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CITY PACIFIC LIMITED

TOWNVILLE OCEAN TERMINAL PROJECT

REVIEW OF SUBMISSIONS

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1.0 Background

Ron Rumble Pty Ltd have been retained by City Pacific Limited to undertake a peer review of the noise component of the EIS prepared by Hyder Consulting Pty Ltd (Hyder) in relation to the Townsville Ocean Terminal Project including the Breakwater Cove Development. This review has covered two reports by Hyder:

- Townsville Ocean Terminal Noise and Vibration Assessment – 12 October 2007;
- Townsville Ocean Terminal – Supplementary Acoustic Report – 16 November 2007.

As part of this brief, we have also been requested to review the submissions received in response to the EIS insofar as those submissions relate to noise.

2.0 Review of the Hyder Reports

As requested, I carried out a review of the Hyder reports in February 2008 and tabled my findings at a meeting of 28th February 2008 involving representatives from the Co-ordinator General Dept, Queensland Transport, City Pacific, Transpac and Emanate Legal.

In summary, my conclusions were and are that the Hyder study has been competently conducted, is exhaustive in its detail, but inconclusive in its findings. Within the copious amount of information contained in the two reports, there is sufficient to convey confidence that the project could proceed on to the next phase, namely the process of developing the Port Protection Code, its performance criteria and its acceptable solutions. Unfortunately this crucial information is submerged in the detail.

One of the criticisms which has been levelled at the Hyder study is that it has not encapsulated what is anecdotally regarded as being the noisiest activity conducted at the Port; namely the loading of scrap steel at Berths 9 and 10. It is a fact that scrap loading was not measured by Hyder; primarily because the activity did not occur during their test window.

From noise measurements which my office has conducted in Brisbane during loadings by Simsmetal and Wanless, the typical sound power levels associated with the scrap loading activity is typically in the range 121dBA($_w$) to 128dBA($_w$). As part of their noise modelling exercise, Hyder included a ships horn at 144dBA($_w$), ship engine noise at 111dBA($_W$) to 118dBA($_w$), ship's generators at 115dBA($_w$) and numerous other noise sources in excess of 110dBA($_w$).

The modelled noise emission level from the ship's horn was found to be 73dBA at a distance of 730m. For a ship's horn at Berth 10, the noise emission at the nearest residence within Breakwater Cove would be around 79dBA. By comparison scrap loading at 128dB($_w$) would produce noise emissions some 16dBA lower than the ship's horn or 63dBA. Although it was not specifically measured or modelled, the noise impact of scrap loading can be reasonably estimated from the results of the Hyder study.

In order to resolve this issue, to confirm our analyses of noise from scrap handling, my office will conduct noise measurements during the next scheduled scrap loading on 20th June.

There are some apparent inconsistencies in the results of the noise predictions in the Hyder study. Table 10 of the Supplementary Report lists the noise emissions at various locations within Breakwater Cove for different activities at the different berths. Notably, car unloading at Berth 9 results in noise emissions between 58dBA and 60dBA at eastern ends of the residential fingers in Breakwater Cove. Although the noise metric has not been identified in Table 10, to be consistent with the data in Table 9, the metric would need to be the Equivalent Level (L_{Aeq}).

By contrast, Figure 7 of the Supplementary Report shows noise emission contours which indicate a noise level of 65 – 70dBA at the nearest residences. There is an apparent discrepancy of 5 to 10dBA. This could be explained by Figure 7 having a different metric such as the average maximum noise level ($L_{A\ max}$).

As the author of the Hyder reports is currently overseas, it has not been able to seek clarification of this apparent discrepancy. However regardless of whether Figure 7 is in terms of L_{Aeq} or $L_{A\ max}$, achieving adequate protection for future residents of Breakwater Cove against noise intrusion would be readily achievable. To put this into context a noise level of 65 – 70dBA (L_{Aeq}) would be comparable to the noise exposure adjacent to a major roadway such as Ross River Road or Abbott Street.

3.0 Review of the Submissions

In accordance with your request, I have reviewed the following submissions received in response to the EIS:

a)	Individuals :	Guido Parra etal Gail Harrower John Ahern Architect KJ Macks Colin Dwyer M. S. Lorimer Margaret Moorhouse Brian Bailey
b)	Stakeholders:	Townsville Local Marine Advisory Committee Sun Metals (Port Users)
c)	Government Agencies:	Environmental Protection Agency Queensland Health Townsville Port Authority Townsville City Council

With regard to noise there are three concerns which have appeared consistently throughout the submissions:

i) The paucity of quantitative data on the actual noise emissions from the Port;

ii) Reliance on a 6m high noise barrier to provide noise protection to the residential area of Breakwater Cove and its potential impacts on beneficial breezes and view corridors; and

iii) A design code for dwellings which appears to rely on small, fixed windows combined with air-conditioning which runs 24/7.

4.0 Consideration of Submissions

In regard to the adequacy of the noise monitoring it is easy to be critical of the duration of the testing, however given the frequency of some of the more audible activities in the Port such as the loading of scrap metal, only testing over an extended period of time, perhaps over a couple of years would be conclusive. I have had experience with noise emissions with scrap metal activities and I would expect the loading of scrap metal in the Port to have similar emissions to that I have measured elsewhere. Such emissions are in my opinion manageable and do not give rise to blanket buffers as been suggested between the Port of Townsville and residential development.

In regard to the amelioration benefits of the proposed noise barrier, such devices are a crude measure with marginal cost-effectiveness and numerous negative consequences as detailed by the Submitters. Mitigation measure on the buildings themselves will be more effective.

In regard to the Port Protection Code (PPC) it is easy to see how the submitters believe they are unnecessarily prescriptive as they do give the impression that buildings in the form of an air-conditioned Fort Knox provide the only solution. In my experience it is possible to design buildings which can afford the occupants the required degree of protection from noise emissions when required without detracting from the architectural quality of the structure. The development codes for the development need to ensure that the PPC does not dictate the architectural outcomes.

5.0 Response to Questions from Co-Coordinator General's Office

We have also been requested to respond to the following questions:

- Whether scrap metal loading at the Port, dredging or construction noise associated with the project would cause any particular concerns that have not already been canvassed in the original EIS;

  I have dealt with the issue of scrap metal above – as for the construction and operational noise associated with the project I do not foresee any particular problems. It is normal in any approval process that will follow for noise emissions to be further investigated and any necessary noise control actions incorporated to ensure there are no unacceptable outcomes. The noise levels for instance on the temporary bridge across Ross Creek would need to be modeled and if necessary measures employed to mitigate the emissions.

- Whether increased activity in the Port through to say 2050 including new trade and simultaneous loading would cause any particular concerns that have not already been canvassed in the original EIS;

  Any increase in activity in the Port does not, in my opinion gives rise to new concerns. The PPC will be sufficiently objective to address any increase in activity. The PPC in simple terms would define the acceptable noise levels to be afforded to occupants of the dwellings – if the noise levels outside increase or even decrease over time then the impost imposed by the PPC changes accordingly. I would add that I would expect that noise emissions for the Port and from any similarly noisey activity will reduce over time as the result of new approaches and technologies. For example in the case of scrap steel, future transportation costs could necessitate fragmentation of the scrap to reduce its volumetric bulk. Loading of such material would be quieter than loading bulk scrap. I have witnessed in my working life considerable advances in technology which have resulted in huge reductions in noise emissions.

- Whether the upper floors in the apartment buildings would be exposed to higher noise emission and would additional amelioration measures be required for these levels;

  As mentioned in response to the previous question the PPC is a performance based measure and would be capable of differentiation for premises in different locations within the development.

- Whether there are any particular issues associated with the change of seasons which have not already been canvassed in the original EIS; and

  Noise exposure at the development site from emissions at the Port will vary with the direction of the wind. The PPC needs to be prepared having regard to worse case scenario in this regard.

- What sort of amelioration measures could be employed and what additional costs this might impose of the construction of say a typical apartment.

  It is difficult to generalise without having a starting point as a basis for comparison. At this location, given its exposure to sea, air and the implicit quality of the development, one could reasonable anticipate masonry construction. This would be adequate for noise control without any upgrades. Similarly the dwellings are likely to be air-conditioned and this would normally be used during the summer months. The PPC would not change either the provision or likely use of air-conditioning. Glazing upgrades may or may not be necessary, depending on the particular building design. It would be possible to design a dwelling to achieve adequate noise control using "normal" glazing, by utilising concepts such as protective enclosed balconies and/or buffering sun rooms. In the worst case if a Fort Knox approach was to be adopted, the cost impacts on glazing would be of the order of $100/m^2$ of glazing area. In the least case, cost impacts would be negligible.

6.0 Significance of Noise Impacts

I don't believe that the Operations of the Port of Townsville, from a noise emissions viewpoint are particularly excessive – in normal circumstance the quality of amenity for the residents of Breakwater Cove will be more than acceptable however on the infrequent occasions when the noise levels are excessive the PPC will ensure there is protection from that nuisance. I therefore confirm the observation I made at our meeting on 28th February and without trivialising the noise issues at the site, I do believe that it is possible to achieve a quality outcome for the future residents of Breakwater Cove through a properly researched and considered PPC. I therefore consider that the residents of Breakwater Cove and the Port can co-exist. It will of course be important to manage the expectations of buyers and future residents and I note that a range of measure is proposed in this regard under the collective umbrella of Port Protection Measures (PPM's). The fact that all the residential development is within a Community Management Scheme is of great assistance in this regard.

7.0 Resolution of Noise Impacts

By *quality,* I am not referring solely to acoustical amenity inside a dwelling. That would be achieved using the brute force approach. I am referring to quality in an overall sense which takes due account of issues raised in the submissions such as design diversity, outdoor space and ESD principles.

I understand the proponent are proposing to install a monitoring station on the development site which will test and record noise levels, wind direction and dust levels over a number of years. The data that will be collected from this station would be very useful in deciding the content of the PPC and will hopefully ensure that realistic measure are employed rather than worst case solutions.

The way forward then is to focus on the PPC and to ensure it delivers the required outcomes. The PPC needs to be a performance-based code (which can be refined and possibly relaxed as actual data becomes available from ongoing monitoring proposed).

R H Rumble