

CHAPTER 20

THE ROLE OF INDUSTRY IN PROMOTING EVIDENCE-BASED POLICY – A CASE STUDY OF THE FREIGHT AND LOGISTICS COUNCIL OF WA IN PLANNING FOR FREIGHT NOISE

Fred Affleck, Evan Jones and Kareena May

INTRODUCTION

Many industry and professional groups have a role to play in urban planning and policy development. They are part of the overall policy formulation and governance system for urban and transport planning in Perth. This chapter is more practical than others included in this book, but has been included as a case study of the way that industry and professional organisations can stimulate policy debate and bring their own research perspective to policy formulation.

Noise from a broad range of economic and other activities is pervasive in urban settings across the world. Recognising the potential ill-effects of excessive noise on human health and finding ways to minimise this noise at the source has for decades been an important task for engineering design and environmental regulation (see chapters 12 and 16). However, some noise, especially from transport-related sources (notably aeroplanes, trains, trucks and buses), cannot be eliminated ‘at source’ or even reduced to tolerable levels without imposing undue constraints on economically valuable activities and adversely affecting the prosperity of the community at large. Fortunately, the sources of transport-related noise are location specific, so that by separating noise-creating activities from noise-averse land-uses, and where

possible creating buffers between them, it is possible to strike a balance among the competing demands of prosperity, amenity and health. Managing the ‘geography of noise’ has become an issue in all states in Australia.

This chapter is a case study describing how an industry-based body can make a useful contribution to good planning outcomes in a large metropolitan area. It describes the program of evidence-based policy advocacy undertaken by the Freight and Logistics Council of Western Australia (FLCWA)¹ aimed at protecting economically important railway freight corridors in the ‘Perth and Peel’ metropolitan area of Australia (population of 2.2 million in 2016), while at the same time preserving the amenity of residents living on the edges of these corridors. This advocacy by the FLCWA, begun in 2011, has been aimed at averting conflict between economically important transport activity and community amenity and health, in a context of competition for land from a growing population and industry. The body has also initiated a program to identify and reduce ‘at-source’ noise from freight rail operations, in collaboration with all railway entities managing rail infrastructure and operating rail freight services in the Perth metropolitan area. The FLCWA has been concerned that current land-use development practice will result in closer proximity of residential and freight-related land-uses, with consequent public pressure to constrain freight operations where adequate ‘buffers’ do not exist or are impractical to establish.

These concerns have been intensified by new state government policies aimed at increasing population density in Western Australia’s dominant Perth and Peel Region. In response to forecasts that the region’s population will increase to 3.5 million in the next three to four decades, the Western Australia Planning Commission (WAPC) has mandated policies aimed at increasing density in new residential areas and significant ‘urban infill’ in established areas to reduce current extreme levels of ‘sprawl’ (Western Australian Planning Commission, 2015). Planning for Perth and Peel aims to place 45 per cent of all new dwellings

in the existing developed urban area. Some local governments responding to 'infill' policies and seeking growth in rateable land values have been insensitive to potential noise-related, land-use conflicts, including approvals for residential redevelopment of former urban industrial land close to freight rail corridors.

THE REGULATORY FRAMEWORK

Environmental regulators recognised the health effects of aircraft noise in the 1960s and airport planning and operations have responded with buffer lands; building siting and design standards (Standards Australia, 2015); retrospective at-source noise mitigation, including changes in jet engine design; and (where all else has failed) night curfews. Since 2004 the *Building Code of Australia* has contained requirements for sound insulation of most residential, community and commercial buildings, although not detached single dwellings (Patterson, 2004). In 2012 the inter-governmental Australian Building Codes Board (ABCB), authors of the *National Construction Code*, issued a Regulation Impact Statement, *Proposal to Address the Problem of Intrusive External Noise in New Residential Buildings*, but to date this has not been followed by new building regulations.

Most Australian states have addressed the issue of transport and urban noise. For example, the Environmental Protection Authority of New South Wales has published a *Rail Infrastructure Noise Guideline* (EPA NSW, 2013), aimed 'to ensure noise and vibration impacts associated with particular rail development projects are evaluated in a consistent and transparent manner. It applies to heavy and light rail infrastructure projects including the construction of new rail lines and upgrades to existing lines', and has been prescriptive in intent.

The EP&A Act [*Environment Planning and Assessment Act 1979* New South Wales] requires that proponents and planning authorities examine and take into account to

the fullest extent all matters affecting the environment. This guideline provides a procedure to consider feasible and reasonable noise mitigation measures that form part of a noise and vibration assessment. This guideline is one component of a number of rail noise initiatives being developed to manage the environmental impacts of noise and vibration from the NSW rail system. The other complementary initiatives aim to reduce noise and vibration impacts from existing rail operations, which have mostly grown over a long period of time. These include: a noise abatement program to address existing acute levels of heavy rail noise on a priority basis, planning guidelines for new residential developments alongside rail lines, national rolling stock standards to reduce noise and other emissions from these sources. (EPA NSW, 2013, pp.1–2).

In Western Australia the implementation of land-use development controls is largely delegated to local governments, with recourse to state government adjudication in some matters. Land-use planning guidance relating to noise from road and rail transport is provided by *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land-use Planning* (WAPC, 2009b) and *Implementation Guidelines*. Development of this policy was the outcome of successful collaboration between the (WAPC) and the state's Department of Environment Regulation, in consultation with the land development industry and the freight industry represented by the FLCWA. Crucially the application of SPP 5.4 requires that local authorities have 'due regard' for the guidance it provides, along with several other competing policies promoting urban infill which have the same status. There is no further planning guidance on how to resolve these policy conflicts.

The complementary purposes of Western Australia's *State Planning Policy 5.4* are to protect urban amenity and important economic activity ('protect people from exposure to unreasonable noise; protecting major transport corridors from urban

encroachment; and encouraging best practice design and construction standards', FLCWA, 2014, p.2). It applies to proposals for 'noise sensitive [land] development'; to 'new' developments and 'major redevelopments' of major arterial road infrastructure; and rail passenger and freight infrastructure (including freight-handling facilities).

The processes in which the policy may be applied occur at different stages of land-use planning. These can address noise-exposure risks in high-level strategic documents, such as regional and local planning strategies, through to statutory planning controls contained in local planning schemes and structure, subdivision and development plans. The policy provides for noise assessments (critically, including forecasts up to twenty years), for specific acoustic treatments to control noise and for 'reasonable and practicable' noise management plans to be implemented by land developers. Transport infrastructure developers are required to 'have regard to the policy in the planning, design and implementation of new major road or rail infrastructure projects' (WAPC, 2014, p.9).

The *Implementation Guidelines* (WAPC, 2014) detail acceptable building treatment packages and provide advice on a range of other potential mitigation measures and guidance on aspects of noise measurement. For rail freight operations of one or more trains per hour, the policy triggers concerns for development located within 53 metres of a rail track, implying potential set-back or other buffering provisions where development is proposed closer than this. This provision has given rise to concerns about the potential for significant land 'sterilisation' and the potential for negative consequences from loss of development opportunities.

'Outdoor noise criteria' against which developments are to be assessed are in the form of day and night noise targets, measured in 'LAeq' (an equivalent averaged sound energy value over one hour),² not peak noise (LMax). The policy specifies outdoor noise targets (measured in LAeq) of 55 dB(A) for daytime (6am to 10pm) and 50 dB(A) at night (10pm to 6am), and noise 'limits' of

60 dB(A) for daytime and 50 dB(A) at night. Significantly, noise measurements are of 'LAeq', i.e. average equivalent noise which are suited to road traffic, not peak noise 'LAmax', which is better suited to noise from intermittent sources with high noise levels such as aircraft and freight trains.

The policy does not apply to proposals involving an increase in traffic along an existing railway or road in the absence of a major land-use redevelopment; to aircraft or watercraft noise; to noise from safety warning devices; to fixed sources of noise or to 'ground vibration'. It has no role in controlling transport noise at its source and it does not apply retrospectively.

THE CONTEXT FOR POLICY ADVOCACY

Growing population and transport activity and policy initiatives promoting 'urban densification' have given rise to a review of SPP 5.4: its implementation guidelines and standards by the WAPC. The FLCWA has undertaken research to provide evidence for consideration by this review.

The focus for advocacy has been the policy's 'outdoor noise criteria' and the *Implementation Guidelines* (WAPC, 2014), which detail acceptable building treatment packages and provide advice on a range of other potential mitigation measures and on aspects of noise measurement. Advocacy by the FLCWA has been required to take into account the complex nature of *State Planning Policy 5.4*, quantitative standards for its application and the complementary roles of state and local government in applying the policy. The policy is complex in its principles and their application and has been difficult for many local governments to interpret and apply, even where there is a will to have 'due regard' for it.

THE ADVOCACY PROCESS

SPP 5.4 took effect in 2009. Since that time, addressing concerns of the freight industry has been a long and complex process. As the FLCWA became more aware of planning decisions that were

affecting land adjacent to major road and rail corridors, it was apparent that many local governments were not well equipped to have ‘due regard’ for the policy as local governments had given approval to development projects close to rail freight lines. Among planners there was uncertainty about how the policy should be applied across the spectrum of plans in Western Australia, which includes district and local-area land-use planning, planning of industrial area buffers and reviews of applications for subdivision and development. The FLCWA established a working group to examine these issues and individual cases, supporting the council’s advocacy in favour of local government planning decisions, which in the council’s view better promoted the aims of SPP 5.4. From the beginning the approach of the FLCWA has been rigorously research-based and consultative.³

In its quest for better outcomes, the council decided it must become better informed about relevant principles and processes of planning law and practice – a large and complex body of knowledge. It recognised it could never be the ‘expert’, but knew it must become more familiar with the ‘territory’ and better equipped to brief advisors and consultants. The council’s first aim was to gain a better understanding of relevant land-use planning processes within state and local governments. For this, two research projects were commissioned: the first to provide it with an overview of Western Australia’s planning system where it touched freight and logistics (FLCWA, 2012) and the second to assess the current state of professional practice in local government regarding land-use planning for freight. The latter study was commissioned by the WA Local Government Association (WALGA) in collaboration with the FLCWA (see WALGA, 2012). Completed in February 2012, it concluded that the planning process is characterised by a low prioritisation of freight planning and limited coordination across government with respect to policies affecting freight – this is not assisted by (and may in part be the result of) a complex referral, assessment and determination process. It also concluded that there is not a lack of understanding of ‘freight issues’ by local

government, but rather insufficient understanding of what its role is or should be in the context of those issues. As a result, there is an inconsistent approach to freight planning and implementation across local government areas.

It was also concluded from this research that land-use planning practice contains little guidance on design of the land-use interface with transport corridors. *Directions 2031 and Beyond* (WAPC, 2010) contains discussion and guidance for freight planning that reflects its key function and should filter down in a consistent manner to more detailed planning instruments, such as Local Planning Schemes and Local Planning Policies. The development of Regional and Metropolitan Freight Plans by the Department of Transport,⁴ provides an opportunity to initiate active implementation of *Directions 2031 and Beyond* to ensure coordination occurs between all levels of planning. There were also conclusions for communication with the public sector. In particular, there is a need for a single freight infrastructure plan for the state to be adopted by all tiers of government and departments. A priority must be to develop strategies to increase better lines of communication between tiers of government and for freight plans to be freely available and consistent across departments.

Priority for change to the existing framework should be to develop a Metropolitan Freight Network Plan consistent with *Directions 2031*, and agreed on by all stakeholders. Updated mapping must identify freight routes and distinguish between activity corridors and dedicated freight routes, as well as outline routes where interface is inappropriate with, for example, residential sectors. A State Planning Policy (Industrial Centres for Perth and Peel) should be developed as a sister policy to 'Activity Centres for Perth and Peel'. *Liveable Neighbourhoods* (WAPC, 2009a) could be strengthened as a design guide for interface and contain increased reference to industry as a key employer and planning factor. *Liveable Neighbourhoods* (LN) could be updated to include reference to freight and SPP 5.4 (or future policy) could also be updated, detailing its relationship to LN and seeking to provide

for employment centres and larger industrial areas. LN should include objective requirements and examples to guide how land developments might best interface with freight corridors.

Four main actions have been taken by the FLCWA on advice from its Working Group on 'Freight Transport and Land-use' as a result of its initial research into planning processes. The first was to promote better understanding among local governments (elected members and planning professionals) of the need for and the means of achieving balance among the competing demands of prosperity, amenity and health and, in particular, better practice in the application of SPP 5.4.

The second action was to promote better understanding by local governments and their planners of the freight and logistics industry – its land-use needs and the ill-effects of 'encroachment' of inappropriate land-uses on high-value industrial land. Thirdly, the FLCWA urged local governments and the WAPC to reach 'better' outcomes in relation to particular land-development plans. And finally, the FLCWA participated in consultative processes connected with broader strategic planning of freight infrastructure in metropolitan and non-metropolitan Western Australia, with amendment of WA's *Planning and Development Act 2005* and with revision of SPP 5.4.

In all of these actions, the FLCWA has been informed by quality advice from professional land-use planners as well as by its own research. A significant library of published documents has been created by the FLCWA on freight and land-use, which is published on its website <http://freightandlogisticscouncil.wa.gov.au/>. The metropolitan area City of Gosnells was found to have a very useful assessment tool to assist land developers to implement SPP 5.4 within its area (City of Gosnells, n.d.).

WORKING WITH THE REGULATORS

The FLCWA has sought to bring its concerns regarding specific land-use strategic planning and sub-division proposals to the

regulators by means of formal submissions to local authorities and, where appropriate in the regulatory cycle, also to the WAPC. This has occasionally involved face-to-face presentations to local elected councils during formal public consultation processes. Local authorities, with whom some form of formal interaction has occurred (with varying rates of success), include Cockburn, Rockingham, Kalamunda, Belmont and also state government land developer LandCorp. A formal presentation was also made at a conference of the mayors and presidents of all metropolitan area local governments, convened by the City of Perth. The practical value of these 'interventions' in the planning process has been varied. The view of the FLCWA is that while it is necessary planning decision makers to be aware of the freight rail noise issue, it is often (but not always) too late in the process for these interventions to have much influence on the outcome of proposals already in the planning system.

COLLABORATING WITH PRACTITIONERS

Clearly individual planning practitioners are key points for intervention to influence outcomes from land-use planning decisions affecting freight and logistics. Like the first avenue – 'working with the regulators' – the FLCWA has sought to lift the outcomes of professional and regulatory practice through the use of a number of forums.

The first of these has been a small number of 'practitioner workshops' for land-use planners in local and state governments and consulting firms. These have focussed on industrial land supply; infrastructure requirements and operational issues for freight and logistics; planning, environmental and transport approval frameworks, policies and process; design and construction (master planning, structure planning, development application – lot sizes, road network and treatments, detailed site planning); and, more specifically, the application of SPP 5.4. University education of young planners has also been targeted through lectures presented

to students at Curtin University and Edith Cowan University as part of their planning degree syllabus, an ongoing annual program. Conference papers have been presented to events staged by the Planning Institute of Australia (their WA young planners' seminar series and their 2012 *Shout-it-Out* series) and to the Australian Transport Research Forum.

The FLCWA has collaborated with other freight and logistics peak bodies, including Ports Australia, Ports Western Australia, the Australian Freight Councils Network and Infrastructure Australia. A notable example is the council's collaboration with Ports Australia to commission and publish a public advocacy document *Leading Practice: Port & Supply Chain Protection: Current practices & future opportunities* (Ports Australia, 2014).

The FLCWA has also published a series of online Bulletins for subscribers in the planning profession, focussing on topics related to freight and land-use. In the series to date are seven publications, as well as a general information brochure, available on the FLCWA's website (<http://freightandlogisticscouncil.wa.gov.au/freight-and-land-use-planning-bulletins/>).

IMPROVING THE 'SYSTEM'

At the time of writing, the most recent initiative of the FLCWA in relation to land-use planning and transport has been advocating improvement of the standards for implementation of *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land-use Planning*. The council was part of the industry working group that advised the Department of Planning and the Department of Environment Regulation on the drafting of SPP 5.4 and its *Implementation Guidelines* in 2009 and has also had representation on the Department of Planning Technical Working Group assisting with the current project to revise the policy in 2015.

The council has also made submissions (which are now being progressed) relating to the revision of the *Liveable Neighbourhood* planning guidelines, which include having its urban design

principles extended to cover freight land-uses. The view of the council is that the 'buffer' provisions of SPP 5.4 should be supplemented by advice on adoption of 'transitional' land-uses to avoid 'sterilisation' of buffer areas between transport land-uses and incompatible residential, educational and other land-uses.

The council has conducted two significant research projects aimed at improving the response of the land-use regulatory system to the needs of the freight and logistics industry. The first was an investigation into the land-use definitions used in the *Planning and Development (Local Planning Schemes) Regulations 2014*.⁵ The evidence and analysis in this research was the basis for three main recommendations to the WAPC detailing inclusions or amending provisions in the proposed new regulations. The first of these is to create an additional zone for 'Transport Industry' or 'Freight and Logistics'. Secondly, an additional and expanded list of land-use definitions applicable to the freight and logistics industry should be written to enable local governments to zone land and outline land-use permissibility that places a focus on the use of land primarily for freight and logistics and associated/complementary land-uses and to reflect the nature and scale of contemporary freight and logistics operations. The report provides general comments on the locational, site and lot size preferences, a description of the activities undertaken by each of the identified land-use typologies and recommends inclusion in the regulations of the following new land-use types: intermodal freight forwarding facility, distribution centre, transport drivers accommodation, outdoor storage and laydown, truck assembly area, container park and truck stop (FLCWA, 2015a). Thirdly, FLCWA has proposed standard/template model provisions relating to existing and future major freight roads, rail and handling facilities and compliance with SPP 5.4. At the time of writing, the process of review and legislative drafting for these regulations was continuing, so the outcome of this research and advocacy by the council is unknown.

The council has also proposed to the WA Department of Planning inclusion in SPP 5.4 of new guidance regarding land-use

regulation in the vicinity of rail freight railways (FLCWA, 2015b). This has arisen from concern by the FLCWA that policy triggers using averaged or equivalent (i.e. LAeq) measures of noise, rather than maximum noise measures (LMax), would understate the impact of noise from rail freight operations. Passage of freight trains at one-hour intervals can have a much lower noise 'footprint' when measured as LAeq than when more realistically perceived as a maximum (LMax) noise volume. This proposal, which was the outcome of detailed, expert empirical research into the unique nature of noise from freight railway operations (Lloyd George Acoustics, 2015), concluded:

[T]he SPP 5.4 assessment method is generally not adequate in addressing LMax noise impacts from freight trains. It shows that, if a LMax criterion were introduced for freight rail noise, in most situations it would dictate compliance when compared to the existing LAeq assessment approach specified by SPP 5.4. This report also demonstrates that the architectural treatment packages provided by the SPP 5.4 Guidelines would be inadequate in achieving reasonable internal LMax noise levels. (p.22)

Noise-sensitive land-uses should be avoided within 20 metres of the centre-line of rail freight lines. In the interval between 20 metres and 135 metres it is proposed that the policy require acoustic treatment packages that include roof/ceiling materials as set out in the FLCWA's Bulletin 7, Table 6 (FLCWA, 2015b).

The aim of the FLCWA has been to avoid approval of new land developments adjacent to existing railway infrastructure which might 'pass' the LAeq test, but fail when assessed against peak noise. Future residents of such developments would suffer the consequences of decisions by local authorities, even when due regard was given to the policy in its present form. The freight and logistics industry is concerned that in such circumstances, residents' agitation could result in governments imposing night

curfews or other limitations on high-value rail operations. The review of SPP 5.4, to which this proposal was submitted, was incomplete at the time of writing.

CONCLUSIONS

Evidence-based advocacy conducted by the FLCWA has lifted awareness of freight noise issues among the planning profession, including both public-sector planners in local and state governments and (to a limited extent) in the private sector. Research into questions about appropriate regulatory standards is complex and difficult and requires resources to engage appropriate expert consultants, but is essential to gaining and retaining credibility among policy makers and advisors. It is also necessary to ensure that advocacy has addressed the right issues.

Very important for the council's ability to communicate effectively with the planning profession was its initial and ongoing research to better understand the very complex and ever-evolving processes involved with land-use planning. This has been enhanced through formal communications in practitioner workshops promoting face-to-face communication among freight and planning professionals, by readily accessible publications, by employment of specialist planning consultant advisors and through tertiary lectures in which there was interaction between informed freight professionals and planning students.

Persistent response to planning processes and decisions by local and state governments has also been very important in lifting awareness of transport noise and land-use issues among both elected and employed officials; however, maintaining this awareness clearly requires unrelenting persistence and attention to detail. Monthly meetings of the FLCWA's Working Group on Freight and Land-use Planning has been invaluable in energising transport professionals and sympathetic planning professionals to become informed about the issues and in sustaining advocacy over a number of years.

ACKNOWLEDGEMENT

The research presented in this chapter was supported by the Freight and Logistics Council of WA.

NOTES

- 1 The Freight and Logistics Council of Western Australia (<http://freightandlogisticscouncil.wa.gov.au/>) comprises representatives of the freight and logistics industry, major freight users and representatives of relevant state government agencies in transport and land-use planning. It was established by the state government to advise the state's Minister for Transport on public issues affecting the freight sector. It also represents the industry to local governments on matters relating to land-use planning.
- 2 Formally 'the equivalent continuous sound which would contain the same sound energy as the time varying sound'. From NoiseNet.org (http://www.noisenet.org/Noise_Terms_Leq.htm).
- 3 The FLCWA's Working Group on Freight and Land-use includes representatives of relevant state government bodies, industry professional peak bodies, public and private transport and logistics infrastructure owners and service providers, with others attending as required from the departments of Transport and Planning, Main Roads WA, the Public Transport Authority (rail infrastructure), Fremantle Ports, LandCorp (the WA Land Authority), the WA Local Government Association, the Kwinana Industries Council, the South-West Group (of local government authorities), the Urban Development Institute of Australia (UDIA), the Planning Institute of Australia (PIA), WA Road Transport Association, Brookfield Rail (infrastructure), Aurizon (rail operations) and others.
- 4 Regional and metropolitan freight plans have been developed by the Department of Transport, but at the time of writing this article, the state government has released only the Regional Freight Plan.
- 5 The report on the FLCWA's research into definitions used in local planning law regarding freight and logistics land-uses is contained in <http://freightandlogisticscouncil.wa.gov.au/documents/submissions/Proposed-Planning-and-Development-Local-Planning-Schemes-Regulations-2014.pdf>.

REFERENCES

- City of Gosnells. (n.d.). *Assessment Tool: Road and Rail Transport Noise and Freight Considerations in Land-use Planning*. Retrieved from http://www.gosnells.wa.gov.au/files/sharedassets/public/pdfs/planning_and_development/guide_to_state_planning_policy_54_assessment_tool.pdf.
- Environmental Protection Authority of NSW (EPA NSW). (2013). *Rail Infrastructure Noise Guideline*. Sydney: Office of Environment and Heritage.
- Freight and Logistics Council of Western Australia (FLCWA). (2012). *Reservation and Protection of Land Required for Freight Logistics in WA*. Report by Greg Rowe and Associates and 360 Environmental to the Freight and Logistics Council of Western Australia. Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/reports/Reservation-Protection-of-Land-Required-for-Freight-Logistics-in-WA-July-2012.pdf>.

- Freight and Logistics Council of Western Australia (FLCWA). (2014). Bulletin Number 5, *The Importance of State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land-use Planning* (December 2014). Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/bulletins/Bulletin5-December-2014.pdf>.
- Freight and Logistics Council of Western Australia (FLCWA). (2015a). *Proposed Planning and Development (Local Planning Scheme) Regulations 2014 – Submission from the Freight and Logistics Council of Western Australia to the Minister for Planning*. Prepared by Spatial Group Planning + Design. Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/submissions/Proposed-Planning-and-Development-Local-Planning-Schemes-Regulations-2014.pdf>.
- Freight and Logistics Council of Western Australia (FLCWA). (2015b). Bulletin Number 7, *Freight Rail Noise Policy and Practice* (October 2015). Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/bulletins/Bulletin-Seven.-Freight-Rail-Noise-Policy-and-Practice-October-2015.pdf>.
- Lloyd George Acoustics. (2015). *Freight Train Noise Assessments*. Report for the Freight and Logistics Council of Western Australia. Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/reports/05-Freight-Train-Noise-Assessments.pdf>.
- Patterson, M. J. (2004). Recent Changes to the Sound Insulation Provisions of the Building Code of Australia. *Transportation Noise and Vibration – The New Millennium*, Proceedings of the Annual Conference of the Australian Acoustical Society.
- Ports Australia. (2014). *Leading Practice: Port & Supply Chain Protection ...current practices & future opportunities*. Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/reports/Leading-Practice-Port-Supply-Chain-Protection-low-res.pdf>.
- Standards Australia Limited. (2015). *Acoustics — Aircraft Noise Intrusion — Building siting and construction, Australian Standard AS 2021:2015*. Supersedes AS 2021: 2000 *Aircraft and Helicopter Noise*. [The original standard was published in 1977.]
- Western Australian Local Government Association (WALGA). (2012). *Local Government Capacity Building Planning for Freight*. Report by Greg Rowe and Associates to WALGA and the Freight and Logistics Council of Western Australia. Retrieved from <http://freightandlogisticscouncil.wa.gov.au/documents/reports/Local-Government-Capacity-Building-Planning-for-Freight.pdf>.
- Western Australian Planning Commission. (2009a). *Liveable Neighbourhoods*,

The Role of Industry in Promoting Evidence-based Policy

- Update 02. Retrieved from http://www.planning.wa.gov.au/dop_pub_pdf/LN_Text_update_02.pdf.
- Western Australian Planning Commission (WAPC). (2009b). *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land-use Planning*. Retrieved from http://www.planning.wa.gov.au/dop_pub_pdf/SPP_5_4.pdf.
- Western Australian Planning Commission (WAPC). (2010). *Directions 2031 and Beyond*. Retrieved from <http://www.planning.wa.gov.au/publications/826.asp>.
- Western Australian Planning Commission (WAPC). (2012). *Economic and Employment Lands Strategy: Non-heavy industrial*. Retrieved from <http://www.planning.wa.gov.au/publications/6274.asp>.
- Western Australian Planning Commission (WAPC). (2014). *Implementation Guidelines for State Planning Policy 5.4* (51 pp). Retrieved from http://www.planning.wa.gov.au/dop_pub_pdf/guidelines_SPP_5_4.pdf.
- Western Australian Planning Commission (WAPC). (2015). *Perth and Peel@3.5million*. Retrieved from <http://www.planning.wa.gov.au/publications/3.5million.asp>.