NSW GOVERNMENT | Planning

MAJOR PROJECT ASSESSMENT
Train Support Facility at Greta
(MP 09_0233)

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

March 2011

NSW Government
Department of Planning

ABBREVIATIONS

CIV	Capital Investment Value
Department	Department of Planning
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning
EA	Environmental Assessment
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning
Part 3A	Part 3A of the *Environmental Planning and Assessment Act 1979*
PEA	Preliminary Environmental Assessment
PFM	Planning Focus Meeting
PPR	Preferred Project Report
Proponent	Pacific National (NSW) Pty Ltd
RtS	Response to Submissions

Cover Photograph: Pacific National Freight. Source: Monteath & Powys, 2010

Published March 2011
NSW Department of Planning
www.planning.nsw.gov.au

NSW Government
Department of Planning

EXECUTIVE SUMMARY

Pacific National Pty Ltd (the Proponent) proposes to construct and operate a train support facility and associated infrastructure to service and provision rail locomotives and wagons for its coal freight business supporting coal transport to the Port of Newcastle. The site is located in the Hunter Valley near the township of Greta, approximately 50 kilometres north-west of Newcastle and 20 kilometres north of Cessnock, in the Cessnock Local Government Area. It is situated to the west of the Greta township, between the Great Northern Railway and the road corridor for the Hunter Expressway (currently under construction). The project has a capital investment value of $50 million and comprises five rail tracks, locomotive maintenance facilities, wagon maintenance facilities, administration facilities and ancillary facilities. It is expected to generate up to 614 construction jobs and up to 30 full time equivalent operational jobs. The project has been declared to be a 'Controlled Action' under the Commonwealth's *Environment Projection and Biodiversity Conservation Act 1999*.

The Environmental Assessment for the project was placed on public exhibition from 8 September 2010 to 11 October 2010 and the Department received a total of 28 submissions on the project. Of the 20 submissions received from the public, three supported the project, 10 objected and the remainder did not state a specific position however raised concerns or comments for consideration by the Department. In addition, submissions were received from eight public authorities.

Key issues raised in submissions relate to traffic and access, noise, ecology, visual and landscape impact, heritage, site suitability and impact to residential amenity. To address significant issues raised, the Proponent modified its project and lodged a Submissions/Preferred Project Report, removing and modifying a number of components of the project.

The project is consistent with the aims and objectives of relevant State policies, including the *NSW State Plan, State Infrastructure Strategy* and the *Lower Hunter Regional Strategy*. The project would provide an alternative fuelling/provisioning location to meet anticipated demand from an increase in coal freight traffic within the Hunter Valley region, which has been identified as an enhancement strategy under the Australian Rail Track Corporation's *Hunter Valley (Rail Corridor) Capacity Strategy 2009*.

The key assessment issues associated with the project relate to ecology, traffic and access, noise and vibration impacts, non-Indigenous heritage and air quality. Based on its assessment, the Department is satisfied that the Proponent has undertaken an appropriate level of assessment of the potential impacts.

There would be unavoidable impacts to Grey Ironbark – Spotted Gum – Grey Box open forest and Forest Gum – Grey Gum dry open forest, identified as Endangered Ecological Communities under the *Threatened Species Conservation Act 1995* and Matters of National Environmental Significance (NES) under the *Environment Protection and Biodiversity Conservation Act 1999*, specifically critical habitat for the Grey-headed Flying Fox and potentially others species such as the Regent Honeyeater, Swift Parrot and Spotted-tailed Quoll. The Proponent has committed to an offset package using the DECCW's Biobanking methodology and demonstrated that offset options are available for further consideration. However, further details of its likely location, condition and any additional measures need to be provided prior to construction.

The site and its immediate surrounds will undergo significant change resulting from the Hunter Expressway and Maitland to Minimbah Third Track Project and planned residential development at Huntlee. The Department accepts that the noise environment will change and that the noise generated by the facility is likely to be masked at the receiver by that

resulting from those developments. Notwithstanding, the Proponent proposes to mitigate noise from both the access road and rail arrival road by the construction of appropriately located noise barriers. A proposed barrier adjacent to the access road would be installed prior to construction to reduce construction noise impacts on adjoining residents. Whilst the Proponent has demonstrated that applicable criteria would generally be met, the Department, in addition to the Proponent's proposed mitigation measures, has recommended conditions establishing project specific noise levels, requiring an operational noise review, and a compliance audit following commencement of operations of the facility.

The Department is satisfied that the mitigation, management and monitoring measures, as recommended in the conditions of approval and the Statement of Commitments, will ensure that impacts from the project are appropriately managed such that residual impacts are acceptable. On this basis, the Department has recommended approval of the project.

TABLE OF CONTENTS

1. BACKGROUND

Pacific National (NSW) Pty Ltd proposes to construct and operate a train support facility (TSF) to service and provision rail locomotives and wagons at Greta, approximately 50 kilometres north-west of Newcastle and 20 kilometres north of Cessnock. The project location is shown in Figure 1.

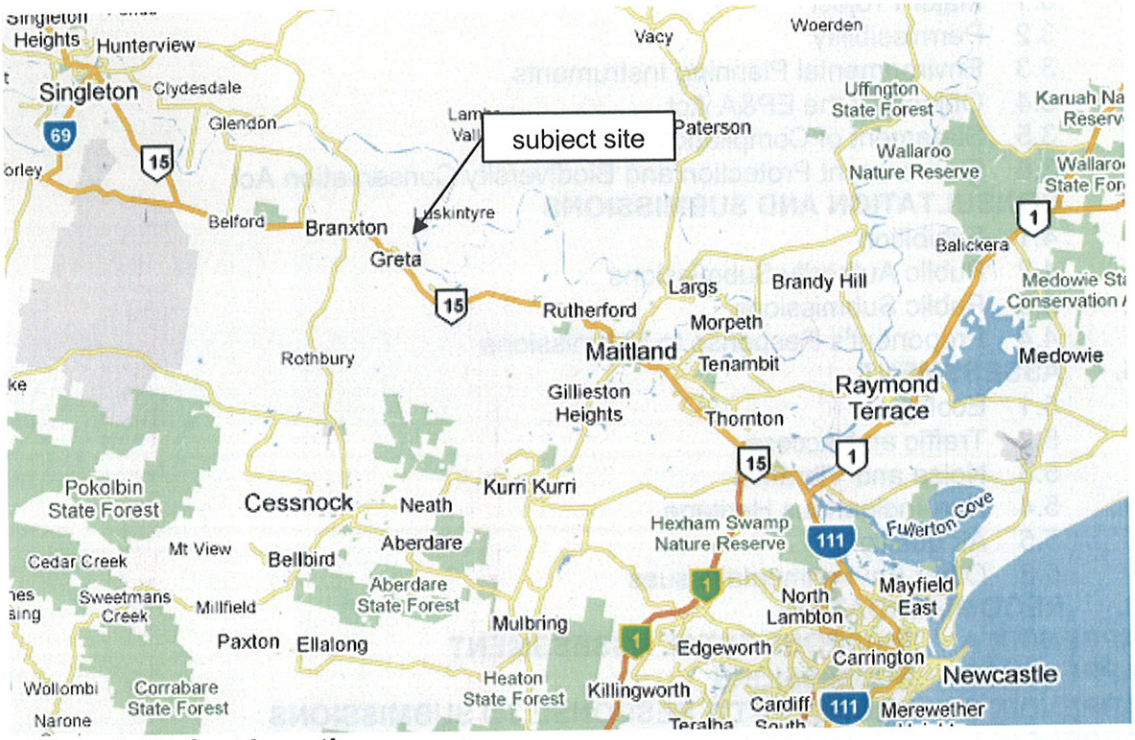


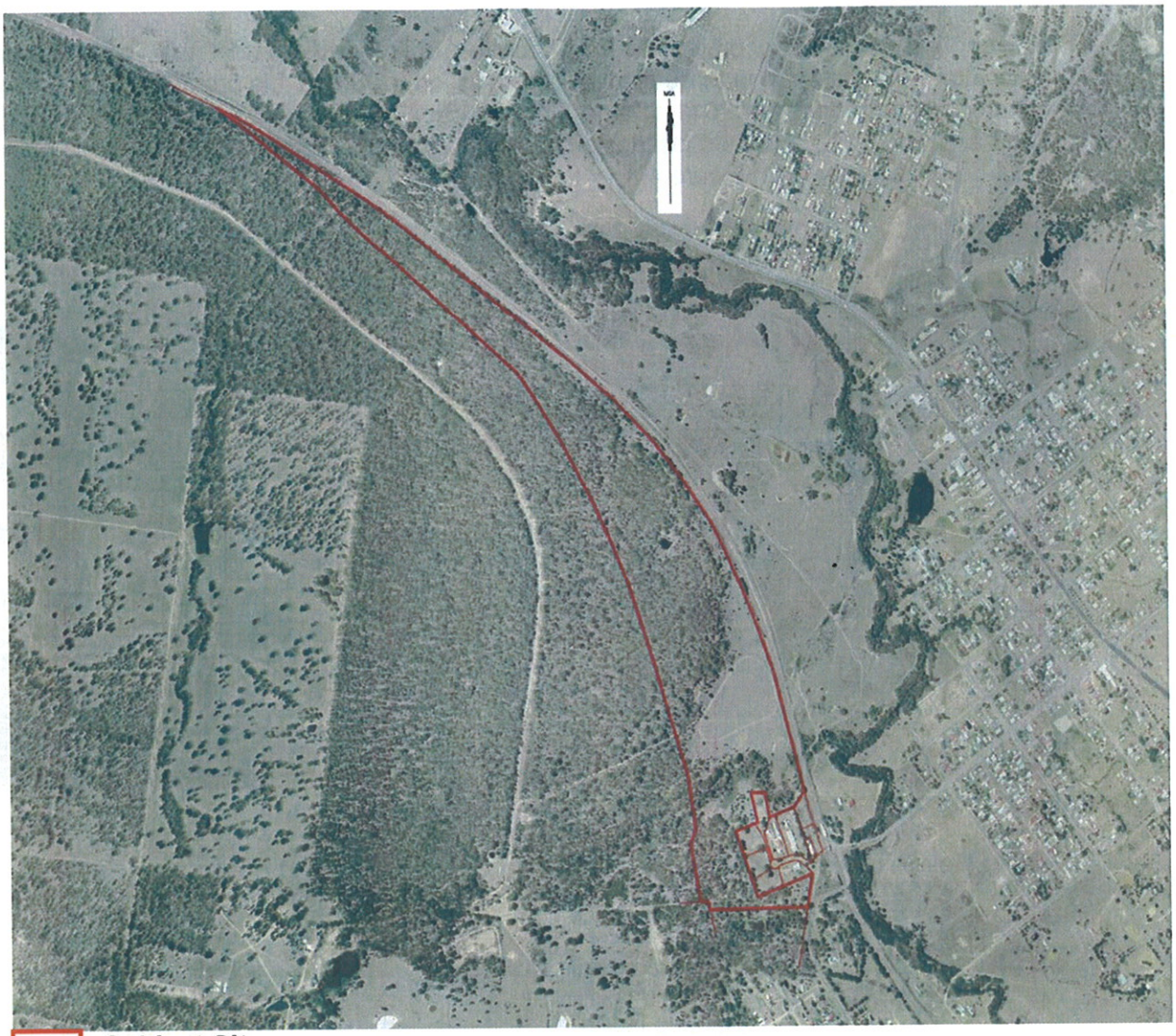
Figure 1: Project Location

The site is located approximately 1.5km west of the Greta township, in the Cessnock local government area. It is situated between the Great Northern Railway to the east and the Hunter Expressway corridor to the west. The site is irregular in shape and comprises an area of approximately 47 hectares. It has frontage to Mansfield Street and extends approximately 2.4 kilometres north from the southern boundary of the lot and is approximately 0.5 kilometres wide at its greatest width. The site is accessible by road, and the main access is from Mansfield Street and Nelson Street, Greta via the New England Highway.

The general grade of the site runs west to east. The site is currently vacant with a horse training track established adjacent to the south eastern portion of the site, whilst the remainder of the site is vegetated to varying extents, comprising typically of a mix of Grey Ironbark - Spotted Gum – Grey Box open forest and Forest Gum – Grey Gum dry open forest. Some areas of regenerating shrub land are also present on site. There are two watercourses which traverse the site, including Sawyers Creek at the southern portion of the site, and an unnamed tributary of Anvil Creek in the northern portion of the site. A number of minor perennial streams also cross the site, passing beneath the existing railway embankment via culverts.

Evidence of underground mine workings are present on site with a portion of the site previously affected by mine subsidence.

The land is zoned 1(a) Rural 'A' zone pursuant to the *Cessnock Local Environmental Plan 1989*. A number of residential properties are located adjacent to the south of the site, with access via Mansfield Street. Refer to Figure 2 for the site layout.



Subject Site

Figure 2: Subject Site

2. PROPOSED PROJECT

2.1 Project Description

The Proponent is seeking project approval for the construction and operation of a TSF to service and provision rail locomotives and wagons.

At completion, the project will include:

- **five rail tracks and sidings**, including three provisioning tracks and two maintenance tracks;
- **maintenance workshop**, including a wagon maintenance hard stand area, wagon maintenance support facility, road vehicle maintenance and storage facilities, store room, amenities and lunch room;
- **administration facilities**, including administration and office facilities equipped with a lunch room and amenities facilities;
- **locomotive maintenance facilities**, including the provisioning and inspection facility, a locomotive wash facility and a locomotive heavy maintenance facility; and
- **ancillary facilities**, including fuel farm containing diesel tanks, electrical infrastructure, water storage and water treatment facilities, fencing, car parking and access roadways, lighting and landscaping.

The project layout is shown in Figure 3. The key components of the project are listed in Table 1.

The Proponent is seeking project approval for the entire development with construction and operation to be undertaken in three stages. Construction for Stage 1 is proposed to commence in the first or second quarter of 2011. Stage 2 construction is scheduled to start in the third quarter of 2013 and Stage 3 in the third quarter of 2017. The components of each stage are outlined in Table 1 below and shown in Figure 4.

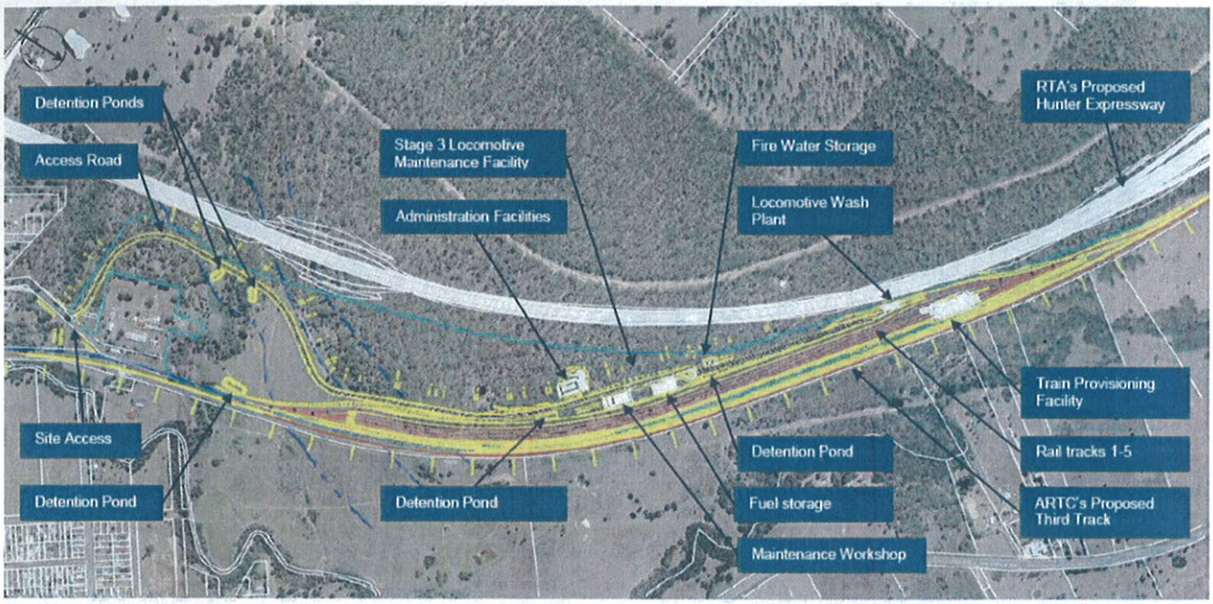


Figure 3: Project Layout

Table 1: Key Project Components

Stage	*Construction Timing*	*Aspect*	*Description*
1	12-14 months	Stage 1A - Access Road	
		Stage 1B - Bulk Earthworks	
		Stage 1C - Site Facilities	• tracks 1 to 5 • provisioning facility • maintenance workshop • administration building • loco wash facility • administration building and carpark • turnouts to main line • water quality system • diesel storage for a minimum of 1.0 million litres (with allowance to grow to 2.0 million litres in stage 2) • support infrastructure • ancillary development including site fencing and access gate, landscaping etc.
2	6 months	Additional Facilities	• diesel storage to increase from 1.0 million litres to 2.0 million litres

Stage	Construction Timing	Aspect	Description
3	12 months	Additional Facilities	• locomotive maintenance facility

2.2 Project Need and Justification

The export of coal through the Port of Newcastle (the port) is expected to grow from 91.5 million tonnes per annum (mtpa) in 2006-2007 to 211 mtpa by 2015. Due to this expected growth, alternative fuelling/provisioning locations to meet demand from an increase in coal freight has been identified to enhance the existing system capacity. The Australian Rail Track Corporations' *Hunter Valley (Rail) Corridor Capacity Strategy* (2009) identifies a requirement for alternative fuelling/provisioning locations to accommodate the expected growth in coal freight traffic within the Hunter Valley region. In accordance with this Strategy, the project is expected to contribute to a freeing up of coal chain capacity given operational constraints from the existing provisioning facilities at the Port end of the rail system.

The project will contribute to achieving the aims of the *NSW State Plan 2010* by increasing business investment and support job. The project is also consistent with the directions of the *Lower Hunter Regional Strategy 2006-2031,* through the provision of employment during construction and operational phrases of the project, as well as long-term economic and employment benefits through the improved efficiency in transportation of coal.

Pacific National currently hauls approximately 80 mtpa of export coal to the port which accounts for approximately 85 per cent of traffic. This is supported by existing fuelling and provisioning facilities, maintenance, train crewing and administration facilities at Kooragang Island and Carrington at the port end of the coal chain. The current system is considered constrained as further expansion of existing facilities cannot be achieved to meet the increased demand that will be created with the addition of the Maitland to Minimbah Third Track Project. A new train support facility would provide capacity for increased maintenance and re-fuelling as a result of increased capacity on the wider network. Expansion of the existing facilities at Carrington and Kooragang Island was considered but discounted as a viable option due to insufficient land availability to construct the additional facilities at both locations. While partial expansion may be possible, the servicing capacity that could be achieved would be lower than that which could be achieved at a new site. In addition, rail network configuration at the port end, in particular limited track lengths, restricts increased activity and any additional throughput capacity. The proposed facilities are required to service the Pacific National coal freight rail business in the Lower Hunter region and would deliver improved traffic and system capacity in the movement of export coal to the Port of Newcastle.

As already mentioned, a number of alternative options to the project were considered, including expansion of the existing provisioning facilities at Carrington and Kooragang Island described above and the 'do nothing' option. The do nothing option was discarded as it could lead to network delays and disruptions and compromise the system capacity in the movement of export coal to the port.

Once the preferred option (and location) was chosen, a total of three design options were considered. Key considerations in determining the preferred option layout included:

- environmental issues, including endangered ecological communities;
- geotechnical considerations, including mine subsidence;
- location of sensitive receivers; and
- road and rail infrastructure.

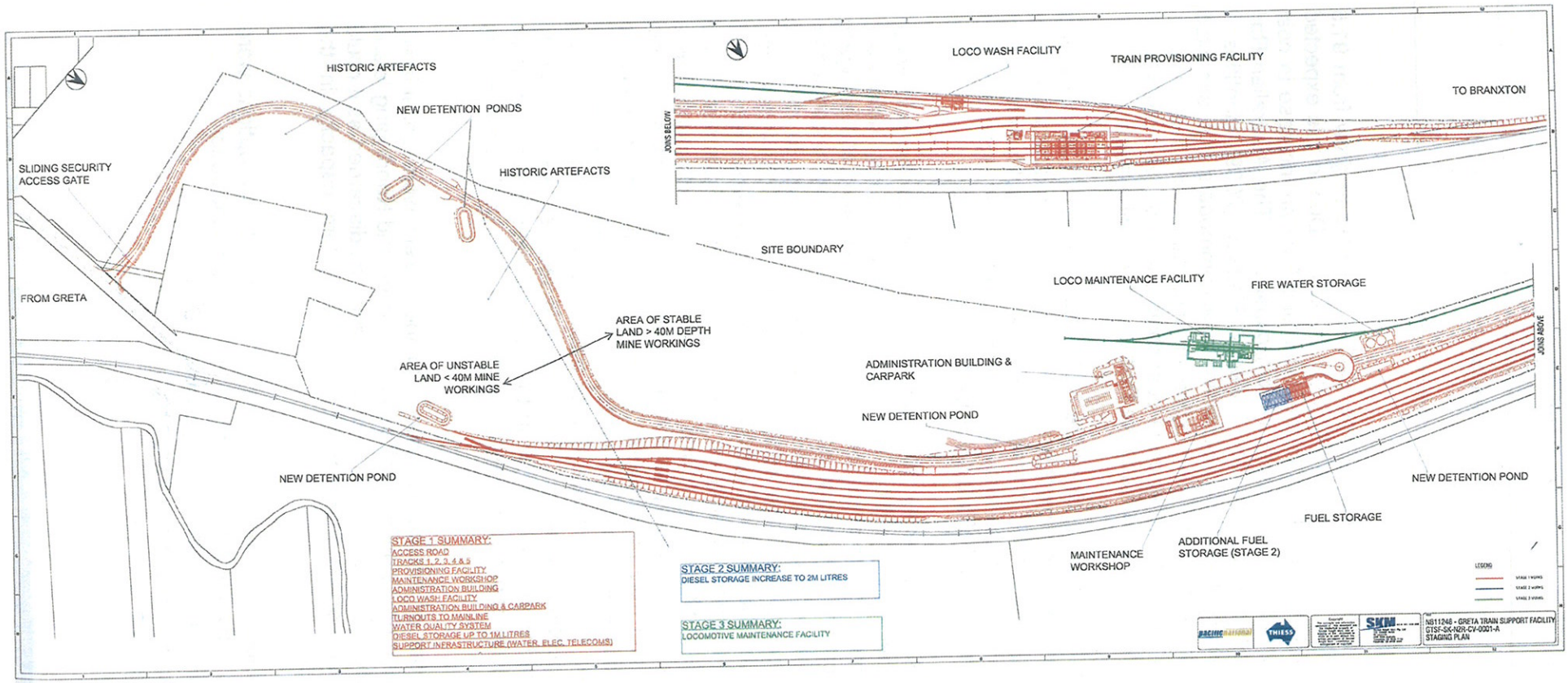


Figure 4: Staged construction layout

3. STATUTORY CONTEXT

3.1 Major Project

On 4 February 2009, the Director-General of the Department of Planning, under delegation from the Minister for Planning, declared the project to be subject to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) under section 75B of that Act because it is development for the purpose of train support facility (a railway freight facility) under clause 23(1)(b) of Schedule 1, Group 8 of the *State Environment Planning Policy (Major Development) 2005*. Therefore the Minister for Planning is the approval authority.

On 25 January 2010, the Minister for Planning delegated responsibility for the determination of project applications under Part 3A of the *Environmental Planning and Assessment Act 1979* to the Director-General where:

- there are fewer than 25 submissions in the nature of objections in respect of the project application; and
- the project is not a critical infrastructure project under section 75C of the EP&A Act.

The project received fewer than 25 submissions in the nature of objections, and is not a critical infrastructure project. The Director-General can therefore determine the project under delegated authority.

3.2 Permissibility

The project site is zoned 1(a) Rural 'A' zone under the *Cessnock Local Environmental Plan (LEP) 1989*. The Cessnock LEP adopts the *Environmental Planning and Assessment Model Provisions 1980* and, under Clause 35 and Clause 1 of Schedule 1 of the Model Provisions, development required in connection with the movement of traffic by rail, including the construction, reconstruction, alteration, maintenance and repair of ways, works and plant are permissible.

3.3 Environmental Planning Instruments

There are no other environmental planning instruments that substantially govern the carrying out of the project.

3.4 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) to encourage:
- *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
- *(iii) the protection, provision and co-ordination of communication and utility services,*
- *(iv) the provision of land for public purposes,*
- *(v) the provision and co-ordination of community services and facilities, and*
- *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- *(vii) ecologically sustainable development, and*
- *(viii) the provision and maintenance of affordable housing, and*

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Of particular relevance to the environmental assessment and eventual determination of the subject project application, are those objects stipulated under section 5(a). Relevantly, the objects stipulated under (i), (ii), (vi) and (vii) are significant factors informing determination of the application (noting that the proposal does not raise significant issues relating to land for public purposes, community services and facilities or affordable housing). The Department, in its assessment, has considered the need to encourage the proper management and conservation of natural resources, including natural areas, water resources, towns and villages for the purposes of promoting the economic welfare of the community and a better environment; the orderly development of land and the protection of the environment.

With respect to ecologically sustainable development, the Act adopts the definition in the *Protection of the Environment Administration Act 1991*, including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms.

It is important to recognise, that whilst the Act requires that the principles of ecologically sustainable development be encouraged, it provides other objects that must equally be included in the decision-making process for the subject proposal. The Department has considered the need to encourage the principles of ecologically sustainable development, in addition to the need for the orderly and economic development of land considering landuse; and the protection of the environment in Section 5 of this report. The agency and community consultation undertaken as part of the assessment process (see Sections 3 and 4 of this report), address objects 5(b) and (c) of the Act.

3.5 Statement of Compliance

In accordance with section 75I of the EP&A Act, the Department is satisfied that the Director-General's environmental assessment requirements have been complied with.

3.6 Environment Protection and Biodiversity Conservation Act

On 15 January 2010, the project was determined to be a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), as it was considered likely that the proposal could have a significant impact on the EPBC Act listed vulnerable Grey-Headed Flying-Fox (*Pteropus poliocephalus*) and the EPBC Act listed endangered Regent Honeyeater (*Xanthomyza Phrygia*).

The Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (formerly the Department of Environment, Water, Heritage and the Arts - DEWHA) has identified that the project will be subject to an accredited assessment under Part 3A of the Act. This means that separate assessment processes are not required under both the EPBC Act and the EP&A Act. The process will follow the general administrative steps outlined in the Administrative Procedures of the Bilateral Agreement between the Commonwealth of Australian and the State of NSW.

The Department has consulted DSEWPC throughout the assessment process, and the Department's assessment of Commonwealth matters is detailed in Section 5 of this report.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition

Under section 75H(3) of the EP&A Act, the Director-General is required to make the EA of an application publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from 8 September 2010 until 11 October 2010 (34 days) on the Department's website, and at the following locations:

- Department of Planning;
- Nature Conservation Council of NSW;
- Cessnock City Council;
- Cessnock library;
- Department of Sustainability, Environment, Water, Population and Communities (formally the Department of Environment, Water, Heritage and the Arts; and
- Greta Licensed Post Office.

The Department also advertised the public exhibition in the Newcastle Herald, The Australian, Cessnock Advertised and The Maitland Mercury on 8 September 2010 and notified the following bodies in writing:

- Department of Environment, Climate Change and Water (including Office of Water);
- NSW Roads and Traffic Authority;
- Australian Rail Track Corporation;
- Mine Subsidence Board;
- Department of Sustainability, Environment, Water, Population and Communities;
- Rural Fire Services;
- NSW Industry and Investment;
- Transport NSW;
- RailCorp;
- Cessnock City Council;
- Department of Planning (Heritage Branch); and
- the State MP.

The Department received 28 submissions - eight submissions from public authorities and 20 submissions from the general public. A summary of the issues raised in submissions is provided below.

4.2 Public Authority Submissions

Eight submissions were received from public authorities. These are summarised below.

Department of Environment, Climate Change and Water (DECCW)

- The DECCW confirmed that an Environment Protection Licence (EPL) would be required for stage 1 activities. Remaining construction and operational activities do not require an EPL and Cessnock Council would be the appropriate regulatory authority (ARA).
- The DECCW advised that recommended conditions of approval could not be provided until the following issues had been adequately addressed:
  - the Air Quality Impact Assessment (AQIA) should be revised to incorporate mitigation measures outlined in section 8 of the EA demonstrating their efficacy in adequately controlling dust emissions;
  - the Noise Impact Assessment should be revised to reduce and cater for adverse construction noise impacts, particularly at Illalong where noise levels are predicted to be near 75 dB(A);
  - reference should be made to the 'Vegetation of the Cessnock – Kurri Region: Survey, Classification and Mapping (DECC, 2008). The mapping used to identify the vegetation communities present in the study area is considered outdated. The

Cessnock to Kurri mapping identified two Endangered Ecological Communities different to those identified in the EA;

- all vegetation to be affected (including for bushfire protection measures and placement of detention basins) must be clearly identified, mapped, quantified and offset in accordance with DECC's *Principles for the use of Biodiversity Offsets in NSW* (DECC, 2008);
- details of the proposed environmental offset, including mechanisms proposed for the long term protection and management of the offset should be provided prior to project approval;
- details of the mechanisms for protecting Aboriginal sites should be provided and include a commitment to the conservation of these areas in perpetuity; and
- comments/evidence of support for the proposal from the registered Aboriginal stakeholders should be included in the final Aboriginal Cultural Heritage report.

NSW Office of Water (NoW)

The NoW provided comments on the following key issues:

- interception or the use of groundwater requires a licence under *Water Act 1912* and *Water Management Act 2000;*
- any displaced water must be dewatered from the area and reused on site or discharged to be treated; and
- recommends that surface water monitoring program be modified for sampling at all monitoring points within the Water Quality Control Ponds.

Department of Planning (Heritage Branch)

Key issues raised in the submission included:

- contradictions noted in report regarding the existence and nature of the archaeological resource;
- additional field excavation is needed as the excavation to date has not been of sufficient detail to address the identified research questions or provide comparative detail against other mining occupation sites;
- assessment of significance has not followed the Heritage Council's Criteria for assessing significance;
- the assessment's conclusions are not sufficiently robust to determine recommendations and mitigation measures for the archaeological resource;
- the proposed commitment relating to the discovery of features not related to the miners' cottages is not in accordance with best heritage practice or with the Heritage Council's guidelines; and
- Statements of Commitments should include the management of Aboriginal and Non-Aboriginal cultural heritage, in particular in relation to unidentified objects, proposed methodology of excavations and processes for notification should any unexpected archaeology be uncovered.

NSW Industry and Investment (I&I)

NSW I&I provided a coordinated response from the Minerals, Agriculture and Fisheries and Forests divisions. I&I (Mineral Resources) noted that the proposal will be beneficial to the regional coal industry and therefore has no objections to the development. There were no comments received from other divisions of I&I.

Rural Fire Services (RFS)

The RFS noted its support for the bush fire protection measures contained in the assessment report.

Transport NSW

Transport NSW supports the proposal and requested that the Proponent address the following matters:

- the maintenance or enhancement of existing access to, from and across Greta Railway station for pedestrian and road traffic;
- the maintenance or enhancement of existing road access across the Great North Railway;
- provision of suitable track for safe and quiet deceleration and attainment of linespeed;
- the provision of noise walls to maintain existing residential amenity;
- containment of light spill; and
- assurances that coordination between the project and other relevant ARTC projects for this section of line, both during construction and operation, is maintained

NSW Roads and Traffic Authority (RTA)

The RTA had no objections to the proposed development but raised the following issues:

- noted the Proponent's proposed mitigation measures for construction traffic impacts on the New England Highway and Nelson Street intersection. However, stated that these could result in vehicles being directed onto local streets or through other intersections with existing capacity issues, such as the New England Highway and Allandale Road intersection. The measures do not address impacts for the period between the start of TSF operations and the completion of the Hunter Expressway;
- a Construction Traffic Management Plan including a Vehicle Movement and Traffic Control Plan should be prepared;
- the Proponent should enter into a Works Authorisation Deed with the RTA; and
- the RTA must provide a final consent for each specific change to the classified (State) road network and/or any traffic control signals prior to the commencement of any work.

Cessnock City Council

Council did not state a position but raised the following comments:

- concerned that the proposed ameliorative measures will not address amenity impacts on neighbouring residents in relation to noise, vibration, visual and air quality;
- specific comments on traffic and traffic, including the following:
  - inadequate assessment of heavy vehicle impacts;
  - the project relies strongly on third party road upgrade works;
  - opposed to the use of the proposed B-Double route as significant upgrade would be required;
  - further consideration of footpath and cycleway facilities is recommended to encourage alternative transport options; and
  - consideration should be given to installing the minimum Disability Discrimination Act compliant bus stop facilities in proximity to the site and surrounds.
- inconsistencies noted in the EA with regards to EECs on site. The ecological relationship between the site and the wetland located at the intersection of Anvil and Water Streets should be established;
- impacts to an approved concept plan comprising residential tourist development at Anvil Creek should be considered; and
- questioned the capacity of the site to accommodate all required site elements associated with the development, including future car parking and office space.

Australian Rail Track Corporation Ltd (ARTC)

The ARTC noted that requirements in relation to the operation of the TSF to mitigate any impacts on current and future network capacity will be stipulated in a Connection Agreement, which the Proponent is currently negotiating with the ARTC. The Connection Agreement is to be executed in relation to the ongoing connection and operation of the new sidings to the ARTC mainline at both the northern and southern ends of the facility.

4.3 Public Submissions

Of the 20 public submissions, ten (50%) objected to the project, three (15%) supported the project and seven (35.0%) did not object but raised concerns. The key issues raised in public submissions are summarised below.

Of the three submissions which supported the project, the basis for support was its potential to improve the efficiency and capacity of the Hunter Valley Coal Chains, specifically at Kooragang Island

Of the sixteen submissions which provided general comments, issues raised included:

- general concern over global peak oil;
- devaluation of property;
- noise and traffic impacts, including capacity of existing road systems to accommodate proposed traffic movements;
- access to the site and private properties;
- dust during construction;
- favour use of rail over road for the transportation of fuel;
- lighting impacts;
- loss of rural outlook;
- alternative site evaluation;
- indigenous heritage;
- treatment of excess fill material;
- ecological impacts;
- social and economic impacts;
- rail operations; and
- inadequate assessment on the major urban release area at Huntlee.

Of the ten submissions which objected to the project, the main concerns related to:

- the increase in traffic and associated impacts including safety, noise, dust and pollution;
- inappropriate location of the project site given its close proximity to residents, schools, tourist and recreational facilities and water bodies;
- noise and vibration impacts;
- loss of residential amenity;
- related health impacts;
- hazards and risks associated with the presence of diesel fuel on site and its transportation;
- inadequate/lack of assessment on planned development in the locality, including Huntlee and the former army and migrant camp (Anvil Creek).

4.4 Proponent's Response to Submissions

The Proponent provided a response to the issues raised in submissions (see Appendix C). The response included a Submissions/Preferred Project Report which proposed changes to the exhibited project, and include:

- removal of wagon shunting activities, cripple wagon sidings and shunting neck at the northern end of the site;
- relocation of the access road to the west at the southern portion of the site to reduce the noise and visual impacts to residents at Barracks Close. The proposed location also minimises the exposure to high risk mine subsidence areas;
- removal of the wheel lathe facility;
- co-location of the wagon maintenance building and maintenance workshop to reduce the building footprint and reduce vehicle movements on site;
- relocation of the Administration Building further north towards the heavy locomotive maintenance facility; and
- as a result of the changes, clearance of vegetation to increase from 18.5ha to 19.8ha.

5. ASSESSMENT

The Department considers the key environmental issues for the project to be the following:

- ecology;
- traffic and access;
- noise and vibration;
- Non-Aboriginal Heritage; and
- air quality.

Other issues considered in the Department's assessment include:

- Indigenous heritage;
- hazards and risks;
- surface water and groundwater
- land use and properties; and
- visual impact.

5.1 Ecology

Issue

Terrestrial and aquatic flora and fauna communities were assessed across the site. Impacts on biodiversity were avoided where possible and included siting of infrastructure, including internal roads, car parking and facilities, to minimise the project footprint and retain vegetation on site. The Proponent contends that whilst the total avoidance of EECs and threatened species habitat would be difficult, the site layout has been optimised to minimise the clearing required.

Flora

Approximately 40.2 hectares (86 percent) of the site is vegetated, with the majority of this vegetation classified as Endangered Ecological Communities (EECs) under the *Threatened Species Conservation Act 1995* (TSC Act). A number of desktop studies and field surveys have been undertaken to confirm the communities present on site. Three distinct vegetation types and broad condition classes have been identified which are consistent with two EECs listed in Schedule 1 of the TSC Act, which are summarised in Table 2.

Table 2: Vegetation Types

Vegetation Type	***EEC***	***Area within development footprint (hectares)***	***Condition***
Grey Ironbark-Spotted Gum-Grey Box open forest on hills of the Hunter Valley, Sydney Basin	Central Hunter Spotted Gum-Ironbark-Grey Gum Forest	8.0	Moderate - good
Forest Red Gum-Grey Gum dry open forest on hills of the lower Hunter Valley, Sydney Basin	Hunter Lowland Red Gum Forest	11.8	Moderate – good
Forest Red Gum-Grey Gum dry open forest on hills of the lower Hunter Valley, Sydney Basin	Hunter Lowland Red Gum Forest	0.8	Low (regenerating shrub land)

Approximately 19.8 hectares of moderate to good condition EECs would be cleared for the project. Additional areas of these vegetation types/EECs (both moderate to good and low condition) are located on the site but outside the development footprint. A small area of these EECs in moderate to good condition is located in an area identified in the development for possible future expansion of the facility, however any such expansion is not considered as part of this project application and would be subject to separate approval processes (refer to discussion under Biodiversity Offsets).

Fauna

The squirrel glider, grey-crowned babbler and speckled warbler are all listed in the schedules of the TSC Act and have been recorded on site. A number of species listed in the schedules of both the TSC and EPBC acts are considered likely to be present or utilise components of the habitats available on the development site. These are listed in Table 3.

Table 3: Threatened Species

Species	***TSC Act****	***EPBC Act****	***Present on site***
Squirrel glider	V	-	Present
Grey-crowned babbler	V	-	Present
Speckled warbler	V	-	Present in adjacent habitat
Grey-headed Flying-fox	V	V	Predicted - Grey Ironbark-Spotted Gum-Grey Box open forest and Forest Red Gum EC within the development footprint are critical habitat for the species
Swift parrot	E	E	Predicted
Regent honeyeater	E	E	Predicted
Spotted-tailed quoll	V	E	Predicted
Woodland birds – brown treecreeper, black chinned honeyeater, diamond firetail hooded robin, varied sittella			Predicted
Large forest owls – masked owl, powerful owl, barking owl	V		Predicted
Cave roosting bats – little pied bat, eastern bent-wing bat, little bent-wing bat, large footed myotis			Predicted
Tree roosting bats – eastern false pipistrelle, greater broad-nosed bat, yellow-bellied sheathtail bat and eastern freetail bat.			Predicted
Brush-tailed phascogale	V	-	Predicted
Little lorikeet	V	-	Predicted
Square-tailed kite	V	-	Predicted

V = vulnerable E = endangered

There is habitat for a number of threatened species listed under the EPBC Act within the development footprint including the swift parrot, regent honeyeater, spotted-tailed quall and the grey-headed flying fox. Critical foraging habitat for the Grey-headed Flying-fox, as defined in the Draft Recovery Plan for that species, has also been recorded on site as well as habitat for a number of other threatened fauna.

The clearing of vegetation proposed under the project would result in the loss of habitat. Other potential impacts include increased noise, artificial light and increased traffic which may affect fauna behavioural patterns or result in direct mortality to plants and less mobile animals during construction. The EA however argues that the proposal is unlikely to have a significant effect on threatened or endangered species, habitats or ecological communities, as the site would become isolated between the Maitland to Minimbah Third Track and Hunter Expressway projects, both of which would involve additional clearing of vegetation, thus reducing its connectivity, size and value.

In consideration of the impacts of the project, the Proponent has committed to a range of measures to mitigate or manage biodiversity impacts including to:

- restore and revegetate degraded and cleared areas outside of the development footprint;
- implement clearing protocols to minimise impacts to hollow dwelling species;
- avoid Spotted Gum forest removal during the winter wherever possible, to minimise impacts on the Grey-headed Flying-fox;
- design waterway crossings, to meet NSW Fisheries (now I&I) guidelines; and
- offset residual impacts through biobanking.

Other mitigation measures are also proposed to minimise the indirect impacts of the proposal on the remaining vegetation on-site, including weed management.

Consideration

Increased vegetation clearing

In response to issues raised in submissions regarding residential amenity, particularly noise, the Proponent proposed changes to the project, including relocation of the access road further westward to maximise the separation distance to residential receivers to the greatest extent practicable. As a result, the amount of vegetation clearing required for the project increased from 18.5 to 19.8 hectares to accommodate batters, water quality ponds and service trenches.

The Department considers the increased clearing is minimal and justified in order to install the required noise mitigation measures for the subdivision adjacent to the site entry. The Department also notes the long term viability of the vegetation remaining on site could be compromised by the fragmentation and isolation from surrounding vegetation as a result of the Hunter Expressway and Maitland to Minimbah Third Track projects. A range of mitigation and management measures are proposed to minimise direct and indirect impacts during pre-construction, construction and operation phases, including habitat clearing procedures to minimise the disturbance of fauna and preparation of an Ecological Restoration and Management Plan. The Department recommends a condition requiring the preparation and implementation of a Construction Flora and Fauna Environmental Management Plan to identify and consolidate the range of measures to be implemented before, during and after construction to minimise impacts.

Classification of Vegetation communities

The DECCW in its submission on the Environmental Assessment and further comments on the Response to Submissions/Preferred Project Report raised concerns regarding the classification of endangered ecological communities on the site. In addition, the DSEWPC queried whether individuals of Slaty Red Gum (*Eucalyptus glaucina*) were present on site.

The Department notes that whilst the issue of whether or not the communities present constitute endangered ecological communities was not in question, the concern was confined to the need to confirm which of the listed communities were represented. This is particularly important in the development of a suitable biodiversity offset package and the use of the biobanking methodology to determine the size of the offset required, as different communities are assigned different credit values based on a variety of factors including rarity. The most recent field investigations undertaken by the Proponent confirmed the presence of Grey Ironbark-Spotted Gum-Grey Box open forest and Forest Red Gum – Grey Gum dry open forest. This information was provided to both the DECCW and DSEWPC which have accepted these findings.

Further information was also forwarded to both agencies regarding the presence of Slaty Red Gum on site. The most recent investigations (GHD, 2011) concluded that no Slaty Red Gum was recorded at the site and this species would not be affected by the development but acknowledges the possible presence of individuals of this species approximately 100 to 150 metres to the west on adjacent land, and the presence of Slaty Red Gum hybrids on the site. On the basis of the information provided, the Department is satisfied that sufficient investigations have been undertaken to classify the vegetation communities present on site, such that the impact of the development can be quantified and a suitable offset package can be formulated. Similarly, the Department is satisfied that the presence of Slaty Red Gum in areas to be affected by the proposal has been disproved and that no further consideration of this species for offsetting is necessary at this time.

Biodiversity offset

Approximately 49 percent of the native vegetation present on site would be removed to enable the facility to proceed. This vegetation is in itself classified as one of two types of EECs as well as providing habitat for threatened fauna species listed under both the Commonwealth and State threatened species legislation.

No threatened flora or EECs listed under the EPBC Act were identified on the site, however there is habitat for a number of listed threatened fauna. None of these species are of a type requiring species credits using the biobanking methodology, however offsets for the removal of their habitat would be linked to ecosystem credits associated with the vegetation types to be removed and offset.

Notwithstanding the above, the project would result in additional biodiversity impacts which would be unavoidable, including loss of additional critical foraging habitat for the Grey-Headed Flying Fox and potentially for the Regent Honeyeater as well as other non listed species. Other impacts include potential injury and fatalities to fauna during clearing and reductions to local flora and fauna populations resulting from the loss of and disturbance to habitat. Preliminary information provided by the Proponent indicates that an offset of between 99 and 158.4 hectares may be required based upon an offset to clearing ratio of between 5:1 and 8:1, however this is yet to be confirmed.

To ensure that the project does not result in a net loss of biodiversity values in the area, it is considered necessary that a suitable offset package be developed. The Proponent has committed to providing an offset through the DECCW Biobanking scheme. The Department and DECCW support this approach. The Department considers that the provision of biodiversity offsets is fundamental to ensuring that the recorded ecological values of the site are improved or maintained in the region.

It should be noted that the Proponent has committed to providing an unused moderate to good quality residual on-site vegetation (*i.e.* that will not be cleared and is not proposed for development or future potential development) as part of the proposed biobanking package. Further, it is understood that a number of other potential off-site biobanking sites in the region have been identified and further investigations are being carried out to confirm their

suitability. The Proponent has advised that its preferred option is to enter into a Conservation Agreement with the Land and Property Management Authority (LPMA), in which Pacific National will purchase BioBanking Credits from the LPMA. Nonetheless, the Proponent noted that the proposed offset is subject to completion of additional investigations and confirmation of the ecological and biodiversity values of the property. The proposed condition of approval does not require commitment to any particular mechanism but is sufficiently flexible so as to not preclude any known or future options which may come to light.

The recommended condition requires the development and submission to the Director-General of a **Biodiversity Offset Package** to be prepared in consultation with the relevant agencies and to provide a final suite of measures that in total would meet the identified objectives and outcomes. In addition it would include detailed information regarding the long term management and funding of the offset, monitoring requirements to measure whether the objectives and outcomes have been met and a procedure for implementing contingency measures/remedial actions where monitoring indicates that the objectives and outcomes are not being achieved. Both the DECCW and DSEWPC have indicated that they consider it necessary that the package be secured prior to construction or substantial commencement of the action. To address this issue, the Department has required that the package be submitted and approved by the relevant stakeholders prior to the commencement of construction unless otherwise agreed by the Director-General. This enables some flexibility should there be any justifiable technical or administrative obstacle which delays finalisation of the package.

DSEWPC also requested that an area of residual land which would not be developed as part of the current project application but which has been identified by the Proponent for potential future development either be included as part of the development and therefore adequately offset or that the Proponent commit to including this area in its on-site offset. The Department does not concur with this request. Whilst the potential cumulative benefits of this approach, both in terms of administrative and ecological outcomes, are acknowledged, the Department cannot require that it be included as part of the impacted area as no development or impact in this area is currently proposed or has been assessed. Any future plans for development in this area, including offset requirements, would therefore be assessed as a separate application. The Department also notes that the Proponent is continuting investigations of both on-site and off-site offset areas and that the recommended condition requiring the preparation of a Biodiversity Offset Package appropriately addresses final site selection.

5.2 Traffic and Access

Issue

Construction impacts
Access to the site would be from the south, via Mansfield Street, Camp, Allandale and Lovedale Roads; and from the east, via Nelson Street and the New England Highway as shown in Figure 5 and 6. Construction vehicles up to 19 metres long and 50 tonnes would be limited to access from the south, due to the poor alignment of Nelson Street and sub-standard road conditions. From the site boundary, access to the development would be via a road connecting to Mansfield Street. This would form a fourth leg to the existing 3-way intersection with Mansfield and Nelson Streets. The ARTC plans to realign Nelson Street to remove sharp and blind corners in this location as part of the Maitland to Minimbah Third Track Project.

A three-staged construction program is planned. Construction traffic would comprise construction workforce and equipment and material deliveries. Stage 1 is anticipated to generate the largest volume of construction vehicle movements per day, as follows:

- construction workforce – for a 12 month construction program, there would be a daily average of 160 vehicle movements, with a peak of 250 vehicle movements spread throughout the day. The majority of these vehicles would access the site via the intersection of the New England Highway and Nelson Street as shown in Figure 5 and Figure 6; and
- equipment and material deliveries – a daily average of 62 truck movements per day, with a peak of 104 truck movements during week 31 of the program. Heavy vehicles would travel via Allandale Road and its intersection with the New England Highway, along Camp Road and Mansfield Street, whilst heavy vehicles over 4.5 metres high would access the site via Lovedale Road to the south, then via Cessnock or Wine Country Drive. This is shown in Figure 6.

During stage 1 of construction, in the morning peak period, demand from construction workers to turn left into Nelson Street from the New England Highway is expected to be high. This intersection also has limited capacity for the critical right turn out of Nelson Street onto the New England Highway for eastbound traffic movements during the afternoon peak period. The Proponent has proposed a series of traffic management measures aimed at reducing demand at this intersection, including:

- private vehicles to turn right when exiting the site to travel on Mansfield Street to avoid the use of the New England Highway and Nelson Street intersection;
- stagger the release of cars from the site that use the New England Highway and Nelson Street intersection, potentially 5 cars every 5 minutes;
- the provision of shuttle buses for construction workers to and from the site; and
- employment of a traffic monitoring crew between 3:30pm and 6:00pm to implement the above measures.

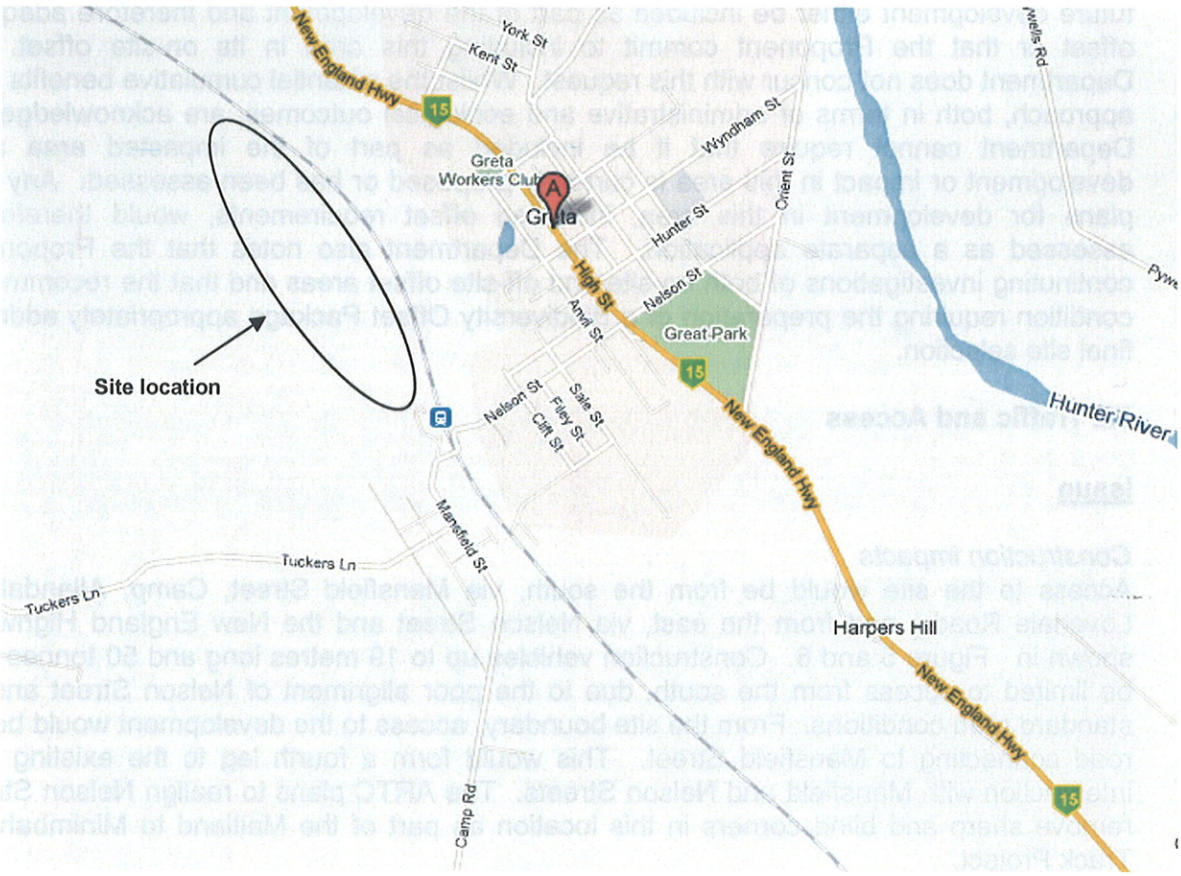


Figure 5: Site access via the local road network

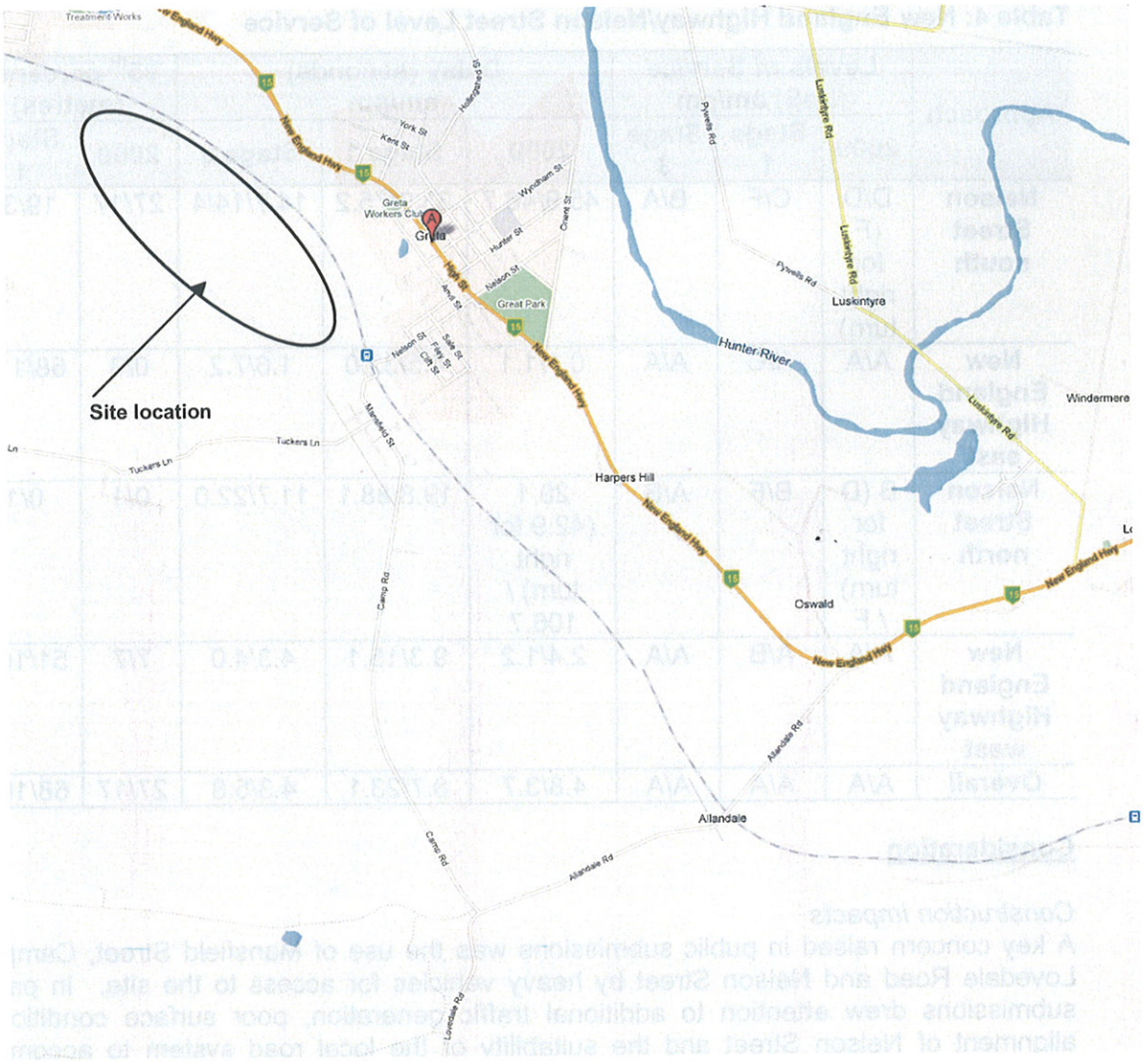


Figure 6: Local and regional road network

Operation impacts
At full operation (that is, following Stage 3), the number of full time staff at the facility would be approximately 30, in addition to 40 non-staff vehicle movements per day from deliveries of fuel, sand and other miscellaneous traffic movements.

The effects of the project on the intersection of New England Highway and Nelson Street, measured in terms of level of service and average delays, at stages 1 and 3 (2020) are summarised in Table 4 below. This shows that traffic associated with the project in the long term would have minimal impact upon the overall operation of the intersection, the Level of Service will either remain similar to the existing situation or improve at stage 3. The analysis, however, also highlights that the critical right turn from Nelson Street onto the New England Highway (Nelson Street south) could deteriorate further with delays increasing after stage 1 operation, but before stage 3 operation. Significant improvement of the intersection performance is anticipated by the time Stage 3 operations commence as the Hunter Expressway will be operational at this time, and this which is expected to significantly reduce traffic volumes on the New England Highway in this location. The intersection would then perform well, with minimal delays for turning traffic and no delays for through movements.

Table 4: New England Highway/Nelson Street Level of Service

Approach	Levels of Service (LoS) am/pm			Delay (seconds) am/pm			95th percentile queue (metres) am/pm		
	2009	Stage 1	Stage 3	2009	Stage 1	Stage 3	2009	Stage 1	Stage 3
Nelson Street south	D/D (F for right turn)	C/F	B/A	45.9/46.7	33.9/75.2	14.7/14/4	27/17	19/31	8/5
New England Highway east	A/A	A/C	A/A	0.1/1.1	4.5/32.0	1.6/7.2	0/3	68/116	19/25
Nelson Street north	B (D for right turn) / F	B/F	A/B	20.1 (42.9 for right turn) / 106.7	19.8/88.1	11.7/22.0	0/1	0/1	0/0
New England Highway west	A/A	A/B	A/A	2.4/1.2	9.3/15.1	4.3/4.0	7/7	51/169	16/55
Overall	A/A	A/A	A/A	4.8/3.7	8.7/23.1	4.3/5.8	27/17	68/169	19/55

Consideration

Construction Impacts

A key concern raised in public submissions was the use of Mansfield Street, Camp Road, Lovedale Road and Nelson Street by heavy vehicles for access to the site. In particular, submissions drew attention to additional traffic generation, poor surface condition, poor alignment of Nelson Street and the suitability of the local road system to accommodate heavy vehicles and transportation of large equipment, specifically with respect to weight limits over existing bridges and road safety.

As an overarching management measure, the Department considers it important for the Proponent to develop and implement a Construction Traffic Management Plan (CTMP) to provide mitigation, monitoring and management measures for traffic impacts associated with the project on the surrounding road network. The Department recommends requirements for the provision of specific measures to ensure compliance with the Plan and ensure heavy vehicle operators are aware of appropriate access routes. This would also include measures to monitor compliance and to implement corrective or preventative actions should heavy vehicle routes not be followed.

Local residents and Council raised concern regarding traffic speeds and road safety on local roads. To address this issue, the Proponent has committed to working with relevant road authorities to install entry statement signs and minor landscaping works along Mansfield Street. This would assist, to some degree, in reminding drivers to reduce speed and noise when travelling along Mansfield Street by reinforcing Mansfield Street as a lower order street. However, the Department recognises that the issue could equally apply to either construction or operation of the facility and considers that such signage should be installed prior to construction to reduce impacts from construction vehicles.

Impacts at Nelson Street and the New England Highway
The RTA raised concerns that the proposed measures to mitigate the impact of construction traffic on the intersection of the New England Highway and Nelson Street could result in vehicle diversions to local streets or through other intersections with existing capacity issues, such as the New England Highway and Allandale Road. The RTA also noted that the proposed measures do not address the impacts of the traffic generated for the period between the start of stage 1 operation and the completion of the Hunter Expressway.

Analysis of the existing and future operation of the New England Highway and Allandale Road intersection shows that additional traffic movements associated with the delivery vehicles would not significantly impact upon the operation of the intersection, which would continue to operate with acceptable levels of vehicle delays, similar to the current situation.

The Proponent recognises the constraints of Nelson Street for access by heavy vehicles, including poor alignment, poor visibility and weight limits on an existing wooden bridge over Anvil Creek. On this basis, the Proponent has committed that no heavy vehicles will travel up Nelson Street from the site under the current road configuration, thus avoiding potential blind and sharp corners over the existing alignment. Council has also confirmed that vehicles of 19 metres in length and 50 tonnes are legally permitted to travel on Mansfield Street, Camp, Lovedale and Allandale Roads.

The Department notes that the RTA initially requested traffic control signals at the intersection of the New England Highway and Nelson Street to alleviate impacts from construction traffic. The RTA has subsequently advised this will not be necessary, subject to conditions of approval requiring management measures during construction and operation (pre- and post- practical completion of the Hunter Expressway), restriction of vehicles peak periods and the use of key intersections on the New England Highway.

In principle, the Department supports these measures as they address limitations on the existing traffic conditions and considers that they could be appropriately contained in the CTMP.

The potential for cumulative impacts associated with the construction of the Maitland to Minimbah Third Track project is recognised and a co-operative and co-ordinated approach between the Proponent and ARTC is considered appropriate. As such, the Department recommends a condition of approval requiring preparation of a Traffic and Site Access Management Strategy (TSAMS) identifying haulage routes to and from the site, any necessary route enhancements, construction vehicle volumes and measures to minimise construction and intersection impacts as agreed with the RTA. Measures to implement the recommendations of the TSAMS will form the basis of a CTMP. The management plan also requires inclusion of a framework for regular and co-ordinated consultation with the ARTC and RTA in relation to cumulative traffic impacts resulting from concurrent construction of the Maitland to Minimbah Third Track project and the proposed TSF and to a lesser extent the Hunter Expressway, and management measures to deal with such impacts. It also identifies that review of the TSAMS in light of this consultation is an iterative process. Both documents must be prepared in consultation with the RTA and Cessnock Council.

Cessnock Council raised similar concerns regarding access arrangements. The Department considers that the recommended conditions of approval will address the issues raised by Council.

Diversions to Local Streets
With regards to concerns raised about traffic diverted to local roads and impacts generated before the completion of the Hunter Expressway, the Proponent has developed, in consultation with the RTA, management measures to maintain the efficiency and safety of classified road systems, particularly measures to be employed at the intersection of New

England Highway and Nelson Street. The RTA also requested that the Proponent prepare a CTMP and that construction of the project should not commence until practical completion of the RTA works at the intersection of the New England Highway and Allandale Road has been reached.

In this regard, the Department concurs with the need to prepare a CTMP which will build on the access routes developed in the abovementioned TSAMS, outline detailed measures to implement those access routes as well as other management measures required to manage construction traffic generated by the project. As stated above, a condition of approval which addresses this has been recommended. However, the Department does not agree with the request that construction of the project not commence until practical completion of the identified RTA works. Whilst it is necessary that the Proponent consider the potential impacts of construction on the RTA works and how this will affect site access in the CTMP, the Department considers it unreasonable to require that construction be delayed until RTA works are complete. However, in order to ensure that this issue can be addressed through on-going negotiation between the Proponent and the RTA, the Department's recommended conditions require the Proponent to consult with the RTA during preparation of the TSAMS.

Access to and across the Great Northern Railway
The Department notes concerns raised in submissions regarding pedestrian and road traffic access to Greta railway station and road access across the Greta Northern Railway. The Proponent has confirmed that pedestrian access to the Greta railway station and vehicular movements over the railway line would not be affected. Notwithstanding this, the Department recognises that the increased traffic volumes may make pedestrian access more challenging. It is considered that specific management measures to ensure pedestrian safety in accessing the Greta railway station should be addressed in the TSAMS and CTMP, for which conditions of approval are recommended.

Existing Road Condition
In relation to concerns raised in submissions relating to damage of local roads, the Proponent has committed to undertake a dilapidation survey of local roads prior to construction. The intent of this commitment is to provide a benchmark against which post construction damage can be assessed should it occur. To strengthen the Proponent's commitment, the Department recommends a condition requiring road condition reports to be prepared prior to commencement of construction for all roads identified in the TSAMS which are likely to be used by construction traffic or as otherwise agreed by the relevant roads authority. Any damage directly attributable to construction of the project shall be repaired at the cost of the Proponent.

Cumulative Traffic Impacts
Many of the submissions received raised concerns about potential cumulative impacts from the concurrent construction of the train support facility, the Maitland to Minimbah Third Track project and the RTA's Hunter Expressway. The RTA has confirmed that construction of the western section of the Hunter Expressway (between Kurri Kurri and Branxton) is due to commence in early 2011 and be complete by the end of 2013. The Maitland to Minimbah project is anticipated to begin construction once Commonwealth approval is obtained and will have an 18 month construction program. The Proponent proposes that should construction activities of the projects be likely to coincide, cumulative impacts would be addressed in the CTMP, which will be done in consultation by the RTA, Council and emergency services.

The RTA does not object to this approach and has advised that relevant proponents for these projects should work collaboratively to coordinate construction traffic management activities, particularly regarding the traffic and road safety impacts on the New England Highway and its intersections. The Department supports this approach. To ensure the effective and coordinated management of construction traffic from the project and adjoining development as construction of each project progresses, the TSAMS as recommended

requires the Proponent to consult with the ARTC and relevant construction personnel of the Maitland to Minimbah Third Track and Hunter Expressway Projects.

Operational Impacts
The number of vehicles accessing and egressing from the site would be significantly reduced (by approximately one third) once the facility is operational compared with that generated at average and peak construction periods. However, levels of service at key intersections (in particular the New England Highway and Nelson Street intersection) are not expected to improve and may worsen prior to the completion and opening of the Hunter Expressway. In some cases these intersections are already operating with a level of service F (representing heavily congested flow with traffic demand exceeding capacity and excessive average delay times), even without this project or the Maitland to Minimbah Third Track project under construction. However, as previously stated, these intersections are expected to improve significantly following the opening of the Hunter Expressway.

Given current and predicted future constraints on the road network surrounding the project site, the Department notes that the project would further deteriorate the regional road system by increasing traffic volumes and affecting network capacity saturation and intersection performance. Nonetheless, the Department does acknowledge that the resulting impacts would be short term, with substantial improvements after the opening of the Hunter Expressway. Furthermore, the Proponent has proposed traffic management measures (as discussed above) to be implemented for the period after Stage 1 operations of the facility commence and before the opening of the Hunter Expressway as discussed earlier. Both the RTA and the Department consider these measures appropriate for the temporary traffic impacts resulting from the project.

In relation to road safety concerns raised in public submissions, the Department notes predicted operational vehicle movements are relatively low and, furthermore, in the context of improved network and intersection performance following the opening of the Hunter Expressway, are not of a magnitude to indicate traffic safety to be a specific issue of concern. Notwithstanding this, the Department has recommended a condition requiring the Proponent to outline mitigation and management measures for traffic impacts, including road safety, as part of the Operational Environment Management Plan.

5.3 Noise and Vibration

Issue

Existing land use in the immediate vicinity of the project is a mix of rural and residential receivers. The closest residential development is adjacent to the proposed access road with other receivers further afield at the villages of Illalong and Greta. Many of these are currently exposed to noise from the New England Highway to the north and the Great Northern Rail Line to the east.

Construction noise, vibration and blasting
Existing background noise is dominated by light and heavy vehicles on the New England Highway and trains on the Great Northern line. The maximum Rating Background Levels measured were 43 dB(A), 43 dB(A) and 36 dB(A) for day, evening and night, respectively. Stage 1 construction is anticipated to take 12 months and would involve major earthworks (including blasting, rock breaking and cutting), establishment of rail sidings and construction of ancillary infrastructure and internal roadways.

Analysis undertaken for Stage 1 construction works, when noise impacts are expected to be higher than Stages 2 and 3, predicted that construction noise goals would be exceeded. Receivers adjacent to the site entry would be most affected during construction and are

expected to experience noise levels of up to 72 dB(A)$_{LAeq(15min)}$ during the access road construction. A noise barrier approximately 500 metres long and two metres high is proposed to reduce noise impact from the construction of the access road, commencing immediately to the north of the site access gate and following the eastern shoulder of the roadway to the top of the approach to the Sawyers Creek crossing (as shown in Figure 7). The barrier is expected to reduce construction noise levels by up to 4 dB(A) at the residences adjacent to the site entry. Whilst the EA noted that some lots adjacent to the access road are undeveloped, in recognition of the exceedances predicted during construction, the Proponent has committed to preparing and implementing a Construction Noise and Vibration Management Plan incorporating mitigation techniques outlined in DECCW's *Interim Construction Noise Guideline* (ICNG) in an effort to further minimise the impacts of construction noise.

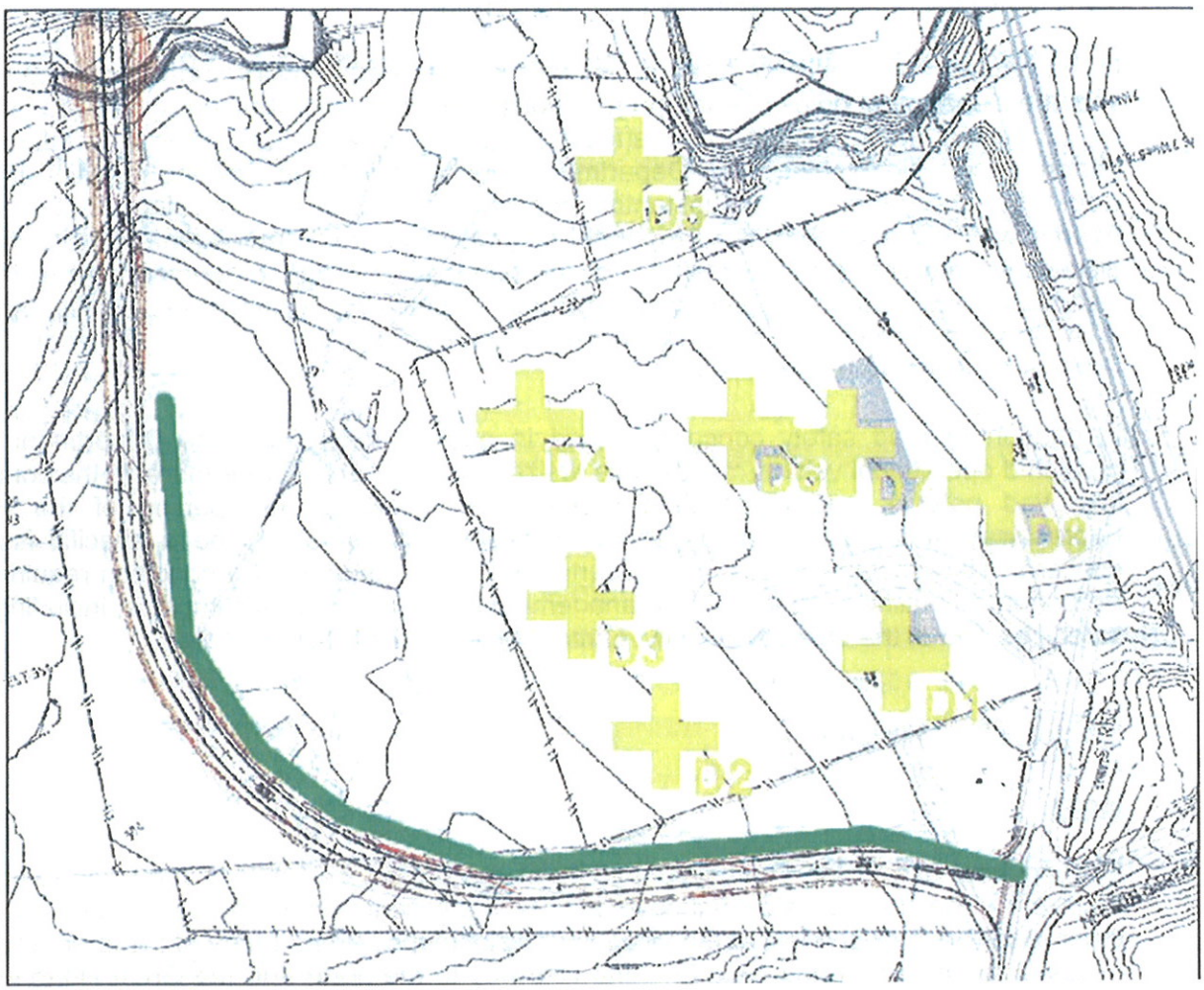


Figure 7: Proposed design and location of site access road noise barrier

Blasting is proposed at two locations, where the closest residential receiver is located within approximately 390 metres. Blast management methods in accordance with AS 2187.2-2006 are proposed to minimise ground vibration and overpressure impacts. These would be outlined in a Blast Management Plan which includes provisions for vibration monitoring. Whilst no exceedances are predicted, vibration mitigation measures consistent with those identified in the ICNG are proposed to minimise impacts on sensitive receivers. These measures include strategies and work practices in the management of potential vibration impacts.

The main source of vibration would occur from the use of heavy rockbreakers, vibratory rollers, trucks and dozers. The nearest receivers to these activities are residential lots (some

of which are undeveloped) adjoining the access road, approximately 20 metres away. Ground vibration levels are unlikely to exceed human comfort and annoyance or structural damage criteria at the nearest sensitive receivers with the exception of the northern rail infrastructure, which is located within eight metres of the blasting location. The Proponent has committed to consult the ARTC to determine an acceptable impact criterion prior to the commencement of construction works and to identify detailed blast designs to ensure compliance with the criterion.

Operational Noise

Noise generated by the operation of the TSF was assessed in accordance with the *NSW Industrial Noise Policy (INP).* Noise impacts were assessed at eight residential locations (at Greta, Illalong, Barracks Close/Mansfield Road, Branxton, Tuckers Lane and North Rothbury, refer to Figure 8), the Greta Public School, Greta Community Pre-school, Greta Arts and Sports Community Hall and other commercial receivers on the New England Highway. The noise assessment indicates that:

- currently, existing trains on the Great Northern Rail Line and New England Highway traffic represent the most significant contributions to background noise at most residential receivers;
- at seven of the eight residential receiver locations, predicted noise levels from the project would comply with the relevant INP levels during the day period under neutral meteorological conditions, without mitigation;
- noise exceedances of between 8 to 15 dB(A) are predicted at receivers at Barracks Close/Mansfield Street (R2) in the day period under neutral meteorological conditions, without mitigation; and
- noise exceedances of up to 4 dB(A) are predicted at three of the eight receivers (R2, R6 and R6(a)) during the night period under temperature inversion conditions, without mitigation.

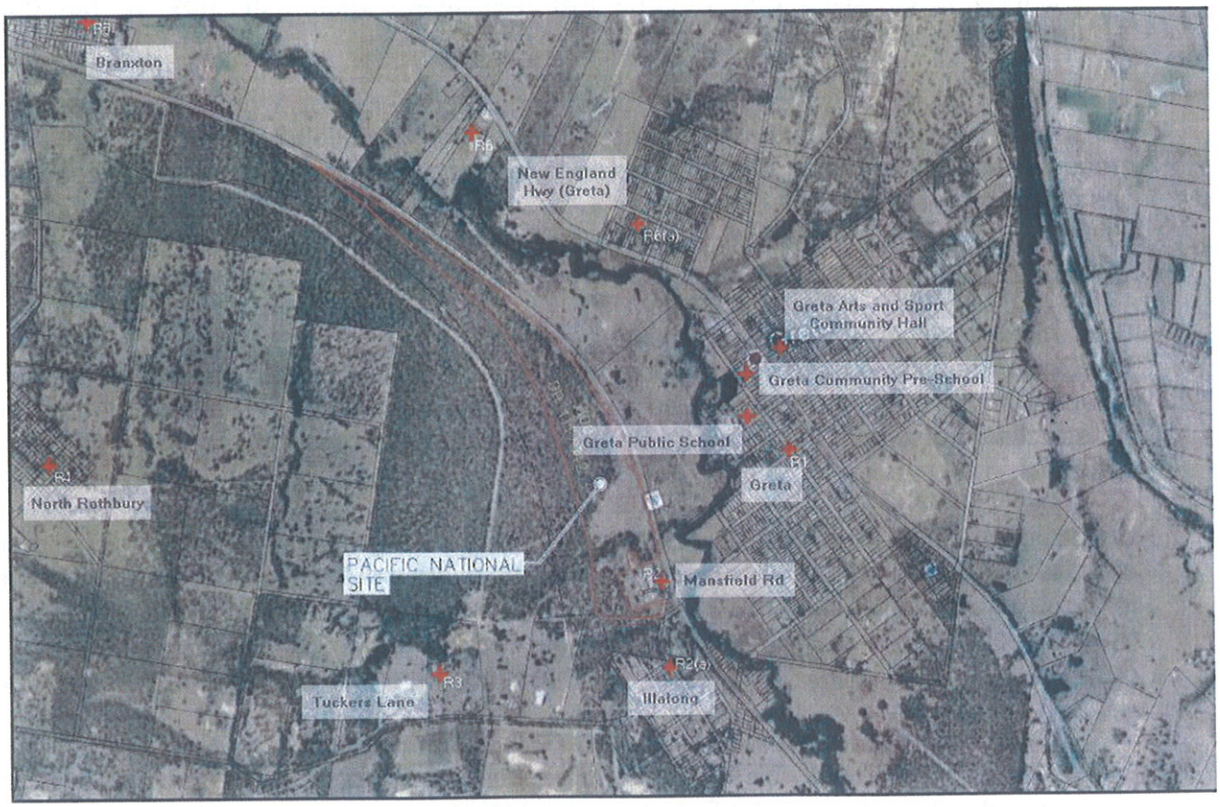


Figure 8: Location of sensitive receivers

Road traffic accessing the site via Mansfield Street would dominate the noise impact from the project for receivers in Illalong adjacent and to the south of the site. Whilst trains entering the site via the "arrival road" (refer to Figure 9) would also contribute to noise impacts, road noise would remain the dominant source. Whilst a day time exceedance of up to 15dB(A) is predicted at one receiver at Barracks Close, this would be reduced to a 9dB(A) exceedance of the project specific noise level* (PSNL) of 49 dB(A) with the proposed retention of the noise barrier adjacent to the access road on its eastern side to be erected during the construction stage.

The proposed noise barrier would be effective in mitigating noise from access road traffic accessing the site with the night-time goal being met at all but one undeveloped residential lot where a residual exceedance of no more than 2 dB(A) would be expected. This is considered a minor and acceptable exceedance.

The dominant noise source to the Greta receiving environment is likely to be trains entering the facility and moving along the eastern-most tracks (1 and 2). Notwithstanding, Stage 3 operations are expected to comply with the PSNL for all periods with the construction of a four (4) metre barrier at the rail arrival road, with the exception of 1 residential location, where the PSNL is exceeded by 5 dB(A) during the day period, under neutral conditions. Existing noise from transportation sources is estimated at approximately 10 dB(A) greater than the expected worst case from the facility. It is therefore unlikely that the contribution of the facility to the noise environment in this area will be measurable.

In addition to the proposed noise barriers, the Proponent has committed to preparing a Noise Management Plan for site operations, which would include:

- utilising operational controls during coupling, take off and stopping of trains to minimise the generation of impulsive noise associated with impact between empty wagons;
- not scheduling noise generating maintenance activities at night; and
- ensuring locomotives and wagons are maintained such that they do not generate excessive levels of noise.

The Proponent expects that, for the operations modelled, noise goals can be met at the majority of existing residential locations. Further consideration of reasonable and feasible measures will occur during detailed design to further reduce residual exceedances wherever possible.

Consideration

Construction Noise, Vibration and Blasting

The Department notes noise during construction as a key concern to the community, which is reflected in the submissions received during the exhibition stage. The community identified construction noise generated by traffic movement and access road construction as major concerns.

Construction noise was assessed using procedures outlined in the ICNG. The predicted noise levels during construction are such that receivers would be considered noise affected. In these circumstances, the ICNG requires that a Proponent should apply all feasible and reasonable work practices in an effort to meet the noise affected level† (*i.e.* the RBL+10 dB or in this case 53 dB). It is also recommended that the Proponent should inform all

* Project specific noise levels (PSNL) for the development are assigned after determining the relevant noise levels from the intrusiveness and amenity criteria. The PSNL typically reflect the most stringent noise level requirement derived from the intrusiveness and amenity criteria and sets the noise target levels of the project.

† As measured at the property boundary most exposed to construction noise and at 1.5 metres above ground level or at the most noise-affected point within 30 metres of the residence where the property boundary is more than 30 metres from the residence.

potentially impacted residents of the nature of works to be undertaken, the expected noise levels and duration, and contact details of site personnel.

The Department accepts that construction generally would be a significant noise generator. However, it also recognises that construction noise is a temporary disturbance for a known period of time. Predicted construction noise for this project is expected to be most significant during construction of Stage 1 based on the types of activities (bulk earthworks) and location of works in proximity to sensitive receivers (the entrance road adjacent to residential development at the south eastern corner of the site). Noise exposure for the most sensitive receivers has been measured at 72 dB(A) which is below the highly noise affected management level of L_{Aeq} 75 dB(A), which represents the point above which there may be strong community reaction to noise, as established in the ICNG.
The Proponent has advised that the lot closest to the proposed access road is currently vacant and is unlikely to be occupied before construction of the access road. The Proponent has identified that the proposed noise barrier adjacent to the eastern side of the site access road would reduce noise levels by up to 4 dB(A) and has committed to providing this barrier to manage construction noise. In addition, the Department considers that the Proponent should undertake further consideration of feasible and reasonable noise mitigation and management measures. To ensure that appropriate consideration is given to this matter, the Department has recommended conditions of approval that require noise mitigation and management measures to be clearly articulated in the Construction Noise and Vibration Management Plan with the objective of minimising noise impacts to the greatest extent practicable.

Blasting which may be undertaken for construction to achieve the desired final site levels is located at a distance ranging from 390 metres to 2050 metres from the nearest residential receivers. Air blast overpressure and ground vibration levels are unlikely to exceed the human annoyance or structural criterion established under the guidelines at adjacent residential receivers. However, blasting may affect the existing Great Northern Railway Line due to a relatively small separation distance of eight metres from the proposed blasting. The Proponent has committed to consult with the ARTC to determine an acceptable impact criterion prior to the commencement of construction works. The Department is supportive of this initiative and acknowledges that the potential impacts are a conservative estimate and could be managed and mitigated with implementation of appropriate measures. In this context, the Department has recommended vibration overpressure and ground-borne vibration criteria to be imposed and to require the Construction Noise and Vibration Management Plan to provide appropriate procedures to manage blasting activities, including a restriction of blasting hours to 9am to 5pm, Monday to Friday and 9am to 1pm on Saturday.

Construction Hours
The Department notes that the Proponent has sought extension to the standard construction hours (7am to 6pm Monday to Friday; 8am to1pm Saturday and at no time on Sundays or Public Holidays) to allow works to be undertaken on Saturday from 7am to 6pm. The ICNG provides examples of the circumstances under which out of hours or extended hours are considered acceptable. The Proponent has not provided sufficient technical justification for the extended hours on an ongoing basis, nor has consultation with affected local residents been demonstrated, therefore the Department does not support a blanket extension of construction hours at this time. Consequently, the Department has restricted construction hours to 7am to 6pm, Monday to Friday, and 8am to 1pm on Saturday. Notwithstanding, a recommended condition of approval provides flexibility to enable the proponent to request out of hours approval for specific activities or periods of time provided that the works are justifiable.

The Department is satisfied that the procedures and mitigation measures as recommended within the conditions of approval and the revised Statement of Commitments would ensure

the appropriate management of construction noise and vibration throughout the construction period.

Operational Noise

The Department acknowledges that noise from rail and road traffic, particularly during the evening and night-time periods, was a key issue raised in public submissions. The Department notes that the key source of noise emissions from the project is attributed to internal vehicle movements, trains entering the site and operational activities including the provisioning and servicing of trains. Following exhibition of the EA, the Proponent undertook further investigation of potential management measures to reduce noise impacts. These measures (shown in Figure 9) included:

- construction of a 2m high barrier of approximate length of 500m (same barrier as that proposed for construction noise); and
- a 4m high barrier of approximate 250m, located adjacent to the rail arrival road.

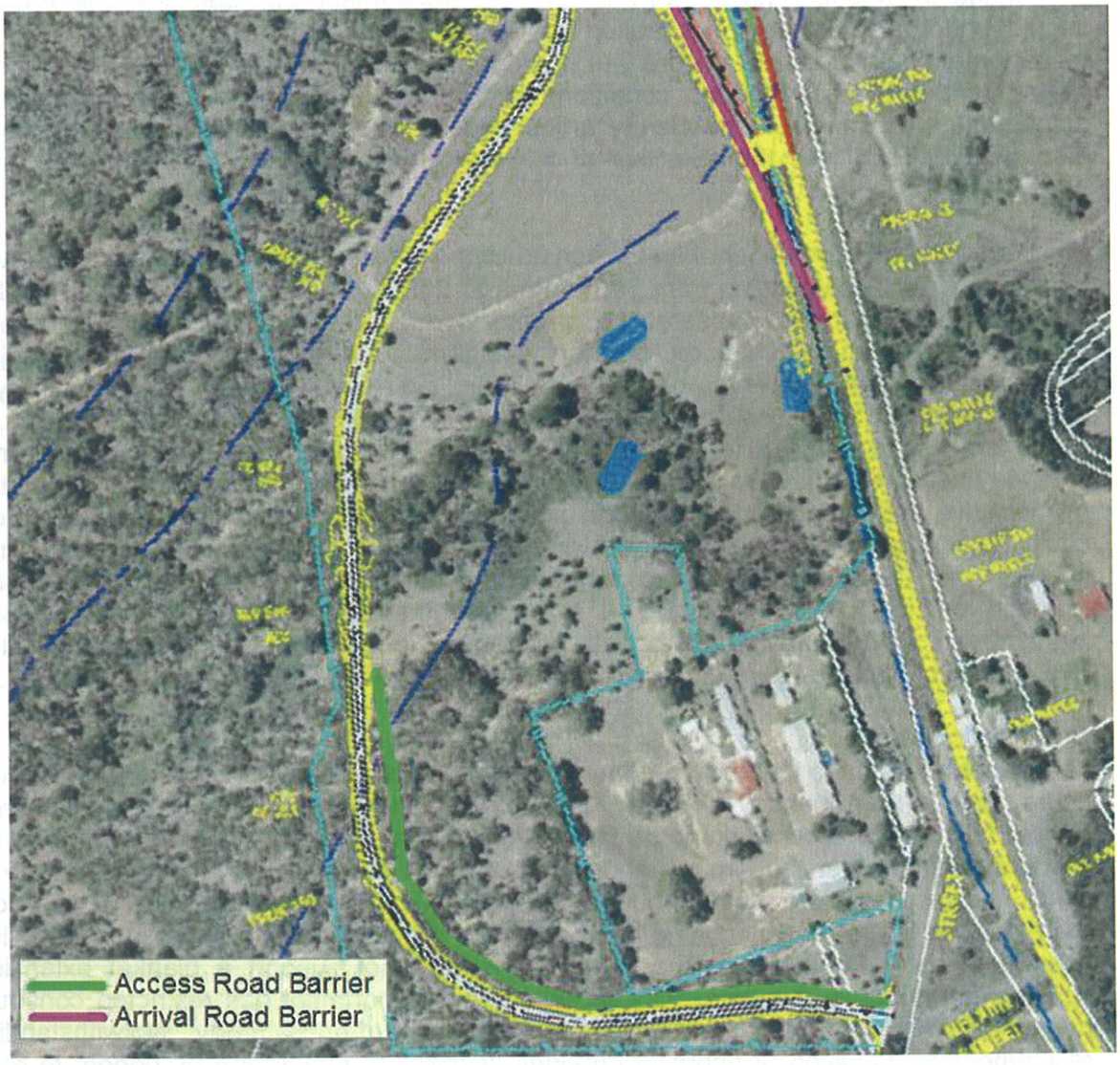


Figure 9: Proposed noise barriers on vehicle access road and rail arrival road

Vehicle Access Road and Rail Arrival Road

The Proponent's noise assessment considered operational noise against the *NSW Industrial Noise Policy* (INP). Whilst the Department notes that noise generated from stationary industrial sources such as the maintenance facilities proposed in the TSF is best assessed

against criteria established by the INP, it also notes that dose/response relationships show that noise generated by transport related activities such as roads results in significantly lower levels of annoyance and is therefore best assessed against criteria that allows for the transient nature of the noise.

Whilst it is usual for private roads to be included in the noise assessment of the industrial site, it is recognised that the project could largely avoid the application of the INP to the road component of the project if it proposed to use the public road system, such as an existing local road such as Barracks Close, for vehicle access to the site. This would, however, result in residences being exposed to greater noise impacts than would occur if the private access road was constructed at a more remote location, in close proximity to the Hunter Expressway, as is proposed for the TSF. The Department considers this to be a superior amenity outcome as it removes traffic from the public road system and ensures that traffic noise would be masked by traffic noise from the Hunter Expressway, once operational.

In considering the advantages of a private access road there may be justification for assessing the access road as a 'new local road' as defined in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). The criteria for such a road classification are 50 $dB(A)_{Leq(1h)}$ day and 45 $dB(A)_{Leq(1h)}$ night. Data presented in Table 23 of the noise impact assessment (Technical Report 6.1 of Submissions/Preferred Project Report, dated 11 November) indicate that there would be no exceedances of this criteria at night. During the daytime, for some 15 minute periods there may be an exceedance of the 1 hour criteria up to 5 dB(A), however it is unlikely that that the criteria would be exceeded on an hourly average. Furthermore, it is considered that with appropriate scheduling of vehicle movements (to be addressed in the Operational Environmental Management Plan) that the daytime criteria can be consistently achieved.

The Department also notes that infrastructure upgrades including the Hunter Expressway and the third rail, which have been, approved‡ will significantly increase the level of transport noise in the surrounding noise catchment once operational. These developments are likely to mask much of the noise generated on the access road. Notwithstanding that the access road would easily meet 'new local road' criteria, the Department has required that the project implement reasonable and feasible mitigation of the road traffic noise. In this respect, the Proponent has committed to construction of the noise wall adjacent to the access road as well as implementing traffic management controls. The Department considers that with the implementation of these measures, road traffic noise can be managed to an acceptable level.

The Department has also recommended a condition which establishes the project specific noise levels, including sleep disturbance criteria for existing residential receivers that the project must meet. Compliance with the sleep disturbance criterion is anticipated at all locations under all meteorological conditions during periods of average impacts, however receivers in Greta, Illalong and to the north of the site on the New England Highway could expect some exceedances during specific meteorological conditions. Therefore, the conditions also require the Proponent to prepare (in consultation with the Department, DECCW, Council, ARTC and the community) an Operational Noise and Vibration Review (ONVR) to confirm noise (air-borne) and vibration control measures that would be implemented, based on final detailed design, and to further examine all reasonable and feasible noise mitigation measures. The ONVR must also include a consultation strategy with directly affected property owners on the proposed mitigation measures. The ONVR must also be independently verified by a noise and vibration practitioner.

‡ Note Minister's approval for the Hunter Expressway (F3 to Branxton) was granted on 7 November 2001. The Maitland to Minimbah Third Track project was approved on 20 December 2010 however determination by the Commonwealth had not been issued at the time of writing.

Whilst the Department acknowledges that the proposed noise barrier adjacent to the rail arrival road is likely to address potential impacts on receivers in Greta, its efficacy will require further investigation as part of the ONVR.

Finally, the Department recommends a condition of approval requiring the Proponent to undertake a noise and vibration compliance assessment to verify the project's compliance with the operational noise levels referred to in the approved ONVR. This assessment must be undertaken within three months of commencement of operation of the facility. Where exceedances of the PSNL are identified, the Proponent will be required to investigate any further feasible and reasonable mitigation measures that could be applied to reduce noise impacts to the PSNL.

The Department is of the opinion that with the implementation of the recommended conditions of approval along with the commitments made by the proponent, that the predicted noise impacts of the facility are acceptable.

Future Land Use

Another issue of concern raised in submissions was the impact on areas of land adjoining the corridor currently identified for future urban development, specifically Anvil Creek (the former army and migrant camp at Allandale) and the Huntlee New Town. The status of each development is detailed in Table 5 below.

Table 5: Proposed future land release and urban development areas

Name of development	Type	Status
Anvil Creek (former army and migrant camp)	Residential and recreational/ tourist development	Development Application for a staged development comprising a subdivision of eleven lots and a tourist precinct containing a golf clubhouse, hotel and tourist accommodation approved
Huntlee New Town	Mixed use urban area	Rezoning under the State Significant Site provisions of the *State Environmental Planning Policy (Major Development)* was gazetted in December 2010. Project Application for Stage 1 subdivision lodged with Department of Planning.

The Department notes that consideration of these areas was not included in the Proponent's noise assessment. However, the difficulties in doing so are acknowledged as the areas are likely to experience substantial changes in land uses which are not fully known at the time of assessment, therefore providing uncertainty over the future noise environment and what would constitute appropriate criteria. Furthermore, the Department acknowledges that the distances between the central part of the site and the closet boundaries of Anvil Creek and Huntlee New Towns are approximately 1.8 kilometres and 450 metres, respectively, and these are considered to be reasonable separation distances in the context of the project's predicted noise levels. Also, given the Hunter Expressway and Maitland to Minimbah Third Track are likely to be operational prior to the completion of the facility, the existing noise environment for these areas is likely to be substantially different from that experienced currently and any noise generated by the TSF is not likely to be audible at either development over and above that generated by these projects. On this basis, the Department does not believe it is appropriate to establish project noise levels for the Anvil Creek and Huntlee New Town developments. However, the recommended condition requiring a compliance assessment of the mitigation measures following the facility becoming operational requires the Proponent to consider changes to land use, the background noise environment at that time and any proposed changes to the noise targets. A further

recommended condition requires a review of operational noise levels within 5 years of the date of approval, and at any subsequent time required by the Director General. This review is to consider, amongst other matters, the status of land use planning, any land use changes and the background noise environment at the time of the review and any changes to the OVNR noise levels as a result of the review.

Vibration
The Department and the DECCW are satisfied with the vibration assessment undertaken by the Proponent and acknowledge that a review of predicted structural vibration levels at the nearest sensitive receivers identified that the predicted vibration levels generally meet the criteria for both human comfort and annoyance and structural damage to buildings. Nonetheless, the Department acknowledges that some community concerns were raised in relation to operational vibration impacts. To address these concerns, the Department has recommended a condition of approval, requiring the Proponent to undertake an operational review of vibration impacts to determine if the levels comply with relevant standards, and provide mitigation measures if exceedances are measured.

5.4 Non-Indigenous Heritage

Issue

Four heritage items associated with former historical activities and uses of the site and the area are located within 500 metres of the site. These include:

- the Greta Railway Station Group - an item listed on the State Heritage Register located approximately 200m south east of the site, consisting of railway buildings, station masters house, signal box, railway platforms and the footbridge;
- the Great Northern Railway - located immediately to the east of the site and identified as being of State significance, meaning significance to the State in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item, under the *Draft Cessnock Local Environmental Plan 2009*;
- Old Anvil Creek Colliery - located on the other side of the railway line to the site and may contain intact underground workings. This item is identified in the *Hunter Regional Environmental Plan* as requiring further investigation; and
- a row of miners cottages - identified on an 1873 survey plan consisting of 11 dwellings located on the eastern portion of the site, adjacent to the Great Northern Railway. These cottages are likely to be associated with mining related activities within the project area. This item is identified in the *Hunter Regional Environmental Plan* as requiring further investigation.

Direct impacts are anticipated only to the miners' cottages during construction. However, the discovery of previously unidentified heritage items such as footings of buildings or relics within the area of the identified miners' cottages and demolition, relocation and/or modification to pit features identified within the project area may also occur. Archaeological monitoring of the miners' cottages during construction and archaeological recording of pit features prior to construction is proposed.

Consideration

Archaeological testing in the area of the miners' cottages was undertaken, subsequent to the exhibition of the EA, to determine the likely extent, nature and integrity of the archaeological deposit, the significance of the resources and to establish appropriate management and mitigation measures. Archaeological resources were discovered, including residual evidence of a fireplace footing with associated artefacts, a door sill and brickbat step or apron with associated artefacts, and other artefacts, mainly ceramic, glass and iron spike and nails. The Proponent concluded that whilst the findings provide material evidence for domestic occupation by miners in the eastern part of the project area, further excavation in search of

the miners' cottages is not warranted as it was unlikely that this would provide more informative material evidence than is already available.

The Department of Planning (Heritage Branch) raised concerns regarding the assessment undertaken and the proposed management measures for European relics. In particular, it identified a number of matters for further consideration, specifically, an examination of the effects of the proposed works on extant heritage surrounding the project area, an archaeological excavation and recording program of any remaining archaeological features related to the miners' cottages not excavated to date, and a mitigation strategy to address any identified or potential impacts.

In this regard, the findings of the fireplace footing and door sill confirm the presence of the miners' cottages identified in the historical map and suggest the potential that other cottages are within the study area and additional material could be exposed. The results to date indicate that there is high likelihood of additional archaeological evidence that would contribute to an understanding and appreciation of the life and conditions of early mine workers in the Greta area, a resource not available from other historical sources. Accordingly, the Department recommends a condition of approval requiring the Proponent to undertake an archaeological excavation program in the area identified in Figure 10, to confirm the full extent of subsurface archaeological deposits at these areas. The further work should be undertaken using a methodology prepared in consultation with the Department's Heritage Branch and result in a final report on these findings including the analysis of any materials and the identification of a final repository for finds.

With regards to other Non-Indigenous heritage items identified above (such as the State significant Greta Railway Station complex), the Proponent's assessment concluded that the project is unlikely to impact on these structures/infrastructure, with the exception of potential vibration impacts should rail traffic increase significantly during construction or operation of the project. The Department considers that the Proponent has undertaken an acceptable level of assessment of the likely potential impacts on these items and notes that due to the physical distance separating the site and the identified items, impacts of the project would be minor and likely to be limited to vibration only. The Department acknowledges that the Proponent has committed to implement measures to ensure that potential heritage impacts are adequately managed but to strengthen this commitment, the Department has recommended a condition of approval which requires the Proponent to prepare a Construction Non-Aboriginal Heritage Management Plan, in consultation with the Heritage Branch. The intent of the Plan is to identify heritage items and archaeological sites potentially impacted by the project, detail management measures to be implemented to prevent or minimise impacts on heritage items and sites and procedures for dealing with previously unidentified relics remains should they be uncovered. Details to be provided in the management plan would include and complement the Proponent's Statement of Commitments and generally address concerns raised by the Heritage branch. This includes a request of the Proponent to provide details of monitoring requirements on heritage structures for construction vibration.

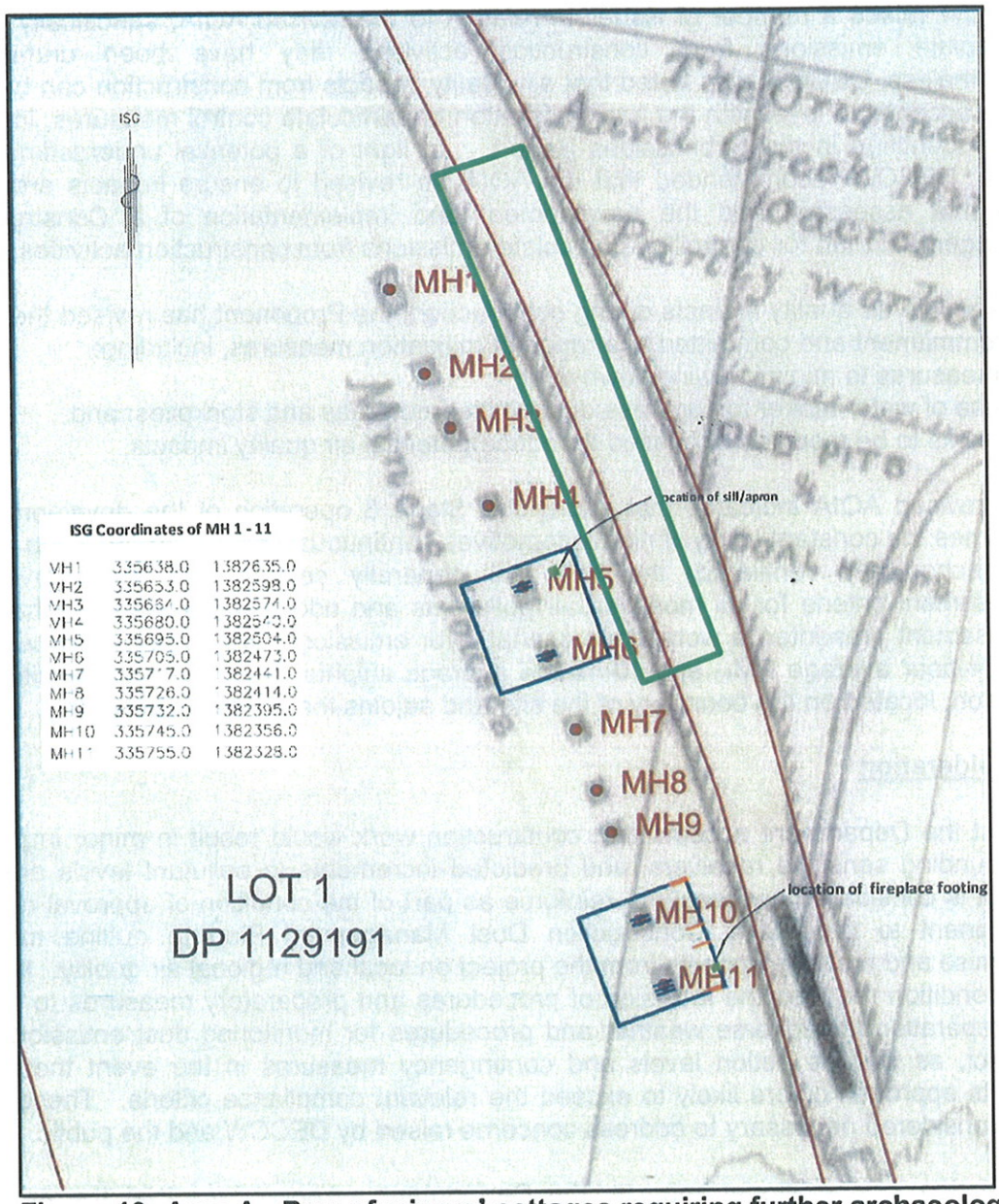


Figure 10: Area A - Row of miners' cottages requiring further archaeological excavation (marked in green box)

5.5 Air quality

Issue

Since exhibition of the EA, the Proponent revised the Air Quality Impact Assessment (AQIA) in response to issues raised by DECCW and the public. Specifically, the revised assessment incorporated additional dust control measures, and inclusion of the Huntlee New Town development as a sensitive receiver. The modelling shows that currently, there are at least 66 occasions throughout the year where the 24-hour PM_{10} criteria is exceeded at the assessed receiver locations, whilst during construction of Stage 1, seven additional exceedaces of the maximum 24-hour PM_{10} criteria are predicted. The assessment also notes that the maximum predicted increment of the PM_{10} level, as a result of the project, will result in minor exceedances of the impact assessment criteria by less than 11 $\mu g/m^3$ at all sensitive receiver locations, with the exception of one sensitive receiver location, which is located at the western boundary of the site, and adjoins the planned Hunter Expressway and is not occupied by residences.

DECCW raised a number of issues in relation to the revised AQIA, specifically noting that particulate emissions from construction activities may have been underestimated. Nonetheless, DECCW also noted that air quality impacts from construction can be managed to an acceptable level with the implementation of particulate control measures, in addition to those identified in the Submissions Report. In light of a potential underestimation in the AQIA, DECCW recommended that the AQIA be revised to ensure impacts are consistent with that assessed, and the development and implementation of a Construction Dust Management Plan for controlling particulate emissions from construction activities.

To alleviate air quality impacts during construction, the Proponent has revised the Statement of Commitment and committed to a range of mitigation measures, including:

- measures to minimise windblown dust;
- use of water tanker to suppress dust on cleared areas and stockpiles; and
- works to be modified or ceased to reduce potential air quality impacts.

The revised AQIA indicates that during the Stage 3 operation of the development, which assumes the constant idling of nine locomotives continuously within the provision shed which is mechanically ventilated, the TSF will generally comply with the relevant impact assessment criteria for all modelled air pollutants and odour emissions from the site. The assessment presented a worst-case scenario for emissions, and predicted exceedances of the 24-hour average PM_{10} and 10-minute average sulphur dioxide at one sensitive receiver location, located on the boundary of the site and adjoins the Hunter Expressway.

Consideration

Whilst the Department accepts that construction work would result in minor impacts to the surrounding sensitive receivers, and predicted increments to pollutant levels are generally low, it is considered necessary to reinforce as part of the condition of approval requiring the Proponent to prepare a Construction Dust Management Plan to outline measures to minimise and manage impacts from the project on local and regional air quality. In particular, the condition requires the inclusion of procedures and preparatory measures to be followed in preparation for adverse weather and procedures for monitoring dust emissions from the project, as well as action levels and contingency measures in the event that monitoring results approach or are likely to exceed the relevant compliance criteria. These conditions are considered necessary to address concerns raised by DECCW and the public.

In relation to operational impacts, the Department acknowledges that the project would produce emissions, mainly associated with the idling of locomotives engines, emissions from diesel tank farm, welding operations and spray painting. The Submissions/Preferred Project Report demonstrated that the predicted level of emissions of pollutants from operational activities would, in most occasions, be within air quality goals established by the DECCW at all likely sensitive receiver locations, including the Huntlee development. However, minor exceedances of PM_{10} and sulphur dioxide levels are predicted at one sensitive receiver location. Despite this, the Department considers that the project would not have an adverse air quality impact on sensitive receivers, as the identified location where exceedances are predicted is at the boundary of the site and is not used for the residential purposes.

On the basis of general compliance with relevant guidelines and the nature of operational activities to be carried out on site, and the Proponent's commitment to review the air impact assessment and mitigation measures to limit gas emission to sensitive receivers from idling locomotives, the Department is satisfied that potential impacts during operation would not result in significant air quality impacts.

5.6 Other Environmental Issues

Issue	Department's Consideration
Indigenous Heritage	Two potential archaeological deposits (PADs) were identified within the project impact zone. Test excavations of the two PADs revealed a total of 115 artefacts; with 114 artefacts (Aboriginal objects) identified in PAD 1 and one artefact in PAD 2. The artefact assemblage found was consistent with those found elsewhere in the Hunter Valley. In general, with the exception of two pits within PAD 1 which were assessed as having medium scientific significance, the finds were considered of low scientific significance. The areas of moderate significance would be subject to further archaeological excavation prior to construction. Salvage activities and monitoring will be carried out in accordance with the recommendations contained of the *Indigenous Archaeological Test Excavation* (2010)[§]. The Proponent has committed to a program of archaeological work at the pits identified as having moderate scientific significance due to a high likelihood of uncovering additional artefacts, and to engage Aboriginal representatives in monitoring works to be undertaken along the remainder of the access road. The Department supports the proposal to undertake further salvage excavations at the nominated location, due to the density of artefacts found and relatively low disturbance, and also supports the commitment to continue consultation with Aboriginal communities during construction. The Department is generally satisfied that the proposed measures listed in the EA and Submissions/Preferred Project Report are adequate and appropriate, responding to the significance of the artefacts uncovered and comments received from registered Aboriginal stakeholders. The Department is also satisfied that the design of the access road and route selection has adequately considered the impacts on Aboriginal heritage. Mitigation measures, including the recommended salvage and recording, may provide some benefits to the general community through the recovery of Aboriginal objects and contribute to the current knowledge of Aboriginal cultural heritage and landscapes in the region. Nonetheless, the Department recommends conditions of approval requiring the Proponent to prepare a Construction Aboriginal Heritage Management Plan inclusive of a methodology and strategies for further salvage (surface and subsurface) and consultation with Aboriginal stakeholders. The DECCW has recommended the Proponent to continually consult with the local Aboriginal stakeholders in the development of appropriate cultural heritage outcomes for the development, including opportunities to collect and salvage any identified Aboriginal objects likely to be impacted. The Department has incorporated the requirements of DECCW in the Construction Heritage Management Plan, as appropriate, which must be developed in consultation with registered stakeholders and DECCW.

§ Technical Report 6.6 of the Proponent's Submissions/Preferred Project Report

Issue	Department's Consideration
	Should any objects of high significance or human remains which are not anticipated in the EA be uncovered, the Department has recommended a condition requiring the Proponent to develop appropriate strategies. This will ensure that the Aboriginal community have sufficient opportunity to provide input into the management of uncovered objects, and in the case of unexpected finds, adequate level of engagement and participation of the Aboriginal community.
Hazards and risks (including mine subsidence and bushfire)	*Mine Subsidence* The Mine Subsidence Board noted that the site is affected by shallow mine workings and there is a history of mine subsidence in the area, including the development of a large pothole on site in 2009, which was subsequently backfilled by the Mine Subsidence Board. Based on this, the Proponent acknowledges that there is a level of risk associated with development of the site and potential for mine roof collapses and has therefore committed to implement measures to manage associated risks. The Department has recommended a condition of approval requiring the Proponent to consult with the NSW Industry and Investment and the Mine Subsidence Board in this regard and comply with any reasonable request from these agencies. The Proponent's commitment to prepare a Mine Subsidence Management Plan will also assist in managing the risk of mine subsidence. *Bushfire Protection* The site is identified to contain Category 1 Bushfire Prone Vegetation under the Cessnock City Council Bushfire Prone Land Map. A Bushfire Protection Assessment was undertaken to identify the level of risk to the facility from potential bushfire hazard and determine the "deemed-to satisfy" bushfire protection requirements for the proposed development and management of the Asset Protection Zones and evacuation protocols necessary to address the bushfire risk. The Department has considered the findings of the Bushfire Protection Assessment and fire protection measures contained in the report as well as the commitments proposed. The Proponent has demonstrated that the proposed bushfire protection measures are compliant with the "deemed-to-satisfy" provisions of the *Planning for Bushfire Protection 2006*, subject to implementation of the recommendations outlined in the Report. The Department is satisfied with the assessment of bush fire risk and notes the Proponent's commitment to implement recommendations outlined in the bushfire protection assessment report. The Department also notes that the RFS' submission stated its support for these proposed measures. *Fuel Storage* The Department's Major Hazards Unit (MHU) has reviewed the proposal and noted that the Preliminary Risk Screening analysis was carried out consistent with the approach outlined in the *Applying SEPP 33 – Hazardous and Offensive Development*

Issue	Department's Consideration
	Application Guidelines. The analysis outlines the proposed inventory of Dangerous Goods and compared this with the total storage quantity against the storage screening threshold of *Applying SEPP 33*, and concluded that the quantity of the proposed Dangerous Goods are well below the screening threshold. The MHU has also advised that the development is not considered to be potentially hazardous with respect to the transport of dangerous goods as the quantity to be delivered and annual movement of dangerous goods are below the thresholds stipulated under the *Applying SEPP 33.* On this basis, the MHU did not consider that a Preliminary Hazard Analysis is required.
Surface Water and Groundwater	The Department is satisfied that the Proponent has demonstrated that impacts of surface water would be minor and that there would be no adverse impacts to water quality and quantity subject to drainage structures and water crossings/culverts being appropriately designed during the detailed design process, and implementation of the proposed mitigation measures. In this respect, the Department concurs with the Proponent's management measures, including the preparation of a Surface Water Management Plan, and its commitment to undertake water monitoring at each of the five Water Quality Control Ponds. In addition, the Department has also recommended conditions of approval in accordance with the Office of Water (NoW) recommendations, which include requirements for the design of waterway crossings within riparian areas. The NoW has requested more frequent monitoring of surface water than that proposed, with additional sampling to be conducted during wet weather events. The Department notes this request and has imposed a condition requiring the Proponent to include details in the Operational Environmental Management Plan on measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to surrounding lands and/or waters. The Department considers that the imposition of this condition would address this concern.
Land use and Properties	With regards to concerns raised by residents regarding potential devaluation of property as a result of the development, the Department acknowledges that both construction and operation environmental impacts may result from the proposal. Construction impacts would be temporary in nature. Whilst there would be some residual operational impacts in some areas, particularly noise and visual impacts, the Department is satisfied that the Proponent's Statement of Commitment, combined with the recommended conditions of approval, would provide a suite of measures to ensure impacts to residents and the environment could be generally managed to an acceptable level in accordance with relevant standards and criteria. Concerns were raised that the project may affect the rural lifestyle of the area. It should be noted that the site and surrounding land is the subject of future development of the Hunter Expressway and Maitland to Minimbah Third Track Project, thus transforming the area into a transport corridor irrespective of the proposed project.

Issue	Department's Consideration
	The Department also notes the planned future development of the Huntlee New Town, comprising a mixed use town centre and over 7,000 dwellings, which, if approved, will also transform the character of the area. However, in acknowledging that the surrounding area will undergo major transformation, the Department, in response to submissions from the public, has recommended conditions of approval requiring the Proponent to prepare an Operational Environmental Management Plan, detailing how the project's environmental performance will be monitored and actions to be undertaken to address identified environmental impacts. The Plan also requires details on complaints handling procedures during operation. The project will generally meet accepted criteria and therefore will not have an unacceptable impact on the receiving environment.
Visual Impact	Some buildings and infrastructure elements may be visible from high viewpoints in the surrounding area. The most prominent buildings on site would be the provisioning faciltiy at nine metres high, with 12 sand storage containers proposed on the rooftop, and the locomotive service facility of 13.5 metres high. The greatest visual impact is expected to be from new housing which forms part of a developing residential area on elevated land towards the southern part of Greta, and elevated sections of the New England Highway, mid way between Branxton and Greta. The project site is clearly visible from the intersection of Cliff and Florence Streets and the visual impact at this location is considered high due to the elevation and clear views to the site. Glimpses of the site are also possible from elevated streets on the north eastern side of the New England Highway. Other view points, including residenital areas in Branxton and the Greta train station, are likely to experience minimal visual impact from the project as in most cases sensitive receivers are shielded by distance of the project to the viewpoints, intervening topography and dense landscaped visual screening. The Department notes concerns raised in private submissions regarding visual impacts on residents at Barracks Close. Residents raised concernes about the construction of an earth mound associated with the access road (proposed for the purpose of noise attentuation), which would lead to the removal of additional vegetation. The Proponent responded to these submissions by removing the noise mound from the project, and replacing it with a two metre high colourbond steel fence, which would result in less vegetation clearing. The Department accepts that this addresses and satisfies the affected receivers in terms of noise, however, has required the Proponent to provide design details of this fence in the Urban Design and Landscape Plan. In terms of potential impacts to the Huntlee development, where future dwellings are likely to be located approximately 450 metres away from the closest facility on site, the Proponent has, demonstrated via further visual impact assessment as part of the Submissions/Preferred Project Report, that despite its higher elevation, the Huntlee development would be screened by existing

Issue	Department's Consideration
	vegetation on rural land for which no proposals to clear are known and in an area which is not likely to be developed in the future. The Proponent also noted that vegetation adjacent to the Hunter Expressway is to be retained as part of the biodiveristy offset requirement for that project. Having reviewed the Submissions/Preferred Project Report, the Department considers that the development, in the context of known surrounding future land use changes, would have a relatively low visual impact. The Department accepts the proposed mitigation measures, including site landscaping and use of appropriate building materials and landscaping to soften the impact of the built form would reduce potential impacts to an acceptable level. Furthermore, conditions of approval are recommended that require the Proponent to prepare an Urban Design and Landscape Plan (UDLP) in consutlation with the Department, Council and local residents, detailing design objectives and standard based on surrounding future land release, landscaping measures to minimise, mitigate and/or offset the impacts of the project on property and other land use within and external to the project site and proposed external materials and finishes of all buildings and structures on site. In addition, given the height of the acoustic barriers adjacent to the access and arrival roads, the Department has recommended the consideration of urban design inititatives and landscaping measures to minimise the impacts of these acoustic barriers.

6. RECOMMENDATION

The Greta Train Support Facility project comprises the construction and operation of a train support facility and associated infrastructure to service and provision rail locomotives and wagons for the Pacific National coal freight business. The Department accepts the need for the project with respect to its function in increasing capacity within the Hunter Valley coal chain by providing an alternative fuelling/provisioning location to meet anticipated demand from an increase in coal freight traffic in the Hunter Valley. In this regard, the Department also considers the project to be consistent with the aims and objectives of relevant State policies, including the *NSW State Plan* and the *Lower Hunter Regional Strategy*.

The key environmental issues associated with the project relate to ecology, traffic and access, noise and vibration impacts, non-Indigenous heritage and air quality. Submissions received on the project raised these issues, as well as other concerns including visual impact and landscape, site suitability and impact on residential amenity.

The Department has considered the Proponent's Environmental Assessment, Submissions/Preferred Project Report, Statement of Commitments and submissions received on the project. Based on its assessment, the Department acknowledges that there would be unavoidable impacts to endangered ecological community and matters of National Environmental Significance, however, based on investigations undertaken to date and consultation with DECCW and DSEWPC, the Department is of the opinion that a biodiversity offset package acceptable to the relevant agencies can be provided by the Proponent.

The Department is also satisfied that

- impacts to traffic and access can be appropriately managed through the preparation and implementation of a Traffic and Site Access Management Strategy and Construction Traffic Management Plan. The RTA concurs with this recommendation.
- noise impacts are assessed to be generally acceptable with the proposed mitigation measures. Furthermore, the site and surrounding land will undergo significant changes resulting from the construction and operation of the Hunter Expressway and Maitland to Minimbah Third Track Project and the planned Huntlee New Town development. As such, the Department is of the opinion that noise generated by operation of the facility could not only be managed to acceptable levels but, over time, would be a minor contributor to the noise environment once the Hunter Expressway and Maitland to Minimbah Third Track become operational; and
- an archaeological excavation program to be undertaken prior to the commencement of pre-construction activities in an area of the Miners' Cottages will provide sufficient information to enable suitable management or recording measures to be developed.

Other issues raised in submissions such as air quality, Indigenous heritage, hazards and risks, surface water and groundwater, land use and properties and visual impacts have been appropriately considered and the impacts managed to an acceptable level. The Department has recommended conditions of approval to complement the Proponent's Statement of Commitments that provide for the mitigation and management of key impacts during the construction and operational phases. These include specific environmental conditions for ecological, traffic and access, noise and vibration, soil and water, heritage, hazards and risk, urban design and landscaping and air quality impacts, to ensure that the project achieves acceptable environment standards, protects public amenity and offsets residual impacts. On this basis, the Department has recommended approval of the project.

On balance, the Department considers the project to be justified and in the public's interest and should be approved subject to the Department's recommended conditions of approval and the Proponent's Statement of Commitments.

14.3.11

Executive Director
Major Projects Assessment

17/3/11

Deputy Director-General
Development Assessment & Systems Performance

Director-General

10/3/2011

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at www.planning.nsw.gov.au.

NSW GOVERNMENT | Planning

APPENDIX B SUBMISSIONS

See the Department's website at www.planning.nsw.gov.au.

NSW GOVERNMENT | Planning

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at www.planning.nsw.gov.au.

NSW GOVERNMENT | Planning

APPENDIX D RECOMMENDED CONDITIONS OF APPROVAL

See the Department's website at www.planning.nsw.gov.au.