Executive Summary

The Wyong Areas Coal Joint Venture (WACJV) proposes to develop an underground coal mine known as the Wallarah 2 Coal Project (W2CP) to the west of the F3 Freeway northwest of Wyong as shown on Figure ES.1. Supporting the proposed underground mine will be two surface facility sites located in industrial areas away from the rural valley areas and a separate air intake shaft located in the Wyong State Forest. The main coal handling and rail loading facility, referred to as the Tooheys Road site, is proposed to be located on the northeast corner of the F3 Freeway and the Motorway Link Road intersection while the ventilation shafts, office and employee facilities will be located to the south of the Buttonderry Waste Disposal Facility off Hue Hue Road.

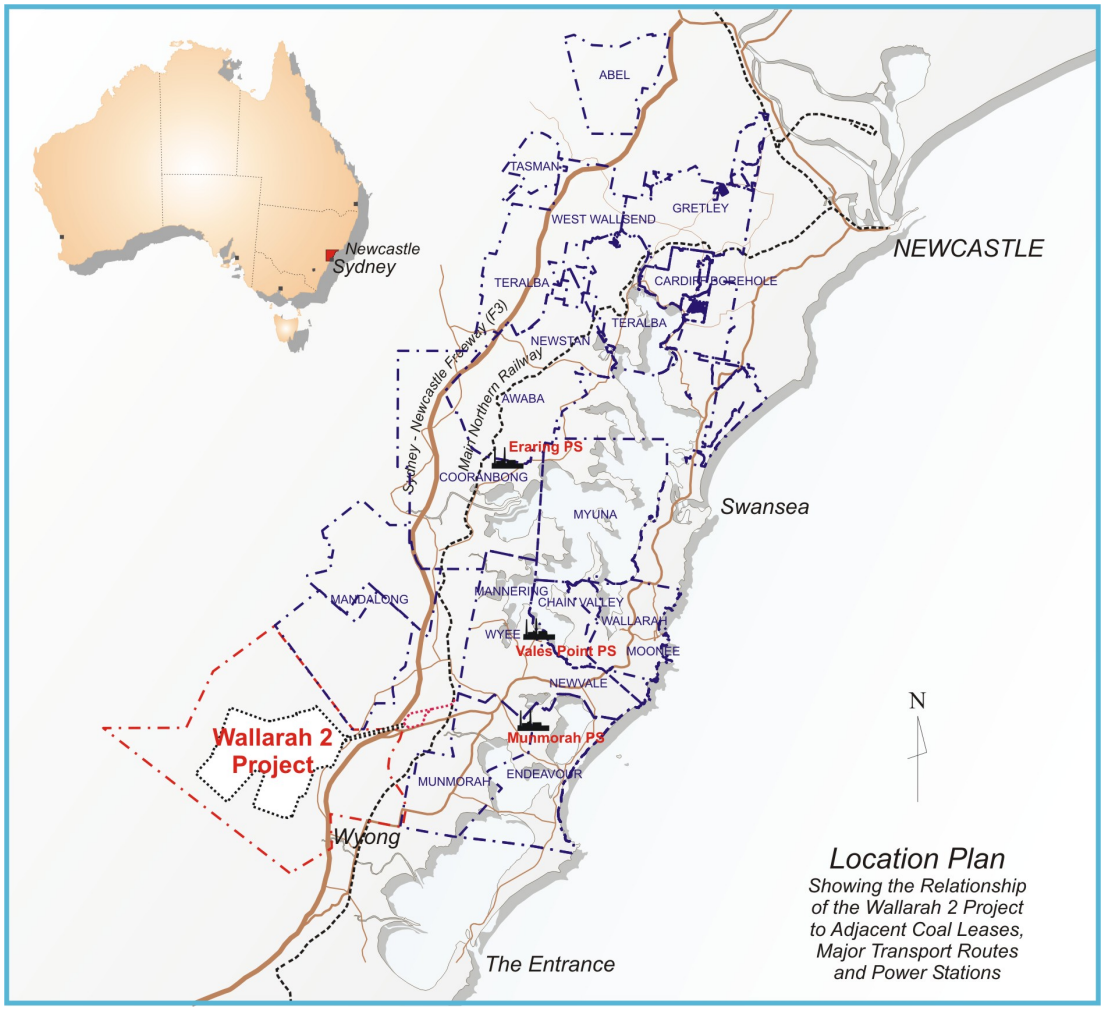


Figure ES.1 Location Plan

The W2CP has been developed in response to the successful tendering for the Exploration Licence from the NSW State Government and is consistent with the requirements of the Department of Industry and Investment (Mineral Resources) for the efficient utilisation of coal resources within NSW. The development can meet environmental objectives and will provide significant economic benefits to the local, State and national economies. In particular, the requirement to safeguard the region's water supply has been integral in the project design.

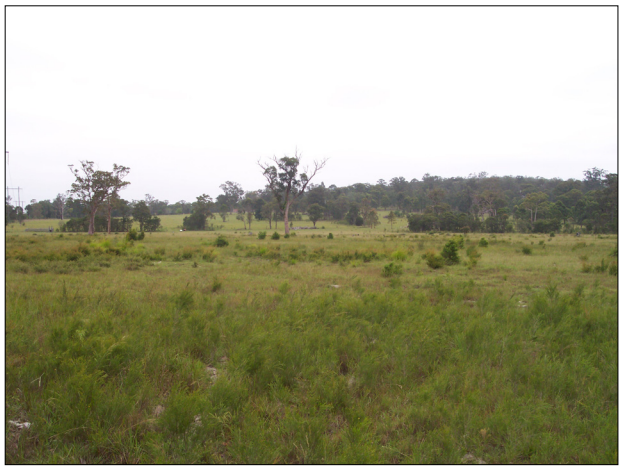
On the basis of the assessments detailed in the various sections of this Environmental Assessment report (EA), the project as proposed provides the option for the lowest impact on the region when compared with other alternative mine plans and surface infrastructure locations and configurations considered for the project.

The impacts of the W2CP will be both positive and negative. Negative impacts have been mitigated by appropriate measures to reduce their impacts on the environment as detailed in this EA. With the implementation of WACJV's environmental management systems and sustainability package, the impacts on surrounding residents, water supply, flooding impacts, native flora, fauna or fauna habitats as a result of the proposed development are considered acceptable. The assessment of impacts has been undertaken within a transparent risk assessment framework which provides confidence that all potential impacts have been identified and have been pro-actively managed and resolved.

The balance between environmental impacts and benefits resulting from the proposal clearly favours the development proceeding.

ES-1 Proposed Development

Two main separate surface facilities areas will be required, one located to the south of the Buttonderry Waste Disposal Facility off Hue Hue Road (photo right) and the second will be located on northeast corner of the F3 Freeway and the Motorway Link Road intersection (Tooheys Road site), shown on Figure ES.2. An additional air intake shaft will be developed by Mining Year 10 within the Wyong State Forest.



The project will involve the extraction of up to 5 million tonnes per annum of export quality thermal coal by underground longwall mining methods. The coal resource is suitable for use in electricity generation. There will be no coal washing plant because coal quality is suitable for both the export and local thermal markets without the need for additional processing. All coal produced will be railed off site, generally to Newcastle for export although some local power station use is envisaged.

The key elements of the project are:

- An underground longwall coal mine;
- A coal handling plant and storage facilities;
- Rail loop and loading infrastructure;
- An underground drift entry;
- Offices, bathhouses and workshops;
- Ventilation shafts; and
- Gas and water management facilities.

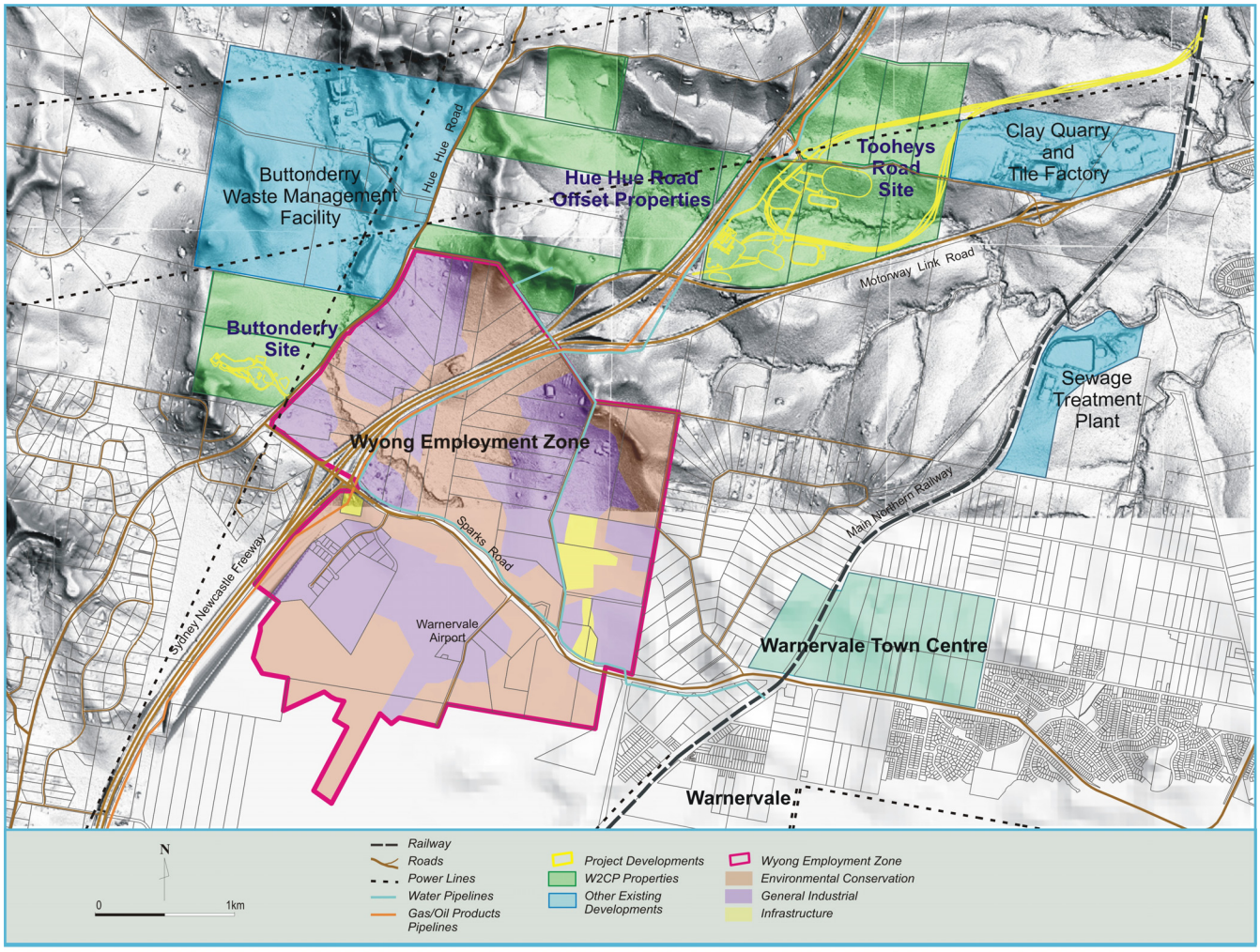


Figure ES.2 W2CP Surface Facilities and Surrounding Land Uses

All coal handling, stockpiling and rail loading will be on company owned land at Tooheys Road between the Motorway Link Rd and F3 Freeway as shown in the photo below.

The main ventilation shafts and main administration and bathhouse buildings will be sited on company owned land near the Wyong Council's Buttonderry Waste Disposal Facility. The future, second downcast shaft site (air intake only) will be located within the Wyong State Forest away from residential areas.

Gas is a normal by-product of coal mining and is harvested to provide safe and well ventilated underground working areas. Gas will be extracted from the mine and brought to the surface facilities by an underground pipeline and will ultimately be used on site to generate power or transferred into the general gas

grid for local consumption. Controlled and enclosed gas flaring will occur in at least the first three years of mining until commercially viable quantities of gas are available for power generation or reuse, as part of the strategy to ensure greenhouse emissions are appropriately mitigated.

Plans showing the two surface facility sites are provided as Figure ES.3 and Figure ES.4 while the proposed mine plan is provided as Figure ES.5.

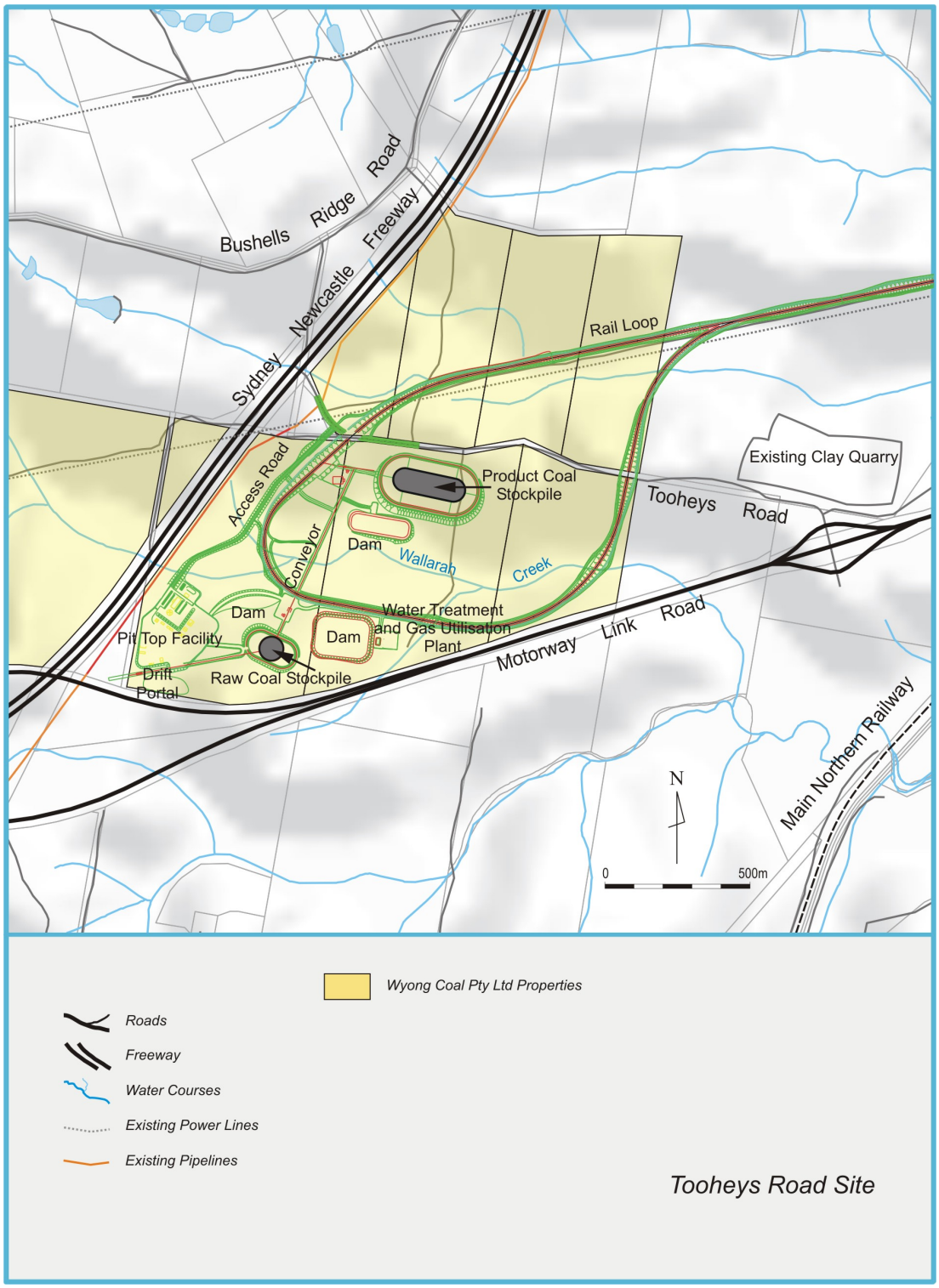


Figure ES.3 Tooheys Road Site

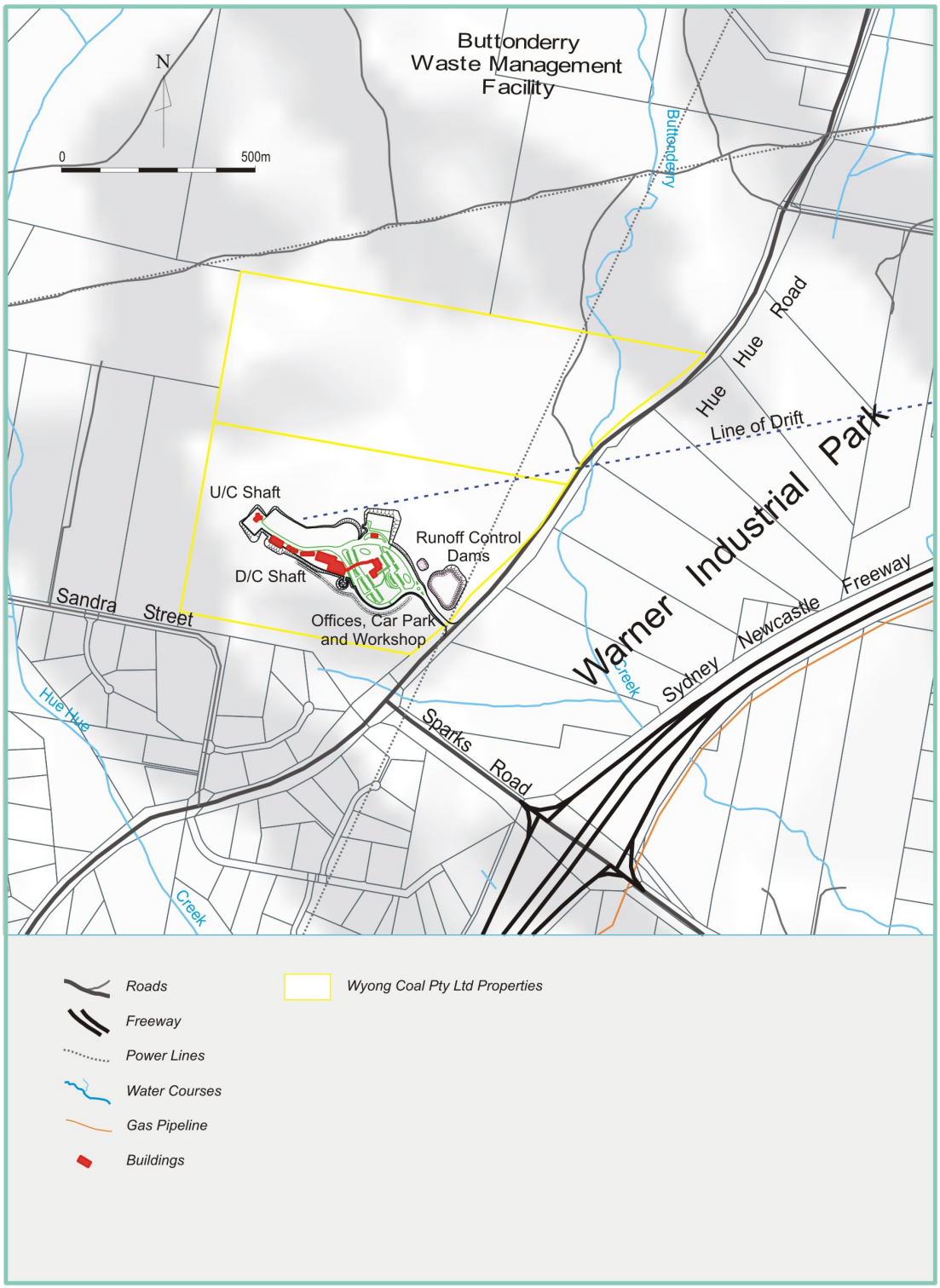


Figure ES.4 Buttonderry Site

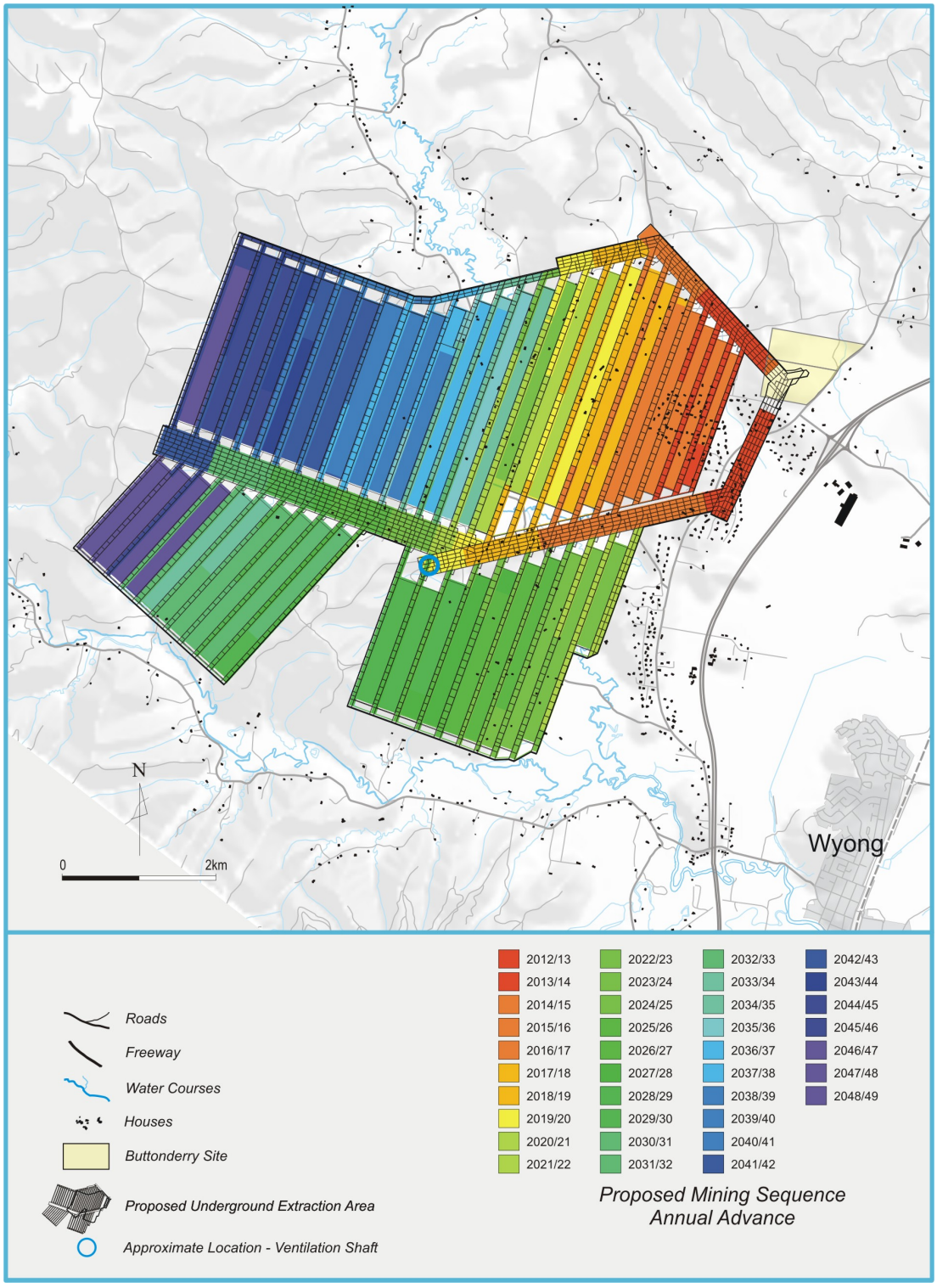


Figure ES.5 Proposed Mining Sequence and Annual Advance

ES-2 Project Planning and Background

The W2CP concept has been progressively developed and iteratively refined over a 14 year period. The first phase involved detailed geological investigations. Twelve separate exploration programs have been undertaken in the Wyong region since the first drilling was undertaken in 1882. Results from 96 pre-existing boreholes formed part of an information package supplied to all companies who tendered to the NSW State Government for the right to explore the Wyong Coal Development Areas in 1994.

W2CP commenced drilling in June 1996 following the award of the exploration rights and was completed in 2002. A total of 352 boreholes (excluding redrills) has been drilled, five of which were large diameter (200 mm) boreholes to provide additional coal quality testing.

The results of this extensive data set were then used to identify minable coal resources within the Exploration Licence area. Two key areas were identified. The first was the current proposed extraction area while the second was the eastern coal reserves deep beneath Tuggerah Lake.

This phase was then followed by preliminary mine planning and engineering studies which allowed financial evaluation work to begin. An economically viable coal deposit was identified and was then subjected to more detailed engineering and environmental investigations. The eastern coal reserves, although of high quality and potentially viable, require significantly greater capital investment and are not being considered further at this stage.

There have been more than 12 separate mine plans and numerous additional variations developed during project planning. Several revisions of the mine plan were required because of the results of environmental investigations. These have included changes in underground panel orientation and location, width of panels, extraction heights, location of main roadways and start and end points for each panel. Each iteration was the result of a combined analysis of subsidence, groundwater, flooding and fluvial interactions on the environment.

The resultant mine plan provides the optimum balance between environmental management, safety and resource utilisation. Environmental issues played a dominant role in the development of the final mine plan and largely dictated the finalisation of the mine plan as described in Chapter 2.

Several options for the design of the surface facilities areas were put forward which optimised coal handling and loading. These were then subjected to environmental investigations including air and noise emissions, ecological and heritage considerations as well as traffic and visual implications. The final design of the surface facilities as described in Chapter 2 has incorporated the results of the assessment process.

Throughout the development of the project, the community and government have been kept informed of the progress. There have been thirteen newsletters with additional factsheets distributed to the community that provided information on development of the project and key environmental studies, several public displays providing information and opportunities for the community to provide feedback. Displays were held at several public libraries and shopping centres as well as the local office. A dedicated website has been developed and presentations provided to

established community groups, government and non-government organisations and there has been general media coverage. A Community Liaison Committee with Government appointed members has held regular meetings throughout the years of the project. W2CP has maintained an open door policy for the past five years which has assisted many local residents and local businesses to gain first hand information on the project.

A key outcome of the ongoing consultation process has been the identification of issues of concern to the community. These issues have been fully addressed in this EA. The risk assessment process has placed a high priority on reviewing the technical aspects associated with issues raised by the community. To this end, this EA has addressed the following key issues:

- Subsidence impacts within the proposed mining area;
- Implications for the local water supply scheme;
- Groundwater issues;
- Flooding within the Dooralong and Yarramalong Valleys;
- Social and economic issues;
- Noise impacts;
- Air quality impacts;
- Ecological issues, and
- Greenhouse issues.

There is a range of other issues which have also been addressed including heritage, visual, traffic, planning, transportation, infrastructure, stream morphology and biophysical issues. These matters have been addressed to the extent necessary to assess the potential impacts of the development. In each case the assessment demonstrated that the project would have implications which are manageable.

The EA process has highlighted issues that require mitigation measures to be incorporated into the proposal so as to reduce impacts to an acceptable level. Where there are residual impacts, the EA has developed a range of offsets, compensation or environmental improvements which form part of the project.

ES-3 Summary of Environmental Impacts

In order to identify and prioritise issues relevant to the W2CP, several risk assessments were carried out as described in Chapter 5. The assessment process commenced at the project inception in 1996 and will continue through the approval process, final design, construction, operation and ultimately closure of the mine. The latest risk assessment was carried out in October 2009 which included the final Environmental Assessment Requirements (EARs) issued by the Director-General of the Department of Planning.

In addition to internal risk identification, W2CP engaged the Central Coast Research Foundation to undertake both community and business attitude surveys which was added to the results of other consultation activities. The results of this work were used to identify and analyse issues of concern to both the local business sector, and the local community. The following sections provide a brief summary of the key issues relating to the project as identified by the risk assessment process and government agencies. More detailed information is contained in the various sections within this EA (Volume 1) while the specialist studies which formed the basis of this work can be found in Volumes 2, 3 and 4.

ES-3.1 Subsidence

The extraction of coal by underground longwall methods, even at the depths proposed of between 345 m and 690 m below the surface, will result in some surface subsidence. Vertical ground subsidence movement can have implications on surface flooding and stream morphology while surface ground strain and tilts associated with this ground movement can have implications on structures and erosion potential in streams. Each of these implications or risks has been assessed and appropriate management initiatives have been incorporated into the project.

The mine plan has been formulated to reduce these effects by incorporating reduced extraction heights near sensitive and constrained areas. For example, the amount of coal to be extracted beneath the Hue Hue rural residential area has been significantly reduced to ensure that surface movement will comply with the levels required within the declared Mine Subsidence District. Houses designed and built in accordance with the Hue Hue Mine Subsidence District criteria should therefore be provided with appropriate levels of structural protection against the impacts of subsidence.

Similarly, when underground mining occurs deep beneath the Dooralong Valley floodplain, which is necessary to access coal reserves within the surrounding State Forest, less coal will be extracted so as to reduce the subsidence effects and to ensure that shallow aquifers are appropriately protected and continue to remain effectively isolated from any deeper, poor quality aquifers within the bedrock.

The Mine Subsidence Board (which is funded by a levy on the coal mining industry) will be responsible for the repair of any damage to surface structures, including houses, should it arise from the effects of subsidence. The Mine Subsidence Board is a service organisation operating for the community in coal mining areas of New South Wales, and is responsible for administering the Mine Subsidence Compensation Act. As part of the ongoing approvals for the mining operation, detailed property inspections will be required for the individual Property Subsidence Management Plans that will be developed in consultation with each affected landowner. These plans will detail the existing condition of all surface structures within a property prior to subsidence occurring. On completion of coal extraction in the vicinity, properties are re-inspected and if any damage is caused by the extraction of coal then it will be fully corrected at no cost to the landowner.

ES-3.2 Local Water Supply Scheme and Groundwater

There has been much concern expressed over the potential for impacts on the Gosford Wyong Water Supply Scheme. In recognition of the importance of protecting the water supply catchment, W2CP has made a public commitment to only propose a mine plan that will safeguard the surface and underground alluvial water regimes, which were issues of concern to the community. The proposed mine plan achieves this commitment.

The W2CP extraction area covers only 5% of the entire combined Gosford Wyong Water Supply Scheme catchment area. This small proportion represents the only area of potential impact to the water supply catchment that may result from the W2CP. The potential impact in this case would be a result of minor alterations to flow of the drainage lines as an effect of subsidence. However, the overall impact to the water supply system is calculated to be negligible. No mining is proposed beneath the Wyong River or key water supply infrastructure such as Mardi Dam, Mangrove Creek Dam or the proposed Mardi-Mangrove Creek Dam Pipeline.

The groundwater study has shown that any effects on the alluvial groundwater system will be minor and transient. The full groundwater modelling has extended well beyond the actual mining area of 37.3 square kilometres in order to determine the full extent of potential groundwater impacts.

Surface water quality is affected by existing land uses such as agriculture and rural residential activities. Erosion and sedimentation impacts also occur within some, but not all, sections of Jilliby Jilliby and Little Jilliby Jilliby Creeks, primarily where there is a lack of vegetation cover on the banks of the creeklines and at existing farm crossings.

Despite the fact that the W2CP will not adversely affect the functions of the water supply catchment but given that the water supply scheme has been recognised as an important issue, the project has developed an outline of a voluntary enhancement scheme designed to assist in improving overall streamflow water quality. This program will include environmental initiatives such as weed eradication, riparian zone plantings and education programs on agricultural water use and maintenance of sewage treatment and disposal systems.

Other water initiatives that form part of the W2CP include treating any surplus saline water which may be encountered by the underground workings to a standard so that surplus treated water can be returned to either enhance the environmental flows of the surrounding waterways, directed to the water supply system or other industrial users. This mine-make water occurs at considerable depth and is expected to be a relatively small amount. It is naturally of poor quality and would otherwise be unavailable to either existing water users or the catchment.

The surface facilities of the mine will include water recycling involving the retention and use of rainwater, water treatment facilities for collected minewater, as well as potential arrangements for the utilisation of treated sewage effluent from the existing Charmhaven Sewage Treatment Plant.

The overall impacts of the project on the water supply scheme will be positive.

ES-3.3 Implications on Flooding

There are 79 dwellings in the Yarramalong/Dooralong study area located within the 1 in 100-year (1% AEP) floodplain. Of these 79 dwellings, 26 would be adversely affected by changes to the flooding regime as a result of subsidence from the W2CP, if mitigation measures were not implemented. A further eight will be negligibly affected and 38 will be beneficially affected. Seven will remain unchanged as a result of subsidence impacts on flood behaviour. Only three dwellings near Hue Hue Creek will be adversely impacted by changes to flooding as a result of mine subsidence and one will be beneficially impacted.

Of those houses affected and in the absence of specific mitigation actions to be undertaken in consultation with the landowners:

- Seven are likely to incur major impacts due to being at greater risk of inundation by major floods after mining in the area is completed (1% AEP or 1 in 100 year flood).

- Ten will be expected to register moderate impacts after mining by having an increased depth of inundation for house floor levels already inundated by these major floods.

- Nine houses are predicted to have minor impacts, which may involve reduced level of freeboard, but not inundation, in these major floods following completion of mining.

The Mine Subsidence Board will be responsible for developing mitigation measures to rectify, reduce or otherwise compensate for increased risk of flood inundation for properties affected by mine subsidence.

Measures proposed to mitigate flood impacts on dwellings include construction of flood levees, raising houses in-situ and relocating or reconstructing houses on higher ground within the property at no cost to the owners. Where impacted dwellings are unable to be protected, raised or moved, properties may need to be purchased or the landowners compensated. Each dwelling will need to be assessed individually by the Mine Subsidence Board and properties where land but not dwellings are affected will also need to be considered.

Measures proposed to mitigate impacts on access routes include raising bridges, raising low sections of roads, and improving the hydraulic capacity of channels in some sections. Studies have shown that all low points can be addressed by moderate road raising. Some works can be undertaken prior to mining in the area so as to access improvements for existing flood conditions.

ES-3.4 Social and Economic Issues

The project will provide significant economic benefits to the Central Coast Region. The project employment policy has set a target to source 70% of its 300 strong workforce from the local region (Central Coast and Lake Macquarie area). The Central Coast Research Foundation has estimated that 2,989 jobs (totalling 5,125 'job-years') are expected to be created on the Central Coast as a result of the mine's three year construction phase. Over 1,800 jobs will be created in the first year of construction alone. In the mine's first year of operation it is expected to generate an additional 428 jobs in the Central Coast economy which will rise to 726 jobs at full production. A further 336 jobs in the Hunter Region will be sustained by the project during operations.

The total potential expenditure in the Central Coast economy from the three years of the mine's construction is expected to be approximately $600 million. This will create a total stimulus to the Central Coast economy of over $1 billion during the construction phase. On top of this will be significant ongoing direct expenditure and flow-on effects to the local economy in the order of $200 million per annum during the mine operation. Total revenue to Governments over the life of the project will be over $1 billion.

The project has developed a Community Enhancement Program (CEP) that will be funded by the project owners and which involves specific works and actions to benefit the local community directly. The main component in the CEP is the development of a Community Trust which will be engaged in local community projects within, and immediately surrounding, the project site and mining area. While a Community Trust Advisory Group has been established, the final details of the Trust program and the broader CEP remain to be negotiated. An outline of the proposed CEP elements is provided in Table ES 1.

The Community Trust will be chaired by an independent person nominated or agreed to by the Department of Planning. Trust members will be appointed from the local community, businesses and non-government organisations.

CEP Element	What this involves	How this be funded
Community Trust Projects	Wallarah 2 Coal Community Trust to be established to manage and implement projects funded by W2CP contributions	Start-up funding plus coal production-related contributions for first 10 years of production. The Trust program to be reviewed for extension after 10 years of coal production.
Local Environment and Biodiversity Management	On site and offsite measures and actions set out in the Biodiversity and Land Management Strategy (refer to Section 13.1.16)	Annual cost in cash or kind each year following commencement of construction, for 5 years.
Work-Ready and Training Development	Work-ready and training development for committing to train new project employees in the region and to support local employment initiatives	Annual cost in cash or kind each year following commencement of construction, for 5 years
Community Infrastructure	Contribution to funds for selected key project(s) listed as a priority item in Council's Management Plan, to be negotiated with Council according to State Government guidelines.	This is an upfront payment following commencement of construction of the approved project.

The proposed Community Enhancement Program will be tailored to the needs of the local community directly affected by the proposed W2CP. By managing the environmental amenity of the project area and the immediate surrounding areas, a balance will be achieved between the main economic beneficiaries being the State of NSW and the wider Central Coast Region and those more directly affected by the mine.

ES-3.5 Noise Impacts

Noise modelling has been undertaken for each of the surface facilities areas for the various prevailing weather conditions. The modelling has shown that the Buttonderry site will meet all noise assessment goals specified under the NSW Industrial Noise Policy. Noise controls on the ventilation fans include physically directing the exhaust mine air away from the residential receptors (directed generally to the north and northeast towards the Buttonderry Waste Disposal Facility and Hue Hue Road), enclosure of the fan motors and baffling of the evase of the fan.

The Tooheys Road site has also incorporated a number of noise controls including partial enclosure of the crushing and screening equipment and acoustic treatment of the mobile plant. The modelling has shown that the project specific noise assessment goals are satisfied under all meteorological conditions. Operational noise levels at Blue Haven are predicted to be less than 35dBA under adverse westerly wind and temperature inversion conditions.

Noise modelling has shown that the increase in road vehicles generated by employees and development activities satisfies the noise assessment goals. The additional coal trains are predicted to not increase the existing L_{Amax} levels along the Main Northern Rail Lind while and the existing L_{Aeq} 24 hour levels would increase by 1.4dBA. Noise generated from construction activities has the potential to exceed the project noise assessment objectives. These activities are transient and will be subject to detailed planning and contractual obligations of the construction contractor.

A Noise Management Plan will be prepared for the mine which will cover both construction and operational phases. The Plan will identify and address noise impacts for potentially affected properties and include a monitoring program, noise mitigation measures and noise management practices. Input from the selected construction contractor and specific additional management controls for the construction program will be included when available.

ES-3.6 Air Quality Impacts

Atmospheric modelling of both construction and operational dust and odour emissions has been undertaken for the project. Concentrations of dust and deposition rates of dust from the construction phase of the project are predicted to be well within the Department of Environment, Climate Change and Water's (DECCW) air quality criteria.

During the operational phase of the project, air quality impacts for particulate matter are in compliance with long-term goals as well as short-term 24-hour PM_{10} goals. The emissions of fine particles (PM2.5) and silica were also modelled and found to readily comply with relevant criteria in all offsite receptor areas.

There will be no measurable environmental effect due to the emissions of greenhouse gases from the Project even when the customer's use of the coal is taken into account. The project will undertake methane gas predrainage and capture for initial flaring to significantly mitigate greenhouse emissions. This initiative will be augmented by utilisation of the gas for offsite supply or onsite generation of electricity during full mine production.

ES-3.7 Health Issues

The W2CP has been assessed in terms of the likely risks to various health outcomes. The risk factors used in the analysis have been developed using research results from the last decade on the health effects of particulate matter on human populations in urban areas. Risks of exposure to airborne silica have also been considered along with health risks due to noise and any predicted effects on drinking water.

The analysis provides estimates of the increase in daily mortality due to atmospheric emissions from the mine at the most affected receptor on the worst day. In addition estimates are provided on the increase in daily hospital admissions that could be expected from the most exposed individual due to emissions from the project on the worst day. The estimates are based on atmospheric modelling of a range of parameters which has demonstrated that the project will comply with emission criteria established by DECCW.

The increase in risk of daily mortality on the worst day in the life of the mine is estimated to be 1 in 16.3 million. This is a small risk. Increase in risk for hospital admission is also low as is the health risk from exposure to silica.

Although there is no theoretical mortality data for noise exposure, the assessment provided in this EA has shown that the project will comply with established criteria relating to human disturbance and responses to external noise. The assessment included both onsite noise sources as well as road and rail traffic.

The assessment of the risks on drinking water revealed that the current water quality of Jilliby Jilliby Creek within the mining area is typically poor. Although the mining activity will not influence water quality either directly or indirectly, the project has included a commitment to work with the relevant water supply authority to improve the existing data base on water quality and catchment yield during the life of the project. This data base will include surface and subsurface water flows, rainfall data and water quality.

ES-3.8 Ecological Impacts

The surface facilities have been designed and located with a view to minimise vegetation disturbance including both clearance area and habitat fragmentation.

The primary impact of the proposed W2CP surface facilities will be the removal of 4.54 ha of the existing 56.59 ha of native vegetation (8%)at the Buttonderry study area, 17.27 ha (of 261.97 ha) of native vegetation (6.6%) at the Tooheys Road study area and 0.92 ha of native vegetation within the Wyong State Forest. Cumulatively, W2CP direct impacts will be removal 22.37 ha of native vegetation plus any further clearing that may be required for rail spur construction which will depend on detail design. Up to an additional 10 ha of native vegetation will also be removed within mainly Darkinjung Local Aboriginal Land Council land adjoining the TransGrid transmission line easement adjacent to the Tooheys Road site for the purpose of constructing the proposed rail spur linking the rail loop to the Main Northern Line.

The project will have no significant impact on the vast majority of flora and fauna species, communities and habitats identified during a series of comprehensive studies and surveys. There will be a direct impact on a limited number of rare species due to the development of surface facilities however these impacts can be mitigated and are not considered to be significant. The directly impacted species include part of the local population of *Angophora inopina* which represents an “important population” at the limit of its distribution, and part of the local sub-populations of *Tetratheca juncea*.

In terms of fauna, there are potential for impacts on the Squirrel Glider and the Wallum Froglet, with the impact on the latter being mitigated by the protection measures proposed for Wallarah Creek and a paperbark swamp wetland area at the Tooheys Road site. . As well as designing the surface facilities to be able to minimise vegetation and habitat disturbance, a range of biodiversity management measures are proposed to ameliorate these potential impacts, including revegetation strategies and specific fauna protection initiatives to be undertaken during the construction stage.

All other impact assessments undertaken for identified threatened species concluded that the proposal would not have a significant impact on the threatened species or populations.

WACJV owns approximately 115 ha of higher conservation value forested land that will not require disturbance as part of the development proposal. These lands lie generally between the Buttonderry and Tooheys Road sites. There is an additional approximately 318 ha of forested land within the company owned development areas that would also not be disturbed.

An ecological offset strategy for the estimated total loss of approximately 33 ha of existing native vegetation will be developed. Although it is proposed to offset an area of approximately 50 ha of existing native vegetation on lands currently owned by the WACJV, a more comprehensive biodiversity land management strategy that takes into account other aspects of the project in order to provide real and enduring benefits to the wider environment also forms part of the project. The main elements of the strategy are discussed below.

Securing 50 ha compensatory offset area of higher value existing native vegetation on WACJV landholdings between the Buttonderry and Tooheys Road surface facilities areas is proposed to provide enduring environmental benefit. This area is proposed to be protected by a permanent land covenant registered on the land title.

The main purpose of this land dedication is to link in with other vegetated land to the south and south west of the Tooheys Road site as well as to the north of the Buttonderry site. This vegetated corridor will be enhanced by active management of dedicated land and will provide a long term fauna corridor in the region consistent with the aims of regional planning strategies.

Remaining vegetated areas within the project facilities sites will be actively managed for ongoing conservation purposes. The area will also serve as a buffer around the facilities to minimise visual impacts. The nominated conservation lands include 12 ha along Wallarah Creek within the Tooheys Road site which will be subject to active management to increase its habitat value and a further 6 ha area nominated for specific revegetation works for *Angophora inopina.*

There are also large areas within the infrastructure sites which represent good quality grazing land. The remaining grazing land around the Buttonderry site is currently zoned for agricultural purposes and will remain as such. However, riparian vegetation of Wallarah Creek which flows through the Tooheys Road site will be actively managed for conservation purposes. Specifically, this zone will be enhanced by the removal of existing weed infestation and replanting with compatible native vegetation. On-site seed collection programs have commenced to facilitate future planting strategies.

WACJV will also develop, in consultation with landowners and catchment authority, a riparian zone enhancement program along Jilliby Jilliby Creek. This program will be designed to improve water quality and riverbank stability by a combination of weed removal and new plantings.

These ecological enhancement projects will fall under the Wallarah 2 Coal Community Enhancement Program (CEP) which will be funded by the project owners.

ES-3.9 Archaeology and Heritage

A series of archaeology and heritage assessments was prepared for the surface facilities sites, other proponent owned land and the underground extraction area. Although no sites were recorded in the Tooheys Road study area, zones of

archaeological sensitivity were delineated along Wallarah Creek and a tributary of Spring Creek. There are several points at which the project intersects with areas assessed as archaeologically sensitive. Although the archaeologist recommended that these areas undergo test excavation and monitoring during construction works, the additional work has been brought forward and will be undertaken during the project assessment phase so that the results will be available prior to project determination. As well as continuing to participate in this upcoming text excavation and any other future survey work, Indigenous representatives will also be present during the earthworks phase of the construction program to ensure that any previously undetected archaeological material is appropriately managed.

Five archaeological sites (axe-grinding grooves) were identified within the mining subsidence area and these were assessed in terms of predicted subsidence, tilt and curvatures (strains). There are likely to be other archaeological sites within the mining area and these will need to be assessed during further archaeological investigations required under the Subsidence Management Plan process. For currently known sites, the subsidence assessment concluded that the likelihood of significant impacts is low.

The assessment also included all known European heritage sites which included dwellings, silos, buildings, bridges and other structures. Each individual item was assessed in terms of potential impacts from subsidence. The results showed that the impacts would be manageable in accordance with established procedures including mitigation measures. Any damage to these structures will be repaired by the Mine Subsidence Board at no cost to the owners which includes those items under public ownership.

ES-3.10 Land Use and Local Planning

It is evident that the proposal is compatible with the strategic planning for the region which has recognised the importance of the location for resource extraction and employment generating purposes since the 1977 Structure Plan through to the 2008 Central Coast Regional Strategy.

The surface facilities are ideally located. The Tooheys Road site which will contain the main coal handling and rail loading facilities is remote from major current and future residential areas. Between these areas and the site there are intervening existing and planned industrial land uses, road and railway infrastructure and a sewage treatment plant. The site is zoned for industrial purposes. It is expected to be compatible with the North Wyong Planning Strategy and will be demonstrably complementary to the Wyong Employment Zone.

Being located adjacent to the F3 Freeway and Motorway Link Road, the Tooheys Road site will be partially visible to passing motorists, however these fleeting views will progressively reduce and ultimately will become obscured by proposed landscape works.

The Buttonderry site will be predominantly an office and carpark, which will be complementary to planned commercial land uses associated with the Wyong Employment Zone located directly opposite. The site is located to the south of the existing Buttonderry Waste Disposal Facility and is sheltered from residences to the west by intervening topography.

The Buttonderry buildings will be architecturally finished and landscaped and considered entirely complementary with other proposed commercial development. It

is therefore not considered necessary to provide extensive tree screens along Hue Hue Road but site landscaping nevertheless will be undertaken which will provide improved screening.

ES-4 Statement of Commitments

Wallarah 2 Coal Project has provided a Statement of Commitments which is detailed in full in Chapter 16. This statement provides for specific planning and design features, operational controls, water supply safeguards, environmental management measures, socio-economic initiatives and community project funding programs. Clearly the ability for W2CP to implement these commitments is subject to the project obtaining a satisfactory project approval, including related licences and leases, and these being acted upon.