Summary of Mitigation Measures

Aspect	Mitigation measure	Timing
Traffic, Access and Parking	• Clear signage is to be provided to direct vehicular and foot traffic to the Unit at the following locations, as appropriate: - The intersection of Johnston Street and Dean Street - The intersection of Dean Street and the 'Emergency Entrance' road • Appropriate 'low clearance' signage is to be installed on both faces of the proposed pedestrian link bridge and in advance of the bridge in a location which will allow the driver of a large truck to turn around safely to avoid the bridge, if needed. • An independent dilapidation survey is to be undertaken pre- and post-construction, to ensure that any undue damage attributed to the demolition and construction on the activity site can be identified and rectified. • Establishment of a Steering Committee (or similar) to ensure successful initial implementation and ongoing implementation, review, and improvement of the Green Travel Plan (GTP) with the aim to initially meet the target of a 20% reduction of single occupancy private vehicle use. Responsibilities of the Steering Committee are outlined in the GTP (refer to **Appendix CC**). • Clear signage should be installed to indicate the relevant restrictions for use of the various parking provisions.	Prior to Commencement of Works / During Works
Noise and Vibration	• Prior to commencement of construction works, a Construction Noise and Vibration Management Plan (CNVMP) is to be prepared and implemented in accordance with the requirements of the ICNG. The CNVMP would take into consideration measures for reducing the source noise levels of construction equipment by construction planning and equipment selection where practicable. The CNVMP should include a detailed noise assessment updated to consider potential noise impacts at all affected properties.	Prior to Commencement of Works / During Works
Air Quality and Energy	• Air monitoring will be required throughout the demolition works. • A Construction Environmental Management Plan will be completed prior to commencement of works on site. Amongst other things, it will address the minimisation and management of dust, odours and emissions during construction. • No materials will be burnt on site.	Prior to Commencement of Works / During Works

Aspect	Mitigation measure	Timing
	• Vehicles transporting waste or other materials that may produce dust will be covered during transportation. • Vehicles, machinery and equipment will be maintained in accordance with manufacturer's specifications in order to meet the requirements of the Protection of the Environment Operations Act 1997 and associated regulations. • Vehicles and equipment will be switched off when not operating. • Debris and waste will be immediately collected into appropriate storage facilities and removed from the site as soon as practical to ensure light-weight material is not dispersed by wind gusts. • Stockpiles and exposed soils will be covered, stabilised or dampened to reduce incidence of dust dispersal. • Appropriate practices are to be in place to minimise dust or fibre generation that could be dispersed during demolition. • The new building, including appliances, fixtures and fittings, would be meet relevant water, thermal and energy efficiency standards.	
Soils and Geology	• Erosion and sediment controls would be implemented in accordance with the Landcom/ Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book). • Works would only commence once all erosion and sediment controls have been established. The controls would be maintained in place until the works are complete and all exposed erodible materials are stable. • Erosion and sedimentation controls would be checked and maintained (including clearing of sediment from behind barriers) on a regular basis (including after any precipitation events) and records kept and provided on request. • All sediment control measures would be checked and repaired or re-installed (if required) if heavy rainfall was forecast. • Imported materials would be sourced as clean-fill from an approved site. • Disturbance of natural sediments and vegetation would be minimised. • Implement the recommendations contained in the Geotechnical Assessments prepared by Regional Geotech Solutions (refer to **Appendix P**).	Prior to Commencement of Works / During Works

Aspect	Mitigation measure	Timing
Hydrology, Flooding and Water Quality	• A spill containment kit would be available at all times. All personnel would be made aware of the location of the kit and trained in its effective deployment. • Erosion and sediment controls would be implemented in accordance with the Landcom/ Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book). • The development would be undertaken in accordance with a stormwater management plan prepared for the activity.	Prior to Commencement of Works
Visual Amenity	• A Construction Environmental Management Plan is to be prepared prior to commencement of works. • The work site is to be kept clean and orderly. All waste would be removed from the site at completion of works. • The areas where demolition occurs is to be cleaned up and restored to a suitable standard following the removal of the structure. • Removal of vegetation is to be kept to a minimum.	Prior to Commencement of Works / During Works / Completion of Works
Aboriginal Heritage	• All relevant personnel, contractors and subcontractors would undergo an Aboriginal cultural heritage induction prior to any ground disturbing works. The induction would outline the legal obligations for Aboriginal cultural heritage under the National Parks and Wildlife Act 1974 and Heritage Act 1977. • Should any archaeological deposits be uncovered during any site works, the following steps must be followed: 1. All works within the vicinity of the find must immediately stop, and the location of the find cordoned-off with signage installed to avoid accidental harm to the archaeological resource. The find must not be moved 'out of the way' without assessment. 2. The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist. 3. The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design	Prior to Commencement of Works / During Works

Aspect	Mitigation measure	Timing
	and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System (AHIMS). 4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken. 5. Reporting may need to be prepared regarding the find and approved management strategies. 6. Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW. • In the unlikely event that human remains are uncovered during the proposed works, the following steps must be followed: 1. All works within the vicinity of the find must immediately stop and the location should be cordoned-off with signage installed to avoid accidental harm to the remains. 2. The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555). 3. The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist. 4. Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives. 5. Works are not to recommence until the find has been appropriately managed.	
Non-Aboriginal Heritage	• Standard unexpected finds and stop-works procedures are to be in place and implemented if unexpected finds occur during the works. If unexpected archaeological remains or relics are uncovered during the works, all works must cease in the vicinity of the material/find. Council's heritage adviser, and if necessary, Heritage NSW and any other relevant authority, will be contacted. Work would not proceed in the vicinity of the find until appropriate clearance is given.	Prior to Commencement of Works / During Works
Ecology	• The 31 trees to be removed are required to be replaced on a one-to-one basis. The location for the replanting will be within the landscaping of Mental Health Unit and in the wider Tamworth Hospital site. • Implement the measures detailed in the Arboricultural Impact Assessment reports (**Appendix C** and **Appendix D**) and the Biodiversity Assessment Report (**Appendix T**). • All trees to be retained require protection during the construction stage. Tree protection measures generally include a range of: - Activities restricted within the TPZ.	Prior to Commencement of Works / During Works

Aspect	Mitigation measure	Timing
	- Protective fencing. - Trunk and ground protection. - Tree protection signage. - Involvement from the project arborist. - Project milestones. - Compliance reporting. • Where generic tree protection measures can be undertaken as per the controls outlined in this report, no further arboricultural supervision should be required until post project (Final) sign-off (refer to Arboricultural Impact Assessments in **Appendix C** and **Appendix D**). • Where there are variations to project scope impacting generic controls, input from the project arborist should be sought in advance of works. • In relation to the car park locations, trees 46, 51, 62, 64, and 67 have proposed development within their TPZ of a percentage, slightly above the generally acceptable 10%, that should enable retention with minimal long-term impact. Further assessment following detailed design should be undertaken to assess their retention suitability. • If no further design reviews are undertaken, site preparation excavation is to be carried out only under arborist supervision and works should be undertaken using techniques that are sensitive to tree roots to avoid unnecessary damage. Such techniques include: - Arborist supervision. - The use of machinery should be undertaken from areas of hardstand to avoid potential root compaction. - The proposed excavation should commence at the outer extent of the TPZ and move inwards to minimise root damage to the tree. - No excavation should occur within the SRZ of these trees. - Roots discovered are to be treated with care and minor roots (<40 mm diameter) pruned with a sharp, sterile handsaw or secateurs. All significant roots (>40 mm diameter) are to be recorded, photographed and reported to the project arborist. • Protective fencing is to be installed as far as practicable from the trunk of any retained trees. Fencing should be erected as per the image below before any machinery or materials are brought to site and before commencement of works (including demolition).	

Aspect	Mitigation measure	Timing
	• Once erected, protective fencing must not be removed or altered without approval from the project arborist. The TPZ fencing should be secured to restrict access. • TPZ fencing is to be a minimum of 1.8 m high and mesh or wire between posts must be highly visible. Fence posts and supports should have a diameter greater than 20 mm and should ideally be freestanding, otherwise be located clear of the roots. • Tree protection fencing must remain intact throughout all proposed construction works and must only be dismantled after their conclusion. The temporary dismantling of tree protection fencing must only be done with the authorisation of a consulting arborist and/ or the responsible authority. • The subject trees themselves must also not be used as a billboard to support advertising material. Affixing nails or screws into the trunks of trees to display signs of any type is not a recommended practice in the successful retention of trees. • Given that proposed works are often within the TPZs of retained trees, standard protective fencing may not always be a viable method of protection. In these areas, trunk protection and ground protection should be installed prior to the commencement of works and remain in place until after construction works have been completed. • Where construction access into the TPZ of retained trees cannot be avoided, the root zone of each tree must be protected using either steel plates or rumble board strapped over mulch/ aggregate until such a time as permanent above ground surfacing (cellular confinement system or similar) is to be installed. • Trunk and ground protection should be undertaken in line with the Australian Standards AS 4790-2009: Protection of Trees on Development Sites as per the Arboricultural Impact Assessments (refer to **Appendix C** and **Appendix D**). • Signs identifying the TPZ should be placed at 10 m intervals around the edge of the TPZ and should be visible from within the development site. • An official “Project Arborist” must be commissioned to oversee the tree protection, any works within the TPZ’s and complete regular monitoring compliance certification. • The project arborist must have minimum five years industry experience in the field of arboriculture, horticulture with relevant demonstrated experience in tree management on construction sites, and Diploma level qualifications in arboriculture – AQF Level 5. • Inspections are to be conducted by the project arborist at several key points during the construction in order to ensure that protection measures are being adhered to during construction stages and decline in tree health or additional remediation measures can be identified. • Measures must be implemented during construction works so that machinery and plant do not introduce weed propagules or plant pathogens to the site (e.g. by adoption and implementation of the ‘Arrive Clean, Leave Clean’ guidelines (DoE 2015).	

Aspect	Mitigation measure	Timing
	• Any tree pruning or protection works must be completed by a certificate 5 arborist and in accordance with Australian Standard 4970-2009 Protection of Trees on Development Sites. • Pre-clearing surveys must be undertaken each morning prior to vegetation clearing by an ecologist/ spotter-catcher to ensure nesting or roosting fauna are not present within vegetation to be removed; or undertake fauna capture, relocation or rescue as appropriate. • Retained trees would be protected in accordance with Australian Standard 4970-2009 Protection of Trees on Development Sites. This includes installing no-go fencing and signage around tree protection zones. • Felling of hollow-bearing trees would be supervised by an ecologist or spotter-catcher. • Where trunk hollows or limb hollows require removal, an arboreal inspection of the hollow would be undertaken by the arborist or ecologist/ spotter-catcher. • If unexpected, threatened fauna is discovered, then work would stop immediately, and a plan would be formulated by the ecologist/ wildlife carer to determine the most appropriate course of action. • If the hollow is found to be occupied by a non-threatened arboreal mammal or reptile, where appropriate the hollow entrance would be covered (e.g. stuffed with a pillow case) and the tree limb cut at a suitable distance from the hollow to avoid any fauna impact. • All hollow limbs and trunks containing fauna or are not able to be thoroughly inspected would be lowered to the ground using roping techniques. • All hollows and habitat trees would be inspected by an ecologist/ spotter-catcher after being lowered to the ground to or undertake fauna capture, relocation or rescue as appropriate. • On the day of clearing and prior to any clearing taking place, all trees within 50 m of those trees to be cleared are to be inspected for the presence of Koalas by an experienced Koala ecologist/ spotter-catcher. • Should Koalas be present, clearing works must: - Be temporarily suspended within a range of 50 m from any tree which is occupied by a Koala. - Be avoided in any area between the koala and the nearest areas of habitat to allow the animal to move to adjacent refuge. - Must not resume until the koala has moved from the tree of its own volition. • Should clearing continue in areas away from the Koala, the ecologist/ spotter-catcher would remain as a designated Koala spotter to monitor the animal until the clearing is finished that day in case the animal moves into proximity of the clearing (which would trigger the works to stop).	
Bushire	No mitigation measures are required.	N/A

Aspect	Mitigation measure	Timing
Land Uses and Services	• Any potential services/ utility interruptions shall be minimised as far as practical and communicated to the relevant services authorities to enable flow on notifications to any affected services customers. • The primary contractor is to liaise with Hospital staff in relation to any work identified as being a potential disruption to the ongoing operations of the Gunnedah Hospital, including access by Staff, support services, and visitors.	Prior to Commencement of Works / During Works
Waste Generation	• A Construction Waste Management Plan is to be prepared prior to commencement of works and form part of the CEMP. It is to detail the framework to reduce waste and manage, recycle or dispose of it responsibly. • Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each construction day. • Waste material is not to be left on site once the works have been completed. • The working areas will accommodate separate bins and other waste storage structures to cater for waste streams required to foster waste avoidance, resource recovery and acceptable disposal to a licensed waste management facility. • The resource hierarchy detailed by the Waste Avoidance Resource Recovery Act 2001 would be adopted. • All waste would be disposed of in accordance with Council, EPA, NSW Health guidelines and DPIE guidelines (as applicable). • Operation of the new unit will be undertaken in accordance with the NSW Health Policy Clinical and Related Waste Management for Health Services. • If required, the existing Operational Management Plan for the hospital should be updated to ensure effective and responsible waste management within the new unit. If there is no Operational Management Plan, one should be prepared.	Prior to Commencement of Works / During Works / Completion of Works
Hazardous Materials and Contamination	• Implement recommendations of the Contamination Assessment prepared by Regional Geotechnical Solutions (**Appendix U**). • If a hazardous material register for the buildings is available, it should be reviewed prior to undertaking any demolition works. All demolition works should be undertaken by licenced	Prior to Commencement of Works/ During Works

Aspect	Mitigation measure	Timing
	contractors with appropriate asbestos removal accreditation. If the building is demolished a site clearance certificate must be provided on completion of the works. • Regional Geotechnical Solutions should be consulted if details of the activity differs from those discussed herein. • Regional Geotechnical Solutions or an alternative consultant should be contacted if any unidentified potential contamination is encountered, (including odorous or stained soils and fragments of cement sheeting that may contain asbestos). • Material exported off site should be assessed in accordance with EPA guidelines for Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM). As a preliminary guide based on the site contamination testing undertaken, the residual profile is likely to be classified as Virgin Excavated Natural Material. The fill encountered throughout the site would likely be classified as Excavated Natural Material, however further testing may be required to classify this when all filled locations accessible (i.e. fill below existing structures) and quantities are known. • If the existing buildings are to be demolished, testing of the soils below the building is recommended. • A spill containment kit would be available at all times. All personnel would be made aware of the location of the kit and trained in its effective deployment. • Implement the recommendations of the Asbestos Register and Review Updates prepared by Practical Environmental Solutions (**Appendix V** and **Appendix W**). • Any hazardous materials, including asbestos, would be handled, managed, transported, and disposed of according to applicable regulations, including WH&S and EPA waste protocols. This includes requirements to use licenced asbestos removalists. • Light fixtures would be inspected for potential polychlorinated biphenyl material containing fixtures prior to disposal, and would be handled, managed, transported, and disposed of according to applicable regulations, including WH&S and EPA waste protocols.	
Community Impact / Social Impact	• No mitigation measures are required.	N/A
Crime Prevention through Environmental Design (CPTED)	• No mitigation measures are required.	

Aspect	Mitigation measure	Timing
Ecologically Sustainable Development	• Project Design Team to review of the targeted items to determine achievability and further coordination with design teams for strategy development as design develops at the DD stage. • Project Design Team to finalise calculations, modelling or analysis required to support strategies and achieve targeted points. • Project Design Team to coordination with QS to ensure any cost impact from required strategies is included within the cost plan and within the procurement requirements. • Finalise set of strategies to be agreed by the design team, stakeholders and the LHD, and to be confirmed by HI to include in the design moving forward.	
Construction Management	• The contractor for the Early Works and Main Works must prepare a standalone Construction and Environmental Management Plan.	
Cumulative Impact	• HI and project staff shall monitor DPIE's major projects register and Council's Development Application tracker for any significant developments that may occur locally and with potential to coincide with the activity's construction period and contribute to cumulative impacts. • Where required project staff will undertake pre-construction review and liaison with other development sites to co-ordinate works and minimise impacts (e.g. delivery times, parking).	Prior to Commencement of Works / During Works

27.02.2023