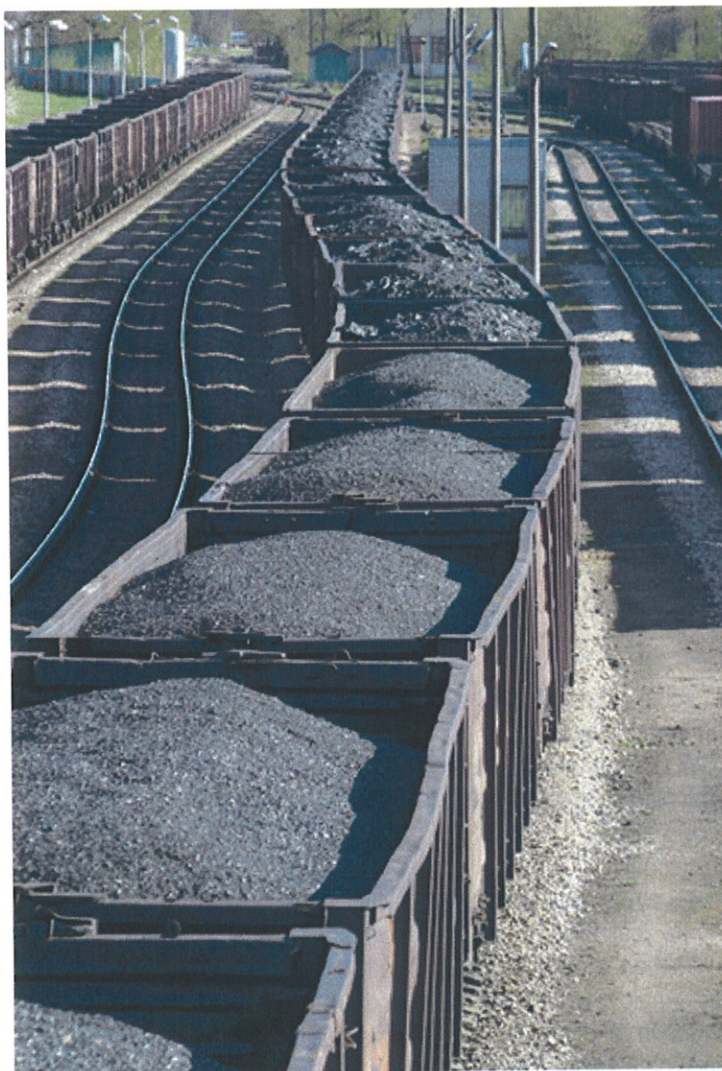




NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT:
Western Rail Coal Unloader, Pipers Flat



Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

May 2009

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EXECUTIVE SUMMARY

Delta Electricity (the Proponent) proposes to construct and operate a new rail loop and coal unloader at Pipers Flat, about four kilometres north-west of Wallerawang, for the purpose of supply coal to the existing Mt Piper Power Station. The project has intended maximum capacity of 8 million tonnes per annum and would involve capital investment of approximately \$80 million (estimated at the time of the project application). The project would also generate 10-15 full-time employment positions during operation and up to 150 during construction.

The fundamental need for the coal unloader derives from a combination of increased need to operate Mount Piper Power Station (within its approved capacity) in response to growing energy demands, and as a result of the need to secure coal supplies beyond the local area. The Proponent has identified coal mining operations to the north of the Mount Piper Power Station that may serve as additional coal supplies into the future. Options for transport of coal to the Power Station from these mines is limited to haulage by road or by rail. The Proponent has argued that rail haulage is both economically, environmentally and socially preferable to increasing the number of coal trucks on local and regional roads. The Department concurs with the Proponent's position in this regard, and is satisfied that the project is justified on the basis of securing the on-going operation of one the State's major baseload power generating facilities and a desire to encourage greater haulage of materials (including coal) by rail.

Exhibition of the Environmental Assessment for the project attracted 60 submissions, including 10 from Government agencies. Key concerns raised in submission related to: the noise impacts of the project and associated increases in rail movements through the township of Portland; air quality impacts, particularly dust generation; hydrological implications of the project, including increases in flooding levels; and the visual amenity implications for residential receivers close to the project site. In a broader context, many submissions raised concerns over land use conflicts and loss of amenity as a result of these key impacts. In addition to these concerns, Lithgow Council objected to the project based on the indirect potential socio-economic impacts of the projects if local mining operations were not guaranteed on-going business with the Proponent for the supply of coal.

Given significant concern over the project, the then Minister for Planning met with affected stakeholders and the local council to discuss key issues. As a consequence of that meeting, the Minister directed that the Proponent undertake further work with respect to alternative sites for the project (particularly within the Baal Bone colliery), rail noise and sleep disturbance impacts. The Proponent's investigations into alternative locations confirmed the proposed project site as the preferred location, based principally on issues of economics and ecological impacts.

The Proponent has demonstrated through its noise assessment that on-going operational noise impacts associated with the project can be managed within acceptable limits. Under adverse weather conditions, the noise modelling predicted that the applicable noise limit of 35 dB(A) may be exceeded by 2-4 dB(A) at two residential receivers. The Department considers such a predicted exceedance to be within the confidence limits of the modelling approach, and an issue that can be appropriately and adequately mitigated through careful detailed design. The Department has therefore recommended imposition of a noise criterion of 35 dB(A) at all residential receivers, to be confirmed during the early stages of operation through confirmatory monitoring. Should predicted noise outcomes and noise criteria not be met, the recommended conditions of approval require the Proponent to identify and implement additional measures to achieve acceptable acoustic outcomes.

Additional assessment work undertaken by the Proponent suggests that without mitigation, sleep disturbance criteria may be exceeded at two receiver locations. The key source of impacts in this case is the sounding of rail horns at the proposed Y junction component of the project. While local residential receivers already experience rail noise, including horn sounding, the Department considers there to be a need for further investigation into mitigation of these impacts. As such, it has recommended that the Proponent be required to investigate and implement additional noise mitigation measures, with a particular focus on the Y junction.

One of the most significant concerns raised by local residents through submissions and the meeting with the then Minister for Planning is the potential for the project to generate additional rail impacts through the township of Portland. The rail noise assessment undertaken by the Proponent indicates that the project will result in an

increase in rail noise by around 2 dB(A) above the 55 dB(A) night time threshold specified in *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* at a capacity around 2-4 million tonnes per annum. By around 6 million tonnes per annum, the Department estimates that exceedance of the threshold will exceed 2 dB(A), ultimately peaking at around 3 dB(A) by the time the project reached full capacity. In accordance with the requirements of the Interim Guideline, the Department has recommended that the Proponent be required to investigate and implement additional noise mitigation measures. In particular, the recommended conditions of approval require the Proponent to investigate additional noise mitigation measures within six months of the project reaching a capacity of 2 million tonnes per annum. Identified mitigation measures must then be implemented to the satisfaction of the Director-General before the project exceeds a capacity of 6 million tonnes per annum.

The Environmental Assessment for the project has demonstrated that the project would not lead to an exceedance of established, acceptable ambient air quality criteria for dust/ particulates or within respect to dust deposition. Notwithstanding, dust impacts and particularly local cumulative dust impacts with power station and mining operation is a significant community concern. To address this concern and to ensure that acceptable air quality outcomes are achieved the Department has recommended that the Proponent be required to undertake comprehensive dust monitoring and to manage dust generation through the implementation of a detailed management plan.

While the project is expected to increase local flooding levels, increases in flood heights would be restricted to the Proponent's property and would not affect surrounding land. There is potential, however, for increases in flood velocities in and around watercourses and constructed culverts to lead to scouring. To ensure that this issue is appropriately managed, the recommended conditions of approval specify that the project must be designed to avoid significant increases in flood afflux on neighbouring properties and in scour through and downstream of culverts. The Proponent is required to demonstrate to the satisfaction of the Department of Water and Energy that the project has been designed to achieve these outcomes, prior to the commencement of construction.

Given the scale and elevation of the project, there is potential that the visual amenity of the area may be impacted by the project. However, the Proponent's assessment of visual amenity impacts has illustrated that of the 30 residential receivers within the locality with potential to view the project, only about 10 of these in fact have clear lines of sight to the project (due to topographical and vegetative obstructions). To mitigate the residual impact to these remaining residences, the recommended conditions of approval require the Proponent to develop and implement a comprehensive landscaping plan.

On balance, the Department considers that the environmental and amenity impacts of the project can be mitigated, monitored and managed to achieve acceptable outcomes. In the context of the importance of the project in supporting the on-going operation of a major baseload power generating facility, and the environmental, environmental and social implications of increased road haulage of coal, the Department is satisfied that the benefits of the project outweigh any residual negative impacts of the proposal.

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1. BACKGROUND

Delta Electricity (the Proponent) proposes to construct and operate a rail loop and coal unloader at Pipers Flat located about four kilometres north-west of Wallerawang, approximately 150 kilometres west of Sydney. The site is located within the Lithgow local government area at 708 Portland Road, Wallerawang within Lots 1 and 2 of DP800003 (refer to Figure 1).

The proposal also includes a number of additional items related to the coal unloading operation. This includes a coal conveyor, locomotive provisioning area, wagon maintenance area, and a diesel storage farm. These items are located within the site adjacent to the rail loop.

1.1 Proposed Site

The site for the coal unloader is located on land currently owned by the Proponent. The land upon which the coal unloader is proposed is zoned Rural (General) 1(a) in the *Lithgow City Local Environmental Plan 1994*. The proposed site consists of a predominantly cleared flat area that is traversed by Irondale Creek, Thompsons Creek and Pipers Flat Creek. The site is primarily used for the purposes of cattle grazing.

The coal conveyor would join the rail loop at its northern end and run north to the Mount Piper Power Station; generally in close alignment to the existing water supply pipeline easements. This route lies within both the Proponent's land and that of another land holder. This land is zoned Rural (General) 1(a) in the *Lithgow City Local Environmental Plan 1994*.

1.2 Surrounding Land Use

Immediately to the north of the site lies Mount Piper. The land rises sharply to a ridge line which sits over 100 metres above the proposed site. This land is covered by natural vegetation although some disturbance is evident, due to an electricity transmission line and a water pipeline easement. Pipers Flat Road borders the site to the south, running in a south-easterly direction and serving to connect the Portland and Wallerawang townships located four kilometres to the north-west and south-east of the site respectively. The Wallerawang – Mudgee Rail Line runs parallel with Pipers Flat Road.

A number of rural residential dwellings lie within relatively close proximity to the site (i.e. less than 1.5 kilometres) some of which are in direct line of sight to the proposed site. These landholdings are primarily used as residences while some are also used for the purposes of cattle grazing. A commercial egg farm is also located in this area.

Other land uses within the vicinity of the site include a dam to the west of the site which is currently used for nearby coal operations; State Forest to the north-east and south-west; and the Mount Piper Power Station located to the north of the adjacent Mount Piper ridge line. Further to the south-east lies the Wallerawang Power Station.

Figure 1 - Site Location (Reproduced from the Proponent's Environmental Assessment).



Figure 1-1 Study Area

Delta Electricity Western Rail Coal Unloader
DELG4185A2 Zone 56



0 200 400
Metres

2. PROPOSED DEVELOPMENT

2.1 Project Description

The Proponent proposes to construct and operate a rail coal unloader facility. The project consists of six component parts – a rail loop; a coal unloader facility; a coal conveyor; a diesel storage area; a wagon maintenance area; and a locomotive provisioning area. The Proponent anticipates that around two million tonnes of coal per year would be initially handled by the facility and that this could increase to eight million tonnes over the long term subject to coal availability and future demand. At a haulage volume of eight million tonnes, total rail movements are predicted to be 40 per week (six trains for five days per week, and then five trains on each of the remaining two days).

The rail loop would be approximately 3.5 kilometres in length and would be aligned to allow the track and coal handling facilities to be located on the loop site, while also allowing for a southbound train to exit the loop onto the Mudgee line as a northbound train. It is anticipated that up to three trains could be accommodated on the loop, thereby providing the Proponent and rail operators with scheduling flexibility so that Mudgee line operations are not adversely affected. The Proponent asserts that trains using the loop could have a maximum length of 1400 metres, although it is stated that a length of 1050 metres would be more typical of what is anticipated.

The coal unloader facility would be located at the northern end of the site and would be constructed approximately 17 metres below the height of the track line at that point. Essentially it would consist of a steel dump hopper, housed in a reinforced concrete chamber. A building would house the facility, including the rail line at the unloader. It would extend about two storeys high and be of approximately 40 metres in length. A small office / amenity building would sit adjacent to this structure.

The conveyor would extend from the bottom of the dump hopper and run over the Mount Piper ridge line to the existing coal handling facility located at the Mount Piper Power Station site. Here the coal would be transferred to the existing stockpiles.

A diesel storage area would be built to store approximately 100 kilolitres of diesel fuel. The storage area would be located between the rail loop and Pipers Flat Road just north-west of the intersection of Pipers Flat Road with Thompsons Creek Road. Fuel would be delivered by truck to the storage farm where it would then be piped under the rail line and along the internal road system to the locomotive provisioning area.

The locomotive provisioning area would be constructed for the purposes of locomotive refuelling and sanding. It would be located on the southern side of the rail loop opposite the intersection of Irondale Road and Pipers Flat Road. The provisioning area would consist of a building structure of approximately 50 metres in length and around eight metres high.

A wagon maintenance area would also be constructed as part of the proposal. Wagons requiring maintenance would be detached and serviced in this area. The maintenance area would consist of two hardstand areas and a shed for the storage of maintenance equipment.

2.2 Project Need

The need for coal at Mount Piper Power Station has increased. Forecast increases in electricity demand, when coupled with the recently approved capacity upgrade to the Mount Piper Power Station, will result in a need to source an additional 0.6 million tonnes of coal per year. Subsequently, local coal demand for the purposes of electricity generation at the Mount Piper Power Station and nearby Wallerawang Power Station will soon total around seven million tonnes per year. Much of this coal is presently sourced from existing local mines such as Springvale and Angus Place and the Proponent states that it anticipates these mines to continue supplying the power stations for the remaining life of those mines.

The Proponent asserts that in light of this high demand for coal, both now and in the future, consideration needs to be given to the security of coal supply over both the short and long term. The Proponent concedes that in the future coal may need to be sourced from north of the power station as existing sources dwindle. A review of coal

supply sources was therefore undertaken by the Proponent to determine likely supply areas. It was limited to the western coal field in the Lithgow-Kandos area because both the Mount Piper and Wallerawang power stations are located in this general area, and it is the area from which coal for these generators is currently sourced. The Proponent's assessment concluded that most of the operating mines in the western coal fields already supply coal to the Proponent's operations, including the smaller operations with minor reserves. Of the mines with significant reserves, Springvale, Angus Place and Cullin Valley already supply the Proponent's operations.

The Proponent argues that it is likely that future coal supply would come from mines further to the north. Distant mines with significant reserves such as Charbon, Ulan, and Clarence (further to the east) could supply significant volumes of coal if a rail unloader was constructed. Similarly, the assessment states that proposed mines at Airly and Running Stream (both located further north and known to contain significant reserves) would also benefit from rail transport as long term road transport would not be environmentally acceptable.

On the basis of this assessment, the Proponent concludes that a rail coal unloader would enable these mines to meet the future coal supply needs of the power station. While alternative transport options such as by coal conveyor or truck exist, the Proponent asserts that these options are not feasible over the likely distances on economic and environmental grounds.

2.3 Alternative Sites and Project Configurations

In response to concerns raised by local residents and a meeting between the then Minister for Planning and affected stakeholders, the Proponent prepared additional studies with respect to the possible location of the project at the Baal Bone coal mine. The Baal Bone mine option was put forward by community members as an option for avoiding impacts including operational noise and dust issues, and rail noise through Portland. As the Baal Bone mine is to the north of the Mount Piper Power Station, location of the project on that site would mean that coal trains would not need to pass through Portland. Further, community members saw the further development of an existing mine site as preferable to the disturbance of a 'virgin site' closer to residential receivers.

The Proponent considered two potential conveyor alignment options between the Baal Bone mine and the power station. While the Proponent admitted that these options were feasible from an engineering perspective, the two Baal bone options involved investment of \$221.134 million and \$252.763 million respectively – approximately double the investment required for the development of the project at Pipers Flat (\$122.356 million). The Proponent argued that cost alone would be sufficient to discount Baal Bone as a viable option for the project. Notwithstanding the cost differential between the options, the Proponent also highlighted that the Baal Bone alternative is inferior with respect to ecological impacts because:

1. it involves the removal of 6.9 hectares of vegetation, compared with only 2.5 hectares for the Pipers Flat option;
2. it involves the removal of up to 200 Capertree Stringybark trees (listed as vulnerable at State and Commonwealth levels), compared with only 50 for the Pipers Flat option; and
3. the longer length of conveyor for the Baal Bone alternative (4.6 kilometres) creates a more significant fauna barrier than in the case of Pipers Flat (only 1.7 kilometres).

On this basis, the Proponent argued that the Baal Bone coal mine site is not a feasible option for the project. The Department concurs with the Proponent's conclusions in this regard.

3. STATUTORY CONTEXT

3.1 Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Projects) 2005* because it is development for the purpose of heavy railway lines associated with mining, extractive industries or other industries with an investment value of more than \$30 million (clause 23(1a)). The project will therefore be assessed and determined by the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979*.

3.2 Permissibility

The proposed site for the rail loop, coal unloader and associated project components are located within land currently owned by the Proponent. This land is zoned Rural (General) 1(a) in the *Lithgow City Local Environmental Plan 1994* (Lithgow LEP). The proposed facility is an innominate permissible use in this zone.

The route for the proposed coal conveyor is similarly zoned Rural (General) 1(a) in the *Lithgow City Local Environmental Plan 1994*. This land is currently owned by the Proponent and another landholder. The proposed conveyor is an innominate permissible use in this zone.

3.3 Environmental Planning Instruments

There are no environmental planning instruments that substantially govern the carrying out of the proposal. The Department highlights that other than in relation to zoning and permissibility, the *Lithgow Local Environmental Plan 1994* includes no particular provisions that substantially relate to the proposal.

3.4 Minister's Approval Power

The application and environmental assessment were placed on public exhibition from 31 May 2007 to 2 July 2007 and submissions invited in accordance with Section 75H of the Act. The Department has met all its legal obligations so that the Minister can make a determination regarding the project.

It is also noted that the Environmental Assessment submitted in support of the subject application adequately addresses the Director-General's requirements.

4. CONSULTATION AND ISSUES RAISED

The Department received 60 submissions during the exhibition of the application. Of these, 50 (83%) were received from the public, and 10 (17%) from government agencies.

4.1 Submissions from the Public, Private Companies and Organisations

A total of 50 submissions were received from the public, organisations and private companies. Of these submissions, 47 (94%) objected to the proposal with one submission stating support for the project while the two remaining submissions stated concerns without expressly objecting to the proposal. The key issues identified in submissions from organisations and the public included:

1. Visual amenity impacts
 - the project buildings are inconsistent with the rural / rural-residential character;
 - the project buildings would detract from the natural amenity provided by the adjacent escarpment;
 - screening measures proposed would not mitigate visual amenity impacts; and
 - light pollution from the facility at night will decrease night-time visual amenity in the local area.
2. Land-use conflicts
 - would decrease land value;
 - project is inconsistent with the zone objectives of the *Lithgow City Local Environmental Plan 1994* and the rural / rural-residential character of the area;
 - would encourage further development of an industrial nature in the area;
 - a site more consistent with industrial / mining should be chosen, such as the areas north of the power station;
 - the Baal Bone rail spur site should be thoroughly investigated because it would not affect local residents and would allow the project to use the existing infrastructure located at this site; and
 - site is located in Sydney Catchment Area on flood prone land and should therefore be located in an area that would not affect catchment.
3. Air quality impacts
 - diesel fumes from rail operations would adversely affect local air quality;
 - dust resulting from coal conveyance would pollute local drinking water, reduce local air quality and affect the quality of grazing land; and
 - project promotes climate change through by perpetuating the use of coal-fired power stations which produce significant tonnages of carbon dioxide.
4. Noise impacts
 - the train noise currently experienced would only significant increase as a result of the project and this would significantly decrease amenity, increase sleep disturbance and increase stress levels for local residents;
 - train noises such as horns, crossing bells would result in regular sleep disturbance;
 - noise assessment did not consider impacts on the residents of Portland who would be directly affected by noise associated with increased noise movements resulting from the project;
 - noise assessment was inadequate because noise monitoring was not undertaken at the right locations; and
 - noise assessment did not evaluate noise impacts associated with the conveyor on the residents of Blackmans Flat and this should have been undertaken.
5. Traffic Impacts / Safety
 - project would result in increased delays at the rail intersection;
 - train length and increased rail operations would result in considerable delays at the rail crossing thereby limiting access for half the town of Portland to emergency services;
 - b-doubles (proposed for diesel fuel transport) cannot be used on the Pipers Flat Road until RTA approval has been gained; and

- rail crossing treatment needs to ensure that vehicles cannot stop on tracks and must ensure safe crossing for school children who traverse the line frequently.

6. Water impacts

- site is traversed by creeks and is on floodplain and pollutants resulting from the impact would affect these water bodies which in turn would affect the Sydney drinking water catchment;
- water quality study is outdated and was not taken at locations downstream of the site and so does not accurately reflect the water quality of the area;
- project would result in the interception of groundwaters and could therefore adversely effect the Sydney drinking water catchment;
- salinity loads on the river catchment need to be examined to determine whether additional loads resulting from this project can be managed;
- waste water treatment methods are not adequate and would only result in further river pollution and pollution of the Sydney drinking water catchment; and
- measures for managing pollution risks such as coal spills is not detailed.

4.2 Submissions from Commonwealth and State Government

Nine submissions were received from Government agencies: the Department of Environment and Climate Change; Department of Water and Energy (two); Department of Primary Industries; Roads and Traffic Authority (two) Sydney Catchment Authority; Australian Rail Track Corporation; and the Mine Subsidence Board. None of the agencies objected to the proposal, but raised a number of key issues for further consideration. Issues identified included: air quality impacts; noise impacts; hydrology impacts; and ecology impacts. Comments made by each agency are summarised below.

Department of Environment and Climate Change (DECC)

- requires the Proponent to recover, in consultation with the local aboriginal community, any aboriginal heritage artefacts at the site 45-1-0076 such that they can be recorded and preserved only;
- Proponent will need to monitor dust fallout at specific receivers and this must commence prior to construction;
- data obtained from dust monitoring must be assessed in conjunction with DECC to determine the effectiveness of dust mitigation controls and whether the monitoring program can be reduced / modified dependent on results;
- an area of 6.5 hectares should, in agreement with the DECC, be provided by the Proponent as a biodiversity off-set;
- a pre-clearing survey should be undertaken to determine a specific conveyor route which seeks to avoid threatened species and hollow-bearing trees;
- a suitably qualified ecologist should be present during all mature tree-clearing activities to check trees for fauna prior to removal;
- the Proponent should prepare a detailed Construction Noise Management Plan detailing how noise impacts will be managed and monitored throughout the construction period; and
- changes to be made to the Proponent's draft Statement of Commitments regarding air, noise and ecology impact management.

Department of Water and Energy (DWE)

- more flood modelling needs to be undertaken in relation to impacts upon the creeks at the site;
- predicted flow velocities through the proposed openings for Pipers Flat Creek are too high and further design changes to the openings are required in order to reduce predicted flow velocities;
- water quality for the site should not adversely impact upon downstream receiving waters;
- a Vegetation Management Plan should be implemented by the Proponent which outlines revegetation measures for creeks and restoration methods for riparian vegetation;
- restoration of riparian vegetation should occur in accordance with latest vegetation management guidelines; and
- if likely to be intercepted, groundwater impacts should be detailed and measures put in place to minimise impacts on groundwater and on groundwater dependent ecology.

Department of Primary Industries (DPI)

- assessment of impacts on threatened fish species and aquatic habitat was insufficient;
- the project should result in no net impacts on the receiving waterways however if adverse impacts are likely then compensatory habitat which recreates the type lost should be provided;
- the upper Cox River catchment is habitat to both rainbow and brown trout (both migratory) that regularly use the small streams above Lake Wallis for refuge during spawning;
- the various waterways and impoundments are an important recreational fishery for anglers; and
- DPI should be consulted during the design phase of any waterway crossings to ensure that works are designed and constructed in accordance with best management practice.

Roads and Traffic Authority (RTA)

- there is a reasonable probability that a queue of construction related vehicles will form from the level crossing onto Pipers Flat Road whilst a train proceeds through the crossing and this could create a potential hazard;
- the level crossing onto Pipers Flat Road should be upgraded prior to construction to reduce the likelihood of a hazard and this should include a queuing treatment in accordance with Australian Standards;
- an indication of the intersection treatment of the site access road and Pipers Flat Road has not been provided however a channelised right turn lane and an auxiliary left turn lane would be required to cater for construction workers accessing the site and other Pipers Flat Road traffic;
- the 95 % queue length of vehicles accessing the site (and delayed by train) will need to be determined and sufficient storage area clear of through traffic provided on Pipers Flat Road;
- the location of any gate or security guard house at the entrance of the site will need such that it will ensure that queued vehicles are clear of the level crossing;
- the B-Doubles proposed for diesel fuel transport will need to be approved to access that road prior use;
- the access road and intersection will required design and construction to accommodate the two-way movement of the B-Double vehicles and cater for concurrent swept paths;
- the access road should be sealed to the property boundary and during construction it may be necessary to install a wheel wash to reduce the quantity of dirt carried onto Pipers Flat Road; and
- any road works required as a result of the project shall be borne by the Proponent.

Sydney Catchment Authority (SCA)

- supports intent to maintain existing creek morphology through the use of appropriately designed flood infrastructure (like culverts and bridges) rather than realigning the creek;
- supports proposed creek restoration and revegetation of riparian zones at new flood infrastructure;
- supports proposed surface/ groundwater monitoring programs, preparation of environmental management plans and measures to control erosion and sedimentation;
- Pipers Flat Creek sub-catchment drains into the upper Cox River's catchment that is part of Sydney's drinking water catchment and therefore the facility must be constructed and operated in a manner that does not adversely impact on the quality of surface and ground waters beyond the boundaries of the site;
- concern exists regarding the potential use of bottom ash as fill for the rail embankment that it could potentially affect water quality in the area;
- clean imported fill material is preferred for use as fill for the rail embankment, however if bottom ash was to be used then further detailed studies would need to be undertaken to ensure that no adverse impacts on receiving waters or ecology result; and
- details of final designs, environmental management plans and proposed creek restoration/ revegetation works should be provided to SCA.

Australian Rail Track Corporation (ARTC)

- a formal application will be needed for the new siding connection of the rail loop and for the installation of the pipeline in the rail corridor;
- detailed facility / property drawings need to be provided for areas on the boundary of the ARTC rail corridor;
- the existing level crossing should be formally closed and an upgraded crossing provided;

- construction methods/ plans need to be reviewed by ARTC specifically in relation to activities that could impact on the existing rail corridor;
- surface water run-off must not be allowed to drain from the site onto the rail corridor;
- supports intent to maintain existing creek morphology through the use of appropriately designed flood infrastructure (like culverts and bridges) rather than realigning the creek;
- supports proposed creek restoration and revegetation of riparian zones at new flood infrastructure;

Mine Subsidence Board

- the proposal is not within a proclaimed Mine Subsidence District and is not subject to any building restrictions imposed by the Mine Subsidence Board; and
- the proposed conveyor would likely cross over some workings in the Lithgow Seam and therefore the design of the conveyor needs to give consideration to the existing mine workings.

4.3 Submissions from Local Government

Lithgow City Council made a submission on the project stating that it could not support the location of the project until 'an ironclad guarantee is provided to the coal mines at Angus Place and Springvale Colliery that contracts will be extended'. Council's particular concern in this regard related to the potential for the Proponent to source coal from outside the Lithgow local government area, with consequent adverse commercial implications for local mining operations (and employment and investment supported by those mines).

Council made supplementary comments on the project in October 2007, include reiteration of its previous concerns over the potential impacts of the proposal on local mining operators. In addition, Council raised concerns about the feasibility of alternative sites for the project, rail noise through Portland, noise and dust impacts, traffic generation and flooding implications.

4.4 Submissions Report

On review of the issues identified in submissions, the Department required the Proponent to prepare a Submissions Report to address each of the issues raised in those submissions. The Submissions Report also responded to series of questions and points of clarification sought by the Department with respect to key issues including:

- justification for the scale, scope and need for the project;
- noise impacts (particularly predicted exceedance of noise criteria and noise mitigation measures);
- sleep disturbance potential (noting issues such as rail shunting);
- construction noise management;
- clarification of dust generation sources and associated mitigation;
- clarification of hazards and risk mitigation and management measures; and
- visual amenity impacts.

The Proponent finalised and submitted its Submissions Report in August 2007. In doing so, the Proponent responded to issues raised in submissions and updated its Statement of Commitments accordingly. No changes were made to the project in response to issues raised in submissions. A copy of the Proponent's Submissions Report is provided as Appendix D to this report.

4.5 Minister's Meeting with Stakeholders

On 23 August 2007, the then Minister for Planning met with concerned local residents as part of the Community Cabinet Meeting in Bathurst. At that meeting, representatives of the local council and local residents articulated their respective concerns in relation to the project, with a particular focus on alternative development sites, rail noise through Portland, general noise and dust impacts, and cumulative impacts. In response to this meeting, the Minister directed that the Proponent provide additional information to address community concerns, with a particular focus on alternative project sites/ configurations and noise (both rail noise through Portland and sleep disturbance impacts). The Proponent duly prepared and provided this additional information to the Department in March 2008.

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

After consideration of the Environmental Assessment, submissions, Submissions Report and the response of the DEC and Commonwealth Department of Defence to the Submissions Report, the Department has identified the following key environmental issues associated with the proposal:

- noise impacts;
- air quality impacts;
- hydrological impacts; and
- visual amenity impacts.

All other issues are considered to be minor and have been adequately addressed as part of the Proponent's Statement of Commitments.

5.1 Noise Impacts

Issues

Operational Noise

A noise impact assessment was conducted as part of the Environmental Assessment to determine the potential noise impacts associated with the operation of the proposal. The assessment stated that it was conducted in accordance with the requirements of the NSW *Industrial Noise Policy* and considered both intrusive noise impacts and the impact on local noise amenity under both normal and adverse weather conditions. The assessment examined noise impacts based on three different scenarios – coal unloading operations (dump hopper and coal conveyor noise impacts combined); train movements (noise from the existing line combined with potential future movements due to the project); and the cumulative impact of the entire project (i.e. the noise impacts due to coal unloading operations and the train movement noise combined). Noise sources were modelled and noise performance at the nearest sensitive receivers compared against the relevant noise criteria.

The noise impact assessment results for the cumulative impact of the entire project (scenario 3) are outlined in Table 1 below. The assessment found that under all neutral weather conditions the predicted noise levels would meet the noise criterion of 35 dB(A) as specified in the NSW *Industrial Noise Policy*. Under adverse weather conditions, compliance with the same criterion is anticipated at all but two of the sensitive receivers assessed. Predicted noise levels at the two most-affected receivers are predicted to be 37 dB(A) and 39 dB(A), an exceedance of the NSW *Industrial Noise Policy* criteria of 2 dB(A) and 4 dB(A) respectively.

Table 1 - Predicted Noise Impacts (Reproduced from the Proponent's Environmental Assessment)

Location	Predicted Noise Impacts (dB(A))		Adopted Noise Criterion (dB(A))
	Neutral Weather	Adverse Weather	
1	28	34	35
2	29	35	35
3	29	35	35
4	32	37	35
5	34	39	35
6	<20	<20	35

It should be noted that noise sources such as train horns, wagon shunting and curving squeal have not been included in the modelling. The Proponent asserted that this was because these noise sources are difficult to predict in terms of timing or duration and that levels associated with these sources can vary with locomotive and wagon types.

Notwithstanding the level of noise impact assessment undertaken by the Proponent and presented in the Environmental Assessment, the then Minister for Planning's meeting with local residents and stakeholders highlighted the significant level of community concern over the potential noise impacts of the project. In addition to the direct, on-going noise impacts of the project, local residents expressed concern over sleep disturbance potential and the implications of additional rail movements through the township of Portland on acoustic amenity.

As a consequence of these significant and valid concerns being presented to the Minister, the Minister directed that the Proponent undertake further work to specifically address these community concerns. The Proponent duly complied with this direction, and in March 2008, completed additional studies into potential sleep disturbance impacts and rail noise issues.

Sleep Disturbance

The Proponent's sleep disturbance assessment specifically considered train horn noise and train bunching and stretching, key activities likely to pose the greatest potential for sleep disturbance through short duration, high noise intensity events.

In the case of horn noise, trains drivers are required to sound their horns when passing through level crossings. There are three such crossings in the vicinity of Pipers Flat, all of which would be crossed by rail traffic servicing the project. While the Proponent has expressed a preference for coal trains to approach the project during the day and evening periods (thereby avoiding any potential sleep disturbance impacts), it concedes that there remains reasonable potential that night time train movements may occur. The Proponent also highlights that night time train movements already occur in the area, and train horn sounding is not an uncommon noise source in the area. In this regard, sleep disturbance impacts (as $L_{A1(1\text{-minute})}$ values) would not increase as a result of the project at existing horn sounding locations. However, the subject project will introduce potential new sleep disturbance (horn sounding locations) as follows:

1. an existing crossing will be upgraded onto the Proponent's property;
2. a new crossing will be provided at the provisioning facility;
3. a new crossing will be provided at the Y junction with the main line; and
4. a new crossing will be provided at the wagon maintenance facility.

Of the above, the Proponent expects horn sounding would be required at the Y junction crossing and at the provisioning facility. It is also noted that these crossing locations are expected to represent the greatest potential for sleep disturbance.

The results of the Proponent's sleep disturbance modelling at these locations is summarised in the table below, for surrounding rural residential receivers. Predicted exceedances of sleep disturbance criteria are highlighted in red.

Table 2 – Predicted Sleep Disturbance Impacts (Horn Sounding)

Receiver Number	Sleep Disturbance Criterion ($L_{A1(1\text{-minute})}$) (dB(A))	Predicted Noise Impact from Y Junction ($L_{A1(1\text{-minute})}$) (dB(A))	Predicted Noise Impact from Provisioning Facility ($L_{A1(1\text{-minute})}$) (dB(A))
6	45	39	42
8	45	39	38
9	45	48	38
10	45	45	37
11	45	53	35

The Proponent highlights that the provisioning facility crossing is not expected to generate any adverse sleep disturbance impacts. However, exceedance of the sleep disturbance criterion is expected at two receivers as a result of horn sounding at the Y junction crossing. The Proponent argues that these receivers are already subject to horn sounding impacts, and that maximum noise levels would not be increased as a result of the project. As such, it considers impacts at these receivers to be acceptable and that no further action is required.

With respect to noise impacts associated with bunching and stretching of trains, the Proponent suggests that potential noise generation from these activities is minimal. Operating conditions for the project require trains to decelerate to a steady one kilometre per hour velocity as trains pass through the rail loop, and then to accelerate slowly as the trains leave the loop. Given these operating requirements, the Proponent concedes that there is some limited potential for train bunching during deceleration, but argues that there is unlikely to be any similar effect (stretching) during acceleration away from the rail loop. For bunching, the Proponent quotes data from similar operations in the Hunter Valley, for which noise impacts have been recorded at 70 dB(A) at seven metres from the train bunching. Based on this 'real' monitoring data, it is estimated that $L_{A1(1\text{-minute})}$ noise impacts would

be below 30 dB(A) at all receiver locations (ie below the sleep disturbance criterion of 45 dB(A)). The Proponent also reinforces that even if noise generation were found to be significantly higher than recorded in the Hunter Valley, there is a comfortable margin for compliance with the sleep disturbance criterion.

Rail Movement Noise (Portland)

A key issue raised in public submissions and at the meeting between the then Minister for Planning and local residents related to rail noise, particularly through the township of Portland. Local stakeholders expressed concerns in both forums over the current levels of rail noise experienced by residential receivers in and around Portland, and the potential for the subject project to increase existing rail noise levels through the generation of additional train movements. Key areas of concern for local residents focused on peak noise impacts (particularly horn sounding) and rail noise impacts at night (including sleep disturbance implications). The Proponent undertook additional assessment of rail noise issues following the then Minister's meeting with local residents, and submit the additional information to the Department in March 2008.

Noise monitoring undertaken by the Proponent to inform the further rail noise assessment identified that residential receivers are in many cases already subject to maximum rail noise impacts above desirable levels (ie the L_{Amax} trigger of 85dB(A) in the Interim Guideline on the Assessment of Noise from Rail Infrastructure Projects (IGANRIP) and the same value specified in the Pollution Reduction Program implemented through the Australian Rail Track Corporation's Environment Protection Licence). A summary of maximum rail noise measurements is presented below for three representative receiver locations.

Table 3 – Measured Maximum Rail Noise Impacts

Receiver Reference	Maximum Noise Impact During Pass-by (L_{Amax}) (dB(A))	Average Noise Impact During Pass-by (L_{Amax}) (dB(A))
2	101.5	91.7
3	92.5	65.3
4	93.5	80.2

During monitoring, the Proponent observed that the most-affected residential receiver (Location 2) (ie those residences along Railway Avenue) currently experience peak rail noise impacts above 85 dB(A) on a regular basis. These peak impacts typically occur once or twice each day, or the equivalent of one quarter of the trains passing this area. At other locations, impacts are not as pronounced, including for example at Location 3, where elevated noise impacts are typically experienced on two occasions each week.

The additional rail noise assessment presents a detailed consideration of noise impacts and duration at locations 2 and 4, to provide context to the consideration of rail noise issues. At location 2, noise impacts commence with the sounding of the crossing bells at the Williwa Street level crossing (up to 40 seconds, around 50 dB(A)). During this period, the approaching coal train sounds its horn, which lasts for only a few seconds and typically peaks between 80 and 85 dB(A)). Between 50 and 100 seconds, noise levels increase to around 80 dB(A) as the train approaches, peaking between the 70 and 100 second mark. Beyond 100 seconds, noise levels gradually decrease as the train departs. This period generally lasts between 100 and 250 seconds (measured from the initial ringing of the crossing bells), with a plateau around 150 to 200 seconds (about 60 dB(A), characterised as general wheel and track noise). The entire noise event takes up to 250 seconds (about four minutes), with noise levels around 50-60 dB(A) for the most part (with peaks up to around 80 dB(A) during horn sound and at the train's closest approach to receivers). A similar soundscape is produced at receiver location 4, although bell and horn impacts are lower (bells around 40 dB(A) and horn sounding peaking at about 60 dB(A)) and general train noise higher (slightly above 70 dB(A) at its peak). Based on these observations and consideration of noise profiles for train pass-bys at other rail locations, the Proponent concludes that:

- for properties location close to the road crossing (Williwa Street), the loudest event during train passing is the locomotive warning horn;
- at residences further from the crossing, engine noise and wheel track noise occur at approximately equally levels. While the warning horn is clearly audible, it is not as loud as these other two sources; and
- at no time were other common train noise sources observed (for example wheel squeal, flanging, braking or acceleration noise).

The Proponent notes that existing rail line to the site provides for five train slots in each direction (north/ south) over a 24-hour period. Based on the availability of train slots, existing rail traffic on the line and expected staged capacity increases for the project over time (up to 8 Mtpa), the Proponent has estimated the likely rail traffic generation of the project, as summarised in the table below.

Table 4 – Expected Total Rail Movements

Scenario	Total Trains in Each Direction (24 hours)	Total Trains in Each Direction (07:00 to 22:00)	Total Trains in Each Direction (22:00 to 07:00)
Without Project (now)	6	4	2
With Project up to 2 Mtpa (from now until 2014/2015)	8	5	3
With Project between 2 and 4 Mtpa (from 2014/2015 to 2030)	9	6	3
With Project up to 7-8 Mtpa (post 2030)	11	7	4

Based on these estimates of rail movement numbers through Portland, the Proponent modelled the expected rail noise impacts at three indicative receiver locations, as summarised in Table 5. Modelling scenarios considered various operational phases (from the current situation without the project, to full capacity beyond 2030) as average equivalent noise levels over a 24-hour period. The Proponent argued that maximum noise levels from locomotives passing through Portland would not increase as a result of the project, because the rail line is currently used for rail movements. However, the frequency of impacts would increase because of greater utilisation of the rail line.

Table 5 – Predicted Rail Noise Impacts at Nearest Receivers

Scenario	Predicted Noise Impacts ($L_{Aeq(24-hour)}$) (dB(A))		
	Receiver 2	Receiver 3	Receiver 4
Without Project (now)	55	45	51
With Project up to 2 Mtpa (from now until 2014/2015)	57	47	53
With Project between 2 and 4 Mtpa (from 2014/2015 to 2030)	57	47	53
With Project up to 7-8 Mtpa (post 2030)	58	48	54

The Proponent highlights that the above estimated rail noise impacts compare favourably with the noise guidelines presented in the *Environmental Noise Control Manual*. That is, the predicted rail noise impacts do not exceed the maximum $L_{Aeq(24-hour)}$ level of 60 dB(A), and with the exception of at receiver 2, do not exceed the $L_{Aeq(24-hour)}$ 'planning level' of 55 dB(A). While the information presented by the Proponent recognises the existence of the *Interim Guideline – Assessment of Noise from Rail Infrastructure Projects*, it does not directly assess rail noise impacts against the threshold values in the Interim Guideline.

The Proponent's assessment of rail noise impacts concludes that, should the project proceed, average equivalent rail noise impacts through Portland would be acceptable. It does concede, however, that maximum rail noise impacts associated with horn sounding at the Williwa Street road crossing currently exceed L_{Amax} goals, but argues that the project would not worsen the current situation.

Consideration

Operational Noise

The Department considers that the three key noise-related issues for consideration as part of the assessment of the project are: general operational noise impacts; sleep disturbance potential; and rail noise (both at Pipers Flat and through Portland). The Department is satisfied that construction noise impacts can be appropriately and adequately managed through the application of best practice construction noise techniques, and that road traffic noise is not a significant issue for the project.

In the case of general operational noise impacts, the Department is satisfied that the Proponent has applied a robust noise assessment methodology consistent with the requirements of the *Industrial Noise Policy*. The Proponent's assessment demonstrates that established noise criteria will be consistently and comfortably met during neutral weather conditions, and at all but two receiver locations under adverse weather scenarios (locations 4 and 5). At these two particular locations, it is important to note that exceedances are either marginal

(in the case of the 2dB(A) exceedance at receiver location 4) or within the range that can be proactively addressed through careful detailed design of the project (in the case of the 4 dB(A) exceedance at receiver location 5). The Department considers that there are reasonable and feasible design measures that the Proponent could consider and implement as part of the project that would allow it to operate without exceedance of the 35 dB(A) criterion at potentially-affected residences. Further, the Department highlights that there is a reasonable level of conservatism within the modelling approach applied by the Proponent. Taking this into account, the Department considers it reasonable to require the Proponent to achieve the 35 dB(A) noise criterion at all times at all receivers, and has recommended imposition of a condition of approval to reflect this approach. The Department of Environment and Climate Change has also indicated its willingness to license the facility to this level.

A number of submissions questioned the veracity of the noise assessment approach, raising in particular concerns over the location of background noise monitoring and consideration of receivers at Blackmans Flat. The Department highlights that background noise monitoring undertaken by the Proponent to inform the noise assessment for the project recorded existing ambient noise levels less than 30 dB(A). As this is the minimum background noise specified within the *Industrial Noise Policy*, it was taken as the assumed background noise level for the purpose of deriving project-specific noise criteria. If one is prepared to entertain the possibility that the Proponent selected inappropriate or non-representative background noise monitoring locations, then two possible scenarios result. The first is that the background noise level is in fact lower than that resulting from the Proponent's noise monitoring. This scenario would have no effect on the outcomes of the assessment process because the *Industrial Noise Policy* would still require a minimum-assumed background noise level of 30 dB(A). The second scenario, that background noise levels were in fact significantly above those recorded by the Proponent (for example, above 30 dB(A)), then derived noise criteria would be higher than the 35 dB(A) applied to the assessment of the project. The result for the second scenario would therefore a smaller exceedance (or perhaps no exceedance at all) of the project-specific noise criteria. It is therefore clear that, even if the Proponent made a fundamental error in determining background noise monitoring locations (which the Department does not consider to the case), then the Department does not consider that the outcomes of the noise assessment for the project would be any different from those presented in the Environmental Assessment and assessed in this report.

The Department appreciates on-going concerns presented by the residents of Blackmans Flat with respect to noise impacts, particularly in a cumulative context, at that locality. It is important, however, to contextualise these concerns with the observation that the assessment of this particular project requires consideration of noise generated by the project (on an individual and cumulative basis), and is not intended or required to deal with noise issues from other developments where no contribution exists from the project under assessment. The receivers at Blackmans Flat are further distanced from the key noise-generating components of the project than the receivers at Pipers Flat. The Department considers it unlikely that Blackmans Flat would be impacted more by the project than the Pipers Flat receivers (the most-affected locations for this particular project). As the Proponent has demonstrated that acceptable noise outcomes could be met for Pipers Flat receivers, then by corollary, the same acceptable outcomes (as a function of noise contributions from the project under assessment) would be achieved at Blackmans Flat. If elevated noise levels are experienced at Blackmans Flat as a result of a development beyond the scope of this particular project, then the onus is on the relevant proponent and environmental regulator in each case to take the appropriate actions to rectify the situation. Such actions are beyond the scope of this assessment and this report.

It will be particularly important that the Proponent not only proactively design the project to achieved specified noise limits, but that there be an effective management and monitoring framework in place to ensure early detection and rectification of potential noise issues. In this regard, the Department has recommended that the Proponent be required to undertake confirmatory post-operational noise modelling to establish whether noise limits and assessed noise outcomes are being achieved in reality. If acceptable noise outcomes are not being met by the project, the recommended conditions of approval require the Proponent to develop and implement additional noise mitigation measures, to the satisfaction of the Director-General. Further, annual environmental auditing of the project by an independent party will ensure that the noise limits enshrined in the conditions of approval are being met. Finally, the Department recommends that the Proponent prepare and implement an over-arching noise management plan to ensure that a coordinated, best practice and holistic approach is taken to noise mitigation, monitoring and management associated with the project.

Sleep Disturbance

The Department concurs with the Proponent's assertion, and the results of its modelling of potential sleep disturbance impacts, that the principal contributor to high-noise, low-duration events during the night time period is the practice of horn sounding at rail crossings. As horn sounding is undertaken for safety reasons, it is not reasonable to consider total removal of this noise source. Similarly, the capital expenditure and engineering practicalities of grade separation are likely to preclude such an alternative approach in this case.

The Proponent's sleep disturbance assessment suggests that potential sleep disturbance impacts will only be an issue at two receiver locations (locations 9 and 11) as a result of the operation (horn sounding) at the Y junction with the new line. The sleep disturbance criterion of 45 dB(A) is expected to be exceeded at these locations by 3 dB(A) and 8 dB(A), respectively. It is important to contextualise these scenarios, given that the impacts in question are not of an on-going nature and are only relevant during the night time period. The Proponent has highlighted that at maximum capacity (8 Mtpa), the project is likely to increase night time trains from 2 to 4, or the equivalent of a maximum of four additional movements (two in and two out) during the night time. Under current rail operating conditions, the Proponent indicates that there are four rail movements.

In quantitative terms, the Department does not consider the expected exceedance of the 45 dB(A) criterion at receiver location 9 to be significant. The predicted 3 dB(A) exceedance is considered to be within the confidence levels of the modelling approach and of a magnitude that can be readily managed. In contrast, the predicted 8 dB(A) exceedance at location 11 is considered significant and a trigger for further investigations into additional noise mitigation measures that may be applied. While the Department accepts the Proponent's arguments that local receivers already currently experience horn sounding impacts, it does not consider this a reasonable and justified argument against application of further reasonable and feasible noise mitigation measures. In particular, while the project will not fundamentally alter the magnitude of short-duration, high-intensity noise impacts from horn sounding, it is likely to increase the frequency of such events. This effect would be most noticeable as the project reaches full capacity. As such, the Department recommends that the Proponent be required to undertake further investigations into treatments that may be applied to the Y Junction to ensure that the sleep disturbance criterion ($L_{A1(1\text{-minute})}$) is met. As noted above, the Y junction is the principal source of sleep disturbance impacts from the project; by reducing noise at this location, the Proponent will be able to reduce impacts at both receiver 9 and 11. The Department is satisfied that there are operational and physical mitigation options available to achieve this outcome, including prohibitions/ restrictions on the use of horns, acoustic barriers or similar treatments. As an alternative, second-tier option, the Proponent may also seek to apply acoustic treatments at the receiver.

The Department recommends that the Proponent be required to investigate and report on these options to the Director-General and the Department of Environment and Climate Change prior to the commencement of operation. Additional mitigation measures would need to be installed to the satisfaction of the Director-General.

Rail Movement Noise (Portland)

The issue of rail noise, particularly through the township of Portland, was the single most frequently raised issue of concern in submissions and during the meeting between the Minister and affected stakeholders. While the Department appreciates that many of the receivers likely to be affected by rail noise associated with the project already experienced impacts from existing rail movements, the Department does not consider it acceptable or appropriate to use this as a reason not to address the impacts directly and indirectly attributable to the project. As with the above consideration of sleep disturbance, the project would not increase the maximum rail noise impacts beyond the existing situation, but would increase the frequency of impacts (associated with each locomotive pass-by). As highlighted in the Proponent's assessment, a key component of the rail noise impacts on receivers in and around Portland is the use of locomotive horns at rail crossings.

The Department is generally satisfied with the approach taken by the Proponent in estimating the likely rail noise impacts of the project. It is noted that rail movements at full project capacity will be rail slot-constrained, and as such, the Proponent's assumption of roughly even distribution of rail movements over a 24-hour period is reasonable. Further, it is noted that the Proponent intends to apply reasonable endeavours to ensure that, below maximum capacity, rail movements associated with the project are assigned to day time slots wherever possible. This approach will ensure that night time noise impacts are minimised.

While the Department generally concurs with the assessment approach taken by the Proponent, it does not agree that the Proponent has applied appropriate and relevant noise assessment criteria in this case. The Proponent has assessed the project against the rail noise criteria previously published in the *Environmental Noise Control Manual*. More recently, however, the *Interim Guideline – Assessment of Noise from Rail Infrastructure Projects* has been released and the Department considers it appropriate that the project be assessed against this new (interim) policy guideline. Under the Interim Guideline, the project is considered as a 'new rail line' because 'existing levels of rail noise are below trigger values for a new rail line development'. That is, although the project will be adding additional rail movements to an existing rail line, the current rail infrastructure does not exceed a day time threshold of 60 dB(A) (7:00 am to 10:00 pm, as $L_{Aeq(15\text{-hour})}$) or a night time threshold of 55 dB(A) (10:00 pm to 7:00 am, as $L_{Aeq(9\text{-hour})}$) at affected receivers (as demonstrated in the Proponent's assessment of the current rail noise situation). The Interim Guideline also provides that if the project causes an exceedance of these threshold levels by 2 dB(A) or more, then further consideration needs to be given to the application of reasonable and feasible noise mitigation measures.

As can be seen from the outcomes of the rail noise modelling, the project would not cause an exceedance of the day time noise threshold of 60 dB(A). It would, however, increase night time noise above the threshold value of 55 dB(A) at receiver location 2. Other receiver locations would not experience rail noise above this level. Increases in rail noise at location 2 are expected to be approximately 2 dB(A) during the early stages of the project (from 2 million to 4 million tonnes per annum). Consistent with the approach outlined in the Interim Guideline, reasonable and feasible noise mitigation measures need to be considered in this case. As such, the Department has recommended a condition of approval that requires the Proponent to undertake investigations into rail noise mitigation measures within six months of the project reaching a capacity of 2 million tonnes per annum). These investigations would need to be undertaken in consultation with other rail operators and rail infrastructure providers, noting the cumulative contributions of all parties to the issue of rail noise through Portland, and the fact that the Proponent has no direct control over rail infrastructure and rolling stock. The recommended conditions of approval require the Proponent to report on all reasonable and feasible noise mitigation measures to the Director-General and to the Department of Environment and Climate Change.

Given the sensitivities of the noise modelling approach, and the assumptions applied, it is not possible to conclusively determine the point at which the project results in an increase in rail noise of exactly 2 dB(A) and at which point the noise increase goes beyond that. It can be said, however, that up to about 6 million tonnes per annum, the project will contribute around 2 dB(A) to existing rail noise levels, and beyond that, more (as predicted, an increase of about 3 dB(A) by the time the project reaches 7-8 million tonnes per annum). The Department therefore considers that a 6 million tonnes per annum threshold is an appropriate point at which identified reasonable and feasible noise mitigation measures need to be applied. As such, the Department has recommended a condition of approval that restricts the project from operating above 6 million tonnes per annum until such time as the reasonable and feasible noise mitigation measures identified by the Proponent (following attainment of a capacity of 2 million tonnes per annum) have been implemented to the satisfaction of the Director-General. The Department has deliberately not placed the onus of implementation solely on the Proponent, noting that some potential mitigation options may be more appropriately applied by other parties (for example, measures applied to rail infrastructure or rolling stock not directly controlled by the Proponent). There may be arrangements established between the parties, however, to facilitate the most practical, effective and cost-efficient options available to each party.

A key focus of the investigations into noise mitigation measures will be in and around the Williwa Street level crossing, where the sounding of locomotive horns (in addition to rail crossing bell signals) is a significant contributor to elevated noise impacts in the surrounding area. Additional noise mitigation at this location for the purpose of reducing period-average noise effects (as day time 15-hour and night time 9-hour averages) would have the added benefit of addressing short-duration, peak noise impacts. This is particularly important at night, when high-intensity noise impacts have the potential to cause sleep disturbance. While the Department accepts that the project will not increase maximum noise impacts (as 1-minute averages), it is clear that the project has the potential to increase the frequency of occurrence of such events. In this regard, proactive noise mitigation around the time the project reaches 6 million tonnes per annum will assist in reducing the effect of greater frequency peak noise impacts.