



ACN: 146 035 707 ABN: 54 146 035 707
Suite 4, Level 7, 100 Walker Street
North Sydney NSW 2060
P: 02 9929 6974
enquiries@willowtreeplanning.com.au
www.willowtreeplanning.com.au

Shaun Williams
Planning Officer
Industry Assessments
NSW Department of Planning, Industry & Environment
320 Pitt Street
Sydney NSW 2000
Shaun.Williams@planning.nsw.gov.au

RE: STATE SIGNIFICANT DEVELOPMENT APPLICATION (SSD 9601) FOR PROPOSED PLANT 2 UPGRADE WORKS

PROPERTY AT: 780 WALLGROVE ROAD, HORSLEY PARK (LOT 7 DP 1059698)

Dear Shaun,

Reference is made in relation to the subject State Significant Development (SSD) Application – **SSD 9601** – that was exhibited by the NSW Department of Planning, Industry & Environment (DPIE) on 9 October 2019 to 5 November 2019 for the proposed Plant 2 Upgrade Works at the identified Subject Site – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698).

Following a review of the NSW DPIE's request for the Response to Submissions (RTS), dated 15 November 2019, the matters raised have been taken into consideration and are accurately addressed in the response matrix that is attached to this letter. It is considered, that this information now provides the NSW DPIE with all the necessary facts and relevant particulars related to the Proposed Development subject to this SSD Application; thereby, enabling the assessment to be finalised and the Proposal determined.

We look forward to the NSW DPIE's feedback on the information provided and look forward to progressing with the assessment of this SSD Application.

Should you wish to discuss further, please contact the undersigned.

Yours Faithfully,

A handwritten signature in blue ink, appearing to read "Andrew Cowan".

Andrew Cowan
Director
Willowtree Planning Pty Ltd
ACN 146 035 707

State Significant Development Application – SSD 9601

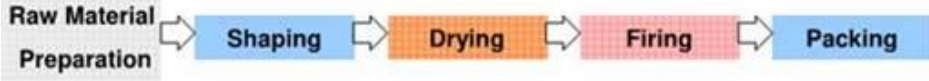
Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Enclosed:

- **Appendix 1 – Air Quality Impact Assessment**
- **Appendix 2 – Waste Management Plan**
- **Appendix 3 – Western Sydney Parklands SEPP Table**
- **Appendix 4 – Traffic Engineering Letter of Support**
- **Appendix 5 – Biodiversity Development Assessment Report**
- **Appendix 6 – Landscape Plans**
- **Appendix 7 – Aboriginal Due Diligence Assessment**

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 1: Response Matrix	
Relevant Entities Response to Submissions	Formalised Response
NSW Department of Planning, Industry and Environment (Chris Ritchie – Director – Industry Assessments)	
<p>Process Description:</p> <p>1. The Department notes there will be no changes to the existing operations of the Plant 2 facility. However, the EIS should detail the operational processes of the facility to provide context for the proposed development. The Department requests the Response to Submissions (RTS) clearly detail the individual processes and stages of brickmaking production including the functions of machinery. The Department recommends preparing a figure/ process diagram that clearly illustrates the brickmaking process of the Plant 2 facility.</p>	<p>It is noted, that the production process for brickmaking on the Subject Site comprises five (5) operational stages, including:</p> <div style="text-align: center;">  <pre> graph LR A[Raw Material Preparation] --> B[Shaping] B --> C[Drying] C --> D[Firing] D --> E[Packing] </pre> </div> <p>1. <u>Raw Material Preparation:</u></p> <p><i>Extraction</i></p> <p>Heavy earthmoving equipment such as bulldozers, scrapers and mechanical shovels are used to extract clays and shales.</p> <p><i>Crushing and Proportioning</i></p> <p>Raw materials are transported from the pit by scraper or truck stockpiled by type and fed into primary crushers to reduce the particle size to about 10 cm. Various clays are then mixed, depending upon the properties required in the brick.</p> <p><i>Grinding and screening</i></p> <p>Conveyors carry the material for secondary crushing by a pan mill with two (2) heavy steel wheels that crush the clay against a perforated base. Dry clay shatters into brittle pieces that fall through the perforations. Wet clay is then squeezed through the perforations and falls between high-speed rollers to complete the grinding process. The crushed clay is screened, and any oversized pieces returned for further crushing.</p> <p>2. <u>Shaping:</u></p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Semi-dry Pressed Bricks

Semi-dry pressed bricks are made from clay with about 10 to 12 percent water content. The powder is dry enough to fall under its own weight into the steel mould (or die box) in which it is then compressed into the finished brick shape. The resulting brick is smooth and straight with sharp arises (edges) and a frog (shallow depression) in the top surface.

Extruded Bricks

Extruded bricks (also known as wire-cut bricks) are the most common brick type, using clay with 18 to 25 per cent water, forced by auger into a horizontal cone-shaped tube which tapers down to a die (something like a pasta machine). A continuous column of clay, a little larger than the size of a brick in plan, is forced through the die and onto a conveyor. The clay column is cut into bricks by a wire, like a cheese cutter. Although inherently smooth, extruded bricks may be patterned or textured mechanically or have selected minerals sprinkled on the brick face before firing.

3. Drying:

Most extruded bricks are perforated to increase the surface area and decrease drying, firing and cooling times. These perforations also relieve internal stresses in the brick and reduce distortions during firing. Before bricks are fired the free water must be removed by forced drying as air drying takes up to three months and is impractical with modern production volumes.

Pressed Bricks

Pressed bricks are set onto kiln cars and dried by a small fire or by hot exhaust gases from an adjacent kiln.

Extruded Bricks

Extruded bricks with a low moisture content are set directly on kiln cars (large trolleys) that pass through drying and firing without additional handling or resetting. Green perforated bricks with a higher water content cannot be stacked and are placed to dry in racks on special cars or frames. After drying they are offloaded and

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>set onto kiln cars ready for firing.</p> <p>4. <u>Firing</u></p> <p>Bricks are fired (baked) at temperatures between 1000°C and 1200°C depending on the clay. Light colours are usually fired at the lower temperature and darker colours at the higher.</p> <p>Although there are many different kiln types, three basic types are widely used in Australia, mostly fuelled by natural gas.</p> <p><i>Tunnel kiln</i></p> <p>A tunnel kiln is continuous, with the bricks moving on kiln cars past stationary fires (similar to a conveyor pizza oven). Spent combustion gases preheat unfired bricks and airflow over cooling bricks is used to dry green bricks.</p> <p>5. <u>Packing</u></p> <p>A vertical layer of 50 to 60 bricks may be strapped (banded) into a 'leaf' that is strapped with three or four other leaves into a 'pack' for transport. Most commonly, delivery to the building site is made by a truck carrying a crane or a special-purpose fork-lift vehicle that can enter difficult sites and place bricks or pavers strategically around the site.</p>
<p>Air Quality:</p> <p>2. The Department notes the purpose of the proposed development is to improve the environmental performance of the facility with respect to heat loss and gas usage. The Department requests the RTS identify the type of gas used as a fuel and where the gas is sourced. Furthermore, the EIS states the kiln upgrade will reduce gas energy used per brick unit by 30% and Greenhouse Gas (GG) emissions by approximately 40%. The RTS should quantify the current amount of gas energy consumed and GG emissions along with the anticipated gas consumption and GG emissions of the upgraded Plant 2 facility.</p>	<p>Airlabs Environmental note, that the proposed development will provide a best practice energy efficient kiln with capacity for approximately 80 million Standard Brick Equivalents (SBEs) per year.</p> <p>The upgraded plant is expected to use over 40% less energy than the existing plant. This upgraded and revised configuration will enable the end user to produce the proposed SBEs from a highly efficient plant, reducing the NSW average energy use per brick produced.</p> <p>Accordingly, a comparison of energy use and greenhouse gases to previous years is best compared on a per brick production basis. For the 2017-18 financial year, approximately 28 million SBEs were produced, for which approximately 335,693 GJ</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>of natural gas was consumed, which provides an approximate gas usage per brick of 12 MJ / brick SBE.</p> <p>On the contrary, the upgraded Plant 2 kiln is expected to produce 80 million brick SBE in its first year of operational and approximately 475,637 GJ of natural gas would be required, which reduces the gas usage per brick to 6 MJ / brick SBE; thereby providing a 50% reduction in gas usage estimates when compared to the existing kiln. As the gas usage is substantially reduced, the corresponding GHG emissions would also be reduced.</p> <p>Based on the estimates provided above, it is inferred that the proposed upgrades for Plant 2 will result in a highly efficient plant, which would substantially lower the gas used per brick and subsequently lower the corresponding GHG emissions released.</p> <p>Furthermore, the gas usage and estimated GHG emissions (t CO_{2-e} / annum) for the 2017-18 FY and for the first year of operation of the upgraded Plant 2 are outlined within Table 30 of Appendix 1 of this Submission.</p>
<p>Waste Generation:</p> <p>3. Section 3.6 of the EIS notes Plant 2 operations last year generated 600,000 bricks worth of waste and the proposed development would significantly reduce waste. The Department requests the RTS provide clarity on the total amount of waste generated by the Plant 2 facility and the anticipated reduction in waste generation for the site.</p>	<p>It should be noted, that there are technically not 600,000 bricks worth of waste. From an operational standpoint, all bricks not utilised within the first batch of bricks produced are utilised via a recycle and reuse process. By virtue of this process the waste volumes previously anticipated are considered redundant, for which reference has been removed from the Waste Management Plan (WMP) prepared by LG Consult, which has been revised accordingly and is located within Appendix 2.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 2: Response Matrix	
Relevant Entities Response to Submissions	Formalised Response
Fairfield City Council (Andrew Mooney – Executive Strategic Planner)	
Planning Issues:	
<p>The proposed upgrades to the existing Plant 2 of the Brickworks Facility are located within the Western Sydney Parklands and is regulated under the State Environmental Planning Policy (Western Sydney Parklands) 2009. The subject site is identified as unzoned land under the SEPP (WSP) 2009 and is part of Precinct 6 – Wallgrove Precinct of the Western Sydney Parklands Plan of Management (WSP POM) 2030.</p> <p>The Austral Bricks site is identified as Interim Infrastructure in the WSP POM 2030 which anticipates the reduction of the use over the long term. In this regard the proponent shall engage with the Western Sydney Parklands Trust regarding the interim infrastructure for future land uses in the Parklands.</p>	<p>Consultation with the Western Sydney Parklands Trust (WSPT) will be undertaken via the separate Submission received, which is addressed in detail throughout Table 11 outlined below and further within Appendix 3 of this Submission.</p>
<p>The existing Brickworks Facility is generally consistent under the Land Use provisions and Key Management Priorities under the WSP POM 2030. The development however must be satisfy Council’s concerns and the relevant authorities (including WaterNSW and Department of Premier and Cabinet NSW - formerly Office of Environment and Heritage) as the adjoining Prospect Reservoir is identified as an environmental conservation area, bulk water supply infrastructure and state heritage item.</p>	<p>It is noted, that this Submission addresses all Agency Submissions, where applicable. Furthermore, the proposed development is located wholly within the Subject Site, for which the proposed development particulars would not have any adverse impacts on the identified State Heritage item – Prospect Reservoir, which would warrant further consideration and investigations to be undertaken.</p>
<p>Council and the relevant authorities issues must be addressed and satisfied with the developments construction and operational phase in order to comply with Part 2 Land uses and provisions applying to development of the SEPP (WSP) 2009.</p>	<p>The Proposed Development, specifically the Environmental Impact Statement (EIS) prepared by Willowtree Planning and the supporting documentation is considered to be generally consistent with Part 2 of <i>State Environmental Planning Policy (Western Sydney Parklands) 2009 (WSP SEPP)</i></p>
<p>It is understood that the subject land is identified for corridor investigations for the Western Sydney Freight Line in connection to the Western Sydney Airport and the Southern Sydney Freight Line. The proponent must consult with Transport for NSW (TfNSW) regarding the proposal in order to ensure that the proposed upgrades to the existing brickworks facility are consistent with the corridor investigations for the future Western Sydney Freight Line.</p>	<p>The Subject Site comprises an existing operation, for which any future development for the purposes of the Western Sydney Freight Line would be required to investigate and undertake compulsory acquisition for any portion of the Site to be excised for the future infrastructure development by Transport for NSW (TfNSW). Additionally, given the future lifespan and economic importance of the Subject Site, it is considered unlikely that the Site would be acquired until such a time is deemed</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>appropriate, for which the mineral resources on-site have been extinguished.</p> <p>It is noted, that any consultation required with TfNSW would be considered where deemed necessary.</p>
<p>Furthermore, the proposed chimney Stack is 35 metres in height and the subject site is located within the boundary of Western Sydney Airport's protected airspace (Obstacle Limitation Surface). The height of the stack must not encroach the OLS and the emissions from a stack may be a 'controlled activity' under the Airports Act 1996. In this regard DPIE needs to determine whether the application needs to be referred to Western Sydney Airport for comment.</p>	<p>By utilising the Western Sydney Airport OLS Tool, the Subject Site was identified within the following key parameters:</p> <ul style="list-style-type: none">▪ Ground Elevation (AHD): 64.4 m;▪ OLS Elevation (AHD): 222.2 m; and▪ OLS Height Relative to Ground Level: 157.8 m. <p>Accordingly, the 35 m high chimney stack would fall well below the 157.8 m OLS height identified within the OLS tool.</p>
<p>Heritage:</p> <p>The subject site immediately adjoins State Heritage Item No. 4 Prospect Reservoir and surrounding area and Local Heritage Item No. 5 Spotted Gun Forest and Local Item No. 6 Group of Hoop Pines and Local Item No. 8 Bunya Pine. The DPIE should consider whether a Heritage Impact Assessment is required in accordance with Clause 15 of the SEPP (WSP) 2009.</p>	<p>It is noted, that the proposed development works are located wholly within the Subject Site, for which the integrity; aesthetic and heritage values & significance of identified State Heritage curtilage and corresponding Local Heritage items would not be impacted by the proposed development. Accordingly, it is considered that the proposed development would not require further investigations via means of a Heritage Impact Assessment; thereby, satisfying Council's Submission request.</p> <p>Should any unexpected finds be encountered during the construction phase of the proposed development, an unexpected finds protocol would be implemented, for which the corrective approaches would be undertaken to cease all works and preserve the Site until the relevant consultants and authorities have assessed the finds for any heritage value and significance.</p>
<p>Staff and Visitors Parking:</p> <p>Council notes that a large area of office space is proposed to accommodate the existing 35-onsite staff. The 18 car spaces proposed is not considered sufficient in accommodating existing office staff, production staff and maintenance staff and in this regard the proponent shall provide sufficient parking to accommodate the development.</p>	<p>Ason Group note, that the Site has historically been utilised for its existing brick-making purposes, for which the proposed development represents an upgrade to the existing operations, with respect to the facilities utilised on-site. No additional staff or traffic would be generated as a result of the proposed development.</p> <p>Noting the Traffic Impact Assessment prepared for SSD 9601 by Ason Group, it is noted, that all existing car parking is provided in an unmarked car parking area in the northern portion of the Site, for which the design and use of this car parking area is consistent with past approvals and the development history of the Site.</p> <p>A technical assessment of the unmarked car parking area was undertaken to ensure</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>that the car park provides appropriate capacity when measured against the appropriate Australian Standards. This assessment indicated that the car park can effectively provide for up to 63 car parking spaces based on the minimum requirements of AS 2890.1 and well over 50 car parking spaces where vehicles are not parked efficiently.</p> <p>Furthermore, it is proposed to provide 18 formal spaces in addition to the existing car parking scenario for the purposes of formal visitor parking.</p> <p>Additionally, the proposal seeks to retain staff numbers (35 staff in total), which would result in a parking demand of 35 spaces in a worst-case scenario. As such, the provision of 63 spaces will account for the anticipated parking demand for the proposal.</p> <p>Accordingly, the parking demand for the proposal is considered satisfactory. The letter of support prepared by Ason Group (2019) is located within Appendix 4.</p>
<p>Environmental Management Comments:</p> <p>Council’s Environmental Management Section have reviewed submitted documentation for the proposed development indicates there will no significant environmental impacts. However, given the existing Brickworks Facility operates under Environmental Protection License (EPL) No. 546 for the ceramic production specified in the Protection of the Environment Operations (PEO) Act 1997, comments are required from the NSW Environmental Protection Agency (NSW EPA) who is the appropriate regulatory authority.</p>	<p>Noted and agreed. The NSW EPA Submission is responded to below in Table 9.</p>
<p>Development Engineer Comments:</p> <p>Council’s Development Engineers have reviewed the submitted documentation for the proposed upgrade to Plan 2 and request the following information for Council to assess the proposal in accordance to clause 14A Flood planning of the SEPP (WSP) 2009.</p>	<p>Noted and agreed. Refer to the below.</p>
<p>Stormwater Drainage and On-site Detention:</p> <ul style="list-style-type: none">▪ The on-site detention system shall be designed in accordance with clause 4.5.1.2 of Council’s Stormwater Management Policy (September 2017). Detailed cross section of the OSD basin shall be included in the final design.	<p>The On-site Stormwater Detention basin has been designed using Runoff Routing software DRAINS in accordance with Council’s preferred method, as described in the Stormwater Management Policy of Clause 4.5.1.1. The Detailed basin design (including sections) will be provided at the Construction Certificate stage.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<ul style="list-style-type: none"> Stormwater discharge from the development to the Eastern Creek shall be in accordance with Council’s Stormwater Management Policy (September 2017). 	<p>The design of stormwater discharge from the Site for the proposed development has been configured to comply with Council’s Stormwater Management Policy e.g. Clauses 4.5.7 and 3.4.1.6. Additionally, erosion protection and energy dissipation will be provided in the form of a rock-lined outfall apron.</p>										
<p>Water Quality:</p> <p>Quality of water discharge to the waterways shall meet the NSW EPA Standards.</p>	<p>It is noted that Section 6.3 of Council’s Stormwater Management Policy states that water quality improvement is not required from the development since it is located within the “Rural Zone”. However, it appears that increased water quality treatment will be driven by the Water NSW Warrangamba Pipeline requirements detailed below within Table 11.</p>										
<p>Natural Resources Comments:</p> <p>Council’s Natural Resources Department have reviewed relevant reports and Biodiversity Offsets Scheme letter prepared by Cumberland Ecology dated 8 April 2019 that suggests that a waiver be applied for future development at 780 Wallgrove Road, Horsley Park under Section 7.9 of the Biodiversity Conservation (BC) Act 2016.</p> <p>Council officers note that the Cumberland Plain Land Snail was present and recorded on Atlas in 2015 and that a desktop search of the site identified the Green and Golden Bell Frog was recorded previously in adjacent land, 5km from the development site.</p> <p>Pursuant to 7.9(2) of the BC Act 2016, any SSD application does not require a biodiversity development assessment report (BDAR) if the Planning Agency Head and Environmental Agency Head determine that the development is not likely to have significant biodiversity values (vegetation integrity, habitat suitability, threatened species abundance, vegetation abundance, habitat connectivity, threatened species movement, flight path integrity and water sustainability).</p> <p>An assessment of the proposal reveals approximately 0.12ha of vegetation being low biodiversity value is proposed to be removed that currently provide sub-optimal foraging habitat for insectivorous and nectivorous fauna species, that are the Grey-Headed Flying Fox, Little Lorikeet, Swift Parrot, Eastern Bentwing-Bat, Little Bentwing-Bat, Eastern Freetail-Bat and Yellow-Bellied Sheathtail-Bat.</p> <p>The consultant has suggested that the proposed upgrades to the Brickworks</p>	<p>The Biodiversity Development Assessment Report (BDAR) prepared by Cumberland Ecology (2019) notes, that desktop assessments and field surveys within the Subject Site, for the purposes of the proposed development included assessment of habitat constraints and microhabitats for predicted species credit fauna species. This included a desktop assessment of the proximity of the Site to features such as caves and waterways and field inspection of microhabitats including leaf litter, stick nests and hollow-bearing trees.</p> <p>The extract below includes a summary of the fauna species surveyed within the Subject Site.</p> <p>Table 4 Threatened fauna survey dates and methods</p> <table border="1" data-bbox="1090 879 2076 1038"> <thead> <tr> <th>Scientific Name</th> <th>Common Name</th> <th>Recommended Survey Period</th> <th>Dates of Survey within Land</th> <th>Survey Method Subject</th> </tr> </thead> <tbody> <tr> <td>Meridolum corneovirens</td> <td>Cumberland Plain Land Snail</td> <td>Jan-Dec</td> <td>10 December 2018 8 November 2019</td> <td>Diurnal active search</td> </tr> </tbody> </table> <p>A total of nine (9) active searches were undertaken within the Subject Site by an Ecologist on 10 December 2018 and 8 November 2019.</p> <p>Additionally, the low occurrence of habitat present on-site can be attributed to the Subject Site not forming part of a regional biodiversity corridor; flyway for migratory species; riparian buffer or estuary; or a local corridor identified by Council.</p> <p>With respect to flora species, a total of 17 flora species credit species and 23 fauna species credit species have been predicted for the Subject Site. Of these species predicted, two (2) flora species and one (1) fauna species have been retained for further assessment, for which they have been targeted during the surveys</p>	Scientific Name	Common Name	Recommended Survey Period	Dates of Survey within Land	Survey Method Subject	Meridolum corneovirens	Cumberland Plain Land Snail	Jan-Dec	10 December 2018 8 November 2019	Diurnal active search
Scientific Name	Common Name	Recommended Survey Period	Dates of Survey within Land	Survey Method Subject							
Meridolum corneovirens	Cumberland Plain Land Snail	Jan-Dec	10 December 2018 8 November 2019	Diurnal active search							

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Facility are unlikely to have significant impact on any biodiversity values and threatened fauna species due to the degraded nature of the vegetation and the abundance of better quality vegetation for foraging for those highly mobile species will remain within the locality.

The consultant suggested that during the assessment of the impact of the proposal, there was limited justification for considering impacts to threatened species with the detail required under the Biodiversity Assessment Method (BAM).

For Council to consider the proposal, a Flora and Fauna Impact Assessment report including a 5-part test is to be undertaken for the proposed upgrade works. The report shall include appropriate monitoring of Green and Golden Bell Frog, Cumberland Plain Land Snail and Microbat Nocturnal Surveys.

undertaken.

It is noted, that *Eucalyptus scoparia* (Wallangarra White Gum) was recorded within the Subject Site during field surveys. As this species is not endemic to the Subject Site, and the individuals have been planted within a boundary strip of native plantings, they are not considered to be natural components of the landscape. Therefore, this species has not been considered within the BDAR.

The initial design proposed to have clay bins, as well as fuel and oil tanks further to the south outside of the current developable site area and potentially impacting on a patch of Cumberland Plain Woodland. In order to avoid and minimise any potential impacts on this identified Threatened Ecological Community (TEC), the clay bins and fuel tanks were repositioned, for which all potential impacts to native vegetation have been avoided.

Accordingly, the proposed development avoids and minimises direct impacts on native vegetation and habitat by:

- Design of building upgrades and accessway upgrades to retain as much as possible of PCT 849 in the east of the Development Site;
- Ensuring the accessway drains naturally to the street frontage minimising stormwater runoff through TEC vegetation and North Rocks Park;
- Providing shared services corridors to Lots 2 and 3 to minimise disturbance;
- Relocating proposed fuel and oil tanks and clay bins to reduce potential impacts on Cumberland Plain Woodland TEC;
- Utilising existing accessways and upgrading to prevent further for upgrades and;
- Engineering retaining wall in the south to be situated in existing batter vegetated with exotic grasslands and prevent impacts to Cumberland Plain Woodland TEC to the south of the Development Site.

Furthermore, by design the upgrades (as proposed), any further reduction to impacts anticipated to PCT 849 within the eastern portion of the Site were not possible due to the following reasons:

- The production process of the brick factory results in the finished products exiting the building on the eastern side. This process does not change with the extension;

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

- The building extension is required to increase kiln car storage to allow the bricks to air dry. This saves energy and reduces manufacturing costs and environmental impact of the plant;
- The kiln car storage can only be increased near the end of the brick manufacturing process, which occurs on the eastern side; and
- Once the building is extended to the east, there is insufficient room for the forklifts to drive around the building and access the existing hardstand area, which is on the western side of the building. The existing retaining wall and batter (containing PCT 849) has thus been moved further to the east to create the forklift access area.

Cumberland Ecology note, that the project will result in the reduction in connectivity by approximately 0.14 ha. The reduction of this small area of habitat is not considered likely to significantly impact the movement of mobile fauna species as connective vegetation will remain around all sides of the Subject Site, including vegetation to the north, south and east. Therefore, it is considered unlikely that any native fauna species would be solely reliant on the habitat within the Subject Site.

Notwithstanding, a range of mitigation measures have been developed for the project to mitigate the potential impacts to native vegetation and habitat that are unable to be avoided. These include a range of measures to be undertaken before and during the construction phase of development to limit the impact of the project, which includes the following:

- Weed Management;
- Delineation of Clearing Limits;
- Tree Protection Measures;
- Pre-Clearance Surveys;
- Staging of Clearing; and
- Sedimentation Control Measures.

The ecosystem credits required for the proposal are as follows:

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 17. Summary of ecosystem credit liability

PCT #	PCT Name	TEC	Area (ha)	Credits Required
849	849-Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion	Cumberland Plain Woodland in the Sydney Basin Bioregion	0.11	2
1232	1232-Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	Not a TEC	0.03	1

Additionally, the like-for-like offsetting options for the ecosystem credits are provided below:

Table 18. Like for like offsetting options for PCT 849

Any PCT with the below TEC	Containing Hollow-bearing Trees?	In the below IBRA Subregions
Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 849, 850	No	Cumberland , Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometres of the outer edge of the impacted site.

Table 19 Like for like options for PCT 1232

Any PCT in the below Class	And in any of below trading groups	Containing Hollow-bearing Trees?	In the below IBRA Subregions
Coastal Swamps This includes PCT's: 1232, 1723	Coastal Swamps Forests - \geq 90% cleared group (including Tier 2 or higher)	No	Cumberland, Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometres of the outer edge of the impacted site.

Traffic Engineers Comments:

The largest vehicle that currently services the Site is a 26 m B-Double vehicle, which will remain consistent subject to approval with respect to the proposed

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p>Council’s Traffic Engineers have reviewed the State Significant Development application and require the applicant to provide clarification for further consideration regarding the following:</p> <ol style="list-style-type: none"> 1. What is the largest vehicle anticipated to service the site? The Transport Assessment Report states that the proposed internal fire road is designed to service 26m B-Double vehicle however, clarification is required for the largest site-servicing vehicle. 	<p>development. The areas currently serviced on the Site by B-Double vehicles are not proposed to be modified as part of this Application.</p> <p>It is noted, that the Site can be (and will continue to be serviced by 26 m B-Doubles). However, the additional area that will be added to the production building will be predominantly serviced by 12.5 m HRVs for loading purposes.</p>
<ol style="list-style-type: none"> 2. The proposed loading docks at Plant 2 site shall be designed to accommodate the type of delivery vehicles and potential uses of the development. Information regarding the number of loading docks and the size of loading docks within the site shall be provided to Council for assessment. 	<p>Loading / unloading would predominantly be undertaken in external loading areas, which as illustrated by the swept path analysis within the Traffic Impact Assessment submitted as part of SSD 9601 can satisfactorily accommodate 12.5 m HRVs.</p> <p>The existing loading dock within the existing Kiln Building was designed and built to accommodate a 12.5 m HRV. This area, and the building itself (which is only being refurbished) has historically been serviced by these types of vehicles, with no concerns raised with the internal operation of the Site.</p>
<ol style="list-style-type: none"> 3. Clarification is required regarding whether there will be changes to the existing servicing arrangement for the site i.e. the type and number of service vehicles using the site during the operational phase of the development. 	<p>There will be no changes to the existing servicing arrangement for the Site.</p>
<p>Building Control Comments:</p> <p>Council’s Building Control Department have reviewed the proposed upgrades to the Brickwork Facility and raises no objections to the proposal, subject to compliance with the recommendations provided in the BCA Assessment report, Project No. 180346, Revision 1, prepared by Blackett Maguire & Goldsmith dated 17.05.2019.</p>	<p>Noted and agreed.</p>
<p>Waste Sustainability Comments:</p> <p>Council’s Waste Sustainability Department have reviewed the Waste Management Plan prepared by LG Consulting Pty Ltd dated 15 July 2019 and find that the waste management plan provides sufficient information on how the proponent will deal with the waste during construction and operational phase.</p> <p>It is noted that during demolition phase will require the removal of 94m² of asbestos sheeting that must be completed by a licensed contractor and disposed of the a licensed facility that can accept asbestos. Receipts and</p>	<p>Noted and agreed.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

licenses should be sighted to ensure that it has been dealt with in accordance to the WorkSafe NSW guidelines.	
--	--

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 3: Response Matrix

Relevant Entities Response to Submissions	Formalised Response
<p>NSW Department of Planning, Industry and Environment – Environment, Energy and Science Group (EES) (Dana Alderson – A/Senior Team Leader Planning)</p>	
<p>Aboriginal Cultural Heritage:</p> <p><i>EES in its previous correspondence dated 26 October 2018 requested as part of the SEARs that an Aboriginal Cultural Heritage Assessment Report (ACHAR), be undertaken. However, the EIS states that "it is considered that there is low potential for the site to contain previously unidentified items of Aboriginal Cultural Heritage."</i></p> <p><i>EES still recommends that an ACHAR be undertaken and completed as outlined in the SEARs.</i></p>	<p>In an email dated 6 December 2019, the NSW DPIE confirmed that an Aboriginal Due Diligence Assessment would suffice with respect to addressing Aboriginal Cultural Heritage impacts anticipated for the proposed development.</p> <p>Accordingly, Biosis prepared the <i>Plant 2 Upgrade Works: Aboriginal Due Diligence Assessment (2020)</i>, which included an assessment in accordance with the <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010a)</i>, in order to inform responsibilities with regard to Aboriginal Cultural Heritage in the area. Additionally, an extended background review, as well as an archaeological survey in accordance with the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b)</i> was undertaken.</p> <p>An extensive search of the Aboriginal Heritage Information Management System (AHIMS) register was completed on 16 December 2019, identifying 120 Aboriginal sites within a three (3) km buffer of the study area, and no Aboriginal sites were located within the study area.</p> <p>Research undertaken into the land use history of the study area indicates that since the 1960s it has been used for brick-making purposes; and is likely to have undergone extensive disturbance through activities associated with the construction and subsequent use of the existing brickmaking plant.</p> <p>Furthermore, an archaeological survey of the study area was completed on 18 December 2019, attended by Biosis and the Deerubbin Local Aboriginal Land Council (LALC). The purpose of the</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

survey was to identify whether Aboriginal sites are present or are likely to be present within the study area. The archaeological survey assessed the two (2) areas which would be impacted by the proposed works, including works proposed to the east – the area surrounding the existing Plant 2 buildings; and to the west, an area currently utilised for stockpiling.

Observations made during the survey indicated that the survey areas have been subject to extensive disturbance associated with the use of the Site as a brickmaking plant since the 1960s. Within the area utilised for stockpiling, there has been extensive landscape modification, while surrounding Plant 2, disturbance associated with the construction of the existing buildings and the establishment of relevant access roads was observed, as well as areas of deep excavation.

Notwithstanding, based on the results of the background research and archaeological survey undertaken by Biosis, the study area has been assessed as holding a low potential to contain Aboriginal sites, which was also agreed and concluded by the Steven Randall of the Deerubbin LALC on-site.

Prior to any impacts occurring within the study area, the following is recommended:

Recommendation 1: No Further Archaeological Assessment is Required within the Impact Areas

No further archaeological work is required in the impact areas, as these areas have been assessed as holding low archaeological potential. Should additional works occur outside of the identified impact areas, further assessment in the form of an archaeological survey will be required.

Recommendation 2: Provide a copy of the draft report to Deerubbin LALC for comment

A copy of this draft assessment should be provided to Deerubbin LALC

for their review and comment. All comments made by the LALC should be incorporated into the report prior to finalisation.

Recommendation 3: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the *National Parks and Wildlife Act 1974* (NPW Act). It is an offence to harm an Aboriginal object without a consent permit issued by the NSW Department of Planning, Industry and Environment (DPIE) – Environment, Energy and Science Group (EES). Should any suspected Aboriginal objects be encountered during works associated with the proposed development works, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying EES and Aboriginal stakeholders.

Recommendation 4: Discovery of Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, the proponent must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and EES' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by EES.

Accordingly, Bosis outline that no further archaeological assessment is required in advance of the works proposed, provided the recommendations outlined above are implemented as part of the proposed development.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Biodiversity:

Whilst a formal BDAR Waiver has not been submitted, the EIS contains a Biodiversity Assessment (BA) prepared by Cumberland Ecology dated 8 April 2019 which concludes "that the preparation of a BDAR is not necessary due to the likelihood of significant impacts to biodiversity. Therefore, we recommend that a waiver for the preparation of a BDAR sought from the Department of Planning and Environment for the proposed Plant 2 upgrade works, constituting State Significant Development."

It should be noted, that EES would not grant a BDAR Waiver, for the reasons outlined below.

The BA states "that the site is predominantly comprised of low biodiversity value exotic dominated grassland. Also present are two small occurrences of extremely degraded Cumberland Plain Woodland with reduced ecological function, and a minimal area of planted natives. Both of these communities may comprise sub-optimal foraging habitat for some threatened and non-threatened fauna species.

EES notes that the proposal will lead to the removal of Cumberland Plain Woodland (CPW), albeit degraded, and does not support the above statement because according to the species lists from the quadrats and random meander searches (RMS) (Table 3), there are a number of locations on the site that have a mix of native CPW tree, shrub and grass species. For example, quadrat 1 has 13 native species including trees, shrubs, grasses, forbs and 'others'. RMS point 5 has 10 species including trees, shrubs, grasses, forbs and 'others'.

The BA also states that "overall property that the site occurs within is likely to provide habitat connectivity along the vegetated eastern boundary and central riparian corridor. These areas of vegetation are outside of the Development site. Vegetation within the site is unlikely to provide significant habitat connectivity as patches of vegetation area isolated by cleared areas and buildings.

EES does not support this statement because, the site is adjacent to the extensive and significant bushland in Prospect Reservoir and along Eastern Creek. There are connections between the vegetation on site and these other areas, albeit with a small break in the south east just off site.

Therefore, it is recommended that a BDAR be submitted as outlined in the SEARs.

The Aboriginal Due Diligence Assessment is located within **Appendix 7** of this Submission.

The Biodiversity Development Assessment Report (BDAR) prepared by Cumberland Ecology (2019) notes, that desktop assessments and field surveys within the Subject Site, for the purposes of the proposed development included assessment of habitat constraints and microhabitats for predicted species credit fauna species. This included a desktop assessment of the proximity of the Site to features such as caves and waterways and field inspection of microhabitats including leaf litter, stick nests and hollow-bearing trees.

The extract below includes a summary of the fauna species surveyed within the Subject Site.

Table 4 Threatened fauna survey dates and methods

Scientific Name	Common Name	Recommended Survey Period	Dates of Survey within Subject Land	Survey Method
<i>Meridolum corneovirens</i>	Cumberland Plain Land Snail	Jan-Dec	10 December 2018 8 November 2019	Diurnal active search

A total of nine (9) active searches were undertaken within the Subject Site by an Ecologist on 10 December 2018 and 8 November 2019.

Additionally, the low occurrence of habitat present on-site can be attributed to the Subject Site not forming part of a regional biodiversity corridor; flyway for migratory species; riparian buffer or estuary; or a local corridor identified by Council.

With respect to flora species, a total of 17 flora species credit species and 23 fauna species credit species have been predicted for the Subject Site. Of these species predicted, two (2) flora species and one (1) fauna species have been retained for further assessment, for which they have been targeted during the surveys undertaken.

It is noted, that *Eucalyptus scoparia* (Wallangarra White Gum) was recorded within the Subject Site during field surveys. As this species is not endemic to the Subject Site, and the individuals have been planted within a boundary strip of native plantings, they are not considered to

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

be natural components of the landscape. Therefore, this species has not been considered within the BDAR.

The initial design proposed to have clay bins, as well as fuel and oil tanks further to the south outside of the current developable site area and potentially impacting on a patch of Cumberland Plain Woodland. In order to avoid and minimise any potential impacts on this identified Threatened Ecological Community (TEC), the clay bins and fuel tanks were repositioned, for which all potential impacts to native vegetation have been avoided.

Accordingly, the proposed development avoids and minimises direct impacts on native vegetation and habitat by:

- Design of building upgrades and accessway upgrades to retain as much as possible of PCT 849 in the east of the Development Site;
- Ensuring the accessway drains naturally to the street frontage minimising stormwater runoff through TEC vegetation and North Rocks Park;
- Providing shared services corridors to Lots 2 and 3 to minimise disturbance;
- Relocating proposed fuel and oil tanks and clay bins to reduce potential impacts on Cumberland Plain Woodland TEC;
- Utilising existing accessways and upgrading to prevent further for upgrades and;
- Engineering retaining wall in the south to be situated in existing batter vegetated with exotic grasslands and prevent impacts to Cumberland Plain Woodland TEC to the south of the Development Site.

Furthermore, by design the upgrades (as proposed), any further reduction to impacts anticipated to PCT 849 within the eastern portion of the Site were not possible due to the following reasons:

- The production process of the brick factory results in the finished products exiting the building on the eastern side. This process does not change with the extension;

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

- The building extension is required to increase kiln car storage to allow the bricks to air dry. This saves energy and reduces manufacturing costs and environmental impact of the plant;
- The kiln car storage can only be increased near the end of the brick manufacturing process, which occurs on the eastern side; and
- Once the building is extended to the east, there is insufficient room for the forklifts to drive around the building and access the existing hardstand area, which is on the western side of the building. The existing retaining wall and batter (containing PCT 849) has thus been moved further to the east to create the forklift access area.

Cumberland Ecology note, that the project will result in the reduction in connectivity by approximately 0.14 ha. The reduction of this small area of habitat is not considered likely to significantly impact the movement of mobile fauna species as connective vegetation will remain around all sides of the Subject Site, including vegetation to the north, south and east. Therefore, it is considered unlikely that any native fauna species would be solely reliant on the habitat within the Subject Site.

Notwithstanding, a range of mitigation measures have been developed for the project to mitigate the potential impacts to native vegetation and habitat that are unable to be avoided. These include a range of measures to be undertaken before and during the construction phase of development to limit the impact of the project, which includes the following:

- Weed Management;
- Delineation of Clearing Limits;
- Tree Protection Measures;
- Pre-Clearance Surveys;
- Staging of Clearing; and
- Sedimentation Control Measures.

The ecosystem credits required for the proposal are as follows:

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 17. Summary of ecosystem credit liability

PCT #	PCT Name	TEC	Area (ha)	Credits Required
849	849-Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion	Cumberland Woodland in the Sydney Basin Bioregion	0.11	2
1232	1232-Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	Not a TEC	0.03	1

Additionally, the like-for-like offsetting options for the ecosystem credits are provided below:

Table 18. Like for like offsetting options for PCT 849

Any PCT with the below TEC	Containing Hollow-bearing Trees?	In the below IBRA Subregions
Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 849, 850	No	Cumberland , Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometres of the outer edge of the impacted site.

Table 19 Like for like options for PCT 1232

Any PCT in the below Class	And in any of below trading groups	Containing Hollow-bearing Trees?	In the below IBRA Subregions
Coastal Swamps Forests This includes PCT's: 1232, 1723	Coastal Swamps Forests - ≥ 90% cleared group (including Tier 2 or higher	No	Cumberland, Burragorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometres of the outer edge of the impacted site.

Flooding:

The proposed development is unlikely to change flood risks based on the modelling results from the Flood Impact Assessment undertaken in 2015. The changes of flood level from existing conditions to the post-development stage under a PMF Flood Event would be small and / or insignificant both at the development site and its downstream areas within the Brick Pit complex. The development works are unlikely to have any impacts on creek and downstream area

Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

flooding due to a proposed on-site detention storage which is expected to restrict the peak flows to the pre-development stage. The development site would not be subject to evacuation difficulties under a PMF Flood Event.

Sustainability:

The proposed has included sustainability measures in the submission (soil and water management plan and civil engineering design) to capture and reuse rainwater from the proposed roof areas for non-potable usages. It is recommended that the proposed also consider the following sustainability measures in conjunction with water management.

- *The solar energy should be captured using solar PV or solar thermal from the expansive roof areas of new buildings of the development site. This will align with the NSW Government's initiatives for Net Zero Emission by 2050 (<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/achieving-net-zero-emissions-by-2050-fact-sheet-160604.pdf>) and energy saving scheme (<https://energy.nsw.gov.au/government-and-regulation/energy-savings-scheme>).*
- *The additional canopy cover via tree plantation should be developed at the Brick Pit complex in conjunction with the development activities which would have beneficial effects on urban cooling through mitigation of potential urban heat island effects under the projected climate change conditions where the number of hot days is likely to be increased (<https://climatechange.environment.nsw.gov.au/>). This will support the NSW Government's initiatives for Five Million Trees Program (<https://www.planning.nsw.gov.au/Policy-and-Legislation/Open-space-and-parklands/5-million-trees>). Furthermore, a well-developed tree canopy at the Brick Pit complex would provide a buffer to the adjoining areas which are under consideration for future release by Fairfield City Council (http://www.fairfieldcity.nsw.gov.au/downloads/file/2221/draft_structure_plan_options_abc).*

Noted and agreed. Sustainability and energy efficiency measures will be implemented where deemed practical and applicable across the Subject Site.

Additionally, the landscaping treatment combined with energy efficiency measures to be implemented across the Site would contribute to reducing the potential increases in the micro climate for the Site, thereby reducing any detrimental impacts, which would influence the Urban Heat Island Effect, which is prone to the Western Sydney Region.

Further consideration is not considered to be warranted in this respect.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 4: Response Matrix

Relevant Entities Response to Submissions	Formalised Response
NSW Department of Planning, Industry and Environment – Crown Lands	
<i>DPIE Crown Lands has no comments for this proposal.</i>	Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 5: Response Matrix

Relevant Entities Response to Submissions	Formalised Response
NSW Department of Planning, Industry and Environment – Crown Lands	
<i>DPIE Crown Lands has no comments for this proposal.</i>	Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 6: Response Matrix

Relevant Entities Response to Submissions	Formalised Response
Blacktown City Council	
<i>We do not have any objection to the proposed development. Given its location and existing infrastructure on the site, there are minimal (if any) impacts on the Blacktown LGA considered likely as a result of the additions to the facility. We ask that the Department of Planning, Industry and Environment carefully consider any potential environmental impacts on the ecological quality of both Eastern Creek and Prospect Reservoir's flora and fauna population as well as their hydrological qualities and that some degree of environmental monitoring take place during construction stage and into the future during the continued operation of the facility.</i>	Noted and agreed.
<i>No comments to offer thanks Judy</i>	Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 7: Response Matrix

Relevant Entities Response to Submissions	Formalised Response
Department of Primary Industries	
<i>The Department of Primary Industries has reviewed the proposal and has no comment.</i>	Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 8: Response Matrix

Relevant Entities Response to Submissions	Formalised Response																										
<p>WaterNSW (Clay Preshaw – Manager Catchment Protection)</p>																											
<p>Stormwater Management:</p> <p><i>Stormwater discharge quantities into Eastern Creek pre- and post-development are not identified in the Civil Design Report (at&l, May 2019). It is understood that a new on-site detention basin will be constructed to the northwest of the site as part of this proposal, with flows conveyed from the development site across WaterNSW lands along Eastern Creek. At this location, WaterNSW lands are specifically prone to prolonged inundation of stormwater flows after rain events impeding access to bulk water supply infrastructure for maintenance and operation.</i></p> <p><i>The proposed detention basin is expected to reduce the peak rate of stormwater flows into Eastern Creek by temporarily storing water and releasing it at a controlled rate over a longer period of time. Given the Pipeline access constraints and risk to infrastructure, WaterNSW is concerned that the detention basin may still release water long after the storm event is over.</i></p> <p><i>As per WaterNSW’s Guidelines for development adjacent to the Warragamba Pipelines Corridor, WaterNSW requires that post-development flows that enter or are conveyed across the Pipelines corridor must be equal to or less than the pre-development flows for each storm event up to and including 1% AEP event.</i></p>	<p>AT&L note, that discharge flow rates from the basin into Eastern Creek are identified within Table 3.2 of the Civil Engineering Design Report submitted with SSD 9601. Table 3.2 is provided below for reference.</p> <p>Table 3.2 - Peak Stormwater Flows for the 5 year and 100 year ARI events</p> <table border="1" data-bbox="1115 611 2078 866"> <thead> <tr> <th>Storm Duration</th> <th>Allowable PSD (78L/sec/Ha)</th> <th>5 YR ARI flow</th> <th>100 YR ARI flow</th> </tr> </thead> <tbody> <tr> <td>5 min duration</td> <td rowspan="8">468 L/s</td> <td>0 L/s</td> <td>0 L/s</td> </tr> <tr> <td>15 min duration</td> <td>0 L/s</td> <td>250 L/s</td> </tr> <tr> <td>30 min duration</td> <td>163L/s</td> <td>349 L/s</td> </tr> <tr> <td>60 min duration</td> <td>314L/s</td> <td>376 L/s</td> </tr> <tr> <td>180 min duration</td> <td>315L/s</td> <td>383 L/s</td> </tr> <tr> <td>360 min duration</td> <td>322L/s</td> <td>391 L/s</td> </tr> <tr> <td>540 min duration</td> <td>326 L/s</td> <td>386 L/s</td> </tr> </tbody> </table>	Storm Duration	Allowable PSD (78L/sec/Ha)	5 YR ARI flow	100 YR ARI flow	5 min duration	468 L/s	0 L/s	0 L/s	15 min duration	0 L/s	250 L/s	30 min duration	163L/s	349 L/s	60 min duration	314L/s	376 L/s	180 min duration	315L/s	383 L/s	360 min duration	322L/s	391 L/s	540 min duration	326 L/s	386 L/s
Storm Duration	Allowable PSD (78L/sec/Ha)	5 YR ARI flow	100 YR ARI flow																								
5 min duration	468 L/s	0 L/s	0 L/s																								
15 min duration		0 L/s	250 L/s																								
30 min duration		163L/s	349 L/s																								
60 min duration		314L/s	376 L/s																								
180 min duration		315L/s	383 L/s																								
360 min duration		322L/s	391 L/s																								
540 min duration		326 L/s	386 L/s																								
<p><i>WaterNSW requests that:</i></p> <ul style="list-style-type: none"> ▪ <i>additional modelling be provided to show the stormwater flow properties (both velocity and water level) for the predeveloped and post developed scenarios. At a minimum, this must be completed at the location of the intersection of the Pipelines corridor and Eastern Creek.</i> 		<p>AT&L note, that this would require a revised flood modelling exercise to be undertaken based on the latest development layout. Notwithstanding, all discharge from the Subject Site and proposed development is directed into Eastern Creek, which will continue to cross into the Pipeline Corridor at the same location as the existing. The quantity of flows into Eastern Creek are limited to equal or less than pre-development levels by the proposed OSD basin.</p>																									
<ul style="list-style-type: none"> ▪ <i>during detailed design stage, measures must be developed ensure</i> 	<p>Noted and agreed.</p>																										

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>flooding and associated water quality and quantity risks within the Pipelines corridor are mitigated;</i></p>	
<ul style="list-style-type: none"> ▪ <i>additional information is provided regarding the pipes associated with the detention basin to demonstrate mitigation measures proposed if the pipes are blocked and the blockage factor;</i> 	<p>If the detention basin outlet pipe (nominal diameter 525 mm) is blocked, flows will still be able to discharge from the basin via a high-level spillway which has been sized with sufficient capacity to safely convey the 1% AEP (1 in 100 year ARI) storm event even when assuming 100% pipe blockage.</p>
<ul style="list-style-type: none"> ▪ <i>the development will have a neutral or beneficial effect (NorBE) on water quality.</i> 	<p>It is noted, that water quality treatment with respect to NorBe Standards was not proposed for the following reasons:</p> <ul style="list-style-type: none"> ▪ Fairfield City Council policy excludes the development area from requiring stormwater quality treatment (contained in "Rural Zone"). ▪ NorBe is normally only required when the development is located within the Sydney Water Drinking Catchment or adjacent to the Upper Canal, which the Site is not. ▪ The proposed development is not immediately adjacent to the Warragamba Pipeline Corridor – approximately 100 m away at its closest point. <p>However, technically speaking, it appears that WaterNSW may be within their rights to request NorBe water quality treatment for this proposal, since the "Guideline for Development Adjacent to the Upper Canal and Warragamba Pipeline Corridor" document does state that this is required for any development within the Western Sydney Parklands zone, mainly because it is considered to be adjacent to the Upper Canal (even though the subject site in this case is not).</p>
<p><i>Requested conditions:</i></p> <ul style="list-style-type: none"> ▪ <i>The proposal must not result in an increase in overland flow water into the Pipelines corridor of either quantity, quality or velocity. The development must be designed, operated and maintained to ensure post-development flows do not exceed pre-development flows into and through the Pipelines corridor.</i> ▪ <i>Stormwater directed to or across the Pipelines corridor is not acceptable, except at approved point of discharge for the development.</i> ▪ <i>The proposal must have a neutral or beneficial effect on water quality</i> 	<p>Noted and agreed.</p>
<p><i>Impacts on Bulk Water Supply Infrastructure:</i></p>	<p>The proposed development works are located wholly within the Subject Site, for which existing drainage and stormwater management outcomes would capture any</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>Further justification is required to demonstrate how the development meets Clause 13 of State Environmental Planning Policy (Western Sydney Parklands) 2009. There is potential for the proposed development to impact outside the development footprint, specifically on the bulk water supply infrastructure. Development consent should not be granted to any development on land in Western Sydney Parklands unless the consent authority is satisfied that this clause has been addressed.</i></p>	<p>stormwater for reuse and reticulation where possible. Additionally, On-site Stormwater Detention would treat any water prior to discharge, for which Council's WSUD targets would be adhered to accordingly. Further consideration with respect to Clause 13 of the WSP SEPP is not considered to be required.</p>
<p>Erosion and Sediment Control:</p> <p><i>It is critically important that the bulk earthworks are designed and undertaken in a manner that does not impact on the Pipelines corridor. Effective erosion and sediment control must be installed prior to any earthworks. The controls should be regularly maintained and retained until works have been completed and the ground surface stabilised or ground cover re-established.</i></p> <p><i>Requested condition:</i></p> <ul style="list-style-type: none">▪ <i>Erosion and sediment controls are to be designed, installed and maintained in accordance with the Blue Book, Landcom (2004) Managing Urban Stormwater: Soils and Construction.</i>	<p>Noted and agreed.</p>
<p>WaterNSW Access:</p> <p><i>Any structure and related works must be designed, constructed and operated in such a way that does not restrict WaterNSW from operating and maintaining the Pipelines.</i></p> <p><i>Requested condition:</i></p> <ul style="list-style-type: none">▪ <i>24 hour all weather access to the WaterNSW Pipelines corridor shall be retained or provided for WaterNSW staff and contractors.</i>	<p>Noted and agreed.</p>
<p>Notification of Incidents:</p> <p><i>WaterNSW requires notification of any incident such as a vehicle accident, discovery of any heritage items, spill or fire that affects or could affect the WaterNSW Pipelines corridor. Any such incident should be reported to WaterNSW on the incident Notification Number 1800 061 069 (24 hour service) as a matter of urgency.</i></p>	<p>Noted and agreed.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Requested condition:

- *All incidents that affect or could affect the WaterNSW Pipelines corridor shall be reported to WaterNSW on the 24 hour Incident Notification Number 1800 061 069 as a matter of urgency.*

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 9: Response Matrix	
Relevant Entities Response to Submissions	Formalised Response
NSW Environment Protection Authority (Jacqueline Ingham – Unit Head Sydney Industry)	
<p>Air Quality:</p> <p><i>Exceedances of hydrogen fluoride (HF) limits at point 5 (Plant 2) and point 7 (Plant 3) were reported in the 2015/2016 annual return. A Pollution Reduction Program (PRP) was placed on the licence on 29 August 2017 to require an investigation into the emissions of fluorine (including hydrogen fluoride) and explore options for reducing them.</i></p> <p><i>An Air Quality Impact Assessment (AQIA)¹ report assessing the HF concentrations from Austral Bricks was provided in response to the PRP.</i></p> <p><i>A report by Ramboll on mitigation options (Best Practice HF Mitigation Options Review²) was provided and recommended Austral Bricks pursue dry lime scrubber technology for new kilns and kiln replacements.</i></p>	<p>Noted and agreed.</p>
<p>Efficiency of Proposed Scrubber Not Demonstrated:</p> <p><i>The AQIA states that the proposed improvements of the fluorine cascade scrubber would offer a 45- 65 % control efficiency in reducing HF emissions.</i></p> <p><i>The Best Practise HF Mitigations Options report provided by Ramboll prepared for the PRP investigating HF emissions at Austral Bricks Plants 1, 2 and 3 identified that under current international best practice cascade absorbers can achieve 90-99 % HF emission reduction.</i></p> <p><i>Previous stack testing measurements of HF (attached memo in AQIA) reported a maximum HF concentration of 68 mg/m³, with an average concentration of 50.6 mg/m³ (N = 15). Based on the manufacturer design specifications of a maximum HF concentration of 45 mg/m³, the EPA calculates a maximum efficiency of 34 % and average efficiency of 11 %.</i></p> <p><i>The EPA expects the proposed scrubber for the Plant 2 kiln to achieve 90-99 %</i></p>	<p>One of the main purposes of upgrading the Plant 2 kiln is to improve the emissions discharged to the atmosphere from the kiln. It is noted, that Airlabs have undertaken air quality assessments and stack emissions monitoring historically for Austral Bricks and are cognisant of the concerns raised by the NSW EPA regarding emissions generated from the Plant 2 kiln, especially Hydrogen Fluoride (HF) concentrations, which is a key pollutant released from brick manufacturing facilities. Other pollutants (monitored over the years), have largely remained compliant with the corresponding limits and emission criteria imposed within EPL 546.</p> <p>Therefore, the upgrade proposed aims to improve the level of emissions released to the atmosphere, especially HF, and in order to achieve this, a range of improvements / mitigation measures have been proposed by Brickworks which include:</p> <ul style="list-style-type: none"> ▪ New Kiln: <ul style="list-style-type: none"> ○ The two (2) existing kilns for Plant 2 will be replaced by a new

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

performance efficiency. The EPA advises the efficiencies stated in the AQIA are below expected performance efficiencies. The EPA recommends the expected performance of the proposed fluorine cascade scrubber be designed to meet international best practice (90-99 %).

The EPA recommends the AQIA be revised to benchmark the kiln and scrubber emission design performance and control efficiency with best practice.

The EPA recommends that the scrubber be redesigned to align with best practice and the redesign should be included in the revised AQIA.

kiln, which would improve fuel consumption and the emissions profile.

- Scrubber to Minimise Acid Gas Emissions:
 - The upgraded Plant 2 kiln would comprise a dry lime fluorine cascade scrubber, which is aimed at reducing acid gas emissions, mainly HF. An overview on the rationale for selecting a cascade scrubber and its expected effectiveness in reducing HF concentrations is provided below:
 - Exceedances of HF limits at EPA I.D. 5 (Plant 2) and Point 7 (Ceric – Plant 3) have been reported to the EPA in the 2015-16 annual returns. Subsequently, a Pollution Reduction program (PRP) was initiated, which required an investigation into the emissions of fluorine (including HF) and exploration of options to reduce HF concentrations.
 - To this extent, two (2) specialist studies were undertaken – an assessment of ground-level concentrations of HF resulting from Plant 1, 2 and 3 kiln emissions determined through air dispersion modelling (Pacific Environment Limited, May 2018) and a report summarising range of best practice HF mitigation measures (Ramboll, May 2018).
 - The report prepared by Ramboll recommended investing in HF end-of-pipe emission mitigation measures for new kilns, replacements or plants with significant plant life remaining (>10 years). The report specifically suggested dry scrubbing using lime mixture as an adsorbent agent to be in-line with best practice HF emission end-of-pipe solution.
 - As-such, a fluorine cascade absorber was chosen by Austral Bricks as the end-of-pipe HF mitigation measure for the upgraded Plant 2 kiln. The absorption material comprised limestone (CaCO₃) chippings.
 - Workings of the proposed cascade scrubber system is presented below:
 - The absorption material – limestone chippings would be located in a silo on top of the absorber.
 - The absorption material then trickles vertically out of

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

- | | |
|--|---|
| | <p>the storage silo past the horizontally aligned cascades in the reaction chamber.</p> <ul style="list-style-type: none">▪ In doing so, the pollutants flow through the absorption materials and react with the limestone chippings. The saturated limestone chippings are collected in the unit hopper and removed continuously or intermittently with a screw conveyor.▪ The reacted surface of the limestone chippings is abraded in the rotating screen drum / peeling drum. The limestone chippings which now can be reused again, are then transported back to the storage silo via a pneumatic transport system.▪ A simplified schematic of a typical cascade scrubber is shown in Figure 3 of Appendix 1 of this Submission. <ul style="list-style-type: none">○ A brief commentary about the expected HF emission reduction efficiency of the cascade scrubber is presented below:<ul style="list-style-type: none">▪ Assessment of HF impacts from the upgraded Plant 2 kiln stack in the original air quality assessment report (AUG18138.2) was based on a maximum discharge concentration of 45 mg/m³.▪ The EPA in their comments note that the Ramboll HF Mitigation Options review identified that between 90-99% HF emission reduction can be achieved through the use of cascade-type bed adsorber / dry scrubber using limestone (CaCO₃) and that the use of 45 mg/m³ in the original air quality assessment (AUG18138.2) was below expected performance of the cascade scrubber. The EPA recommended the expected performance of the cascade scrubber be designed to meet international best practice (90-99%) and that the expected emissions from the redesigned scrubber be included in the revised AQIA.▪ To that effect, Austral Bricks undertook an investigation to further improve the HF removal efficiency of the cascade scrubber and informed Airlabs that the improved cascade scrubber would now be able to contain the maximum HF discharge concentration to 20 mg/m³ as opposed to the initially assessed 45 mg/m³. |
|--|---|

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>Moreover, upon comparison with the concentration limits (refer Table 5 of Appendix 1), the revised discharge concentration of 20 mg/m³ from the scrubber would be 60% lower than the current licence limit of 50 mg/m³.</p> <ul style="list-style-type: none">▪ Austral Bricks have expressed their reservation with regards to specifying a definitive HF reduction efficiency owing to the uncertainties associated with the raw gas concentrations, and therefore, are willing to commit to limit the HF discharge concentrations from the upgraded Plant 2 kiln stack to a maximum of 20 mg/m³.▪ Airlabs concur with the reservations expressed by Austral Bricks about emphasising on reduction efficiencies. As an example, historical stack monitoring data shows that HF concentrations measured at Plant 2 site (prior to the upgrade) ranged from 45 mg/m³ up to 120 mg/m³. When these concentrations are compared to the proposed discharge concentration of 20 mg/m³, the reduction efficiencies range from 55% - 83%. It is acknowledged that these reduction efficiencies are not in the range that is expected with cascade scrubbers as noted in the Ramboll HF Mitigation Options review.▪ However, Airlabs would like to draw reference to Austral Bricks' Wollert plant at Wollert, VIC. As per information provided to Airlabs and as noted from the Ramboll report, HF emissions at the Wollert kiln are controlled through a dry cascade scrubber, which limits the maximum HF discharge concentration to a maximum of 20 mg/m³, which is similar to the proposed discharge concentration for the upgraded Plant 2 cascade scrubber.▪ The effectiveness of the cascade scrubber at the Wollert kiln was tested in December 2015 and Airlabs were provided a copy of the report (Ektimo, 2015).▪ From the test report, it is evident that the inlet HF concentration at the Wollert East kiln was 220 mg/m³ and the corresponding concentration at the exit was 18 mg/m³, which shows a 92% reduction efficiency for the
--	--

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

	<p>cascade scrubber. Nonetheless, the exit concentration of 18 mg/m³ is comparable to the corresponding concentration of 20 mg/m³ for the upgraded Plant 2 cascade scrubber.</p> <ul style="list-style-type: none">▪ This demonstrates that the HF reduction efficiencies are majorly dependent on the concentration of fluorine in raw materials and the process.▪ Most of Austral Bricks' plants that have end-of-pipe HF abatement technologies, have a maximum discharge concentration of 20 mg/m³, which include facilities at Golden Grove in South Australia and facilities in Bellevue, Cardup and Malaga, all of which are located in WA. As the upgraded Plant 2 would also have similar discharge concentrations, it is considered to be in-line with best practice measures implemented by Austral Bricks.▪ Furthermore, Airlabs and Austral Bricks opine that to achieve compliance with licence limits 100% of the time, it is important that limits are set at a reasonable level which can be achieved at all times, notwithstanding the variability associated with the raw materials and process.▪ Therefore, drawing reference from the above discussion, the assessment of HF impacts from the upgraded Plant 2 kiln stack in this revised air quality assessment is based on the revised maximum discharge concentration of 20 mg/m³.▪ Increase in stack height:<ul style="list-style-type: none">○ In addition to commissioning a cascade scrubber, Austral Bricks are also proposing to increase the stack height of the existing Plant 2 kiln (i.e. Point No: 5) from 16m to 35m. Increasing the stack height would facilitate better dispersion of pollutants and minimise building wake effects that can potentially disrupt / impact the plume dispersion.
<p><i>Proposed Upgraded Plant 2 Emissions Below the Protection of the Environment Operations (Clean Air) Regulation 2010 ("Clean Air Regulation") Standards of Concentration:</i></p>	<p>Airlabs Environmental agree to the adjacent comment that emission limits cannot be provided by the NSW EPA until the Air Quality Assessment has been adequately updated to include demonstrations of the expected scrubber performance efficiency. Details of the scrubber performance efficiency are</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>The AQIA presents the manufacturer design specifications for concentrations of pollutants emitted from the proposed Plant 2 Kiln upgrade in Table 14. Table 14 indicates that the pollutants Total suspended particles ("TSP"), nitrogen oxide NOx (as NO2 equivalent) and Flourine (F2) (as HF equivalent) would be below the Group 6 standard of concentrations for the scheduled activity (ceramic works). The AQIA states that actual discharge concentrations from the exhaust kiln are not expected to exceed the design specifications.</i></p> <p><i>The EPA advises that the proposed upgrade of the kiln at Plant 2, including the scrubber, indicates compliance with the Clean Air Regulation standards of concentrations.</i></p> <p><i>However, the EPA recommends the emission limits cannot be provided until the AQIA has been adequately updated to include demonstrations of the expected scrubber performance efficiency.</i></p>	<p>outlined above.</p>
<p>Offsite Hydrogen Fluoride (HF) Impacts Below Impact Assessment Criteria (IAC):</p> <p><i>Predicted incremental impacts (Plant 2 upgrade only) at all identified receptors are below the HF Impact Assessment Criteria (IAC) for generalised land use of 2.9 µg/m3. The maximum incremental 24-hour concentration, predicted at receptor 7 to the immediately east of the site, is 1.48 µg/m3, which constitutes a significant amount (51 %) of the 24-hour IAC.</i></p> <p><i>The cumulative impacts (assumed to be only sourced from Plant 1 and Plant 2 emissions) are predicted to be below the IAC for generalised land use at all receptors. The maximum cumulative 24-hour concentration, predicted at receptor 8 east of the site is 1.59 µg/m³, which constitutes a significant amount (54.9 %) of the 24-hour IAC of 2.9 µg/m³.</i></p> <p><i>The EPA advises that the HF IAC from the Approved Methods for Modelling and Assessment of Air Pollutants in NSW (Approved Methods) for "general land use" has been used in the AQIA and offsite HF concentrations at all identified receptors are predicted to be below this IAC. However, a more stringent IAC exists for specialised land use, which includes all areas with vegetation sensitive to fluoride. Whilst the AQIA has stated that the surrounding land use is largely grazing/pastoral land, it has not adequately demonstrated that the general land use IAC is appropriate.</i></p>	<p>To predict air quality impacts from the upgrade Plant 2 facility, a set of sensitive receptors closest to the facility have been identified. Model predicted incremental (impacts from Plant 2 alone) and cumulative impacts have been determined at each of the identified sensitive receptors and compared against the assessment criteria to assess compliance.</p> <p>To assess compliance for HF emissions released from the kiln stack, model predicted cumulative concentrations at the nearest sensitive receptor are compared against the assessment criteria provided in the Approved Methods. Specifically, for HF, the Approved Methods have two (2) sets of assessment criteria – one for general land use and another for specialised land-use, which includes all area with vegetation sensitive to fluoride impacts.</p> <p>In accordance with the submissions received, the NSW EPA note, that the HF impacts predicted at all of the identified sensitive receptors in the original air quality assessment were compared against the general land use criteria and not the specialised land use criteria.</p> <p>Airlabs have since identified a set of agricultural receptors (including pastoral / grazing land), mainly to the south of the Plant 2 facility and applied the specialised land use criteria for these receptors. As it is unknown what type of produce is grown at these receptors, it has been assumed that all of these receptors are sensitive to fluoride and therefore, the more stringent specialised</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>The EPA advises that had the specialised land use IAC been used, it would have been exceeded at two identified receptors (7 and 8) on a 24-hour basis, one identified receptor (1) on a 7-day basis and two identified receptors (1 and 7) on a 90-day basis.</i></p> <p><i>The EPA recommends the proponent provide a detailed land use and vegetation assessment to evaluate current and potential future land uses and vegetation that may be sensitive to fluoride.</i></p>	<p>land use impact assessment criteria have been applied at these receptors.</p> <p>For the remaining receptors, the general land use criteria have been adopted. Accordingly, details for the HF general land use and specialised land use assessment criteria are located within Table 6 of Appendix 1 of this Submission.</p>
<p>Dispersion Modelling Issues:</p> <ul style="list-style-type: none"> ▪ <i>Plant 3 not modelled</i> <p><i>The cumulative impacts have only included HF emissions from Plants 1 and 2 and not Plant 3.</i></p> <p><i>The EPA advises that emissions from Plant 3 should have been included in dispersion modelling and assessment of cumulative impacts offsite.</i></p> <p><i>The EPA recommends the AQIA should be revised to include Plant 3 emissions in dispersion modelling.</i></p>	<p>Airlabs note, that contribution from the Plant 3 operations comprising point source emissions from the two (2) kiln stacks – EPA ID Point 6 (Swindell) and EPA ID Point 7 (Ceric) have been included and are outlined within Section 9 of the revised Air Quality Impact Assessment located within Appendix 1 of this Submission.</p>
<ul style="list-style-type: none"> ▪ <i>Average emissions rather than maximum emissions from Plant 1</i> <p><i>Average emissions from Plant 1 were included in dispersion modelling and assessment of offsite impacts rather than maximum emissions.</i></p> <p><i>The EPA advises that the Approved Methods requires that maximum measured emission rate to be used in the absence of available data to describe emission rate distribution.</i></p> <p><i>The EPA recommends the AQIA should be revised to include maximum emissions from Plant 1 in dispersion modelling.</i></p>	<p>For all the modelled pollutants (except HF), the maximum measured pollutant emissions from the kiln stack at Plant 1 (EPA ID 4) between 2017 and 2019 have been used in the revised Air Quality Impact Assessment (refer to Appendix 1).</p> <p>Additionally, Austral Bricks is committing to install a scrubber on Plant 1 Kiln by 31 December 2020. Hence, HF concentrations of 20 ug / m³ have been applied for the Plant 1 Kiln.</p>
<ul style="list-style-type: none"> ▪ <i>Use of CALMET data for long-term assessment of meteorological conditions</i> <p><i>The AQIA has presented the long-term site-representative meteorological data</i></p>	<p>The NSW EPA’s recommendations have been adhered to accordingly within the revised Air Quality Impact Assessment (refer to Appendix 1), for which the following methodology has been adopted:</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

using CALMET model generated data instead of meteorological data collected at a meteorological monitoring station as preferred and outlined in the Approved Methods. The choice of 2017 for dispersion modelling was based on CALMET generated data comparison rather than site-representative meteorological data from a monitoring station.

The EPA advises that there are significant differences between the observed (BoM) meteorological data and the modelled (CALMET) meteorological data (Figure 13 of the AQIA).

The EPA notes that the licence requires weather monitoring onsite, including rainfall, temperature, wind speed and direction, and advises that site-specific meteorological data (if >90 % complete) is preferred above site-representative.

The EPA advises that the presentation of CALMET generated long-term meteorological data only does not adequately establish that this data describes the expected meteorological conditions at the site.

The EPA recommends additional information be provided on long-term site-representative meteorological data collected from a monitoring station and a detailed discussion on the prevailing meteorological conditions at the site including an analysis of wind speed and direction, stability class, ambient temperature and mixing height.

The EPA recommends an adequate justification of the use of 2017 for dispersion modelling compared to the long-term site-representative meteorological data collected from a monitoring station be provided.

▪ *Building wake effects*

Section 11 of the AQIA states building wake effects on plume dispersion have been included in the modelling for the Plant 2 kiln stack.

The EPA advises that it is unclear in the AQIA if building wake effects have been included for emissions from Plant 1.

The EPA recommends the AQIA clarify if building wake effects for Plant 1 have been included in dispersion modelling and justify whether Plant 1 kiln is a wake-affected or wake-free point source.

- Airlabs have been informed by Austral Bricks that quality assurance / quality control checks have not been conducted at the on-site monitoring station and cannot confirm if the data is error free.
- Therefore, for the revised assessment, site-representative meteorological data was obtained from the BoM Automatic Weather Station at Horsley Park, NSW.
- As per the comments provided by the EPA and as per the Approved Methods, at least one (1) year of site-representative data (i.e. BoM AWS data at Horsley Park) has been used and correlated against a longer-duration dataset of at least five (5) years to be considered acceptable.
- Selected year has been used in the dispersion modelling to characterise the meteorology at the site.
- Details of the meteorological model selection year is presented in Appendix B of **Appendix 1**.

Airlabs confirm that the existing Plant 1 Kiln stack, the two (2) kiln stacks at Plant 3 – Point 6 (Swindell) and Point 7 (Ceric) and the upgraded Plant 2 Kiln Stack are all wake-affected sources. Accordingly, the Building Profile Input Program (BPIP) – Prime algorithm has been used to model building wake effects for all the wake-affected sources.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

▪ *Inconsistencies with previous modelling meteorology*

The EPA notes that the 2018 AQIA (Pacific Environment, section 4.3) shows different wind fields and a much higher % of calms than the AQIA report modelling the proposed Plant 2 upgrade (see Figure below).

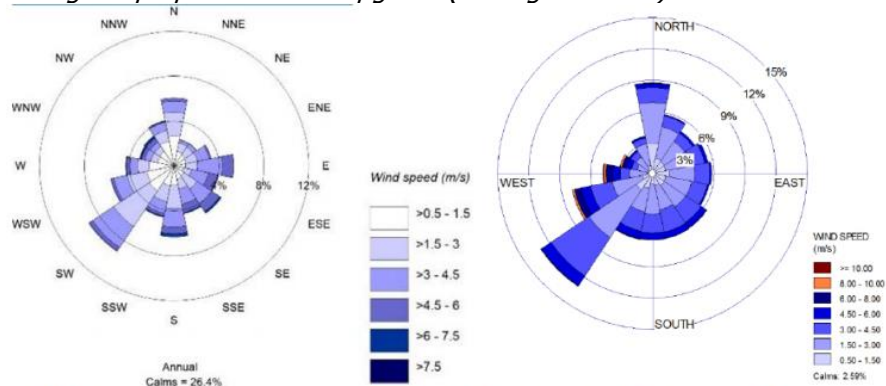


Figure: 2018 Pacific Environment meteorological data (Left) and 2019 Airlabs Environmental meteorological data (Right).

The EPA advises that the significant inconsistencies of meteorological data by the same proponent is questionable and that the significant difference in the percentages of calm would influence the dispersion of emissions, potentially changing the results and conclusions of the assessment.

The EPA recommends that a revised AQIA be prepared that demonstrates the meteorological data used for dispersion modelling adequately describes the expected meteorological patterns at the site.

The EPA recommends that additional information be provided on long-term site-representative meteorological data collected from one or more monitoring stations and a detailed discussion on the prevailing meteorological conditions at the site include an analysis of wind speed and direction, stability class, ambient temperature and mixing height, to demonstrate that the meteorological data produced by the model is appropriate for use in dispersion modelling.

The EPA calculations are outlined below. However, the EPA advises that these issues should not influence the emissions from the kiln and the proposed kiln

Airlabs wish to inform the NSW EPA that technical inaccuracies were identified in the CALMET model developed in the original Air Quality Impact Assessment. The inaccuracies were in relation to the percentage of calms predicted by CALMET. This has since been addressed in the revised meteorological model developed by Airlabs and a detailed discussion on the validity of the meteorological model output has been presented.

Additional information on long-term site-representative meteorological data collected from the BoM AWS at Horsley Park has been presented in Appendix B of **Appendix 1** of this Submission.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>upgrade and scrubber installation.</i></p> <p>Significant Issues with Fugitive Emissions Calculations:</p> <p><i>The EPA advises that the offsite impacts from particulates (TSP PM10 and PM2.5) cannot be assessed from the AQIA due to numerous issues in the emissions inventories for Plants 1 and 2. These issues are itemised below:</i></p> <p><i>Not enough information to evaluate emissions inventory.</i></p> <p><i>Table 12 provides the estimated fugitive emissions at Plant 1 however not enough information is provided to recalculate these emissions values. Missing information includes control factors applied, load weight of haul trucks, weight of trucks, distance travelled, silt content and moisture content.</i></p> <p><i>Table 16 provides the estimated fugitive emissions at Plant 2, however as for Plant 1, insufficient information is provided to recreate the emissions from the various activities included in the emissions inventory.</i></p> <p><i>The EPA recommends that all information and variables needed to calculate the emissions from all activities in Tables 12 and 16 should be provided.</i></p>	<p>Additional information including all variables and equations needed to calculate fugitive dust emissions from Plants 1, 2 and 3 have been provided in Appendix A of Appendix 1 of this Submission.</p>
<ul style="list-style-type: none"> ▪ <i>Incorrect total emissions calculated</i> <p><i>In Table 12, the sum of emissions from all sources listed equals 16,225 kg/yr for TSP, however Table 12 provides a total of 3,649 kg/yr. As the AQIA has not provided sufficient information to assess the particulate fugitive emissions, it is unclear which total is correct and what emission rates have been used in the dispersion modelling to assess offsite impacts.</i></p> <p><i>The EPA recommends a correct emissions inventory be provided and that if total emissions has been significantly underestimated, a revised AQIA with more realistic dispersion modelling be provided.</i></p>	<p>Airlabs would like to inform the NSW EPA that typographical errors have been identified within Table 14 of the original Air Quality Impact Assessment submitted with SSD 9601. Due to the typographical errors, the sum total of all the fugitive dust sources for Plant 1 does not match the corresponding reported total emissions.</p> <p>The typographical errors were limited to the report only (and not the model files) and has no such implications on the model predictions.</p> <p>Additional information, including all variables and equations needed to calculate the emissions has been provided in Appendix A of Appendix 1 of this Submission.</p>
<ul style="list-style-type: none"> ▪ <i>Inconsistent emissions from same activity between Plant 1 and Plant 2</i> <p><i>Plant 1 has a total emission of TSP of 16,225 kg/yr (calculated from the sum of individual activities, see above issue) from a production of 65 million bricks, while Plant 2 has a total emission of TSP of 7,882.7 kg/yr from a production of 80 million bricks. Given the increased production and quantity at Plant 2, it is</i></p>	<p>Airlabs would like to inform the NSW EPA that typographical errors have been identified within Table 14 and Table 20 of the original Air Quality Impact Assessment submitted with SSD 9601, which incorrectly outlines that the sum of TSP emissions from all fugitive sources for Plant 1 (Table 14) are considerably higher than the corresponding emissions for Plant 2 (Table 20), even though the production rate for Plant 1 is less than Plant 2. This typographical error has</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>incongruous that the fugitive emissions from Plant 1 are higher.</i></p> <p><i>Additionally, individual activity emissions between the two plants are vastly different. For example, Plant 1 haulage emissions are 13,435 kg/yr (TSP) while Plant 2 haulage emissions are 29.8 kg/yr (TSP).</i></p> <p><i>The EPA advises that no evaluation of the impacts from particulates has been conducted based on the multiple issues outlined above.</i></p> <p><i>The EPA recommends the emissions inventories for Plants 1 and 2 be corrected and all information and variables used to calculate the emissions be provided.</i></p> <p><i>The EPA recommends a revised AQIA should include dispersion modelling and particulate (TSP, PM10 and PM2.5) impact assessments using the correct fugitive emissions inventories.</i></p>	<p>since been corrected within the revised Air Quality Impact Assessment (refer to Appendix 1).</p> <p>The typographical errors were limited to the report only (and not the model files) and has no such implications on the model predictions.</p> <p>Additional information, including all variables and equations needed to calculate the emissions has been provided in Appendix A of Appendix 1 of this Submission.</p>
<p>Additional Issues Noted:</p> <p><i>AQIA states there are no standards specific to brick manufacturing. The EPA advises that the standards for ceramic works in Schedule 3 of the POEO Clean Air Regulation apply as the facility is licensed under the scheduled activity of ceramic works (and others).</i></p> <p><i>Table 14 in the AQIA references the POEO Clean Air Regulations standards of concentrations to evaluate the proposed emissions of SO2 and sulfuric acid mist for the proposed Plant 2 upgrade. However, the licence sets a lower concentration limit at Point 5 for SO2 of 400 mg/m3 which should be used for the evaluation of SO2 emissions for the proposal.</i></p> <p><i>As the AQIA demonstrates that this EPL concentration can be met however, the use of the incorrect standard is a minor issue.</i></p>	<p>The revised Air Quality Impact Assessment references the standards for ceramic works in Schedule 3 of the POEO Clean Air Regulations. For SO₂, the design concentrations from the Plant 2 upgrade would be compared against the corresponding limits set in the licence. Table 18 located within Appendix 1 contains additional details with respect to the above.</p>
<p>Noise and Vibration Management:</p> <p><i>Generally, the EPA is satisfied with the assessment of noise and notes that no change to the current noise limits in EPL 546 are proposed.</i></p> <p><i>The Noise Impact Assessment provides an assessment against Project Noise Trigger Levels (PNTLs) in accordance with the guidance in the Noise Policy for Industry, however the predicted noise levels are fittingly compared not just</i></p>	<p>Noted and agreed.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

against the PNTLs but also against the current licence noise limits (and are not predicted to exceed either the PNTLs or noise limits).

The EPA is satisfied that the proposal does not require an update to the current noise condition on the licence and does not consider that any further noise recommendations or assessments are required for this proposal.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 10: Response Matrix	
Relevant Entities Response to Submissions	Formalised Response
NSW Roads and Maritime Services (Pahee Rathan – A/Senior Manager Land Use Assessment)	
<i>Roads and Maritime has no objections to the proposed development. Roads and Maritime provide the following comments for Department's consideration in the determination of the application:</i>	Noted and agreed.
1. <i>Any new building or structures, together with any improvements integral to the future use of the site, are erected clear of the identified easement (shown by brown colour on the attachment) and Westlink M7 boundary (unlimited in height or depth).</i>	
2. <i>Access to the Roads and Maritime easement is not to be denied.</i>	Noted and agreed.
3. <i>The integrity of the Roads and Maritime easement is not to be compromised.</i>	Noted and agreed.
4. <i>A Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted for approval prior to the issue of a Construction Certificate.</i>	Noted and agreed.

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

Table 11: Response Matrix	
Relevant Entities Response to Submissions	Formalised Response
Western Sydney Parklands Trust (Joshua French – Director, Parklands Development and Strategy)	
<p>Previous Consultation:</p> <p><i>The site is within the Western Sydney Parklands. As such the Western Sydney Parklands Trust has previously been invited to respond to the Department's Request for Secretary's Environmental Assessment Requirements (SEARs). As part of its submission WSPT requested that the applicant clearly demonstrate how the proposed development would contribute to the implementation of the objectives and long term vision for the Parklands.</i></p> <p><i>WSPT has also been involved in pre-lodgement consultation with Willow Tree Planning. As noted within Willow Tree Planning's Community Consultation Report WSPT has previously advised that:</i></p> <ul style="list-style-type: none"> ▪ <i>the site is subject to future acquisition for use as a multi-purpose public open space.</i> ▪ <i>that, given Austral's proposal supports long term use of the site, WSPT would like to encourage the landowner to consider opportunities in the short term to create environmental links along Eastern Creek and recreational links such as walking and cycling links north south through the site.</i> <p><i>The applicant still needs to address the request for environmental or recreational links within its Environmental Impact Statement (EIS) and also how the proposal will contribute to the implementation of the objectives and long term vision for the Parklands, as outlined in the Western Sydney Parklands Plan of Management 2030, and other relevant matters outlined in the State Environmental Planning Policy (Western Sydney Parklands) 2009.</i></p>	<p>Until such a time that the lifespan of the Subject Site ceases, including the quarrying activities permitted on the Site, the potential to consider environmental and recreational links within both the short and long term are considered to be unwarranted and unnecessary due to the future longevity anticipated for the existing and future operations and significant economic value, with respect to mineral resources. In addition, any linkages through the Site are not considered viable as it is active in its entirety and any public connectivity would be compromised in terms of safety due to the operation of plant and machinery.</p> <p>Notwithstanding, the Proposal remains consistent with the overarching aims and objectives intended for the area outlined within the WSP SEPP, as well as being consistent with the four (4) Strategic Directions outlined within the Western Sydney Parklands Plan of Management 2030.</p>
<p>State Environmental Planning Policy (Western Sydney Parklands) 2009 and Western Sydney Parklands Plan of Management 2030:</p>	<p>Noted and agreed.</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>The State Environmental Planning Policy (Western Sydney Parklands) 2009 (Parklands SEPP) was established to assist in fulfilling the functions of the Parklands, as established by the Western Sydney Parklands Act 2006. It puts in place flexible planning controls to enable WSPT to develop the Parklands into a multi-use urban parkland for the region. It establishes matters that must be considered by the consent authority in determining a development application, which include consistency with any plan of management or precinct plan for a precinct of the parklands. The Western Sydney Parklands Plan of Management 2030 (PoM 2030) establishes the vision, principles and strategic directions for the Western Sydney Parklands and the objectives, land use opportunities and key management priorities for the Wallgrove Precinct. The Parklands SEPP and the PoM 2030 have both been addressed by the applicant as part of its application.</i></p>	
<p>The Applicant’s Assessment – Parklands SEPP:</p> <p><i>The applicant has assessed the proposal against the Parklands SEPP and the matters required to be considered by the consent authority. The table below provides an overview of the applicant's consideration of the issues and provides comment on the consistency of the proposal with the relevant requirement.</i></p>	<p>It is noted, that formal comments with respect to the comments provided by the Western Sydney Parklands Trust in relation to Clause 12 of the Western Sydney Parklands SEPP are located within Appendix 3 of this Submission.</p>
<p>Applicant’s Assessment – POM 2030:</p> <p><i>The applicant has assessed the proposal against the PoM 2030, which establishes the vision, principles and strategic directions for the Western Sydney Parklands and the objectives, land use opportunities and key management priorities for the Wallgrove Precinct.</i></p> <p><i>The applicant identifies the Environmental Protection and Land Stewardship Strategic Direction as being relevant to its proposal. This Strategic Direction seeks to improve the sustainability of WSP's operations and the quality of the Parkland's natural environment. Objective two of this Strategic Direction includes the following actions:</i></p> <ul style="list-style-type: none">▪ <i>Improve the health of waterways and wetlands, as well as protecting water supply assets;</i>▪ <i>Work with partners to improve, measure and monitor water quality, birdlife and aquatic health in Eastern Creek, Hinchinbrook Creek,</i>	<p>The On-site Stormwater Detention (OSD) basin has been designed using Runoff Routing software DRAINS in accordance with Council’s preferred method, as described in the Stormwater Management Policy of Clause 4.5.1.1. The Detailed basin design (including sections) will be provided at the Construction Certificate stage. The OSD basin to be implemented would further reinforce the WSUD targets across the Site, thereby improving water quality in the long term.</p> <p>The proposed civil engineering design, combined with additional landscaping across the Site, would facilitate an improved visual aesthetic through landscape screening, as well as encourage improved runoff along the eastern boundary of the Subject Site, which would allow for increased nutrient uptake with regard to runoff across the eastern boundary of the Site, thereby improving water quality as a result and further achieving the WSUD targets established across the Site for the stormwater management outcomes implemented throughout previous developments.</p> <p>It is noted, that the recommendations outlined by WaterNSW have also been</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<p><i>Bungarribee wetland and other waterways; and</i></p> <ul style="list-style-type: none"> ▪ <i>Work with State Government partners to protect water quality and assets for key water supply infrastructure such as Prospect Reservoir, Upper Canal and the Warragamba Pipelines.</i> <p><i>The applicant considers that its compliance with Environmental Protection Licence (EPL)546 satisfies these directions. WSPT considers that the applicant should explore further opportunities to improve the health of waterways and wetlands.</i></p>	<p>considered and will be implemented across the Site where necessary prior to both the construction and operational phases.</p> <p>Accordingly, it is considered that the proposed development is consistent with the objectives of the WSP POM 2030.</p>
<p><i>The applicant has not addressed Objective 4 of this Strategic Direction, to increase bushland biodiversity. WSPT considers the applicant needs to address the following actions:</i></p> <ul style="list-style-type: none"> ▪ <i>Expand existing biodiversity corridors and core habitats and connect the Parklands to the Green Grid across Western Sydney</i> ▪ <i>Undertake environmental management practices that improve understorey and groundcover biodiversity.</i> 	<p>The BDAR prepared by Cumberland Ecology investigates the potential ecological impacts on biodiversity values and significance across the Site, for which a range of mitigation measures have been developed for the project to mitigate the potential impacts to native vegetation and habitat that are unable to be avoided. These include a range of measures to be undertaken before and during the construction phase of development to limit the impact of the project, which includes the following:</p> <ul style="list-style-type: none"> ▪ Weed Management; ▪ Delineation of Clearing Limits; ▪ Tree Protection Measures; ▪ Pre-Clearance Surveys; ▪ Staging of Clearing; and ▪ Sedimentation Control Measures. <p>Further management and mitigation measures, as identified within the EIS would be implemented across the Site to encourage and further enhance an ecologically and environmentally sustainable development, and as a result would have positive impacts on surrounding and nearby biodiversity values, that contain ecological significance.</p> <p>The BDAR prepared satisfactorily identifies the potential impacts anticipated to identified species, whereby biodiversity credits have been nominated to account for any potential impacts incurred by the proposed development works.</p>
<p><i>The applicant has not adequately demonstrated how the proposal will satisfy the PoM precinct plan for Wallgrove, particularly in respect to the following:</i></p> <ul style="list-style-type: none"> ▪ <i>Land use opportunities:</i> <ul style="list-style-type: none"> ○ <i>Walking and cycling tracks</i> 	<p>Until such a time that the lifespan of the Subject Site ceases, including the quarrying activities permitted on the Site, the potential to consider environmental and recreational links within both the short and long term are considered to be unwarranted and unnecessary due to the future longevity anticipated for the existing and future operations and significant economic value of the Subject Site,</p>

State Significant Development Application – SSD 9601

Proposed Plant 2 Upgrade Works – 780 Wallgrove Road, Horsley Park (Lot 7 DP 1059698)

<ul style="list-style-type: none">○ <i>Environmental protection works</i>▪ <i>Key Management priorities:</i><ul style="list-style-type: none">○ <i>Improve the bushland and biodiversity along Eastern Creek and its inflows</i>○ <i>Explore long-term walking and cycling links</i>	<p>with respect to mineral resources.</p> <p>Accordingly, the Landscape Plan prepared by Geoscapes (refer to Appendix 6) would allow for improved landscaping along the eastern boundary, and as a result would improve the landscape setting, aesthetic and amenity of the side setback adjoining Prospect Reservoir.</p> <p>Additionally, improved landscaping across the Site would facilitate increased nutrient uptake with regard to runoff across the eastern boundary of the Site, thereby improving water quality as a result and further achieving the Water Sensitive Urban Design (WSUD) targets established across the Site for the stormwater management outcomes implemented throughout previous developments.</p>
<p>Summary:</p> <p><i>WSPT does not object to the proposal, within Western Sydney Parklands, for brick production purposes, and supports the proposal which is intended to improve the environmental, health and safety and sustainability performance of the existing brickworks operation. However, WSPT considers that the proposal does not comply with some elements of the PoM 2030, and should include measures to improve the existing physical environment in order to:</i></p> <ul style="list-style-type: none">▪ <i>protect and enhance the natural systems of the Western Sydney Parklands</i>▪ <i>provide for enhancement of natural systems, particularly in the vicinity of Eastern Creek</i>▪ <i>improve the health of waterways</i>▪ <i>improve the bushland and biodiversity along Eastern Creek</i>▪ <i>expand existing biodiversity corridors and core habitats; and</i>▪ <i>to undertake environmental management practices that improve understorey and groundcover biodiversity.</i> <p><i>WSPT considers that the applicant should also investigate opportunities for and potentially deliver walking and cycling links through the site.</i></p>	<p>The proposed development is considered to satisfactorily address the objectives of the WSP POM, where applicable based on the existing and historical use of the Site, for which the proposed development would not compromise the future strategic direction intended for the Western Sydney Parklands.</p> <p>As stated above, until such a time that the lifespan of the Subject Site ceases, including the quarrying activities permitted on the Site, the potential to consider environmental and recreational links within both the short and long term are considered to be unwarranted and unnecessary due to the future longevity anticipated for the existing and future operations and significant economic value of the Subject Site, with respect to mineral resources.</p>

Appendix 1
Air Quality Impact Assessment

Appendix 2

Waste Management Plan

Appendix 3 Western Sydney Parklands SEPP Table

Appendix 4

Traffic Engineering Letter of Support

Appendix 5
Biodiversity Development Assessment Report

Appendix 6

Landscape Plans

Appendix 7

Aboriginal Due Diligence Assessment