

## MEETING OF 22 JUNE 2017

### – FREIGHT RAIL NOISE AND VIBRATION DISCUSSION

#### Background:

The City of Cockburn ('CoC') provided formal comment to the Department of Planning ('DoP') on **26 August 2016** in relation to the then **Draft SPP 5.4**. That letter is attached with relevant considerations to today's meeting **highlighted in yellow**. Since August 2016 the CoC has progressed to prepare, advertise and now seeks Council's final support for Scheme Amendment No. 118 and its associated policy.

The CoC has received approximately **193 submissions** from the Community, Government Agencies, Service providers and key stakeholders. In relation to the Amendments Acoustic report the CoC has received an **overwhelming level of support** (with respect to the noise and vibration initiative).

#### Today's meeting:

In relation to the City's previous comments and the recent work undertaken for the 'Lakes Scheme Amendment (No. 118)' the following points are highlighted as follows for discussion purposes:

1. The **Freight rail** networks are an essential and invaluable component of the **WA economy**.
2. Freight networks are no longer remote from urban communities. This results in **land use conflicts** that **threaten** urban amenity and **the country's national economic competitiveness**.
3. The World Health Organisation's Night Noise Guidelines 2009 (**'WHO'**) is referenced in the 12 August 2016 **Draft SPP 5.4 Guidelines**. Most, if not 'all', stakeholders **support** the intent of this **international document**. (Note: extracts can be provided upon request).
4. **'Noise' includes regenerated noise and/or vibration**. This is reflected by the WHO, the DER (whom the DoP rely upon for 'technical' advice), PTA, DoT (*however expresses concern there is, in their view, limited evidence to suggest that requiring properties to meet vibration standards will be effective in managing expectations of amenity*), WALGA, Fremantle Ports, SLR, Lloyd George Acoustics, FLCWA, CoC, and importantly under the EPA Act. The 12 August 2016 Draft SPP 5.4 Guidelines reflects the above in that the draft guidelines reference the scientific understanding in numerous sections (details can be provided upon request, please refer also to the City's submission as mentioned in the Background section above).
5. Notwithstanding point 4 above, the 12 August 2016 **Draft SPP 5.4 defines 'noise' as;**

*[‘Sound, especially when it is unwanted, unpleasant or loud. For the purposes of this policy, noise **does not include regenerated noise or vibration**’.]*

It is understood ‘noise’ (under both its national and international definition includes regenerated noise and vibration) is considered by some to be **difficult to measure and implement into statutory controls**. There is also a concern of subsequent ‘**housing affordability**’ impacts. The stakeholders understand this and have **considered** these points in detail in the preparation of **Amendment 118 and its associated policy**. Please note there are 3416 lots within the Amendment/ study area. Of that 463 lots are within the ‘Noise Area’. Of that 89 lots (2.6%) are affected by noise and vibration. **Housing affordability has to be considered in this context**.

6. The above document (under point 3.) references **L<sub>AMAX</sub>** and Vibration/ regenerated noise with respect to Freight Trains. The **Draft SPP 5.4 is partially inconsistent** in that regard. Under the 12 August 2016 draft SPP 5.4 vibration/ regenerated noise is not supported however the draft SPP 5.4 Guidelines does support the consideration of vibration.
7. To comply with Clause 27 of the **Planning and Development Act 2005 ‘Matters to be considered when preparing State Planning Policy’** (Note: extract can be provided upon request); It should be clear within the draft SPP 5.4, not only the guidelines, that **due consideration of ‘Public Health’ and ‘amenity’** is included as part of the intent of the Policy. Please note the Environmental Protection Act 1986 includes the consideration of ‘vibration’ under the definition of ‘noise’. The **EPA Act is consistent with the WHO (3.)**. **The 12 August 2016 draft SPP 5.4 should be modified to be consistent with its draft Guidelines, the WHO, the Planning Act, The EPA Act, the DER, PTA, FLCWA, WALGA, and Freemantle Ports.**
8. The City of Cockburn and its stakeholders is **well placed to deal with vibration**. Our ability has been demonstrated in consultation and associated with the development industry (Stockland as one example) through various Structure Plans, LDPs and an existing LPP. We have addressed vibration through the advice of Lloyd George (Acoustic Consultants) with the Lakes Revitalisation Strategy and Scheme Amendment. This **Acoustic report is supported by the DER**.
9. Page 10 of the **current SPP 5.4** (not the draft SPP) currently **specifies**;

*“**Ground-borne vibration** is most commonly associated with rail transport, and at close distances **can lead to a loss of amenity in noise sensitive areas**, but is not specifically addressed in the Policy.*

**Refer to the Department of Environment (DER) for specific technical guidance”.**

In relation to point 4 above, the DER supports the approach as proposed by the CoC and its stakeholders.

10. It is noted under **Supreme Court Rule [2009] WASC 196;**

- **“The existence of State Planning Policy (‘SPP’) is not intended to replace the discretion of the Commission (or planning decision makers) in the sense that it is to be inflexibly applied regardless of the merits of the particular case before it.”**
- **“It must be accepted, as counsel for the Minister submitted, that Ministerial policy is not to be construed and applied with the nicety of a statute. “Policies are not statutory instruments”. They prescribe guidelines in general, and not always very precise, language. To apply them with statutory nicety is to misunderstand their function.”**

With respect, In line with the above, Local Governments could seek to include the issue of vibration under a SCA or a LDP should they seek to do so. Consistent with the Act, the above mentioned Supreme Court Ruling and Proper and Orderly Planning. **Vibration should be appropriately addressed by draft SP 5.4.** In support of this please note the below extract from the FLCWA on Amendment No. 118:

The Council is encouraged by the strategic nature of the initiative proposed by the City, and the beneficial outcomes that it will deliver for both the community and the freight and logistics industry, including, but not limited to:

- greater certainty for landowners and industry;
- greater consistency in decision making along a portion of the freight rail network;
- greater protection for the unrestricted operation of road and rail freight corridors;
- greater protection of urban amenity for established and future urban communities;
- facilitating urban infill in a manner that balances increased residential density, providing an incentive for landowners to undertake redevelopment, against higher construction standards, which affords a greater level of protection for the long-term operation of freight corridors; and
- delivering higher standards of urban amenity for single and ancillary dwellings.

**DEPARTMENT OF TRANSPORT ('DoT') SUBMISSION ON THE LAKES REVITALISATION STRATEGY  
SCHEME AMENDMENT NO. 118 DATED 26 MAY 2017 (IN BLACK).**

**City of Cockburn ('CoC') response 21 June 2017 (in blue)**

**DoT:** It is a comprehensive body of work, and the accompanying Freight Train Noise & Vibration Assessment provides useful insight into the impact of the freight rail line on adjacent urban land within the City of Cockburn.

**CoC:** Noted. The CoC considers the proposed;

- Scheme Text (*Special Control Area: 'The Freight Rail Noise Area' as proposed to be shown on the Scheme Map as FRNA*) and
- the accompanying Local Planning Policy (1.17 'Freight Rail Noise Area')

to offer a fair and reasonable solution to the amenity issue associated with the Freight Railway line which dissects the Scheme Amendment study area.

It is considered the proposed (fair and reasonable) solution considers a whole of government approach. The proposal is considered to be a scientifically acceptable solution, consistent with proper and orderly planning principles including 'amenity' considerations and complimentary to Public Health objectives. Additionally, it is worth noting the CoC has received support (during the submissions period) from key stakeholders including;

- DER, PTA, FLCWA, WALGA, Fremantle Ports

**Interaction with SPP 5.4**

**DoT:** A revised draft SPP 5.4 was endorsed by the WAPC December Last year and is expected to be released for public consultation in the coming months. As the final contents of the policy have not yet been released by the WAPC, it is difficult for DoT (or other stakeholders) to compare it objectively with the Freight Rail Noise Area (LPP 1.17) proposed by the City of Cockburn.

**CoC:** We acknowledge this is the case, however the Lakes Revitalisation Strategy has been a project undertaken by the City separately to the DOP review of the SPP.

The City is a participant on the Transport Corridor Protection Technical Working Group and has liaised with representatives of the group during this project. The City has recently been advised by the DOP that the Draft SPP and Guidelines documents circulated to the group are similar to those which the WAPC recently endorsed.

**DoT:** Based on our joint involvement in the SPP 5.4 technical working group however, it would appear that there is some level of inconsistency between the two polices, specifically in regards to the inclusion of vibration, and the use of  $L_{Amax}$  rather than  $L_{Aeq}$ .

**CoC:**  $L_{Amax}$  has been used in addition to the  $L_{Aeq}$  (not instead of  $L_{Aeq}$ ) under the Freight and Logistics Council (FLC) model, which combines the use of the  $L_{Amax}$  and the  $L_{Aeq}$  with upgraded home construction packages (Package AF, BF and CF) to provide a better standard of noise attenuation, particularly in the lower frequencies. This provides a higher standard of internal

amenity to the home and results in a greater level of surety for residents as more homes are then able to meet a (FLC) modified construction standard rather than requiring a design specific acoustic report.

The use of  $L_{Amax}$  (in association with  $L_{Aeq}$ ) is in accordance with DER advice in relation to the Lakes Revitalisation Strategy for Freight Rail noise and consistent with national practice.

**DoT:** DoT would therefore encourage the City to await the gazettal of SPP 5.4 before releasing LPP 1.17, in order to ensure policies are consistent and provide certainty for all stakeholders.

**CoC:** The City is presently in discussions with DOP around the Lakes Revitalisation Strategy acoustic reports.

### **Use of maximum ( $L_{Amax}$ ) Noise Criteria**

**DoT:** DoT accepts that  $L_{Amax}$  more accurately captures the representative noise profile of an individual train pass by than  $L_{Aeq}$  does. This measure is sensitive to outliers however, and in effect would require properties to be safeguarded from the effects of the noisiest rolling stock on the network.

**CoC:**  $L_{Amax}$  has been used in addition to the  $L_{Aeq}$  (not instead of  $L_{Aeq}$ ) under the Freight and Logistics Council (FLC) model, and the 'noisiest' trains are disregarded under this model.

**DoT:** In order to scientifically quantify how this would provide amenity, the policy should also ideally list an internal  $L_{Amax}$  target that corresponds with sleep disturbance. For reference, the WHO specifies 42dB to be a suitable sleep quality threshold. This would imply that for an external  $L_{Amax}$  of 90dB, a noise reduction of 48dB would be required in order to meet the WHO internal target. Referring to Lloyd George Acoustics' recommended architectural treatment packages, even the most stringent measures (package CF) require windows and external door systems to attenuate noise by a maximum of 37dB. So when defined in  $L_{Amax}$  terms, the internal target is still not being met.

**CoC:** The City understands that the WHO criteria may be too conservative as they are intended for peak noise events which occur more than 10 times a night (which is more than 1 train per hour).

The City understands that in the absence of a set limit in the SPP, the FLC model adopted the  $L_{Amax}$  criteria which was proposed in the Draft SPP, but removed from the final adopted SPP. The upgraded FLC Packages provide a significant improvement on the internal noise level (60dB  $L_{Amax}$ ), where otherwise levels would be 70 dB(A) inside, whilst still potentially complying with the SPP. The City understands that this is addressed in the FLC report.

As a comparison in relation to transportation peak noise events, the City has been advised that aircraft noise is specified to be 50 dB  $L_{Amax}$  in bedrooms and 55 dB  $L_{Amax}$  in living spaces (with no limit on the number of flyovers).

**DoT:** The above example highlights some of the complexity encountered during the SPP 5.4 review, when trying to plan for the effects of a wide variety of privately owned rolling stock. With a gradual renewal in rolling stock over time (i.e. quieter trains), coupled with an increasing frequency of trains, it would seem that  $L_{Aeq}$  is the most consistent method for quantifying noise. In regards to particular rogue trains causing 100dB+ pass by readings, this is the kind of issue that is currently being investigated by the Freight and Logistics Council as part of the on-corridor solutions package.

**CoC:** The use of  $L_{Amax}$  (in association with  $L_{Aeq}$ ) is in accordance with DER advice in relation to the Lakes Revitalisation Strategy for Freight Rail noise, and will assist to mitigate peak noise events and low frequency noise, but does not consider the outlier 'noisiest train' for each area.

The City is unaware of whether the investigation will address low frequency noise.

### **Vibration**

**DoT:** Scientifically, DoT has no objection to the information provided in the Freight Train Noise and Vibration Assessment. From a policy perspective however, there remains limited evidence to suggest that requiring properties to meet vibration standards will be effective in managing expectations of amenity. The perception of vibration is often a combination of low frequency noise or regenerated noise, and these effects may not be mitigated by vibration isolation.

**CoC:** The adoption of the higher freight packages would assist in reducing the entry of low frequency noise into the interior of the houses and may assist with the amenity impact.



26 August 2016

Mr Chris Longley  
Department of Planning  
Western Australian Planning Commission  
Locked Bag 2506  
Perth, WA 6001

Dear Mr Longley

## STATE PLANNING POLICY 5.4 – ROAD AND RAIL TRANSPORT NOISE AND FREIGHT CONSIDERATION IN LAND USE PLANNING (REVIEW)

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Thank you for the privilege in providing comment with respect to the *Draft State Planning Policy No. 5.4* ('SPP 5.4') and inviting the City of Cockburn to the *Transport Corridor Protection Project Technical Working Group*. The City greatly values this opportunity and appreciates the level of complexity associated with the subject matter. In this regard please note the respective below mentioned comments for your consideration.

### STATE PLANNING POLICY 5.4 ROAD AND RAIL NOISE (DRAFT):

1. **Section 2:** On page 43 of the associated guidelines it makes mention "*the management of road and rail transport noise is the 'shared responsibility'*". It may be appropriate to reflect this notion within the section 2 'Policy Intent'.
2. **Section 2:** On page 6 of the associated Guidelines under the heading of 'Understanding Noise' it explains '*Noise is unwanted sound, and the literature shows it carries a variety of negative health effects.*'...and also; '*The World Health Organisation considers that there is sufficient evidence that road and rail transport noise can adversely affect community health and amenity. Recent research indicates noise increases the risk of adverse physiological and psychological outcomes including [and then lists 5 serious issues]*'

The above two points are considered critical as to 'why'. Why does SPP 5.4 exist? It could be argued in some respect as the key is to protect the health of humans. Consistent with Part 3 (27) of the Planning and Development Act 2005 under 'Matters to which Commission is to have regard'; it is recommended that the SPP 5.4 under Section 2 makes mention of the issues as described above. **It should be clear within the Policy, not only the guidelines, that due consideration of 'Public Health' and 'amenity' is included as part of the intent of the Policy.** This should be brought the attention of the reader at the front-end of the Policy.

3. **Section 3.1:** Between Section 3 and 4 perhaps, the policy should have a general section of limitations of the policy where it is upfront and says something along the lines of, noise is complicated and there may be instances of compromise. The noise levels/ criteria prescribed by the Policy, or an Acoustic consultant, may not result in an outcome that satisfies every person. It is not to be expected that noise mitigation will result in no noise indoors or levels of noise that satisfies all persons. The Policy offers a compromised solution.
4. **Section 3:** On page 30 of the associated guidelines it makes mention "*Local parks, drainage corridors and community facilities are examples of non-sensitive development that could be located along transport corridors.*"

Consistent with this notion, on page 13 of the associated guidelines under the heading of 'Higher Order Planning Documents' it makes mention; *"At this stage of planning, there is scope to identify existing and proposed sources of road and rail noise likely to trigger SPP 5.4 and, using a principle of avoidance, minimise the likelihood of future land use conflict by proposing non-noise-sensitive development on land affected by such noise"*.

On this basis it is considered appropriate to reflect these comments as an additional 'objective' of the SPP under section 3. It should be made clear within the SPP that land use planning with respect to sensitive land uses should be considered/ flagged early as possible for Higher Order Planning Documents. The specific wording should encapsulate the above two points as a single objective.

5. **Section 3:** It is understood under the definition of 'noise' (under section 8) 'noise' does not include regenerated noise or 'vibration' for the purposes of the draft SPP.

Under section 3 it currently states *"road and rail 'noise' [excluding vibration] can have an adverse impact on nearby communities so it is important that it is carefully considered in land use planning and development"*.

Under the associated guidelines 'vibration' is reflected as an issue that may contribute to impact on communities which contradicts the above. This is specifically provided under the draft guidelines on page 7 where it states *"Proponents of planning or development in close proximity to freight rail lines (i.e 50 metres) are strongly encouraged to consider assessing short-term ( $L_{AMAX}$ ) noise levels and vibration"*.

Similarly on page 23 where it states *"consideration may need to be given to vibration effects and short 'terms' [presumably 'term'] noise in proximity to freight rail"*.

It also makes mention on Page 23 under the "Important note" (in bold) *"...vibration impacts which have historically been the cause of various public and high profile complaints in Western Australia"*.

On page 28 of the guidelines within Figure 7 it states *"road and rail noise and 'vibration' impacting upon adjacent development. This is likely to increase in the future and may result in operational restrictions being imposed"*.

On page 49 and over to page 50 of the draft guidelines a section on 'vibration' is provided referencing various sources addressing 'vibration'.

On this basis, as described above, and from the professional advice received from DER, CoC Health Officers and Lloyd George Acoustics (who have addressed vibration under the recent Lakes Revitalisation Strategy case study example) it is apparent to me, as a planning officer that vibration and regenerated noise in some circumstances can result in noise / impacts on people's health and wellbeing.

Whilst the SPP text excludes 'vibration' as an issue under section 3 (as described above) this is inconsistent with the guidelines in a number of sections.

It is suggested, after the first paragraph under section 3 of the draft SPP 5.4, it should be noted; something to the effect of: *This Policy does not directly address vibration through Table 3 (noise exposure forecast) of the guidelines. Vibration is considered to be a complex issue and a difficult issue to standardise and address. Notwithstanding it is understood that vibration may be a consideration that*



landowners may seek to address in some cases particularly with development proposed in close proximity to freight rail lines (i.e 50 metres). This should be informed by their respective Acoustic consultants and/ or the DER on advice from the WAPC.

6. **Section 4:** It is noted the last dot point under section 4 the draft SPP currently states 'This Policy does not apply to ground-borne vibration.' Under the associated guidelines page 15 it states where a "LPP is made inconsistent with SPP 5.4 and these Guidelines, SPP 5.4 and these Guidelines will prevail to the extent of any inconsistency."

As the DoP may be aware the CoC currently has a LPP which addresses vibration. It is noted the SPP excludes the consideration of vibration however the Guidelines could be argued to include the consideration of vibration (see above point within this letter for details).

The City of Cockburn is well placed to deal with vibration. Our ability has been demonstrated in consultation and associated with the development industry (Stockland as one example) through various Structure Plans, LDPs and the LPP. In addition we are currently in the process of seeking to address vibration through the advice of Lloyd George (Acoustic Consultants) with the Lakes Revitalisation Strategy.

As per this section of this letter and the above point of this letter, the City respects the DoP's view that the DoP seeks to ensure This Policy does not apply to ground-borne vibration. Notwithstanding it is recommended that this point be elaborated upon advising 'vibration' can be an issue and can be dealt with on advice from Acoustic consultants/ DER where considered relevant.

7. **Section 5.2.1:** include the words "as described under section 8 of this Policy" after the word 'uses' on line 4.
8. **Sections 5.2.2 and 5.2.3:** these sections should reference the issues of 'Health' and 'Amenity' as described above in this letter.
9. **Section 6:** This section should have an appropriate disclaimer with regards to the assumptions and note the limitations of this table clearly and succinctly. It should also make mention that someone who complies with the noise criteria may not necessarily be protected from noise. On the last line of section 6 include the words 'to achieve a negotiated outcome'.
10. **Section 7.3.2.a:** include at the end something along the lines of; this is because there is no guarantee every occupant will not be impacted by noise regardless of the mitigation.
11. **Section 7.4:** line 2, replace 'do not' with 'may not require planning approval where they are Public Works'.
- STATE PLANNING POLICY 5.4 – ROAD AND RAIL TRANSPORT NOISE IMPLEMENTATION GUIDELINES AUGUST 2016 (DRAFT):**
12. **Section 1.5 and 4.2.3 'Single Houses':** In the situation where a Building Permit is required for a single house without the need for a Development Application does the Building Act permit 'planning issues' to be dealt with under a SPP? The City has not had time to investigate this issue however will seek to do so. The question may be more appropriate for the SSO and also the Building Commission. As a worst case an amendment to the Planning Regulations may be required to call in DAs for instances

such as this. This is if the advice regarding the Building Act comes back as negative in this regard.

13. **Figure 2:** Under the box 'High level consideration' include a third dot point which says something along the lines of *'identify areas that may not be appropriate for sensitive land uses in accordance with the principle of avoidance.'*
14. **Section 4.3.2:** Permit LDPs to address Vibration. Noting Cockburn already has a number of LDPs which do so and which have been supported by the development industry.

It is noted under Supreme Court Rule [2009] WASC 196;

- *"The existence of State Planning Policy is not intended to replace the discretion of the Commission (or planning decision makers) in the sense that it is to be inflexibly applied regardless of the merits of the particular case before it."*
- *"It must be accepted, as counsel for the Minister submitted, that Ministerial policy is not to be construed and applied with the nicety of a statute. "Policies are not statutory instruments". They prescribe guidelines in general, and not always very precise, language. To apply them with statutory nicety is to misunderstand their function."*

In line with the above Local Governments could seek to include the issue of vibration under a SCA or a LDP should they seek to do so. Consistent with the Act, the above mentioned Supreme Court Ruling and Proper and Orderly Planning Vibration should be included as a permitted issue under this section and within the SPP and its guidelines.

15. **Section 6.2:** Include a legend into the image on this page.
16. **Section 6.3 Table 3 Page 22:** this should have an appropriate disclaimer regarding assumptions and more so limitations. Additionally highlight that a detailed noise assessment will most likely be more accurate.
17. **Section 6.4:** Appendix 4 and this section – update to address 'vibration' as indicated above in this letter.
18. **Appendix 2:** Include Vibration as discussed above.

Should you wish to discuss further please contact Lorenzo Santoriello – Senior Strategic Planning Officer via email at [l.santoriello@cockburn.wa.gov.au](mailto:l.santoriello@cockburn.wa.gov.au) or by telephone on (08) 9411 3530 or the undersigned.

Yours Sincerely



**Lorenzo Santoriello**  
**SENIOR STRATEGIC PLANNER**