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Proposed Ulan to Gulgong railway : environmental impact  
assessment.



# Proposed Ulan to Gulgong Railway

ENVIRONMENTAL IMPACT  
ASSESSMENT

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# Proposed Ulan to Gulgong Railway

## ENVIRONMENTAL IMPACT ASSESSMENT

DEPARTMENT OF ENVIRONMENT & PLANNING  
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## FOREWORD

Ulan Coal Mines Limited has lodged development applications with Mudgee and Merriwa Shire Councils for the reconstruction of the Sandy Hollow to Maryvale Railway between Ulan and Gulgong and associated works. The development applications have been supported by an environmental impact statement.

As the development is subject to a direction under Section 101 of the Environmental Planning and Assessment Act, 1979, the Minister for Planning and Environment will determine the development applications lodged with the Shire Councils.

To assist in the determination of the applications the Department of Environment and Planning has undertaken an assessment of the proposal. In carrying out the assessment, due consideration has been given to all written submissions received, however, there were no objectors to the development.

This assessment report has been prepared by the Department of Environment and Planning and constitutes the Department's consideration of the development applications and the associated environmental impact statement. The report will be forwarded to the Councils, the applicant and the authors of written submissions. If either Council or the applicant requests a hearing in accordance with Section 101 of the Environmental Planning and Assessment Act, 1979, this report and the recommendations contained herein shall constitute the Department's submission to the Commission of Inquiry. If no hearing is requested, the report and its recommendations will be forwarded to the Minister for Planning and Environment for his consideration in determining the development applications.

R.B. SMYTH  
DIRECTOR

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## 1. INTRODUCTION

### 1.1 Relevant Previous Approvals and Agreements

In December, 1978, Ulan Coal Mines Limited announced its intention of providing the funds for completion of the Ulan to Sandy Hollow railway to facilitate transport of the envisaged expanded coal production at Ulan. An environmental impact statement was prepared for this proposal and placed on public exhibition in June and July 1980. The railway proposal was subsequently approved by the Department of Environment and Planning in September 1980. It is now under construction and is proceeding on schedule for completion by the end of June, 1982.

In October 1980, Ulan Coal Mines Limited submitted development applications, together with copies of an environmental impact statement, to the Councils of the Shires of Mudgee and Merriwa for the expansion of the Ulan Coal Mine to achieve a production rate of 4.2 million tonnes per annum.

The Councils subsequently placed the documents on public exhibition and then forwarded same, together with submissions received, to the Secretary of the Department of Environment and Planning for determination by the Minister, in accordance with Section 101 of the Environmental Planning and Assessment Act. The Department prepared and published an Assessment Report on the development including recommendations for approval of the development. At the request of several objectors, an inquiry was held under Section 101(5) of the Act. The Department's Assessment Report became a submission to the inquiry. Following the advice of the Commissioner of Inquiry, the Minister approved the development, subject to conditions, on 26 May, 1981.

Condition 12 of the Minister's Consent endorsed the Department's recommendation relating to the Gulgong railway. This Condition required the applicant to, "within six months of the date of this consent, undertake and complete in consultation with the State Rail Authority and the Mudgee Shire Council, a feasibility study for extending the Sandy Hollow railway from Ulan to Gulgong". This recommendation originated to meet the objective of removing the road to rail coal loading facility at Gulgong and road transport of coal thereto. The undertaking by Ulan Coal Mines Limited to arrange and finance the reconstruction of the Ulan to Gulgong Railway has become an integral part of an agreement between the Company and the Government whereby the Company will receive a new coal lease at Ulan. The Company's consultants have already consulted the Director regarding the preparation of a further impact statement for the Stage 2 mine expansion.

### 1.2 The Development Approval Process for the Current Development

The Ulan to Gulgong Railway development is considered under Part IV of the Environmental Planning and Assessment Act, 1979 as a designated development as per Schedule 3 of the Regulations, item

(i). The consent authorities are Mudgee and Merriwa Shire Councils. A Section 101 Direction dated 23 July, 1981, applies to the development, it being a "development relating to transport of coal". The Minister for Planning and Environment will determine the applications lodged with the consent authorities.

Kinhill Pty. Ltd., consultants to Ulan Coal Mines Limited, was commissioned to prepare an environmental impact statement for the development. In preparing the environmental impact statement, Kinhill Pty. Ltd. consulted the Director of the Department of Environment and Planning, in accordance with Clause 35 of the Environmental Planning and Assessment Regulation. Development applications, together with copies of the completed environmental impact statement, were subsequently lodged with Mudgee and Merriwa Shire Councils. The councils placed same on public exhibition at strategic local locations for the periods 13 November - 12 December and 11 November - 10 December respectively.

The consent authorities forwarded the development applications to the Secretary of the Department of Environment and Planning. This assessment report has been prepared by the Department of Environment and Planning and constitutes the Department's consideration of the development applications and the associated environmental impact statement. The report will be forwarded to both councils and the applicant. If either council or the applicant requests a hearing in accordance with Section 101 of the Environmental Planning and Assessment Act, 1979, this report and the recommendations contained herein shall constitute the Department's submission to the Commission of Inquiry. If no hearing is requested, the report and its recommendations will be forwarded to the Minister for Planning and Environment for his consideration in determining the development applications.

## 2. THE PROPOSAL

The proposal as outlined in the environmental impact statement involves the reconstruction of the previously abandoned Maryvale to Sandy Hollow Railway between Ulan and Gulgong at a cost of approximately \$11.2 million and the construction of a second rail loop with provision for a loading facility at Ulan. Associated with the development would be the demolition of the existing coal loading facility at Gulgong. The purpose of the railway would be to provide the Company with a rail route for domestic coal and an alternative route for export coal if the main line between Ulan and Newcastle becomes inoperative for any reason. The railway could also be available for other produce at the discretion of the State Rail Authority.

The length of the proposed railway is 24.8 kilometres. The 6.1 metre wide formation would be constructed within the existing easement which varies in width between 30 and 40 metres. Grades would not exceed 1:80 against loaded trains and 1:50 against empty trains. Depth of ballast would be 300mm. 53 kg/metre of continuously welded rail would be laid on prestressed mono-bloc

concrete sleepers. Three steel bridges would be constructed. There would also be seven public level crossings and sixteen private and accommodation crossings. Both sides of the easement would be fenced, though some stock underpasses would be provided.

Construction work would involve clearing and burning of vegetation in the easement, fencing, placement of formation earthworks to a depth of 300mm, construction of a maintenance road adjacent to the track within the easement and the placement of an earth capping layer. The formation would then be trimmed prior to dumping of ballast and placement of sleepers and track. Various access points would be located along the railway during the construction phase.

Approximately 160,000 tonnes of earth capping material would be required. It would be obtained from borrow pits in private property adjacent to the eastern half of the railway. The material would be trucked in 20 to 35 tonne capacity trucks directly to the formation. Borrow pits would be reformed and rehabilitated to the requirements of land holders. Approximately 100,000 tonnes of sized ballast would be required. It is proposed that this be obtained from either a new quarry near Ulan or the existing quarry at Bylong. Approval is sought for the Ulan Quarry which would involve production of 200 tonnes of ballast per hour for 10 hours per day, six days per week. Some blasting would be necessary and ballast would be crushed and screened at the quarry site.

The sized ballast would be transported by 20 to 35 tonne capacity trucks to a temporary stockpile adjacent to the railway. 41,000 prestressed concrete sleepers would be supplied by Monier from the existing Denman plant. These would be transported to Ulan by rail. Rails would be supplied from B.H.P. - A.I.S. at Port Kembla, joined to form 110 metre lengths at Chullora and transported entirely by rail. A small quantity of steel girders to complete bridge construction would be transported by road.

A total construction workforce of 95 people is proposed over the 10 month construction period. It is anticipated that the contractors used for the Sandy Hollow Railway would also be used for the Gulgong Railway. These people would be accommodated at the existing Ulan and Bylong construction camps.

### 3. THE EXISTING ENVIRONMENT

The proposed railway would be constructed entirely on an existing easement. 24 kilometres of the railway and the proposed balloon loop would be located in Mudgee Shire. Only one kilometre of railway and the proposed quarry would be located in Merriwa Shire. Except for the village areas of Gulgong and Ulan all land adjacent to the railway is zoned non urban.

The Ulan to Sandy Hollow Railway is currently under construction, as is the approved Stage I expansion of the Ulan Coal Mine. The proposed railway would be an integral part of the overall local

mine development. There is currently a coal dump and train loading facility located on the Ulan-Gulgong Railway easement at Gulgong. The existence of this facility has been a cause for complaint by local residents over the years because of coal dust and noise associated with truck movements, stockpiling, train loading and shunting. Existing noise levels are discussed in more detail in Section 5.2.2 of this Report. The use of road trucks for transport of coal to the facility has resulted in damage to Main Road 598 and danger to the public.

For a distance of 1.5 kilometres the railway easement passes through Cope State Forest, the management of which is directed towards the production of timbers for rural and mining uses to meet local needs. Most of the remainder of the easement passes through lands devoted to farming and grazing. The timbered area is an open woodland comprising ironbarks, boxes, smooth barked gums, Rough-Barked Apple, Black She Oak and Black Pine. The River Oak is found in creek crossings. Approximately 15 properties are adjacent to, and severed by, the easement. These areas are largely cleared of native vegetation. The most significant watercourses along the route are Cooyal Creek near Gulgong and Moolarben Creek at Ulan. The range of fauna found in the area is typical of the Western Slopes of N.S.W. Climatic parameters are also typical of the region.

The area proposed for borrow pits is largely in private property and confined to the areas of duplex yellow soils. The topsoil is sandy loam and the surface is hard setting. Subsoils are deep, infertile, acid, have a low water holding capacity and are highly erodible. A recently rehabilitated borrow pit near Ulan is already showing signs of erosion.

The proposed ballast quarry site is located 13 kilometres north of Ulan and two kilometres west of Main Road 214. The site is on private property which has been largely cleared of native vegetation. Only one residence is in the vicinity and this is owned by the lessor of the quarry site. The site is surrounded on three sides by low vegetated hills. The road to Ulan from the quarry site comprises a narrow gravel property road for two kilometres and Main Road 214 for approximately 12 kilometres. Much of Main Road 214 is currently being reconstructed to a higher standard by the Company.

#### 4. REVIEW OF SUBMISSIONS

##### 4.1 Government Departments

Crown Lands Office : The Office indicated that no land administered by it is affected by the proposal. It notes the beneficial effects which would result and in supporting the proposal presented the following suggestions to further minimise environmental impact:

- The noise of coal trains passing residential dwellings be kept to a minimum, possibly through the use of vegetative or

- other screens;
- . Water tankers be used during construction to minimise dust;
  - . All potential soil erosion and siltation problems be controlled by approved Soil Conservation Service works;
  - . Adequate provision be made for stock underpasses;
  - . Disruption caused to the wildlife corridor be minimised by reduced vegetative clearing widths along the rail easement and other suitable measures.

Forestry Commission : The Commission would expect the route through Cope State Forest to be formalised at some future stage by appropriation of an easement.

Department of Industrial Development and Decentralisation : The Department supports the granting of consent to the project in view of the benefits it would bring to the Company and the local community. If, at a later stage, the line is extended further west to Maryvale this could be an incentive for increased development and decentralisation in the central western and western parts of the State because there would then be a more direct rail connection with Newcastle.

Department of Main Roads : The Department indicated that the project appears acceptable to it as employment of the railway would eliminate coal traffic from Main Road 598 and construction traffic on that road would be well within the capacity of the road. The Department notes that the level crossing on Main Road 598 would be designed to the requirements of the Inter-Departmental Level Crossing Committee. The developer should liaise with the Department's Divisional Engineer Lithgow regarding the intersection of Main Road 214 with the road from the proposed ballast quarry and the intersections of Main Road 598 with the various construction access routes to the railway easement.

Department of Mineral Resources : The Department submitted the following information:

- . The proposed railway and balloon loop would not result in any sterilisation of coal.
- . Any additional crossing loops constructed between Ulan and Sandy Hollow would need to be examined closely for their potential to sterilise coal.
- . Future electrification of the line could be achieved entirely within the 70 metre "no mining" barrier required by the State Rail Authority.

National Parks and Wildlife Service : The Service presented the following advice:

- . Information in the environmental impact statement on flora species and associations was insufficient for proper assessment, particularly in the vicinity of Cope State Forest.
- . Any borrow pits should be located in already cleared lands.
- . Two Aboriginal sites were damaged during construction of the Sandy Hollow Railway. It is an offence to destroy or damage an Aboriginal site without the written permission of the Director of National Parks and Wildlife. The current development should not be undertaken without an Aboriginal sites survey being carried out.
- . In construction of the Sandy Hollow Railway, two gravel pits were opened and used within Wollemi National Park without Service or Ministerial consent and another two gravel pits were opened in Crown Lands proposed for reservation as the Goulburn River National Park without the Service's views being sought. It is important that this situation does not recur.

Soil Conservation Service : The Service presented the following advice:

- . The undertakings in the environmental impact statement regarding environmental protection are commendable and are the result of Service involvement in preparing the document.
- . The Service's Soil Conservationist, Mudgee, should be contacted and inspections undertaken of proposed borrow pits prior to the extraction of any material.
- . Grass species and seeding rates should be as presented in the submission for revegetation of disturbed areas.

State Pollution Control Commission : The Commission's submission is reproduced in full as an appendix to this Report.

State Rail Authority : The Authority considers the proposed railway is necessary, the main reasons being the provision of an alternate rail link between Newcastle and the Central West and it would result in the cessation of road haulage of coal and removal of the rail loading facility at Gulgong. It also lists other advantages of the railway. The Authority indicated that there may be a limit placed on the amount of coal hauled via Gulgong because of the existing rail infrastructure between Gulgong and Wallerawang. It also indicated that a passing loop of approximately one kilometre in length would be required at Ulan.

Water Resources Commission : The Commission considered that insufficient details were provided in the environmental impact statement to enable identification of specific effects on water

resources. It therefore recommended the following safeguards be adopted in the development and operation of the railway:

- . All works be constructed and maintained in a manner so as to prevent erosion and sedimentation of adjacent water courses.
- . All river crossings be constructed with adequate waterway area to permit unimpeded passage of flood waters.
- . Borrow areas within the bed or banks of any stream be operated in accordance with licensing requirements of the Commission.

#### 4.2 Local Government

Merriwa Shire Council : Council raised no objection to the proposal but requested that the following conditions be included in any consent that may be issued:

- . All ballast for construction be transported by railway to the site from the quarry established by the company at Bylong and that road transport of this material be prohibited.
- . That any borrow pits to be established for earthworks and capping material be located on the generally eastern (railway line) side of Main Road 598 so as to alleviate any likely traffic control problems and not to cause additional damage to this road over and above that presently experienced by coal haulage.
- . Full and precise details of borrow pits for earthworks and capping material being submitted to and approved by Council, such details to incorporate rehabilitation works and tree planting following completion of excavation, with all rehabilitation works being carried out to the satisfaction of the N.S.W. Soil Conservation Service.

Council's reasons for requesting these conditions relate to the unsatisfactory road conditions in the area and the likely major conflict between coal transport and construction material transport.

Mudgee Shire Council : Council considered the comments made by five Government Departments which forwarded submissions to it and advised that it resolved to approve the application subject to the approaches to the proposed railway crossings on Shire Roads No. 133 and No. 107 being sealed on either side for a distance of 20 metres. Should the Minister grant consent to the development, the developer may obtain further details of Councils requirement in this regard.

#### 4.3 Private Organisations

No submissions were received from private organisations.

#### 4.4 Individuals

No submissions were received from individuals.

### 5. ASSESSMENT OF ENVIRONMENTAL IMPACT

#### 5.1 Short-Term Impacts

##### 5.1.1 Ballast Quarry

Ballast is to be quarried at a rate of up to 200 tonnes per hour over a 15 week period for a total production of approximately 100,000 tonnes. Drilling and blasting would be necessary and basalt would be crushed and screened on site. Dust and considerable noise could be expected from drilling, blasting, crushing, loading and vehicle movements. In the short term siltation could result at the proposed crossing of Bobadeen Creek, however cut off drains would be excavated around the quarry and plant to intercept runoff from those sources and direct it to a siltation dam. It is unlikely that the quality of water would be adversely affected in the Goulburn River which is seven kilometres downstream. It is proposed to fence the quarry and on completion of quarrying rehabilitate the site to the satisfaction of the land owner and Merriwa Shire Council using methods prescribed by the Soil Conservation Service. The site is remote from natural areas and, except for the house owned by the quarry site lessor, it is also remote from residences. In view of this, and the fact that the development is temporary, environmental impact should be acceptable.

The most significant short-term impact on the local area would be presence of heavy trucks on Main Road 214 between the "Bobadeen" Road and Ulan. Approximately eight trucks per hour (16 truck movements) would be required to transport the envisaged production. It is for this reason that Merriwa Shire Council, in its submission, recommended that the Company use the Bylong quarry and rail transport in preference to a new quarry at Ulan. The Department of Environment and Planning agrees with the Council that use of the Bylong quarry would be preferable in terms of environmental, road safety and road maintenance criteria. However it may not be economically feasible to adopt this alternative and transport of ballast may interrupt coal exports along the Sandy Hollow Railway. The development of the railway project, having such long term advantages to the local area and the State, should not be jeopardised by a decision to refuse development consent for the Ulan quarry. In view of the short term of quarry operation proposed (15 weeks) it is considered that its development should be permitted, subject to conditions designed to minimise hazard and impact on Main Road 214. If, however, use of the Bylong quarry and rail transport is found to be economically and otherwise practicable, it should be used as a ballast source in preference to the development of a new quarry at Ulan.

### 5.1.2 Borrow Pits

160,000 tonnes of material would be required from borrow pits in an area adjacent to the eastern 13 kilometres of the railway easement. The exact location and number of borrow pits has not been determined and would depend on the suitability of soil for capping following tests at several locations. Any pits would be located on private property and the details of excavation and rehabilitation would be in accordance with the requirements of property owners. The major cause for concern in the development of borrow pits stems from the erodibility of the A2 horizon of the duplex yellow soils. Erosion control of these soils is expected to be difficult due to their surface sealing properties, low chemical fertility, low water holding capacity and acidity. Evidence from a recently rehabilitated borrow pit located a few kilometres west of Ulan confirms that the erodibility of these yellow duplex soils is high.

In order to prevent erosion of the proposed borrow pits following their rehabilitation, a proper rehabilitation programme would be required and diligent attention applied to its implementation. The Soil Conservation Service indicated in its submission that it would require to inspect borrow pit sites before extraction takes place. The Service should also oversee rehabilitation operations.

Transport of extracted earth by truck may cause some damage and hazard on Main Road 598. It would be advantageous where possible, to locate borrow pits on the eastern (railway) side of Main Road 598, to avoid use of the road.

In its submission, the National Parks and Wildlife Service indicated that borrow pits were established in Wollemi National Park and in lands proposed for reservation as the Goulburn River National Park for use in constructing the Ulan to Sandy Hollow Railway. Such a situation should not recur. In any case, for the Ulan to Gulgong Railway, adequate borrow material should be available from cleared private property. Borrow pits should not be located in forested areas regardless of land ownership.

### 5.1.3 Sleeper Manufacture

41,000 prestressed concrete sleepers would be required to construct the railway. It is proposed that Monier supply these from its existing batching plant at Denman. The batching plant was initially established to supply sleepers for the reconstruction of the Ulan to Sandy Hollow Railway. Being sited close to a residential area, it has been the subject of complaints, particularly regarding noise pollution. This problem has to some extent been overcome by stockpiling large numbers of sleepers along the residential side of the plant. The effect of the current railway proposal would be to prolong the operation but not increase the level of impact of the batching and sleeper manufacture plant, together with its associated sand and gravel

extraction from the Hunter River and transport of same to the plant. However, it is probable that the plant would remain regardless of the current proposal in view of the favourable price, availability and durability of concrete sleepers, compared with timber sleepers, for State needs. Transport of the sleepers to Ulan would be by rail so environmental impact of transport would be minimal.

#### 5.1.4 Construction Activity

The types of activities that would be associated with construction of the railway are listed in Section 2 of this report. The most prominent effects would be noise and dust associated with raw materials extraction and transport and preparation of the railway formation. Turbidity and siltation of streams could also occur. Use of water tankers should substantially ameliorate dust problems. Little could be achieved to ameliorate noise, however few people are likely to be affected and construction noise would be confined to daylight hours.

In order to prevent siltation of streams intersecting the easement, it would be necessary to pay close attention to the control of formation earthworks when these are being carried out in the proximity of water courses.

As the raw materials would be extracted in close proximity to the railway, impact on public roads would be minimal. The majority of construction traffic and heavy equipment would be confined to the railway easement. The Ulan area is already subject to substantial construction activity and traffic associated with mine development and any increase resulting from railway construction would make little difference to environmental quality over the short (10 month) construction period. The Company has demonstrated, during its current construction of the Ulan to Sandy Hollow Railway, that the impact of construction activities can be contained to an acceptable level.

#### 5.1.5 Employment and Social Impacts

Railway construction would provide a total of approximately 3000 man weeks of work creating temporary employment for some 95 people during the 10 months construction period. According to the environmental impact statement, 40 per cent of the workforce may be from the local district, representing employment opportunities for 38 local people. However, it is anticipated that the contractors currently constructing the Ulan to Sandy Hollow Railway would also be employed on the Ulan to Gulgong Railway. For this reason it is expected that construction of the Ulan to Gulgong Railway would have the effect of maintaining the existing workforce for a further 10 months. These people would be accommodated in the existing construction camps and there would be little change to the social environment resulting from railway construction.

Closure of the Gulgong rail coal loading facility would, however

result in the loss of 20 jobs, including truck drivers. Such people should have little trouble being re-employed at Ulan or at other coal mining developments in the Hunter or Lithgow areas.

## 5.2 Long Term Impacts

### 5.2.1 Beneficial Impacts

It is State Government policy, where possible, to transport coal by rail in preference to road. The construction of the Ulan to Gulgong Railway would result in the elimination of trucks to the Gulgong loading facility. (However, insignificant numbers of trucks would continue to be used for transport of coal to local markets such as the Mudgee and Dubbo hospitals.) An average of 10 trucks currently operate between the Ulan mine and the loading facility, each making 10 to 12 round trips (200-240 vehicle movements) per day. At peak times up to 16 trucks are operating representing up to 350 vehicle movements per day. Approximately 80 per cent of these truck movements will be eliminated once the Sandy Hollow Railway becomes operational. The remaining 20 per cent would be eliminated if the Gulgong Railway becomes operational. Elimination of such a large number of trucks from Main Road 598 would result in substantial improvement in road safety, noise levels and road maintenance costs.

On completion of the railway, the Gulgong rail loading facility would be demolished and the site rehabilitated. This would improve the air and visual quality in the north-eastern area of Gulgong and substantially reduce noise levels. (See Section 5.2.2. of this Report for further analysis of noise levels.)

Use of the railway in preference to road transport would result in significant energy savings. Truck transport involves expenditure of between 1.65 and 1.84 MJ per net tonne kilometre compared with 0.46 to 0.61 MJ per net tonne kilometre expended using diesel trains. This represents a 70 per cent reduction in energy expenditure. Should electric trains replace diesel at some time in the future, energy expenditure would be further reduced.

Completion of the Ulan to Gulgong Railway would open the way for coal from the Western Coalfields to be transported to Newcastle and coal from Ulan Coalfields to be transported to Sydney and Port Kembla. Thus the new rail link would provide considerable flexibility, to a number of producers, in use of coal loaders. This may be of particular benefit during industrial disputes. The rail link may also be used for transport of other primary produce such as wheat to Newcastle. The transport of large amounts of wheat to Newcastle may depend on further extension of the railway to Maryvale.

### 5.2.2 Noise

Noise associated with proposed train loading operations at Ulan will be the subject of assessment when the Company submits a

development application for the proposed mine expansion. At this stage it can be said that noise levels should not be significantly higher than those expected for the already approved mine. The loading facility would be sited further from the village of Ulan than the already approved Sandy Hollow Railway loading facility and would thus be further from the few residences and school than other major noise sources.

Train noise would affect an area extending from Ulan to Gulgong and would normally emanate from one or two train movements per week. The noise level of a passing train lasts for approximately one minute at a level of 77 dBA at 100 metres. 5 houses would be within this distance range. The existing situation, where an average of 220 truck movements occur per day, affects an equivalent number of houses. Each truck passing registers noise levels of approximately 70 dBA at 100 metres. In summary, the existing and expected future noise levels, associated with coal transport between Ulan and Gulgong, are:

- (a) Existing : 70 dBA at 5 houses, 220 times per day;
- (b) Expected : 77 dBA at 5 houses, one or two times per week.

In both the existing and expected future cases, other houses are affected at greater distances from the noise sources. A total of 70 houses occur within one kilometre of the railway, fifty of which are more than 500 metres from the track. Each would be subject to noise levels of between 65 and 77 dBA one to two times per week. Train noise between Gulgong and further south would be little changed from the existing situation. The incidence of trains along the Ulan to Gulgong Railway and elsewhere may increase in the future either as a result of coal traffic diversion to alternative ports or use of the railway for other primary produce.

The major change in noise environment associated with the proposed railway development would be at Gulgong. Currently, noise levels occur at random times throughout the day at the Gulgong rail loading facility from truck movements, coal handling and train loading operations. Noise levels measured by the Department of Environment and Planning during typical train loading operations are as follows:

- Background noise level at 50 metres when no activity occurring - 33 dBA
- Front end loader at 50 metres - 60 dBA
- Dumping coal in train at 50 metres - 66 dBA
- Train starting and stopping (during loading operation) at 20 metres - 82 dBA

- General operations from nearest house - intermittent around 46 dBA
- From side of Flirtation Hill, well within residential area - Range 37 to 45 dBA

The noise levels measured at the loading facility are consistent with those provided in the impact statement. These noise levels are intermittent and when they occur, significant.

In the immediate residential area of Gulgong existing noise levels are offensive. With the introduction of the Ulan to Gulgong Railway all operations at the Gulgong loading facility would cease, substantially improving the noise environment. Under normal conditions, only one to two train movements per week would occur as a result of the transport of Ulan coal. As most Ulan coal will be transported to Newcastle via Sandy Hollow, there will shortly be fewer trains passing through Gulgong than has occurred in the past. This also will result in more acceptable noise levels. In the event that the Ulan to Gulgong Railway is used to transport the bulk of Ulan coal during industrial or other problems on the Newcastle route, the incidence of significant noise levels from trains at Gulgong would be temporarily increased. However, a corresponding decrease in noise levels would occur along the Ulan - Sandy Hollow - Newcastle route.

### 5.2.3 Level Crossings and Access

The development of the Ulan to Gulgong Railway would involve the establishment of seven public level crossings and sixteen private and accommodation crossings. There would also be provision for privately owned water reticulation sleeves, stock underpasses and other miscellaneous facilities consistent with property management. Despite these provisions, fencing of the easement is likely to cause some inconvenience to owners of the 15 properties to be severed by the railway. Fencing is of course necessary, however, to protect stock and secure the easement. Safety on public roads is a potential problem at railway level crossings. In accordance with normal practice the type of crossings and the control of trains and road vehicles at each would be determined by the Inter-Departmental Level Crossing Committee. This procedure should optimise crossing safety.

### 5.2.4 Impact on State Rail System

Under normal conditions the railway would be subject to approximately one to two train movements per week from transport of Ulan coal. This represents fewer trains than currently depart Gulgong loaded with Ulan coal, as export coal will soon be leaving via the Sandy Hollow Railway to Newcastle. Trains leaving for Gulgong would continue south along the Gwabegar to Wallerawang branch of the Main Western Line and thence via Sydney

to domestic coal markets. Although various operating constraints are applicable to use of the line, the proposed minor use would be expected to have little impact on the rail system. Should the Sandy Hollow Railway become inoperable for any reason, all export coal would depart via Gulgong to Port Kembla, Balmain or Newcastle Coal Loaders. Currently approved exports would involve eight train movements per day, however proposed colliery expansion would increase this to 20 train movements. At this level of traffic reliable movement of coal south from Gulgong could be jeopardised by operating constraints and special arrangements may be necessary.

#### 5.2.5 Impact on Wildlife

The vegetated area including Cope State Forest comprises the only substantial association of native flora (and presumably native fauna habitat) traversed by the railway. Development of the easement should not significantly increase the incidence of exotic species, fires or other detrimental phenomenon and it should not interrupt the free exchange of plant genes within the natural area. Most bird species should be unaffected by the development. Movements of pedestrian fauna, including emus, would however be restricted in two ways. Small fauna would be reluctant to cross the formation, it being a physical barrier without suitable shelter. Larger fauna would be constrained by the fences which are proposed on either side of the formation, though some movement could be achieved at creek underpasses such as Deadmans Creek. This restriction to habitat, together with the disturbance caused by the occasional coal train, may threaten the viability of some fauna in the immediate area.

### 6. CONCLUSIONS

Reconstruction of the Sandy Hollow to Maryvale Railway between Ulan and Gulgong would provide considerable benefit to the local environment in facilitating the dismantling of the Gulgong rail loading facility and road transport of coal thereto. Use of the railway would also provide benefit to primary producers, especially coal producers, through cheaper, more efficient and flexible transport of produce to markets and export facilities. Whereas construction of the railway may cause some impact, this would be more than off-set by the benefits that would accrue.

There is potential for reconstructing the remainder of the Maryvale to Sandy Hollow Railway (between Gulgong and Maryvale). Should such reconstruction be undertaken at some time in the future, the benefits of the current proposal would be increased.

It is considered from the foregoing assessment of the environmental impact of the proposed Ulan to Gulgong Railway that the project is in the overall public interest and that the line can be built and operated in an environmentally acceptable manner, provided the recommendations listed in Section 7 of this Report are adopted.

## 7. RECOMMENDATIONS

The Department of Environment and Planning recommends that the construction of the Ulan to Gulgong Railway, as described in the environmental impact statement dated October 1981, be approved provided the Company:

- (a) Meets the requirements of all public authorities having statutory responsibilities in respect of the proposed operation, and consults with all authorities having an interest in the project with a view to meeting any reasonable requirements relative to the development, referring any disputed environmental matters to the Minister for Planning and Environment.
- (b) Obtains from the State Pollution Control Commission all approvals required under the Clean Air, Clean Waters and Noise Control Acts, prior to commencing construction and where relevant, prior to commencing raw material extraction.
- (c) Constructs and maintains all works in a manner such that erosion of embankments and sedimentation of water courses is prevented.
- (d) Constructs all stream crossings such that adequate waterway area is provided to permit unimpeded passage of flood waters.
- (e) Uses water tankers for dust suppression during construction, especially where unsealed main roads are used and consult the State Pollution Control Commission regarding appropriate water application rates.
- (f) Provides full and precise details of each proposed borrow pit to the Soil Conservation Service (Soil Conservationist, Mudgee) and the relevant local Council for endorsement, such details to incorporate proposals for rehabilitation following completion of excavation.
- (g) Locates borrow pits, where possible, on the eastern (railway line) side of Main Road 598 to alleviate traffic control and road damage problems on that road. Borrow pits should not be located in forested areas.
- (h) Operates any borrow areas within the bed or banks of any stream in accordance with licensing requirements of the Water Resources Commission.
- (i) Rehabilitates and maintains until stabilised all completed borrow pits, to the satisfaction of the Soil Conservation Service and the property owners affected.
- (j) Consults with, and meets the requirements of, the Department of Main Roads (Divisional Engineer, Lithgow) regarding the intersection of Main Road 598 with any construction access

routes to the railway easement.

- (k) Seals Shire Roads No. 133 and No. 107 for a distance of 20 metres either side of the railway and consults with Mudgee Shire Council to ascertain its requirements in this regard.
- (l) Formalises with the Forestry Commission, by appropriation of an easement, the route of the railway in Cope State Forest.
- (m) In the timbered area which includes Cope State Forest and surrounding private property, ensures that easement fencing does not preclude passage of large pedestrian fauna under the railway at stream crossings.
- (n) Consult with the National Parks and Wildlife Service regarding its requirements for an Aboriginal sites survey, prior to commencing construction.
- (o) Investigates and reports to the Department of Environment and Planning on the economic feasibility and general practicability of using the existing Bylong quarry as a source of ballast with a view to transporting ballast by rail and abandoning the Ulan quarry proposal. Should use of the Bylong quarry and rail transport of ballast be found by the Company and agreed by the Department of Environment and Planning to be impracticable, the following conditions to apply to establishment of the Ulan quarry:
  - . Suitable measures be taken to prevent siltation or turbidity occurring in Bobadeen Creek.
  - . The quarry be rehabilitated and abandoned following railway construction, as specified in Section 7 of the Instrument of Agreement with the land owner.
  - . Subsequent use of the quarry (for instance for possible reconstruction of the railway between Gulgong and Maryvale) be the subject of a further development application.
  - . The Company consult with, and meet the requirements of, the Department of Main Roads (Divisional Engineer, Lithgow) regarding the intersection of Main Road 214 with the "Bobadeen" property road.
  - . The Company consult with and reach agreement with Merriwa and Mudgee Shire Councils regarding the method of calculating possible repair costs to local roads, and pay such costs where road damage is directly attributable to haulage of ballast.
- (p) On completion of railway construction, removes all coal and structures from the site of the Gulgong rail loading facility and rehabilitates, including effective revegetation, using the guidelines of the Soil Conservation

Service and to the satisfaction of Mudgee Shire Council and the land owner.

- (q) Ensures that all other environmental safeguards specified in the environmental impact statement and consistent with the foregoing recommendations are instigated.

APPENDIX: SUBMISSION OF THE STATE POLLUTION CONTROL COMMISSION

The State Pollution Control Commission has identified the following as the major considerations pertinent to its areas of responsibility in respect of the proposal by Ulan Coal Mines Ltd to reconstruct the railway line between Ulan and Gulgong.

Air Quality

Construction activities are likely to give rise to dust emissions and it is recommended that the proponent be required to utilise water tankers having the capacity to apply water coverage at the rate of 1.5 l/h/m<sup>2</sup> for dust suppression on exposed surfaces and unpaved roads.

The proposed quarrying operation at the "Bobadeen" property, to provide ballast for the railway, will require approval under section 16 of the Clean Air Act and the Commission will attach appropriate conditions to any approval, to control air pollution.

Air quality in the Gulgong area will improve following dismantling of the coal loading facility and rehabilitation of that particular site. The haulage of coal by rail rather than road will also have a beneficial effect on air quality in the vicinity of the Ulan to Gulgong road.

Water Quality

It is recognised that the railway is to be built along an existing easement and formation and is therefore likely to cause little change to the existing hydrology. However, deterioration in water quality is to be expected during clearing, reforming and associated civil works during the construction phase. Care will be needed in all construction activities to prevent siltation of watercourses, especially at bridge construction sites.

Effects on water quality have not been adequately assessed by the proponent in the environmental impact statement nor has there been any presentation of design criteria for sedimentation dams and diversion drains that may be required. Such works would need to be approved under the Clean Waters Act and the effects on water quality will be considered by the Commission before granting approval.

An approval under section 19 of the Clean Waters Act will also be required for the quarrying operation if discharges of water from the site are proposed.

The continued use of existing construction camps for this extension of the railway line should minimise water pollution problems often associated with such sites.

Noise Environment

A number of residences will be affected by noise, particularly during the construction phase. Approval under section 27 of the Noise Control Act will be required for the construction of the railway. The Commission will consider attaching conditions relating to hours of construction, and the fitting of silencers to all construction machinery with internal combustion engines and to pneumatic equipment.

When application is made for approval under section 27 of the Noise Control Act, detailed information will be required as to the location of likely affected residences, noise levels and proposed noise control measures.

Approval under section 27 of the Noise Control Act will also be required for the proposed quarrying operation at the "Bobadeen" property.

#### Other Environmental Considerations

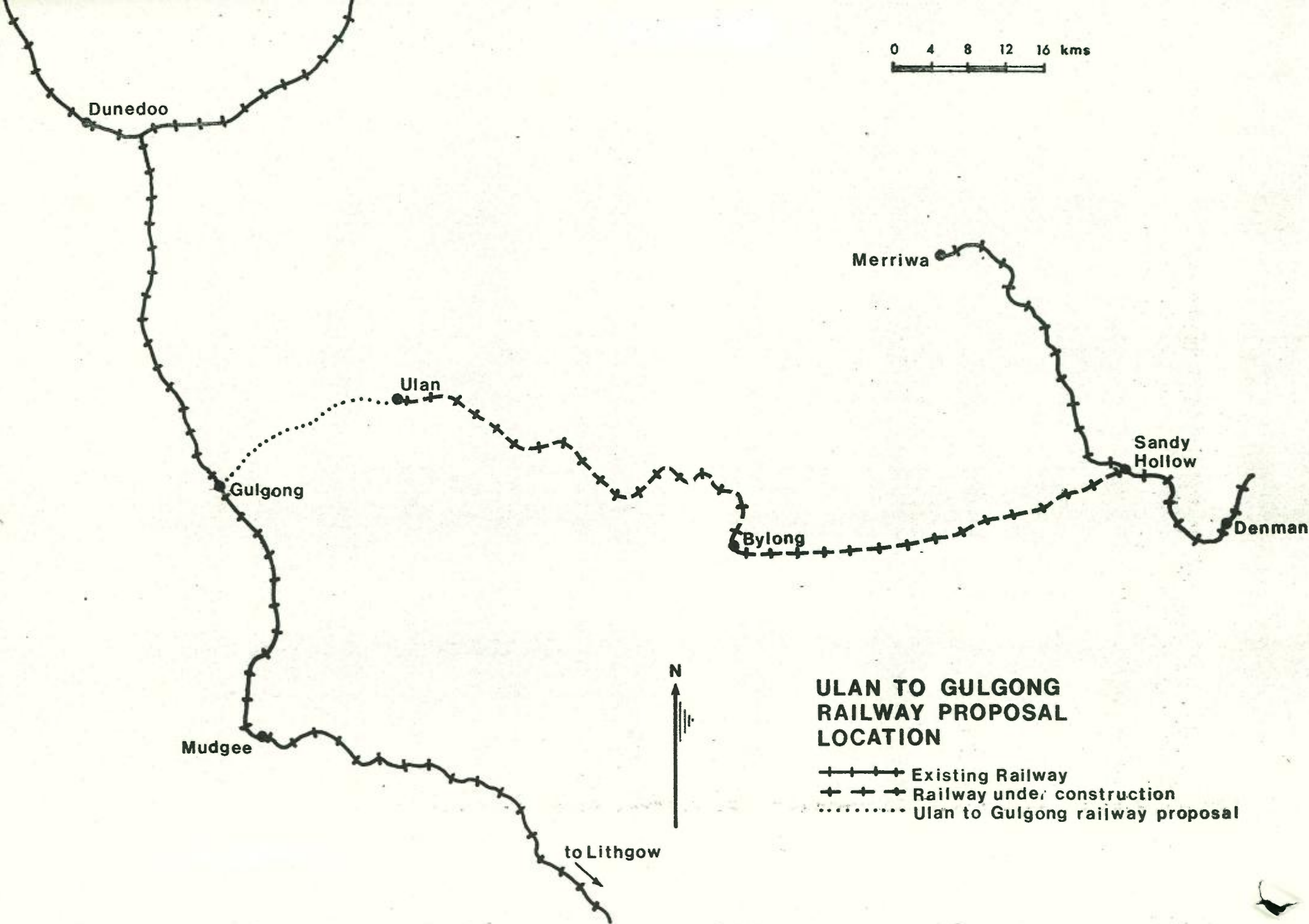
The construction and operation of the railway line, if carried out in an environmentally sound manner, and if designed to cause a minimum of disturbance to the route, should not affect the populations of flora and fauna along that route. The migration of animals and the continuous distribution of plants may, however, be affected. This disturbance should not be of such magnitude as to warrant concern.

#### Summary

The State Pollution Control Commission is satisfied, having regard to the conditions it can impose on the proponent pursuant to the legislation it administers, that the emission of air pollutants or noise, or the discharge of pollutants to waters will not be such as to warrant development consent being withheld on these grounds.

The proponent must make application to the Commission for the necessary approvals under section 16 of the Clean Air Act, section 19 of the Clean Waters Act and section 27 of the Noise Control Act and the Commission will make a final determination of control measures necessary when it is considering those applications.

0 4 8 12 16 kms



Dunedoo

Merriwa

Ulan

Gulgong

Sandy Hollow

Bylong

Denman

Mudgee

to Lithgow



### ULAN TO GULGONG RAILWAY PROPOSAL LOCATION

- +—+—+ Existing Railway
- - - - - Railway under construction
- ..... Ulan to Gulgong railway proposal



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Ulan to Gulgong railway line  
extension

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