

25 June 2017



Submission on Behalf of Battle for Berrima – Hume Coal Proposal and E.I.S.



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1. Introduction and Executive Summary

This submission was prepared by Perica and Associates Urban Planning Pty Ltd, in association with Battle for Berrima Inc. ("B4B"), a non-aligned community organisation incorporated under the *Associations Incorporation Act 2009*, as a submission objecting to the "Hume Coal" Proposal and associated Environmental Impact Statement ("EIS").

This submission should be read in conjunction with a separate submission from others, outlines in this submission.

After a full, balanced and objective consideration of the proposal from a number of perspectives, it is clear the proposal should be refused. The key reasons to support this conclusion are:

- (a) There are significant and adverse environmental impacts arising from the proposal, including impacts on groundwater, contamination of ground and surface water, scenic impacts, heritage impacts on Berrima Township and region, subsidence, air quality, flora and fauna impacts, Aboriginal impacts, safety impacts from road and rail conflicts and potential downstream adverse impacts related to the increased use of the rail freight line;
- (b) The proposal will have adverse impacts on the social fabric of Berrima town, arising from a temporary spike in workers and distortions to organic and sustainable growth and demand;
- (c) The proposal will have adverse economic impacts on Berrima and region, due to a direct impact on attractiveness for tourism to the town (and region), as well as wider adverse economic impacts from diversion of crucial water resources;
- (d) The economic "benefits" of the proposal are minor, temporary and not directed to appropriate sustainable development for the region and State, while such overall "benefits" are significantly outweighed by the wide range of dis-benefits;
- (e) The proposal compromises the sustainable economic growth of Berrima and the Southern Highlands region, which should concentrate on sustainable complementary growth and diversity, building on unique and

key assets related to the scenic qualities, tourism and agriculture of the area;

- (f) The proposal will result in significant increased greenhouse gas emissions, in light of recent data showing that in 2015 NSW increased greenhouse gas emissions, despite State, national and international desires to arrest growth in greenhouse gas emissions;
- (g) The proposal does not achieve rational and orderly development nor sustainable development, both of which are key Objects of the Environmental Planning and Assessment Act 1979;
- (h) There are numerous uncertainties related to the proposal, including reliance on another consent and other parties, a lack of security and certainty regarding water licenses, the unknown and untested proposed "pine and feather" mining, subsidence (including to the National Highway); the degree of contamination; the ability for the rail line to cope with significant increases in load and use; the coal industry and feasibility generally (given world-wide trends away from coal and unknown impacts arising from other proposals); whether royalties will be realised; ability to mitigate against harm, the lack of a biodiversity offset package; the lack of a VPA and a questionable ability to rectify and make-good the land. These uncertainties are significant and warrant a "precautionary principle" to be applied, and the proposal not to be supported;
- (i) There is significant opposition to the proposal and granting consent in light of such opposition, as well as the numerous impacts and uncertainties of the proposal (even using the applicant's assumptions), are such that granting consent would not be in the public interest;
- (j) The proposal is the antithesis of what is socially, economically and environmentally appropriate for the area and region. Growth should provide support for existing business, opportunities that enhance the scenic qualities unique to the region, tourism, education and service industries. Future growth and opportunities should be directed to complementary, sustainable industries that create diversity to the area and region, not ones that cause significant adverse impacts, work against the qualities and assets of the area, provide arguable and temporary benefits for other markets and leave a long-lasting negative legacy for future generations.

2. Other Related Submissions

Battle for Berrima (B4B) has also co-commissioned the following study:

Statement of Potential Heritage Impact, Ms Colleen Morris, June 2017.

This report assesses the cultural landscape, significance of items and the area as a whole and prepares a draft Statement of Heritage Impact of the proposal. The report finds “A substantial area will be transformed from a pastoral landscape into an industrial landscape with buildings, stockpiling of coal, coal-loading, and a railway extension. Here the cultural landscape will be irrevocably changed.”, and “this proposal is located in undulating land overlooked by a number of viewing points across the landscape from hills and highpoints and the Hume Motorway. Views across what is now a rural landscape will be negatively impacted”. The report concludes “the proposal will impact on the cultural significance of the rare and substantially intact Berrima, Sutton Forest and Exeter cultural landscape to an unacceptable extent”.

B4B is also aware a number of other reports or studies have been commissioned by others, including:

1. ***Coal in the Southern Highlands Economy***, Australia Institute, March 2015

This report was commissioned by the Southern Highlands Coal Action Group and opens: “Mining has a long history in the Southern Highlands, but plays a small role in its economy today”. Agriculture is stated to employ 6 times that of mining and the main employment industry is services and this is likely to be negatively affected due to groundwater resources. The report poses issues and questions about benefits derived from mining generally and in the southern highlands specifically. It concludes “By any measure, coal mining’s current and potential contribution to the Southern Highlands economy is minor”.

2. ***Hume Project: Sutton Forest Coal Exploration Licence EL 349 Groundwater Study***, Southern Highlands Coal Action Group, Pells Consulting, The University of New South Wales, Department of Environment and Civil Engineering, Water Research Laboratory, September 2013, December 2013, April 2014

This report assesses the impact on groundwater (prior to release of the EIS. The contents and approach are relevant, despite pre-dating the current EIS. The report estimates the drawdown, concludes it will be significant and

require compensation (which is accepted by the proposal) and realisation of the water licenses is “doubtful”. This remains the case.

3. Berrima – An Overview

3.1 Economy and Tourism

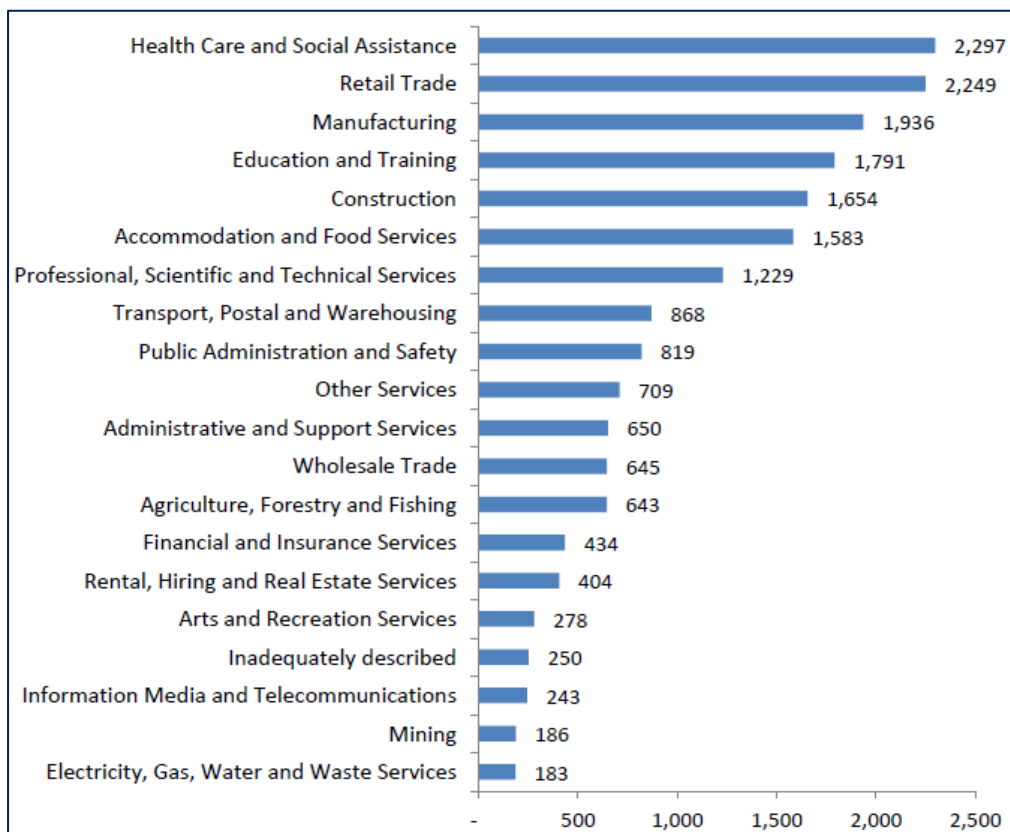


Figure 1 – Employment industries in the Southern Highlands (source: *Coal in the Southern Highlands Economy*, Australia Institute, March 2015)

2016 Census details have not been released yet, although there are some high level statistics until 2015 compiled by the Australian Bureau of Statistics (“ABS”). As shown above, the Mining industry is a small employer, and will remain so if the proposal goes ahead, even if the figures in the EIS are realised despite ongoing modernisation and technology seeking to reduce recurrent labour costs in repetitive tasks.

Tourism is not separately tracked in ABS data. However, accommodation, food services and retailing accounts for 21% of the employment in the Moss Vale – Berrima Statistical Division (2011), SA2, compared to 0.8% for mining. Agriculture, forestry and fishing accounted for 3% of employment in 2011 (Source: ABS). There were 3

businesses operating in Mining in 2011 and this has declined to zero in 2015, so the total contribution to employment numbers is expected to be little changed if the proposal is approved.

The southern highlands is home to many businesses, operated by people living locally. There is a vibrant tourist economy, encompassing hotels of international standard, 5 star accommodation, bed and breakfasts, guest houses and farm stays. These business depend on both clean water and the attractiveness of the landscape and image of the area for business. There are over 1000 accommodation facilities in the southern highlands catering for tourists and over 50 accommodation places in Berrima alone (source B4B).

The high level figures tracked by ABS show there is relative stability in the businesses across various sectors in the Southern Highlands (although mining has reduced). The figures show a variety of industries exist and many are dependent on clean water.

3.2 Heritage

There are 65 heritage items listed in Berrima within Wingecarribee LEP 2010. Eight (8) heritage items are listed in the proposed project area. An extraordinarily high 16 properties are listed on the State Heritage Register, being items which are significant to the State of NSW.

The township is listed as a Heritage Conservation Area in WLEP 2010. In Berrima Village Development Control Plan, this Conservation Area is broken into 10 precincts.

The surrounding area is also listed as a Heritage Landscape in WLEP 2010.

Berrima is widely recognised as the best preserved example of a Georgian village on the Australian mainland.

A fortunate series of events created Berrima, as 1831 to the 1860s was a time of promise and growth, which came to an abrupt end when the railway bypassed the village in 1867. For the next hundred years there was little or no development in the village (source: Destination NSW: Berrimavillage .com.au).

Berrima Precinct Boundaries

Precinct Number

- Precinct 1 - Market Place
- Precinct 2 - Surveyor General
- Precinct 3 - Breen and Taylor Inns
- Precinct 4 - Goal and Courthouse
- Precinct 5 - Central Oxley Street
- Precinct 6 - Harpers Mansion
- Precinct 7 - West Oxley Street
- Precinct 8 - Northern Entry
- Precinct 9 - Southern Entry
- Precinct 10 - Sutton Street

Precincts of the Berrima Conservation Area

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Berrima Town has obvious heritage significance. It is a unique town with highly intact areas dating from the Colonial period, which is internationally rare. It is understood a nomination for the whole town's listing under the NSW Heritage Act 1977 has been made. The heritage significance and intactness of Berrima town, and the scenic surrounding area, contribute to its attraction to tourism, with over 50 accommodation places in Berrima. The attraction is recognised by the State, with the Historic Town logo on Highway street signs (apart from the local sign below).



The Statement of Potential Heritage Impact of the proposal by Colleen Morris finds the Berrima township and surrounding landscape has "historic significance at State level". Given the nature of the place, and the State and local statutory listings, this is hard to dispute.

3.3 Demography and Social Infrastructure

ABS data shows that the population in Berrima-Moss Vale increased from 4,467 to 4631 between 2011 and 2015 (an increase of 4% over 4 years or around 1% per annum). This is similar to the overall growth in Australia and higher than trends in other regional areas, given most growth is concentrated in cities. There was an increase in both 0-14 year olds as a percentage of the population and those aged over 55. This indicates not just retirees, but families moving the region.

The trend can be expected to continue if not increase, given rising property prices in Sydney and the locational advantages of Berrima (80mins from Sydney, 100mins from Canberra and 50mins from Wollongong).

There is limited social infrastructure in the Berrima Town. There is one public school, Berrima Public School, which is a primary school (K-Year 6) which is at capacity. No out-of-area places are being taken. The school has 138 students, and combined year

3-4 and 5-6 classes. Recent enrolments (17 Kindergarten and 19 Year 1) show continued demand. The nearest public high school is at Moss Vale. Other public schools exist at Bowral, Moss Vale and Mittagong, although are understood to be in high demand.

There are renowned private schools in the area: Chavalier College and Oxley College in Burradoo; Frensham in Mittagong; St. Pauls International College in Moss Vale and Southern Highlands Christian School in Bowral.

There is a TAFE facility at Moss Vale and a University of Wollongong Campus at Wollongong. The nearest major university is in Wollongong.

Education is an important local and export industry and is no doubt supported by the clean, pristine and scenic qualities of the area.

There are no Childcare places at Berrima.

The nearest major public hospital to Berrima is at Bowral, around 8km away (which has a joined private hospital).

There is a general lack of emergency services at Berrima, although there are Police (Bowral), SES (Mittagong), Fire (Bowral, Moss Vale, Mittagong) and ambulance services (Bowral) in the region.

A key issue will be the temporary spike and impact on services for a short duration, for construction and operational workers. For construction workers, the EIS estimates 90% (373 people) will be from out of area, but will demand local services, despite the proposed temporary on-site accommodation.

4. Strategic Context

4.1 Regional Diversity, Growth and Employment

There is a Council target of 8,000-10,000 jobs in the region by 2031 (2031 Community Strategic Plan), based on wider State estimates for growth and more importantly the expected impact of automation and technology.

The strategic direction for sustainable growth led and initiated by the Council while having regard to wider strategic directions is to encourage growth in 10 industries, with associated aspirational goals:

- 1 Water (300 jobs)

- 2 Food (2,040 jobs)
- 3 Shelter (250 jobs)
- 4 Energy (300 jobs)
- 5 Transport (160 jobs)
- 6 Technology (400 jobs)
- 7 Art (300 jobs)
- 8 Recreation (250 jobs)
- 9 Business, including tourism (5,500 jobs)
- 10 Learning (500 jobs)

There are important implications of this for the Hume Coal proposal:

- (a) The jobs to be provided, apart from being temporary, are very minor in a strategic context;
- (b) The industries of choice for the area, based on sustainable growth, have a dependence on clean water, water resources generally, scenic qualities and the clean image of the area;
- (c) The “jobs gained” need to be considered against the potential jobs lost, particularly by diverting precious groundwater resources;
- (d) Business and tourism are a key drivers for employment and at a strategic level, these are compromised by the proposal (with employment targets well over 10-fold that provided by the temporary employment from the proposal);
- (e) Coal forms no part of the strategic employment growth for the area.

It is interesting to note the Council's 2031 strategy recommends to “*Develop and implement a comprehensive Tourism Strategy for the Southern Highlands, based on the unique Southern Highlands brand of climate, horticulture, recreation, landscape and heritage*”. This is an understandable and somewhat obvious aspiration, knowing the attributes of the area.

At a practical level, it is understood weddings and conferences are seeing increased attention and investment, again due to the scenic (and heritage) qualities of the area and the rural landscape. The attractiveness of the area is important in current investment decisions.

4.2 Water Supply

The area is a pristine water catchment area and contains a pristine natural underground water aquifer (where there is protection from porous covering Hawkesbury Sandstone containing ferrous and salts). This water supply is for the use of the surrounding agricultural land and its people in surrounding towns and the villages

(Berrima, Exeter, Sutton Forest, Moss Vale, Bowral Bundanoon, Burrawang, Fitzroy Falls, Belmore falls, Medway, Penrose, Robertson and Canyonleigh).

With global warming and the cyclical draughts (as well as population growth), it is a likely future water supply for the Sydney Basin and Southern Illawarra districts. Careful decision-making is warranted in this strategic context.

4.3 Scenic Qualities

A strategic difference for the region is its rolling hills, rural landscape, scenic qualities and quaint towns containing many heritage assets. This creates a “green and clean” image, which is a strategic advantage for business and general growth in the area. Coal extraction, large mounds of waste, dust and long coal trains conflict with this natural strategic quality.

As stated on the NSW Government website (Destination NSW):

Discover the rural delights of the beautiful Southern Highlands, from cool-climate wines and fresh seasonal produce to gorgeous gardens, spectacular waterfalls and wonderful national parks. Enjoy idyllic walks in the fresh country air, visit cellar doors for wine tasting, and explore colonial heritage.

Getting to this picturesque region in Country NSW is easy. The drive from Sydney to Bowral is 90 minutes and under two hours from Canberra. You can travel by train, too. Perfect for day trips, weekend escapes and longer sojourns, you'll find many things to do and tours throughout the year

4.4 Carbon Emissions

Due to the well-established science behind global warming and greenhouse gas emissions, responsible countries are taking serious steps to arrest an increase in carbon emissions. 195 countries have signed the Paris Climate Agreement (ratified by 148 countries).

In a worrying statistic, Australia saw an increase in carbon emissions in the year to March 2015 by 1.5% in electricity generation emissions (accounting for one third of emissions) – source; Sydney Morning Herald, reference to Dr Hugh Saddler from Pitt and Sherry.

With changes to land clearing rules, there is a worrying strategic direction for increased carbon emissions and greenhouse gas for NSW. Continued coal extraction for “old technology” electricity production (while acknowledging coking coal

components in the proposal) is contrary to responsible strategic directions in tackling climate change.

4.5 Coal Industry

There are a number of factors that weigh against extracting coal direct to foreign markets into the future:

- (a) The need to arrest carbon emissions;
- (b) Decreased global demand;
- (c) Significant increases in renewable energy investment;
- (d) Changes in prices and therefore uncertain feasibility;
- (e) The impact of China on demand, and basic economics that assumptions based on continued growth are history-bound to fail;
- (f) The impact of other large scale proposals on coal price and feasibility (e.g. Adani); and
- (g) The likely realisation (hopefully) at some point in the near future of the benefits of value-adding to Australia's finite resources, rather than exporting raw materials, or worse allowing foreign companies to own finite resources, key infrastructure and directly export to their country of origin.

4.6 Technology

The Committee for Economic Development Australia (CEDA) in its major research report for 2015, "Australia's Future Workforce?" states there is a high probability that 40% of Australia's workforce, more than five million people, could be replaced by automation within the next 10 to 20 years.

Key industry targets of automation and decreasing labour are those that:

- (a) Have large-scale yet repetitive processes;
- (b) Involve large upfront investment, with consequent need to provide a return for capital as soon as possible; and
- (c) Pose some safety threats to humans.

Coal mining fits these criteria arguably more than most others. The increased size of machinery and automation is a key economic driver. These strategic directions

mitigate against employment realisation in the medium-long term, particularly for a mining technique that is new and untested/unknown.

5. Proposal and Key Uncertainties

The Proposed Hume Coal Project is estimated to produce 50 million tonnes (mT) of excavated coal from its underground mine over an area of 50.5 sq. kilometres of underground tunnelling, using a “Pine and Feather” technique untested in Australia and directly resulting from concerns with subsidence and water contamination. Of the 50 Mt, 39mT or 78% will be saleable (55% metallurgical and 45% thermal). The remaining 22% will be unsaleable, stored and injected back into the mine. The expected mine life is 23 years.

The multinational firm POSCO intends to move the coal along the existing Moss Vale Unanderra rail line to the Port Kembla on the east coast of NSW, with a proposed extension that involves other parties (including a rail section owned by a separate company, BORAL, and involves a separate SSD application). A separate “Part 5” approval is also contingent for electricity supply.

The above-ground storage area appears approximately 800m long and 6 storeys high.

The proposal will cause significant impacts on the groundwater level, which triggers compensation. 93 groundwater wells will be affected. Not all the water needed for the proposal has been secured (only around 60%, using the applicant’s figures).

This submission argues that the proposal should be refused based on known information.

However, despite numerous well-considered reasons to not support the proposal on known information, it is submitted there are many uncertain matters, such that the proposal should not be considered or approved based on these uncertain matters alone.

There are numerous and serious uncertainties regarding the proposal, including those summarised below:

(a) Reliance on another consent and other parties:

The proposal relies on consent for another separate application (the rail line extension), which also includes a portion of rail owned by another private entity. The

linking of any consents may be feasible, but difficult to administer and guarantee. The reliance on other privately-owned parties, whom may change ownership over time, poses uncertainties that warrant greater certainty prior to investing public resources in what may be a dubious outcome or realisation.

(b) Uncertain securing of water licenses:

This is a very important uncertainty, for two main reasons. Firstly, the water is needed for the use, and the quantum is significant. Without the water allocation the project cannot be realised. The licenses secured only represent 60% of need, based on the applicant's figures.

Secondly, the local opposition to the mine may render realisation of the securing licenses untenable. This is a real possibility and warrants not proceeding until the matter is certain (apart from the concerns that water is best allocated to more suitable uses in the region that secure lasting and sustainable employment, without the negative impacts).

(c) The unknown and untested proposed “pine and feather” mining technique:

This technique has not been used in this country. It is understood from others in the industry that it has been tried in America, although is no longer used due to safety concerns.

What is known is that the untested technique in Australia is being adopted due to concerns regarding contamination of groundwater and subsidence. These are significant issues and there is no guarantee the technique will be successful.

The notion of securing the roof of a mine by columns (either by coal or concrete) as excavation occurs around it, is dubious at best.

The geological conditions are unique, including a porous roof sediment of Hawkesbury sandstone (generally east of the Highway). Cracking will occur and this also places in doubt overall watertable impacts.

All of this is apart from the fact that having an approach which takes a small percentage (around a quarter) of a valuable resource is not recovery of resources in itself, and only expands the footprint of the untested operations by 4-fold due to the smaller percentage recovered.

(d) The real impacts on the water table:

A key assumption is the watertable will be recharged due to making the partially excavated caverns watertight. This seems an important assumption, yet hard to guarantee.

The dynamic nature of a changed geological stratum is such that the real groundwater impacts cannot be known, either as groundwater quantum needed, lost or able to be re-charged.

(e) The degree of contamination to groundwater and surface water:

Coal dust contains manganese, sulphates, cadmium, lead, pyrites, methylmercury, toxic isotopes and other contaminating chemicals.

The Hawkesbury sandstone, where over the coal layer, is porous and contains ferrous and is generally acidic (which is what makes sandstone red on oxidation). To compensate an alkaline will be used to neutralise acidity. The science of the salinity of water from the geological layers and the impacts of the mining approach deserves extreme caution.

22% of the excavated material is not saleable and will be stored and then (conveniently) placed back into the mine, with chemicals which will react with the “recharged” water.

The wider leaching of contaminated water into the groundwater resource is not known.

The assumption that the storage and treatment of mine workings and the treatment of all sewerage on site not leading to any surface or groundwater contamination seems heroic.

The lack of surface water discharges also relies on historical rainwater data, which is questionable given clear changes in climate and impacts on future rainfall (if more, then surface water contamination arises, if less then recharging of the groundwater and increased demand for precious clean groundwater arises).

(f) Subsidence (including to the National Highway):

The mine is assumed to lead to subsidence of “less than 20mm”. This is for an untested technique.

The stakes or consequences are high, with a National Highway traversing the mine surface. The consequences of wrongful assumptions warrants extreme caution, as the

costs and implications of any significant subsidence to the Highway would be catastrophic.

(g) The ability for the rail line to cope with significant increases in load and use:

The analysis has concentrated on the 10km rail extension, as opposed to the ability and capacity of the existing 70km track in meeting the increased frequency and load of the 50mT proposed to be excavated. The track dates from 1932 and an expected 3000 rail movements per year (estimate) adds strain to the system and a rail gauge which is understood to not be ideal for heavy coal loads.

There was an accident on 31 August 2015 at the level crossing on the Pacific Highway and Nolan Street Unanderra, a B9162 derailment on 28 July 2004 and a rail accident on 23 April 2017 where a freight train lost its ability to brake (source: Danny Pullicin).

This gives rise to safety issues and concerns, particularly with 170 additional train movements a week and increased time delays to traffic of 24 minutes a day, using the applicant's own figures. The State is trying to decommission level crossings, not seek increased conflict.

(h) The coal industry and feasibility generally:

As outlined in the previous Section of this report, the future for the coal industry is not bright, and some uncertainties around realisation of projected benefits exist.

(i) Whether royalties will be realised:

This is linked to the dynamic nature of the coal industry, fluctuating prices, changing demand and competitive supply pressures. This is reflected in recent media articles about the "Adani" mine where a "royalty holiday" is being sought by the operator to address feasibility issues.

The lack of economic feasibility for the Adani mine gave rise to the lack of realisation of benefits, including taxes. This is applicable for the proposal, using a locally-untested technique and only extracting one-quarter of the resource, which is not cost-effective. This will either lead to a similar exemption to be sought from costs, like the Adani proposal, or increased extraction, with vastly magnified impacts. Both scenarios are obviously concerning and all risks point to the down-side.

This is further magnified by an industry on the wane due to global factors, with the flow of capital to coal reducing and that to renewable energy increasing, and rightly so.

(j) Ability to mitigate against harm:

This is a real and relevant issue for the area, noting the nearby Berrima Colliery closed in 2013 following a court case which found the mine was polluting local waterways and that its expansion should not proceed. This was despite the apparent proud record of Australian companies and Australian environmental regulation, which is supposed to be “world class”. If another mine in the same area was found to pollute local waterways, what confidence is there this will not occur again? Isn’t there even more uncertainty on relying on a new and untested technique in Australia?

(k) Ability to rectify and make-good the land:

On May 11 2017, the NSW (acting) Auditor General found the system and approach to bonds for rehabilitation of mines was inadequate. The report concludes:

The Department's [of Industry, Skills and Regional Development] policy is that each mine's security deposit should cover the full costs of rehabilitation for that mine. The security deposits the Department holds are not likely to be sufficient to cover the full costs of each mine's rehabilitation in the event of a default. The rates and allowances in the current cost calculation tool have not been updated since 2013 and some activities required for effective rehabilitation are not covered, or not covered adequately.

Security deposits also do not include sufficient contingency given the substantial risks and uncertainties associated with mine rehabilitation and closure, particularly in the absence of a detailed closure plan. This risk is exacerbated by the limited independent verification of mining company claims about the size of the outstanding rehabilitation task, which remains the case despite recent improvements to monitoring and review procedures and practices.

There is also no financial assurance held over the risk of significant unexpected environmental degradation in the long-term after a mine is deemed to be rehabilitated and the security deposit is returned. A security deposit is not an appropriate vehicle for covering this risk

As the Guardian Newspaper reported (www.theguardian.com):

With old mines being sold for as low as one dollar and some mining companies such as Peabody recently facing bankruptcy, whether mine rehabilitation costs will be adequately covered is a very contemporary issue.

“Not only are the bonds held inadequate, but the standard of rehabilitation is low and, as the auditor general found, the outcomes are vague and the rehabilitation assessment process is ill-defined” – quote from Auditor-General.

So, the collection of funds for rehabilitation is likely to be inadequate. If increased, this affects viability (and possibly realisation of royalties).

In the case of a mine whose footprint is 4-fold due to the untested technique adopted, the ramifications and costs if and when contamination of groundwater occurs could be catastrophic.

(l) The realisation of a Suitable Biodiversity Offset:

The applicant's own analysis states that a total of 101 ecosystem credits and 582 species credits will be required to compensate the damage to flora and fauna from proposed clearing. This is a large amount and requires a careful calibration, and an appropriate and deliverable offset, even if it is accepted (as the sustainable approach is to avoid harm).

The details of such an offset are not provided. Rather, the applicant proposes to establish such an offset within 12 months of approval. At that stage (post-approval), the options and negotiation position of the State is clearly severely compromised. The proposed approach should be dismissed and mitigation measures should be clear and realisable with the proposal.

(m) Whether infrastructure upgrades will be achieved, without a VPA:

There is reference to an intended VPA in the EIS. No VPA is provided with the DA, nor a legally binding offer, which would ordinarily be part of an exhibited DA package. Without a VPA and the range of commitments from the applicant, there is no guarantee any benefits will be realised.

6. Precautionary Principle

All the above uncertainties in the previous Section are significant and warrant a “precautionary” principle to be applied, and the proposal to be refused.

In simple terms, the precautionary principle is: if the effects of a product or action are unknown, then the product or action should not be used or taken.

It is reasonable to apply a precautionary principle when considering the impacts which are long-lasting and when the sustainability credentials of a proposal are questionable or dubious.

It is also reasonable and appropriate to apply a precautionary principle when the benefits or impacts are uncertain. This is certainly the case with the Hume Coal proposal. The previous Section of this submission outlines 13 key areas of uncertainty, relating to:

- Reliance on another consent and other parties:
- Uncertain securing of water licenses:
- The unknown and untested proposed “pine and feather” mining technique:
- The real impacts on the water table
- The degree of contamination to groundwater and surface water:
- Subsidence (including to the National Highway):
- The ability for the rail line to cope with significant increases in load and use:
- The coal industry and feasibility generally:
- Whether royalties will be realised:
- Ability to mitigate against harm:
- Ability to rectify and make-good the land:
- The realisation of a Suitable Biodiversity Offset; and
- Whether infrastructure upgrades will be achieved, without a VPA.

These significant uncertainties alone warrant the refusal of the application. Despite this, the known impacts and assumptions used by the applicant also warrants refusal of the proposal.

7. Sustainability Considerations – “Triple Bottom Line”

The Department of Planning and Environment adopts a “triple bottom line” to assessment of coal proposal (and all mining proposals), as advised to a community information session on 26 April 2016.

These lines are outlined below and broadly reflect the tenements of sustainability.

7.1 Social Considerations

The following main concerns regarding social considerations are held:

(a) The impact on housing within Berrima is under-estimated;

The Social Impact Assessment with the EIS (Attachment R) assumes that all construction workers will be housed in the temporary “Construction Accommodation Village” (CAV).

This is questionable, as the village needs to be constructed, taking many workers (expected over 12 months) and workers cannot be forced to stay at the village, which

is expected to be very basic. The workers during construction and those who do not wish to reside at the CAV will have an impact on existing housing, including artificially inflating rent, despite assumptions to the contrary in the EIS.

In terms of the operational workers (also temporary, although of longer duration, to an estimated maximum of 300 workers), the EIS appropriately adopts an approach which looks at the housing in proximity to the mine (within 45 minutes), due to WHS concerns about safety from travel distances and tiredness, due to long shifts.

The EIS provides statistics on workers in the mining industry in 2011. However, as ABS data shows, there were 3 companies operating in mining in 2011 and in 2015 there were none. Relying on non-existent workers is a flaw.

There is an estimate that 50-70% of workers will be local. These are likely to be mostly non-trained, due to the nature of the specialist industry and the unique proposed methodology. However, it is accepted there may be skilled workers who worked at the former colliery. If the local workers are mostly unskilled, the assumptions are also considered flawed as unskilled workers need 6-9 months training by the applicant's own figures. This raises several issues: the market forces acting against unproductive training; safety aspects for an untested technique; and the ratio of skilled workers when more than half of the workforce are expected to be trained! It is more likely the multinational company would look to import workers under working visas, no doubt arguing the specialist and unique skills for a mining technique not used before in Australia.

In looking at workers who may buy or rent in the area, the EIS also appropriately considers availability, affordability, liveability and accessibility.

Then, assumptions are made on likely destinations for workers. For Berrima, the assumption is an extremely low 2%, despite the proximity and clear liveability benefits compared to New Berrima. This is considered flawed, for several reasons: the amenity of Berrima is considered high (despite a lack of general shopping and GPs), having a public primary school, general store and nearby facilities, but also due to its very high scenic amenity and overall attractiveness.

While affordability in Berrima is ranked low, this is based on median sales figures. The rental figures should be given far greater weight than median sales prices, and these are generally comparable to other areas, certainly for those on skilled mining wages. The assumption of 2% of residing workers is artificially low. Instead, due to the proximity (very high) and amenity, particularly compared to New Berrima, it is likely there will be very high demand for housing at Berrima. This will inflate housing and rent artificially

for a short period, with negative longer term consequences on resulting speculation, as seen in other mining towns.

(b) Impacts from workers in the fabric of the town;

The EIS assumes there will be no impacts from construction workers on the Berrima town as the temporary village contains a gym, hall and recreation facility. However, the CAV will be a “dry zone”, is expected to be basic (especially given its’ intended 36 month lifespan) and it is surely reasonable to assume workers will seek recreation, alcohol and an “escape” from the compound.

The opposite assumption is reasonably made to that of the EIS: workers will seek to drink and escape the CAV, and the most likely destination is low-key hotel and drinking facilities in nearby Berrima (the nearest pub). There are likely to be negative social impacts arising from temporary workers who have no social ties to the local community, despite conclusions to the contrary in the EIS.

(c) Impacts on stretched social services, which will be temporary and not sustained;

The local school is at capacity and there is a general lack of emergency services in Berrima. The increased demand from workers likely seeking accommodation in the village or use of its’ services will see a temporary peak. This is likely to require Government investment, for growth which is temporary and unsustainable.

Instead, uses and employment types which have permanent employment and are wholly based on a local workforce, as well as complementing the scenic and heritage qualities of the area, would work to aid sustainable investment in social infrastructure.

It is noted there is no VPA with the proposal, and in any event the impacts on Berrima are considered underestimated.

(d) Safety Concerns from use the railway;

As previously outlined, there have been accidents on the existing rail line, which includes level crossings (TfNSW, as they are actively trying to eliminate level crossings throughout the State, not increase them). Single rail head-lighting signals are partly obscured with vegetation on highways and by overhead rail powerlines, causing safety issues that will be magnified.

The existing rail line may not be suitable for the increased use and load, while the potential coal dust from carriages (notwithstanding an intention they be covered) may cause dust issues along the line. There are sections of the rail which are unfenced, including close to existing schools.

The applicant's own estimate of 24 minute delays per day is likely to lead to risk-taking once implications of delays are understood by people leading busy lifestyles, and potentially for emergency vehicles. Delays appear not to have been factored in economic modelling (despite this being common-place in Cost:Benefit analysis).

(e) Coal dust and impacts on health;

The proximity of the mine and stockpile on site to Berrima and south-westerly winds, particularly in winter, gives rise to concerns regarding coal dust, also from the loading operations into and from rail carriages. When coal is loaded or unloaded to/from carriages the dust is exposed to air.

Coal dust contains many chemicals including manganese, sulphates, cadmium, lead, pyrites, methylmercury and isotopes, which have toxic qualities. These can react with microorganisms in the food chain and local vegetation and accumulate over time within the eco system and the human food, with adverse health consequences.

(f) A negative legacy for future generations

The proposal will leave a large hole, subsidence, reduced valuable water, likely contamination, a degraded landscape, impacts on flora and fauna and a scar on the environment for future generations. This is at the expense of more suitable forms of employment and growth, which may be sustainable and leave a positive legacy to future generations.

The long-lasting impact on the spiritual guardians of the land, the indigenous Gandaragara people, needs careful consideration.

7.2 Economic Considerations

The following main concerns regarding economic considerations are held by B4B:

(a) Impact upon existing businesses

There are three main components to this:

- The impact on existing business who use water that will be “bought out”;
- The impact on the scenic qualities, image and attractiveness of the area and region, which affects visitation and patronage (not modelled or accounted for); and
- Unnatural and unsustainable short-term impacts that may warrant speculative investment, to the longer term disadvantage of existing businesses.

It is noted that of the 71 properties affected, some of these bore will not regain normal (today's) water volumes/pressure for up to 70 years.

These impacts appear not to be modelled in the Economic Analysis by BAEconomics, which merely states.

A portion of the land that would be disturbed by the project is currently used for livestock production. The net benefits arising from the project would therefore be offset by a small reduction in agricultural value added in the local region.

This appears to be a very narrow view of analysing costs and benefits, markedly skewed to enhancing perceived benefits. It appears contrary to modern approaches by NSW Treasury which seek to identify all costs and benefits, and against the key principle of Cost:Benefit analysis.

Delays arising from the proposal rail line and level crossings also appear not to have been factored in economic modelling, despite the opposite (improved travel times) commonly being used as a measurable and quantifiable benefit.

(b) Impact on alternative businesses using water rights

The impact on other more suitable businesses who may make use of water which is lost is a real impact. Water is a finite resource, the life of the mine is long and the quantum of water sought to be used is huge.

(c) Opportunity costs not accounted for

The alternative investment and use of water rights, and indeed an alternative mine proposal, would have greater economic and long term benefits.

The modelling of rural water use has been estimated, although not other businesses who may have used such water in the future.

The mine essentially involves the least value-adding model possible, whereby a foreign-owned company retrieves an Australian resource, directly transports it to a port and ships it overseas for value-adding by another country. Profits are lost to an otherwise local public (or family) company and there is no value-adding by use or local manufacture of steel from the valuable local coking coal. This is particularly so, using the applicant's argument that high-grade coking coal is relatively rare. It is also noted the region has a very strong manufacturing sector (confirmed by ABS statistics) and this opportunity to locally value-add to a primary resource will be lost.

The economic model delivers the least benefit possible to the State. This is an opportunity cost which is real and should be modelled (at least in terms of other options common for CBR analysis), yet has not.

(d) Artificial and temporary impact on housing

As previously outlined, the assumptions regarding demand on local housing in Berrima is considered to be significantly underestimated. There are expected to be short-term distortions in the housing market (such as occurred in other towns with new mining activity), which sees significant speculation, yet longer-term disadvantage and loss. Examples may include low quality and unsafe overcrowding of rental properties and illegal boarding houses. This may be magnified given we are currently experiencing a very low interest rate environment, which only has one way to move, exposing speculative investment.

(e) Questionable benefits and jobs

The economic analysis includes questionable value-adding from jobs, although this is at least differentiated. As stated in the submission by the Australia Institute referred to in Section 2:

Empirical data on how mining affects other industries suggests that some industries important to the Southern Highlands, especially agriculture and manufacturing, can be negatively affected. Other research by The Australia Institute has shown that mining creates almost no jobs in other parts of the economy.

Despite this, Hume Coal claim:

1200 jobs are estimated to be created if a mine was given approval in the future. These include direct and flow-on jobs.

No source is provided for this estimate, which contradicts the experience of other areas of NSW and Queensland. If there has been any actual calculation behind this claim, it is likely to be based on “multiplier” models, which have been dismissed by the ABS as “biased” and by the Productivity Commission as being regularly “abused”.

The fact is that coal is a small employer, which has a minimal effect on employment in the wider economy, but can negatively affect important regional employers.

While this may be based on preliminary figures, the points are salient. As previously stated, there is a real issue that workers may not even be local, but sought from the company's country of origin, or countries with lower wages, further significantly

diminishing the assumptions regarding local employment. This is apart from the likely effects of increased automation to reduce actual jobs, also previously outlined.

The assumptions regarding taxes as a benefit also cannot be guaranteed. As seen in many other examples of overseas investment in large local infrastructure projects (e.g. offshore gas), accounting is manipulated to accrue losses against any locally-registered company to divest profits to offshore entities where taxes are lower. Large companies have resources to enable tax structures which support their bottom line, particularly large multi-national companies, much to the chagrin of many counties with higher relative tax rates where multi-nationals operate, yet are not based.

(f) Lack of benefits to the Region and State

There are very few benefits to the State. Royalties are relatively low (and are not an “extra” as the resource is being removed, and longer term holding may give greater return). In a fickle and declining market for coal, there is no compelling timing imperative.

(g) Long-term costs not accounted for

The longer-term rehabilitation costs and negative environmental and social costs have not been accounted for in the economic modelling. In the NSW Treasury approach to Cost:Benefit analysis, all costs and disbenefits should be costed (although it is recognised it is difficult to monetarise social and environmental impacts, which NSW Treasury regularly grapples with).

As stated recently by the NSW Auditor-General, the rehabilitation fund and cost-recovery for mines is inadequate. Increasing this may help recover costs though will affect viability and place increased pressure on reducing royalties (as has occurred in Queensland) or saving costs in monitoring, compliance and mitigation, which is an area that adds business costs, yet no return.

The mine can never be properly rehabilitated and the risks to groundwater contamination far outweigh any temporary benefit in royalties

7.3 Environmental Considerations

The following main concerns regarding environmental considerations are held by B4B:

(a) Impacts on groundwater:

This area is addressed by others with expertise in the field. The EIS itself acknowledges significant impacts, and this needs to be considered against other uses which complement the sustainable long-term growth of the region and State.

(b) Impacts arising from contamination:

This too is an area where others may have greater expertise. However, assuming that a process which extracts a known contaminating resource, and seeks to store such material on site close to clean water streams, then re-inject substantial portions (over 20%) back into an area to be filled with water, while treating all sewerage on site with causing any contamination to either ground or surface water, and loading 50mT into steel bins would no cause contamination defies logic.

(c) Scenic impacts:

The proposal will result in a stockpile of material estimated at 800m long and 6 storeys high in a scenic rural landscape, in the vicinity of heritage items and businesses which are based and reliant on scenic qualities and cleanliness.



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It is noted the regionally attractive Zen Oasis restaurant (shown above), using high quality and organic produce, is to the immediate north of the surface workings. This business has recently invested significant funds in sustainable infrastructure perfectly suited to the region.

Zen Oasis was set up in 2004. For those concerned with global warming, Zen Oasis chose a vegetarian restaurant as the 1st phase. They have been working on the Zen Harmony Garden for 13 years very quietly. It is greatly appreciated by the local and wider community.

The 2nd phase commenced in 2012. They try to encourage people to contemplate and appreciate the deeper meaning of each celebration in the year through their Art work in the field.

Their vision, in essence, is to provide a Zen space for humanity, to contemplate who we are and where we should go.

Last year, they submitted a development application for a multi-function centre. The ancient Zen principle will be embedded in the agriculture with art landscaping. This celebrates the beautiful setting and landscape of the area.

Further information on Zen Oasis and feedback from users can be found on the internet. A business owner provided B4B the following comments (noting English is not a first language):

I think it will be very to be realised that the noise, visual impact and air pollution will put Zen Oasis in a very difficult situation. Again, this is from my personnel observation with the information I have got from them. Thanks for BfB's good heart and hard work. Universe Bless you!

Zen Oasis' setting and attractiveness, as well as the wider attractiveness and setting of Berrima and the district, will be adversely affected by the proposal.

The landscape and heritage impacts are further elaborated upon in a separate submission by Ms Colleen Morris.

(d) Heritage impacts and Aboriginal Impacts;

The heritage impacts of the proposal are addressed in a separate submission by Ms Colleen Morris.

As previously stated, there are 65 heritage items listed in Berrima within Wingecarribee LEP 2010. Eight (8) heritage items are listed in the proposed project area. An extraordinarily high 16 properties are listed on the State Heritage Register, being items which are significant to the State of NSW. The township is listed as a Heritage Conservation Area. In Berrima Village Development Control Plan, this Conservation Area is broken into 10 precincts.

Berrima is widely recognised as the best preserved example of a Georgian village on the Australian mainland. A fortunate series of events created Berrima, as 1831 to the 1860s was a time of promise, growth and investment, which came to an abrupt end when the railway bypassed the village in 1867. For the next hundred years there was

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little or no development in the village (source: Destination NSW: Berrimavillage.com.au).

The following photos illustrate some of the highly significant State and local heritage items in Berrima:



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In terms of Aboriginal impacts, while the matter has been addressed in the EIS, there are 39 potentially affected sites. It is noted the Gandangara indigenous people are the spiritual guardians of the Southern Highlands and the impacts of the proposal should be carefully considered after full and appropriate consultation with the range of indigenous groups with an interest in the area.

(e) Subsidence:

The EIS claims subsidence will be limited to 20mm or less. This must be questioned and interrogated, given the type of mining proposed is untested in Australia, and a National Highway runs over the proposed mine.

The consequences of assumptions being wrong are severe to catastrophic.

(f) Flora and Fauna impacts:

While not an area of specific expertise, it is noted the proposal results in the removal of 8.3 Hectares of Broad-leafed Peppermint trees and Red Stringybark open forest and trees. This includes potential habitat for koala, Southern Myotis and Squirrel Glider.

The applicant's own analysis states that a total of 101 ecosystem credits and 582 species credits will be required to compensate the damage to flora and fauna from proposed clearing. This is a large amount and requires a careful calibration, and an appropriate and deliverable offset, even if it is accepted (as the sustainable approach is to avoid harm).

The details of such an offset are not provided. Rather, the applicant proposes to establish such an offset within 12 months of approval. At that stage, the available options and negotiation position of the State is clearly severely compromised. The proposed approach should be dismissed and mitigation measures should be clear and realisable with the proposal.

(g) Noise Impacts:

The applicant's own analysis demonstrates noise impacts on residences which exceed the threshold and trigger voluntary mitigation (8 properties) or voluntary acquisition (2 properties). This is a further adverse impact that diminishes the quality of life for residents and businesses in the area and adds to concerns with the proposal.

(h) Greenhouse gas emissions:

On 31 May 2017, the Sydney Morning Herald stated that NSW Greenhouse gas emissions had increased by 5% in 2015. If true, this is very concerning. A key contributor to greenhouse gas emissions is coal-fired power stations (accepting that not all coal is for that purpose).

The Australian Government has committed to the Paris Climate Agreement. Clearly, NSW will need to work hard to reduce emissions and responsibly contribute to reducing greenhouse gas emissions, especially in the context of vegetation clearing laws.

The EIS states the greenhouse gas emissions, totalling 1.79 million tonnes of CO₂ will be “minimal” and “minor”. In this context, it would be alarming to know what “major” would be. The conclusion, as often occurs to minimise the figure discussed, is based on a percentage of the total (being 0.07% of the State annual total). However, this is a large and significant amount from one source.

Further, while the approach of direct and indirect accounting for GGE includes 3 steps (direct and indirect), it is not clear if all greenhouse gases are accounted for in the estimate (e.g. emissions from use in subsequent manufacturing processes of steel). The estimate is not likely to be an under-estimate.

(i) Traffic Impacts:

The main concerns relate to the difficulty in accessing the site when approaching from the north (and needing to cross the Hume Highway) and the delays and safety impacts from level crossings which will see increased rail usage by coal-laden trains.

8 Public Interest (S 79C(1)(e))

The proposal is not in the public interest, for several reasons:

- (a) An independent survey conducted by an independent and respected firm (Galaxy Research) of residents in the Wingecarribee Council area found that:
 - i. **Nearly 6 in 10 (59%)** Wingecarribee Shire residents oppose the Hume Coal proposal, including **almost 5 in 10 (47%)** who strongly oppose it;
 - ii. **Fewer than 1 in 5 (18%)** Wingecarribee Shire residents support the Hume Coal proposal;
 - iii. **More than 7 in 10** Wingecarribee Shire residents are worried about the impact of the mine on groundwater (**76%**) and catchment water supply and purity (**73%**);
 - iv. **Over two thirds** of Wingecarribee Shire residents (**69%**) are worried about the impact of the mine on flora and fauna in the Southern Highlands;
 - v. **More than 6 in 10** Wingecarribee Shire residents (**67%**) are worried about the airborne dust levels in the Southern Highlands;
 - vi. **Two thirds** of Wingecarribee Shire residents (**66%**) are worried about the impact of the mine on existing local industries including agriculture, equine, tourism and local food production;
 - vii. **Over half** of Wingecarribee Shire residents (**56%**) are worried about the impact of the mine on the culture and lifestyle of the Southern Highlands communities; and

- viii. **Nearly two thirds** of Wingecarribee Shire residents (**61%**) believe that if the Hume Coal mine is approved it will make it more likely similar underground coal mines will be approved in the Southern Highlands.
- (b) Battle for Berrima has coordinated 'Coal Free Community Surveys' in the villages of:
Berrima;
Medway;
Burrawang; and
Exeter.

'Coal Free Community Surveys' are an initiative of Lock the Gate and more than 350 communities across Australia have declared themselves coal free,

Berrima Results

- A total of **299 houses** were targeted for the Berrima survey
- Of these **252 households** were successfully contacted.
- **227 households or 90%** said they did want their neighbourhood coal free

Medway Results

- A total of **54 houses** were targeted for the Medway survey
- Of these **44 households** were successfully contacted
- **37 households or 84%** said they did want their neighbourhood coal free

Burrawang

- Total of **141 houses** targeted for Burrawang Survey
- Total of **102 households** successfully contacted
- **92 households or 90%** said they did want their neighbourhood coal free

Exeter

- Total of **189 households** targeted for Exeter Survey
- Total of **152 households** successfully contacted
- **128 households or 84%** said they did want their neighbourhood coal free

NSW Parliament Petition

A petition with more than 16,000 signatures calling on the Baird Government to protect the Southern Highlands and Sydney's water catchment from destructive coal mining was debated on the floor of the NSW Legislative Assembly in August 2016.

The petition was sparked by the announcement by the Korean-owned Hume Coal to develop a massive underground coal mine beneath the Southern Highlands and on the outskirts of the nationally significant historic settlement of Berrima.

The petition signed by more than 16,000 people calls on the NSW Parliament to act and protect the Sydney Water Catchment and the Sydney Water Catchment from the impact of underground coal mining activities now and in the future.

Local MP and NSW Minister Pru Goward sponsored this debate and tabled our petition after it was formally presented.

The petition was coordinated by Battle for Berrima and demonstrates the extraordinary depth of democratic opposition to coal mining in the Southern Highlands.

The proposal is not considered a good precedent for the area.

There is significant opposition to the proposal and granting consent in light of such opposition, as well as the numerous impacts and uncertainties of the proposal, are such that granting consent would not be in the public interest.

9 Solution – Need for Sustainable, Complementary Diversity

The “solution” for future development in the Southern highlands involves uses and proposals which sustainably provide ongoing employment, value-add, leave a lasting positive legacy and capitalise on the unique characteristics of the region, specifically its’ scenic qualities, rural setting and heritage qualities. This is recognised by the Council in its 2031 Strategic Plan.

The proposal is not part of the solution for the region: it is the opposite of what is appropriate for the area and region.

10 Conclusion

The proposal by Hume Coal should be refused.

It is contrary to core Objects of the EPA Act 1979 which seek to promote rational and orderly development of land, and sustainable development. The proposal represents unsustainable development, having adverse social, economic and environmental impacts. These impacts are neither mitigated nor outweighed by any benefits, which are relatively minor. In economic terms, the opportunity costs are not appropriately

accounted for, and a finite resource is being utilised with minimal, if any, added benefits to the economy.

Apart from real and considerable impacts using the applicant's own assumptions, the proposal has many and significant uncertainties, which in themselves warrant refusal based on a "precautionary principle", appropriately applied in determining the acceptability of this proposal.

The Southern Highlands needs sustainable, complementary support for existing businesses, and support for opportunities that enhance the scenic qualities and heritage assets unique to the region. Future growth and opportunities should be directed to complementary, sustainable industries that create diversity to the area and region, not ones that cause significant adverse impacts, work against the qualities and assets of the area, provide arguable and temporary benefits for other markets and leave a long-lasting negative legacy for future generations. Complementary diversity is needed and is not being provided by the proposal.

Berrima is an asset and heritage jewel for the region and State and Battle for Berrima are understandably and appropriately opposed to the proposal by Hume Coal.

The Planning Assessment Commission should ask: Is the proposal in the interests of the State and the Region? The answer, after sober and considered reflection, should be a resounding "No".



Jason Perica, B.Sci. (ARCH), M.U.R.P.
Director