Managing Port Noise Effects – Experience with the New Zealand Port Noise Standard

Coasts & Ports Australasian Conference

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Background

• Prior to 1990
  – Some control of land-based noise under District Schemes (T&CP Act 1977)
  – Little or no control over noise from vessels or on wharves
  – Some attempts at on-site noise management by some ports
Background

• Post 1991
  – RMA required effects-based planning for marine areas as well as land
  – Growing concern about port noise: “reverse sensitivity”
  – Integrated management of effects (across mhws) required
  – Port/Standards NZ initiative
Typical Land use Relationship

High value housing with coastal views
What the Standard Does

• Provides philosophy, methodology and practice suggestions for inputs into plans
• Recognises the unique situation / importance of ports
• 10 (or more) year projection of growth/change
• Inner and outer control boundaries (i.e. affected areas)
• Compliance by ports
• Controls over land uses within both areas
• Promotes noise management planning by ports
District and Regional Plan Mechanisms

- Combined Regional/District Council responsibility
- Include in plans:
  - Policy
  - Rules
  - Methods
- Policy to enable ports to generate reasonable noise
  - To alert affected nearby residents that they will be exposed to noise
  - set basis for rules
District and Regional Plan Mechanisms

- Rules
  - Noise compliance for ports
  - Acoustic insulation requirements and / or land use limitation on land
  - Encouragement for noise management plans
Predicting and Modelling Port Noise

Main Inputs required

- source sound levels (e.g.)
  - Straddle Carriers
  - Ships
  - Trains
  - Cranes
- Ground Contours (2 metre interval contours)
- Operational Information
  - 5 Day scenario
  - Ships visiting and Volume of cargo throughput
  - Day/night
### Example of Operational Inputs

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Ships visiting in 5 days each staying an average of 8 hours</td>
<td>Tugs assumed to operate for each arrival and departure</td>
</tr>
<tr>
<td>Cranes unloading ship (x 3)</td>
<td>Operate same hours as ship is in port</td>
</tr>
<tr>
<td>Tugboats (x 2)</td>
<td>Operate for 20 minutes pulling ship in when it arrives and 20 minutes pulling ship out when it departs</td>
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<tr>
<td>Trains</td>
<td>Fifteen trains in the 5 days</td>
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<tr>
<td>Logging Trucks</td>
<td>80 trucks per day arriving and departing</td>
</tr>
<tr>
<td>Log Grabbers</td>
<td>One Grabber normally. Three grabbers when loading a log ship</td>
</tr>
<tr>
<td>Reefers</td>
<td>300 boxes operating continuously, 300 boxes cycling 20 minutes on 45 minutes off, randomly distributed over operational area</td>
</tr>
</tbody>
</table>
Noise Model
Noise Contours
Noise Boundaries
Examples of Implementation

- Port Chalmers
- New Plymouth
- Auckland
- Wellington
- Nelson
- Napier
Key Issues in Applying the Standard

• How to co-ordinate regional and district plans?
• Reliability/durability of predictions given ports’ changing circumstances
• How to control/manage land uses within inner and outer control boundaries
• Relationships with residents and district/regional councils.
Conclusions

• Port Standard has been moderately successful
• Has allowed Ports flexibility as they move to 24 hour 7 day operation
• Noise Boundaries signal to Community where amenity may be affected
• Inadequate in situations where conflict is most difficult because of speed of change of Port situation not able to be reflected in Plan changes
• A review in 2-3 years is recommended to deal with rapid changes in ports and better regional-district integration