



ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION MEASURES

The following section outlines the recommended mitigation measures in response to potential impacts identified in Section 6 of the Environmental Impact Statement (EIS). The structure of mitigation measures is based on the Department of Planning and Environment's hierarchy of approaches for managing impacts identified in the Draft Environmental Impact Assessment Guidance Series released by DPE in June 2017, as:

- Performance based measure – identify performance criteria that must be complied with to achieve an appropriate environmental outcome but do not specify how the outcome is to be achieved.
- Prescriptive measure – require action to be taken or specify something that must not be done.
- Management based measure – identify one or more management objectives that must be achieved through the implementation of a management plan.

Following the implementation of appropriate mitigation measures as recommended, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment. The following table illustrates how the matters raised within the SEARs will be addressed.

A consolidated set of mitigation measures required for each of the environmental and social impacts identified in Section 6 of the EIS are outlined in the table below. The mitigation measures directly respond to each impact and are based upon the range of technical consultant reports appended to the EIS.

- The type of mitigation measure as noted within the table below are as follows:
- 'Pe' – performance based mitigation measure
- 'Pr' – prescriptive based mitigation measure
- 'Ma' – management based mitigation measure

The mitigation measures have also been allocated to the construction ('C') and/or operational ('O') phase.

Augusta Street Warehouse and Distribution Centre

Technical Area	Potential Area	Stage of the Project	Approach	Type of Measure (Pe/Pr/Ma)
Urban Design and Visual	Visual impacts on residential development to the north.	C	- Protect existing trees to be retained along the western and northern boundaries, as well as within conservation zones. - Supplement existing trees with high quality landscaping including endemic canopy tree planting and greening of the streetscape and hardstand areas. - Visual interest in the façade through rhythm and articulation, using different layers of materials and patterns resulting in varied built form.	Ma
Traffic, Transport and Accessibility	Impacts of the construction activities on the surrounding road network	C	Detailed CTMP will be prepared in response to any conditions of consent at a time when a construction contractor methodology is known (i.e., final details of work zone requirements, oversized vehicles etc).	Pr
	Impacts of the operational activities on the surrounding road network	O	- Great Western Highway/Flushcombe Road Traffic Signals - Extend the existing right turn bay on Great Western Highway (eastern approach) by some 50 metres. - Provide a separate signalised left turn lane (some 120 metres) on Great Western Highway (eastern approach). - Upgrade the Flushcombe Road (northern approach) to provide two lanes, a shared left/through lane and separate right turn lane. - Modify the existing pedestrian crossing of the Great Western Highway (western approach) to a staged crossing. TfNSW has indicated that any upgrade of the intersection would require provision of pedestrian crossing on approaches to the	Ma

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			intersection. With a pedestrian crossing on the eastern approach, consideration should be given to deleting the pedestrian crossing on the western approach. ▪ Flushcombe Road/Augusta Street - Upgrade Flushcombe Road (between Great Western Highway and Augusta Street) and Augusta Street to the Huntingwood Precinct DCP requirements. This includes provision of a 27 metre diameter turning head at the end of Augusta Street. ▪ Great Western Highway/Prospect Highway Connection Traffic Signals - Modify the proposed t-intersection traffic signals to provide a fourth (southern) approach for access to Warehouse 5. - To maintain a three phase operation of the traffic signals, no through movements between Warehouse 5 and the Prospect Highway Connection would be permitted (access to Warehouse 5 would be limited to left and right turns to/from Great Western Highway). - Provide a separate right turn bay on Great Western Highway (western approach). - Provide a separate signalised left turn lane on Great Western Highway (eastern approach). - Provide a new southern approach to the intersection with two lanes (separate left and right turn lanes).	

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			- Provide a pedestrian crossing on the southern approach to the intersection. - Provide a 4.0 metre wide shared cycle/pedestrian path along the Great Western Highway frontage of the site. To accommodate future traffic from the development up to 2033, the following works should be undertaken: ▪ Great Western Highway / Flushcombe Road - Provide a third lane on the Flushcombe Road northern approach, configured as a separate left turn slip lane (some 30 metres long), shared through/right turn lane and separate right turn lane (some 100 metres). - Reconfigure the existing pedestrian crossing on the Great Western Highway western approach to staged crossing. - modify the signal phasing to split phasing on the Flushcombe Road approaches. - provide a third lane on the Flushcombe Road southern approach, configured as a separate left turn lane (some 40 metres long), shared through/right turn lane and separate right turn lane.	
Biodiversity	Impact to existing biodiversity value of the site	C, O	▪ A site specific Vegetation Management Plan (VMP) should be developed in conjunction with the Construction Management Plan as a condition of consent.	Ma

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			▪ Appoint an experienced Restoration Ecologist and Construction Manager to design, supervise and implement works in accordance with a Vegetation Management Plan. ▪ Conservation awareness of all persons onsite and the awareness of the No-Go Areas. ▪ Clearly identify No-Go areas onsite and on plan ▪ Ensure efficient re-use of conservation assets onsite from areas being cleared. ▪ Ensure hygiene protocols in place. ▪ Pre-clearance fauna survey and relocation of native fauna to areas of retained vegetation. ▪ Implement monitoring and corrective actions. ▪ Engage with council regarding mitigation measures (which may be incorporated in the Planning Agreement), including: - Bush regeneration downstream along Blacktown Creek including in Timbertop Reserve (zoned C2 – Environmental Conservation) which is mapped as an Important Habitat Area for the Swift Parrot; - Planting of local native trees in the RE1 - Public Recreation zoned land north of the Great Western Highway; and - Planting of local native trees in the residential land north of the Great Western Highway for minimisation of heat island effects for the local residents.	

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			8 ecosystem credits to offset development impacts.	
Noise	Impact of construction and operational noise and vibration on surrounding receivers	C, O	Construction Impacts: - A Construction Noise and Vibration Management Plan (CNVMP) would be prepared before any work begins Operational Impacts: - Use of broadband and/or ambient noise sensing reversing alarms to minimise potentially annoyance. - Roller doors will be kept closed when un/loading is not occurring. - Increase wall height on northern edge of the Building 5 – Level 2 access ramp to 3 m to act as noise barriers. - Installation of a 3m noise mound along the perimeter of the Building 3 and 4 truck access road. - Installation of a 3m noise barrier along the northern and eastern perimeter of the Building 1 hardstand area. - Installation of a 3m noise barrier in the north-western boundary of Building 5 along the truck exit road.	Pr, Ma
Trees and Landscaping	Tree removal and impacts to retained trees	C	2,000 trees will be planted to off-set loss of existing trees. Trees to be retained will be suitably protected during the construction phase.	Pr
Air Quality	Impact of construction activity in relation to dust and human health at sensitive receptors	C	Earthworks: Measures that are not required but good practice:	Ma

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			- Re-vegetate or cover (using hessian, mulches or trackifiers) earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable - Only remove the cover in small areas during work and not all at once. Construction: Measures that are desired: - Avoid scabbing (roughening of concrete surfaces) if possible. - Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. Not required but good practice measures: - Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. - For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. Trackout Measures that are desired:	

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			- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. - Avoid dry sweeping of large areas. - Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. - Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). Not required but good practice measures: - Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. - Access gates to be located at least 10 m from receptors where possible.	
Soils and Water Management	Impacts of construction stormwater, sediment and site run off	C	- Sediment basins based on 5 day, 85th percentile rainfall to ensure sediment concentrations in site runoff are within acceptable limits. - Sediment fences around the perimeter of the site, around the existing drainage channels and proposed stockpiles. - Stabilised site access at the entry to the eastern works area via the Great Western Highway and the western works area via Flushcombe Road. - Minimise the extent of disturbed areas across the site at any one time.	Pr

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			- Progressive stabilisation of disturbed areas or previously completed earthworks to suit the proposal once trimming works are complete. - Regular monitoring and implementation of remedial works to maintain the efficiency of all controls.	
	Potential impacts to water quantity and quality during operation	O	- Erosion and sediment control installation. - Grading of existing earthworks to suit building layout, drainage layout and pavements. - Stormwater and drainage works. - Service installation works. - Building construction works.	Ma
Flood Risk	Potential damage to development from flood waters	O	- On-site response plan that addresses what measures should be undertaken once the threat of a flood is determined to be imminent. - Flood evacuation strategy so all persons within the precinct are familiar with the processes required if a flood occurs.	Ma
Contamination and Remediation	Impacts of disturbance of existing site contaminants and stockpiles and required remediation	C, O	- A minimum soil cover thickness of 0.5m in landscaped or mass planting/shallow landscaped areas and 1.5m in tree pit zones which is underlain by a visual marker land in unpaved areas. - Permanent concrete floor/ground slabs as underlain by a visual marker. - Top (concrete) of pile foundations.	Ma

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			▪ Containment of contamination soils to occur on the western area of the site on Lots 2 and 3. ▪ Preparation of a LTEMP to manage and monitor containment of contaminated soils. The LTEMP is to be updated by a suitably qualified Environmental Consultant or Occupational Hygienist if changes to the legislation occur.	
Waste Management	Waste associated with the construction of the warehouse and distribution centre	C	Site specific waste management measures are to be developed for the proposed development including the principles and options of avoidance and reduction of waste, reuse and recycling and treatment and disposal of waste: ▪ Preparation of a procurement policy which considers waste avoidance measures, refines waste stream estimates to ensure adequate onsite storage and segregation and refined estimated volume of materials for construction. ▪ Implementation of a reuse and recycling strategy that prescribes an accessible area and methodology of waste segregation and considers opportunities for material reuse in areas in proximity to the site. ▪ Employ site induction procedures to ensure contractors are familiar with onsite waste storage areas and practices. ▪ Provide separate bins for subcontractors to dispose of various construction waste	Pr/Ma
Aboriginal Cultural Heritage	Preservation of existing archaeological and Aboriginal cultural heritage of the site.	C, O	▪ Temporary fencing around the site #45-5-2361 be included in all construction and management planes for the area to ensure that future impacts are avoided.	Pr

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			▪ Consideration should be given to the development of a cultural interpretation plan. ▪ An unexpected finds protocol should be implemented for the life of the development. The unexpected finds protocol should be adhered to if unforeseen Aboriginal objects of human remains are uncovered during the development. If any Aboriginal objects or bones suspected of being human are identified during construction, site workers must: - Not further disturb or move these remains. - Immediately cease all work at the location. - In the case of suspected human remains only, notify NSW Police. In the case of Aboriginal objects, notify the Heritage NSW Environment Line on 131 555 as soon as practicable and provide available details of the objects or remains and their location. Management options will be determined in consultation with the Registered Aboriginal Parties to this project. - Not recommence any work at the location unless authorised in writing by Heritage NSW. ▪ A copy of this report should be forwarded to the Registered Aboriginal Parties and to: - The Registrar, Aboriginal Heritage Information Management System, Heritage NSW (Locked Bag 5020, Parramatta NSW 2220)	

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Environmental Heritage	Impacts of built form on views to the State heritage St Bartholomew's Church and Cemetery.	O	▪ Prior to commencement: - An archival photographic record should be made of the study area so far as it forms part of the setting of St Bartholomew's Church and Cemetery, including views from the heritage listed property towards the west. - In planting screening trees along the eastern boundary of the study area, care should be taken to avoid unnecessary impact on the views from St Bartholomew's Church towards the west. ▪ During the works: - If any unexpected historical archaeological relics or potential relics are unearthed during the course of the development, work should cease in the vicinity, and Heritage NSW should be contacted for advice. It may be necessary to redesign the works to avoid impact to relics. ▪ Following completion of the works: - A copy of the archival record should be lodged with the Heritage NSW Library and with Blacktown City Library. - The screening planting along the eastern boundary of the study area should be maintained during operation of the facility, and no changes should be made that may result in additional impact to St Bartholomew's Church and Cemetery. ▪ A copy of this report should be forwarded to the Heritage NSW Library, and to the Blacktown City Library.	Pr

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Social Impact	Cumulative social impact from the proposed development on surrounding residents and stakeholders	C, O	▪ Undertake regular cleaning and maintenance of the outdoor staff breakout spaces and open space areas to ensure they are attractive, inviting, and safe. ▪ As the future warehouse tenants and exact operational procedures occurring at the site are not known, consider additional air quality monitoring when confirmed to ensure there are no unanticipated air quality impacts on surrounding sensitive receivers. ▪ Provide regular communication updates to nearby sensitive receivers to notify them of any significant air quality impacts during construction. ▪ Future warehouse tenants should consider developing an employment strategy including strategies to assist with young people disengaged with education or employment. This could include establishing connections with local TAFEs, colleges or youth-focused not for profit organisations. ▪ Future warehouse tenants should promote public transport access to encourage a broader range of people to apply for roles, particularly people who cannot drive or have access to a car. ▪ Prepare an engagement plan prior to construction which identifies the likely impacted stakeholders and the engagement activities that will be undertaken. Engagement should involve clear messaging and communications regarding multiple issues should be consolidated to avoid consultation fatigue. ▪ Implement a complaints management system prior to construction to provide opportunities for residents and other stakeholders to	Ma

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			express concerns. All complaints should be recorded, and appropriate response measures should be detailed and actioned. Any future construction management plan should consider cumulative impacts associated with the proposed development and surrounding developments, such as the Prospect Highway upgrade.	