talk to children about what games they play at home in the afternoon or after school, the response isn't always of a similar note.

Young children talk about PS2 and PS3 games, some as scary as Grand Theft Auto. It appears that in some cases more time is spent in front of screens than encouraging and developing the skill of play. Through the EYN I would love to provide opportunity to raise the profile of the importance of play to parents.

I would like to thank you for listening,

I am proud to be one of the founding members of our EYN and I am hopeful that that through Parent education and raising awareness of these issues, in a supportive and non-judgemental manner, parents will develop confidence in their parenting, and their capacity to provide a home environment that is supportive of optimal child development.

I would like to hand you over to my colleague Bree

School readiness

Family stress model proposes that

the effect of income on children's school readiness is through its impact on family relationships and interactions. For example financial stress and poverty have been found to influence children's behaviour problems due the effect on parent's emotional health, marital relationships and parenting practices.

Investment model

Children from low income family's children have fewer opportunities to develop skills due to the financial strain limits the parents ability to invest in a cognitively stimulating home environment, nutritious food and safer living environments

Adult education for

parents might be more likely to make a change in their parenting practices and actively seek alternatives for their children's entertainment.

Child Health Presentation

Bree Byfield

- Introduce self in my role as a child health nurse, 7 years as the CHN.
- Born and raised in Toodyay and moved back here
- I am the mum of two gorgeous energetic boys aged 7 & 4. The eldest attends TDHS and my 4 year old will start kind there next year. I am very active volunteer in the community with coordinating and coaching junior tennis, and coordinating in2cricket , T20 blast and Auskick while my husband coaches and I actively involved in our local P & C. I Love our town and wouldn't want to raise my family anywhere else.
- In Toodyay we have on average around 40 new births a year. In my role as a CHN I see a family from when bub is a few days old until when they start school. Through my role I connect families to our local Child development Team

    - A lot of people don't understand just how important the early years. By the age of 3 a child's brain has reached 90% of its adult size. Research shows us that brain sensitivity to language, numeracy, social skills and emotional control actually peak before the age of 4.Babies brains are like little sponges and that is why the early years lay the foundations for life.

    - Toodyay has playgroups which runs twice a week (community centre) & Montessori which is once a week, Kindergym is run every Friday at the sports pavilion and the Library runs story and rhyme time every Wednesday.

    - Over last 4 years in Toodyay I have noticed a big shift in the demographics of Toodyay with a lot more children being born into socially disadvantaged homes and involvement has increased with CPFS. These children are considered developmentally vulnerable and are not "school ready". We really need to look at new initiatives to engage these families, which is not just an issue in Toodyay but the whole of the Wheatbelt.

    - Teaching our parents how to be present with their children, engaging those hard to reach parents.

    - Encouraging movement and activity from a young age. With screen time increasing and movement in our children decreasing. We are now asked to do a Body Mass Index (BMI) at the 2 year old check to help combat our problem of obesity (25% of kids in Australia are obese or overweight).

    - **CLOSE:** At this point in time we would like to keep holding our once a month meetings at the Toodyay community centre.

    - We really value and appreciate having Debra on the Early Years Network. Strong communication is vital between the EYN and the Toodyay shire, so we would very much appreciate to have Debra's continued participation.

    - Thank councillors and community for their time and please feel free to ask any questions. Thankyou

Shire of Toodyay

COUNCIL FORUM PROGRAM

14 NOVEMBER 2017

1. DECLARATION OF OPENING

2. RECORD OF ATTENDANCE/APOLOGIES

3. DECLARATIONS OF INTEREST

4. PRESENTATIONS

4.1 Toodyay Early Years Network

Presenters as follows:

Jenny Isbill, Chairperson, Toodyay Early Years Network
Clare Withers, TDHS Kindergarten Teacher
Bree Byfield, Child Health Nurse
Debra Andrijich, Community Development Coordinator

5. PUBLIC QUESTIONS (relating to the contents of the program)

Questions can be made ad hoc, but it is preferred that notice be given by midday on the day of the Council Forum.

6. PUBLIC SUBMISSIONS (relating to the contents of the program)

A submission can be made ad hoc, but it is preferred that notice be given by midday on the day of the Council Forum.

7. AGENDA FORUM MATTERS

The Agenda Forum Matters listed below are attached.

8. CONCEPT FORUM MATTERS

The Concept Forum Matters listed below are provided to Council as a separate confidential attachment, indexed separately.

8.1 Budget Review

9. CHIEF EXECUTIVE OFFICER'S UPDATE

The CEO's Update is provided to Council as a separate confidential attachment, indexed separately.

10. CONFIDENTIAL MATTERS

10.1 Request to purchase part of the Recreation Precinct

10.2 Presentation (Information Briefing) – Integrated Planning and Reporting

10.3 Strategic Community Plan Review (Update)

11. SHIRE PRESIDENTS UPDATE

The Shire will provide a verbal update at the forum.

12. REPRESENTATIVE UPDATES

The Elected Members will provide a verbal update at the forum.

13. STATUS REPORT

13.1 Committee Meeting Status Report

There is no status report.

14. MEETING CLOSURE

AGENDA FORUM DISCUSSION PAPER

Date of Report:	7 November 2017
Name of Applicant / Proponent/s:	National Trust
File Reference No.:	HER2
Author:	G Bissett – Manager of Planning and Development
Responsible Officer:	G Bissett – Manager of Planning and Development
Previously Before Council:	Forum May 9, 2017
Nature of Council's Role in the matter:	Executive
Attachments:	1. National Trust Proposal; 2. Application Form; and 3. Heritage Appeal Process Chart.

7.1 Heritage Appeal for Toodyay

PURPOSE OF THE DISCUSSION PAPER

To consider the concept of engaging the National Trust to run a Heritage Appeal of its behalf to raise funds for heritage works in Toodyay.

BACKGROUND

Council was advised of the concept of Heritage appeals and the offer from the National Trust to assist us with setting one up in Toodyay at the May 2017 Council Forum.

This involves an opportunity for Council to be involved in raising funds through a tax deductable fund setup and managed by the Trust. The funds collected are put aside for the specific use of Toodyay for Heritage purposes.

The Trust have done some further work on how this could work in Toodyay and have provided a proposal with an application for the Shire to consider (**Attachment 1 and 2**).

A copy of the Heritage Appeal process chart has also been included (**Attachment 3**).

CONSULTATION IMPLICATIONS

There are no adverse consultation implications envisaged from this report.

STRATEGIC IMPLICATIONS

A key point of the *Shire's Strategic Community Plan and Corporate Business Plan* is to ensure "*continued maintenance and renewal of asset base".*

The pursuit of funding through this program will assist in regards to Heritage Buildings.

POLICY IMPLICATIONS

There are no adverse financial implications envisaged from this report.

LEGAL AND STATUTORY IMPLICATIONS

There are no adverse legal or statutory implications envisaged from this report.

RISK IMPLICATIONS

There are no adverse risk implications envisaged from this report.

SOCIAL IMPLICATIONS

There are no adverse social implications envisaged from this report.

ENVIRONMENTAL IMPLICATIONS

There are no adverse environmental implications envisaged from this report.

ECONOMIC IMPLICATIONS

The only costs involved apart from some Officer time, is how much Council is prepared to spend to promote any Appeal and the cost of Corporate Membership to the National Trust. This could include promotion on the web, locally, state-wide and through appropriate publications. If Council decides to proceed a proposal will be brought to an Ordinary Council Meeting for consideration.

Given Toodyay is committed to Heritage, has a number of National Trust premises and will be working closely with the Trust into the future, becoming a corporate member of the Trust is not unreasonable. The financial commitment of a few hundred dollars for the potential return is worth the investment and the positives with association to the Trust.

OFFICER COMMENT / DETAILS

Council's further guidance is sought on this proposal. The initial feedback was members were happy for officers to pursue this further and bring something back to Council. This is now a firm proposal for Council to consider.

OFFICER'S RECOMMENDATION

That the application for establishing a heritage appeal in Toodyay be brought back to the November 2017 Ordinary Council Meeting for a formal decision.

NATIONAL TRUST OF WESTERN AUSTRALIA

PROPOSED SHIRE OF TOODYAY HERITAGE APPEAL OUTLINE

Proposal

The National Trust of Western Australia has the ability to establish tax deductible appeals for heritage projects. These appeals typically are used for an individual place or project; however in this instance, it is proposed to establish an appeal for projects located within the Shire of Toodyay for places or projects under the responsibility of the Shire. Each proposed project will be assessed in conjunction with the National Trust on a case by case basis. This allows flexibility for the Shire to prioritise heritage projects within their local government area. It also allows the National Trust to form a positive relationship with a local government authority which has the potential to be rolled out on a state-wide basis.

Conditions

All projects considered for funding by the appeal will be determined by the Shire in conjunction with the National Trust.

All projects must be supported by documentation (e.g. Conservation Management Plan, Scope of Works, Interpretation Plan etc.); the appeal may fund this documentation.

All fundraising for the appeal is the responsibility of the Shire; the National Trust's requirements for the collection of donations must be adhered to.

Promotion of the appeal will be undertaken by both organisations; any promotional material developed by the Shire using the National Trust's name or logo must be approved by the Trust prior to distribution.

All other standard conditions for National Trust heritage appeals must be understood and agreed to by the Shire of Toodyay.

National Trust
WESTERN AUSTRALIA

ESTABLISHMENT OF HERITAGE APPEAL

To be completed with the Heritage Appeal Representative

NAME OF HERITAGE APPEAL
SHIRE OF TOODYAY HERITAGE APPEAL

PURPOSE OF APPEAL
This appeal aims to support the Shire of Toodyay's heritage including conservation and interpretation projects. Projects will be determined by the Shire and its heritage specialist in consultation with the National Trust. Identified projects will have relevant supporting documentation and supervised by the Shire's heritage specialist.

APPEAL REPRESENTATIVE DETAILS
Name of organisation: Shire of Toodyay **Contact person (name, title):** Graeme Bissett, Manager of Planning and Development **Address:** Shire of Toodyay, PO Box 96, TOODYAY WA 6566 **Phone:** 9574 9340 **Email:** mpd@toodyay.wa.gov.au
Is the applying organisation incorporated? **No** ☐ **Yes** ☐
Is the applying organisation a member of the National Trust? All organisations are required to be a member of the National Trust. **Existing member** ☐ **New member** ☑

PLACE DETAILS (if applicable)
Name (if applicable) and address of the heritage place: **Name:** Shire of Toodyay **Address:** PO Box 96, TOODYAY WA 6566

Is the place included on any statutory or non-statutory heritage list?

Classified by the National Trust ☑ *Toodyay is Classified a Historic Town*

Municipal Heritage Inventory/Heritage List ☐

State Register of Heritage Places ☐

Register of the National Estate ☐

Other **Projects identified for the appeal should be heritage listed

Is the place owned by the Appeal Representative? If not, have approval been provided by the owner?

**Projects identified for the appeal should be owned by the Shire

PROJECT DETAILS

Who is the Project Coordinator/Heritage Specialist and what are their qualifications relevant to this project?

Name: Stephen Carrick

Company: Stephen Carrick Architects

Address: PO Box 578, Scarborough 6922

Phone: 0457 309 201

Email: stephen@stephencarrickarchitects.com.au

Qualifications: Stephen Carrick is a registered architect with over twenty five years experience in the conservation and management of heritage sites

Have any supporting or planning documents for the place been prepared? If yes, please provide details. ***Please Note: If plans are not yet available, these should be the first component to be completed as part of any conservation project.***

No ☐ **Yes** ☐

Details:

**Projects identified for the appeal should be supported by relevant documentation; development of these documents may also be funded by the appeal.

APPEAL CONDITIONS

For agreement of the Appeal Representative

All activities will be approved by the Project coordinator (National Trust or third party).

Activities consistent with the Objectives of the *National Trust of Western Australia Act 1964.*

The organisation for whom the appeal is being conducted will ensure that all work is undertaken with appropriate indemnities, insurance, warranties and inspections.

Contractors performing work or providing services will be paid directly by the National Trust. Creditor invoices for payment must be addressed to the National Trust of Australia (WA) and be endorsed for payment by the Project Coordinator and Appeal Representative, prior to the National Trust processing invoices for payment. For payments to the Project Coordinator/Heritage Specialist from the appeal, endorsement by the Appeal Representative is required.
The Appeal Representative is responsible for ensuring all planning and building approvals are obtained prior to works commencing.
The National Trust is not responsible for any outstanding costs which exceed the funds in the heritage appeal. All additional costs are the responsibility of the Appeal Representative.
The organisation for whom the appeal is being conducted will retain ownership or title to any assets, improvements or works undertaken under auspices of the appeal.
All persons collecting funds or responsible for collection, will be an appointed as a Collector of Public Monies (forms provided and approved by the National Trust). All duties and responsibilities are documented.
The organisation for whom the appeal is being conducted is a member of the National Trust.
There is no individual or personal benefit from the appeal on the part of any donors.
A receipt will be issued for all monies collected. Funds will be deposited directly into the National Trust of Australia (WA)'s bank account.
The National Trust will retain any interest earned on appeal account balances to assist in the administration of the appeal.
Any promotional material produced by the Appeal Representatives should be referred to the National Trust prior to circulation.

By signing this form, the Appeal Representative understands and agrees to all above conditions on behalf of the applicant organisation.

APPEAL REPRESENTATIVE

Name: _____

Signature: _____

Date: _____

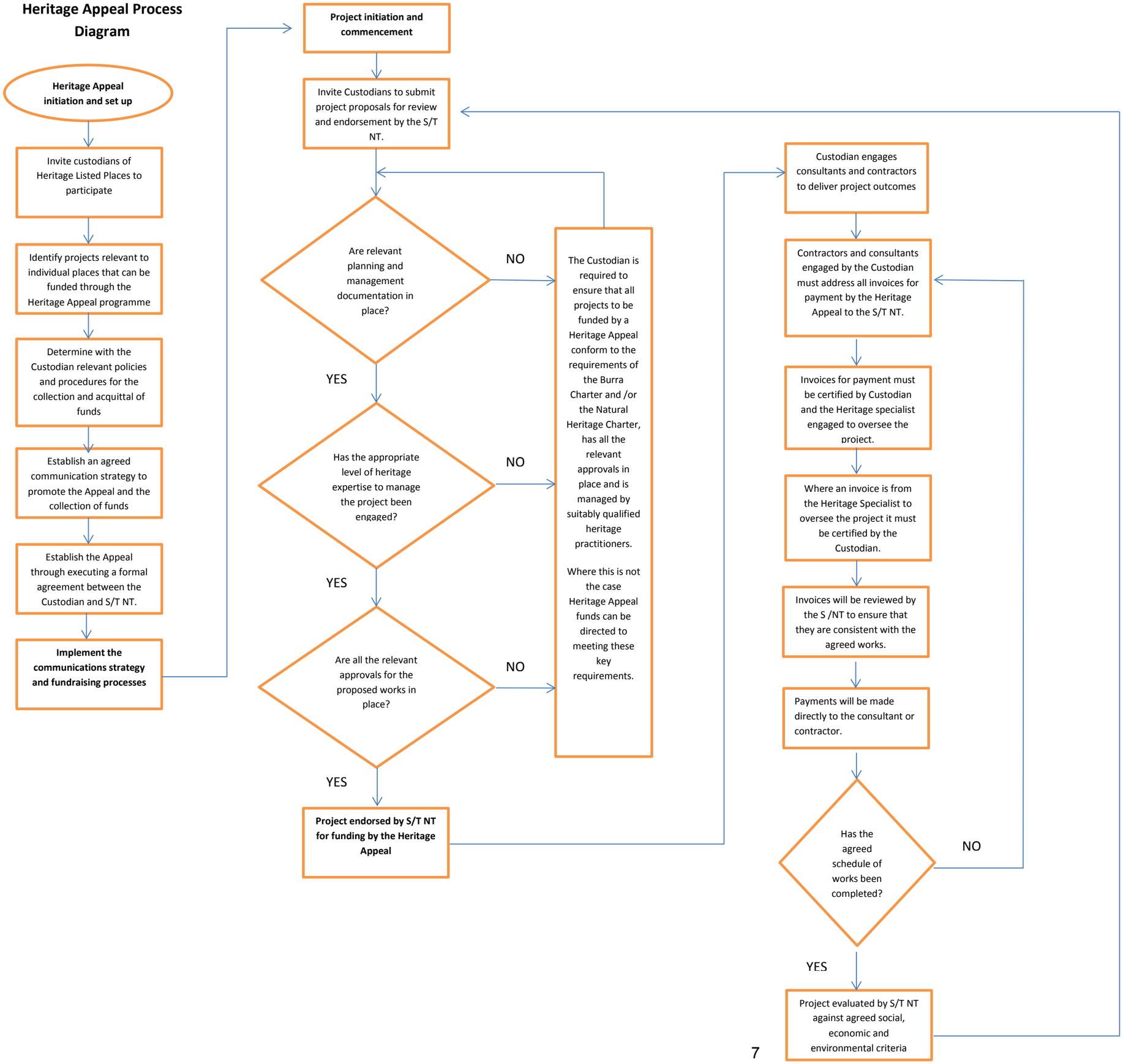
NATIONAL TRUST

Project Officer (if applicable): _____

Coordinator Heritage Services: _____

Executive/Council: Approved Not approved Date: _____

Heritage Appeal Process Diagram



AGENDA FORUM DISCUSSION PAPER

Date of Report:	7 November 2017
Name of Applicant / Proponent/s:	Department of Planning
File Reference No.:	PLA1
Author:	H. de Vos – Planning Officer
Responsible Officer:	G. Bissett – Manager Planning and Development
Previously Before Council:	Nil
Nature of Council's Role in the matter:	Executive
Attachments:	1. DRAFT SPP 5.4 – Road and Rail Noise; 2. DRAFT SPP 5.4 – Policy Implementation Guidelines; 3. DRAFT SPP 5.4 – F.A.Q.s; 4. MAP - DRAFT SPP 5.4 Impact of 300m buffers on Toodyay - Extended view; 5. MAP - - DRAFT SPP 5.4 Impact of 300m buffers on Toodyay Townsite; and 6. Table 1 – Transport Corridor Classification and trigger distances.

7.2 DRAFT STATE PLANNING POLICY 5.4 – ROAD AND RAIL NOISE

PURPOSE OF THE DISCUSSION PAPER

Council is requested to review the proposed changes to the State Government's DRAFT *State Planning Policy 5.4 – Road and Rail Noise* and the associated Implementation Guidelines to provide guidance to assist with the preparation of a formal submission from the Shire of Toodyay. This report is to introduce Council members to the draft policy.

BACKGROUND

The Western Australian Planning Commission (WAPC) is seeking public comment on proposed changes to State Planning Policy 5.4 Road and Rail Noise and associated guidelines.

A key objective of SPP 5.4 is to minimise the impact of road and rail noise on noise-sensitive land uses; and protect the State's key transport corridors. The current policy was gazetted in 2009.

The draft policy, its associated implementation guidelines and answers to some frequently asked questions can be viewed in **Attachments 1-3**.

One of the most significant changes proposed is the increase in buffer sizes, A summary of the key points can be found in part 4 of the FAQ in **Attachment 3**.

The public comment period closes on 15 December 2017.

CONSULTATION IMPLICATIONS

No consultation is required.

STRATEGIC IMPLICATIONS

There are no adverse strategic implications envisaged from this report**.**

POLICY IMPLICATIONS

The Policy applies to the preparation and assessment of planning instruments, including region and local planning schemes; planning strategies, structure plans; subdivision and development proposals in Western Australia, where there is proposed:

a) noise-sensitive land use within the Policy's trigger distance of a transport corridor as specified in Table 1 (**Attachment 6**);

b) new or major upgrades of existing primary and secondary roads; or

c) new railways or upgrades of existing railways or any other works that increase capacity for rail vehicle storage or movement.

The Shire of Toodyay has a number of Primary Regional Roads within its boundary and the town site is bisected by the main east-west freight railway.

As a result of this, much of the Shire and in particular the main areas of potential development concentration such as the Toodyay Town site, West Toodyay, and Dumbarton are all likely to be impacted through the proposed 300m buffers.

Maps demonstrating the extent of this impact can be viewed as Attachments 4 and 5. For further viewing for specific areas and associated impacts in the Shire please follow this link and bring up the State Planning Policies layer:

https://espatial.planning.wa.gov.au/mapviewer/Index.html?viewer=planwa

However, the policy also provides the following exemptions:

4.3 Policy exemptions

The Policy does not apply:

a) retrospectively to noise from existing railways or roads to an existing noise-sensitive land use and/or development within the Policy's trigger distance;

b) to subdivision/development proposals that do not result in intensification of land-use, that is, boundary alignments;

c) to increases in road and rail traffic/noise in the absence of physical construction works, however infrastructure providers are encouraged to continuously enhance assets to reduce noise levels;

d) upgrades of existing or new major road and railway construction proposals in existing reserves generally do not require planning approval, however transport infrastructure providers are expected to carry out these works in a manner that is consistent with the Policy;

e) road works such as routine maintenance, re-sealing, minor changes in alignment or minor changes required for safety reasons, unless such works would result in a significant increase in road transport noise levels;

f) for single houses which are exempt under the deemed provisions of the *Planning and Development (Local Planning schemes) Regulations 2015*. However landowners/proponents are strongly encouraged to consider the incorporation of the Guidelines quiet house design requirements to mitigate the impacts of transport noise;

g) fixed sources of noise such as, but not limited to, horns, warning bells and sirens, safety warning devices installed on road or rail vehicles or any noise produced during the actual construction of new road and rail infrastructure, are governed by the *Environmental Protection (Noise) Regulations 1997*;

h) to aircraft or watercraft transport noise; and

i) to ground-borne vibration.

FINANCIAL IMPLICATIONS

Should any development not meet the parameters for exemptions there are likely to be increased development costs in order to incorporate Quiet House Design Treatments into the design and construction.

Some research has been undertaken and the following indicative costs have been determined:

Additional Build Costs (Based on the average cost of a standard three bedroom, single storey dwelling - $178,480).

Package A: $910.00 or 0.5%

Package B: $2,990.00 or 1.7%

Package C: $6,530.00 or 3.7%

LEGAL AND STATUTORY IMPLICATIONS

There are no adverse legal nor statutory implications envisaged from this report.

RISK IMPLICATIONS

There are no adverse risk implications envisaged from this report.

SOCIAL IMPLICATIONS

There are no adverse social implications envisaged from this report.

ENVIRONMENTAL IMPLICATIONS

There are no adverse environmental implications envisaged from this report.

ECONOMIC IMPLICATIONS

There are no adverse economic implications envisaged from this report.

OFFICER COMMENT

This matter will be brought back to the December 2017 Council Forum with a draft response incorporating Council notes from this item for members to consider. The main impacts of this proposal will involve new land releases within the proposed buffer area and is not retrospective.

Members are invited to submit any feedback they have directly to the Manager of Planning and Development via email at mpd@toodyay.wa.gov.au. This item is to give members time to consider the proposal before coming back to another Council Forum.

Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

Draft
State Planning Policy 5.4
Road and Rail Noise

September 2017

Prepared under Part Three of the Planning and Development Act 2005 by the Western Australian Planning Commission

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CONTENTS

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1 CITATION

This is a State Planning Policy prepared under Part Three of the *Planning and Development Act 2005*. It may be cited as *State Planning Policy No. 5.4 Road and Rail Noise* (the Policy).

2 POLICY INTENT

The purpose of the Policy is to minimise the adverse impact of road and rail noise on noise-sensitive land use and/or development within the specified trigger distance of major transport corridors. The Policy also seeks to protect the functionality of the State's transport corridors by protecting them from encroaching incompatible development.

The Policy should be read in conjunction with the *State Planning Policy 5.4 Road and Rail Noise - Implementation Guidelines (the Guidelines);* and is supported by State Government mapping which specifies the State's major road and railway corridors and the Policy's trigger distances which can be viewed at www.dplh.wa.gov.au.

3 BACKGROUND

Road and rail transport corridors play a vital role in moving people and goods safely and efficiently around the State and provide wide-ranging economic and social benefits to the community. However, road and rail noise can have an adverse impact on human health and the amenity of nearby communities, so it is important that it is carefully considered in land use planning and development.

Urban consolidation is placing increasing development pressure on land near busy transport corridors. The Policy ensures acceptable levels of acoustic amenity can be achieved through appropriate interface management when noise-sensitive land use and/or development is located in areas impacted by road and rail noise.

4 POLICY APPLICATION

4.1 When and where it applies

The Policy applies to the preparation and assessment of planning instruments, including region and local planning schemes; planning strategies, structure plans; subdivision and development proposals in Western Australia, where there is proposed:

a) noise-sensitive land use within the Policy's trigger distance of a transport corridor as specified in Table 1;

b) new or major upgrades of existing primary and secondary roads; or

c) new railways or upgrades of existing railways or any other works that increase capacity for rail vehicle storage or movement.

Table 1:
Transport corridor classification and trigger distances

Transport corridor classification	Trigger distance	Distance measured from
Primary Roads		
State Roads (freeways/highways/primary distributors) Primary Regional Roads (red roads under region schemes) Freight roads (Perth and Peel regions) Regional freight roads	300 metres	Road carriageway edge
Secondary Roads		
Other Regional Roads (blue roads under region schemes) District Distributor A	200 metres	Road carriageway edge
Passenger railways		
	60 metres	Centreline of the closest track
Freight railways		
	300 metres	Centreline of the closest track

4.1.1 Noise-sensitive land use and/or development

This is generally determined by land uses or development as zoned by a local planning scheme or structure plan that is occupied or designed for occupation or use for residential purposes (including dwellings, residential buildings or short-stay accommodation), caravan-park, camping ground, educational establishment, child care premises, hospital, nursing home, corrective institution or place of worship.

4.1.2 Roads

Major roads are identified in appendix 9 of the Guidelines and the Department's map viewer.

A major upgrade of an existing road involves:

a) physical construction works designed to facilitate an increase in traffic-carrying capacity (such as carriageway duplication or the addition of a traffic lane);

a) substantial change in the alignment that moves the asset closer to existing noise sensitive land use; or

b) modifications which may improve road capacity, performance or function, such as an intersection expansion, grade separation or the like.

4.1.3 Railways

Passenger and freight railways are identified in appendix 9 of the Guidelines and the Department's public mapping viewer.

An upgrade of a railway means:

a) a proposed realignment, either inside or outside the existing corridor;

b) a rail track duplication; or

c) works such as the installation of switches / turnouts, signalling systems, spurs or passing loops, the modification to the track support structure, crossovers, refuges, relief lines, straightening of curves, or re-sleepering.

4.2 Planning horizon

The application of the Policy should consider future development and associated increases in traffic anticipated for the next 20 years. This includes any transport corridor proposals where there is sufficient certainty regarding the corridor's alignment and function.

4.3 Policy exemptions

The Policy does not apply:

a) retrospectively to noise from existing railways or roads to an existing noise-sensitive land use and/or development within the Policy's trigger distance;

b) to subdivision/development proposals that do not result in intensification of land-use, that is, boundary alignments;

c) to increases in road and rail traffic/noise in the absence of physical construction works, however infrastructure providers are encouraged to continuously enhance assets to reduce noise levels;

d) upgrades of existing or new major road and railway construction proposals in existing reserves generally do not require planning approval, however transport infrastructure providers are expected to carry out these works in a manner that is consistent with the Policy;

e) road works such as routine maintenance, re-sealing, minor changes in alignment or minor changes required for safety reasons, unless such works would result in a significant increase in road transport noise levels;

f) for single houses which are exempt under the deemed provisions of the *Planning and Development (Local Planning schemes) Regulations 2015*. However landowners/proponents are strongly encouraged to consider the incorporation of the Guidelines quiet house design requirements to mitigate the impacts of transport noise;

g) fixed sources of noise such as, but not limited to, horns, warning bells and sirens, safety warning devices installed on road or rail vehicles or any noise produced during the actual construction of new road and rail infrastructure, are governed by the *Environmental Protection (Noise) Regulations 1997*;

h) to aircraft or watercraft transport noise; and

i) to ground-borne vibration.

5 POLICY OBJECTIVES

The objectives of the Policy are to:

a) protect the community from unreasonable levels of transport noise;

b) protect major transport corridors from incompatible urban encroachment;

c) ensure that noise impacts are addressed as early as possible in the planning process; and

d) encourage best practice noise mitigation design and construction standards for noise-sensitive land use and/or development and/or major road or railway proposals.

6 POLICY MEASURES

The planning process should apply the precautionary principle of avoidance where there is risk of future land use conflict.

Where it is unavoidable to place a proposed noise-sensitive land use and/or development to which the Policy applies, it will be necessary to demonstrate that the noise impact on the proposed noise-sensitive land use and/or development can be adequately mitigated to meet the Policy's Noise criteria.

6.1 Noise criteria

Table 2 sets out the Noise criteria that are to be achieved by proposals to which the Policy applies using the A-weighted average sound level L_{Aeq} metric.

Table 2:
Noise Criteria

Proposals	New/upgrade	Noise Criteria[1]			Where outdoor criteria must be met
		Outdoor		Indoor	
		Day (LAeq(Day) dB) (6 am–10 pm)	Night (LAeq(Night) dB) (10 pm–6 am)	(LAeq(Day) or LAeq(Night) dB)	
Noise sensitive land use and/or development	New noise sensitive land use and/or development within the trigger distance of an existing/proposed transport corridor	55	50	40 (living and work areas) 35 (bedrooms) Refer to Note 2	Outdoor all floors
Roads	New	55	50	NA	Outdoor first two floors (more if practicable)
	Upgrade	60[3]	55[3]	NA	
Railways	New	55	50	NA	
	Upgrade	60[3]	55[3]	NA	

Notes:

1. The Noise Criteria set out above apply to the emission of road and rail noise as received at a noise-sensitive land use and/or development. These criteria apply at the following locations:

   a) for new noise-sensitive land use and/or development proposals, to be measured at one metre from the most exposed, habitable façade of the proposed building, at indoor and outdoor (all floors). If mitigation is not reasonable and/or practicable, then at least one outdoor living area for each dwelling or multiple dwelling development; or

   b) for new or upgrade road or rail infrastructure proposals, to be measured at one metre from the most exposed, habitable façade of the building, at the first two floors (i.e. ground and first floor) and other floors where practicable, is encouraged.

   The most exposed habitable façade of a building is that which has the greatest exposure to the noise-source. A habitable room has the same meaning as defined in the National Construction Code. For a residential dwelling, this is any room other than a garage, storage area, bathroom, laundry, toilet or pantry.

2. For all other non-residential noise-sensitive land use and/or development, acceptable indoor noise levels are to meet the recommended design sound levels in Table 1 of *Australian Standard/New Zealand Standard AS/NZS 2107:2000 Acoustics — Recommended design sound levels and reverberation times for building interiors (as amended)*.

3. The 5dB difference in the criteria between new and upgrade infrastructure proposals acknowledges the challenges in achieving noise level reduction where existing infrastructure is surrounded by existing noise-sensitive development.

6.2 Noise Exposure Forecast

When it is determined that the Policy applies to a planning proposal as outlined in Section 4, a preliminary assessment using Table 2: Noise Exposure Forecast in the Guidelines is encouraged to determine the likely noise impacts on noise-sensitive land use and/or development within the trigger distance of a specified transport corridor. Completion of a Noise Exposure Forecast Worksheet may minimise the need for a site specific assessment as part of a Noise Management Plan.

Depending on the outcomes of the noise exposure forecast assessment, the forecast noise level will identify if:

- no further measure is required;
- noise-sensitive land use and/development is acceptable subject to mitigation measures;
- noise-sensitive land use and/development is not recommended; or
- noise-sensitive land use and/development is strongly discouraged.

6.3 Noise Level Contour Map

Where it is determined that noise impacts on noise-sensitive land use and/or development within the trigger distance of Table 1 is likely, then a Noise Level Contour Map can be used to inform planning proposals on the likely impacts of transport noise upon the subject site. The map illustrates the likely noise levels and associated noise exposure categories and can be prepared using the noise level information contained within the Noise Exposure Forecast Table or prepared using site-specific noise level information provided by a suitably qualified acoustic consultant/engineer.

If the Noise Level Contour Map identifies that no part of the site is estimated to be affected by noise levels above the criteria, no further measures are required.

6.4 Noise Management Plan

Preparation of a Noise Management Plan is required early in the planning process to determine actual noise levels across the subject site and demonstrate that the proposal can adequately mitigate the noise impacts through use of noise attenuation measures. Noise Management Plans are required where:

a) a Noise Level Contour Map identifies that part of the site that is noise- sensitive is estimated to be affected by noise levels above the criteria in Table 2 and where it is unavoidable to propose new or additional noise-sensitive development on any part of the site estimated to be affected by noise levels above the criteria;

b) all practicable steps to avoid or minimise transport noise have been taken but the outdoor noise levels are predicted or measured to exceed the Policy's noise criteria, specific noise mitigation measures should be considered in accordance with any Noise Management Plan;

c) a new noise-sensitive land use and/or development is located adjacent to a specified primary road or railway identified in the Policy's mapping, which is not yet planned for construction but is anticipated within the Policy's planning horizon; and

d) a new or major upgrade of a primary road or railway construction proposal is located adjacent to undeveloped land zoned with the potential to accommodate noise-sensitive land use and/or development.

e) for (c) and (d) the Noise Management Plan should include treatments which meet the indoor noise criteria, and outdoor noise criteria 10 dB greater than the noise criteria, as outlined in Table 2.

Noise Management Plans are to be prepared by a suitably qualified professional acoustics engineer or consultant (refer to Guidelines). Noise Management Plans already approved by the relevant state agency responsible for noise regulations at the time of gazettal of this Policy are deemed to be satisfactory.

7 IMPLEMENTATION

As a general principle, noise should be considered at the earliest stages of the planning process and not defer its resolution or management to subdivision or development assessment stage, where mitigation options are more limited.

The level and recommended type of noise management and mitigation measure will be dependent on the severity of the noise source, the intensity of the proposed land use and the information available at the particular stage of the planning process.

There is a general presumption against approving proposals that cannot achieve the Policy's noise criteria. However it is acknowledged that in some circumstances, it may not be reasonable or practicable for the Policy's noise criteria to be met. Discretion may be exercised by the decision-maker.

The decision-maker should consider:

- the justification as to why the noise criteria cannot be achieved and whether the noise can be reduced to an acceptable level;

- the intent and objectives of this Policy;
- the requirements of other relevant plans and policies;
- the impact of proposed mitigation measures on the amenity of the built environment;
- the seasonality of train movements, particularly in regional towns; and
- advice received from relevant referral agencies.

The Guidelines assist in outlining ways in which some reasonable and practicable limitations can be addressed in a manner that also minimises transport noise.

7.1 High-order strategic planning

Strategic planning documents such as sub-regional frameworks and strategies, and local planning strategies should:

(a) seek to avoid the risk of future land use conflict with noise by identifying compatible land use zones and/or reserves to provide spatial separation.

(b) where it is unavoidable to place a proposed noise-sensitive land use and/or development within the trigger distance of a transport corridor to which the Policy applies, it will be necessary to:

   i. identify the location of relevant transport corridors on the maps;

   ii. outline why alternative design solutions are not suitable; and

   iii. demonstrate that the noise impact on the proposed noise-sensitive land use and/or development can be adequately mitigated through planning mechanisms at the next stage of the planning process to meet the Policy's noise criteria.

7.2 Region and local planning scheme and amendments, structure plans and activity centre plans

The key objective for the above planning instruments for where noise-sensitive land use and/or development to which the Policy applies, is to address the impact of noise through the:

a) identification of appropriate compatible land use zoning such as Mixed Use zones;

b) design solutions that utilise street and lot configuration to screen and/or buffer noise;

c) consideration of density and built form outcomes that will help alleviate and/or manage noise; and

d) consideration to local planning scheme Special Control Areas with appropriate provisions for land in the vicinity of a transport corridor to ensure more detailed planning is undertaken at the subdivision and development stage, which may include the requirements for a Local Development Plan.

Information to be accompanied by region and local planning scheme and amendments, structure plans and activity centre plans prepared in accordance with the Guidelines:

- Noise Exposure Forecast Worksheet; and/or
- Noise Level Contour Map; and/or
- Noise Management Plan, where deemed appropriate.

7.3 Subdivision and development

Subdivision and development applications should take into consideration any noise assessment and a Noise Management Plan conducted earlier in the planning process.

Subdivision and development should seek to manage and avoid land use conflict through:

a) the design of the street, lot and building configuration in accordance with the Guidelines;

b) consideration to the preparation of a site specific Local Development Plan; and

c) quiet house requirements in accordance with the Guidelines.

Subdivision and development applications are to be accompanied by the following information prepared in accordance with the Guidelines:

- Noise Exposure Forecast Worksheet; and/or
- Noise Management Plan, where deemed appropriate.

7.3.1 Conditions of subdivision and development

The decision-maker may impose conditions on subdivision and development applications requiring the implementation of mitigation measures as outlined in the Noise Exposure Forecast or Noise Management Plan. These may include the construction of physical barriers, quiet house requirements or the need for more detailed planning through the preparation of a Local Development Plan.

Noise Management Plans must be completed and approved prior to conditional approval of the subdivision proposal.

Notifications on title should also be required as a condition of subdivision (including strata subdivision) and development approval informing of the existence of transport noise where noise levels are forecasted or estimated to exceed the Policy's outdoor noise criteria following the implementation of noise mitigation measures.

7.4 Major road and railway construction proposals

To achieve overall noise management outcomes proposals for new or major upgrade of major roads and railways should consider:

a) route selection and alignment that maximises separation distances from existing or future noise-sensitive land uses;

b) natural topography to shield the transport corridor, reducing the reliance on noise walls; and

c) acquiring or preserving adequate space in the corridor reserve to ensure that a suitable set-back to receivers or other mitigation measure can be achieved.

The following information should accompany a proposal for a major road and railway in accordance with the Guidelines:

- A Noise Management Plan to determine actual noise levels across the subject land accounting for any relevant adjacent zoning under an applicable region or local scheme.
- Demonstrate that the proposal can adequately mitigate the noise impacts through utilising noise attenuation measures.

7.5 Local planning policies

Local governments may prepare local planning policies to supplement or elaborate on measures associated with the implementation of this policy. Local planning policies should be consistent with the objectives and intent of this policy, as reflected in local planning strategies and schemes.

7.6 State authority advice on noise

The advice of the State authority responsible for noise regulation is to be sought and considered by the decision-maker in the preparation and determination of all proposals outlined in Sections 7.1 to 7.4 where:

a) compliance with these policy measures is unlikely to be achieved;

b) additional/alternative noise mitigation measures are proposed; and/or

c) assumptions informing Noise Management Plans are not agreed to by a decision-maker.

Proposals in the vicinity of a State Agreement shall be referred to the relevant agency responsible for the administration of the *State Agreements Act*.

8 DEFINITIONS

A-weighted level	A level which includes the frequency-weighting network 'A' (see AS IEC 61672.2-2004) to approximate the frequency response of the normal human ear.
dB	Decibel. A unit used to measure the intensity of a sound.
development	As defined in the *Planning and Development Act 2005*. Development includes land use, but for the purpose of this Policy does not include subdivision.
Guidelines	Refers to the most recent version of the Guidelines published by the Western Australian Planning Commission that accompany this Policy.
L_{Aeq}	The equivalent steady-state, A-weighted sound level which in a specified time period contains the same acoustic energy as the time-varying level during the same period.
$L_{Aeq(Day)}$	The L_{Aeq}(16 hour) for the time period 6 am to 10 pm.
$L_{Aeq(Night)}$	The L_{Aeq}(8 hour) for the time period 10 pm to 6 am.
major road	• Roads classified as one of the following: • State Roads (freeways/highways/primary distributors) • Primary regional roads under a region Scheme (Red Roads) • Freight roads in the Perth and Peel Region and regional freight roads • Other regional roads under a region scheme (Blue Roads) • District Distributor A (typically carrying 15,000 – 35,000 vehicles per day).
major transport corridor	Land identified for the movement of road and/or rail traffic, including railways, and major roads.
noise	Sound that is unwanted, unpleasant or loud. For the purposes of this Policy, noise does not include regenerated noise or vibration.
Noise Exposure Forecast	See Section 3.4 of the Guidelines.
Noise level Contour Map	See Section 3.3 of the Guidelines.
Noise Management Plan	See Section 3.5 of the Guidelines.
noise-sensitive land use and/or development	Land uses or development occupied or designed for occupation or use for residential purposes (including dwellings, residential buildings or short-stay accommodation), caravan park, camping ground, educational establishment, child care premises, hospital, nursing home, corrective institution or place of worship.
outdoor living area	Is defined in the Residential Design Codes of Western Australia as the area external to a single house, grouped or multiple dwelling to be used in conjunction with that dwelling such that it is capable of active or passive use and is readily accessible from the dwelling.
reasonable and practicable	See Section 3.2.1 of the Guidelines
transport infrastructure provider	An agency responsible for the design, construction and/or management of transport infrastructure as identified by this policy, including local and State government agencies.
trigger distance	The distance which determines if and when the Policy applies and the requirement for further investigation based on noise measurement data and the extent of noise from each corridor classification (Table 1 and 2).

Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

Draft
State Planning Policy 5.4
Road and Rail Noise

Implementation Guidelines

September 2017

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1 INTRODUCTION

These Guidelines should be read in conjunction with *State Planning Policy 5.4: Road and Rail Noise* (the Policy). These Guidelines replace the Implementation Guidelines for *State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning* published in 2014.

1.1 PURPOSE OF THESE GUIDELINES

These Guidelines provide supporting information for decision-making authorities, planners, landowners/ proponents, referral agencies and infrastructure providers to implement the Policy. Specifically, they assist with:

- determining appropriate land use planning in areas impacted by transport noise;
- identifying, assessing and managing the impacts of transport noise; and
- specifying the requirements of the Policy at each stage of the planning process.

1.2 HOW TO USE

These Guidelines are structured into chapters that follow the logical steps a proponent and or decision-maker will need to undertake for the preparation and assessment of a planning proposal to which the policy applies. Further guidance on noise assessment methodology, site verification, worksheets, and example templates for management plans, and planning instruments are included in the appendix.

1.3 MAPPING

The Policy and these Guidelines are supported by maps which specify Western Australia's major road and rail networks to which the policy applies that are considered of key economic importance due to their high vehicle movements and freight handling functions but can also adversely affect land adjacent to these corridors due to noise (Refer to appendix 9).

The major roads and rail, along with approximate trigger distances for each transport corridor classification, can also be viewed on the Department of Planning, Lands and Heritage public map viewer, PlanWA at www.dplh.wa.gov.au.

The trigger distances act as a mechanism for further investigation to ascertain likely noise levels through a Noise Exposure Forecast and or Noise Management Plan (refer to **Table 1 of the Policy**).

The inclusion of other transport corridors and their trigger distance will be added to the mapping in the event of a road/rail being reclassified into one of the corridor types listed in **Table 1 of the Policy** (for example, a region scheme amendment or an update to Main Roads Western Australia's Road Information Mapping System) and considered by the WAPC where it can be demonstrated that the noise generated by those corridors is sufficient to justify application of the Policy.

Discretion should be exercised for areas not subject to a region scheme, which are less likely to be affected by noise generated by the transport corridors subject to the policy. For example, many rural areas where roads classified as Primary Distributors in the State's road hierarchy carry comparatively low levels of traffic and therefore generate levels of noise that are not sufficiently high to justify the Policy being applied. Similarly, many railways operated solely to carry grain are only in use seasonally, which do not satisfy the general principle that transport corridors subject to the policy must generate high levels of noise consistently.

2 POLICY APPLICATION

This section provides guidance to determine if and when the policy applies as outlined in **section 4** and Table 1 of the Policy.

Western Australia's planning system includes strategic and statutory planning functions set out in the *Planning and Development Act 2005*. The planning system is hierarchical, requiring increasing levels of detail as a proposal progresses through regional, district and local planning to subdivision and development of individual sites. It is inteded that transport noise considerations and any mitigation measures are addressed as early as possible in the planning process, with the level of information provided becoming progressively more detailed.

Table 1 of these guidelines provides an overview of how the policy is addressed at each stage of the planning process.

2.1 HIGH-ORDER STRATEGIC PLANNING

High-order planning documents such as sub-regional strategies and frameworks, and local planning strategies guide land use and infrastructure planning for relatively large areas through broad coordination of land use provision and distribution, infrastructure and community facilities. At this stage of planning, the principle aim is to avoid land use conflict from the impact of transport noise. This is achieved through measures that rely on compatible land use zones, and reserves to provide spatial separation (refer to **section 4: Noise Mitigation**).

As a minimum, high-order strategic planning should clearly map the transport corridors to which the policy applies and the surrounding areas potentially impacted by transport noise. A Noise Exposure Forecast work sheet and/or Noise Level Contour Map are required where the level of information is available to provide greater detail on the transport noise impacts (refer to **section 3: Assessing Noise**).

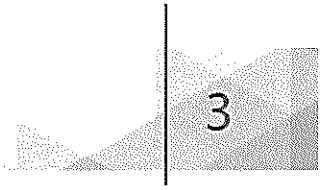
Where the provision of noise-sensitive land use and/or development within the trigger distance cannot be avoided high-order planning documents should outline options for site-specific statutory planning processes to be addressed later in the planning process such as the designation of new zones and reserves to adequately mitigate noise constraints and meet the policy's noise criteria.

2.2 SCHEMES AND AMENDMENTS, STRUCTURE PLANS AND ACTIVITY CENTRE PLANS

The level of information available at this stage of planning should allow for a more comprehensive assessment of the noise constraints. At this stage there is still an opportunity to avoid the introduction or intensification of noise-sensitive land use and/or development. The proponent should consider design solutions that utilise street and lot configuration, and densities that inform built form outcomes (refer to **section 4: Noise Mitigation**).

Where it is unavoidable to propose new or additional noise-sensitive development on any part of the site, a Noise Exposure Forecast worksheet and/or a Noise Level Contour Map can be used to facilitate the introduction or intensification of noise-sensitive land uses and/or development in areas likely to be affected by transport noise. Where the noise estimated to be affected by noise levels is above the criteria, a Noise Management Plan is required (refer to **section 3: Assessing Noise**). While Noise Management Plans represent an initial cost, they provide the opportunity to avoid land-use conflict and achieve better land planning outcomes. Once land is zoned for a noise-sensitive land use or a transport corridor is constructed, the practicable options for achieving the noise criteria are more limited and generally more expensive.

The designation of a Special Control Area may assist to address site-specific noise modelling; topography and natural environment; existing and proposed built environment; site-specific noise mitigation; and/or interface management necessary to address railways



covered by State Agreements as advised by the Department of Jobs, Tourism, Science and Innovation. Special Control Areas should not define alternative noise metrics. **Appendix 7** includes model Special Control Area provisions for inclusion in local planning schemes.

2.3 SUBDIVISION AND DEVELOPMENT

An assessment of the noise impacts should have been undertaken prior to this stage of planning. In the absence of a structure plan and/or noise assessment, the provision and/or intensification of noise-sensitive land use and/or development should be determined to be appropriate through an initial completion of a Noise Exposure Forecast worksheet as per the above. The Noise Exposure Forecast worksheet will assist with determining how the subject land/development is affected by noise and what exposure category and subsequently which mitigation measures apply.

More complex and large scale subdivision and development applications may require the preparation of a site-specific Noise Management Plan that may result in a recommendation to construct physical barriers and/or quiet house requirements (refer to **section 4: Noise Mitigation**). A Local Development Plan or other localised planning mechanisms may also be considered to support the design and coordination of appropriate development outcomes that address noise constraints.

This stage of planning generally focuses on physical mitigation measures that, once implemented, will contribute to the achievement of the Policy's noise criteria. Conditions of subdivision should be imposed as appropriate in order to ensure that the recommendations of any Noise Exposure Forecast worksheet and or Noise Management Plan are implemented, as relevant. If there are measures recommended in a Noise Management Plan that relate to the subsequent development stage, advice should also be included indicating the WAPC's expectation that such measures will be implemented at that stage.

Notifications on title are required informing of the existence of road and/or railway transport noise for all proposals where noise levels are forecasted to exceed the Policy's outdoor noise criteria (refer to **Appendix 6 and 7 - Recommended wording for a notification on title**).

2.4 ROAD AND RAILWAY CONSTRUCTION PROPOSALS

Road and railway transport infrastructure providers are responsible for ensuring that proposals for new infrastructure, and for upgrades of infrastructure constituting a major upgrade, are compliant with the relevant requirements of the Policy. For these proposals, it is expected that infrastructure providers prepare a Noise Management Plan.

It is expected that transport infrastructure providers will implement design and construction features aimed at minimising the generation and emission of noise (as far as is practicable within the transport corridor), with the objective of achieving the noise criteria. Land use planning controls and infrastructure upgrades can only mitigate noise to a certain extent; it is imperative that service providers contribute to minimising the generation and emission of noise.

While the Policy does not apply to increases in road noise in the absence of physical construction works, infrastructure providers are encouraged to maintain or enhance assets to reduce noise levels.

Other types of proposals that are likely to impact on noise-sensitive land use and/or development and as such may also require a Noise Management Plan include:

- road or rail infrastructure (including intersections) that result in undergrounding or grade separations;
- roads that have significant gradients or may become a future freight route;
- rail segments that have newly introduced elements that could create additional noise impacts, such as track switch points, crossings, or track curve radii less than 600 metres; or
- where there may be a substantial change in noise from that currently, such as metropolitan fringe greenfield sites or rural areas.

Infrastructure providers should consider the policy measures and the benefits of preparing a Noise Management Plan where:

- the nature of the noise emissions likely to emanate as a result of the minor redevelopment will probably increase in level or duration, for example, a new crossing where there was none previously or tighter track curvature leading to new or additional wheel squeal;
- projected cumulative noise levels exceed the noise criteria; and/or
- past consultations with State environmental agencies indicated a need to apply policy measures on similar minor redevelopments.

Table 1: *Policy measures and implementation at different planning stages*

Planning stage	Steps to address	Plan provision	Implementation responsibilities
High-order strategic planning	• Map of major transport / freight routes • Estimates of traffic volumes through a traffic management strategy • Identify potential noise sensitive land use through Noise Exposure Forecast sheet and/or contour map • Review land use compatibility and seek avoidance • Where cannot be avoided consider appropriate land use configuration and density • Determine if management plan is appropriate • Recommend policy advice including whether Special Control Areas should be established	• Land use plan • Policy advice • Contour Map • Noise Exposure Forecast sheet	**WAPC** - Preparation and assessment of strategies, schemes and plans; and assessment of accompanying Noise Level Contour Maps, Noise Exposure Forecasts and Noise Management Plans. **Local Government** - Ensuring that local strategies, schemes and plans are consistent with the objectives of the Policy. - Determining whether Special Control Areas should be established. Refer Appendix 6 for model Special Control Area provisions for inclusion in local planning schemes. - Preparing local planning policies consistent with this policy to complement or clarify requirements of the Policy and help inform and guide the preparation, assessment and discretionary decision-making of planning applications at the local government level. - Incorporating noise mitigation measures, as appropriate, into Developer Contribution Plans consistent with *State Planning Policy 3.6 – Development Contributions for Infrastructure.* **Department of Transport** - Provide input into strategic planning including route selection and design and ensuring that the Policy mapping is kept updated as new infrastructure and major upgrades of infrastructure proceed. **Department of Water and Environmental Regulation** - Provide expert technical advice primarily in relation to Noise Management Plan and the effectiveness of performance-based recommendations.
Region and local schemes and amendments, structure plans and activity plans		• Contour Map • Noise Exposure Forecast sheet • Management Plan • Special Control Areas • Developer Contribution Plans • Local planning policy	
Subdivision and development	• Identify potential noise sensitive land use through Noise Exposure assessment forecast sheet • Where cannot be avoided consider design of the street and lot layout; and building configuration • Determine if management plan is appropriate • Consideration to the preparation of a site specific Local Development Plan • Consideration to mitigation measures such as quiet house requirements	• Noise Exposure Forecast sheet • Contour Map • Management Plan • Local Development Plan • Subdivision conditions for noise mitigation measures such as quiet house requirements and notification on title	**WAPC** - Assessment and determination of subdivision plans; and accompanying Noise Level Contour Maps, Noise Exposure Forecasts and Noise Management Plans. - Impose conditions of subdivision approval. Refer **Appendix 5** for recommended wording for a notification on title. **Local Government** – Assessing as per the above in addition to assessing and determining development applications, local development plans and building permits in accordance with the requirements of the Policy. This included ensuring any quiet house requirements required through a Local Development Plan is implemented through the building permit process. - Advising the **WAPC/Department of Planning, Lands and Heritage** of proposals for new infrastructure likely to trigger application of the Policy and for major upgrades of such infrastructure. **Department of Water and Environmental Regulation** - Provide expert technical advice primarily in relation to Noise Management Plan and the effectiveness of performance-based recommendations. **Department of Jobs, Tourism, Science and Innovation (building commission)** - Administering the *Building Act 2011* and *Building Regulations 2012* that set out the building approval process for Western Australia, including the requirement to obtain a building permit to carry out building work. Administering and applying the *Building Code of Australia in Western Australia.*

3 ASSESSING NOISE

This section sets out the key assessment and management tools of noise impacts to enable implementation of the policy measures outlined in **section 6 of the Policy**.

For further guidance on measurement and on-site verification and noise assessment methodology, refer to **Appendix 3 and 4**).

3.1 UNDERSTANDING NOISE

Sound may be simply described as what we hear. Noise is unwanted sound, which carries a variety of negative effects that can adversely affect community health and amenity. **Figure 1** shows a range of typical noise levels.

Figure 2 illustrates the road noise source (typically engine exhausts, braking vehicle aerodynamics-flow turbulence and the interaction between wheel and road or track) and rail noise (generally interaction/shunting between cars and wheel squealing on tight curves) to which the Policy applies.

3.2 NOISE CRITERIA

Table 2 of the Policy sets out the noise criteria that apply to proposals for new noise-sensitive land use and/or development or new/upgraded major roads and railways assessed under this Policy.

Transport noise levels can change very quickly so it is more convenient to use a single number which is equivalent ('eq') in level (L) to the total sound energy measured over a given time period. Sound is also perceived differently according to its frequency. In general, human hearing is less sensitive to airborne sound at lower frequencies (such as a rumble) compared to those at higher frequencies (like a hiss).

Painful	120	Jet aircraft take off at runway edge
	110	Rock concert
	100	225mm angle grinder at 1 metre
	90	Heavy industrial factory interior
Noisy	80	Shouting at 1 metre
	70	Freeway at 20 metres
	60	Normal conversation at 1 metre
	50	Night time outdoor noise target
Quiet	40	Office air conditioning
	30	Typical bedroom design target
Very Quiet	20	Whisper, rural bedroom at night
	10	Human breathing at 3 metres
	0	Threshold of typical hearing

Note: The levels above are L_{Aeq} (dB re 20 µ Pa). Sound and noise is measured in decibels (dB). It is important to realise that the decibel is just a ratio between two quantities, and there needs to be a common reference value ('re'). The usual reference value for sound pressure in air is 20 micropascals (20 µ Pa) – a value associated with the minimum threshold of typical hearing. Although the correct way to present a unit of a sound pressure level against this reference value is in 'dB re 20 µ Pa', the reference value is very common and some simplify the measurement result to just 'dB'.

Figure 1: *Typical noise levels*

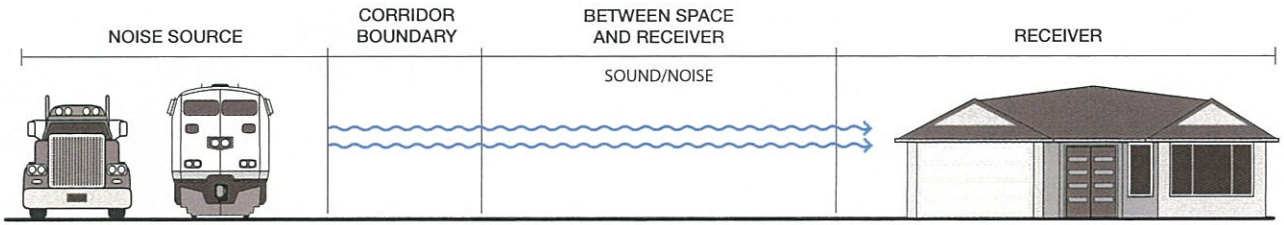


Figure 2: *Experience of noise*

Given the above, the unit used in this Policy is the 'A- weighted equivalent continuous sound pressure level', or 'L_{Aeq}'. Care should be taken to note that L_{Aeq} values are averages over large time periods. Consider that a quiet night with a loud single event (such as a road train passing) may result in a higher degree of annoyance than the overall L_{Aeq} value may indicate.

3.2.1 Exceeding the noise criteria

The Policy recognises that in some instances it may not be 'reasonable' and/or 'practicable' to implement noise mitigation measures in order to achieve the noise criteria. The determination of 'reasonable' and/or 'practicable' is to be to the satisfaction of the responsible decision-maker. A submission outlining the reasonable and practicable considerations should help to facilitate a determination on the matter and should assist in communicating that decision to the community in a transparent way.

About the term 'reasonable'

An assessment of reasonableness should demonstrate that efforts have been made to resolve conflicts without compromising on the need to protect noise-sensitive land use activities. For example, if residents are concerned about the height of a transport noise barrier, have reasonable efforts been made to design, relocate or vegetate the barrier to address these concerns?

Whether a noise mitigation measure is reasonable might include a consideration of:

- the noise reduction benefit provided
- the number of people protected
- the relative cost of mitigation
- existing and future noise levels, including changes in noise levels
- aesthetic amenity and visual impacts
- compatibility with other planning policies
- differences between metropolitan and regional situations
- differences between greenfield and infill development
- the benefits arising from the proposed development.

About the term 'practicable'

'Practicable' considerations for the purposes of the Policy normally relate to the engineering aspects of the noise mitigation measures under evaluation. It is defined as "reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge" (*Environmental Protection Act 1986*).

These may include:

- limitations of the different mitigation measures to reduce transport noise
- safety issues (such as impact on crash zones or restrictions on road vision)
- topography and site constraints (such as space limitations)
- drainage requirements
- access requirements (for driveways, pedestrian access and the like)
- maintenance requirements
- suitability of the building for acoustic treatments.

3.3 NOISE LEVEL CONTOUR MAP

A Noise Level Contour Map is a scale map of the subject site illustrating the likely noise levels and associated noise exposure categories. It is typically used for planning proposals to provide decision makers with information on the likely impacts of transport noise upon the subject site.

The Noise Level Contour Map can be prepared in two different ways.

1. A map (**Figure 3**) can be prepared using the noise level information contained within the Noise Exposure Forecast **Table 2**.
2. A map can be prepared using site-specific noise level information provided by a suitably qualified acoustic consultant/engineer, usually as part of the preparation of a Noise Management Plan.

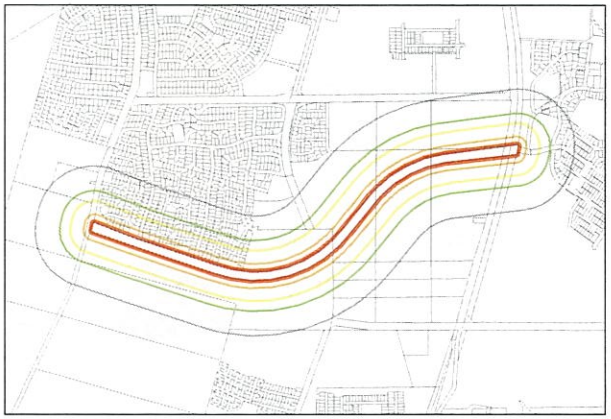


Figure 3: *Example Noise Level Contour Map*

Table 2: *Noise forecast*

Transport Corridor Classification		Vehicles/day	Forecast noise level (LAeq,Day) and exposure category based on distance from edge of nearest road carriageway (m)																					
			adjacent	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	175	200	225	250	275	300
Primary roads[1] * State roads (Freeways, highways, primary distributors) * Primary regional roads (Red roads under region schemes) * Metropolitan freight roads (in the Perth and Peel regions - typicallly 7.5% heavy vehicles) Map 1, 2, 3		up to 25,000	71	66	64	62	61	59	59	58	57	56	56	56	55	55	54	53	52	51	51	50	50
		~ 30,000	71	67	64	63	61	60	59	58	58	57	57	57	56	56	54	54	53	52	51	51	50
		~ 35,000	72	68	65	63	62	61	60	59	58	58	58	57	56	56	55	54	53	53	52	51	51
		~ 40,000	72	68	66	64	62	61	60	59	59	58	58	58	57	57	56	55	54	53	52	52	51
		~ 45,000	73	68	66	64	63	62	61	60	59	59	59	58	57	57	56	55	54	54	53	52	52
		~ 50,000	73	69	66	65	63	62	61	60	60	59	59	59	58	58	56	56	55	54	53	53	52
		~ 55,000	74	69	67	65	64	62	62	61	60	59	59	59	58	58	57	56	55	54	54	53	53
		~ 60,000	74	70	67	66	64	63	62	61	61	60	60	60	59	59	58	57	56	55	54	54	53
		~ 70,000	75	71	68	66	65	64	63	62	61	61	61	61	59	59	58	57	56	56	55	54	54
		~ 80,000	75	71	69	67	65	64	63	62	62	61	61	61	60	60	59	58	57	56	55	55	54
		~ 90,000	76	72	69	67	66	65	64	63	62	62	62	61	60	60	59	58	57	57	56	55	55
		~ 100,000	77	72	70	68	67	66	65	64	63	62	62	61	61	61	60	59	58	57	57	56	56
		~ 120,000	77	73	70	69	67	66	65	64	64	63	63	63	62	62	61	60	59	58	57	57	56
		more than 140,000	78	74	71	69	68	67	66	65	64	64	64	64	62	62	61	60	59	59	58	57	57
* **Regional freight roads** (Regional freight roads are defined by Department of Transport Western Australian Regional Freight Transport Network Plan) Maps 1 and 2	up to 10% heavy vehicles	up to 10,000	72	69	67	65	64	63	62	61	61	60	60	59	59	58	58	57	56	56	55	55	54
		more than 10,000	74	70	68	67	65	64	63	63	62	61	61	60	60	59	59	58	57	57	56	56	55
	10 to 20% heavy vehicles	up to 10,000	74	70	68	67	65	64	64	63	62	62	61	61	60	60	59	59	58	57	57	56	56
		more than 10,000	76	72	70	68	67	66	65	64	63	63	62	62	61	61	61	60	59	58	58	57	57
	more than 20% heavy vehicles	up to 10,000	75	72	70	68	67	66	65	64	64	63	63	62	62	61	61	60	59	59	58	58	57
		more than 10,000	77	73	71	70	68	67	66	66	65	64	64	63	63	62	62	61	60	60	59	59	58
Secondary roads[1] * Other regional roads (Blue roads under region schemes) * District Distributor A (Typicallly 5%heavy vehicles) Map 3		up to 5,000	60	57	55	54	53	52	51	51	50	50	49	49	48	48	48	47	47	46	46	45	45
		~ 7,500	63	60	58	57	56	55	54	54	53	53	52	52	51	51	51	50	50	49	49	48	48
		~ 10,000	65	62	60	59	58	57	56	55	55	54	54	54	53	53	53	52	51	51	50	50	49
		~ 15,000	66	63	61	60	59	58	57	57	56	56	55	55	54	54	54	53	53	52	52	51	51
		~ 20,000	67	64	62	61	60	59	58	58	57	57	56	56	55	55	55	54	54	53	53	52	52
		~ 25,000	68	65	63	62	61	60	59	58	58	57	57	57	56	56	56	55	54	54	53	53	52
		~ 30,000	68	65	64	62	61	60	60	59	59	58	58	57	57	57	56	56	55	55	54	54	53
		more than 35,000	69	66	64	63	62	61	60	60	59	59	58	58	58	57	57	56	56	55	55	54	54

Transport Corridor Classification		Movements/day	Forecast noise level (LAeq,Day) and exposure category based on distance from nearest rail centreline (m)																					
			adjacent	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	175	200	225	250	275	300
Passenger railways Map 3	Joondalup-Butler	260	68	64	61	60	59	58	57	56	56	55	55	54	54	53	53	52	52	51	50	50	49	
	Midland	170	66	62	59	58	57	56	55	54	54	53	53	52	52	52	51	51	50	49	48	48	47	
	Fremantle	160	66	61	59	58	56	56	55	54	53	53	52	52	52	51	51	50	49	49	48	48	47	
	Armadale-Thornlie	290	68	64	62	60	59	58	57	57	56	56	55	55	54	54	53	53	52	51	51	50	50	
	Mandurah	250	68	64	61	60	59	58	57	56	56	55	55	54	54	53	53	52	51	51	50	50	49	
	Other lines	300	68	64	62	60	59	58	57	57	56	56	55	55	54	54	54	53	52	51	51	50	50	
Freight railways Map 1, 2, 3 (LAeq,Night)		-	70	66	64	62	61	60	59	59	58	58	57	57	56	56	55	55	54	53	53	52	52	

Forecast Noise Level (LAeq,day, dB)	Exposure Category	Policy requirements for noise-sensitive land use and/or development
55 or less		No further measures
56 to 58	A	Noise-sensitive land use and/or development is acceptable, subject to: Mitigation measures in accordance with an approved Noise Management Plan; or Quiet house A (see Table 3)
59 to 62	B	Noise-sensitive land use and/or development is acceptable, subject to: Mitigation measures in accordance with an approved Noise Management Plan; or Quiet house B (see Table 3)
63 to 66	C	Noise-sensitive land use and/or development is acceptable, subject to: Mitigation measures in accordance with an approved Noise Management Plan; or Quiet house C (see Table 3)
67 to 70	D[1]	Noise-sensitive land use and/or development is not recommended.[2]
71 +	E[1]	Noise-sensitive land use and/or development is strongly discouraged.[2]

1 For Exposure Categories D and E there is no quiet house option.

2 If noise-sensitive land use and/or development is unavoidable, an approved Noise Management Plan is required to demonstrate compliance with the noise criteria (see Table 1).

1. Specific data for Primary, Regional freight and Secondary Roads vehicles per day and % heavy vehicle mix can be obtained from the Main Roads WA Traffic Map website: http://mrapps.mainroads.wa.gov.au/TrafficMap

Assumptions:

- The NEF table does not account for the risk of short-term noise / vibration impacts which have historically been the cause of various complaints in Western Australia.
- Forecast noise levels assume level and open ground between the noise source and the receiver and neutral weather effects. All values include a +2.5 dB façade correction.
- It is acceptable to estimate noise levels where values lie between distance intervals.
- Primary, Regional freight and Secondary Roads noise levels are based on the following traffic mixes:
- Primary roads – 80 km/h traffic speed and heavy vehicle percentage of 7.5%, dense graded asphalt road surface.
- Freight roads – 110 km/h traffic speed and heavy vehicle percentages of 10%, 20% or 30%, 14mm chip seal road surface.
- Secondary roads – 80 km/h and heavy vehicle percentage of 5% or 10%, dense graded asphalt road surface.
- Primary, Regional freight and Secondary Roads for each road traffic volume range are already adjusted to account for future traffic growth rates of 2.5% per year over 20 years.
- Railway noise levels are based on current traffic volumes and mixes with adjustments included for future growth over 20 years in line with historical averages.

3.4 NOISE EXPOSURE FORECAST

When it is determined that the Policy applies to a planning proposal the Noise Exposure Forecast enables proponents and/or decision-makers to undertake a simple assessment of the risk of noise impacts on noise-sensitive land use and/or development within the trigger distance of road or railway infrastructure through forecasts on noise levels which has been verified through noise monitoring. Proponents can complete the worksheet (**Appendix 1**) to accompany subdivision, development and building licence applications to demonstrate the forecast noise levels at a noise-sensitive land use and/or development and the required noise mitigation measure through quiet house requirements.

Proponents and/or decision-makers can also identify future development areas where transport noise may present an unacceptable impact on noise-sensitive land use and/or development which may result in consideration of more compatible land uses.

The Noise Exposure Forecast can be used to prepare a Noise Level Contour Map to inform high-order planning documents and planning proposals.

3.4.1 Noise reductions from existing screening building and structures

The Noise Exposure Forecast table contains noise levels assuming open and level ground. It does not account for existing screening buildings, terrain, structures or noise walls/fencing that is located between the noise source and the receiver, which enable reductions in noise levels lower than what is presented in the Noise Exposure Forecast table.

A 4dB reduction to the noise levels contained in the Noise Exposure Forecast table which equates to at least one exposure category/quiet house specification (i.e. quiet house C (63dB) to quiet house B (59dB)) can be applied in the following situations.

- An existing building or structure (at least one storey high) screens more than 50% (not intermittently) of the most exposed frontage of a noise-sensitive land use and/or development (**Figure 4**).
- An existing solid continuous two metre noise wall/ fence.
- Topographical difference of at least four metres that is not a direct line of sight (that is, where the infrastructure corridor is lower than the subject site) as illustrated in **Figure 5**.

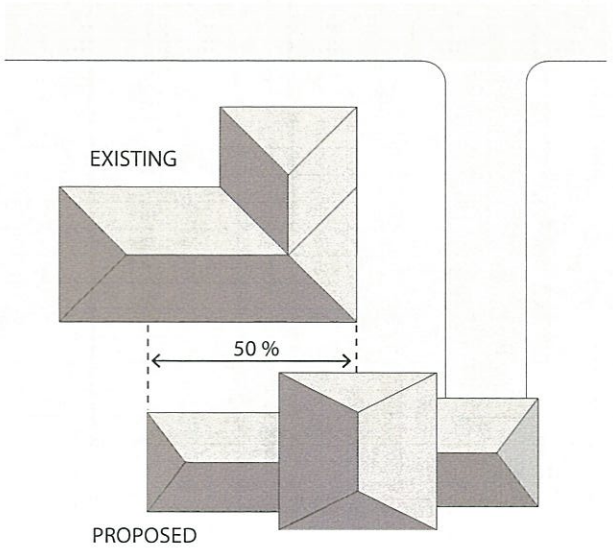


Figure 4: *Illustration of a building or structure screening more than 50% of the most exposed, habitable façade of a noise-sensitive building*

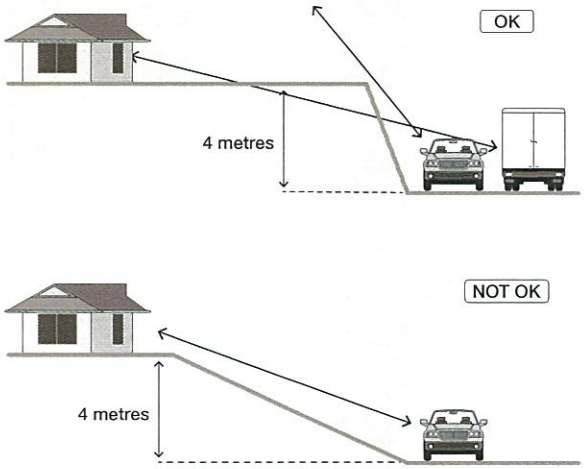


Figure 5: *Illustration of a topographically uninterrupted and interrupted line-of-sight between a noise source and the most exposed, habitable façade of a noise-sensitive building*

Caution should be applied when considering a reduction to noise levels contained in the Noise Exposure Forecast table if proponents desire a higher quality acoustic environment that would be achieved through the customised performance-based mitigation measures. This is particularly relevant for above ground floor levels not screened that have a direct line of sight to the road or rail line and are therefore still significantly impacted by the noise source.

A site-specific Noise Management Plan is required to quantify the noise reduction performance of existing screening buildings and structures beyond the 4dB reduction.

3.5 NOISE MANAGEMENT PLAN

A Noise Management Plan provides a site-specific noise assessment and recommended noise mitigation measures to achieve the Policy's criteria. They are commonly prepared by a competent professional such as an acoustics engineer or other consultant on behalf of the developer or proponent.

Those accepted as being suitably qualified are:

- a person holding membership of the Australian Acoustical Society (AAS) in the grade of Member or Fellow (designated by the post-nominal letters M.A.A.S. or F.A.A.S. respectively); and/or
- a company holding current corporate membership of the Australian Association of Acoustical Consultants (AAAC).

An acoustics engineer is defined as a person eligible for professional membership to the Institute of Engineers Australia (MIEAust).

Both the AAS and AAAC require their members to meet and maintain standards of technical competency. The AAS and AAAC retain current lists of their members on their respective websites.

Section 2 outlines when a Noise Management Plan is to be prepared, with a preference of it being prepared as early as possible in the planning process.

For noise-sensitive land use and/or development proposals, where there is an existing road or railway, noise measurement to inform preparation of the plan must be undertaken. Noise modelling in the absence of noise measurement should only be undertaken where a road or railway is proposed but not yet constructed. **Appendix 4** includes a checklist for road and rail noise modelling.

Appendix 5 provides a recommended template for the content of a Noise Management Plan which typically outlines:

- how the proposed noise mitigation measures will achieve the noise criteria (see **Figure 6 and 7**);
- recommended mitigation measures for the proposal including extent of noise walls/bunds and consideration of amenity impacts and residential lots with quiet house requirements;
- outlining the stage of the planning process, responsible parties, staging and timing;
- a description of other noise management measures, for example post-construction noise monitoring, complaint response, ongoing maintenance requirements; and/or
- outcomes of community and stakeholder consultations (where a noise wall is proposed on a common boundary).

If the development is occurring prior to the construction of a nearby planned major road or railway, the developer should seek details of the infrastructure design and work with the infrastructure provider to develop a joint Noise Management Plan to outline responsibilities and commitments in relation to noise mitigation.

The proponent should be tasked with ensuring that what is designed and constructed remains consistent with the Noise Management Plan.

The Department of Water and Environmental Regulation is available to provide noise-related advice and expertise, as well as other stakeholders potentially affected such as the State government transport portfolio. Local government may play a role in the clearance of certain conditions.

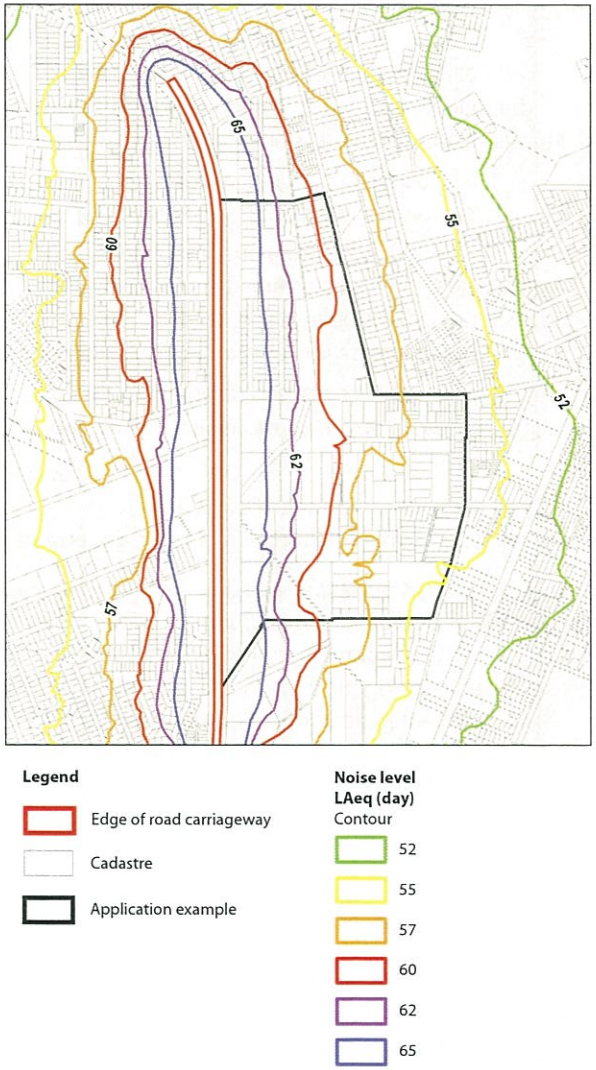


Figure 6: Noise Management Plan Contour Map - prior to any proposed noise mitigation

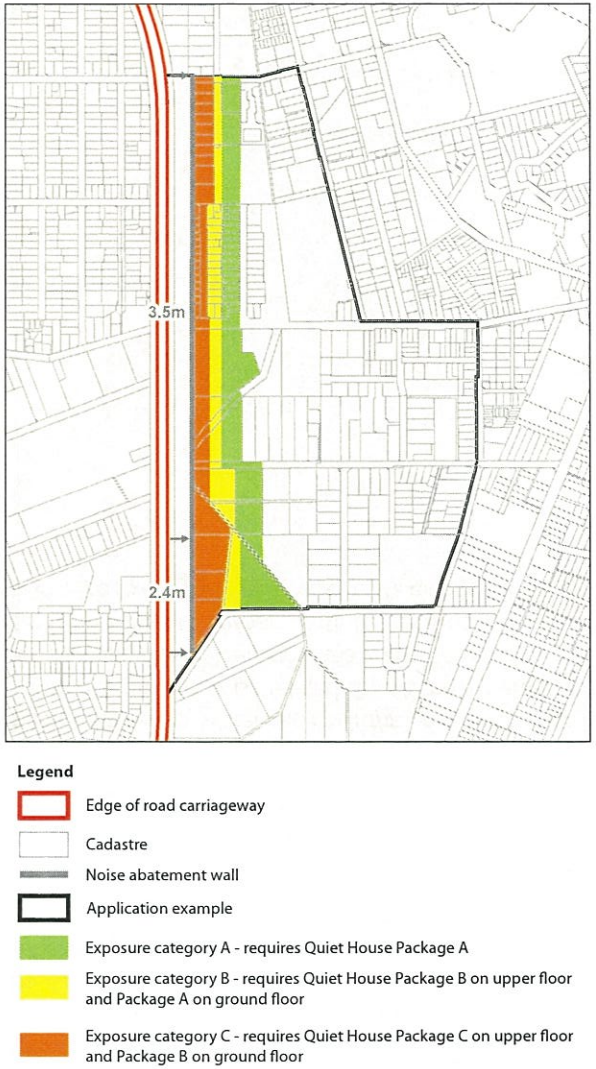
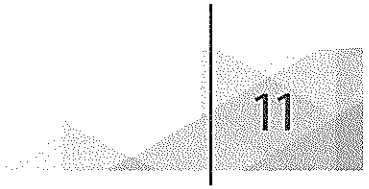


Figure 7: Noise Management Plan Contour Map - showing noise mitigation measures



4 TECHNIQUES FOR NOISE AVOIDANCE AND MITIGATION

This section outlines the various ways to minimise noise from road and rail from the strategic planning stage through to the detailed design at the development approval stage.

The most straightforward way of minimising the noise-related impact of transport corridors is to avoid proposing noise-sensitive land use and/or development in close proximity to such infrastructure.

4.1 PHYSICAL SEPARATION AND COMPATIBLE LAND USES

The allocation of non-noise-sensitive land uses in the vicinity of transport corridors serves two purposes. Firstly, it provides spatial separation for noise-sensitive land use and/or development and secondly it can, depending on built form, create a physical barrier protecting land beyond.

Physical separation between the transport infrastructure and noise-sensitive areas could include:

- Local streets and road reserves including shared paths/cycle lanes (in compliance with Liveable Neighbourhoods) that provide further separation from the noise source, promote passive surveillance of the street and allow for planting and landscaping;
- Open public spaces of a size and function that can be designed to ensure the spaces are usable to residents and preferably have areas that are quieter; and
- Defined easements or building setbacks in new estates along road/rail corridors should be considered. The vesting/management authority for such reserves on greenfield site subdivisions should be local government.

At the strategic planning stage proponents should consider route alignment for a new road or railway that maximises separation distances from existing or future noise-sensitive land uses is critical to achieving overall noise management outcomes. The planning and design should also consider the likely hours of operation of those routes, for example whether they will carry increased numbers of freight vehicles during night periods. Natural ground topography can also be used to better shield the transport corridor. Cuttings, with a finished surface below natural ground level, can be significantly quieter and improve the effective height of nearby noise screening walls.

Acquiring or preserving adequate space in the corridor reserve is important to ensure that suitable set-back distances to receivers can be achieved and that, if necessary, bunds and barriers can be constructed close to either the source or receiver, but preferably closer to the source.

In the vicinity of transit stations and precincts, non-noise-sensitive land uses such as commercial buildings, including mixed use developments, community and recreational facilities will help to facilitate a self-contained walkable neighbourhood that can support public transport and reduce car dependence.

Along freight corridors, service commercial and industrial activity would be more appropriate and would benefit from proximity to transport links. Establishment and maintenance of land along transport corridors for non-noise-sensitive development is achievable through the designation of appropriate land use zones in local planning schemes.

For locations where land zoned for residential purposes abuts or is in close proximity to a transport corridor, opportunities for non-noise-sensitive development are more limited but do exist. Drainage corridors and community facilities are examples of non-noise-sensitive development that could be located along transport corridors. If residential development is unavoidable, consideration should be given to the siting and layout of dwellings and form particularly of multiple dwellings, which are built at a scale that is more likely to make mitigation measures more economically feasible.

4.2 NOISE WALLS

Where a subdivision or development backs onto a major transport corridor and from which access is not permitted, it is normal practice to provide a continuous wall along the property boundary. Noise walls – also referred to as noise screens and barriers – are a solid wall or fence designed to reduce airborne noise. In this context, 'walls' usually refer to heavy or primary walls immediately adjacent to transport infrastructure. Fences usually refer to lighter and shorter structures located on residential lot boundaries.

Noise walls used near Perth major roads generally reduce transport noise (L_{Aeq}) levels by between 5dB and 10dB, depending on the design (materials, density, height and other such factors) of the barrier and the topography of the site. Reducing noise by more than this with a wall is usually very difficult and not economical.

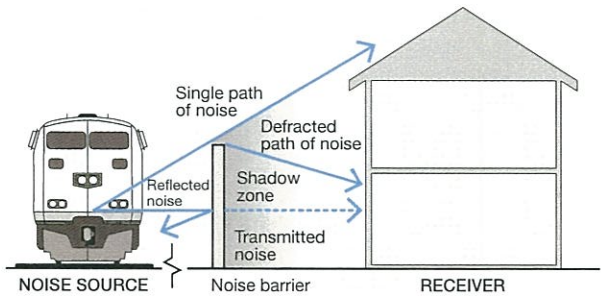


Figure 8: Effect of a noise barrier on the path of noise

Low noise walls, that is those around two metres high, should be used with high caution when used in close proximity to transport infrastructure. While low barriers may be effective at reducing noise from sources close to the ground, such as noise from the wheels of passenger cars or freight wagons, they are likely to have no effect on elevated noise sources such as exhaust discharges from trucks or locomotives.

4.2.1 Positioning

The most effective place to position a noise wall is generally as close as possible to the road or railway, as this will tend to reduce the overall height of the wall required to attenuate traffic noise. However, construction of such a barrier is usually limited to transport infrastructure providers who operate within the province of the road or railway reserve.

Figure 9 depicts that to minimise the transmission of noise around the ends of a transport noise barrier, it should generally be long enough to subtend an angle of 160 degrees from the receiver to the road or railway. This results in a barrier with a total length of about eight times the distance from receiver to barrier. The length of the barrier can be effectively reduced by moving the barrier closer to the receiver or by bending the ends of the barrier away from the road or railway.

Figure 10 depicts that overlapping barriers can be used to suit pedestrian walkways, egress points or service roads.

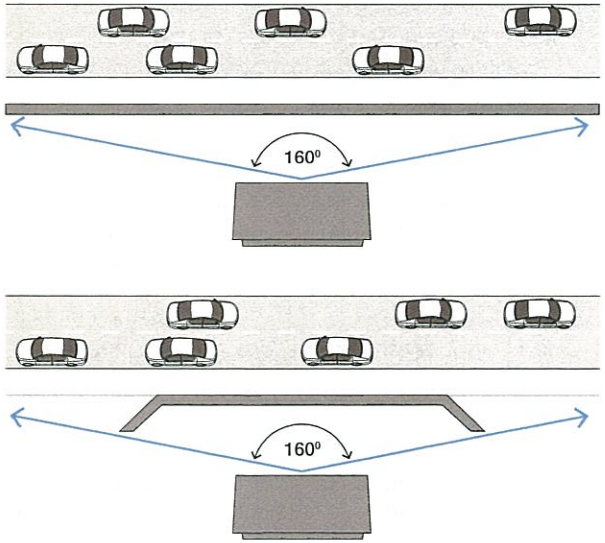


Figure 9: Reduction of barrier length through end treatment

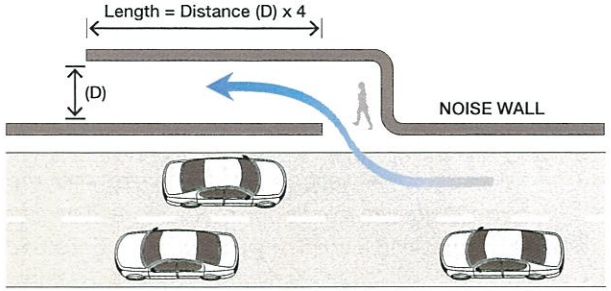


Figure 10: Overlapping barrier section to cover gaps

4.2.2 Materials

Noise walls must be continuously airtight or without gaps but can be made from a range of materials including precast concrete panels, brickwork, limestone blocks, concrete blockwork, timber, transparent acrylic, fibre cement, recycled plastic, and metal sheeting.

It is generally recommended that walls in close proximity to transport noise have a minimum surface density of at least 15 kilograms per square metre to effectively reduce the noise passing through the barrier. This surface density is readily achieved with masonry or timber walls which meet relevant structural/wind-loading requirements. Heavier walls do not necessarily perform better since at this point the dominant noise path is probably over the top of the wall.

Lightweight fences such as post and rail and sheet steel are not substitutes for noise walls but provide some benefit for heights up to two metres and locations immediately adjacent to outdoor living areas and ground floor openings to habitable rooms. Lightweight materials may be sheeted on both sides of supports to form a double layer construction for comparable performance and planks or sheeting must be tight fitting and overlaid by a minimum of 30 millimetres, with no gaps between materials or between the base of the fence and the ground.

4.2.3 Reducing visual impacts

Often the strongest resistance to implementing noise walls is in relation to their appearance. The design should consider scale, proportion, deliberate use and/or variation of:

- colour;
- pattern;
- height;
- non-linear forms;
- texture;
- transparency;
- materials; and
- lighting

to improve the aesthetics of the noise wall. The design should consider the local character taking account of the urban fabric and natural, historic and cultural context. In some cases it may also be appropriate to integrate the noise wall design with an entrance statement or public art. Where practical planting can assist with breaking down the scale of a noise wall by reducing its visual dominance, which is more critical on the receiver side of the transport noise barrier.

Figure 11 shows the use of transparent viewing panels, textured surfaces and planting to reduce the visual impact of noise walls and **Figure 12** shows how block work, planting and the incorporation of other pedestrian elements give a noise wall a more human scale.

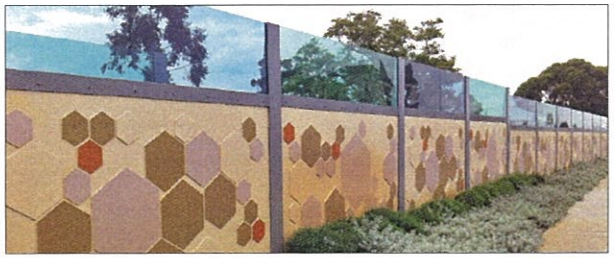


Figure 11: *Noise wall*

Figure 12: *Noise wall with vegetation*

4.3 EARTH MOUNDS/BUNDS

Landscaped earth mounds or bunds can provide benefits in terms of natural landscape values and good visual screening where there is fill and space available, for example in rural areas. However they are generally not suitable in urban areas as they require large footprints. They also attract ongoing maintenance costs for weeding, erosion, litter, fire prevention, and may need structural retaining of the soil to enable steeper vertical slopes to bring the bund closer to the transport corridor, or to enable the retention of mature trees on lower slopes.

Bunds will often need to be built slightly higher than an equivalent vertical wall because the top of the bund cannot be placed as close to the noise source and requires significant horizontal spacing. For example, a two-metre high unreinforced earth bund requires approximately 17 metres of horizontal space; for every metre of additional height, approximately six metres of additional horizontal space is needed.

4.4 BUILDING DESIGN AND CONFIGURATION

Acoustic design to mitigate noise for single and multi-storey buildings generally recommend:

- positioning noise-sensitive spaces such as bedroom and living areas away from noise source and less noise sensitive spaces, such as the garage, bathrooms and laundry, closer to the noise source (**Figure 13**);
- private and communal open space located furthest away from the noise source, preferably screened by the building itself;
- use of podiums and extended facade elements to provide useful shielding of floors above and provide distance offset (**Figure 14**);
- designing balustrades to be continuous without gaps to shield noise sources below;
- fully enclosing balconies with operable windows to create winter gardens;
- applying sound-absorptive/diffusive elements to the underside of balcony ceilings (soffit) to reduce reflected sound into the dwelling; and
- avoiding designs and configurations which 'collect' and 'focus' noise (**Figure 15**).

Refer to *Draft State Planning Policy 7.3 Apartment Design* for more detailed guidance on built form design for multi-storey buildings.

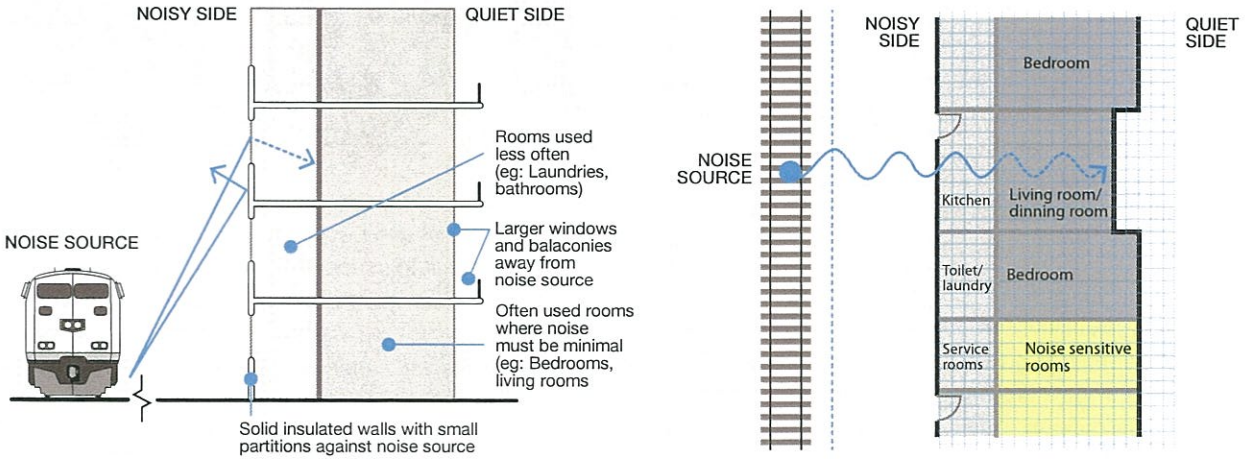


Figure 13: *Locating noise-sensitive rooms away from the noise source*

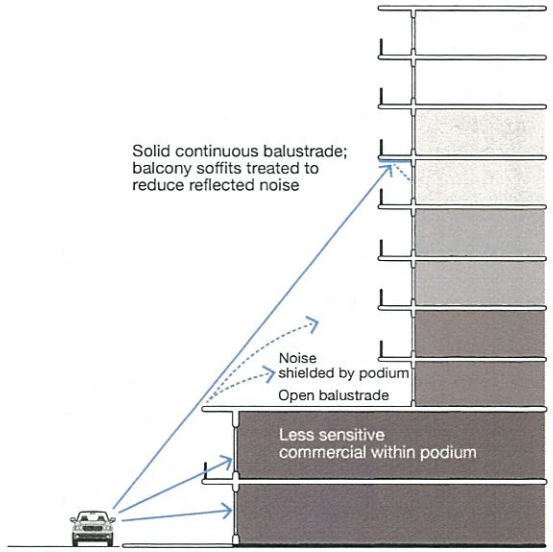


Figure 14: *Shielding effects of commercial podium developments*

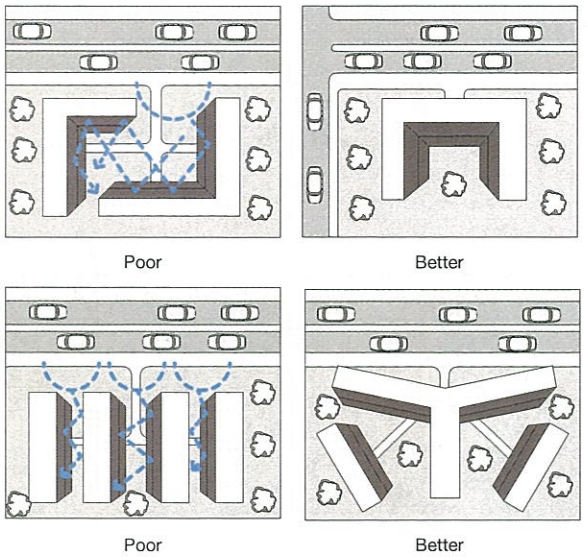


Figure 15: *Acoustic design for the effective orientation of buildings in transport noise zones*

4.5 QUIET HOUSE REQUIREMENTS

Where outdoor and indoor noise levels received by a noise-sensitive land use and/or development exceed the Policy's noise criteria, implementation of quiet house requirements (Table 3) is an acceptable solution.

Quiet house acoustic design aims to minimise the extent of noise insulation needed to meet the indoor noise level standards and provide for at least one protected outdoor living.

Table 3 also introduces several new terms defined below and illustrated in **Figure 16**:

- **'Facing'** the transport corridor (red): Any part of a building facade is 'facing' the transport corridor if any straight line drawn perpendicular (at a 90 degree angle) to its nearest road lane or railway line intersects that part of the façade without obstruction (ignoring any fence).
- **'Side on'** to transport corridor (blue): Any part of a building facade that is not 'facing' is 'side on' to the transport corridor if any straight line, at any angle, can be drawn from it to intersect the nearest road lane or railway line without obstruction (ignoring any fence).
- **'Opposite'** to transport corridor (green): Neither 'side on' nor 'facing', as defined above.

The most common approaches to acoustic treatment of a building are providing mechanical ventilation or air conditioning so windows can remain closed; providing acceptable glazing thicknesses (refer to **Figure 17**); and improving insulation to the roof and above-ceiling space.

A mechanical ventilation system is usually required to allow windows to be closed when quiet indoor conditions are required. Mechanical ventilation systems need to comply with AS 1668.2 – The use of mechanical ventilation and air-conditioning in buildings and natural ventilation arrangements of F4.6 and F4.7 of Volume One and 3.8.5.2 of Volume Two of the National Construction Code.

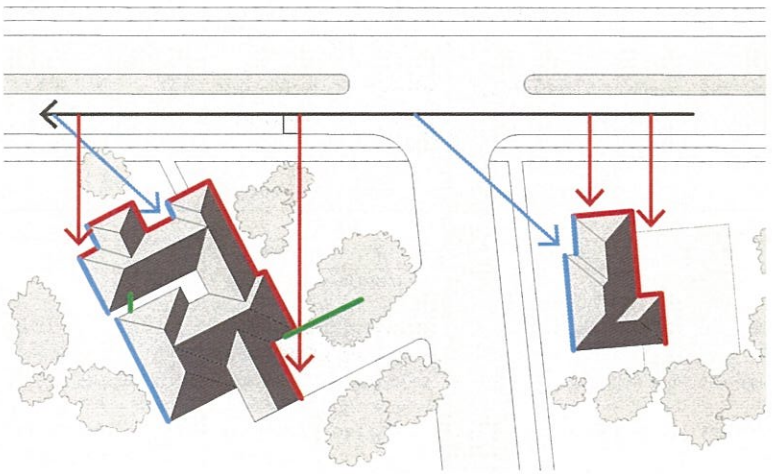
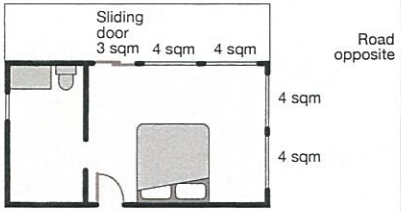


Figure 16: *Determining building face orientation*



A Noise Exposure Forecast undertaken for a proposed new residential development in the vicinity of a primary road determines an external incident level of $L_{Aeq,Day}$ 58dB at the lot boundary.

$L_{Aeq,Day}$ 58dB is above the external noise criteria of $L_{Aeq,Day}$ 55dB, therefore mitigating measures need to be undertaken.

The approval agency advises that the development proponent can elect to implement quiet house A treatment or prepare a Noise Management Plan which demonstrates to the satisfaction of the approval agency how the requirements will be otherwise be met. The proponent elects to implement the first option, which for $L_{Aeq,Day}$ 58dB corresponds to quiet house A according to the Noise Exposure Forecast table.

One corner of the proposed dwelling has a bedroom of 20 square metres with attached ensuite, in which one wall is facing the road corridor and another is facing 'side-on'. The wall facing the road corridor has window glazing with a combined area of eight square metres, and the wall facing side on has eight square metres of window and a glass balcony door of three square metres.

The glazing area facing the road is eight square metres per 20 square metres equating to 40 per cent of the floor area, so must have a minimum Rw + Ctr value of 28dB. From Table 3, this can be achieved with any fixed glazing more than six millimetres thick, or a sliding type window with 10 millimetres laminated glass and acoustic seals.

If for example, the window facing the road were increased to 60 per cent (or 12m² in this example), then the acoustic rating must be increased to Rw+Ctr 31dB, requiring 10 millimetres fixed pane glass or same six millimetres glass but with a sealed awning type frame.

Side on to the corridor, the glass door is included in the area calculation (11m² total/20m² = 55%), however the allowance for Rw+Ctr 28dB glazing is increased to 60 per cent, meaning the same window system facing the road can be used. The glass door needs to comply with Rw+Ctr 28 dB, and from Table 3 this can be achieved with a six millimetre toughened glass suite with acoustic seals.

The proponent may also here nominate a glass sliding door system acoustically rated to Rw 31dB by a manufacturer or professional acoustical consultant.

Figure 17: *Example of determining acceptable treatment glazing*

Table 3: Quiet house requirements

Exposure Category	Orientation to corridor	Acoustic rating and example constructions				Mechanical ventilation / air conditioning
		Walls	Windows / external doors	Roof and ceiling	Outdoor living areas	
A **Quiet House A**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 45dB** • One row of 92mm studs at 600mm centres with: - Resilient steel channels fixed to the outside of the studs; and - 9.5mm hardboard or 9mm fibre cement sheeting or 11mm fibre cement weatherboards or one layer of 19mm board cladding fixed to the outside of the channels; and - 75mm glass wool (11kg/m³) or 75mm polyester (14kg/m³) insulation, positioned between the studs; and - Two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs. • Single leaf of 150mm brick masonry with 13mm cement render on each face. • Double brick: two leaves of 90mm clay brick masonry with a 20mm cavity between leaves.	**Bedroom to Rw+Ctr 28 dB, total glazing area up to 40% of room floor area [if Rw+Ctr 31dB: 60%] [if Rw+Ctr 34dB: 80%]** • Sliding or double hung window with single pane glazing to Rw 36dB (or 10mm glass) or 6mm-12mm-10mm double insulated glass; • Fully glazed hinged door with certified Rw 31dB rated door and frame including seals and 6mm glass; and/ or • Glazed sliding door with 10mm glass **Indoor living and work areas to Rw+Ctr 25dB, total glazing area limited to 40% of room floor area. [if Rw+Ctr 28dB: 60%] [if Rw+Ctr 31dB: 80%]** • Sliding or double hung window with single pane glazing to Rw 33dB (or 6mm glass) or 6mm-12mm-6mm double insulated glass **External doors other than glass doors to Rw+Ctr 26dB** • 35mm solid core timber frame and door, side hinged with certified Rw 28dB acoustically rated door and frame system including seals • Glazed sliding door with 10mm glass	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling	At least one outdoor living area located on the opposite side of the building from the transport corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2 metres height above ground level.	• Evaporative systems require attenuated ceiling air vents to allow closed windows • Refrigerant-based systems need to be designed to achieve fresh air ventilation requirements • Acoustically rated openings and ductwork to provide a minimum sound reduction performance of Rw and 40dB into sensitive spaces • Openings such as eaves, vents and air inlets must be acoustically treated, closed or relocated to building sides facing away from the corridor where practicable
	Side on		Rw+Ctr values may be 3dB less, or max % area increased by 20%			
	Opposite	No requirements				
B **Quiet House B**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • Single leaf of 90mm clay brick masonry with: - A row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; - A cavity of 25mm between leaves; - 75mm glass wool (11kg/m³) or 75mm polyester (14kg/m³) insulation between studs; and - One layer of 10mm plasterboard fixed to the inside face • Single leaf of 220mm brick masonry with 13mm cement render on each face • 150mm thick unlined concrete panel or 200mm thick concrete panel with one layer of 13mm plasterboard or 13mm cement render on each face • Double brick: two leaves of 90mm clay brick masonry with: - A 50mm cavity between leaves - 50mm glass wool (11kg/m³) or 50mm polyester (14kg/m³) cavity insulation - resilient ties where required to connect leaves • Double brick: two leaves of 110mm clay brick masonry with a 50mm cavity between leaves and 50mm glass wool (11kg/m3) or 50mm polyester (14kg/m³) cavity insulation	**Bedroom Rw+Ctr 31dB, total glazing area up to 40% of room floor area [if Rw+Ctr 34dB: 60%]** • Fully glazed hinged door with certified Rw 34dB acoustically rated door and frame including seals and 10mm glass • Fixed sash, awning or casement window with single pane glazing to Rw 33dB (or 6mm glass) or 6mm-12mm-6mm double insulated glass **Indoor living and work areas to Rw+Ctr 28dB, total glazing area up to 40% of room floor area [if Rw+Ctr 31dB: 0%] [if Rw+Ctr 34dB: 80%]** • As per Quiet House A example above **External doors other than glass doors to Rw+Ctr 26dB** • As per Quiet House A example above	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling	At least one outdoor living area located on the opposite side of the building from the corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2.4 metres height above ground level	
	Side-on		Rw+Ctr may be 3dB less, or max % area increased by 20%			
	Opposite	As per Quiet House A 'Side-on'				
C **Quiet House C**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • As per Quiet House B example above	**Bedroom to Rw+Ctr 34dB, total glazing area limited to 40% of room floor area [if 20% of floor area or less, Rw+Ctr 31dB]** • Fixed sash, awning or casement window with single pane glazing to Rw 36dB (or 10mm glass) or 6mm-12mm-10mm double insulated glass **Indoor living and work areas to 31dB, total glazing area up to 40% of room floor area [if Rw+Ctr 34dB: 60%]** • As per Quiet House B example above **External doors other than glass doors to Rw+Ctr 30dB** • 40mm solid core timber frame and door (without glass or with glass inserts not less than 6mm), side hinged with certified Rw 32dB acoustically rated door and frame system including seals	**To Rw+Ctr 40dB** • 2 layers of 10mm plasterboard • Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling, 50mm glass wool (11kg/m³) or 50mm polyester (20kg/m³) cavity insulation	At least one outdoor living area located on the opposite side of the building from the transport corridor	
	Side-on		Rw+Ctr may be 3dB less, or max % area increased by 20%			
	Opposite	As per Quiet House A 'Facing'				

Footnotes:

- The airborne weighted sound reduction index (Rw) and traffic correction term (Ctr) are published by manufacturers/suppliers, can be determined by acoustical consultants or measured in accordance with AS ISO 717.1. Higher Rw+Ctr values infer greater sound insulation. All values are minimum Rw+Ctr (dB)
- Example construction for different external wall ratings of Rw+Ctr 45dB and 50dB are provided and are listed within Specification F5.2 in Volume 1 Part F of the National Construction Code. These values are based on the installation and sealing of joints and penetrations in accordance with Specification F5.2.
- Window and external door sound reduction values provided are based on the provision of suitable acoustic seals to prevent sound leakage. To comply with the above ratings, all external glass windows and doors specified under requirements A, B and C must have the following:
  - Operable windows and external doors must have a seal to restrict air infiltration fitted to each edge and doors must have a drop seal to provide an airtight seal when closed
  - Within doors or fixed framing, glazing must be set and sealed using an airtight arrangement of non-hardening sealant, soft rubber (elastomer) gasket and/or glazing tape, or be verified by manufacturer or approved person that the construction system as to be installed achieves the relevant Rw+Ctr value
  - In this context, a seal is foam or silicon based rubber compressible strip, fibrous seal with vinyl fin interleaf or the like. Brush / pile type seals without this seal included are not allowed.
  - Glazing referenced can be monolithic, laminated or toughened safety glass
- Any penetrations in a part of the building envelope must be acoustically treated so as not to degrade the performance of the building elements affected. Most penetrations in external walls such as pipes, cables or ducts can be sealed through caulking gaps with non-hardening mastic or suitable mortar
- No requirements for other indoor areas other than bedrooms and indoor living or work areas

4.6 AT THE SOURCE (ON-CORRIDOR)

Management of noise at its source (known as 'at-source' or, more specifically for road and railway noise, 'on-corridor') is beyond the scope of the planning system. As such, effective mitigation of road and railway transport noise is reliant on measures that minimise the generation and emission of noise.

Controlling noise at its source is often the most cost-effective way to minimise noise impacts as part of the planning and design of new road and railway infrastructure proposals. The key noise mitigation options available to transport infrastructure operators are briefly summarised as follows:

Design and construction

- **Low-noise surfaces.** Low-noise road surfaces can be an effective noise mitigation tool. For roads, open graded asphalt can be up to 3dB quieter than standard asphalt pavement types. Chip seal surfaces are noisier. For rail vehicles, noise generated by the wheel/rail interaction is strongly influenced by the design and roughness of the track. Routine maintenance is crucial.
- **Appropriate speeds.** Vehicle noise increases with speed and acceleration rates. In noise-sensitive areas, controls which limit speeds and/or heavy acceleration can be an effective form of noise mitigation. For example, traffic noise levels near roundabouts, where vehicles do not need to stop fully are quieter in comparison to stop-controlled intersections. On the other hand, speed humps may increase noise if they are likely to be heavily trafficked or used by commercial vehicles (e.g. noise from loose items).
- **Minimising gradients.** Reducing gradients reduces noise from freight vehicles. This can be an effective noise mitigation tool. Because engines work harder and produced more noise to go up gradients, while on steep down gradients, trucks may use engine braking.
- **Eliminating tight rail curves.** Rail squeal can be a significant source of noise annoyance and can be eliminated in design by avoiding tight curves (generally defined as less than 600 metres in radius). A less effective option post-construction may be the use of specific trackside lubrication systems.

Maintenance

- **Investment in new vehicles and rolling stock.** Investing in modern road vehicles and railway rolling stock (including locomotives, carriages and wagons) takes advantage of new technologies that improve their operational efficiency and quietness.
- **Infrastructure maintenance.** Track grinding, loco exhaust refurbishment, wheel alignment, track lubrication, brake refurbishment, road surface management.
- **Monitoring.** Collation of complaints data in a centralised repository and the use of monitoring equipment such as noise monitoring cameras allows noise 'hotspots' and vehicles or rolling stock requiring targeted maintenance to be identified.

Driver behaviour

- **Education.** Educating drivers about the importance of responsible driving and vehicle maintenance (particularly for road traffic) can lessen noise impacts. For example, minimising the use of horns (within safety parameters) and minimising the use of compression braking in residential areas through the use of signage and enforcement.
- **Demand management.** Encouragement of alternative routes (i.e. designated freight routes) and alternative transport modes (i.e. public transport) can result in reduced noise levels in areas comprising noise sensitive development.

Standards

- **Vehicle and infrastructure standards.** New or more stringent vehicle standards or regulations can be used to limit noise emissions from road and rail vehicles.

5 OTHER CONSIDERATIONS

5.1 STAKEHOLDER ENGAGEMENT

The management of road and railway transport noise is the shared responsibility of various stakeholders and noise mitigation is most effective when balanced, comprehensive and coordinated action occurs.

Proponents should engage with decision-making authorities and any other relevant stakeholders as early as possible where any proposal is located within the Policy's trigger distance (refer to **Table 1 of the Policy**).

This provides opportunities for early design to minimise the exposure of noise-sensitive land use and/or development to sources of transport noise. Doing so may result in reducing the need for physical barriers, such as noise walls, quiet house requirements and/or notifications on title.

Specifically, proponents' responsibilities include (but are not limited to) the following:

- Being aware of the road and railway transport noise impacting the subject land, with an understanding that such noise cannot be completely eliminated.
- Consulting with the State government transport portfolio, Department of Planning, Lands and Heritage, and/or the local government in relation to strategic planning for the infrastructure
- Preparing noise level contour maps or a noise management plan in accordance with the Policy requirements, and in doing so, seeking advice from the Department of Water and Environmental Regulation on technical matters, as required.
- Ensuring the initial and ongoing implementation of any noise management plan applying to the subject land.

5.2 MONITORING AND EVALUATION

Monitoring and evaluation is an integral part of the Policy lifecycle and is vital for continuous improvement.

The Department of Planning, Lands and Heritage will, on behalf of the Western Australian Planning Commission, monitor the implementation of the Policy and the planning and development outcomes delivered, to determine if outcomes are being achieved as intended.

The mapped road and railway corridors to which the Policy applies will be regularly reviewed to ensure the planning of construction of new road and railway corridors or deletion of any road or railway reservations is reflected in the Policy's mapping. Mapping may also need to be updated to reflect movement per day increases.

Future policy review, amendment or changes to the policy's mapping will be subject to full consultation with relevant stakeholders

5.3 VIBRATION

The Policy does not address ground-borne vibration. Vibration is a common emission involving the same physical processes as air-borne noise and the two are interrelated in a complicated manner. Vibration is most commonly associated with freight and passenger railways and at close distances to rail corridors, can cause a loss of amenity to sensitive land uses.

Vibration levels are dependent on ground composition and groundwater levels, rail track and rolling stock condition, train speeds and other factors, making it difficult to predict and mitigate. Vibration is best and most cost-effectively addressed 'at-source' through measures including rail track grinding, wheel maintenance or speed restrictions in built up areas.

Vibration is challenging and costly to mitigate generally and mitigation options for single detached housing is generally cost prohibitive. Feasible mitigation options do exist for larger scale multi residential development. Industry leaders do assess and if required, mitigate vibration.

APPENDIX 1: THE NOISE EXPOSURE FORECAST WORKSHEET AND STEP-BY-STEP GUIDE

Step 1	Identify the relevant noise source (road or rail) from SPP 5.4 policy mapping and list in the Noise Exposure Forecast worksheet. If subject site is near multiple mapped corridors, all need to be included in the worksheet. For road vehicle per day data and % heavy vehicle mix information, visit the Main Roads Western Australia Traffic Map website: https://mrapps.mainroads.wa.gov.au/TrafficMap. Locate the nearest site for which there is monitoring data and use the most recent vehicle per day and heavy vehicle mix information available. Round up to the nearest vehicle per day line or heavy vehicle mix line in the Noise Exposure Forecast.	Site description and summary of proposal		
Step 2	Measure the distance from relevant noise source(s) to receiver. The distance is defined as the three dimensional distance between the edge of the nearest road carriageway or the centreline of the nearest rail tracks to either: • if the position and extent of the noise sensitive building position can be reasonably determined, one metre outside the nearest external façade or opening to a normally occupied space; or • a point which reasonably represents where each future noise-sensitive development could be constructed nearest the transport asset and is within three (3) metres of the lot boundary. Insert measured distances into the Noise Exposure Forecast table.	1) list road / rail corridors (as mapped) and VPD/heavy vehicle mix	2) for each corridor, measure the distance to subject site/development	3) Noise Exposure Forecast noise level (dB)/ Exposure category
Step 3	Locate the closest scenario in the Noise Exposure Forecast table (rounding up or down to the closest VPD/Heavy vehicle mix). Identify the forecast noise level (dB) and corresponding exposure category in the Noise Exposure Forecast table (rounding to the nearest noise level (dB) where measured distance is between intervals) and put this into the worksheet.			
Step 4	If the subject site is impacted upon by multiple noise sources, use the formula in table to arrive at a single noise level. Use Noise Exposure Forecast table to identify a single relevant noise exposure category and corresponding policy requirements (Noise Management Plan required, quiet house requirements or no further measures).	4) Where there are multiple roads/rail noise sources: (4) Add correction if the two highest values in highlighted column (3) above are: dB equal or within 1dB of each other = +3dB; different by 2 or 3dB = +2dB, different by 4-7dB= +1d		
Step 5	For scenarios with multiple noise sources, add the highest noise source value (column 3) to the correction.	5) Sum of the maximum LAeq value from column 3) and the above correction		
Step 6	If there is existing development between the subject site and the road or rail corridor (as defined), describe this in the worksheet. It is permissible to drop 4dB (approximately one noise exposure category) to account for screening effects.	6) Screening development? Drop 4dB (one Exposure Category if desired		
Step 7	Determine final noise level/exposure category and corresponding policy requirements in the Noise Exposure Forecast worksheet, which is to accompany your planning or development application.	7) Final noise level and Exposure Category		

APPENDIX 2: EXAMPLE OF A NOISE EXPOSURE FORECAST WORKSHEET

A new residential development is proposed near the intersection of Marmion Avenue and Burns Beach Road. Being residential, it is noise-sensitive. Both roads are secondary roads (Category 2).

The closest carriageway edges of Marmion Avenue is approximately 44 metres, and approximately 80 metres for Burns Beach Road.

According to most recent traffic volume data, Marmion Avenue carries 46,393 vehicles a day, and Burns Beach Road carries 27,249 vehicles a day.

From the Noise Exposure Forecast table, the contribution from Burns Beach Road (secondary road, 25,000 vehicles, 80 metres distant) is estimated as $L_{Aeq,Day}$ 58dB. The Marmion Avenue contribution (secondary road, more than 35,000 vehicles per day, 44 metres distant) is estimated as $L_{Aeq,Day}$ 62dB. These two values are 4dBdifferent, so a cumulative correction of +1dB is added. Therefore the highest value of 62dB + 1dB in corrections is $L_{Aeq,Day}$ 63dB.

In this scenario, there is a single residential house which qualifies as screening development. If desired, a -4dB reduction (one exposure category) can be applied. After applying this reduction, the final noise level is 60dB and exposure category B.

1) list road/rail corridors (as mapped) and VPD/ heavy vehicle mix	2) for each corridor, measure the distance to subject site/development	3) Noise Exposure Forecast noise level (dB)/ Exposure category
Marmion Avenue 46,393 8%	45 metres	62dB Exposure Category B
Burns Beach Road 27,249 8%	80 metres	58 Exposure category B
4) Where there are multiple roads/rail noise sources: (4) Add correction if the two highest values in highlighted column (3) above are: - dB equal or within 1dB of each other = +3dB; - different by 2 or 3dB = +2dB, - different by 4-7dB= +1dB		+1dB
5) Sum of the maximum LAeq value from column 3) and the above correction		63dB Exposure Category C
6) Screening development? Drop 4dB (one Exposure Category if desired		Residential house -4dB
7) Final noise level and Exposure Category		59 dB Exposure Category B

APPENDIX 3: GUIDELINES FOR MEASUREMENTS AND ON-SITE VERIFICATION

Measurements and/or on-site verification may be required as part of any Noise Management Plan. Generally, these should be undertaken in accordance with relevant standards and the associated reporting must document:

- equipment/instruments used
- measurement duration
- measurement locations
- equipment settings
- calibration details
- ambient/background activities/ measurements (if indicated)
- relevant weather conditions (wind speed and direction)
- uncertainty of measurement
- operational conditions of noise source(s)
- adjustments made to measured levels (e.g. facade correction if free field)

Several of these aspects are discussed in the following table.

EQUIPMENT DETAILS

Noise measurements should follow the procedures set by *Australian Standard 2702-1984 and Australian Standard 2377- 2002* (Appendix 7). Variations to these standards may be acceptable, provided that: they are grounded by professional experience; are reasonably justified; and that any implications are addressed in the measurement report.

Sound-level meters need to be of the 'integrating averaging' type to measure the L_{Aeq} values for comparison with the Policy's criteria. The meter must have a Class 1 or Class 2 level of precision, in accordance with *AS IEC 61672* (usually marked on the body of the instrument). Sound-level meters must be checked for accuracy in the field using a calibrator. This provides a known sound level for reference. The calibrator must be compliant with *AS IEC 60942* for Class 1 and Class 2 calibrators. The meter must be checked before and after each measurement period, with a drift in sensitivity not to exceed + or – 0.5dB.

Instruments must be calibrated by a NATA-accredited laboratory within the previous two years.

Attended measurements are always preferable; however traffic volumes change on a daily and weekly basis. In such situations, unattended noise data loggers, or noise monitors, are often used with post-measurement analysis of the data used to verify the noise results.

Where a competent person considers that a recorded value from an unattended noise logger has been influenced by a noise source other than traffic, they are to exercise their professional judgment and adjust or omit the abnormal measurement value.

GENERAL PROCEDURES

Where a noise-sensitive building exists, for example, an existing residence adjoining a major transport corridor where a new major road or railway is proposed, the microphone is to be located one metre from the outside of the most exposed, habitable facade of that building.

The microphone shall be at least one metre from any corner of the building, and 1.4 metres (+/-0.2 metres) above ground floor level.

The microphone shall not be located in front of any door or window that can be opened, or, where this is not practicable, the door or window shall not be opened during the measurement period.

Where no building exists, the microphone shall be located at least 3.5 metres from a reflecting surface (other than the ground plane) and a +2.5dB correction should be added to the measured noise levels to account for facade reflection.

Where transport noise measurements are taken indoors, the microphone should be placed at least one metre from any window, door or wall surface and ideally in the centre of the room. All windows and doors must be closed during the measurement period. Indoor transport noise levels should be measured only in habitable spaces.

A photograph should be taken to show the location of measurement location for future, repeat measurements.

The monitoring equipment shall be capable of recording at least the L_{Aeq} parameter. It may also be useful for the equipment to be capable of measuring L_{Amax}, L_{A1}, L_{A10} and L_{A90} parameters.

The monitoring equipment should be set to record using the slow time weighting.

The number of measurement locations is to be determined on a project-by-project basis by a competent person. Refer to Austroads *Modelling, Measuring and Mitigating Road Traffic Noise* for guidance on the minimum number of noise monitoring locations including:

- Sparsely settled rural areas: About 20% of the residence within 500m of the alignment.
- Rural townships: About 10% of the residences nearest the alignment.
- Built-up areas: At least one site at each major crossroad and at least one site between crossroads.

MEASUREMENT DURATION

- The duration of the measurement needs to account for the likely change in noise levels in various time periods each week. Consider the possible change in peak hour traffic to evening periods, freight route schedules, and changes in patterns between weekdays and weekends or public holidays. A deployment period of one week is generally sufficient, so that if weather or other environmental behaviour affects the result, at least three representative measurements are usually obtained in each time period.
- The measurement period should not be less than 15 minutes and not more than one hour, to minimise data loss due to short-term noise events while capturing representative periods of transport activity.
- For major roads, a minimum of three 'valid' 24-hour weekday periods must be obtained for unattended measurements. This may require the monitoring equipment to be left for longer periods, depending on conditions. For railways, the measurement period should cover a sufficient number of train passes to obtain an acceptable level of repeatability.
- Noise measurements during school holidays, public holidays or weekends are generally not to be used for road and passenger rail traffic (freight rail may not change during these periods). Similarly, monitoring should be discarded during times of abnormal traffic flow (for example, during construction works).

WEATHER CONDITIONS

The validity of data is mainly dependent on weather conditions. Acceptable weather conditions are defined by Main Roads WA and have been adopted for the purpose of this guidance. They are as follows:

- Road or rail surface is to be dry.
- Source-receiver distance up to 20 metres:
  - variable wind during a 24-hour period up to 19 kilometres per hour; or calm conditions, or continuous positive wind up to 19 kilometres per hour.
- Source-receiver distance greater than 20 metres:
  - variable wind during a 24-hour period up to 19 kilometres per hour; or calm conditions, or continuous positive wind up to 11 kilometres per hour.
- Unacceptable weather conditions will not necessarily invalidate the measurements but will require comment.
- Where adjustments are made to hourly measured data, based on professional judgment, this must be highlighted. A reasonable estimate of an affected one-hour period can normally be obtained by taking the average of the hourly values on either side.
- Hourly and averaged data, where tabulated, can be shown to one decimal place (up to three significant figures); however, values for comparison with criteria are to be rounded to the nearest whole number.

APPENDIX 4: NOISE ASSESSMENT METHODOLOGY

The methodology for the assessment and stated assumptions must be reported as part of a Noise Management Plan.

MEASUREMENT AND MODELLING PREDICTION

Noise Management Plans are typically based on either noise measurement or noise modelling prediction. The level of transport noise at a particular point in relation to the noise source can be determined through a combination of field measurement and modelling prediction.

Noise measurements are required if the transport corridor already exists, as they are more representative of conditions specific to the site. Some corrections will still be needed to forecast future noise levels or assess the performance of any scheduled measures.

Noise prediction models are appropriate where transport corridors are not yet operating at their forecast capacity; for proposed new or upgraded road or railway infrastructure; or to predict noise levels across a proposed development area.

The Noise Management Plan must include details on:

- current traffic volumes and type of vehicles (that is, the percentage of heavy vehicles or locomotive class);
- forecasted changes;
- traffic speeds; and
- road surface/track configuration and condition.

The Noise Management Plan must clearly state what assumptions are being used for the modelling predictions and outline any verification procedures or model calibration.

In relation to noise-sensitive land use and/or developments, noise predictions can delineate the areas likely to exceed the Policy's noise criteria, and evaluate various noise-mitigation options separately.

ACCEPTABLE METHODOLOGIES

The general acceptable methodologies for noise prediction models are as follows:

- Predicted traffic noise levels should be reported only to the nearest whole number.
- Various industry traffic noise prediction models produce overall single-number noise emission results, however where indoor noise levels are to be predicted, assessment should include octave band analysis of noise sources, diffraction/shielding effects and the varying sound reduction through building elements.
- Cadastral and topographical data inputs to a predictive noise model can be obtained from the Landgate website: www.landgate.wa.gov.au/
- Future traffic levels can be based upon a logarithmic relationship which assumes incoherent addition of sound pressures, that is Change (dB) = 10 log10 (future traffic/existing) or suitable modelling appropriate to Austroads traffic engineering guidelines.
- The cumulative impact from existing road and railway noise sources should be included in the assessment for new noise-sensitive land use and/or development, but not for new transport infrastructure.
- Under the Policy, the noise criteria for new and upgraded road or railway infrastructure proposals apply to first two floors; however for informative purposes, Noise Management Plans can include analysis for receivers at all anticipated floor levels.
- For the purpose of assessing freight trains only, day and night noise levels must be assessed on the basis of each period having a minimum of one train per hour or the actual number of train movements per day, whichever is the higher.
- Estimates of $L_{Aeq(night)}$ values may be made on the basis of a maximum train pass-by noise level (L_{Amax5}) or average sound exposure level (L_{Aeq}).

The following table specific acceptable methodologies.

NUMERICAL CODES

Road traffic may be assessed using the UK Calculation of Road Traffic Noise (CoRTN) algorithm which yields LA10,18hour values, provided a suitable conversions to Australian conditions are made to obtain the appropriate $L_{Aeq,Day}$ ($L_{Aeq,16hour}$) or $L_{Aeq,Night}$ ($L_{Aeq,8hour}$) values as specified in the Policy.

It is preferable to undertake direct noise measurements of the roadway being investigated to determine the existing differences between relevant noise parameters. Where this is not possible, reference should be made to the DEFRA publication *Method for Converting the UK Road Traffic Noise Index LA10,18 hour to the EU Noise Indices for Road Noise Mapping*, which provides conversion formulae.

Also, where traffic noise measurement data are unavailable and the road traffic noise model cannot be calibrated against existing noise conditions, it is standard practice to apply a further correction of -1.7dB [1].

Rail traffic may be modelled using the *Nordic Rail Prediction Method (Kilde 130-1984)* algorithms with appropriate corrections for train class, speeds and local conditions. The algorithms have $L_{Aeq,24hour}$ noise prediction outputs, and they can be readily converted to an $L_{Aeq,16hour}$ or $L_{Aeq,8hour}$ noise level using a logarithmic relationship.

ISO9613-2, suitably corrected Harmonoise or Nord2000 algorithms may be used exclusively with neutral wind and stable temperature conditions for environmental attenuation effects for source to receiver distances up to 100 metres.

Beyond this distance or alternatively, variance due to environmental meteorological effects should be considered. Reference may be made to guidance on noise modelling provided by the Department of Water and Environmental Regulation.

SOURCE HEIGHTS AND RECEIVER LOCATIONS

Unless otherwise determined by a competent person for specific situations, the noise source heights should be as follows[2]:

- Passenger vehicles (Austroads Class 1 and 2) +0.5m
- Heavy vehicles (Austroads Class 3 and up) – Engine +1.5m
- Heavy vehicles (Austroads Class 3 and up) – Exhaust +3.6m
- Passenger rail 0 m
- Freight rail locomotive +4.0m
- Freight rail wagons +0.8m

Receiver heights for predictions should be 1.4 metres above floor level.

For new or upgrade of road and railway infrastructure proposals, at the most exposed habitable façade[3] of existing noise-sensitive premises, ground floor level only.

For new noise-sensitive land use and/or development proposals, at the most exposed habitable facade of the proposed buildings, at heights of 1.4 metres above all proposed floor levels.

SOURCE CORRECTIONS

For rail surface discontinuities or tight curves, the following corrections may be applied to segment exposure (LAe) or maximum L_{AmaxS} levels:

- Mechanical/uneven joint +3dB
- Curve radius less than 600m +3dB
- Turnout +6dB
- Curve radius less than 300m +8dB
- Diamond crossing +10dB

The above is a basic guide and other corrections for effects such as bridges, brake noise, car bunching, blowers, air compressors and wheel-rail components should be stated.

Accepted corrections for various road surfaces are:

- 14mm chip seal +3.5dB
- 10mm chip seal +2.5dB
- 5mm chip seal +1.5dB
- Dense graded asphalt 0.0dB
- Novachip -0.2dB
- Stone mastic asphalt -1.5dB
- Open graded asphalt -2.5dB

For the CoRTN algorithms, it is recommended to apply the 'three strings' approach, that is, use three road strings of different heights to represent traffic from passenger vehicles, heavy vehicle engines and exhausts.

For the passenger vehicle, the noise emissions are determined in accordance with the CoRTN algorithms.

For heavy vehicles, noise level corrections of -0.8dB and -8dB are recommended to be applied to the string of engines and exhausts respectively, relative to the source sound power level of heavy vehicles. As such, the noise model can reasonably reflect the difference of noise emissions from heavy vehicle engines and exhausts, and the overall noise emissions from the heavy vehicles in accordance with the CoRTN algorithms remain unchanged.

RECEIVER CORRECTIONS

When predicting transport noise levels immediately outside a facade, a +2.5dB facade correction is to be applied for both road and rail to account for the increase in noise caused by reflections from the facade. Similarly, for internal noise predictions based on a measurement immediately outside a facade, 2.5dB should first be deducted.

Notes:

1. This adjustment comes from a 1982 Australian Road Research Board study, An Evaluation of the U.K. DoE Traffic Noise Prediction (Report No 122, ARRB – NAASRA Planning Group) which found that the CoRTN calculations were over- predicting road traffic noise by this margin.
2. Rail noise source heights are relative to the wheel contact surface of the tracks.
3. The most exposed habitable facade would not include the wall or door of an enclosed carport or the like.

APPENDIX 5: ROAD TRAFFIC NOISE MODELLING CHECKLIST

Checklist item			Action
Road traffic input data			
Road name	[insert road name]		
	16-hr daytime road traffic volume		
	Percentage of heavy vehicles (daytime)		
	8-hr night-time road traffic volume		
	Percentage of heavy vehicles (night-time)		
Road pavement	[insert road pavement surface type]		
Road traffic heights	Have the road emissions sources been modelled at the following heights?		
	Light and heavy vehicle tyre-road height at +0.5 m		Y / N
	Heavy vehicle engine height at +1.5 m		Y / N
	Heavy vehicle exhaust height at +3.6 m		Y / N
Traffic speed	What is the modelled road traffic speed?		km/h
Noise prediction corrections			
Traffic emission	If using the Calculation of Road Traffic Noise algorithms, have the following corrections been applied?		
	-0.8 dB correction to heavy vehicle engine emission?		Y / N
	-8.0 dB correction to the heavy vehicle exhaust emission?		Y / N
Road pavement	Has one of the following road pavement corrections been applied to the tyre/road emission?		Y / N
	14 mm chip seal	+3.5 dB	Y / N
	10 mm chip seal	+2.5 dB	Y / N
	5 mm chip seal	+1.5 dB	Y / N
	Dense graded asphalt	0.0 dB	Y / N
	Novachip	-0.2 dB	Y / N
	Stone mastic asphalt	-1.5 dB	Y / N
	Open graded asphalt	-2.5 dB	Y / N
Australian traffic	Has a -1.7 dB Australian Road Research Board study been applied?		Y / N
Receptor façade	Has a +2.5 dB building façade correction been applied?		Y / N

Checklist item		Action
Road noise barriers		
Noise barriers	Have noise barriers been modelled as being fully reflective?	Y / N
	If noise barriers have not been modelled as being fully reflective, have absorptive barrier designs been considered?	Y / N
Environmental inputs		
Receivers	Were receiver heights modelled at 1.4 m above floor level?	Y / N
	Have noise levels been predicted at the most affected façade/s?	Y / N
Road traffic noise predictions		
Predicted noise levels	Have noise levels been predicted at all floors of the development?	Y / N
	Have the noise predictions considered the 20-year planning horizon?	Y / N
Rail traffic input data		
Rail line name	[insert rail line name]	
	16-hr daytime passenger rail movements	
	16-hr daytime freight rail movements	
	8-hr daytime passenger rail movements	
	8-hr daytime freight rail movements	
Rail traffic heights	Have the rail noise sources been modelled at the following heights?	
	Passenger and freight trains at 0.5 m above rail height?	Y / N
	Freight train locomotives at 4.0 m above rail height?	Y / N
Rail line speed	What is the modelled rail traffic speed?	km/h

Checklist item			Action
Noise prediction corrections			
Train noise emissions	Has the assessment described how the following have been calibrated in the rail noise calculations?		
	The various train classes in use on the rail line		
	Train speed		km/h
	Train length		m
Track features	Based on the localised track features have the following noise emission corrections been appropriately considered?		
	Mechanical/uneven joints	+3 dB	Y / N
	Curve radius less than 600 m	+3 dB	Y / N
	Turnout	+6 dB	Y / N
	Curve radius less than 300 m	+8 dB	Y / N
	Diamond crossing	+10 dB	Y / N
	If appropriate has the assessment described how other noise sources such as bridges, brake noise, car bunching, blowers and air compressors been accounted for?		Y / N
Receptor façade	Has a +2.5 dB building façade correction been applied?		Y / N
Rail noise barriers			
Noise barriers	Have noise barriers been modelled as being fully reflective?		Y / N
	If noise barriers have not been modelled as being fully reflective, have absorptive barrier designs been considered?		Y / N
Environmental inputs			
Receivers	Were receiver heights modelled at 1.4 m above floor level?		Y / N
	Have noise levels been predicted at the most affected façade/s?		Y / N
Rail noise predictions			
Predicted noise levels	Have noise levels been predicted at all floors of the development?		Y / N
	Have the noise predictions considered the 20-year planning horizon?		Y / N

APPENDIX 6: NOISE MANAGEMENT PLAN CONTENT

This is a guide for the preparation and/or assessment of Noise Management Plans. It is not intended to be a complete list of all issues that should be covered in a Noise Management Plan, as no guide can anticipate all issues that may be relevant to individual proposals.

NOISE MANAGEMENT PLAN TABLE OF CONTENTS

1.0 Executive summary

- Scope of work
- Criteria used in the assessment
- Statement about compliance
- Recommended noise mitigation measures (if required)
- Other recommendations (e.g. further assessment)

2.0 Introduction

3.0 Project description

- Background history or relevant previous studies
- Noise issues addressed and commissioned scope of work

4.0 Site details

- Location of major transport corridor(s)
- Noise receiver locations (i.e. existing and proposed future residential areas)
- Site information including natural and constructed, existing development and surrounding land uses that may affect noise propagation
- Measurement or prediction locations
- Maps with site details including north point and scale

5.0 Noise criteria

- Outdoor noise criteria (Table 1) - for proposed new or upgraded road and rail infrastructure or for outdoor living areas in proposed noise-sensitive land use and/or developments
- Indoor noise criteria (Table 1) - for noise-sensitive land use and/or development proposals (Reference *AS/NZS 2107:2000 Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors for non-residential developments*)

6.0 Methodology

Acoustic assessments are typically based on either *noise measurement or noise modelling prediction*. The assessment must include details on all noise modelling input parameters (see below checklists) including the following transport factors:

- Current traffic volumes and type of vehicles (i.e. for road noise, percentage of heavy vehicles of locomotive class; for rail noise, rail car series type (currently A or B series for Perth passenger trains))
- Forecast traffic volumes (and basis for estimating future traffic volumes)
- Horizon year for traffic projections
- Traffic speeds
- Road surface/ track configuration and condition (if relevant)

Methodology for noise measurement

Direct noise measurement is appropriate if the transport corridor already exists, as it is generally more representative of conditions specific to the site. Also for some cases, noise modelling prediction requires on-site verification based on measurements. The noise measurement methodology should detail:

- Equipment/instruments used
- Measurement duration
- Measurement locations
- Equipment settings
- Calibration details
- Ambient/background activities/measurements (if indicated)
- Relevant weather conditions (wind speed and direction, rainfalls)
- Operational conditions of noise source(s)
- Adjustments made to measured levels (e.g. façade correction if free field)

Methodology for noise modelling prediction

Noise modelling prediction is appropriate where transport corridors are not yet operating at their forecast capacity; for proposed new major road or rail infrastructure; for proposed major redevelopment of major road or rail infrastructure; or to predict noise levels across a proposed development area. The noise prediction methodology should detail:

- Type of computer noise modelling software used (e.g. SoundPlan, CadnaA, etc)
- Industry recognized prediction codes used (e.g. CoRTN for road noise, Nordic (Kilde Rep 130) for rail noise, etc)
- Model inputs in relation to noise emissions – number of trains, length, speed, passby noise exposure level (SEL or LAE) at a specific distance (usually 15 metres from track centerline)
- Noise source heights and locations (where different from standards)
- Topographical settings
- Meteorological conditions - a 'worst case' scenario based on suitable historical weather observations for the time periods of interest, or the following default conditions:

Parameter	Day	Night	Comments
Wind speed, m/s	4.0	3.0	General direction is from source to receiver
Temperature gradient / inversion lapse rate, °C/100m	Nil	2.0	Implementation dependent on specific software packages
Pasquill Stability Criterion	E	F	
Temperature, °C	20	15	-
Relative humidity, %	50	50	-

- Receiver locations
- Any other relevant modelling parameters/assumptions (ground absorptions, for example)
- Details of adjustments made to predicted levels (façade correction, NAASRA correction, conversion from $L_{A10,18hour}$ to L_{Aeq})
- Outline of any verification procedure or model calibration

7.0 Analysis/results

The traffic noise level results should be displayed clearly (normally in tabulated format for individual point calculations and/or noise contour format for grid point calculations) and should incorporate details of the following:

Results for noise measurement

- Measurement duration, date, time
- Distance from the noise source and operating conditions, as relevant
- Ensure at least 3 full days of road traffic, or 60 train pass-bys unaffected by weather or school holidays is reported. For road traffic noise, the Screening Assessment Tool estimates may be used in lieu of field data only.
- Uncertainty of the measurement

Results for noise modelling prediction

- Individual receivers (point calculations) or contour maps (grid calculations) for modelling scenarios indicated
- Uncertainty of the modelling predictions

8.0 Discussion, recommendations and conclusions

The discussion compares the relevant noise criteria with the measured/predicted results and carries out assessment for compliance. The following should also be addressed in the discussion:

- Assessment of compliance. Assessment should be made in terms of both $L_{Aeq,day}$ and $L_{Aeq,night}$. For road traffic, $L_{Aeq,night}$ may be assumed to be 5 dB below the LAeq,day value.
- Comparison of existing versus predicted future noise levels (if relevant)
- Comparison of predicted future noise levels versus a predicted no-build scenario (if relevant)
- Noise mitigation options to achieve compliance (noise control measures)
- Reasonable and practicable considerations relevant to the noise mitigation measures
- Predicted noise levels with/without reasonable and practicable noise mitigation measures in place
- Recommendations in sufficient detail to be turned into conditions of development

Overall, a suitable noise management strategy is to be clearly identified.

9.0 Noise mitigation

- Recommended mitigation and control measures and relevant benefits
- Mitigation measures to be adopted
- Identification of the responsibilities of each party for construction and ongoing maintenance
- Timeframes for implementation of commitments made
- Other management measures to be included, such as post-construction monitoring and complaint response procedure for example
- Results of community stakeholder consultations (if relevant)

10.0 Summary

The summary of the plan may be presented as a brief version of the executive summary, outlining the projected level of compliance with applicable criteria.

11.0 Appendices (as required)

Documents or data often referred to in the text of the plan including:

- Photographs of measurement sites
- Details of measurement site conditions
- Detailed charts and data from noise measurements
- Wind and meteorological data
- Ambient noise data
- Noise level contour maps preferably using policy criteria for the categories mapped

APPENDIX 7: RECOMMENDED WORDING FOR NOTIFICATIONS ON TITLE

Notifications on title advise prospective purchasers of the potential for noise impacts from major transport corridors and help with managing expectations. A notification on title should be required as a condition of subdivision (including strata subdivision) or development approval for the purposes of noise-sensitive development as well as planning approval involving noise-sensitive development to advise that the site is located in a noise-affected area.

For subdivision approvals, use of notifications on title is guided by the WAPC's *Planning Bulletin 3 – Record of Information (Memorials) on Title and the Model Subdivision Conditions Schedule.*

The condition (including the Notification itself) should be worded as follows:

"A Notification, pursuant to Section 165 of the *Planning and Development Act 2005* is to be placed on the Certificate(s) of Title of the proposed lot(s) / subject lot(s) [DELETE AS APPLICABLE]. Notice of this Notification is to be included on the diagram or plan of survey (Deposited Plan). The Notification is to state as follows:

> *'This lot is in the vicinity of a transport corridor and is affected, or may in the future be affected, by road and rail transport noise. Road and rail transport noise levels may rise or fall over time depending on the type and volume of traffic.'*
> (Western Australian Planning Commission)

For development approvals, local governments use Section 70A of the *Transfer of Land Act 1893.*

It is strongly encouraged that proponents make prospective purchasers aware of the existence of the Notifications on Title on affected lots, such as through Contracts of Sale.

Prospective purchasers of land/lots/dwellings located within the area to which the Policy applies may wish to contact the relevant local government for further advice.

APPENDIX 8: MODEL SPECIAL CONTROL AREA PROVISIONS FOR LOCAL PLANNING SCHEMES

Provisions relating to Special Control Areas are included in Part 5 of Schedule 1 of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the model provisions for Local Planning Schemes). The following is a model Special Control Area for land in the vicinity of a transport corridor:

Special Control Area – Road and Railway Noise

X.X SCA X – Land affected by road and rail noise

X.X.1 Purpose

The purpose of Special Control Area X is to ensure that the requirements of *State Planning Policy 5.4 – Road and Rail Noise* (SPP 5.4) are satisfied by all proposed development and land use.

X.X.2 Objectives

The objectives of Special Control Area X are to:

a) Delineate land within which SPP 5.4 applies;

b) Ensure that SPP 5.4 is properly considered and implemented where development or a change of use is proposed on land within which SPP 5.4 applies.

X.X.3 Planning Approval

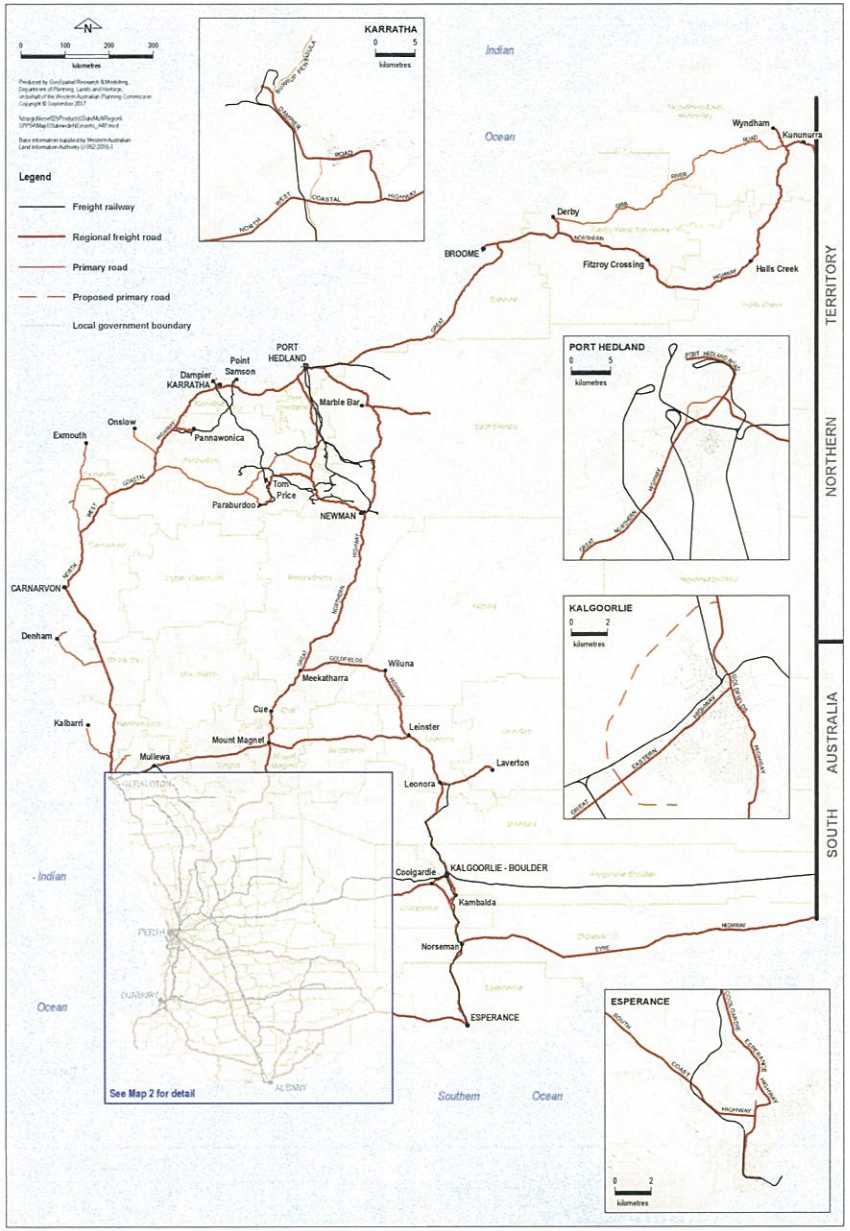
a) Notwithstanding any other provisions in this Scheme, planning approval is required for any development or change of use proposed for land within Special Control Area X.

b) In considering an application lodged pursuant to Section X.X.3(a), the local government will have due regard to SPP 5.4.

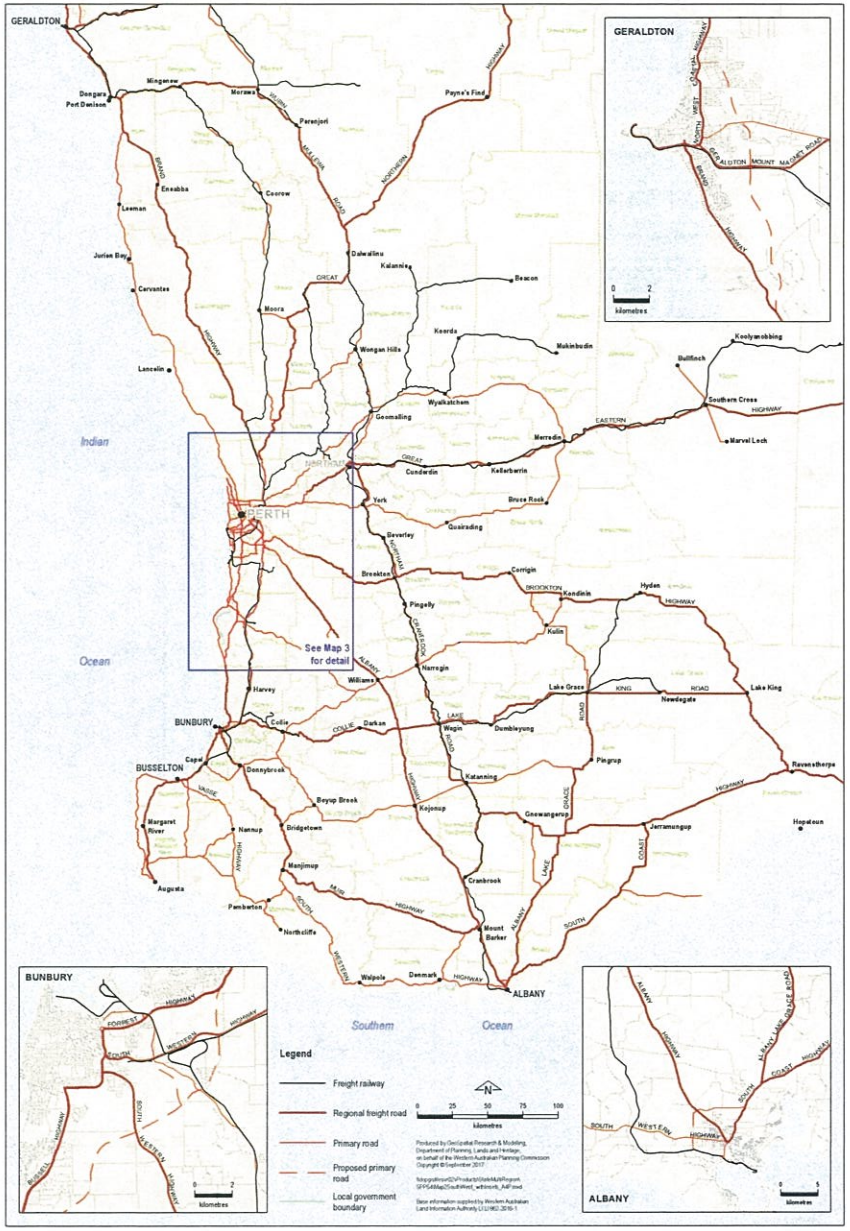
c) Approval of an application lodged pursuant to Section X.X.3(a) will only be forthcoming where the local government is satisfied that any applicable requirements of SPP 5.4 have been met, or can be met through the satisfaction of a condition of approval.

d) In considering an application lodged pursuant to Section X.X.3(a), the local government may seek technical advice from the Department of Planning, Lands and Heritage and Department of Water and Environmental Regulation, as appropriate, and will have due regard to that advice when making its decision.

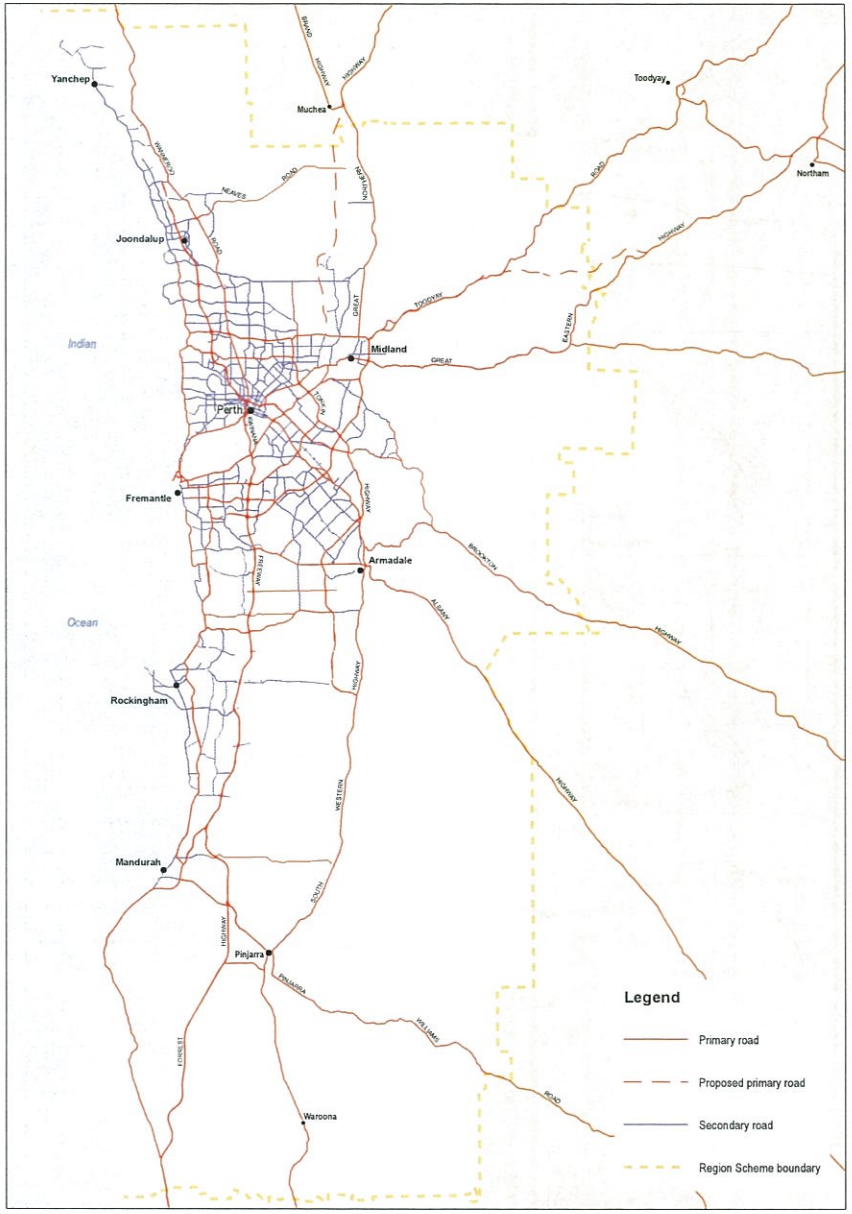
APPENDIX 9: MAPS

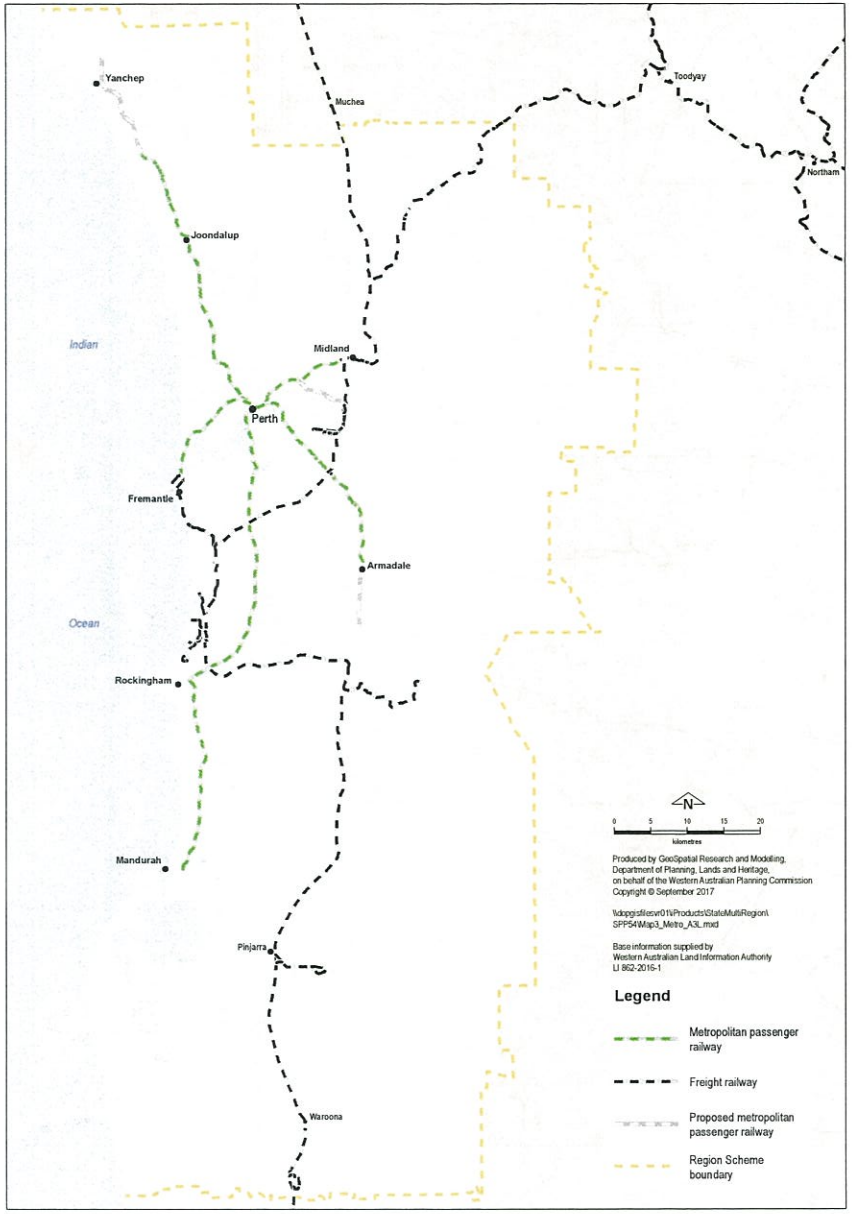


Map 1: Statewide



Map 2: South West





Map 3: Perth and Peel

FAQ's

1. How do I find out if SPP 5.4 applies to my proposal?

Refer to section 4 of the Policy. If your development proposal is within the trigger distance (as set out in Table 1 of the Policy) from any specified major road or rail corridor; and relates to a noise-sensitive land use/development, new or major upgrades to major roads and railways, then the Policy applies.

2. Where do I find out to which major road and rail the Policy applies?

Existing major roads and rail to which the Policy applies is identified on spatial maps in the Implementation Guidelines (Appendix 9 of the Guidelines). The major roads and rail, along with approximate trigger distances, can also be viewed on the Department of Planning, Lands and Heritage public map viewer at www.dplh.wa.gov.au.

3. Does SPP 5.4 apply to existing developments?

No. SPP 5.4 does not retrospectively impose noise mitigation measures over existing transport infrastructure or existing developments, however, home owners are encouraged to consider voluntary upgrades to their home to assist in managing noise where it may be beneficial to do so.

4. What are the key changes that have been made to the Policy?

The policy review has focused on:

- Improving implementation through the provision of clearer policy measures and guidance.
- Simplifying the noise criteria/assessment (refer to question 6 and 8 below).
- Enhancing deemed to comply options through quiet house design (refer to section 4.5 of the Guidelines).
- Providing standardised templates for Noise Management Plans, local planning scheme provisions and notification on title wording (Appendix 4 to 6 of the Guidelines).

5. What is a notification on title?

A notification on title is to advise prospective purchasers of the potential for noise impacts from major transport corridors. It's generally required as a condition of development and/or subdivision for when estimated and forecasted noise levels exceed the policy's outdoor noise criteria, following implementation of any noise mitigation measures. The WAPC's Planning Bulletin 3 – Notifications on Title provides further guidance when such a measure may be imposed.

6. What are the key changes to the screening assessment?

The Screening Noise Assessment table, now called the Noise Exposure Forecast table (Table 2 of the Guidelines), has been revised following comprehensive case testing of noise levels by an acoustic consultant. The Table has introduced noise exposure categories that correspond with quiet house design requirements.

7. What is quiet house design?

Quiet house design aims to ensure that that houses are built to ensure expected standards of living are upheld for development proposals that have predicted or measured outdoor noise levels that exceed the Policy's noise criteria. This is achieved through the design and internal layout of rooms, provision for at least one protected outdoor area, and use of specified materials for glazing and insulation. Refer to section 4.5 and Table 3 of the Guidelines.

8. What are the key changes to the noise criteria?

The dual target and limit noise criteria has been simplified into a single value for compliance and a new 'concession' to account for developments which occur behind existing screening and barriers such as housing, noise walls or bunding.

9. Can alternative noise metrics such as L_{Amax} be used?

The adoption of L_{Amax} metric was considered in the policy review but not recommended due to the likely significant implications for both developers and/or operators, including more stringent and costly building treatments, noise walls and larger physical separation distances. Short term noise events, which are well-captured by the L_{Amax} metric are more effectively controlled 'at source'.

10. What level of consultation has been undertaken in drafting SPP 5.4?

The policy review has been overseen by the Western Australian Planning Commission and supported by a government/industry technical working group comprising wide representation of relevant stakeholders. A technical acoustic analysis has been undertaken by a team of specialist consultants.

11. Does SPP 5.4 address ground borne vibration?

No. As part of the policy review, technical investigations were undertaken to consider vibration. The findings were that vibration is best and most cost effectively addressed 'at source' through measures like track design, track grinding, wheel maintenance or speed restrictions in built-up areas. Addressing vibration would add significant additional complexity and be challenging to model and mitigate, adding to time constraints and cost to proponents without a guarantee for success.

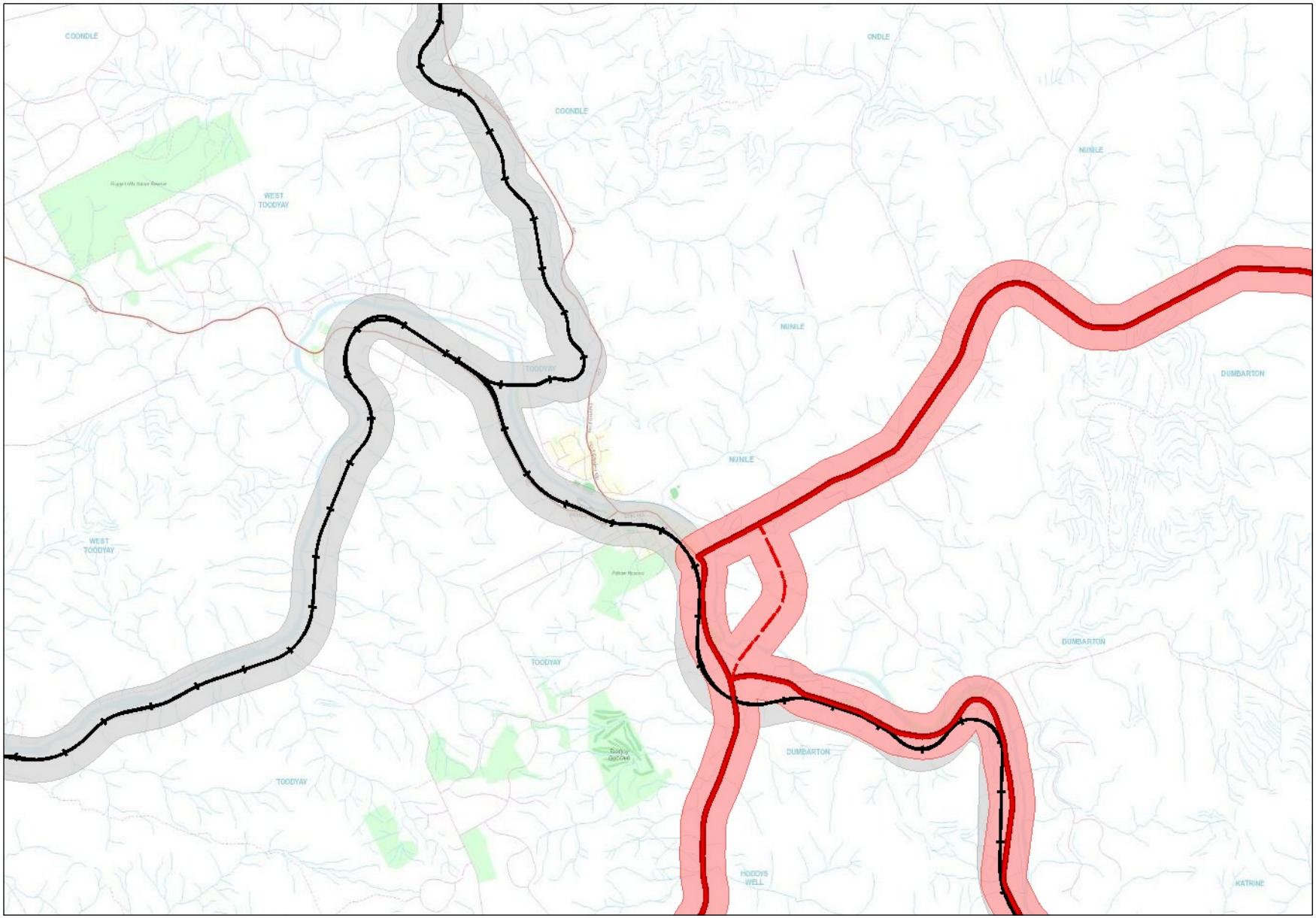
12. Who is responsible for assessing and determining noise impacts?

The management of road and railway transport noise is a responsibility shared among various stakeholders. The Department of Planning, Lands and Heritage is the lead agency for ensuring that Noise Level Contour Maps, Noise Management Plans and Noise Exposure Forecasts are consistent with the policy, with technical assistance provided by the Department of Water and Environmental Regulation. Refer to section 2 of the Guidelines for full implementation responsibilities.

Department of Planning, Lands and Heritage

GOVERNMENT OF WESTERN AUSTRALIA

DRAFT SPP 5.4 Impact of 300m buffers on Toodyay Townsite - Extended View



Legend

SPP 5.4 Road-Rail Noise Cont

- Railway Line
- State Freight Roads
- State Freight Roads (Future)

SPP 5.4 Statewide (Draft 2017

- Freight Railway
- Regional Freight Road
- Primary Road
- Proposed Primary Road

SPP 5.4 Road and Rail Noise I 2017)

- Primary Road Buffer
- Freight Railway Buffer

4.5 0 2.27 4.5 Kilometers

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

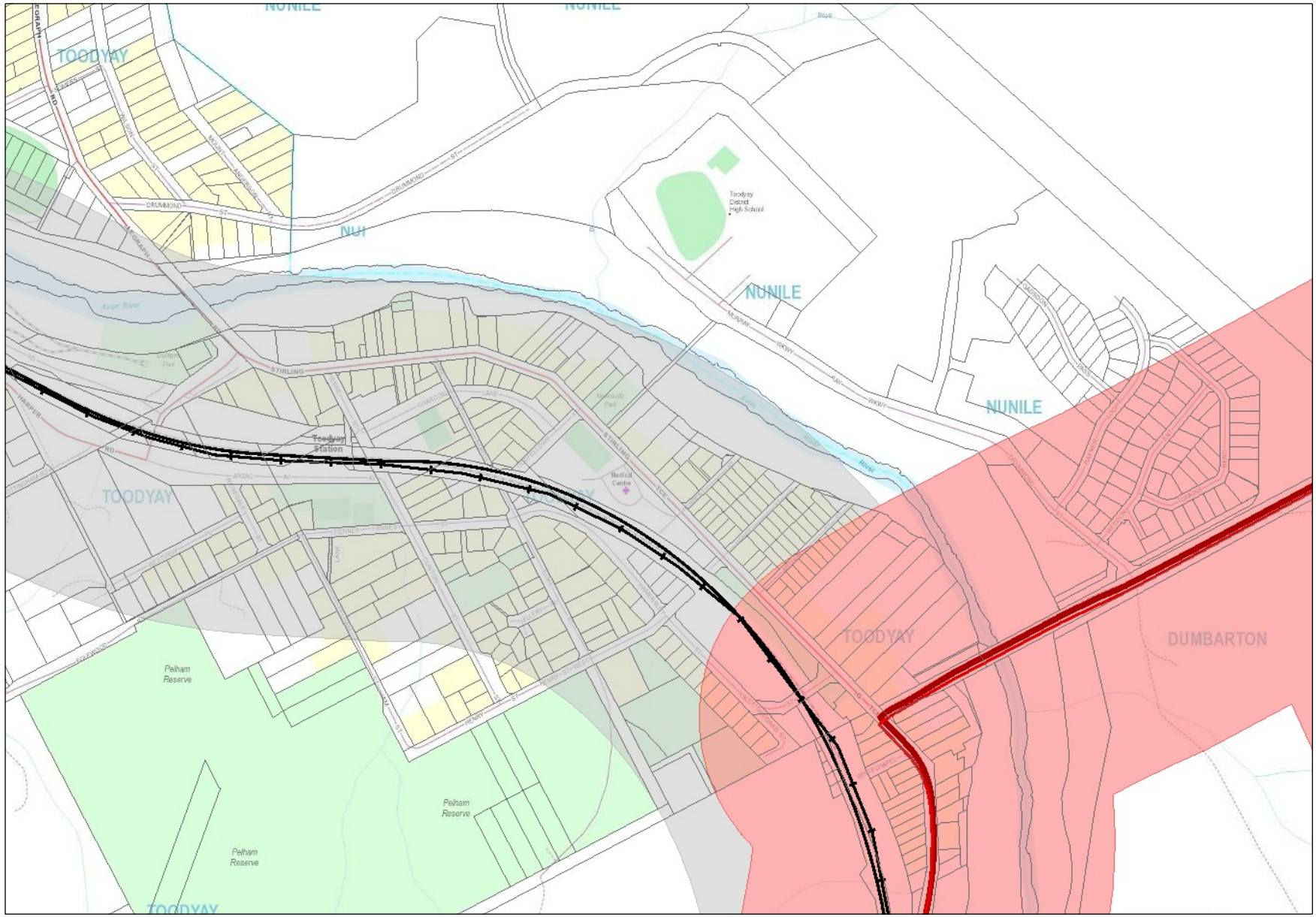
Notes

Showing wider impacts on West Toodyay, Glencoe Estate etc

Department of Planning, Lands and Heritage

GOVERNMENT OF WESTERN AUSTRALIA

DRAFT SPP 5.4 Impact of 300m buffers on Toodyay Townsite



Legend

- Cadastre

SPP 5.4 Road-Rail Noise Cont

- Railway Line
- State Freight Roads

SPP 5.4 Statewide (Draft 2017

- Freight Railway
- Regional Freight Road
- Primary Road

SPP 5.4 Road and Rail Noise I 2017)

- Primary Road Buffer
- Freight Railway Buffer

Notes

0.6 0 0.28 0.6 Kilometers

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Table 1:
Transport corridor classification and trigger distances

Transport corridor classification	Trigger distance	Distance measured from
Primary Roads		
State Roads (freeways/highways/primary distributors) Primary Regional Roads (red roads under region schemes) Freight roads (Perth and Peel regions) Regional freight roads	300 metres	Road carriageway edge
Secondary Roads		
Other Regional Roads (blue roads under region schemes) District Distributor A	200 metres	Road carriageway edge
Passenger railways		
	60 metres	Centreline of the closest track
Freight railways		
	300 metres	Centreline of the closest track

Source

DRAFT SPP 5.4 Road and Rail Noise (2017)