KANE

ENVIRONMENTAL MANAGEMENT PLAN

Children's Hospital Westmead
Multi-storey Carpark

22/12/2022

CHANGE HISTORY

FREQUENCY OF REVIEW			
☐ Monthly	☑ Quarterly	☐ Annually	☐ Event: ……..

CONTENT AUTHOR	Marcus Owen

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	First Issue	MO	27/04/2022
02	For CC	Attachments 8 & 9 Updated to CC Issue	SB	26/05/2022
03	For Construction	Project Team & CSWMSP Updated	SB	5/08/2022
04	For Construction	Project Team Updated	SB	22/12/2022
05				
06				
07				

SCHEDULE 3 (Clause Ref 3.5)

Environmental Management Plan

Who shall implement	Project Manager to prepare for implementation on site
When to implement	Each Project
How to use/implement	The Project Manager shall prepare and authorise for use the Project Environmental Management Plan EMP. In preparing the EMP, the Project Manager must: • insert names of Kane staff into the chart • detail consultation process • prepare environmental risk assessment and checklist • prepare incident response flowchart

SELF VERIFICATION CHECKLIST

SSDA REQUIREMENT	DOCUMENT REFERENCE
Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary for information. The CEMP must include, but not be limited to, the following: (a) Details of:	
(i) hours of work;	Section 5.1
(ii) 24-hour contact details of site manager;	Attachment 4
(iii) management of dust and odour to protect the amenity of the neighbourhood;	Section 5.3 / Attachment 2
(iv) stormwater control and discharge;	Attachment 3 / Attachment 10
(v) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;	Attachment 3 / Attachment 10
(vi) groundwater management plan including measures to prevent groundwater contamination;	Section 5.12
(vii) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;	Section 5.11
(viii) community consultation and complaints handling;	Attachment 4
(b) an unexpected finds protocol for contamination and associated communications procedure to ensure that potentially contaminated material is appropriately managed;	Attachment 8
(c) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Attachment 9
(d) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site.	Kane NOT removing any material from site
(e) Construction Traffic and Pedestrian Management Sub-Plan (see condition B12);	Refer CTPM Sub-Plan
(f) Construction Noise and Vibration Management Sub-Plan (see condition B13);	Refer CNVM Sub-Plan
(g) Construction Waste Management Sub-Plan (see condition B14); and	Refer CWM Sub-Plan
(h) Construction Soil and Water Management Sub-Plan (see condition B15).	Attachment 10

CONTENTS

1 INTRODUCTION

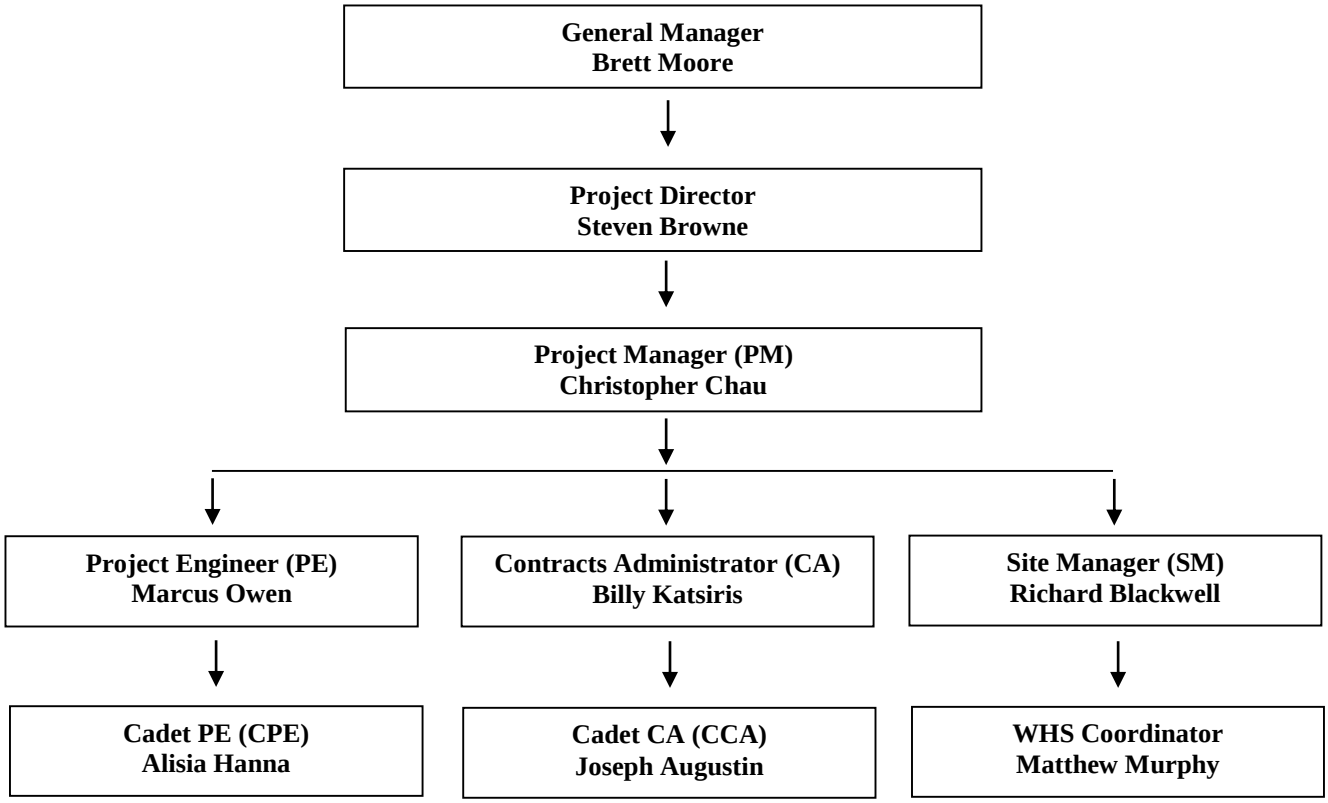
The Kane Constructions Environmental Management System is third party certified to ISO 14001 and developed for functionality and use at construction site level. The system is designed so that when implemented, will assist in achieving the objectives of the Kane Environmental Management Policy.

The Environmental Management Plan facilitates a systematic approach to site environmental management by applying the processes, checklists and forms of the Kane EMS to achieve compliance with relevant Environmental Legislation. When implemented on site, the checklists and forms of the Kane EMS become a record of project environmental management. We audit internally for compliance with the Kane EMS and randomly select sites for third party surveillance auditing for compliance with ISO 14001.

The Environmental Management Plan is developed to identify workplace environmental hazards, assess risks and implement control measures associated with activities, products and services over which Kane have control or influence.

The Kane project team is identified in the chart below. The project staff responsible for environmental management is assessed for competence, understanding and acceptance of the environmental responsibilities. Confirmation of this is provided – *refer Attachment 7*

1.1 Project Team Chart



2 CONSULTATION AND COMMUNICATION

2.1 Site Induction

Before commencing work, all visitors must report to the site office for a site specific induction where employees and service providers are presented information contained in the Environmental Induction Booklet *(refer Attachment 3)*. Consultation and communication processes established are communicated at the site induction. All workers are encouraged to express their views on environmental issues direct to the Site Manager.

2.2 Currency and Awareness of Environmental Information

Kane Constructions seek Environmental advice, assistance and keep updated with changes to Environmental legislation, regulations and guidelines through the following (not limited to);

- Environmental Protection Authority Victoria
- Office of Environment and Heritage NSW
- Department of Environment and Resource Management QLD
- Department of the Environment, Climate Change, Energy and Water ACT
- Standards Australia Update emails etc.

During toolbox talks, the Site Manager shall communicate relevant alerts, newsletters, bulletins, results of audits, corrective actions etc. consistent with current activities on site. These shall be recorded using the OHSMS Schedule W-Record of Meeting proforma.

3 TRAINING AND COMPETENCY

3.1 Kane Staff

Kane Constructions ensures ongoing Environmental Management and Awareness training for all employees based on skill gaps. This targets the needs of individual people and relates appropriately to their roles and responsibilities. Certificates of competency are maintained in staff personnel files and available to validate competency upon request.

3.2 Non Kane Staff

The employer is responsible for providing their employees with the relevant training and supervision so they have the necessary competency and skills to undertake their responsibilities.

4 HAZARD IDENTIFICATION AND RISK CONTROL

4.1 Risk Assessment

An Environmental Risk Assessment and Checklist is prepared by the Project Manager to identify environmental aspects associated with the activities to be undertaken *(refer Attachment 2)*. The risk of those aspects occurring and causing environmental impact is rated, and control measures identified to reduce the risk.

The Site Manager is responsible for ensuring the control measures determined in the Environmental Risk Assessment and Checklist are implemented and remain effective. The aspects that have significant impact and assessed to be of higher risk must be given the highest order of priority.

5 ENVIRONMENTAL ASPECTS

5.1 Work Hours

Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

(a) between 7am and 6pm, Mondays to Fridays inclusive; and

(b) between 8am and 1pm, Saturdays (and between 1pm and 5pm if works do not exceed the existing background noise level plus 5dB).

No work may be carried out on Sundays or public holidays.

5.2 Noise

The Site Manager will ensure noise and vibration levels meet acceptable standards and statutory requirements. Potential noise sources include but not limited to; plant, machinery, radios and construction methods.

The impact from noise on the surrounding areas shall be restricted to early construction activities undertaken until the building fabric is established further reducing noise impact on adjoining properties. A summary of the activities and equipment are detailed below:

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level
Excavator with Bucket (up to 20 tonnes)	47 to 54	**NSW EPA *Interim Construction Noise Guideline*** **Residential Areas** Noise Affected Level: 53 dB(A)$L_{eq(15min)}$ (for condition C4 approved hours) 48 dB(A)$L_{eq(15min)}$ (for condition C5 approved hours) Highly Noise Affected Level: 75dB(A)$L_{eq(15min)}$ (Assessed at property boundary)
Concrete Saw	47 to 54	
Bobcat	47 to 54	
Heavy Trailers (idling)	42 to 49	
Piling Plant	48 to 55	
Concrete Pump	52 to 59	
Concrete Vibrators	47 to 54	
Hand Tools (Used Externally)	45 to 52	
Work Zone (Forklifts, Trucks, etc.)	45 to 49	
Crane (electric)	43 to 49	

As detailed within this report “on site” noise assessments of specific equipment shall be undertaken throughout the course of the project to ensure that safe noise levels for both on site workers and adjoining residence and businesses are maintained.

Refer to the Construction Noise Vibration Management Plan prepared by Acoustic Logic.

5.3 Dust and Odour

The main site activities that have potential to generate dust & odour are; disturbance of ground conditions including the interim capping layer, vehicle movements, vehicle emissions, dry powdery soils, stockpiled soils, and ponding water. The Project Manager will identify sources and apply appropriate controls while the Site Manager will ensure the controls are managed effectively. It is up to the Project Managers discretion to identify dust causing activities and appropriate controls to be implemented. Such controls could include; wheel shakers, wheel wash, manual cleaning, tarpaulins to cover haulage trucks, daily monitoring of weather conditions (wind), daily hose down of problem areas, dust protection sprinklers, dust suppression machines and chemical applications as required.

5.4 Waste

The accumulation of waste resulting from demolition works, construction works, packaging, office tasks and amenities will be managed accordingly by Kane and/or engaged subcontractors. The Site manager shall ensure facilities are provided to adequately dispose of all types of waste. All site waste management will be in accordance with the Kane Constructions Waste Management Plan.

5.5 Chemicals

Various chemicals stored on site include but not limited to fuels, oil, paint and adhesives may have an impact on the environment if not handled appropriately. The Site manager will ensure minimum quantities of chemicals are stored correctly on site and empty packaging is disposed of in accordance with state laws and regulations.

5.6 Land Contamination / Soil Contamination

Various activities may contribute to the contamination of land and soil including wash water, brick cutting and plaster. Effective controls shall be implemented to ensure contamination to soil is minimised.

5.7 Erosion and Sediment

Rain and/or water used on site over recently disturbed or bare areas of soils have potential to carry sediment off site and cause erosion impacting native vegetation and water courses. The Site Manager shall minimise the disturbance of vegetation to reduce the likelihood of sediment loss and erosion. All erosion and sediment controls will be completed in compliance with the Erosion and Sediment Control Plans (SSDA Condition B16).

5.8 Flora / Fauna

Plant/machinery and various forms of construction work can impact negatively on surrounding flora and native vegetation. Protection of existing native vegetation from the impacts of construction work shall be implemented by the Site Manager.

When native fauna is encountered, it must not be disturbed. Notify the Site Manager if you see any fauna which is in the way of conducting work. Disturbing, injuring or killing native fauna without a permit may lead to prosecution.

5.9 Mud on Road

Vehicle movements after heavy rain events increase the risk of transferring mud and dirt onto public roads. The Site Manager shall put controls in place to ensure the risk of mud on roads is minimised. These controls may include; shaker grids, wheel wash downs, tarpaulins on haulage trucks and road cleaning as required.

5.10 Heritage Sites

Various forms of construction work including demolition can have an impact of the cultural heritage of an existing building or site. The heritage significance of the building shall be determined by the Project Manager and the Site Manager shall ensure agreed protection methods are implemented on site. Refer to Children's Hospital at Westmead Stage 2 Redevelopment Heritage Impact Assessment for MSCP rev C prepared by Jacobs for heritage significance and the Kane Constructions Unexpected Finds protocol for aboriginal and non-aboriginal heritage items (Attachment 9).

5.11 Air Pollution

Poor plant maintenance and exhaust emissions will impact the quality of the air. The Site Manager shall ensure that incoming plant is assessed and confirmed to be maintained in accordance with manufacturer's recommendations. Other sources of air contaminants shall be contained and managed appropriately.

5.12 Obtrusive Lighting

All external site lighting will be selected, positioned and controlled in a manner that there will be no obtrusive impacts on surrounding buildings in accordance with AS4282-2019. Project Manager and site management will monitor the above and ensure compliance.

5.13 Groundwater Management

It is expected that two groundwater systems exist within the project area including a shallow groundwater system located in the alluvial, fill and shallow weathered sandstone and shale units. The second regional groundwater unit is expected to exist within the deeper confined Hawkesbury Sandstone.

Groundwater seepage was encountered during the geotechnical investigations. It was measured within the wells below the base of any such excavations and is not expected to be an issue for these sites. However, some perched water may be encountered trapped within the fill, but if that is the case it should drain quickly and be able to be controlled using gravity drainage.

As such, it is not expected that specific controls for groundwater would be required as excavations associated with the MSCP site are expected to be too shallow to intercept the groundwater table. Therefore, Water Access Licences will not be required.

During piling, groundwater seepage may occur into the bored piers. To mitigate any issues resulting from this the piles are to be drilled, inspected, and poured with minimal delay. Where seepage does occur it should be pumped from the pier holes prior to pouring of concrete and all concrete poured using tremie techniques, which should be used anyway given the expected depth of the piles.

Groundwater contamination can occur when three main components exist: a potential source of contamination; an aquifer as the receptor; and a pathway for transfer between the two.

One of the primary pathways for groundwater contamination is infiltration of contaminants from the land surface, through the unsaturated zone, and to the unconfined aquifer below. Shallow unconfined aquifers (including karstic, conduit and fractured rock aquifers) are particularly vulnerable to contamination, especially where the associated land use includes hazardous activities with uncontrolled contamination sources. The porosity and permeability of the unsaturated zone contributes significantly to the travel time of contaminants between the source and the groundwater. A highly porous or permeable unsaturated zone, such as karst limestone, can result in the relatively quick transfer of contaminants from the surface to groundwater. However, ‘reaction’ of contaminants with the soil and rock of the unsaturated zone can slow or even stop contamination reaching groundwater. The unsaturated zone can be an important consideration in groundwater quality management.

Human-induced contamination is most often referred to as either point source or diffuse source. Point sources refer to localised contamination, often centred on one or more identifiable locations.

Many industrial chemicals are in use in Australia. Leaks, spills and other releases of these chemicals pose a risk to groundwater quality.

Changing groundwater levels have the potential to cause water quality changes as a result of processes such as seawater intrusion and mobilisation of acidity and metals in sulfidic soil or rock. In some cases, these can have detrimental impacts. Such changes in groundwater levels and consequent changes in groundwater quality may result from anthropogenic processes such as groundwater pumping and climate change as well as from natural climate variability. Falling groundwater levels have resulted in the drying of some wetlands. This can oxidise acid sulphate soils, which creates acidic conditions that mobilise metals and sometimes release arsenic. Falling groundwater levels due to pumping can also result in seawater intrusion into a fresh aquifer or leakage of higher- salinity groundwater into a fresher aquifer. On the other hand, rising groundwater levels or changes in groundwater flow directions can cause flow of contaminated or poor-quality groundwater into streams and wetlands. They can also bring salts in the groundwater to the surface and cause dryland and stream salinity. To mitigate this risk, groundwater is to be separated during dewatering to ensure the water is not contaminated through construction works or by accident.

6 SYSTEM IMPLEMENTATION AND RESPONSIBILITIES

Site staff have responsibility for implementation of the following site specific Environmental Management system procedures and related Kane Business Management System procedures. Responsibilities listed below must be read in conjunction with the Kane EMS responsibilities (refer Clause 3.1). The priority, order and timeframes in which the items below are implemented may differ as determined by the Project Manager to suit the project construction programme and the findings of the environmental risk assessment.

Project Specific Systems	Corporate Responsibility	Individual Responsibility
1. Include Environmental Management as a fixed agenda item of meetings	Kane	Kane PM, CM, CA
2. Develop the Environmental Management Plan EMP and all attachments	Kane	PM
3. Deliver Site Induction (including policy, controls, incident response)	Kane	SM / WHS Coordinator
4. Implement the environmental controls identified in the EMP	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
5. Implement Incident Response procedure (where incidents occur)	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
6. Raise Non-conformance reports and initiate corrective and preventative action	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
7. Communicate alerts, incidents etc via Toolbox Meetings	Kane and Subcontractors	SM, Subcontractor Supervisor
8. Update site noticeboard with material waste data sheets	Kane	SM, WHS Coordinator
9. Monitor and evaluate environmental controls (document weekly)	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
10. Measure and evaluate the effectiveness of the EMP	Kane	PM, WHS Coordinator

7 INCIDENT NOTIFICATION, INVESTIGATION AND RESPONSE

7.1 Incident notification

All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill or escape of a substance or pollution incident causing or threatening public or property harm. In the event of an incident, the clean-up process shall be managed under the direct supervision of the Site Manager. The Site Manager is responsible for reporting notifiable incidents to the relevant environmental authority, Kane Senior Management and the Client Emergency Contacts in accordance with Attachment 4 Incident Response Flowchart.

7.2 Investigation and action taken

Procedural and/or legislative Non-conformances are identified, investigated, corrected and prevented by raising an Improvement Notice (refer Attachment 5). When raised, Kane Site Management documents the non-conformance and recommendation on how to correct the non-conformance. The Improvement Notice recipient is required to document the action taken to rescind the notice. Kane Site Management determines if the rectification is complete and adequate to prevent recurrence.

If the incident is of a large magnitude and poses high risk, the Site Manager shall contact and allow emergency services to manage the clean-up process. Such incidents shall be investigated using Kane OHSMS Schedule M/2 - Incident Investigation to determine how the incident occurred, how to prevent recurrence and how procedures may require revision to improve preparedness and response. The findings of an investigation are reviewed by the Construction Director, Systems Manager, Systems Coordinator, and Construction Supervisor NSW/QLD with a view to disseminating the lessons learnt to all projects.

8 AUDITING AND FREQUENCY

8.1 Internal

Quarterly Audit Report (refer Attachment 7) is used by the Project Manager to audit effective implementation of the Kane EMS. Points are awarded for effective implementation and points taken where noncompliance is observed. The audit facilitates recognising good practice environmental management and requires

actions be documented where improvement is necessary. Each site is audited quarterly (minimum) close to the end of each reporting period on a day determined by the Project Manager. The audit report is issued to the Systems Manager for VIC projects or Construction Supervisor for NSW/QLD projects to review against company objectives/targets and identify trends that may appear (positive and negative). The audits are scheduled at the end of the following months (or otherwise scheduled to avoid holiday and extremely busy periods i.e. lead up to Christmas)

- March (Jan – Mar)
- June (Apr – Jun)
- September (Jul – Sept)
- December (Oct – Dec)

Random EMS audits are undertaken by the Systems Manager/Coordinator (VIC) and Construction Supervisor (NSW/QLD). Reports are prepared and distributed to all staff on the project for actioning and for information to the Directors in each state.

8.2 External

Kane Constructions certification to ISO 14001 – Environmental Management requires third party surveillance audits be undertaken. Projects are selected randomly. Each audit confirms if the company certification should remain. Corrective action must be promptly closed where identified.

It is not uncommon for head contracts to require external audits of projects. The auditor is commonly required to have Lead Auditor competency. Audit frequency and reporting requirements differ based on project complexity and risks.

9 ATTACHMENTS

Attachment	Document Title	Document Number	Revision
1	Schedule of Acts, Regulations, Standards and Codes of Practice	EMS-SYS-SCH3-ATT1	A2
2	Risk Assessment and Checklist	EMS-SYS-SCH3-ATT2	A2
3	Environmental Induction	EMS-SYS-SCH3-ATT3	A2
4	Incident Response Flowchart	EMS-SYS-SCH3-ATT4	A2
5	Improvement Notice	EMS-SYS-SCH3-ATT5	A2
6	Quarterly Audit Report	EMS-SYS-SCH3-ATT6	A2
7	Confirmation of Responsibilities	EMS-SYS-SCH3-ATT7	A2

The below table identifies the documents associated with this EMP, however are integrated with and presented in the Kane Occupational Health and Safety Management System.

Document Title	Document Description	Document Number	Kane OHS / BMS Reference
Skills Register	Register of training /competency	OHS-SYS-SCHD	OHS Schedule D
Post Tender Interview	Contract document detailing environmental management obligations of all subcontractors engaged	NA	Section 8.26

Incident Investigation	Form completed for the purposes of investigating incidents	OHS-SYS-SCHM2	OHS Schedule M2
Site Induction Record	Form completed by all inductees detailing personal and employment details	OHS-SYS-SCHP	OHS Schedule P
Record of Consultation	Form used to record consultation / communication	OHS-SYS-SCHW	OHS Schedule W

ATTACHMENT 1

Schedule of Acts, Regulations, Standards and Codes of Practice

Who shall implement	Construction Director/Secretary- Maintain currency of documentation All Project Staff- Ensure availability of publications
When to implement	Bi Annually- Maintain Currency As required - Provide documentation
How to use/implement	The list of publications is available to confirming legal obligations / best practice controls / guidance material for works on site. All Commonwealth legislation applies across

Publication	Source
Acts Environment Protection Protection of the Environment Administration Act 1991 National Environment Protection Council (NSW) Act 1995	NSW Legislation and Parliamentary Document Website http://www.legislation.nsw.gov.au/ Search Using title OR
Protection of the Environment Operations Act 1997 Smoke Free Environment Act 2000	Commonwealth Legislation Website http://www.comlaw.gov.au/Home Search using title
Contaminated Land Management Act 1997	
Planning and Environmental Impact Assessment	
Waste Avoidance and Resource Recovery Act 2001	
Environmental Reform (Consequential Provisions) Act 1999	
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	
Heritage and Other Land Protection	
Legislation	
National Parks and Wildlife Act 1974	
Other Acts with Potential to Affect Construction Activities	
Health Administration Act 1982	
Dangerous Goods (Road and Rail Transport) Regulation 2014	
Water Act 2007 (Commonwealth)	

Regulations Protection of the Environment Operations (Clean Air) Regulation 2010 Protection of the Environment Operations (General) Regulation 2009 Protection of the Environment Operations (Noise Control) Regulation 2017 Protection of the Environment Operations (Waste) Regulation 2014 Contaminated Land Management Regulation 2013 Smoke-Free Environment Regulations 2016	NSW Legislation and Parliamentary Document Website http://www.legislation.nsw.gov.au/ Search using title
Office of Environment and Heritage Publications and Guidelines Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW Managing Urban Stormwater Harvesting and Re-Use Soil and Construction Environmental Management on the Urban Fringe 6.1 Economic incentives for environmental management 6.2 Property management plan 6.3 Environmental assessment Storing and Handling Liquids: Environmental Protection - Participants Manual Interim Construction Noise Guideline Review of alternatives to 'beeper alarms' for construction equipment Assessing Vibration: A Technical Guideline Land Contamination: What are my Responsibilities? (Website only)	NSW Government – Office of Environment and Heritage Website http://www.environment.nsw.gov.au/ Search using title http://www.environment.nsw.gov.au/clm/index.htm https://www.epa.nsw.gov.au/
Other Standards and Guidelines ISO ASNZS ISO 14001:2015 - Environmental Management Systems Environmental Management System Guides – Risk Based Licencing Biodiversity Biodiversity Conservation Act 2016 The National Strategy for the Conservation of Australia's Biological Diversity	http://www.environment.gov.au https://legislation.nsw.gov.au/view/html/inforce/current/ac%20t-2016-063

Australian Government Department of Defence Defence Environmental Strategic Plan 2016- 2036	Department of Defence Infrastructure Management Website https://defence.gov.au/EstateManagement/governance/p%20olicy/environment/Policy/EnvironmentStrategy2016.PDF

ATTACHMENT 2

Risk Assessment and Checklist

ATTACHMENT 2 – INTERIM ENVIRONMENTAL RISK ASSESSMENT and CHECKLIST (Cl 3.5.1)

ASSESS RISK RATING IN ACCORDANCE WITH THE BELOW RISK CLASSIFICATION TABLE
Determine the RATING for each aspect (including any site specific) after consideration of the standard risk controls.
After implementation of the standard risk controls, is there:

Job No.	**Job Title: Children's Hospital Westmead Stage 2 – Multi-story Car Park**	• Potential for pollution resulting in long term damage • Potential for pollution that cannot be mitigated immediately • A specific contract requirement • A specific permit requirement • A specific authority requirement	**H - HIGH** — **Additional risk controls required. Frequency of monitoring to be based on level of risk**
Prepared By :	**Position : Project Manager** **Sign :** **Date Approved:**		
Date of Review:	**Risk Review undertaken by (list names / company);**	• Minimal potential for public or other complaint • Minimal potential for pollution (mitigated with minor damage)	**M - MEDIUM** — **Monitor weekly to ensure controls are effective (may require increased monitoring based on inspections)**
Review Number		• No potential for public or other complaints • No potential for a legal breach • No specific contract requirement • No specific permit requirement • No specific authority requirement	**L - LOW** — **No additional risk controls. Monitor weekly**

No	ASPECTS	SOURCE	STANDARD RISK CONTROLS	Residual Risk Rating (H, M, L)	Additional Risk Controls Required (where risk rating is H)	No. of Compliant Controls Observed	No. of Non-Compliant Controls	Minor Actions Required [Improvement Notice (Attachment 5) to be raised where significant Non-compliance is observed]	Initial and Date when action Completed
1	Noise	Plant / Machinery Construction Methods Radios	• Plant /machinery maintained in accordance with manufacturer recommendations • Silencers placed on large compressors / generators • Comply with council work hours • Limit volume of radios • Utilise prefabricated materials	L					
2	Dust & Odour	Ground disturbance Vehicle Movement Dry powdery soils	• Protect surrounding buildings ventilation systems with louvre filters • Protect areas of vegetation and minimise clearing / disturbance • Cover exposed ground with mulch or other suitable material • Restrict vehicle movements • Dampen surfaces with fence mounted sprinklers, water cart (seek approval where water restrictions apply) • Landscape and re-vegetate as soon as possible • Seed, or cover and maintain soil stockpiles • Special, high quality hoarding which meets infection control standards installed for operational healthcare facilities • Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)	L					
3	Waste	Demolition Construction Works Packaging Office Amenities	• Utilise separate recycle bins for paper, steel etc (space permitting on site) • Use bin contractors who sort and recycle construction waste • Utilise existing client facilities for domestic recyclables (paper, cans etc) • Recycle demolished materials wherever possible • Place lids on domestic waste bins for odour and vermin control	L					
4	Chemicals	Fuel Oil Paint Adhesives	• No bulk storage of fuel / oil on site (fuel tankers to visit site as required) • Paints, adhesives stored on site at minimum quantities in vented containers/rooms • All storage of chemicals shall comply with the Material Safety Data Sheet • Major servicing of plant e.g. where large quantities of oil requires changing shall be undertaken off site	L					
5	Contamination (from slurry / wash water) & Soil Contamination	Paint Plaster Concrete Brick / Paver cutting	• Use paint wash trough. Settled solids should be removed by an appropriate waste disposal company • Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting • Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting • Documented evidence of contaminated soil removed from site is accepted by landfill facility	L					
6	Erosion and Sediment	Disturbed / cleared soils Rain events	• Protect and maintain natural vegetation and minimise clearing / disturbance • Connect downpipes to stormwater drainage as soon as possible or pipe roof water onto grassed areas • Install sediment fences close to the site boundary and drains where surface water may carry sediment off site • Place gravel sausages across pit openings	L					
7	Mud on Road	Muddy site Vehicle Movements Significant Rain Event	• Crushed rock placed in areas of vehicle movement • Restrict vehicle movements on un-vegetated/exposed ground • Cover exposed trafficked ground with mulch or other suitable material • Protect areas of vegetation and minimise clearing / disturbance • Remove water from site by connecting downpipes to stormwater drainage • Install rumble strips at site exit to promote cleaning mud off vehicle tyres	L					
8	Heritage Sites	Demolition Construction Works	• Project documentation to be closely reviewed for areas of Heritage significance • Any Heritage significance to be identified during site induction • Agreed protection measures to be included in the work method statement	L					

9	Air Pollution	Plant / Machinery	• Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)	L					
Total Compliant and Non-compliant Observed			• **This Week**						
					Total Compliant and Non-compliant Observed			**Since Project Started**	

ATTACHMENT 3

Environmental Induction Booklet

ATTACHMENT 3 (Clause 3.5.2)

Environmental Induction Booklet for the Children's Hospital Westmead Multi Storey Car Park

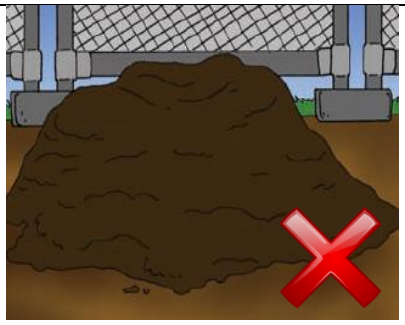
Environment Policy	All personnel (Kane Constructions and Subcontractors) must be committed to achieving the objectives of Kane's Environment Policy. The policy is posted on the noticeboard or induction room for all inductees to read

Incident Response	All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill escape of a substance or pollution incident causing or threatening public or property harm

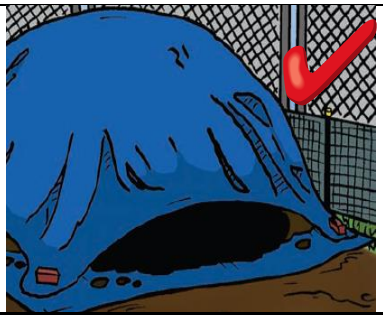
Waste Data Sheets	The Site Noticeboard is updated as required with Material Waste Data Sheets (good practice environmental control information) for all to read

NOISE	**Source** • Plant / Machinery • Construction Methods • Radios • Unnecessary
	**Risk Controls** • Plant /machinery maintained in accordance with manufacturer recommendations • Silencers placed on large compressors / generators • Comply with council work hours • Limit volume of radios • Utilise prefabricated materials

DUST & ODOUR	**Source** • Ground disturbance • Vehicle Movement • Dry powdery soils • Cutting • Stagnant water • Infection Control
	**Risk Controls** • Protect areas of vegetation and minimise clearing / disturbance • Cover exposed ground with mulch or other suitable material • Restrict vehicle movements • Dampen surfaces (seek approval where water restrictions apply) • Landscape and re-vegetate as soon as possible • Seed or cover soil stockpiles • Monitor stormwater catchments and eliminate ponding zones



- Special, high quality hoarding which meets infection control standards installed for operational healthcare facilities



WASTE

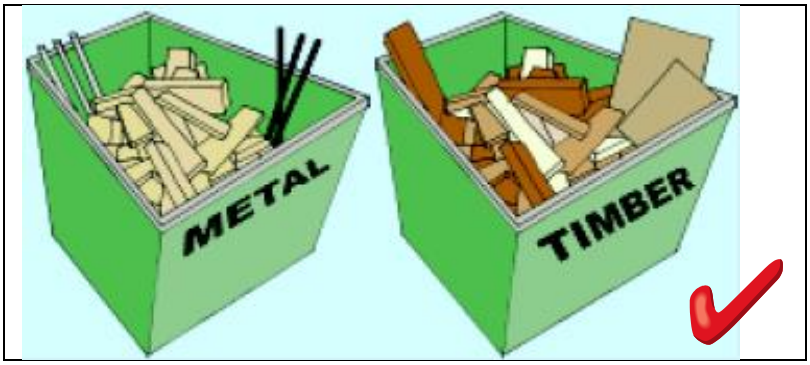
Source

- Demolition
- Construction Works
- Packaging
- Office
- Amenities

Risk Controls

- Utilise separate recycle bins for paper, steel etc (space permitting on site)
- Use bin contractors who sort and recycle construction waste
- Utilise existing client facilities for domestic recyclables (paper, cans etc)
- Recycle demolished materials wherever possible
- Place lids on domestic waste bins for odour and vermin control

RECYCLE



CHEMICALS

Source

- Fuel
- Oil
- Paint
- Adhesives

Risk Controls

- No bulk storage of fuel / oil on site (fuel tankers to visit site as required)
- Paints, adhesives stored on site at minimum quantities in vented containers/rooms
- All storage of chemicals shall comply with the Material Safety Data Sheet
- Major servicing of plant e.g. where large quantities of oil requires changing shall be undertaken off site

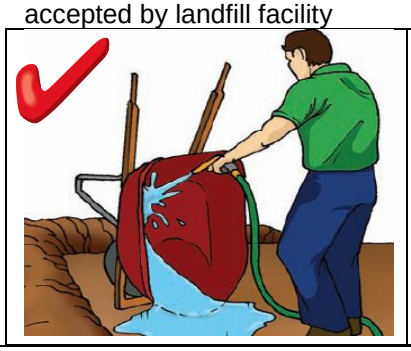
CONTAMINATION (FROM SLURRY/ WASHWATER)

Source

- Paint
- Plaster
- Concrete
- Brick / Tile / Paver cutting

Risk Controls

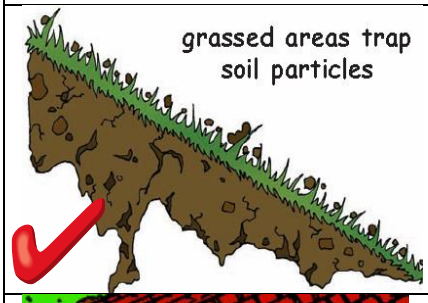
- Use paint wash trough. Settled solids should be removed by an appropriate waste disposal company
- Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting
- Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting
- Documented evidence of contaminated soil removed from site is accepted by landfill facility



EROSION AND SEDIMENT

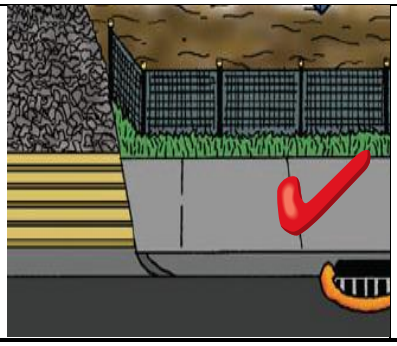
Source

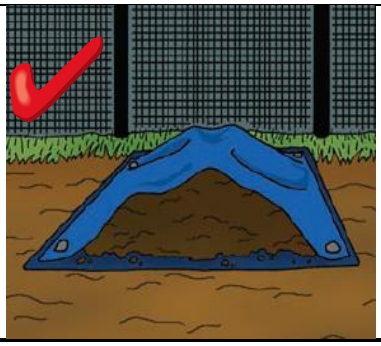
- Disturbed / cleared soils
- Rain events



Risk Controls

- Protect and maintain natural vegetation and minimise clearing / disturbance
- Connect downpipes to stormwater drainage as soon as possible or pipe roof water onto grassed areas
- Install sediment fences close to the site boundary and drains where surface water may carry sediment off site
- Place gravel sausages across pit openings





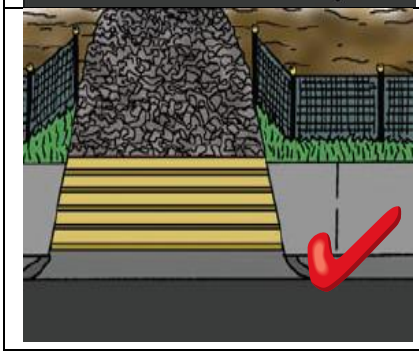
MUD ON ROAD

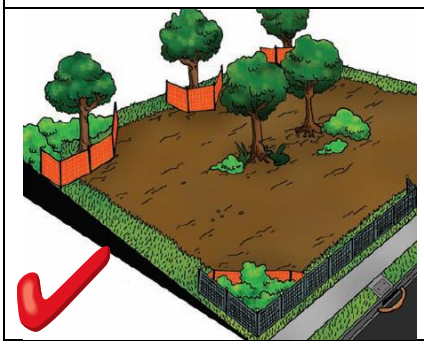
Source

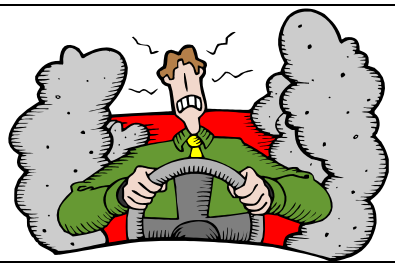
- Muddy site
- Vehicle Movements
- Significant Rain Event

Risk Controls

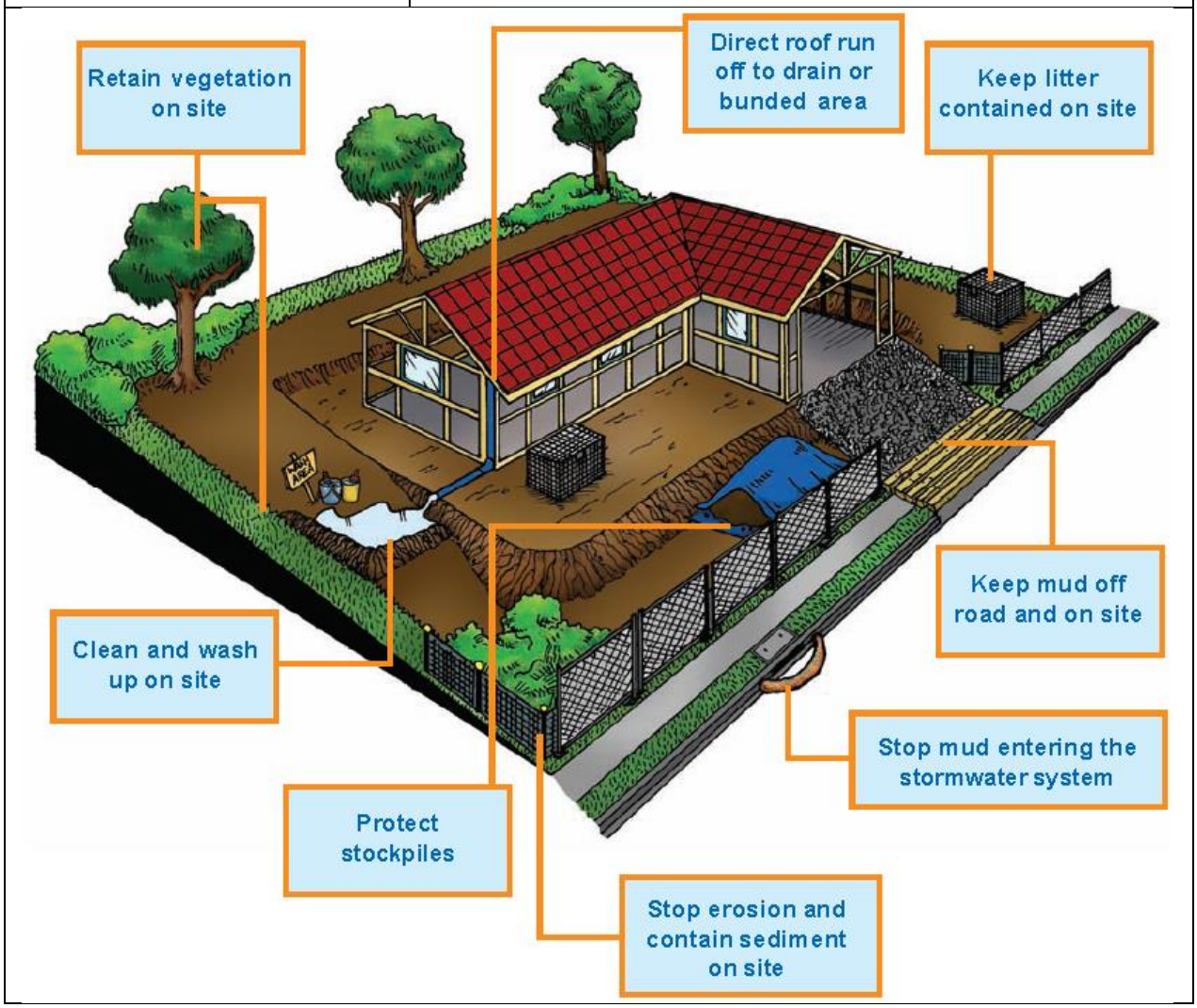
- Crushed rock placed in areas of vehicle movement
- Restrict vehicle movements on un-vegetated/exposed ground
- Cover exposed trafficked ground with mulch or other suitable material
- Protect areas of vegetation and minimise clearing / disturbance
- Remove water from site by connecting downpipes to stormwater drainage
- Install rumble strips at site exit to promote cleaning mud off vehicle tires



FLORA / FAUNA	Source
	• Plant / Machinery • Construction Works
	**Risk Controls** • Trees, shrubs etc is protected by flagging, roped off i.e."No Go Zone" • Vehicles parked outside of tree root zone to avoid damage • No entry to fenced off areas, no pets on sites, stick to access roads, and notify Site Manager of any fauna

AIR POLLUTION	Source
	• Plant / Machinery
	**Risk Controls** • Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)

SUMMARY	Risk Controls



ATTACHMENT 4

Incident Response Flowchart

ATTACHMENT 4 (Clause 3.5.3)

Incident Response NSW

New South Wales

Organisations operating under the New South Wales Department of Planning and Environment (DPE) issued environmental licences are required to notify pollution incidents by calling the DPE Pollution Watch Line.

Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

- Protection of the Environment Operations Act 1997 (links are to the NSW legislation website):
    - Section 116: It is an offence to willfully or negligently cause any substance to leak, spill in a manner that harms or is likely to harm the environment.
    - Section 120: It is illegal to pollute or cause or permit pollution of waters.
    - Section 124-126 Businesses must maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution at all times.
    - Section 139 and 140: It is an offence to allow noise from your premises to be generated as a result of the failure to maintain or operate machinery.
    - Section 142: It is an offence to pollute land
    - section 147: Meaning of material harm to the environment
    - section 148: Pollution incidents causing or threatening material harm to the environment
    - section 149: Manner and form of notification
    - section 150: Relevant information to be given
    - section 151: Incidents not required to be reported
    - section 152: Offence for breaching duty to notify pollution incidents
    - section 153: Incriminating information

The DPE relies on everyone in the community to report pollution. The community is encouraged to call the DPE Pollution Watch Line when the following is noticed:

- Smoke or odours from an industry or business
- Spills or slicks in waterways
- Illegal dumping of wastes
- Noise from a factory or industrial complex
- Littering
- Smokey Vehicles

CONTACT ENVIRONMENT LINE

Metropolitan – 131 555 (24 hours)

All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill escape of a substance or pollution incident causing or threatening public or property harm. When notified, the Site Manager shall implement the attached Incident Response Flowchart.

ATTACHMENT 4 (Clause 3.5.3)

Incident Response

In the event of an ENVIRONMENTAL INCIDENT

(all types of incidents) notify the Site Manager

NOTIFY THE SITE MANAGER IMMEDIATELY

(24-Hour contact)

Name - Richard Blackwell

Mobile - 0400 743 356

Is the pollution incident (including leak, spill escape of a substance &/or other pollution incident) causing or threatening public health, property or environment harm?

YES

CALL 000 (FIRE BRIGADE)

NOTIFY NSW ENVIRONMENT LINE on 131 555 (24hrs)

Kane site team to notify Kane Senior Management

NO

Emergency Services & DPE Notification is **NOT required.**

Clean-up to be managed under the direct supervision of the Site Manager

Kane to report incident via WhatsApps message on established project channel as per Incident Management Framework

3. Incident Management Framework

Category 1 – Critical Incident **Trigger**: Incident involving fatality or severe injury or major impact to critical hospital operations or incident resulting in potential severe corporate reputational damage.	Category 2 – Significant Incident **Trigger**: Incident involving major detrimental impact to project, including damage to civil structures, extreme weather impacts, and threats to life or property or major environmental impact, or significant impact to critical hospital operations or any LTI, significant near-miss or external environmental breach.	Category 3 – Minor Incident **Trigger**: Incident involving Medical Treatment Injury (MTI), potential for LTI, or on-site environmental impact, or minor near miss or non-conformance likely to lead to LTI	Category 4 – Notifiable Incident **Trigger:** Minor incident and/or safety breach on worksite For example: first aid treatment or non-conformance on site not likely to lead to an LTI
Step 1 – Immediate **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Directors/Project Directors/Construction Managers **Contractor informs** Regulators and Emergency Services if required	**Step 1 – Immediate** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Directors/Project Directors/Construction Managers **Contractor informs** Regulators and Emergency Services if required	**Step 1 – Within 1 hour** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Director/Project Directors/Construction Managers **Contractor informs** Regulators	**Step 1 – Within 4 hours** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Project Directors/Senior Project Directors/Regional Director /Construction Managers
Step 2 – Immediate **Regional Director informs:** HI Chief Executive Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Immediate** **Regional Director informs:** HI Chief Executive Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Within 1 hour** **Regional Director / Senior Project Director / Project Director informs:** Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Within 8 hours** **Project Director/Senior Project Director:** Engage with HI Communications Business Partner and Director Communications and Engagement
Step 3 – Immediate **Chief Executive and Executive Director:** Inform Secretary (and if instructed to the Minister), Ministry, Local Health District/s Inform the HI Board Chair Engage with Director Communications and Engagement	**Step 3 – Immediate** **At discretion of CE and ED.** Chief Executive and Executive Director inform Secretary (and Minister if instructed), Ministry, Local Health District/s Informs the HI Board Chair Engage with Director Communications and Engagement	**Step 3 – Within 2 hours** **Executive Director:** Informs CE and Leadership Team	**Step 3 – Within 3 working days** Incident report submitted with recommended mitigation to Executive Director Incident Management Team not required Managed through routine project governance and reporting
Step 4 – Immediate **HI Chief Executive / Executive Director** officially declare incident as detailed in the NSW health Incident Management Policy	**Step 4 – Immediate** **At discretion of CE and ED** HI Chief Executive / Executive Director officially declare incident	**Step 4 – Within 24 hours** Stakeholder Communications Plan implemented Media Management Plan implemented, as required	**Step 4 – Within 24 hours** Stakeholder Communications Plan implemented Media Management Plan implemented, as required
Step 5 – Within 1 hour Upon CE / ED officially declaring incident, a **HI Incident Management Team is formed** – see Section 2 below	**Step 5 – Within 1 hour** Upon CE / ED officially declaring incident, a **HI Incident Management Team is formed** – see Section 2 below	**Step 5 – Within 3 working days** Incident report submitted with recommended mitigation to Executive Director Incident Management Team not required Managed through routine project governance and reporting Employee status monitored and incident escalated if condition becomes serious	
Step 6 – Ongoing **Incident Management Team assumes control of incident response** **Media and stakeholder communication** managed in line with Section 3 – Stakeholder Relationship Managers and Appendix 1 – Incident Media Protocols	**Step 6 – Ongoing** **Incident Management Team assumes control of incident response** **Media and stakeholder communication** managed in line with Section 3 – Stakeholder Relationship Managers and Appendix 1 – Incident Media Protocols		

ATTACHMENT 5

Improvement Notice

ATTACHMENT 5 (Clause 3.5)

Improvement Notice

This notice is issued as a consequence of your failure to maintain adequate environmental controls during the performance of your contract works

PROJECT – CHILDREN'S HOSPITAL WESTMEAD STAGE 2.	**PROJECT NO.**
SITE MANAGER – Richard Blackwell	**DATE:**

TO: ..... Company Name

FROM: ..... Company Name

❑	Noise	❑	Dust and/or Odour
❑	Waste	❑	Chemicals
❑	Contamination (slurry, wash water, oil)	❑	Erosion and Sediment
❑	Flora / Fauna	❑	Mud on road
❑	Heritage	❑	Air Pollution
❑	Other	❑	

Where this Improvement Notice is issued as a result of an environmental incident,

IDENTIFY ACTION TAKEN TO CLEAN UP

ACTION TAKEN TO ELIMINATE THE CAUSE (i.e re-induction, improved control measure etc)

VERIFICATION OF ACTION TAKEN (Kane Site Management use only)

☐ Action verified as completed

☐ Action inadequate (describe why inadequate)

.....

.....

Signed: .....

Date:.....
Kane Representative

In the event the company issued this notice fails to action, all costs incurred to undertake these works will be back-charged.

☐ Labour to Rectify

men x hours = Total Hours

Distribution:
☐Site File
☐Project Manager
☐Subcontractor

ATTACHMENT 6

Quarterly Audit Report

ATTACHMENT 6 (Clause 4.1.2)

Environmental Management Audit

Who shall implement	Project Manager (Auditor) - Audit and submit report Site Manager (Auditee) - Implement actions identified
When to implement	Quarterly (minimum)
How to use/implement	Project Manager to check compliance, with the Site Manager, of all items against actual site record/observations and score out of 150. If not applicable, write N/A and award total points. Do not award negative points. Lowest score possible is zero. Any issue identified shall be listed *(immediate actions required column)* and actioned by the Site Manager *(sign and date in the closed column)*. The report is to be issued to the Systems Manager (Vic) or Construction Supervisor (NSW/QLD).

Job Title: CHILDREN'S HOSPITAL WESTMEAD STAGE 2		**Period Audited**
Site Manager: Richard Blackwell	**Job No.**	**Date Audited**

*** if not applicable write N/A and award total points**

EMS Sch / CL Ref	Audit Criteria	* Points Scored	Immediate Actions Required	Closed Sign/Date
Sch 1B	1. All EMS (body and schedules) implemented on site is the most current revisions i.e check documents against revision control table *(Award 15 points, less 2 points for each document not current)*			
Sch 3	2. Environmental Management Plan is signed, dated and prepared using current revision *(15 points if signed, dated and current. Less 10 points if not signed and dated. Zero points if not current revision used)*			
Sch 3 Att 2	3. Environmental Risk Assessment and Checklist prepared *(15 points if prepared, less 10 points if not signed and dated by PM, less 10 points if risk rating is not completed, less 5 points if names of attendees not listed, zero points if not prepared)*			
Sch 3 Att 2	4. Environmental Risk Assessment implementation *(15 points for completed weekly checks, less 10 points for weeks not completed, zero points for no implementation)*			
Sch 3 Att 2	5. Tally of Compliant / Non-Compliant Controls Maintained *(5 points, less 2 points if tally not updated, zero points if no tally)*			
Sch 3 Att 2	6. Environmental Risk Assessment minor actions required *(10 points for minor actions required and closed out, less 2 points each action not closed out)*			

EMS Sch / CL Ref	Audit Criteria	* Points Scored	Immediate Actions Required	Closed Sign/Date
Sch 3 Att 3	7. Environmental Induction Booklet displayed in induction room *(10 points for induction book displayed, zero points if not displayed)*			
Sch 3 Att 4	8. Incident Response Flowchart completed with Site manager's name and displayed on site noticeboard *(10 points if completed and displayed, less 5 points for not displaying on the noticeboard and zero points if not completed)*			
Sch 3 Att 5	9. Improvement notices raised and closed out *(20 points for notices closed out, less 10 points for each notice raised and not closed out)*			
Sch 4	10. Materials Waste Data Sheets displayed on site notice board relevant to stage of project works *(10 points, less 2 points for each data sheet not relevant to works)*			
Sch 3 Att 6	11. Quarterly environmental reporting statistics are submitted by the requested date *(15 points, less 10 points if not submitted on time)*			
Sch 3 Att 6	12. Are issues/actions repeated from previous audits? *(10 points, less 10 points if answered Yes without an explanation why the issues/actions are repeated from previous audits)*	Yes/No	If Yes, list the reasons why the issues/actions are not actioned from previous audits	
4.1.2	13. Is the Kane EMS effective in achieving the objectives and targets? *(10 points, less 10 points if answered No without an explanation why the system is not effective)*	Yes/No	If No, list why *(i.e system change, training etc)*	

Total Points achieved	**maximum score 160**	**Date Immediate Actions must be closed by**	**write date above**

If maximum points are <u>not achieved</u> on the Audit Criteria 1 and 2 above, the Total Points achieved for this audit shall default to "Improvement Required"

If maximum points are <u>not achieved</u> on the Audit Criteria 3, 4 and 6 above, the Total Points achieved for this audit shall default to "Unsatisfactory Result"

Between 90 - 100% (144 – 160) Points	**Kane EMS trainer/mentor suitable to train young foreman**
Between 70 – 89 % (112 – 143) Points	**Good Implementation (above average implementation)**
Between 50 – 69 % (80 – 111) Points	**Improvement Required (average implementation)**
Below 50 % (0 – 79) Points	**Unsatisfactory result (Non-conformance report and re-induction)**

Print Name …… (Site Manager)

Print Name…… (Project Manager)

<u>Distribution</u>
Site File
Systems Manager/Systems Coordinator (VIC)/Construction Supervisor (NSW, QLD)

ATTACHMENT 7

Confirmation of Responsibilities

ATTACHMENT 7

Confirmation of Responsibilities

The project staff responsible for management of environmental management is assessed for competence, understanding and acceptance of their environmental responsibilities. Confirmation of this is provided below.

Each individual shall complete the table to verify the items listed below. Write either Yes or No (alongside the item in your column only) sign and date.

Item 1 I understand my responsibilities identified in the Kane EMS (revision A2)
Item 2 I understand my responsibilities identified in the Environmental Management Plan (revision 1)
Item 3 I was consulted and given opportunity for input in the development of this Environmental Management Plan
Item 4 I am competent to carry out my responsibilities identified in the Kane EMS and this Environmental Management Plan
Item 5 I will carry out my responsibilities identified in the Kane EMS and this Environmental Management Plan

	Project Manager	**Site Manager**	**Project Engineer**	**Contracts Administrator**	**Cadet Project Engineer**
Name	Christopher Chau	Richard Blackwell	Marcus Owen	Billy Katsiris	Alisia Hanna
Item 1 (yes/ no)	Yes	Yes	Yes	Yes	Yes
Item 2 (yes/ no)	Yes	Yes	Yes	Yes	Yes
Item 3 (yes/ no)	Yes	Yes	Yes	Yes	Yes
Item 4 (yes/ no)	Yes	Yes	Yes	Yes	Yes
Item 5 (yes/ no)	Yes	Yes	Yes	Yes	Yes
Sign					
Date	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

R – Responsible
A – Accountable
C – Consulted
I – Informed

ATTACHMENT 8

Unexpected Finds Protocol Contamination and Associated Communications Procedure

UNEXPECTED FINDS PROTOCOL FOR CONTAMINATION AND ASSOCIATED COMMUNICATIONS PROCEDURE

It is acknowledged that previous investigations of the site have been undertaken to assess the identified contaminants of potential concern in selected parts of the site. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations during remediation. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example;

- >10 m2 of ACM fragments encountered in one location (visible);
- Friable ACM such as lagging (visible);
- bottles / containers of chemicals (visible);
- construction / demolition waste (visible);
- ash and/or slag contaminated soils / fill materials (visible);
- petroleum contaminated soils (staining / discolouration visible) beyond the identified impact, or at levels that prevent off-site disposal without treatment; and
- volatile organic compound contaminated soils (odorous).

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances be identified (or any other unexpected potentially hazardous substance), the procedure summarised in the following flowchart is to be followed.

An enlarged version of the unexpected finds protocol, suitable for use on-site, will be posted in the Site Office and referred to during the Site Specific Induction by the Contractor.

Revision History

Revision	Date	Author	Approval	Description
REV A	09/03/2022	MO		DRAFT
REV 1	26/05/2022	SS	SB	ISSUED FOR CC

BE AWARE
UNEXPECTED HAZARDS MAY BE PRESENT

drums

asbestos

chemical bottles

odour

ash / slag

demolition waste

If you <u>SEE</u> or <u>SMELL</u> anything unusual

<u>STOP WORK</u> & contact the Site Manager / WHS Coordinator

do not restart working before the area has been investigated and cleared by an Environmental Consultant.

ATTACHMENT 9 -

Unexpected Finds Protocol Aboriginal & Non-Aboriginal Heritage Items

UNEXPECTED FINDS PROTOCOL FOR ABORIGINAL AND NON-ABORIGINAL HERITAGE ITEMS

PURPOSE

This management plan has been developed to provide a consistent method for managing unexpected finds of either Aboriginal or non-Aboriginal heritage discovered during work on a project site.

This procedure assumes that an appropriate level of Aboriginal and non-Aboriginal heritage assessment has been undertaken prior to work commencing.[1]

Despite appropriate and adequate investigation, unexpected heritage items may still be discovered during construction works. When this happens, the following procedure must be followed.

REVISION HISTORY

Revision	Date	Author	Approval	Description
Rev A	09/03/2022	MO		DRAFT.
Rev 1	26/05/2022	SS	SB	ISSUED FOR CC

LEGISLATIVE REQUIREMENTS

Table 1 below identifies some of the relevant legislation / regulations for the protection of heritage and the management of unexpected heritage finds in NSW.

Table 1: Requirement and Objectives

Relevant Requirement	Objectives and offences
Environmental Planning and Assessment Act 1979 (EP&A Act	Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval
Heritage Act 1977	The Heritage Act provides for the care, protection and management of (Heritage Act) heritage items in NSW. Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Division of the . Under the Act, a relic is defined as: 'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.' A person must notify the Heritage Division of DPE, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to $1.1million.

[1] If previous studies have identified that finds are likely, an *application may be required under the Heritage Act 1977 or the National Parks and Wildlife Act 1974*.

National Parks and Wildlife Act 1974 (NPW Act)	The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW. An Aboriginal object is defined as: 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'. An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects). Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify DPE if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include two years imprisonment and/or up to $550,000 (for individuals), and a maximum penalty of $1.1 million (for corporations)

It should be noted that significant penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with relevant statutory approvals(s) can be exempt from these offences.

To avoid breaches of legislation, it is important that Kane and its contractors are aware of our statutory obligations under relevant legislation and that appropriate control measures are in place to ensure that unexpected heritage items are appropriately managed during construction.

AN UNEXPECTED FIND

An *unexpected find* in the context of heritage is usually categorized as one or more of the following:

a) Aboriginal objects
b) Historic (non-Aboriginal) heritage items
c) Human skeletal remains

All of these are protected by law and destruction or disturbance of them could result in significant fines or even jail terms. The relevant legislation that applies to each of these categories is described below.

a) ABORIGINAL OBJECTS

The *National Park and Wildlife Act 1974* protects *Aboriginal objects*. These include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

If any impact is expected to an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) is usually required from the Department of Planning and Environment (DPE). When a person becomes aware of an Aboriginal object they must notify the Secretary of the Department Planning Industry and Environment about its location. Assistance on how to do this is provided in Section 7.

b) HISTORIC HERITAGE ITEMS

Historic (non-Aboriginal) heritage items may include:

- Archaeological 'relics'

  Other historic items (i.e. works, structures, buildings or movable objects).

c) ARCHAEOLOGICAL RELICS

The *Heritage Act 1977* protects relics which are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

d) OTHER HISTORIC ITEMS

Some historic heritage items are not considered to be 'relics'; but are instead referred to as works, buildings, structures or movable objects. Examples of these items may be encountered include culverts, historic road formations, historic pavements, buried roads, retaining walls, tramlines, cisterns, fences, sheds, buildings and conduits. Although an approval under the *Heritage Act 1977* may not be required to disturb these items, their discovery must be managed in accordance with the procedure as per *Figure 1.*

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. An archaeological excavation permit under Section 140 of the *Heritage Act 1977* is required to do this. In contrast, 'other historic items' either exist above the ground's surface (e.g. a shed), or they are designed to operate and exist beneath the ground's surface (e.g. a culvert).

Despite this difference, it should be remembered that relics can often be associated with 'other heritage items', such as archaeological deposits within cisterns and underfloor deposits under buildings.

e) HUMAN SKELETAL REMAINS

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-European settlement archaeological Aboriginal burial would be protected under the NPW Act, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the Heritage Act. In addition to the NPW Act, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984(Commonwealth*).

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW). Such a case would be considered a 'reportable death' and under legal notification obligations set out in section 35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old[2] regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

SEEKING ADVICE

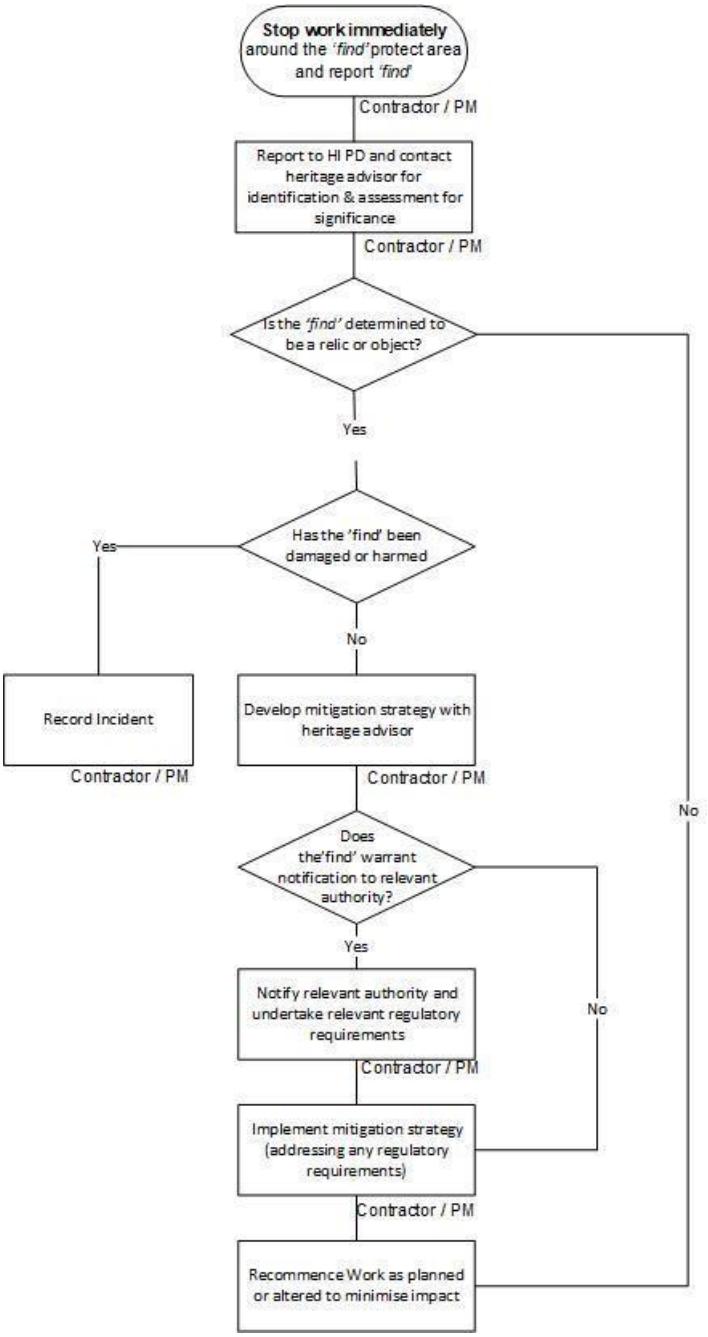
Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from HI and the contracted archaeologist. Technical specialist advice can also be sought from heritage policy staff within Environment Branch to assist with the preliminary archaeological identification and technical reviews of heritage/archaeological reports.

[2] Under section 19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

UNEXPECTED HERITAGE ITEMS PROCEDURE

In the event that an unexpected find is encountered, refer to flow chart below for procedure.

Figure 1: Procedure flow chart with an unexpected finding



APPENDIX A

UNCOVERING BONES

All matters relating to uncovering bones/human remains require notification to HI Development Team staff. They will guide Project Managers through occurrences of uncovering bones.

This appendix A provides Project Managers with advice (1) on what to do on first uncovering bones (2) the range of human skeletal notification pathways and (3) additional considerations and requirements when managing the discovery of human remains.

1. FIRST UNCOVERING BONES

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. Therefore they must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist. These specialist consultants can be sought by contacting regional environment staff and/or heritage staff at Environment Branch.

On the very rare occasion where it is instantly obvious from the remains that they are human, the Project Manager (or a delegate) **should inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 2. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and clothing are present.

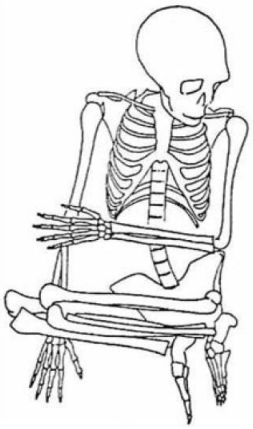


Figure 2: Schematic of a complete skeleton that is 'obviously' human[12].

Figure 3: Disarticulated bones that require assessment to determine species.

[12] After Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal Remains*:

Where it is not 'obvious' that the bones are human (in the majority of cases, illustrated by Figure 3), specialist assessment is required to establish the species of the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in photo above. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so urgent notification (as below) can occur. Preliminary telephone or verbal notification by the Project Manager to the HI Representative, and/or HI's planning team is essential.

2. RANGE OF HUMAN SKELETAL NOTIFICATION PATHWAYS

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A) HUMAN BONES ARE FROM A RECENTLY DECEASED PERSON (LESS THAN 100 YEARS OLD).

☑ Action

A police officer must be notified immediately as per the obligations to report a death or suspected death under s35 of the Coroners Act 2009 (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B) HUMAN BONES ARE ARCHAEOLOGICAL IN NATURE (MORE THAN 100 YEARS OLD) AND ARE LIKELY TO BE ABORIGINAL REMAINS.

☑ Action

The DPE and the HI's Planning Team must be notified immediately. The Planning Team, must then contact and inform the relevant Aboriginal community stakeholders who may request to be present on site..

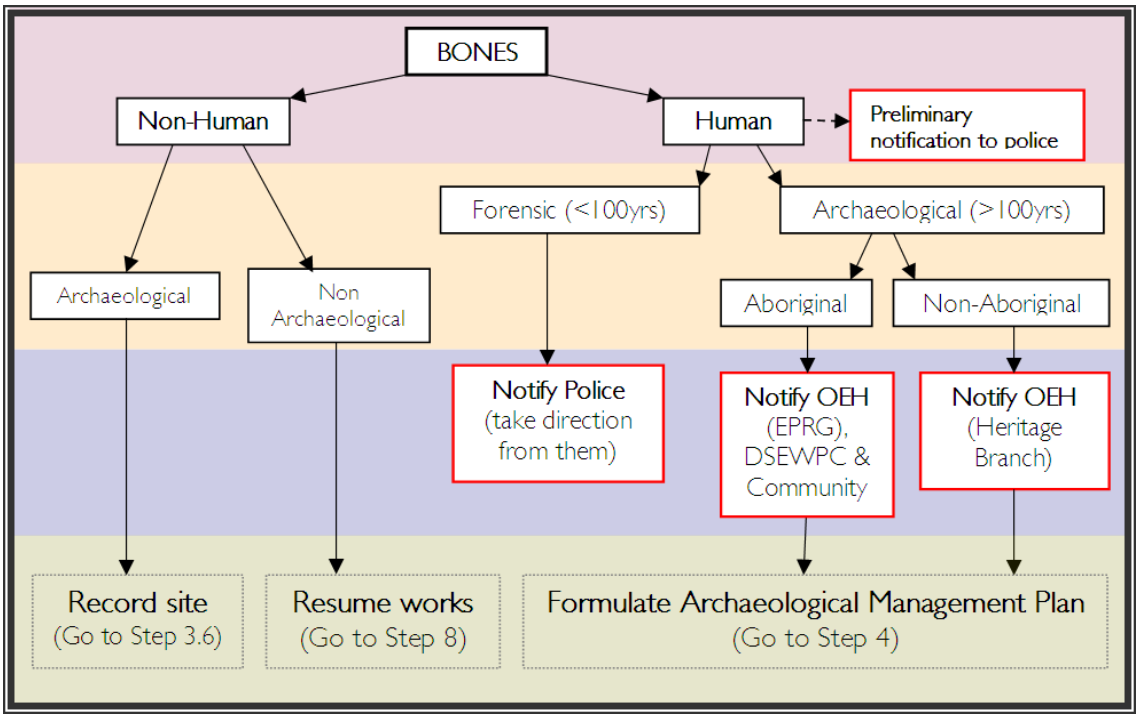
C) HUMAN BONES ARE ARCHAEOLOGICAL IN NATURE (MORE THAN 100 YEARS OLD) AND LIKELY TO BE NON-ABORIGINAL REMAINS.

☑ Action

The DPE (Heritage Branch, Conservation Team) must be notified immediately.

The simple diagram below summarises the notification pathways on finding bones.

Figure 2: Notification pathways on bones finding



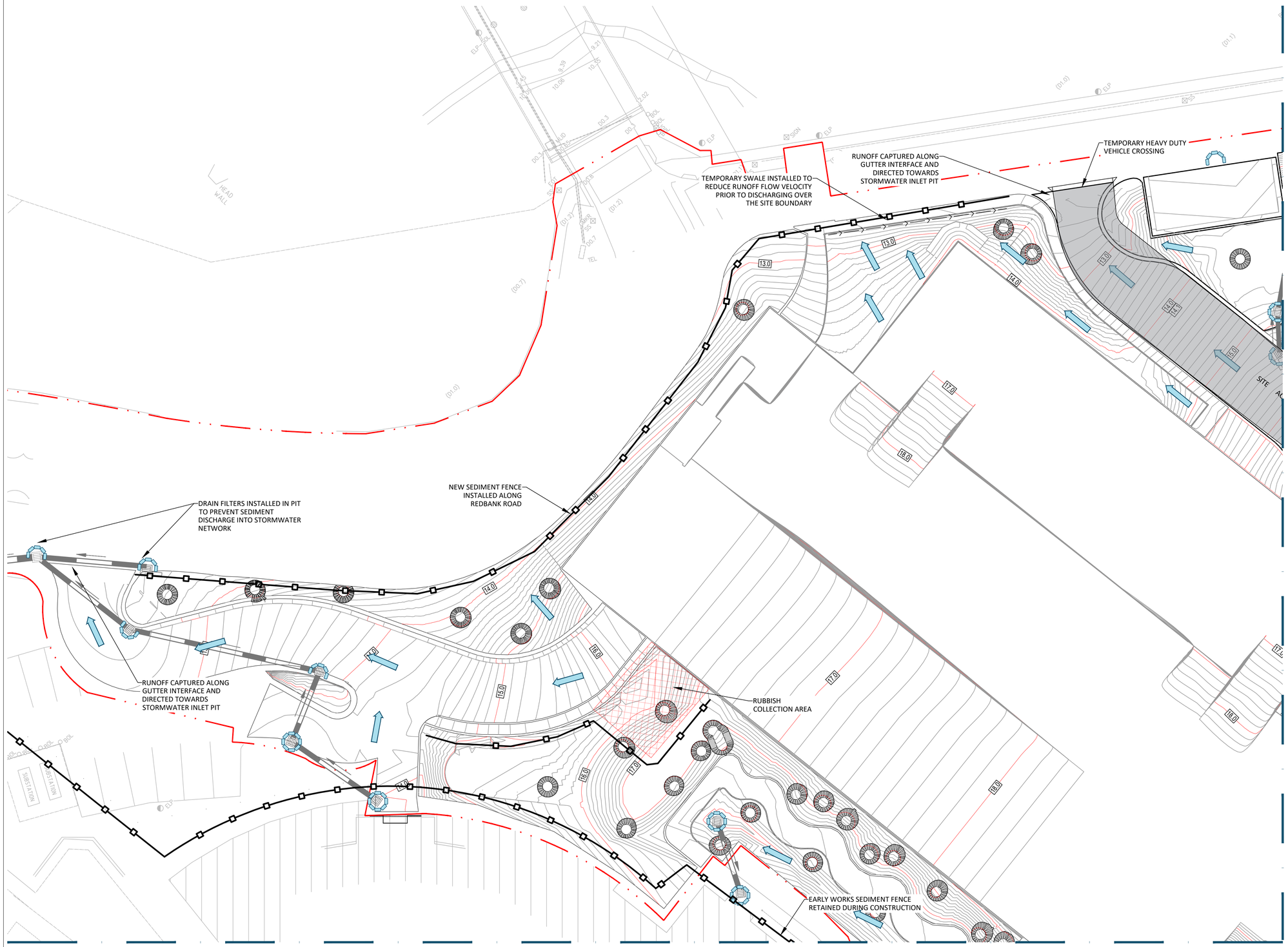
After the appropriate verbal notifications (as described in B and C), the Kane Project Manager must proceed through the Unexpected Heritage Items Procedure to formulate an archaeological management plan (Step 4). Note no archaeological management plan is required for forensic cases (A), as all future management is a police matter.

Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to recording the find as per Step 3.6.

[13] This requirement is in addition to heritage approvals under the *Heritage Ac*

ATTACHMENT 10

Construction Soil and Water Management Sub-Plan



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LEGEND

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- VEHICLE SHAKEDOWN DEVICE
- PROPOSED SILT FENCE
- PROPOSED SEDIMENT BASIN
- PROPOSED SANDBAG PROTECTION
- FLOW DIRECTION

CONSTRUCTION SOIL AND WATER MANAGEMENT SUB-PLAN NOTES

WET WEATHER EVENT MANAGEMENT

1. DURING WET WEATHER EVENTS ALL CONSTRUCTION MATERIALS AND EQUIPMENT WILL BE STORED UNDER COVER TO PREVENT DAMAGE FROM STORMWATER.
2. THE SITE WILL BE STABILISED PERMANENTLY DURING THE CONSTRUCTION STAGE BY THE INCORPORATION OF THE SEDIMENT & EROSION CONTROL MEASURES SHOWN ON THESE PLANS. ANY AREAS UNSTABILISED AS A FUNCTION OF THE WORKS ARE TO BE MADE STABLE DURING STORM EVENTS IN ACCORDANCE WITH THESE PLANS.

SITE STORMWATER FLOWS AND STORMWATER MANAGEMENT

- REFERENCE SHOULD BE MADE TO CIVIL DRAWINGS C-40 TO C-45 FOR DETAILS ON STORMWATER MANAGEMENT FOR THE SITE.
- STORMWATER DRAINAGE FOR THE SITE HAS BEEN DESIGNED BY ARUP TO CONVEY THE 20% AEP DESIGN RUNOFF FLOWS THROUGH THE IN GROUND DRAINAGE SYSTEM. THE 1% AEP DESIGN RUNOFF FLOWS IN EXCESS OF THE CAPACITY OF THE STORMWATER DRAINAGE WILL BE CONVEYED ACROSS THE SITE AS OVERLAND FLOW TO THE SURROUNDING DRAINAGE NETWORK.

EROSION AND SEDIMENT CONTROL NOTES

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REV	DESCRIPTION	DRAWN	APP'D	DATE
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D	ISSUED FOR APPROVAL	IH	IH	14.07.22
C	ISSUED FOR APPROVAL	IH	IH	16.05.22
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CLIENT: NSW GOVERNMENT Health Infrastructure
ARCHITECT: KANE / CCG ARCHITECTS

PROJECT: CHILDRENS HOSPITAL WESTMEAD MULTI-STOREY CAR PARK
TITLE: SEDIMENT & EROSION CONTROL PLAN - SHEET 1

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
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SCALE @ A1	PROJECT No	DRAWING No	REV
AS NOTED	0060	C-05	E

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LEGEND

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A	ISSUED FOR APPROVAL	IH	IH	03.03.22

CLIENT: NSW Government Health Infrastructure
ARCHITECT: KANE / CCG ARCHITECTS

PROJECT: CHILDRENS HOSPITAL WESTMEAD MULTI-STOREY CAR PARK
TITLE: SEDIMENT & EROSION CONTROL PLAN - SHEET 2

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info@enscapestudio.com.au
ABN 91 649 181 171

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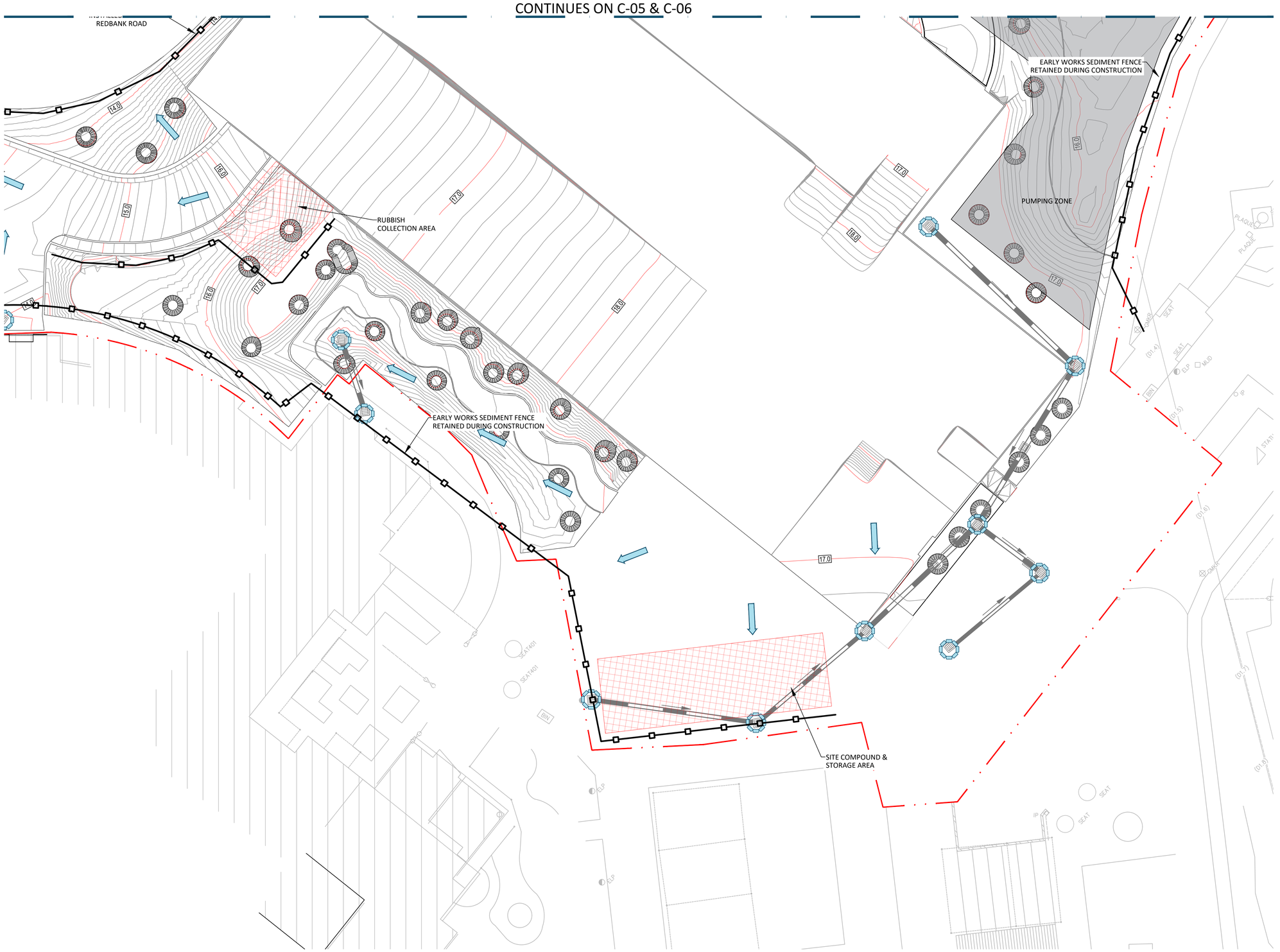

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CLIENT: NSW GOVERNMENT Health Infrastructure
ARCHITECT: KANE / CCG ARCHITECTS

PROJECT: CHILDRENS HOSPITAL WESTMEAD MULTI-STOREY CAR PARK
TITLE: SEDIMENT & EROSION CONTROL PLAN - SHEET 3

enscape studio
tel 0411 267 151
info@enscapestudio.com.au
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Health Infrastructure

The Children's Hospital at Westmead Redevelopment - Stage 2 Multistorey Car Park

Construction Traffic and Pedestrian Management Sub-Plan

Client //	Kane Constructions
Reference //	N175
Date //	13/07/2022

Table of Contents

Appendices

Document Control

Internal Reference	N175	
Issue	Final D	05/07/2022
Client Name	Constructions	NSW

Revision Register

Issue	Date	Description	Prepared By	Signed
Draft A	05/03/2022	Draft CTMP	S.A, S.K	S.K
Final A	13/04/2022	Final CTMP	S.A, S.K	S.K
Final B	19/04/2022	Final CTMP based on Consultation with TfNSW and Council	S.A, S.K	S.K
Final C	19/04/2022	Final CTMP to include condition compliance table	S.A, S.K	S.K
Final D	13/07/2022	Final CTMP to include updated site establishment and logistic plan	S.A, S.K	S.K

1. Introduction

1.1 Background

A Stage Significant Development Application (SSD-10434896) has been approved by NSW Department of Planning, Industry and Environment (DPIE) for the construction of The Children's Hospital at Westmead Redevelopment Stage 2 Multistorey Car Park.

The Westmead Precinct contains numerous hospitals and medical facilities, including Westmead Hospital and Children's Hospital, as well as the Children's Medical Research Institute. These existing uses are advantaged by high frequency/capacity rail and bus services, which will be enhanced with the proposed provision of a Parramatta Light Rail station and the Sydney West Metro Link station.

The approved development comprises a MSCP accommodating both staff and visitor car parking to be located on Labyrinth Way, on the site of The Lodge.

This plan has been prepared in satisfaction of Consent Conditions no. B12 and B16 for submission of a Construction Pedestrian and Traffic Management Plan as part of the Construction Certificate documentation as follows:

> *B12. The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:*
>
> *(a) be prepared by a suitably qualified and experienced person(s);*
>
> *(b) be prepared in consultation with Council and TfNSW;*
>
> *(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;*
>
> *(d) detail the measures that are to be implemented to mitigate adverse impacts to the Parramatta Light Rail (PLR) Project;*
>
> *(e) provide a description and route map for vehicles involved in spoil removal, material delivery and machine floatage;*
>
> *(f) provide the estimated number and type of construction vehicle movements including morning and afternoon peak and off peak movements;*
>
> *(g) ensure that turning areas within the site allow the forward entry and egress of construction vehicles;*

(h) outline the location of construction site entrances and exits (controlled by a certified traffic controller), proposed work zones, proposed crane standing areas, vehicle loading / unloading points, truck layover zones, storage areas and on-site construction worker parking; and

(i) detail the proposed staging and the process for managing temporary road closures associated with the realignment of Redbank Road.

B16. A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following: (a) minimise the impacts of earthworks and construction on the local and regional road network; (b) minimise conflicts with other road users; (c) minimise road traffic noise; (d) ensure truck drivers use specified routes.

The conditions and associated sections, page numbers and appendices are provided in the table below.

Consent Satisfaction Table Condition		
Condition	**Requirements**	**Document reference**
B12	The CPTMSP must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:	CPTMSP
	(a) be prepared by a suitably qualified and experienced person(s);	CPTMSP - Section 4.9 (pg. 26)
	(b) be prepared in consultation with Council and TfNSW;	CPTMSP - Section 3.10 (pg. 18-19) and Appendix E
	(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;	CPTMSP - Section 5 (pg. 28-29)
	(d) detail the measures that are to be implemented to mitigate adverse impacts to the Parramatta Light Rail (PLR) Project;	CPTMSP - Section 4.3 (pg. 21)
	(e) provide a description and route map for vehicles involved in spoil removal, material delivery and machine floatage;	CPTMSP - Section 4.5 (pg. 24)
	(f) provide the estimated number and type of construction vehicle movements including morning and afternoon peak and off peak movements;	CPTMSP - Section 4.6 & 4.7 (pg. 25-26)

Consent Satisfaction Table Condition		
Condition	**Requirements**	**Document reference**
	(g) ensure that turning areas within the site allow the forward entry and egress of construction vehicles;	CPTMSP - Section 4.1 (pg. 22)
	(h) outline the location of construction site entrances and exits (controlled by a certified traffic controller), proposed work zones, proposed crane standing areas, vehicle loading / unloading points, truck layover zones, storage areas and on-site construction worker parking; and	CPTMSP - Section 4.1 (pg. 22)
	(i) detail the proposed staging and the process for managing temporary road closures associated with the realignment of Redbank Road.	To be done by others as part of the early works.
B16	A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:	CPTMSP - Section 4.4 (pg. .24-26)
	(a) minimise the impacts of earthworks and construction on the local and regional road network;	
	(b) minimise conflicts with other road users;	
	(c) minimise road traffic noise;	
	(d) ensure truck drivers use specified routes.	
B17	Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities. A copy of the strategy must be provided to the Planning Secretary for information.	Appendix D - Construction Worker Transportation Strategy
B25	Prior to the commencement of construction, evidence of compliance of construction parking and access arrangements with the following requirements must be submitted to the Certifier: manoeuvrability through the site, is in accordance with the latest version of AS 2890.2; and	CPTMSP - Section 3.5 (pg. .17)
	(a) all vehicles must enter and leave the Site in a forward direction;	CPTMSP - Section 4.1 (pg. 22)

Consent Satisfaction Table Condition		
Condition	**Requirements**	**Document reference**
	(b) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as	CPTMSP - Appendix F
	(c) that the proposed design demonstrates that safety issues in areas with shared vehicles and pedestrian access have been managed safely, applying best practice in road design and traffic management, as considered in Austroads, Transport for NSW Guidelines and the Australian Standards.	CPTMSP - Section 4.11 (pg. .29)

This Plan has been prepared by a suitably qualified and experienced civil (traffic) engineer with 10 years of professional experience and holds the Roads and Maritime Services Prepare a Work Zone Traffic Management Plan accreditation, detailed as follows:

Syed Faizan Ali – card no. 0052212575, expiry 13/11/2022

1.2 Objectives

The primary objective of this Plan is to ensure that the construction is completed in the best and safest practice manner with adherence to the guidelines and regulations of the authorities. This Plan is to identify and define plans to:

- To minimise inconvenience to all residents, staff, visitors, tenants and others
- To minimise the impact on local road use and avoid the use of transport-related operations inside peak road use times and school hours
- To ensure that local pedestrians are able to use footpaths or have suitable safe circulation routes clearly provided during construction.
- To complete the proposed without damaging any property, either the property itself or the adjoining owners.
- To minimise dust and noise to safe and acceptable levels.
- To remove spoil without creating health or safety issues.
- To minimise the impact of the project on the public and the environment with the aim to reduce or eliminate the number of the vehicle, pedestrians or environmental incidents.
- Ensure that the construction process is safe, seamless and compliant with council, state and federal guidelines.

1.3 References

In preparing this plan, reference has been made to the following:

- an inspection of the site and its surrounds
- Procedures for use in the Preparation of a Traffic Management Plan (TMP), Roads and Maritime Services (RMS), December 2001 (Version 2.0)
- Transport for NSW - Traffic control at work sites Technical Manual, Issue No. 6.1, February 2022
- Australian Standard AS1742.3 – 2019 'Manual of Uniform Traffic Control Devices – Part 3: Traffic control for works on roads'
- other documents and data as referenced in this plan.

2. Existing and Future Transport Conditions

2.1 Existing Site

The site is located on the former Ronald McDonald House site (known as the Lodge) and has frontages to the southern side of Redbank Road and Labyrinth Way and the western side of Labyrinth Way. The site is partially cleared in preparation for the construction.

The location of the subject site and its surrounding environs is shown in Figure below.

2.2 Existing Road Network

The surrounding road network includes:

- Darcy Road – a major collector road and Regional Road connecting between Binalong Road in Wentworthville and Hawkesbury Road in Westmead. It generally aligns in the Northwest – Southeast with 2 lanes in each direction. Darcy road is a 22.5m wide, divided carriageway with no kerbside parking.
- Hawkesbury Road - a local road / regional Road which runs in the north-south direction. It is a 23m-wide undivided carriageway with 1 northbound and 2 southbound lanes.
- Mons Road – a minor collector road generally running in the North-South direction connecting Dragonfly Drive to Darcy Road. The northern end of Mons Road holds a 24-hour T-Way, allowing direct access for buses to Briens Road.

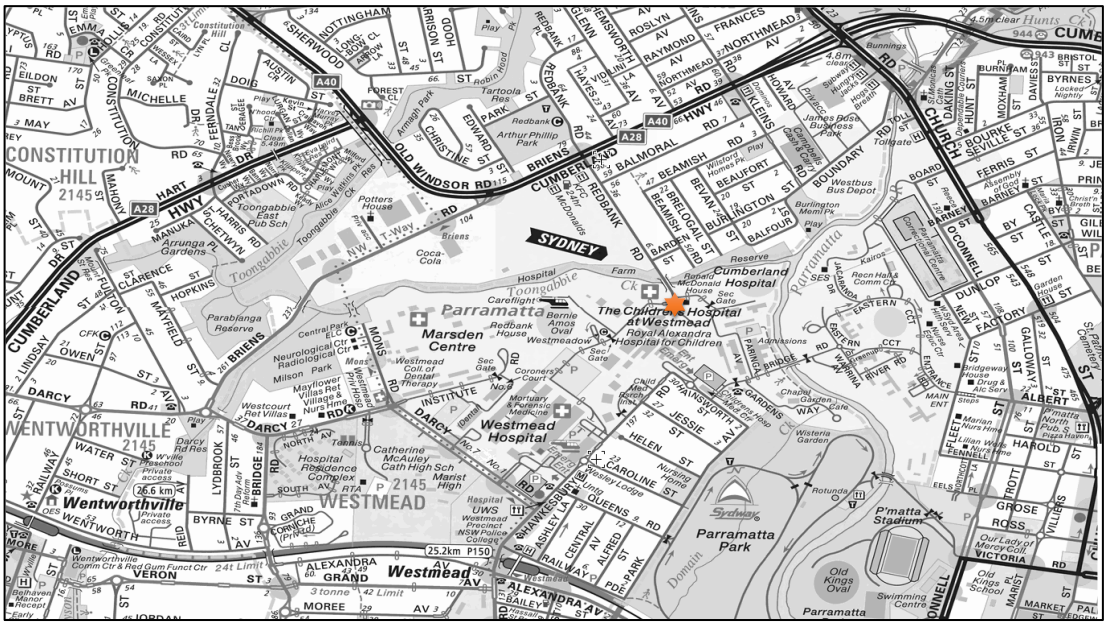
- Institute Road – a minor local road generally running in the Southwest – Northeast direction providing connections between Darcy Road and Dragonfly Drive. Institute Road is an 8.3m wide, single carriageway with no kerbside parking.

- Dragonfly Drive – a minor local road generally running in the West-East direction providing connections between Mons Road, Institute Road and Redbank Road. Dragonfly Drive is a 6m wide single carriageway with no kerbside parking.

- Redbank Road – a minor collector road providing connections between Briens Road and Dragonfly Drive. Redbank Road is a 7m wide (min) single carriageway with no kerbside parking along the site's frontage. It has a posted speed limit of 20kph in the vicinity of the site.

- Labyrinth Way – a local access road connecting Redbank Road and Paringa Avenue. Labyrinth Way is a 6m wide single carriageway with no kerbside parking along the site's frontage. It has a posted speed limit of 20kph in the vicinity of the site.

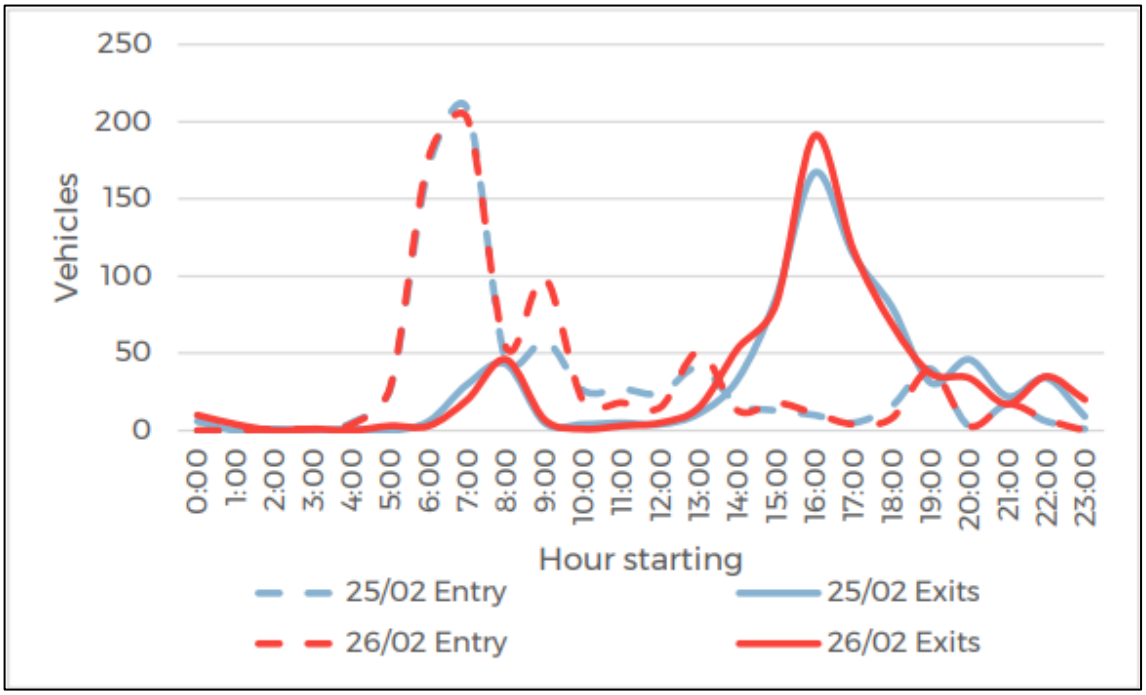
The surrounding road network is shown in figure below.



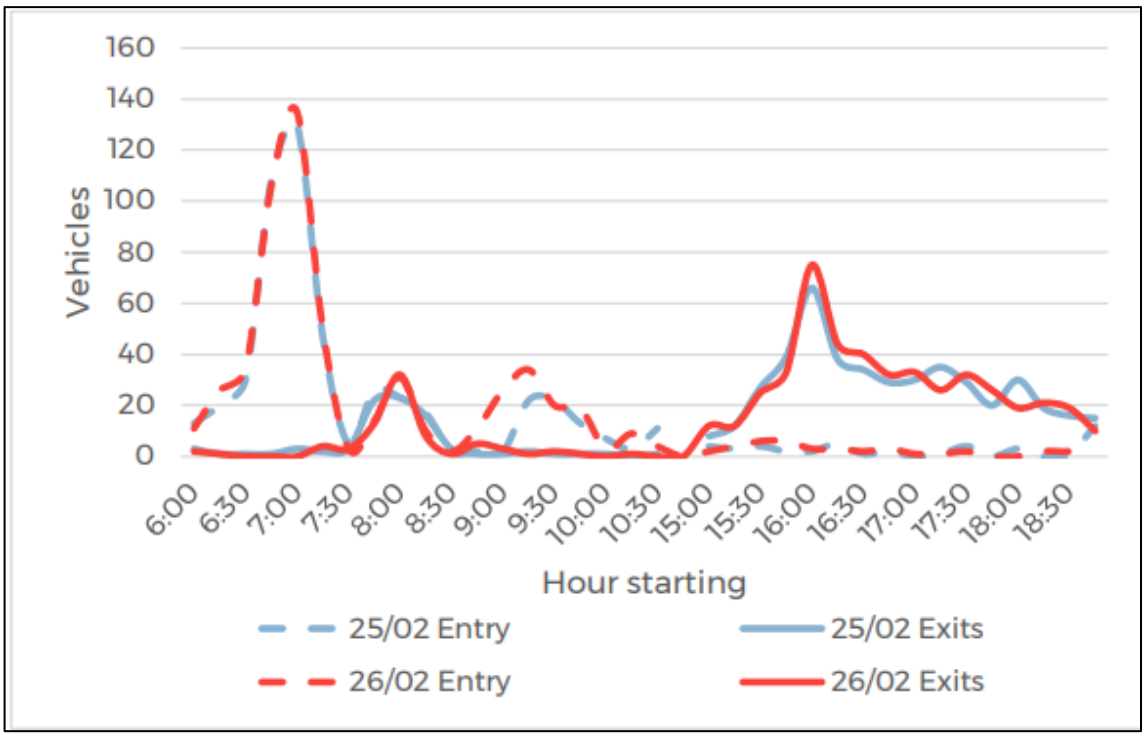
2.3 Traffic Conditions

WSP obtained boom gate data for the CHW staff car park (P17) on February 2020 indicates the CHW's peak traffic activity occurs within a brief 30-minute period between 6:45am and 7:15am in the AM and a brief 15-minute period between 4:00pm and 4:15pm in the PM. Traffic volumes are significantly lower outside these peak periods, as shown in the following figures.

P17 staff car park boom gate daily profile

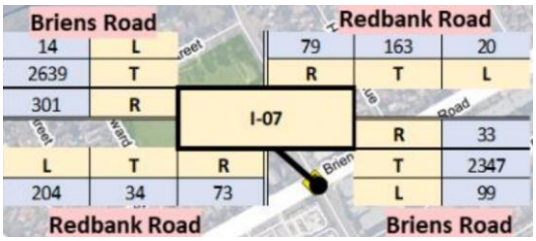
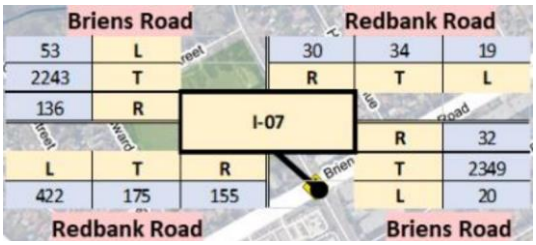


P17 staff car park boom gate peak period profile



The estimated Year 2020 traffic data for the Briens Road/ Redbank Road are provided in the following figure.

2018 existing AM and PM peak hour surveyed traffic volumes

Year 2020 AM Peak Hour	Year 2020 PM Peak Hour
	

The operational performance of the intersections during the weekday AM and PM peak, have been assessed by WSP as part of the DA report:

Intersection	AM Peak	PM Peak
Briens Road and Redbank Road	D	C

The traffic modelling indicates the nearby intersections to the site currently operate satisfactorily (level of service D or better) during the assessed peak hours.

2.4 Public Transport Services

Train

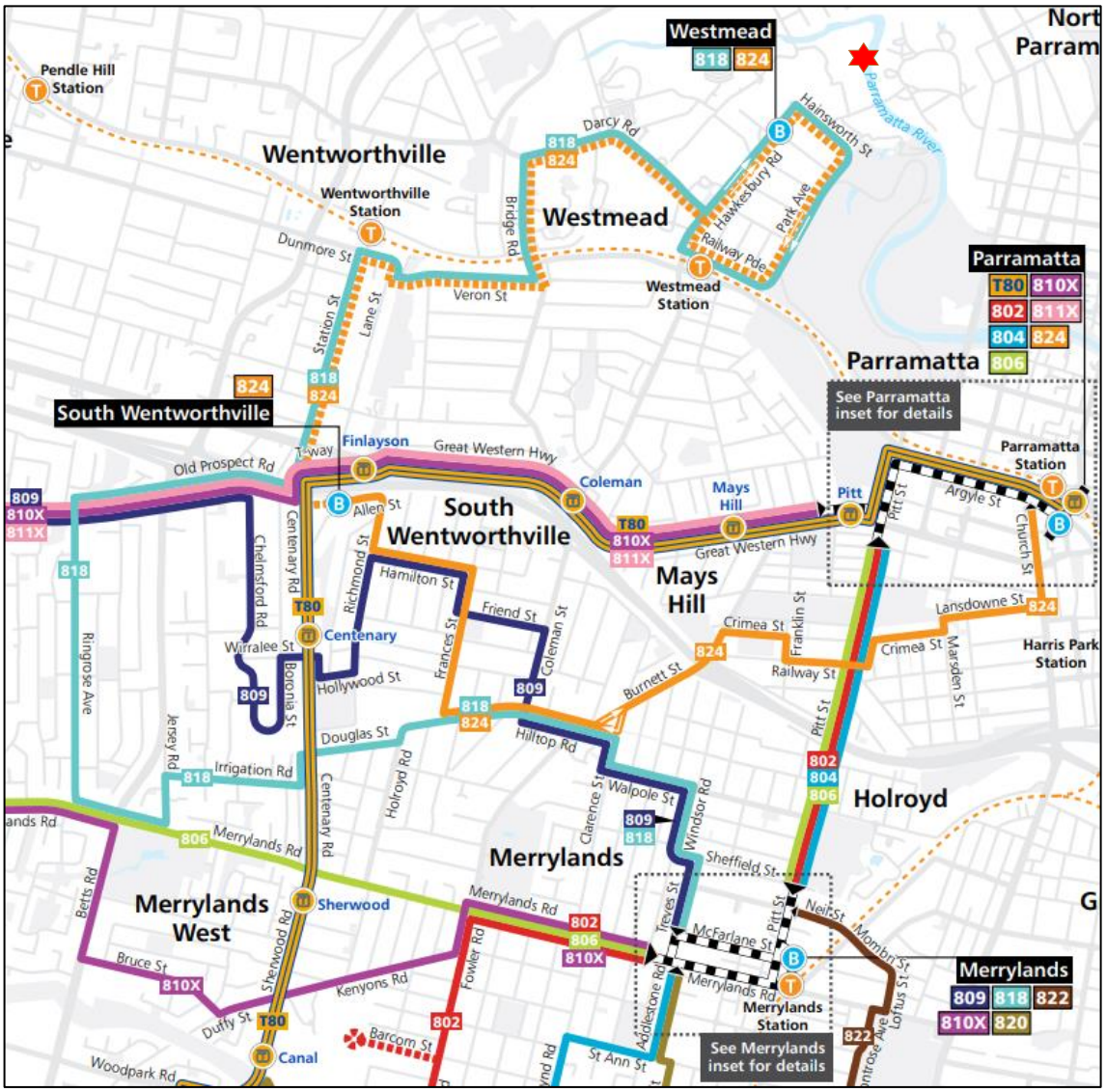
The closest railway station to the site is Westmead Train Station, which is 1km (about a 12-minute walk) to the south of the site. Westmead Station is serviced by the T1 North Shore, Northern and Western Line, T5 Cumberland Line and Blue Mountains Line. Services along the T1 and T5 lines operate every 5 to 10 minutes, with express services to the Sydney CBD (from Parramatta Station). It interchanges with the T9 Northern Line at Strathfield, the T7 Olympic Park Line and the T3 Bankstown Line at Lidcombe and the T2 Inner West and Leppington line at Parramatta, Lidcombe or Strathfield. The T5 Cumberland Line interchanges with the T1 Western and T2 Inner West and Leppington lines at Parramatta, the T3 Bankstown Line at Cabramatta and Liverpool, and the T8 Airport and South Line at Glenfield. Services on the Blue Mountains Line operate every 30 minutes. Details of the existing train services are provided in Appendix A.

Bus

The nearest bus stop to/from the site is located on Hawkesbury Road north of Jessie Street and is within a 5-minute 350-metre) walk to the south of the site. The stop is serviced by the following bus routes:

Bus Route	Details
711	Blacktown to Parramatta via Wentworthville
712	Westmead Children's Hospital to Parramatta
818	Westmead Hospitals to Merrylands
824	Westmead Hospitals to Parramatta via South Wentworthville

Bus route no. 711, 818 and 824 providing connection to/from the Westmead Station. Details of the existing bus services and their connections to nearby railway stations/suburbs are provided in the following figure.



The site is also served by a comprehensive network of bus services with 800m of the site. The bus routes servicing the site vicinity include:

- Westmead Hospital T-Way along Darcy Road: 606, 661, 662, 663, 664, 665, 705, 708, 711, 818, 824

- Westmead Station along Alexandra Avenue: 660, 661, 662, 663, 664, 665, 705, 708, 711, 712, N70, N71

Bus Route	Details
606	Winston Hills to Parramatta
661	Blacktown to Parramatta via Kings Langley & North West Twy
662	Castle Hill to Parramatta via Bella Vista & North West Twy
663	Rouse Hill Station to Parramatta via Kellyville Ridge
664	Rouse Hill Station to Parramatta via Kellyville
665	Rouse Hill Station to Parramatta
705	Blacktown to Parramatta via Seven Hills
708	Constitution Hill to Parramatta via Pendle Hill
711	Blacktown to Parramatta via Wentworthville
712	Westmead Children's Hospital to Parramatta
818	Westmead Hospitals to Merrylands
824	Westmead Hospitals to Parramatta via South Wentworthville
N70	Penrith to City Town Hall (Night Service)
N71	Richmond to City Town Hall (Night Service)

Details of the existing bus services are provided in Appendix B.

2.5 Walking Facilities

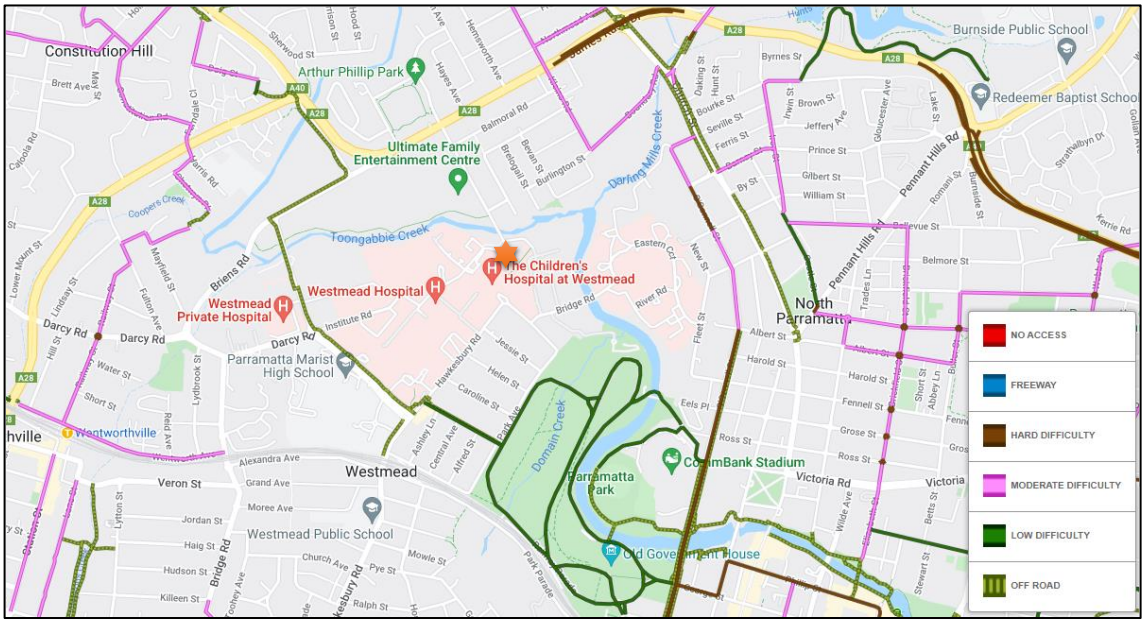
There are currently footpaths on:

- both sides of Redbank Road north of Labyrinth Way.
- Northern side of Labyrinth Way

There are currently no footpaths along Redbank Road south of Labyrinth Way along the site's frontages. Marked crossings are provided at the intersection of Redbank Road and Labyrinth Way.

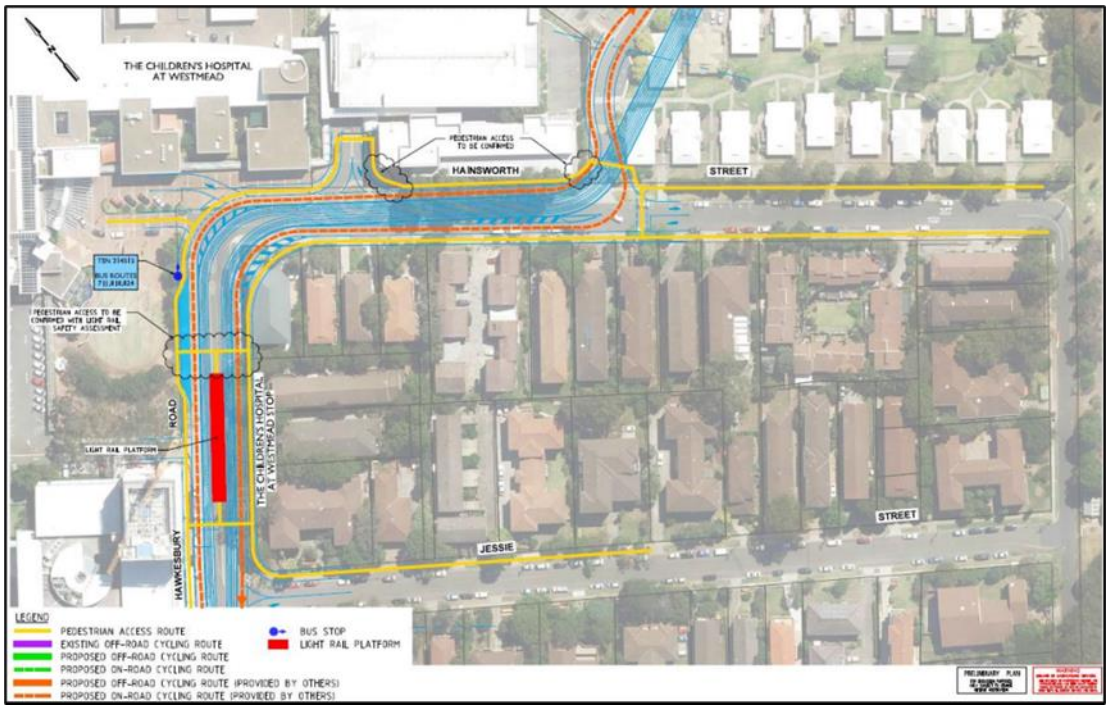
2.6 Cycling Facilities

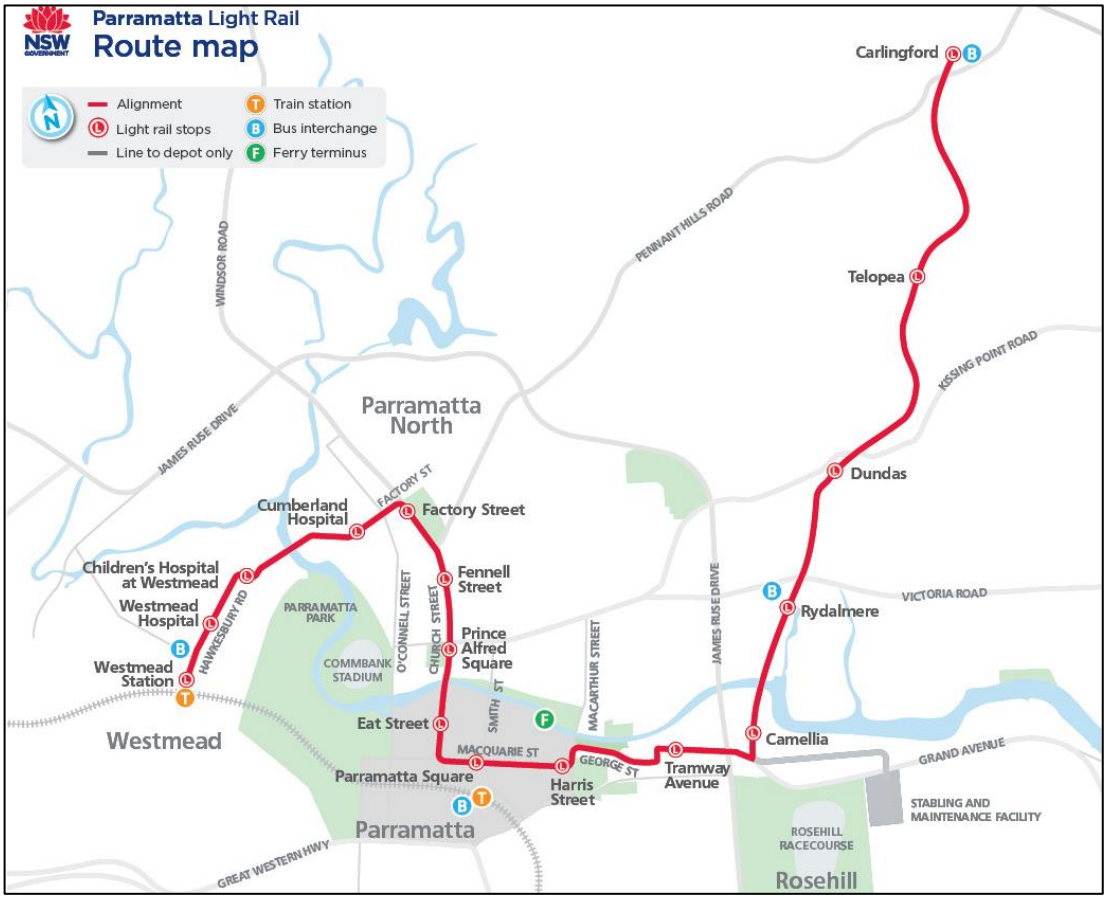
There are currently no bicycle routes along the site's frontages, as shown in the following figure.



2.7 Parramatta Light Rail

The Parramatta Light Rail Stage 1 will connect Westmead to Carlingford via Parramatta CBD and Camellia. The route will ink Parramatta's CBD and train station to the Westmead Precinct. The nearest station will be the Children's Hospital at Westmead Station, which is located 350m to the north of the site (see the following figure). The construction has begun in 2018 and is expected to be completed in 2023.





Source: GTA, Parramatta Light Rail Operational Traffic and Transport Technical Assessment Plan, 2017

3. Approved Works and Proposed Construction Scheme

3.1 Approved Works

The scope of approved works includes the construction of a MSCP accommodating both staff and visitor car parking to be located on Labyrinth Way:

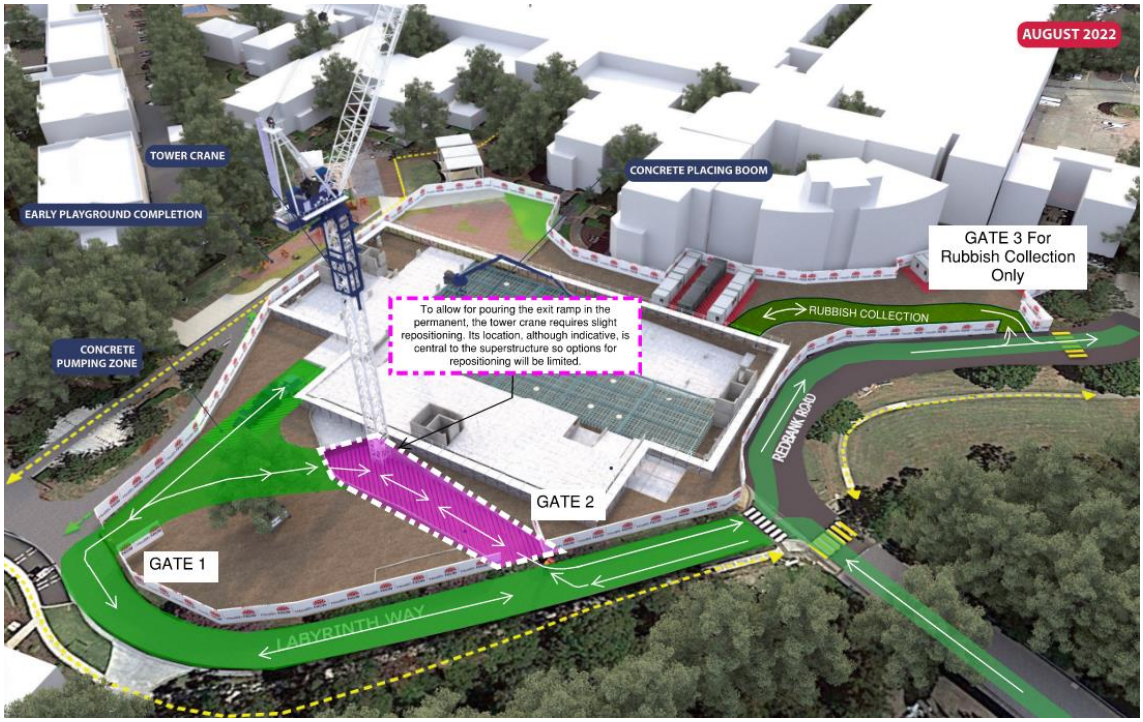
- Demolition of The Lodge (**completed**)
- Construction of a new MSCP, approximately 8 car parking storeys, which is equivalent to the height of 5 storeys of the hospital.
    - Facilitating 996 car parking spaces for staff and visitors
    - Vehicular access from Labyrinth Way and / or Redbank Road
    - A split-level approach to the MSCP to respond to the natural ground level
- Ancillary retail facilities
- Realignment of Redbank Road with vehicular access connection to MSCP (**on-going by others**)
- Tree removal
- Associated landscape works.

The proposed development is shown in in Appendix C.

3.2 Construction Site Layout

The construction site layout provided in the following figure indicate the locations of:

- Dedicated construction site entrance and exit via Gates 1 and 2
- A separate gate to the northwest (Gate 3) for rubbish collection only
- Truck turning zone
- Truck standing area
- Concrete pouring zone
- Dedicated storage area (included excavated material, construction materials)
- A-Class hoarding
- Site amenities



3.3 Construction Stages and Program

The site establishment activities have commenced on the site in May 2022. The construction will commence upon approval from stakeholders with expected completion by mid-2023.

Construction is anticipated to occur as per the below:

- Early works
- Site establishment
- Existing services
- Site remediation works
- Civil works/piling platform
- Piling works
- Substructure
- Superstructure
- Post-tensioning
- Props removal
- Envelope
- Services

- Internal finishes and services
- External works

3.4 Construction Hours

The approved hours for construction, including the delivery of materials to and from the site, are:

Monday to Friday	7.00 am – 6.00 pm
Saturday	8.00 am – 1.00 pm 1pm and 5pm (works with noise levels do not exceed the existing background noise level plus 5dB)
Sunday and public holidays	No work

Rock breaking, rock hammering, sheet piling, pile driving and similar activities can be carried out during:

Monday to Friday	9.00 am – 12.00 pm; 2.00 pm – 5.00 pm
Saturday	9.00 am – 12.00 pm
Sunday and public holidays	No work

Construction activities may be undertaken outside of the above hours if required:

(a) by the Police or a public authority for the delivery of vehicles, plant or materials;

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm;

(c) where the works are inaudible at the nearest sensitive receivers;

(d) for the delivery, set-up and removal of construction cranes, where notice of the crane related works is provided to the Planning Secretary and affected residents at least seven days prior to the works;

(e) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.

Notification of such construction activities as referenced in condition C6 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

Kane shall ensure that all sub-contractors are aware of the permitted hours of operation and shall ensure that all activity occurs strictly within the hours stipulated by the Conditions of Consent.

3.5 Construction Workers Parking

It is anticipated that there will be a maximum of 150 workers on-site during the construction stage. Very limited construction worker parking may be established within the site. All workers will be instructed to use public/active transport and not utilise the hospital's public/patient/visitor parking areas. Kane would take appropriate action if informed of this activity occurring.

The site is in close proximity to well established and high frequency public transport services, therefore construction workers will be encouraged to use public transport to access the site. A tool drop-off and storage facility will be provided within the site office. This would allow tradespeople to drop off and store their tools and machinery, allowing them to use public transport to travel to/ from the site on a daily basis. This will be incorporated into the site induction program.

A Construction Worker Transportation Strategy has been prepared to minimise demand for parking in nearby public and residential streets or public parking facilities. See Appendix D.

All site staff related to the works who **need** to drive to/from the site are to park at the following designated off-street area (see the following figure):

- Westmead Children's Hospital Car Park at Hawkesbury Road (approx. 400 spaces): 250m walking distance to the southeast of the site
- Westmead Hospital - P4 at Hawkesbury Road (360 spaces): 400m walking distance to the southwest of the site

All construction-specific equipment and plant shall be parked wholly within the site.

3.6 On-Street Works Zone

On-street works zone would not be required for the construction-related works. Should a works zone be required, a separate application will be made to the Council to organise appropriate approvals for the proposed works zone prior to the start of works, as well as the parking and traffic changes.

3.7 Cranage and Materials Handling

A tower crane would be required for the construction-related works for materials handling within the on-site material handling zone. Specific areas will be available for loading/unloading, materials handling and storage, and worker sheds, etc. All light materials will be loaded/unloaded directly to/from trucks using either forklifts or trolleys. All materials will be stored on the site, with all excavated materials removed from the site.

3.8 Site Inspections and Record-Keeping

The construction work will be monitored to ensure that it proceeds as set out in the Construction Management Plan provided by KANE. A daily inspection before the start of the construction activity should take place to ensure that conditions accord with those stipulated in the plan and there are no potential hazards. Any possible adverse impacts will be recorded and dealt with as they arise.

3.9 Other Construction Activities

The construction activities will overlap with the construction of the Parramatta Light Rail (PLR) and Sydney Metro West.

Parramatta Light Rail (PLR)

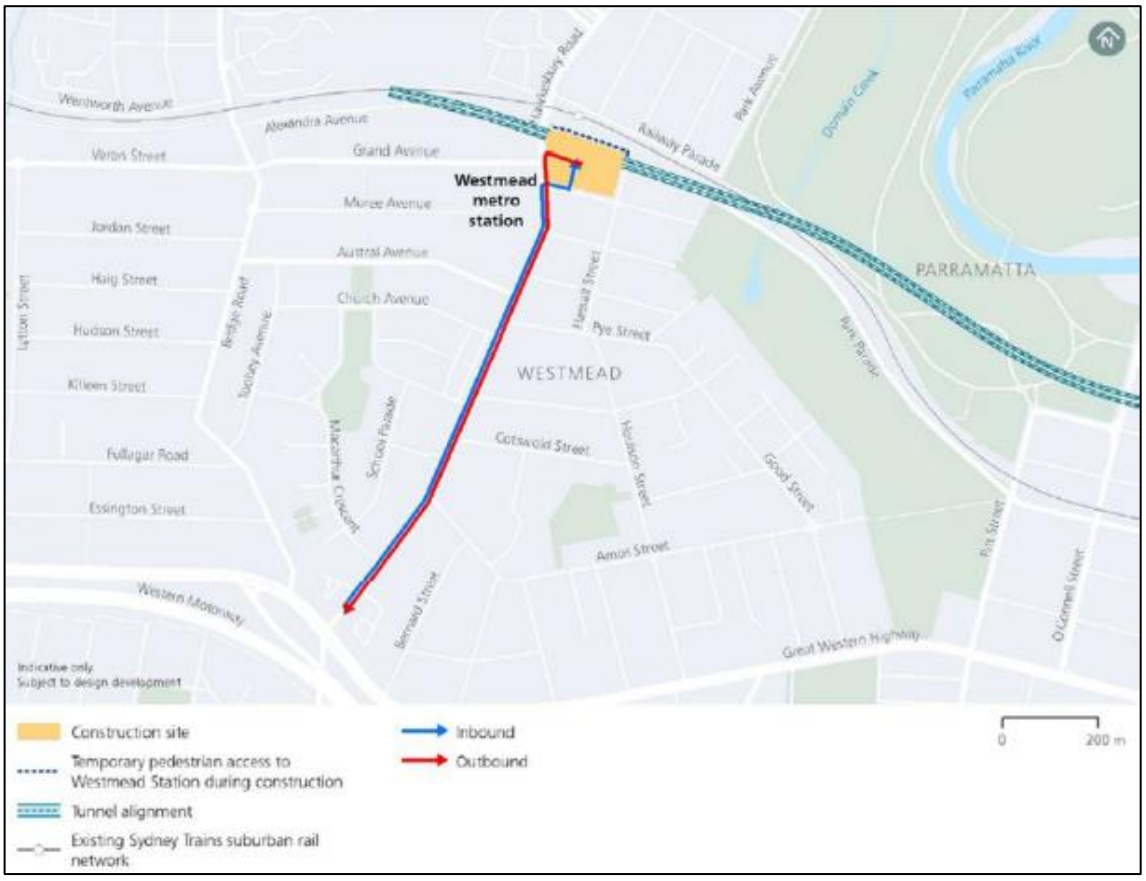
KANE noted that the major construction to deliver the light rail program has begun in 2020, with the network expected to commence services in 2023. Information on the PLR Project can be found at http://www.parramattalightrail.nsw.gov.au/.

The primary construction vehicle route for PLR is via Hawkesbury Road, Darcy Road and Cumberland Highway.

Sydney Metro West

Based on the Construction Traffic Management Plan Westmead prepared by DELTA dated 12/10/2021, the construction site access is via Hawkesbury Road into Bailey Street with the egress directly onto Hawkesbury Road. The construction vehicle routes are shown the following figure.

Construction vehicle routes for Sydney Metro West



With the above measures, it is not expected that this level of traffic movement would create any adverse impact on the surrounding road network.

3.10 Consultation, Communication and Liaison

This Plan has been prepared in consultation with be prepared in consultation with Council and TfNSW. See Appendix E.

In addition to Council and TfNSW, KANE will continue to liaise/coordinate with the following the relevant stakeholders:

- Westmead Health precinct stakeholders
- Westmead Hospital
- Parramatta Connect (Parramatta Light Rail)
- Police NSW
- Bus Operators: CDC, Transit Systems, Transdev, Hillsbus, and State Transit Authority
- Endeavour Energy

Any planned Disruptions to Westmead Health precinct operations and services will be managed through the process of Disruption Notices (DNs). For such stoppages, the DN will describe the applicable Works, timetable, issues and contingency plans. DNs will be submitted by the KANE to the Project Manager and Hospital stakeholders for approval. Depending on the nature of the Works, these are required 10 days prior to commencement of Works, however this doesn't take into consideration the review and approval process, which depending on the scope of Works can take up to 4 weeks.

In addition, KANE will maintain regular contact with the surrounding project contractors (especially the Parramatta Light Rail construction team - CPB Contractors and Downer) to identify any potential overlap of major construction works and cooperate to ensure such overlaps are minimised during the lifecycle of the works.

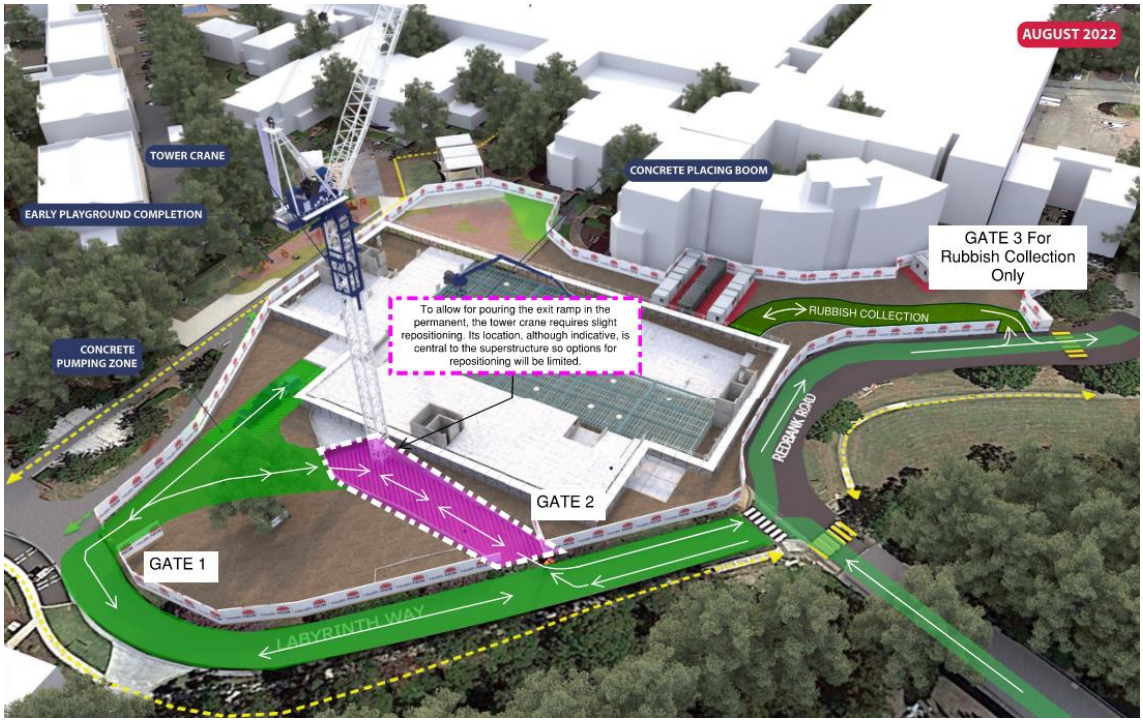
A sign will phone number and email address will be installed on the hoarding to allow the general public to make enquires or complaints regarding traffic control for the site.

KANE will provide a representative for a monthly meeting that may occur with the representatives of the local community and Council staff to discuss traffic control at the site.

4. Traffic Management Plan

4.1 Construction Site Access

Site accesses to the construction site is proposed via 2 gates off Labyrinth Way. A separate access off Redbank Road is also provided for rubbish collection trucks (see below figures).



- Gate 1 (ingress/egress): 5m-wide driveway on Labyrinth Way. This is an existing driveway to/from The Rotary Wing. Construction trucks will turn right-in to enter and left-out to exit the site via Gate 1.
- Gate 2 (ingrerss/egress): 5m-wide driveway on Labyrinth Way on the site's north-eastern frontage. Trucks will enter and exit the site by turning right-in and left-out accordingly.
- Gate 3 (ingress/egress): Dedicated access via Redbank Road for rubbish collection trucks only. The gate is located to the north-west corner of the site. The rubbish collection trucks will turn left-in to enter and left-out to exit the site.

Sufficient manoeuvring area will be provided on-site to ensure construction vehicles can enter and exit in a forward direction for up to 12.5m heavy rigid vehicles. All vehicles entering and exiting the site will be completed under the management of Traffic controllers.

Swept path analysis was completed for the largest vehicle expected to access the site, which is provided in Appendix F of this plan.

4.2 Pedestrian Access

Access to the site is provided via a security-controlled gate on the north-western corner of the site along Redbank Road. All personnel entering the site will be required to undertake an induction program. Pedestrian activities are currently removed from the construction area by the erected site fencing, which is comprised of A-Class hoarding. Application for the A-Class hoarding will be submitted to Council for approval. Trained on-site personnel will be present at the site access to manage pedestrian movements and assist with vehicle's ingress and egress.

4.3 Construction Traffic Haulage Route

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, all construction vehicles will be restricted to the State and Regional Road network.

Dedicated construction vehicle routes (including vehicles associated with spoil removal, material delivery and machine floatage) have been developed with the aim to provide the shortest distances to/from the arterial road network while minimising the impact of construction traffic on streets within the vicinity of the site, as well as avoiding the major construction routes and works zones of the PLR, Sydney Metro and PCB project towards the north and east.

The selected truck haulage routes will have regard for the above construction traffic that is largely concentrated within Darcy Road and Hawkesbury Road, such that their travel directions minimise any possible overlap with other trucks to avoid any further implications during peak periods.

As such, the dedicated construction vehicle routes will use Redbank Road as much as possible, with access to/from Cumberland Highway and Briens Road.

Construction vehicle movements will be limited during peak periods, AM (7 am-9.30 am) and PM (4 pm-6.30 pm) to reduce impacts on any bus operations and traffic flow.

Truck drivers will be advised of the designated truck routes to/ from the site. No queuing or marshalling of trucks will be permitted on public roads in the vicinity of the site.

Accredited traffic controllers will ensure they are in radio contact with truck drivers, thus ensuring each vehicle's arrival is anticipated and planned. Such a process will be important in managing truck activity to ensure access to the construction site is available at all times and to remove any such likelihood of construction vehicles queuing and waiting along Labyrinth Way to enter the site, causing delays on surrounding roads.

4.4 Driver Code of Conduct

Impacts of Earthworks and Construction

KANE is committed to protecting the environment and preventing air, water and noise pollution. The operators of all construction-related vehicles are subject to environmental regulations relating to vehicle emission and product spill and to minimise the impacts of earthworks and construction on the local and regional road network.

KANE also understands and appreciate the seriousness of polluting the environment and the consequences of this any carelessness or neglect of responsibilities may cause personal injury, loss of life, property damage, substantial fines, and adverse publicity for the company.

All drivers of vehicles transporting loose materials will be required to ensure the entire load is covered using a tarpaulin or similar impervious material. The vehicle driver will need to take all precautions to prevent any excess dust or dirt particles depositing onto the roadway during travel to and from the site. Truck cattle grid and wheel wash station shall be positioned at the exit point of all gates. The respective trades will be inducted by the head contractor into the above procedures and will monitor all trucks exiting the site to ensure the procedures are met.

Kane will be required to monitor the roadways leading to and from the site on a daily basis and take all necessary steps to rectify any adversely impacted road deposits caused by site vehicles. The roads will also be cleaned on a regular basis to minimise dirt particles depositing externally from the site. Such cleaning will occur in the evenings outside of the peak traffic period.

Conflicts with Other Road Users

The road is there to share and therefore, it is KANE's requirement that the heavy vehicle operators display courtesy and restraint towards other road users to minimise conflicts with other road users.

Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. All deliveries and works will be carried out within the site at the designated Construction Zones. If there is a requirement to operate any material handling machinery on public access roads, Kane will be required to seek separate Council/Police/TfNSW/Sydney Buses approval prior to the event.

Road Traffic Noise

Generating excessive noise is governed by legislation and is an offence. Heavy trucks generate a higher level of noise than light vehicles. The amenity of surrounding road users/residents is to be maintained as far as practical during the construction process. Vehicles traveling to, from and within the site shall not create unreasonable or unnecessary noise or vibration to minimise interference to adjoining building operations. No tracked vehicles will be permitted or required on any paved roads. All heavy vehicle operators are required to adhere to the following during the course of their duty:

- If possible, minimise road traffic noise by not using engine brakes near residences and built-up areas.
- All vehicles must be fitted with audible reversing alarms. These are essential for the safety of all personnel. Reversing alarms are, however, the source of potential noise complaints from neighbouring residents, so all drivers should be aware of this and try to minimise reversing when possible.
- Avoid loading and unloading of materials/deliveries outside of daytime hours.
- Compounds and work areas should be designed as one-way to minimise the need for vehicles (up to 18.1m truck and dog trailers) to reverse.
- Trucks should not idle near to residential receivers.
- Stationary sources of noise, such as generators, should be located away from sensitive receivers.

- Project personnel, including relevant sub-contractors, to acquaint themselves with noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.
- Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.
- Truck drivers should avoid compression-braking as far as practicable.
- Where night-time works are required, trucks should use broadband reversing alarms.

Specified Routes

All trucks must enter and exit the works via the site gates. The preferred routes for access to and from the site provided in Section 5.4.

Where possible, you should always:

- Use main roads,
- Use bypasses,
- Avoid communal areas, schools, e.g. (particularly during school start and finish times), parks, etc.

The heavy vehicle operators must stick to the defined routes laid down unless there are exceptional circumstances. Such exceptional circumstances may be:

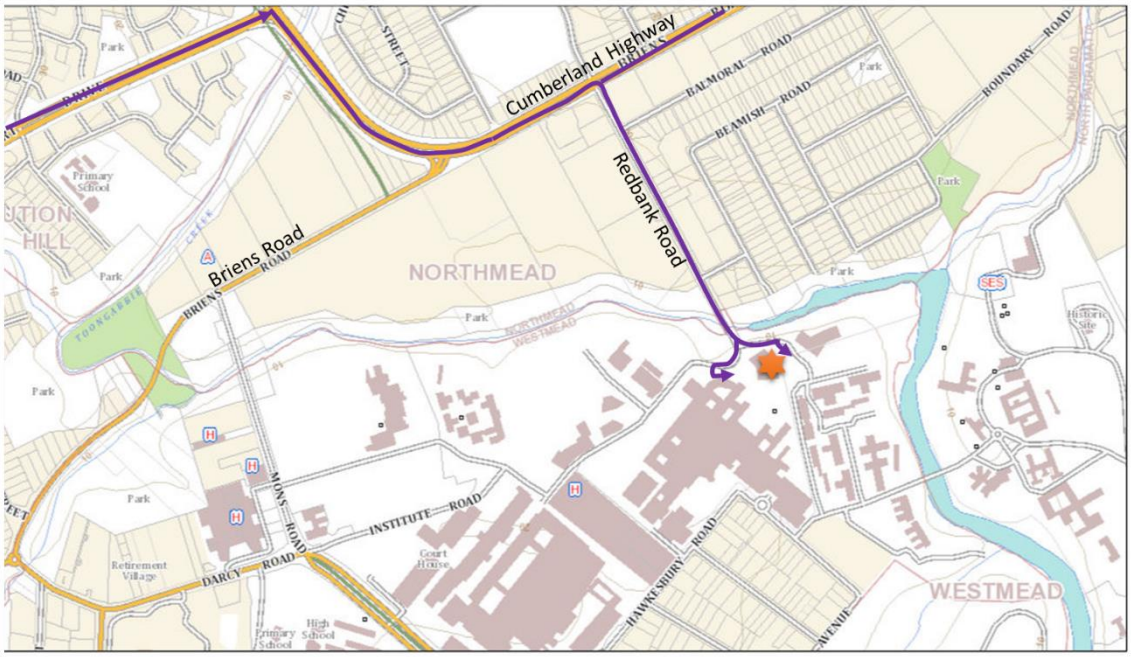
- Normal route blocked, e.g., flooded,
- A revised route agreed in writing.

Trucks and heavy vehicles must not use local residential streets.

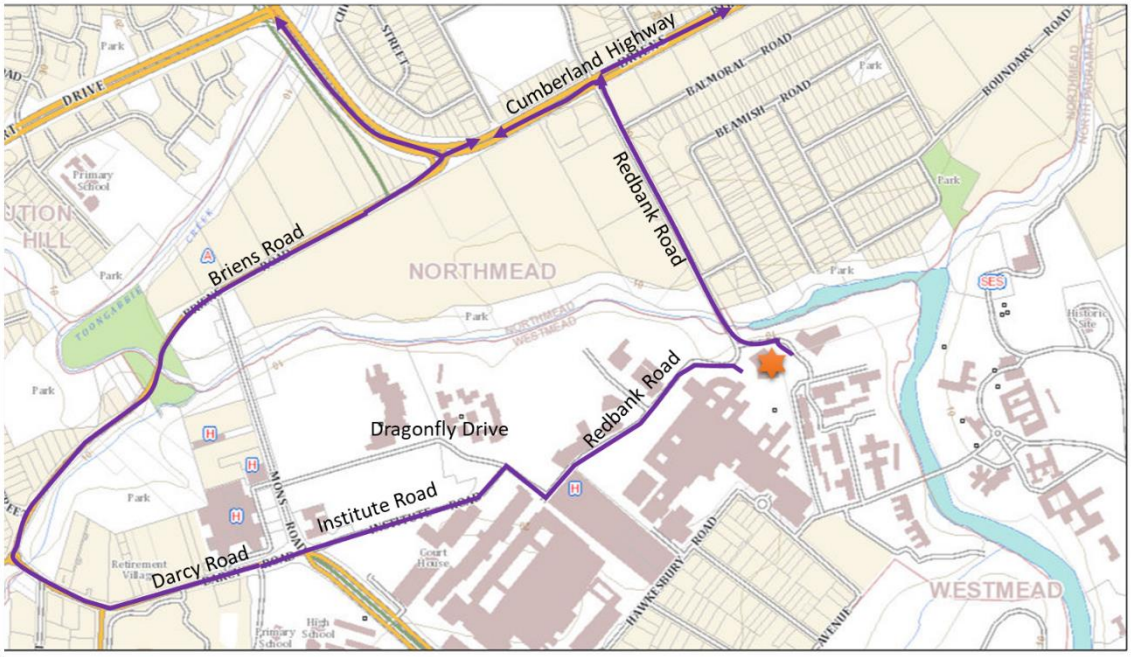
4.5 Construction Vehicle Route

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, all construction vehicles will be restricted to the State and Regional Road network as much as possible. Dedicated construction vehicle routes have been developed with the aim to provide the shortest distances to/from the arterial road network while minimising the impact of construction traffic on streets within the vicinity of the site. As such, the dedicated construction vehicle routes to/from north and east via Redbank Road and Briens Road, as illustrated in the following figures.

Truck arrival routes



Truck departure routes



4.6 Construction Vehicle Types

It is anticipated that the construction works will involve the following heavy vehicle types:

Type	Purpose	Length
Heavy rigid vehicles (HRV) including concrete pump and Single bogie	Construction material delivery	12.5m

Medium rigid vehicles (HRV) including Concrete trucks		8.8m
Small rigid vehicles (SRV)		6.4m
Bin trucks	Waste collection	10.2m
Mobile cranes/ Crawler Crane	Material handling/façade installation	18.5m
Small utility vehicle/Van	Tradesperson	5.2m

It should be noted that the precinct roads have generally been designed to accommodate for vehicles up to a 19m semi. As such, the internal road network including Redbank Road can be accommodate the proposed construction vehicle access.

4.7 Number of Construction Vehicles

The construction vehicle estimates during the construction activities would be:

General Construction Activities

- Up to 6 vehicles per hour
- Up to 60 vehicles per day

Large Concrete Pouring Activities

- Up to 10 vehicles per hour
- Up to 80 vehicles per day

The traffic movement activities associated with the proposed construction will be significant less than the proposed development when operational.

4.8 Site Hoarding

Kane is responsible for protecting the construction site with A-Class hoarding. All the construction works are contained within the site boundary. A silt fence will also be installed along the site perimeter prior to the site fence. Safety for passing traffic and pedestrians will be maintained at all times.

4.9 Contact Person

Kane's contact person which will be assigned to liaise with all the stakeholders and have authority without reference to other persons to comply with instructions issued by the Council's Traffic Engineer would be:

Steven Browne
Project Manager
Kane Constructions Pty Ltd

Mobile: 0413 735 490

Email: sbrowne@kane.com.au

4.10 Site Induction and Occupational Health and Safety

All workers and visitors employed on the site by the appointed contractor (including sub-contractors) will be required to undergo a formal 'site induction' process, and all the inductions will be performed specifically to each trade according to the occupational health and safety requirements of the New South Wales Work Cover Authority requirements.

The induction will include details of approved access routes to and from the construction site for site staff and delivery vehicles, parking arrangements, and standard environmental, WHS, driver protocols and emergency procedures. The agreed work hours must be included as part of this induction.

4.11 Traffic Guidance Scheme

The Traffic Guidance Scheme (TGS) presents the principles of traffic management, with the detailed information for worksite operations is contained in the Traffic Control at Work Sites Technical Manual Version 6.1 dated February 2022. The control of traffic at work sites must be undertaken with reference to WorkCover requirements and Kane's Constructions Workplace Health and Safety Manuals.

The TGSs in accordance with Australian Standards 1742.3 is attached in Appendix G.

4.12 Oversized Vehicles

No oversized or over massed vehicles will be required for the construction works.

If an oversized or over massed vehicle is needed, a separate application would be submitted to Council and Transport for NSW.

4.13 Road Serviceability

Kane will be responsible for monitoring and ensuring that the road and footpath along Redbank Road and Labyrinth Way will remain in a serviceable state during the course of the construction. Under the direction of the Council, Kane will restore any roadside facilities affected by the construction works, being footpaths, road pavement, etc., to the Council's satisfaction, at no cost to Council.

4.14 Public Notification

Kane will prepare notification letters, under the approval of Council, that would be dropped and emailed to adjoining property owners to advise of the timeframes for completion of each phase of the development/construction process.

4.15 Spoil Management

To ensure that soil/excavated material is not transported on wheels or tracks of plants and deposited on surrounding roadways, truck cattle grid and wheel wash station will be positioned at the site entry/exit point. Any run-off from the rumble grid will be directed to the sediment control system within the site.

5. Impacts

5.1 Parking

There will be no loss of on-street parking associated with the construction activities. Given that all workers will be instructed to use the public transport, the proposed construction activities are not anticipated to have an adverse impact on the off-street parking in the Precinct.

5.2 Impact on Public Transport Services

As indicated in Figure 5, the heavy vehicle haulage routes will largely be limited on arterial and sub-arterial roads, which are designed to accommodate heavy vehicle movements. As such, the impacts on public transport services will be minimal on the approach/departure routes. While the truck route will overlap with the bus routes during the construction period, it is not expected that traffic generation of no more than 10 vehicle visitations per hour would be adverse to the efficiency of the existing bus services.

5.3 Impact on Pedestrians

During construction, pedestrian movements along Redbank Road will be maintained at all times. A-Class hoarding would be erected around the perimeter of the site. Trained personnel will be made available as needed during construction hours to manage construction vehicle entry and exit and pedestrian movements at the site access, noting that pedestrian priority would be given.

Notwithstanding, all construction-related traffic movements within the site will occur under the supervision of accredited traffic controllers, with trucks escorted between the Access Gates 1 and 2 and Labyrinth Way.

To minimise disruption to pedestrian movements, it is advised that truck movements are managed, wherever possible, to occur outside of peak pedestrian periods.

5.4 Impact on Cyclists

There are no bicycle routes along the site's frontages. As such, the construction activities will not have any impact on cyclists.

5.5 Traffic Movements in Adjoining Council Areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

5.6 Emergency Vehicle Access

Access to the site and neighbouring sites by emergency vehicles would not be affected by the proposed construction zones, which are within the bounds of the construction site. Emergency protocols on the site would indicate a requirement for the traffic controller to assist with emergency access from Labyrinth Way. All truck movements to the site construction zone and the incident point would be suspended and cleared. Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

The liaison would be maintained with the police and emergency services agencies throughout the construction period, and a 24-hour contact would be made available for 'out-of-hours' emergencies and access. Thus, there would be no adverse impacts on the provision of existing emergency vehicle access to the site or other neighbouring properties as a result of the proposed construction activities.

5.7 Construction Traffic

As articulated in the preceding section, the construction works will involve a variety of construction vehicles ranging between an HRV and a normal utility vehicle. The envisaged construction traffic movements vary from time to time, depending on a range of factors including:

- Processes
- Weather
- Time of day

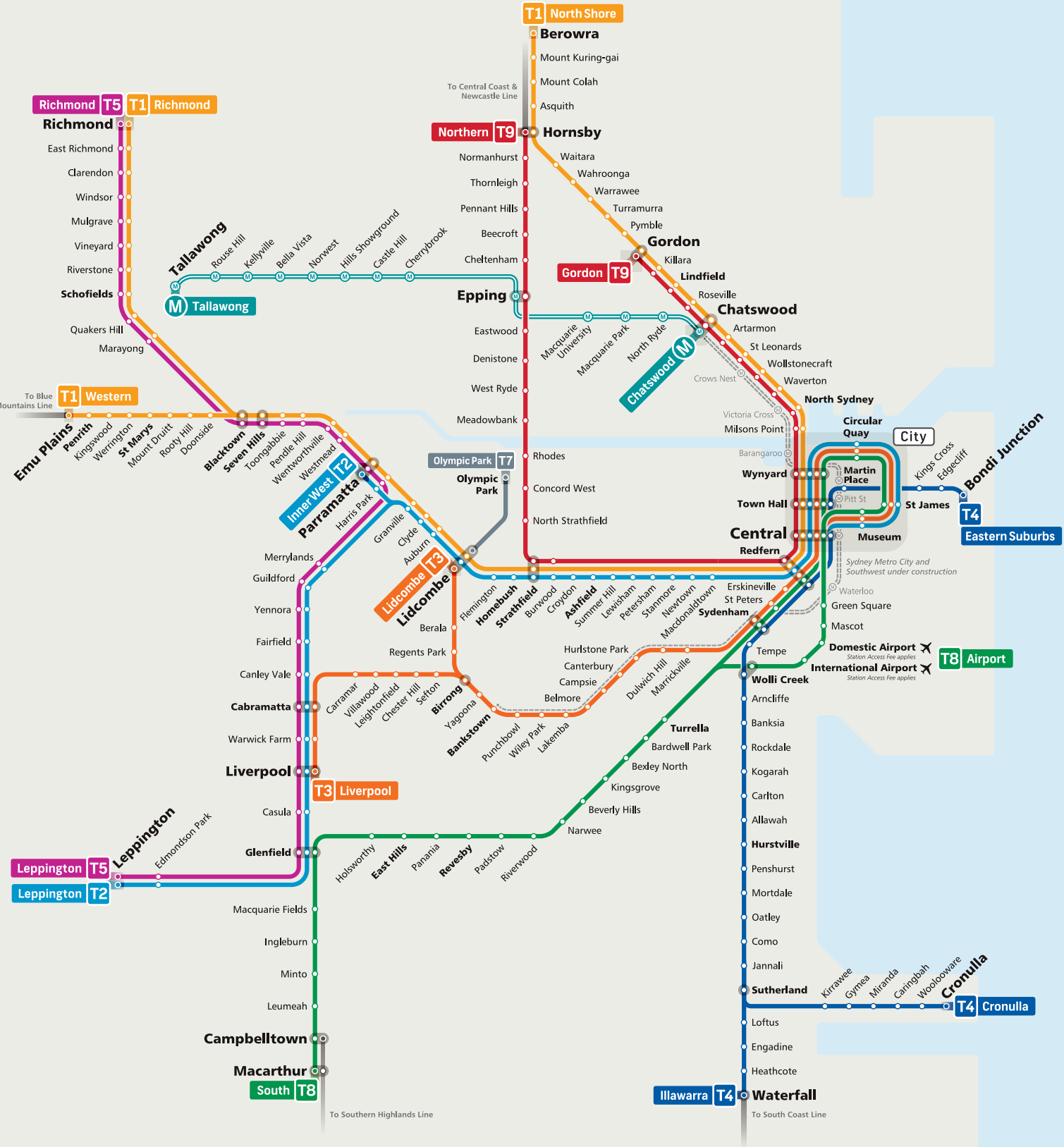
Peak vehicle volumes would be in the order of 10 vehicles (80 movements) per day, which would occur outside of peak traffic periods - AM (7 am-9.30 am) and PM (4 pm-6.30 pm) to minimise traffic (bus and traffic flow) impacts and associated road network delays when possible.

Appendix A - Existing Train Services

Sydney rail network

NSW GOVERNMENT | Transport

M Metro T Trains



Sydney metro and train lines

M *Metro North West Line*
Chatswood
Tallawong

T1 *North Shore & Western Line*
North Shore
Western
Richmond

T2 *Inner West & Leppington Line*
Inner West
Leppington
City

T3 *Bankstown Line*
Liverpool
Lidcombe
City

T4 *Eastern Suburbs & Illawarra Line*
Eastern Suburbs
Illawarra
Cronulla

T5 *Cumberland Line*
Leppington
Richmond

T7 *Olympic Park Line*
Olympic Park
Lidcombe

T8 *Airport & South Line*
Airport
South
City

T9 *Northern Line*
Northern
Gordon

Stop | Interchange | Interchange | End of line

Line under construction

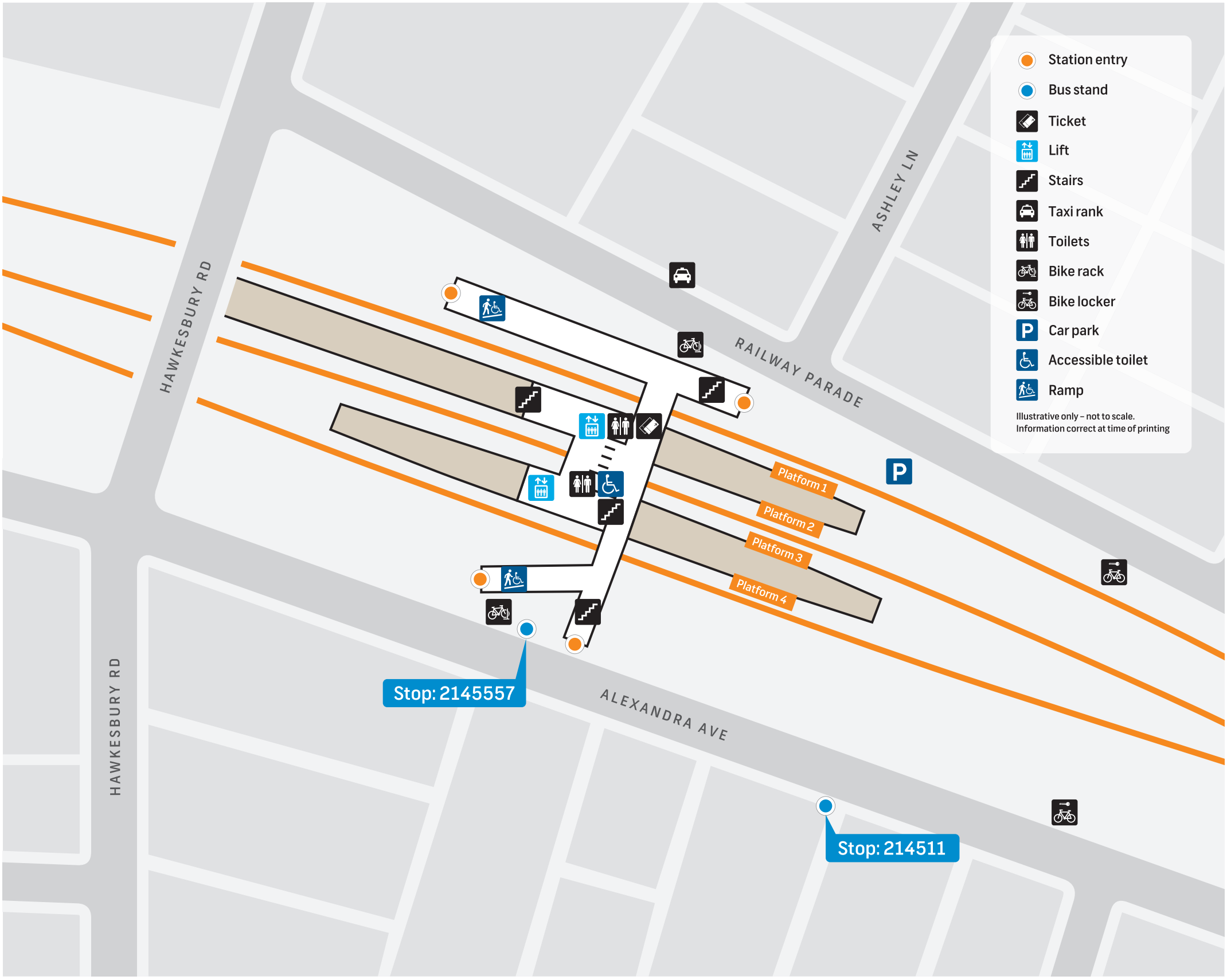
NORTH

Check timetables and trip planners for train services and connections

Visit **transportnsw.info**

1909TMS-E-MWT-A4P-WCAG

Westmead Station Public Transport Map



T **T1** *North Shore, Northern & Western Line*
North Shore
Western
Richmond

T5 *Cumberland Line*
Leppington
Richmond

Blue Mountains

B

Stop: 2145557		Stop: 214511	
705	Parramatta	705	Blacktown
708	Parramatta	708	Constitution Hill
711	Parramatta	711	Blacktown
N70	City Town Hall	N70	Penrith
N71	City Town Hall	N71	Richmond
T60	Parramatta	T60	Castle Hill
T61	Parramatta	T61	Blacktown
T62	Parramatta	T62	Castle Hill
T63	Parramatta	T63	Rouse Hill Town Centre
T64	Parramatta	T64	Rouse Hill Town Centre
T65	Parramatta	T65	Rouse Hill Town Centre
T66	Parramatta	T66	Rouse Hill

For more information
transportnsw.info

NSW GOVERNMENT | Transport

Parramatta, Fairfield & Liverpool region network effective 18 April 2021

B

St Marys & WSU Penrith inset

Kingswood Station
Kingswood
835
Second Ave
Burgelly Rd
O'Connell St
Great Western Hwy
Kingswood
Werrington Station
Werrington
Claremont Meadows
Caddens
St Marys Station
Station St
Charles Hackett Dr
Queen St
Glossop St
St Marys
North St Marys
Oxley Park
Bennett Rd
Colyton
Whalan
Mount Druitt Station
Mount Druitt
Plumpton
Rooty Hill
Rooty Hill Station
Minchinbury
Orchard Hills
St Clair
Erskine Park Rd
Erskine Park
Lenore Dr
Eastern Creek
Continues on main map
Old Wallgrove Rd

Merrylands inset

Treves St
McFarlane St
Merrylands Rd
Addlestone Rd
Pitt St
Neil St
Terminal Pl
Merrylands Station
Merrylands
809 818 822
810X 820

Fairfield inset

Smart St
Nelson St
The Hexagon Dr
Court Rd
The Crescent
Hamilton Rd
Fairfield Station
800 813
808 814
817
Fairfield

Parramatta inset

Parramatta
T80 810X
802 811X
804 824
806
Pitt St
Argyle St
Great Western Hwy
Church St
Parramatta Station
Pitt
T80 810X 811X

Cecil Park & Badgerys Creek inset

Horsley Park
Burley Rd
Delawarre Rd
Acuna Rd
Horsley Rd
Garfield Rd
Carroll Hill Dr
Mount Vernon
Mount Vernon Rd
Jersey Rd
Mamre Rd
Cecil Park
Elizabeth Dr
Badgerys Creek Rd
Badgerys Creek
801
Western Rd
Kemps Creek
Devonshire Rd
Watts Rd
Herbert St
Lee & Clark Rd
Continues on main map

Kings Park
Marayong Station
Blacktown
800 812
Blacktown
Blacktown Station
Richmond Rd
Patrick St
Newton Rd
Main St
Blacktown Rd
Seven Hills
Seven Hills Station
Toongabbie Station
Toongabbie
Prospect
Prospect Hwy
Prospect Reservoir
Girraween
Pemulwuy
810X
Nijong Dr
Wombat St
Driftway Dr
Clunies Ross St
Pemulwuy
809 811X
Rooty Hill
Minchinbury
Eastern Creek
Interchange Dr
Wonderland Dr
Wallgrove Rd
Old Wallgrove Rd
835
Continues on St Marys & WSU Penrith inset
Continues on Cecil Park & Badgerys Creek inset
Burley Rd
Arcadia Rd
The Horsley Dr
813
Horsley Park
Western Sydney Parklands
813
Lizard Log
Cowpasture Rd
Airfield Dr
827
Middleton Grange
Hinchinbrook
Hinchinbrook Dr
Partridge Ave
Abbotsbury
Roony Ave
Stockdale Cres
Darling St
Provincial Rd
Beaconsfield Cres
Bancroft Rd
Kalang Rd
Edensor Park
Edensor Rd
Bonnyrigg
813
Bonnyrigg Heights
Bonnyrigg Ave
Tarlington Pde
Wall Pl
Newleaf Pde
Cecil Hills
Elizabeth Hills
Nexgate Blvd
Rosebank Ave
Gowanlea Ave
Reginville Dr
Feodore Dr
Spencer Rd
Lancaster Ave
Santringham Dr
Windsor Rd
Frederick Rd
Athlone St
Cecil Hills
807
Lascelles St
Carnes Hill
827
Kurrajong Rd
Carnes Hill
Hoxton Park
West Hoxton
Len Waters Estate
Lord Howe Dr
The Valley Plaza
Green Valley
Green Valley Rd
Whitford Rd
Wilton Rd
Simpson Rd
Gloucester St
Northumberland St
Dowland St
Aplin Rd
Delgarno Rd
North Liverpool Rd
Cabramatta Rd W
Brown Rd
Gemalla St
Weanne Rd
Lalich Ave
Meadows Rd
Anderson Ave
David St
Townview Rd
Oliphant St
Mount Pritchard
Heckenberg
S10
Matthew Ave
Heckenberg
S10
Busby
Busby Rd
Sadleir
Sadleir Ave
Sutton Rd
Sinclair Rd
Maxwells Ave
Insignia St
Bobin Rd
Ashcroft
Miller
Shropshire St
Willandra St
Cartwright
Cartwright Ave
Woodville Degas
Hoxton Park Rd
Ash
Maxwells
Brickmakers
Liverpool
Memorial
Memorial Ave
Macquarie
Georges River
Liverpool Station
See Liverpool inset for details
Liverpool
T80 804 819
801 805 823
802 806 827
803 808
Prairiewood
Orphan School
819 835
Prairiewood
Prairie Vale Rd
Restwell Rd
Bossley Park
Bossley Rd
Quarry Rd
Marconi Rd
Mimosa Rd
Cowpasture Rd
Polding St
Fairfield West
Fairfield Heights
The Boulevarde
Manbrough St
Smart St
Sackville St
Cunningham St
Station St
Fairfield
Fairfield Station
See Fairfield inset for details
Fairfield
800 813
808 814
817
Fairfield East
Yennora
Yennora Station
Wakeley
King Rd
Bulli Rd
Driftway Dr
Greystanes Rd
Bathurst St
Berestford Rd
Old Prospect Rd
Greystanes
Gore Rd
Whalans Rd
Kirkham St
Watson Tench Pde
Gipps Rd
Merrylands Rd
Jonathan St
Cumberland Rd
Braeside Pl
Rimgrove Ave
Avoca Rd
Kalora Ave
Thorney Rd
Maud St
Avenel St
Canley Heights
Canley Vale Rd
Canley Vale
Canley Vale Station
Carramar
Carramar Station
Humphries Rd
Harrington St
St Johns Park
St Johns Rd
Brisbane Rd
Melbourne Rd
Clear Paddock
St Johns
Greenfield Park
Greenfield Rd
Myrtle Rd
Cheyenne Rd
Cherokee Ave
Mimosa Rd
Arrowhead Rd
Sweethaven Rd
Powhatan St
Edensor Park
Bonnyrigg
Bonnyrigg Rd
Brown
Cabramatta West
Cabramatta Rd W
Gladstone St
Joseph St
Hughes St
Cabramatta
Cabramatta Station
See Cabramatta inset for details
Cabramatta
805 815 817
807 816
Cabramatta inset
McBurney Rd
Railway Pde
Hughes St
Hill St
John St
Cabramatta Rd W
Church St
Boundary Lane
805 815 817
807 816
Cabramatta
Mount Pritchard
Warwick Farm
Lawrence Hargrave Dr
Gallop St
Station Rd
Nicholls St
Hume Hwy
McGirr Pde
Hinkler Ave
Homepride Ave
Orange Grove Rd
Warwick Farm Station
Sadleir
Bossley Park
Busby
Cartwright
Hinchinbrook
Miller
Ashcroft
Liverpool
Macquarie
Memorial
Copeland St
Moore St
Elizabeth Dr
Campbell St
Goulburn St
Lachlan St
Bigge St
George St
College St
Northumberland St
Park Rd
Marsden Rd
Liverpool Station
Liverpool
T80 804 819
801 805 823
802 806 827
803 808
Constitution Hill
Northmead
Pendle Hill
Pendle Hill Station
Wentworthville
Wentworthville Station
Dunmore St
Station St
Lane St
Veron St
Bridge Rd
Westmead
Westmead Station
Darcy Rd
Hawkesbury Rd
Hainsworth St
Parramatta River
Park Ave
Railway Pde
North Parramatta
Parramatta
T80 810X
802 811X
804 824
806
See Parramatta inset for details
Parramatta Station
Pitt St
Church St
Argyle St
Harris Park
Harris Park Station
Lansdowne St
Crimea St
Marsden St
Franklin St
Railway St
Mays Hill
Great Western Hwy
Pitt
Coleman
Finlayson
T-way
Old Prospect Rd
South Wentworthville
South Wentworthville
824
Centenary
Centenary Rd
Chelmsford Rd
Wirralee St
Boronia St
Hollywood St
Richmond St
Hamilton St
Friend St
Frances St
Coleman St
Burnett St
Douglas St
Irrigation Rd
Jersey Rd
Hilltop Rd
Holroyd
Merrylands
Merrylands West
Sherwood
Kenyons Rd
Bruce St
Duffy St
Canal
Barcom St
Woodpark
Woodpark Rd
Smithfield
Warren
Warren Rd
Percival Rd
Stuart St
Woodpark
Guildford West
Guildford
Guildford Station
Guildford
820 821
Guildford
Tampin Rd
Dennistoun Ave
Carrington Rd
Byron Rd
Kay St
Cross St
Henry St
Broughton St
Old Guildford
Granville
South Granville
Merrylands
809 818 822
810X 820
Merrylands Station
See Merrylands inset for details
Merrylands Rd
Adderstone Rd
Treves St
McFarlane St
Neil St
Lotus St
Monroe Ave
Claremont St
Patten Ave
Lowe St
Railway Cres
Myall St
Bursill St
Mountford Ave
West St
Guildford Rd
Chetwynd Rd
Tower Rd
Rowley Rd
Fairfield Rd
Amherst St
Elizabeth St
Military Rd
Railway Ter
Hawksview St
Albert St
Bristol St
Denmark St
St Ann St
Lowes Rd
Sheffield St
Windsor Rd
Railway Pde
Smithfield
821PM
Smithfield
821AM
Smithfield
814
Smithfield
Chifley St
Market St
Justin St
Victoria St
Victoria
Elizabeth
Wetherill
Wetherill Park
Redfern St
Frank St
Hassall St
Cooper
Summit St
Long St
Cooper St
Woodpark Rd
Prospect Hwy
Gipps
Gipps Rd
Davis Rd
Newton Rd
Victoria St
Cowpasture Rd
Canley Vale Rd
Elizabeth Dr
Lizard Log
The Horsley Dr
Horsley
Horsley Park
Western Sydney Parklands
813
Prairiewood
Polding St
Smithfield Rd
Greig Rd
Beaufort St
Prairie Vale Rd
Mimosa Rd
Restwell Rd
Bossley Park
Abbotsbury
Edensor Park
Bonnyrigg
Bonnyrigg Heights
Cecil Hills
Elizabeth Hills
Hinchinbrook
Miller
Cartwright
Busby
Sadleir
Ashcroft
Hoxton Park
West Hoxton
Carnes Hill
Len Waters Estate
Green Valley
Mount Pritchard
Heckenberg
Liverpool
Macquarie
Memorial
Copeland St
Moore St
Elizabeth Dr
Campbell St
Goulburn St
Lachlan St
Bigge St
George St
College St
Northumberland St
Park Rd
Marsden Rd
Liverpool Station
Liverpool
T80 804 819
801 805 823
802 806 827
803 808
Legend
Bus Route
Diversion/Extended Route
Liverpool-Parramatta T-way
Multiple Routes on Corridor
800 Bus Route Number
Train Station
Bus Route Terminus
T-way Stop
Ferry Wharf
North
TRANSIT SYSTEMS
Cartography by transitgraphics.com.au | base map © OpenStreetMap contributors

Appendix C – Approved Architectural Plans

0 5 10 15 20 25m
1:500

N

LEGEND:

- EXISTING
- EXISTING TO BE PROTECTED
- EXISTING PLAYGROUND

REFER TO THE DETAIL SURVEY PLANS FOR FURTHER EXISTING DETAIL

EXISTING

REV		
C	SSDA For Information	21/12/20
B	SSDA For Information	27/11/20
A	Draft SSDA Issue	16/11/20

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SITE PLAN - EXISTING

Scale 1:500@A1		Date 21/12/20
Drawn By PH	Checked By SC	Revision C
Project No		19038
Drawing No		CHW-AR-DG-MCP-DA007

FOR INFORMATION

BIM 360://CHWStage 2/CHW-BLP-MDL-ARC-MCP-BLD.rvt
16/12/2020 3:40:32 PM

0 5 10 15 20 25m
1:500

N

DEMOLITION NOTES:

NOTE 1. DEMOLISH EXISTING BUILDING.

NOTE 2. REMOVE EXISTING TREES (TYPICAL).

NOTE 3. PART DEMOLISH EXISTING CAR PARK.

NOTE 4. REMOVAL OF PLAYGROUND EQUIPMENT AS EXEMPT DEVELOPMENT.

NOTE 5. EXTENT OF PART EXISTING ROAD DEMOLITION.

NOTE 6. PART DEMOLISH EXISTING LANDSCAPE FOR PROPOSED ROAD ALTERATION WORKS.

LEGEND:

TO BE DEMOLISHED

EXISTING / RETAINED

EXISTING TO BE PROTECTED

REFER TO THE DETAIL SURVEY PLANS FOR FURTHER EXISTING DETAIL

REDBANK ROAD
REDBANK ROAD BRIDGE
SUBSTATION
EX. CARPARK
FENCE
BOUNDARY
TOONGABBIE CREEK
NOTE 5.
NOTE 6.
DELIVERY
NOTE 3.
SHED
FENCE
LABYRINTH WAY
NOTE 2.
GAZEBO
GARDEN
NOTE 3.
NOTE 1.
PROPOSED NEW BUILDING SHOWN FOR INFORMATION
FENCE
NOTE 2.
NOTE 2.
GRASS
SOFT FALL SURFACE
THE LODGE
HYDRANT ASSEMBLY
DELIVERIES
EX. TREE
CHILDREN'S HOSPITAL AT WESTMEAD (CHW)
SHADE FABRIC
CHILDREN'S PLAYGROUND
NOTE 4.
GARDEN
SHADE STRUCTURE
GRASS
EASEMENT BOUNDARY
BOUNDARY
Ex. Driveway
GATES
EX. SETDOWN
EX. ACCESSIBLE RAMP
RONALD McDONALD HOUSE
COVERED ENTRY
GALLERIA ENTRY LEVEL 1
GRASS
SHADE FABRIC STRUCTURE
GRASS
REMEMBRANCE GARDEN
LANDSCAPE MOUND
GATE
ABORIGINAL CHILDREN'S MEMORIAL GARDEN
RMH CAR PARK
STORMWATER EASEMENT
EX. TIERED SEATING
6x21.30m
PARINGA UNIT
PARINGA AVE
HERITAGE ITEM I00820
CUMBERLAND DISTRICT HOSPITAL

D	SSDA For Information	22/06/21
C	SSDA For Information	21/12/20
B	SSDA For Information	27/11/20
A	Draft SSDA Issue	16/11/20
REV		

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
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CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
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www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SITE PLAN - DEMOLITION

Scale 1:500@A1		Date 22/06/21
Drawn By PH	Checked By Ag	Revision D
Project No		19038
Drawing No		CHW-AR-DG-MCP-DA008

FOR INFORMATION

BIM 360://CHW-Stage 2/CHW-BLP-MDL-ARC-MCP-BLD.rvt
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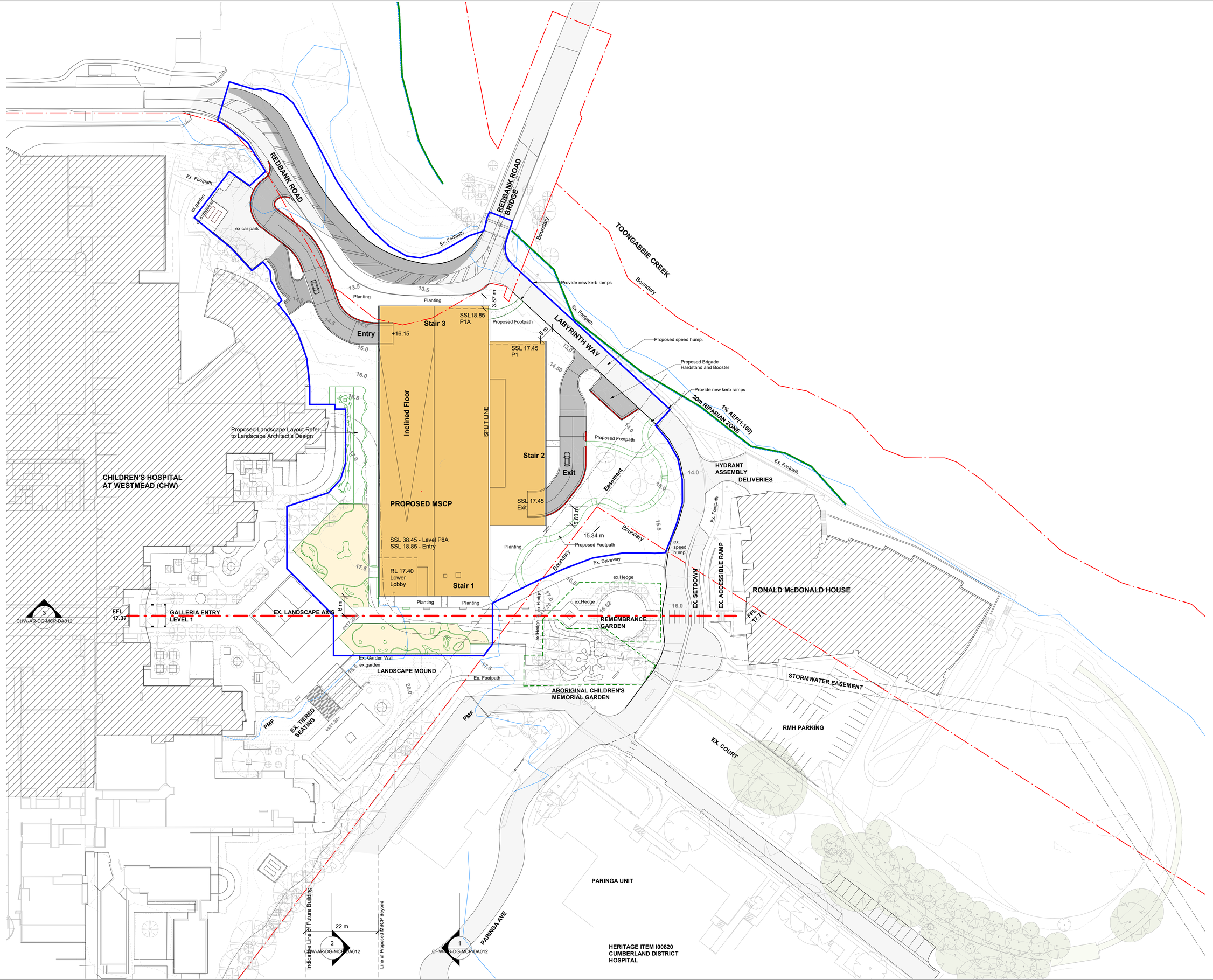

0 5 10 15 20 25m
1:500

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LEGEND:

- EXISTING / RETAINED
- INDICATIVE LINE OF PROPOSED WORKS
- EXISTING GARDENS TO BE PROTECTED

REFER TO THE DETAIL SURVEY PLANS FOR FURTHER EXISTING DETAIL

- PROPOSED AND ALTERATION ROAD / RAMP WORKS. REFER TO THE CIVIL ENGINEER'S DRAWINGS.
- PLAYGROUND RELOCATED AS EXEMPT DEVELOPMENT.

GENERAL NOTE:

FOR DETAIL OF "PROPOSED FOOTPATHS" REFER TO THE CIVIL ENGINEER'S and LANDSCAPE ARCHITECT'S DESIGN and DRAWINGS.

Existing contours are shown for information only. For the Proposed Finished Ground contours, refer to the design and drawings of the Civil engineer and Landscape architect.

NOTE INDICATIVE Riverine Flooding LINEWORK SHOWN BASED on the FLOOD IMPACT ASSESSMENT prepared by OveArup.
CHW-ARP-CV-RP-MP-91-XX013 Rev.1

REV		
D	SSDA For Information	22/06/21
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A	Draft SSDA Issue	16/11/20

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Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

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ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SITE PLAN - PROPOSED ROOF LEVEL

Scale 1:500@A1		Date 22/06/21
Drawn By PH	Checked By Ag	Revision D
Project No		19038
Drawing No		CHW-AR-DG-MCP-DA009

FOR INFORMATION

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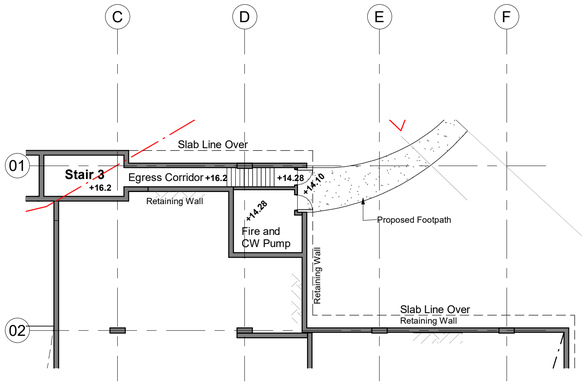

2 PART LOWER GROUND PLAN

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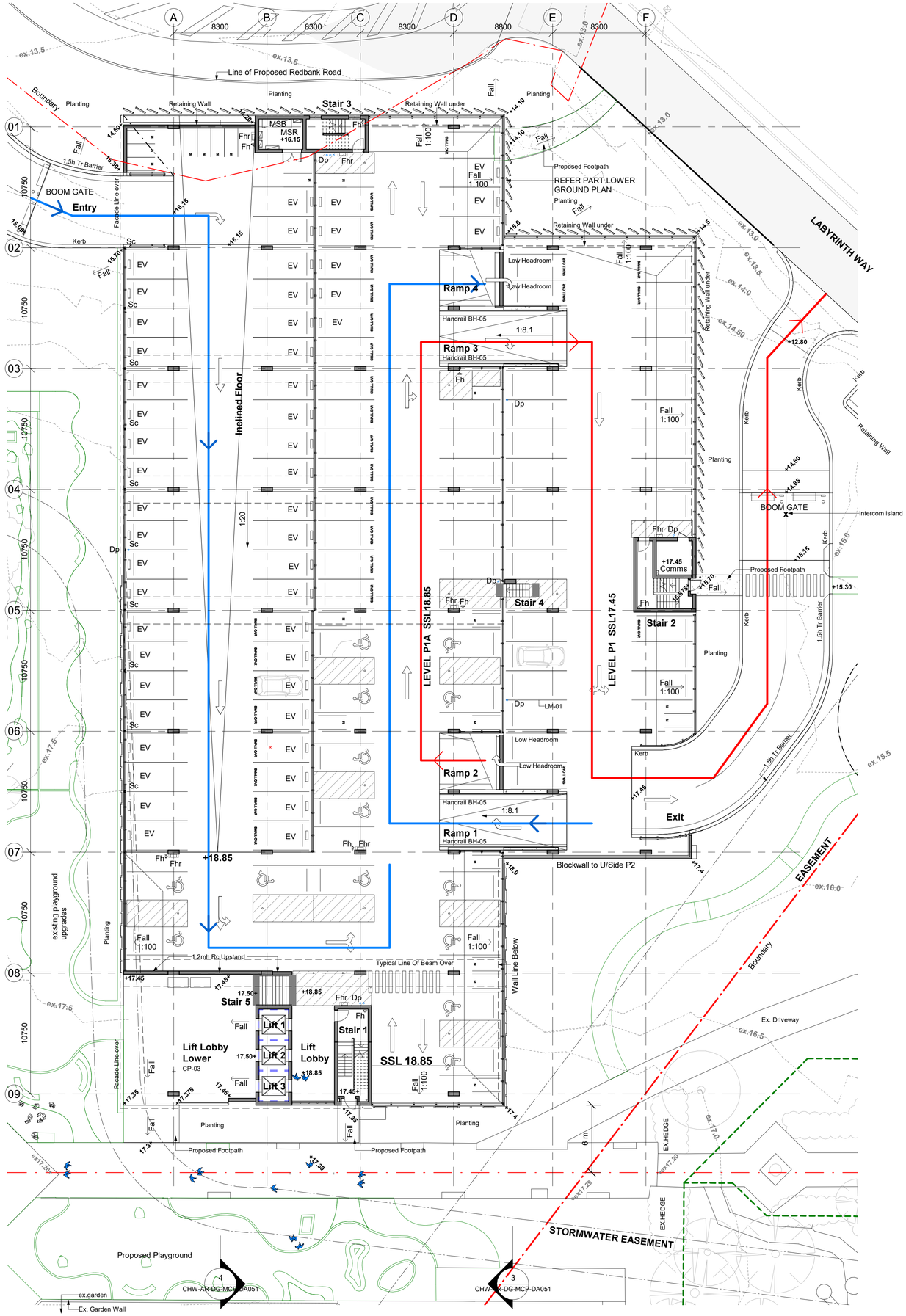
CHW-AR-DG-MCP-DA050



2
CHW-AR-DG-MCP-DA050

0 2 4 6 8 10m
1:200

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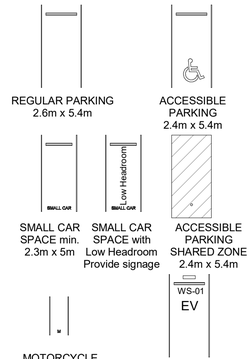
NOTE:

INFRASTRUCTURE FOR ELECTRICAL VEHICLE (EV) CHARGING POINT CONDUITS TO BE INSTALLED. EV PARKING CHARGER NUMBERS and LOCATIONS TBC. ALL CAR BAYS NOT INSTALLED AS EV BAYS ARE TO BE CONSTRUCTED AND USED AS REGULAR PARKING.
REFER TO THE ELECTRICAL ENGINEER'S REPORT.

PARKING KEY LEGEND:



PARKING.SCHEDULE	
Level	Count
P8A	99
P8	28
P7A	99
P7	28
P6A	99
P6	28
P5A	99
P5	28
P4A	99
P4	28
P3A	99
P3	28
P2A	99
P2	28
P1A	80
P1	27
TOTAL: 996	

MOTORCYCLE PARKING	
Level	Count
P4A	2
P3A	2
P2A	2
P1A	18
P1	2
TOTAL: 26	

REV		
F	SSDA For Information	22/06/21
E	SSDA For Information	21/12/20
D	SSDA For Information	27/11/20
C	Draft SSDA Issue	16/11/20
B	FOR INFORMATION	23/10/20
A	FOR INFORMATION	11/09/20

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
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PROJECT
The Children's Hospital at Westmead
Stage 2 Redevelopment

Sheet Name
PARKING LEVEL - P1 PLAN

Scale		Date
1 : 200@A1		22/06/21
Drawn By	Checked By	Revision
PH	Ag	F
Project No		19038
Drawing No		
CHW-AR-DG-MCP-DA031		

FOR INFORMATION

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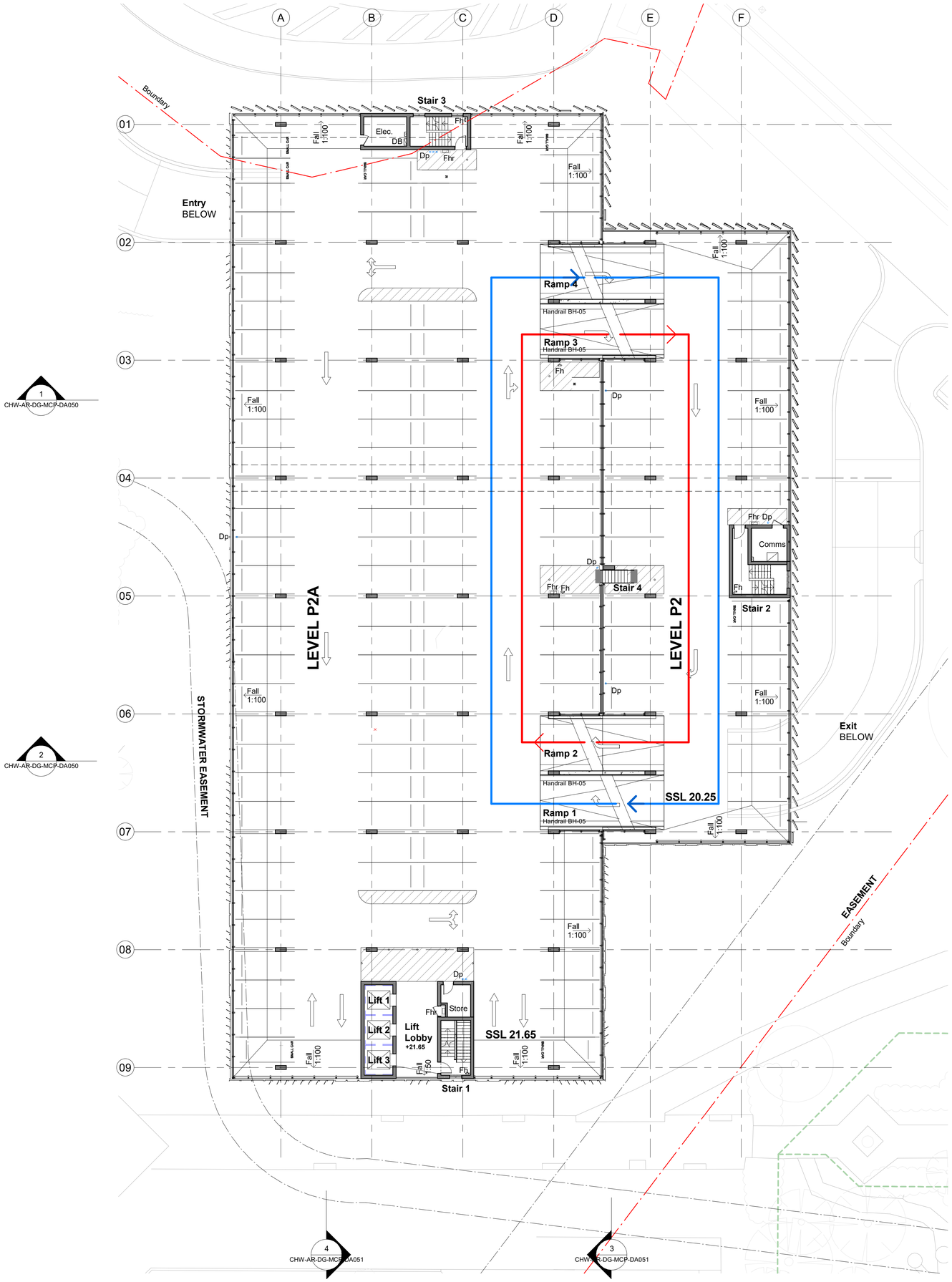

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F	SSDA For Information	22/06/21
E	SSDA For Information	21/12/20
D	SSDA For Information	27/11/20
C	Draft SSDA Issue	16/11/20
B	FOR INFORMATION	23/10/20
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REV		

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Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
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CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
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PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
PARKING LEVEL - TYPICAL PLAN Levels P2 - P7

Scale		Date	
1 : 200@A1		22/06/21	
Drawn By	Checked By	Revision	
PH	Ag	F	
Project No		19038	
Drawing No			
CHW-AR-DG-MCP-DA032			

FOR INFORMATION

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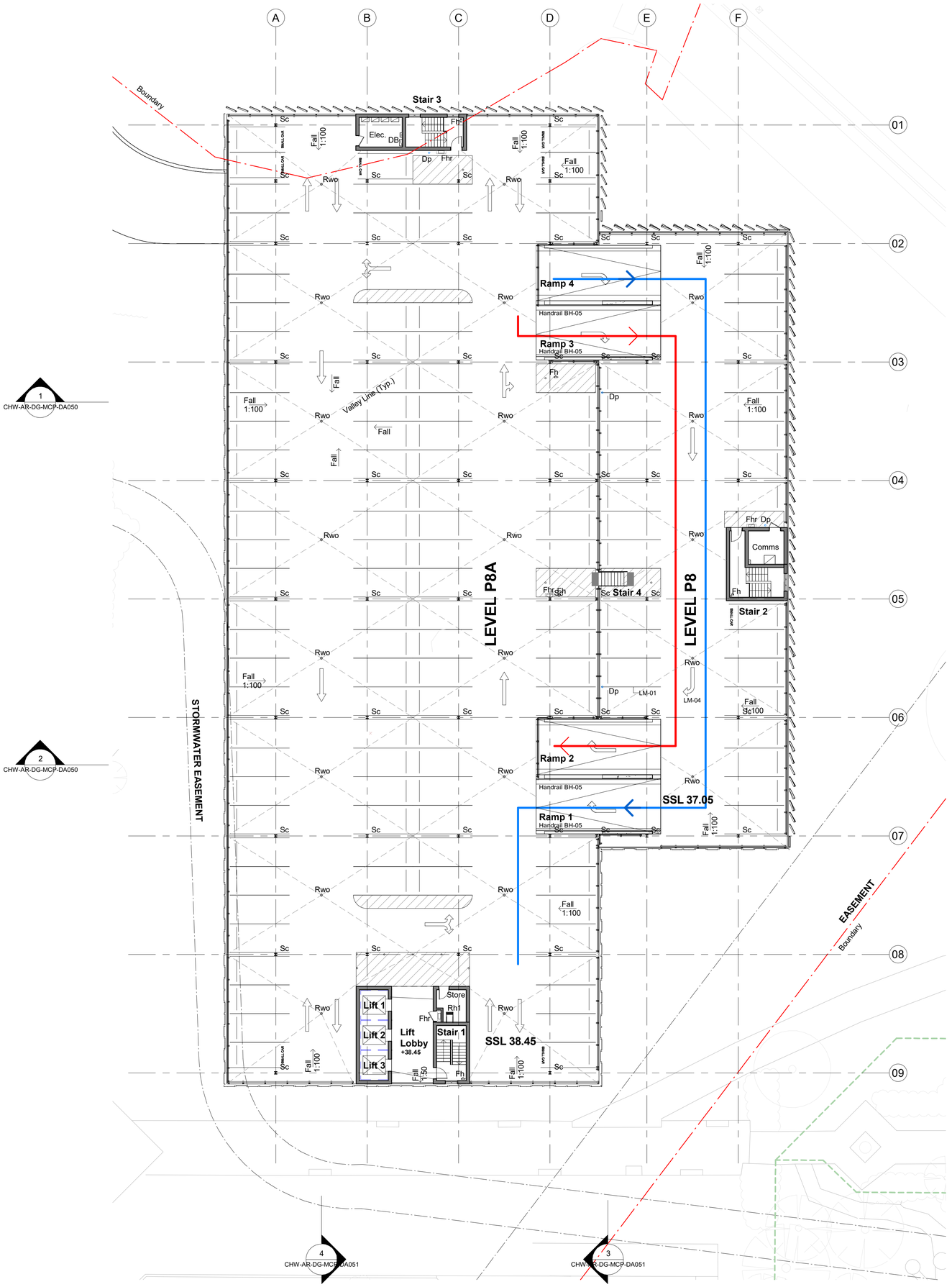

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REV		
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D	SSDA For Information	21/12/20
C	SSDA For Information	27/11/20
B	Draft SSDA Issue	16/11/20
A	FOR INFORMATION	23/10/20

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

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ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
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PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
PARKING LEVEL - P8 PLAN

Scale		Date
1 : 200@A1		22/06/21
Drawn By	Checked By	Revision
PH	SC	E
Project No		19038
Drawing No		
CHW-AR-DG-MCP-DA038		

FOR INFORMATION

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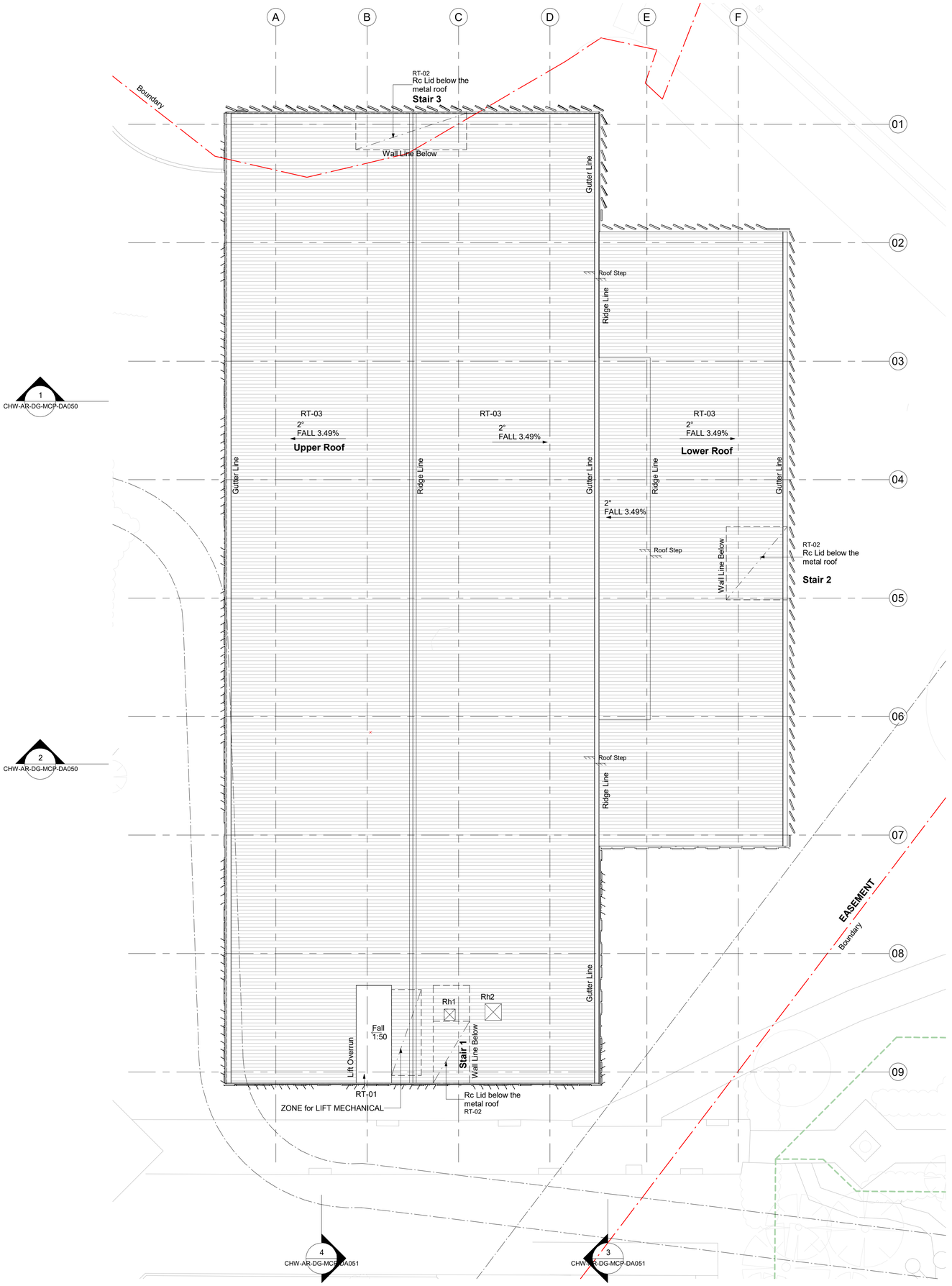

0 2 4 6 8 10m
1:200

N

ROOF NOTES:

THE STEEL ROOF IS DESIGNED WITH THE INTENT TO SUPPORT PVs.

REFER TO THE ELECTRICAL ENGINEER'S DESIGN AND DRAWINGS FOR THE PV DETAIL AND SPECIFICATION.

REV		
D	SSDA For Information	22/06/21
C	SSDA For Information	21/12/20
B	SSDA For Information	27/11/20
A	Draft SSDA Issue	16/11/20

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Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards
NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street
Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney
Watermans Quay,
Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St
Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road
St Leonards, NSW 2065
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PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
PARKING LEVEL - ROOF PLAN

Scale		Date
1 : 200@A1		22/06/21
Drawn By	Checked By	Revision
PH	Ag	D
Project No		19038
Drawing No		
CHW-AR-DG-MCP-DA039		

FOR INFORMATION

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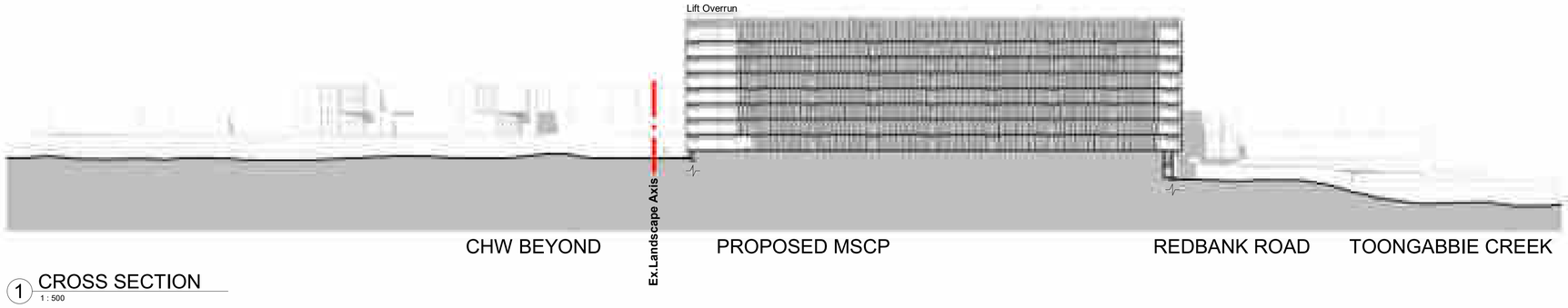

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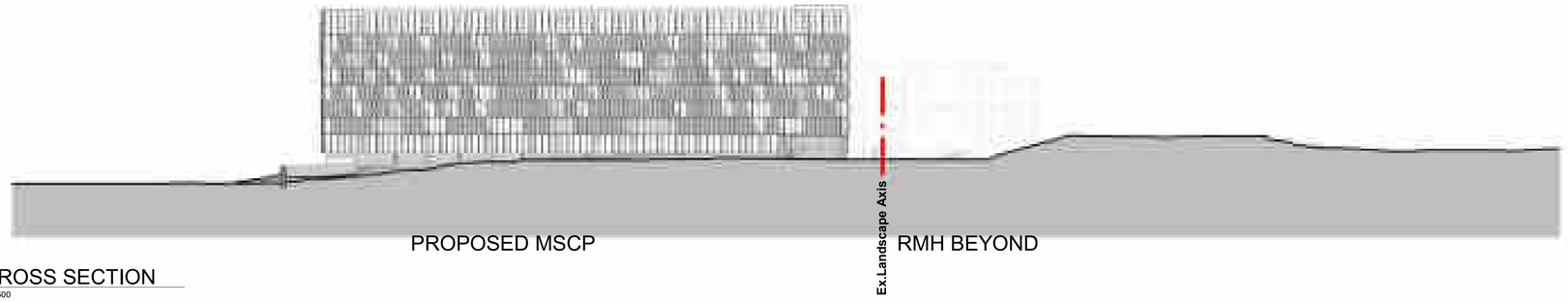

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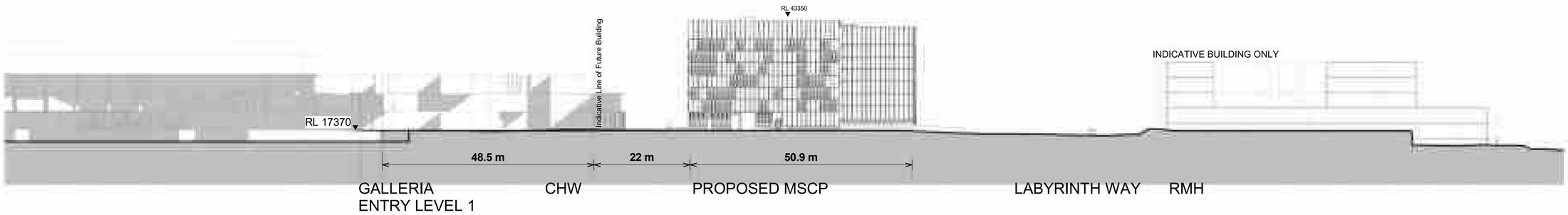

3 SITE SECTION THROUGH LANDSCAPE AXIS
1 : 500

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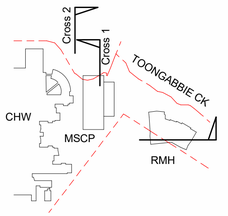
1:500



REV		
D	SSDA For Information	22/06/21
C	SSDA For Information	21/12/20
B	SSDA For Information	27/11/20
A	Draft SSDA Issue	16/11/20

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Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
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ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SITE SECTIONS AND ELEVATIONS

Scale		Date
1:500@A1		22/06/21
Drawn By	Checked By	Revision
PH	Ag	D

Project No 19038

Drawing No
CHW-AR-DG-MCP-DA012

FOR INFORMATION

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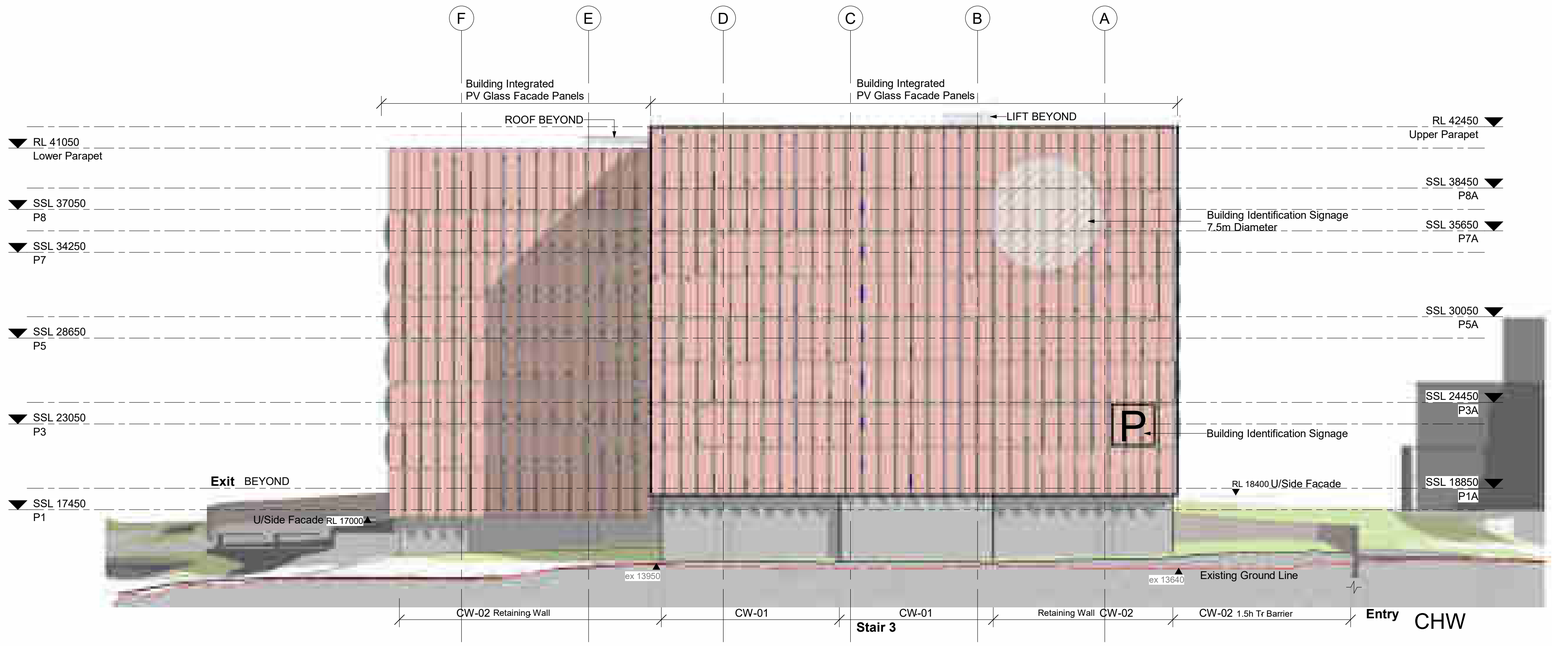
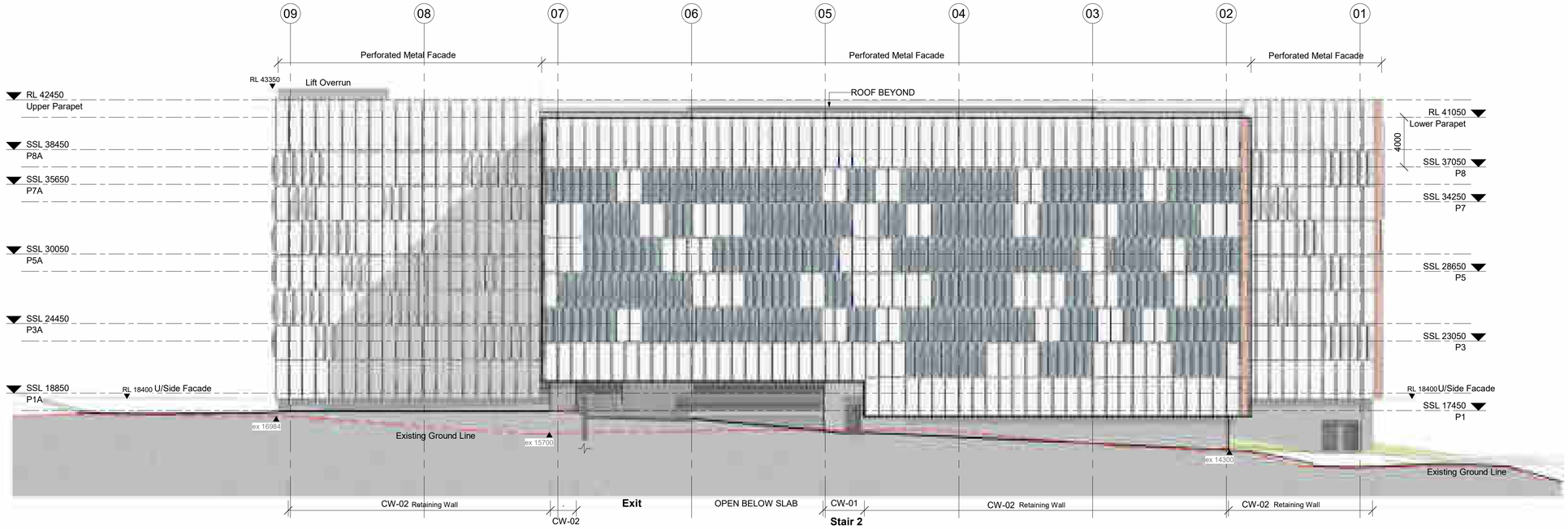


1 PROPOSED ELEVATION - NORTH

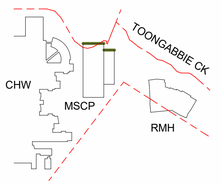
North



2 PROPOSED ELEVATION - EAST

East

0 2 4 6 8 10m
1:200



GENERAL NOTE:

TO BE READ IN CONJUNCTION WITH FACADE TYPES DRAWING DA060. SCHEDULE - MATERIAL DA092.

KEY:

AS MARKED IN GREEN ON THE KEY PLAN ABOVE, BIPV GLASS FACADE APPLIED TO THE NORTH ELEVATION.

REV		
J	SSDA For Information	23/07/21
H	SSDA For Information	06/04/21
G	SSDA For Information	24/03/21
F	SSDA For Information	15/01/21
E	SSDA For Information	21/12/20
D	SSDA For Information	27/11/20
C	Draft SSDA Issue	16/11/20
B	FOR INFORMATION	23/10/20
A	FOR INFORMATION	11/09/20

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
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CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
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www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
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T +61 2 8266 0000
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ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
ELEVATIONS - SHEET 01

Scale 1 : 200@A1		Date 23/07/21
Drawn By PH	Checked By Ag	Revision J
Project No		19038
Drawing No		**CHW-AR-DG-MCP-DA040**

FOR INFORMATION

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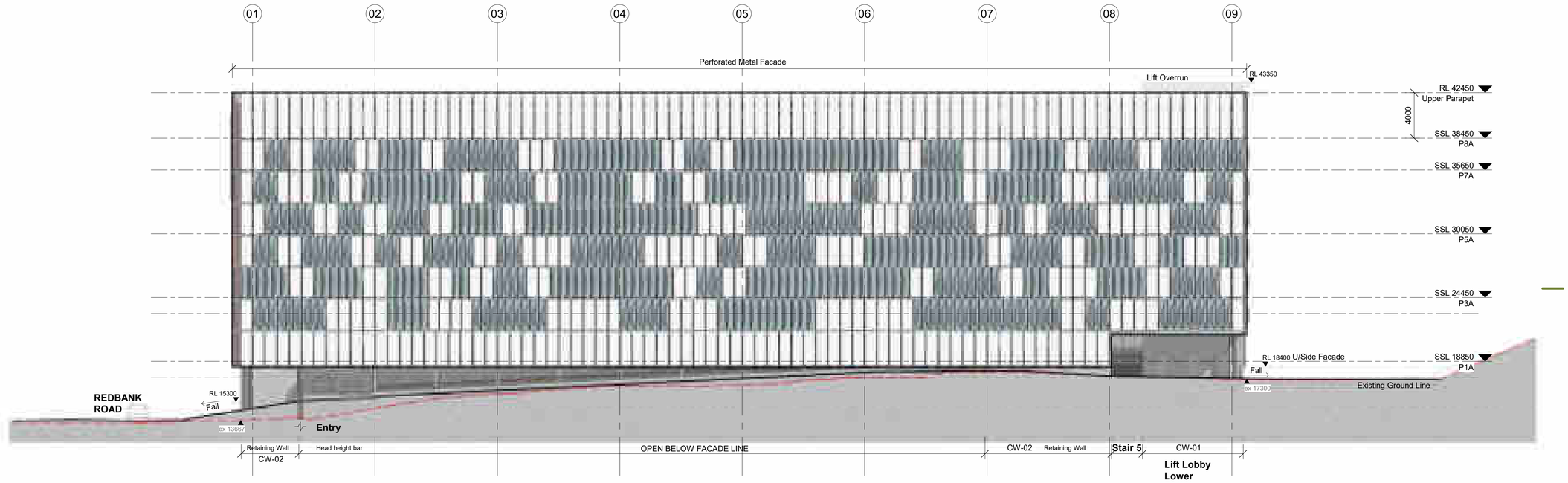
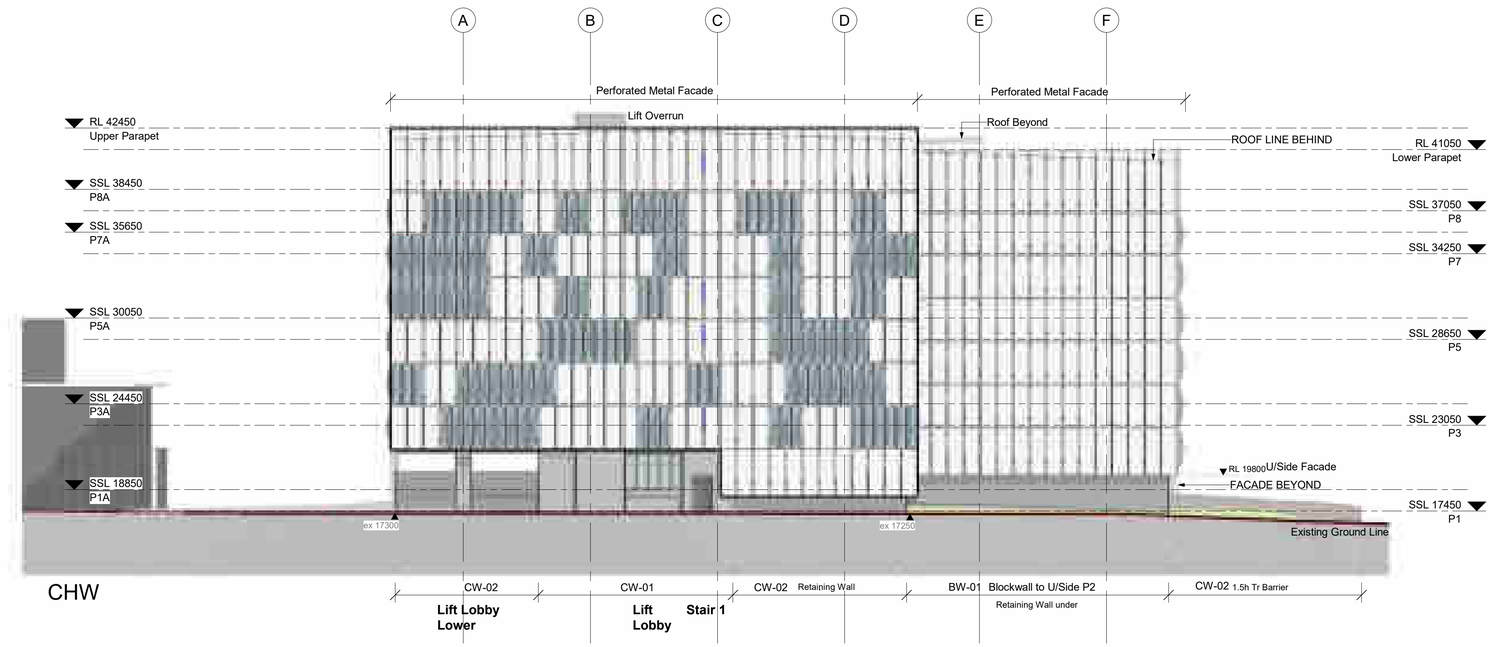


1 PROPOSED ELEVATION - WEST

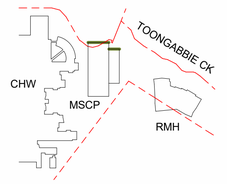
West



2 PROPOSED ELEVATION - SOUTH

South

0 2 4 6 8 10m
1:200



GENERAL NOTE:

TO BE READ IN CONJUNCTION WITH FACADE TYPES DRAWING DA060. SCHEDULE - MATERIAL DA092.

KEY:

AS MARKED IN GREEN ON THE KEY PLAN ABOVE, BIPV GLASS FACADE APPLIED TO THE NORTH ELEVATION.

REV		
H	SSDA For Information	23/07/21
G	SSDA For Information	06/04/21
F	SSDA For Information	24/03/21
E	SSDA For Information	21/12/20
D	SSDA For Information	27/11/20
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MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
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https://www.stantec.com

CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
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ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
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Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
ELEVATIONS - SHEET 02

Scale		Date
1 : 200@A1		23/07/21
Drawn By	Checked By	Revision
PH	Ag	H
Project No		19038
Drawing No		
CHW-AR-DG-MCP-DA041		

FOR INFORMATION

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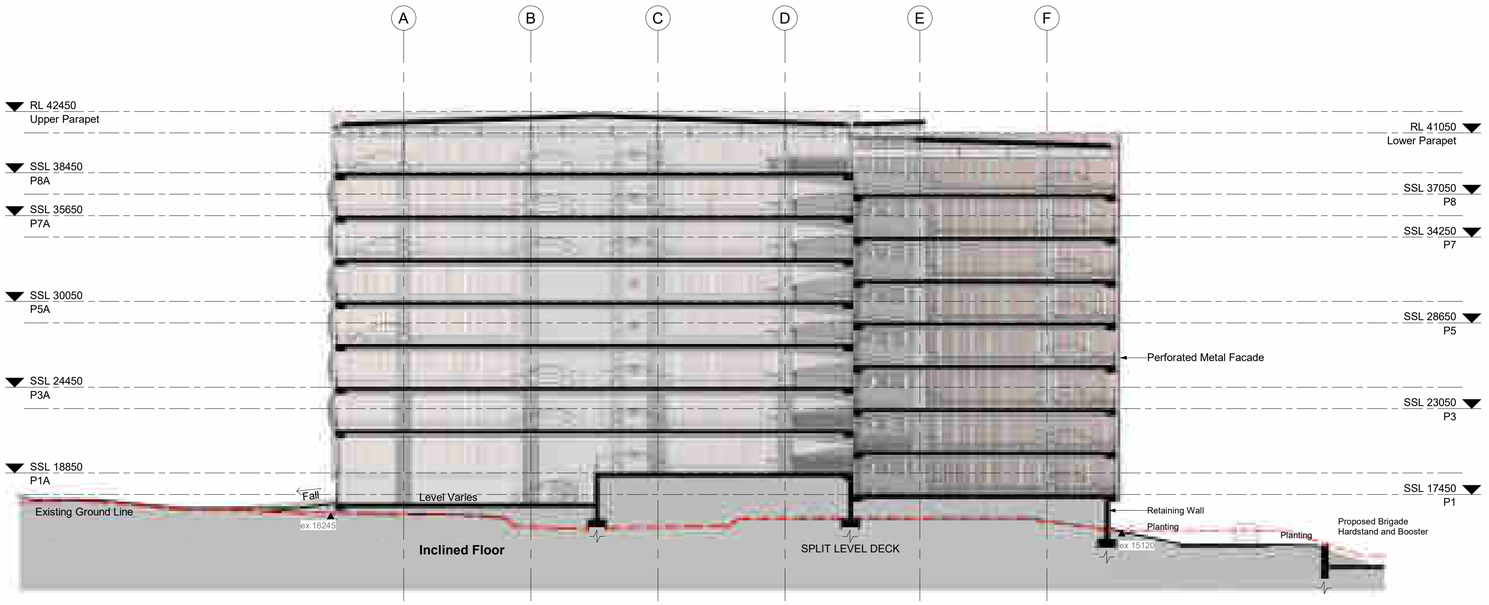
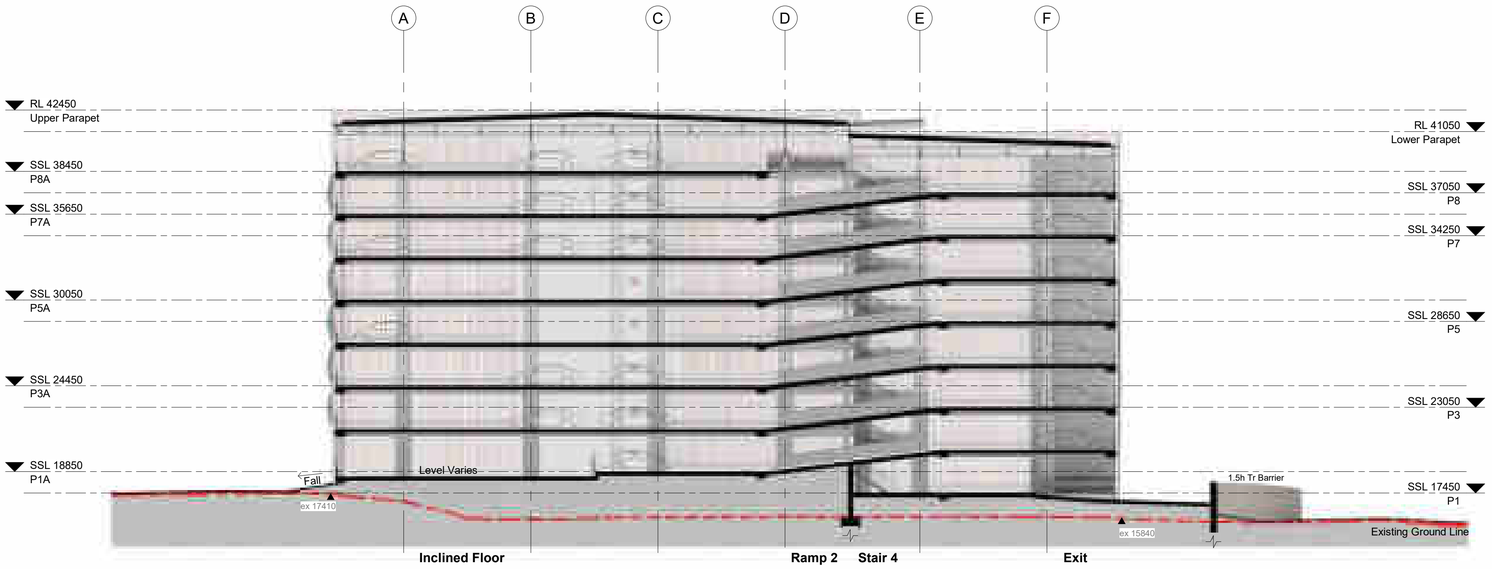


1 SECTION

Section 1



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Section 2

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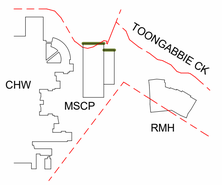

GENERAL NOTE:

TO BE READ IN CONJUNCTION WITH FACADE TYPES DRAWING DA060. SCHEDULE - MATERIAL DA092.

KEY:

AS MARKED IN GREEN ON THE KEY PLAN ABOVE, BIPV GLASS FACADE APPLIED TO THE NORTH ELEVATION.

REV		
G	SSDA For Information	23/07/21
F	SSDA For Information	15/01/21
E	SSDA For Information	21/12/20
D	SSDA For Information	27/11/20
C	Draft SSDA Issue	16/11/20
B	FOR INFORMATION	23/10/20
A	FOR INFORMATION	11/09/20

MECHANICAL / ELECTRICAL
Wood & Grieve Engineers
Level 6, Buildign B, 207 Pacific Highway, St Leonards NSW Australia 2065
T +61 2 8484 7000
enquiries.sdy@stantec.com
https://www.stantec.com

CIVIL / STRUCTURE / HYDRAULIC / FIRE
ARUP
Level 5, 151 Clarence Street Sydney, NSW 2000
T +61 2 9320 9320
sydney@arup.com
www.arup.com

PROJECT MANAGER
PricewaterhouseCoopers
One International Towers Sydney Watermans Quay, Barangaroo NSW 2000
T +61 2 8266 0000
www.pwc.com.au

ARCHITECT
Billard Leece Partnership Pty Ltd
Architects & Urban Planners
Level 6, 72-80 Cooper St Surry Hills NSW 2010
T +61 2 8096 4066
info@blp.com.au
www.blp.com.au

CLIENT
Health Infrastructure NSW
Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SECTIONS - SHEET 01

Scale	Date
1 : 200@A1	23/07/21
Drawn By: PH	Checked By: Ag
Revision: G	
Project No: 19038	
Drawing No: **CHW-AR-DG-MCP-DA050**	

FOR INFORMATION

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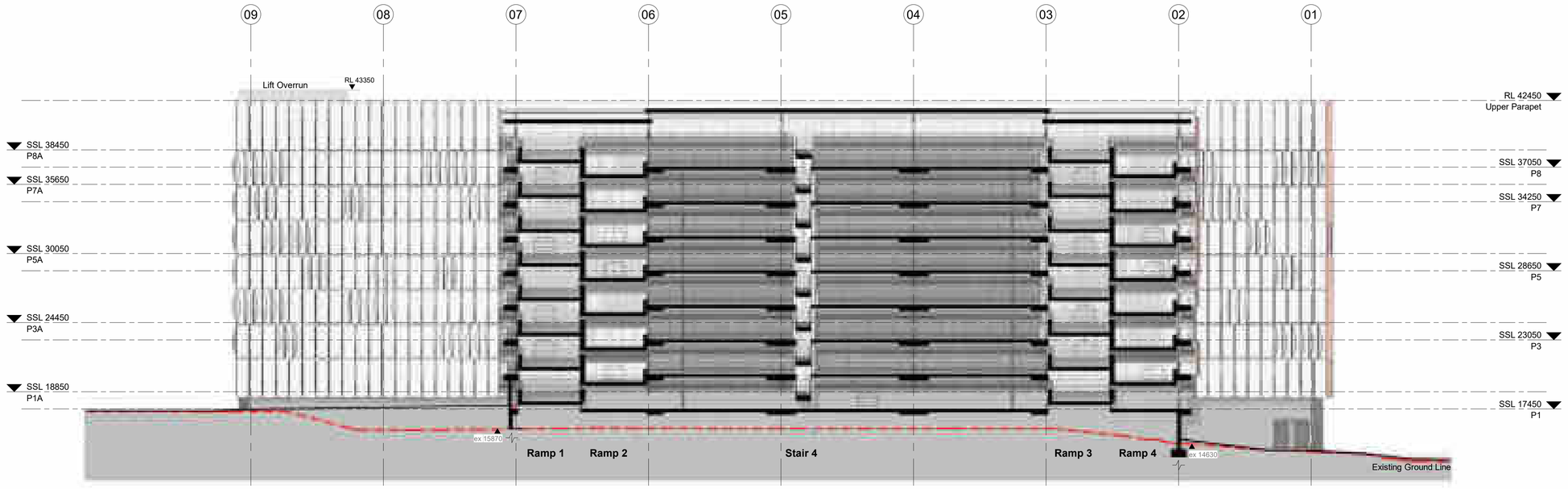
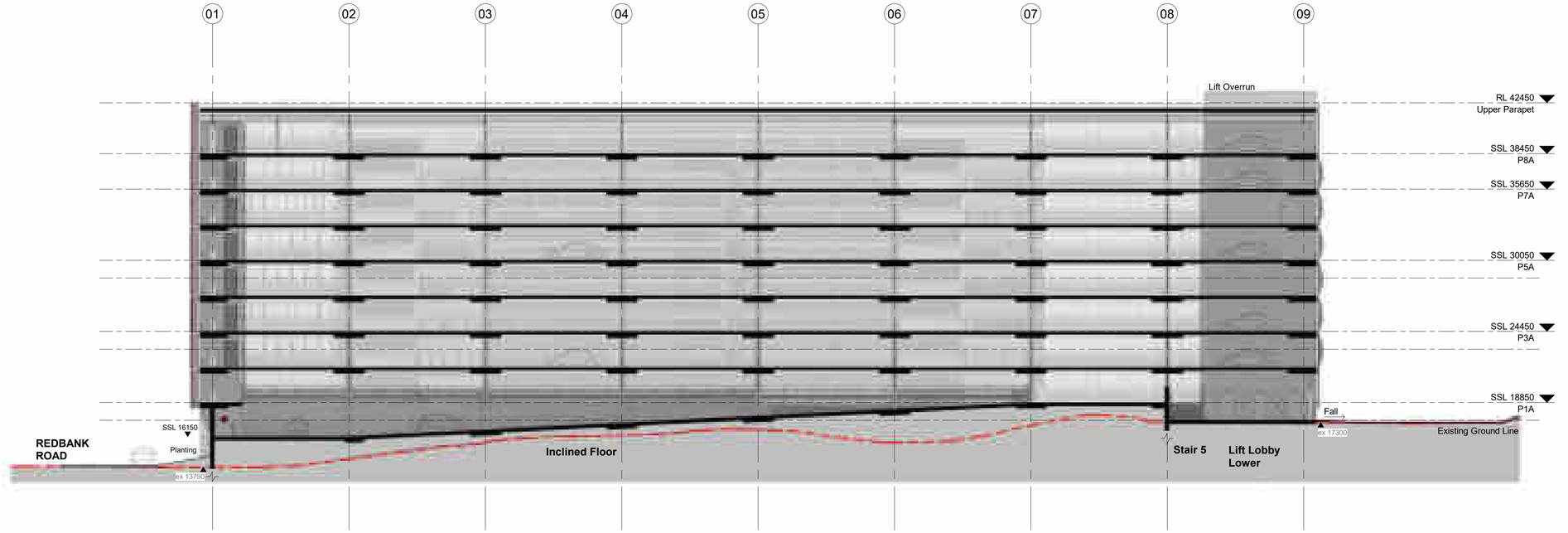


3 SECTION

Section 3



4 SECTION

Section 4

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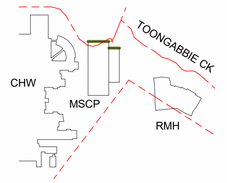

GENERAL NOTE:

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KEY:

AS MARKED IN GREEN ON THE KEY PLAN ABOVE, BIPV GLASS FACADE APPLIED TO THE NORTH ELEVATION.

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CLIENT
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Level 6, 1 Reserve Road St Leonards, NSW 2065
T +61 2 9978 5402
www.hinfra.health.nsw.gov.au

PROJECT
The Children's Hospital at Westmead Stage 2 Redevelopment

Sheet Name
SECTIONS- SHEET 02

Scale		Date
1 : 200@A1		23/07/21
Drawn By	Checked By	Revision
PH	Ag	G
Project No		19038
Drawing No		
CHW-AR-DG-MCP-DA051		

FOR INFORMATION

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Appendix D – Construction Workers Transportation Strategy

TTPS
TRANSPORT MATTERS

Health Infrastructure

The Children's Hospital at Westmead Redevelopment - Stage 2 Multistorey Car Park

Construction Worker Transportation Strategy

Client // Kane Constructions
Reference // N175
Date // 18/03/2022

Table of Contents

Appendices

Document Control

Internal Reference	N175	
Issue	Draft A	18/03/2022
Client Name	Kane Constructions	NSW

Revision Register

Issue	Date	Description	Prepared By	Signed
Draft A	18/03/2022	Draft CWTS	S.A, S.K	S.K

1. Introduction

A Stage Significant Development Application (SSD-10434896) has been approved by NSW Department of Planning, Industry and Environment (DPIE) for the construction of The Children's Hospital at Westmead Redevelopment Stage 2 Multistorey Car Park.

The approved development comprises an MSCP accommodating both staff and visitor car parking to be located on Labyrinth Way, on the site of The Lodge.

The site is advantaged by high frequency/capacity rail and bus services, which will be enhanced with the proposed provision of a Parramatta Light Rail Station and the Sydney West Metro Link station.

This plan has been prepared in satisfaction of Consent Conditions no. B17 for submission of a Construction Worker Transportation Strategy as part of the Construction Certificate documentation as follows:

> *B17. Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities. A copy of the strategy must be provided to the Planning Secretary for information.*

2. Strategies

Contractor parking will be very limited. All workers will be instructed to use public/active transport and not utilise the hospital's public/patient/visitor parking areas.

Facilities will be provided within the site to store tools to reduce the need to bring vehicles to site each day to carry their tools.

The strategies will be communicated to construction workers during tender interviews, site inductions and regular toolbox talks, ensuring construction workers are aware of the construction worker transportation strategy.

2.1 Public Transport Strategies

Train

The closest railway station to the site is Westmead Train Station, which is 1km (about a 12-minute walk) to the south of the site. Westmead Station is serviced by the T1 North Shore, Northern and Western Line, T5 Cumberland Line and Blue Mountains Line. Services along the T1 and T5 lines operate every 5 to 10 minutes, with express services to the Sydney CBD (from Parramatta Station). It interchanges with the T9 Northern Line at Strathfield, the T7 Olympic Park Line and the T3 Bankstown Line at Lidcombe and the T2 Inner West and Leppington line at Parramatta, Lidcombe or Strathfield. The T5 Cumberland Line interchanges with the T1 Western and T2 Inner West and Leppington lines at Parramatta, the T3 Bankstown Line at Cabramatta and Liverpool, and the T8 Airport and South Line at Glenfield. Services on the Blue Mountains Line operate every 30 minutes. Details of the existing train services are provided in Appendix A.

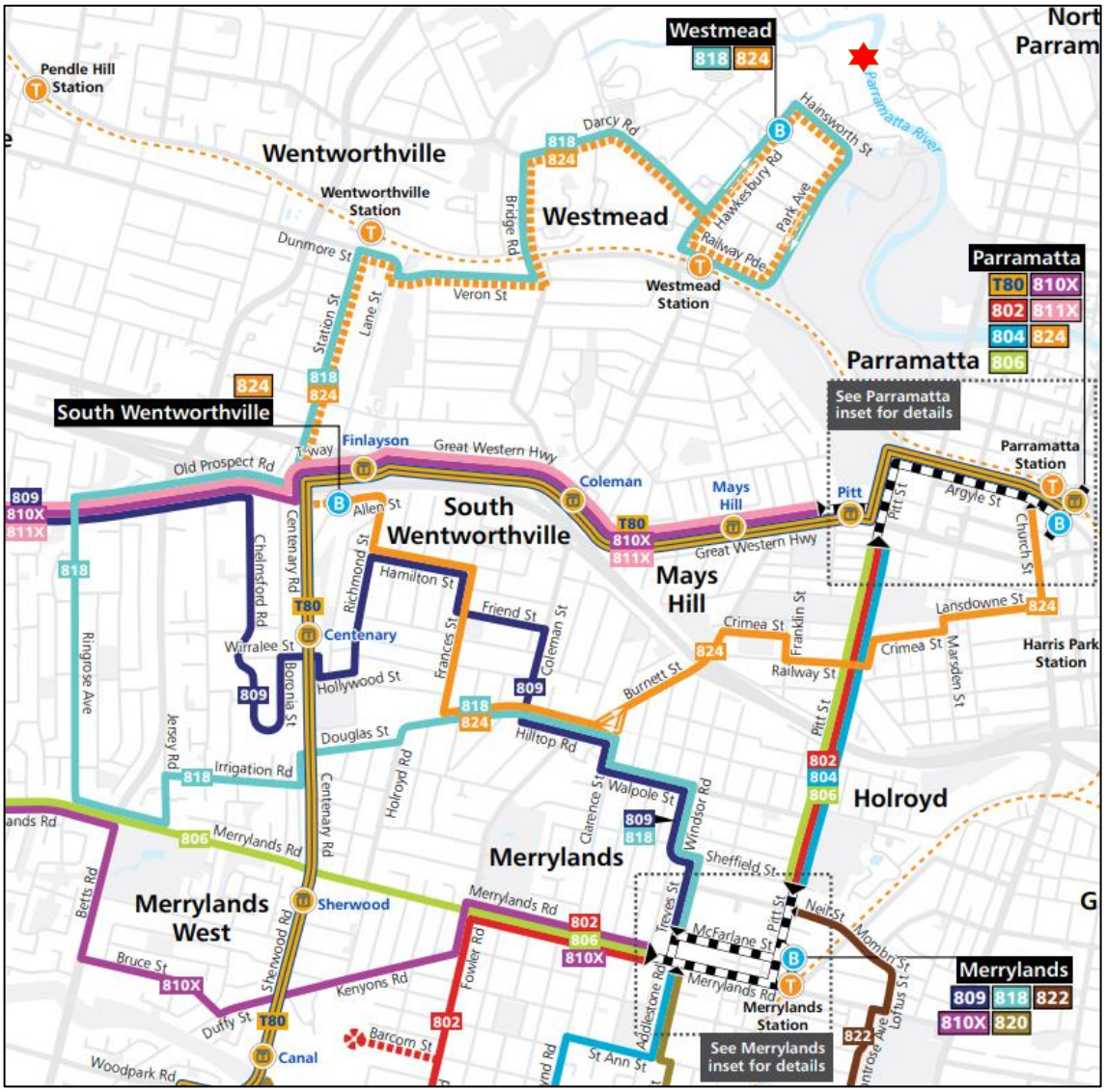
Bus

The nearest bus stop to/from the site is located on Hawkesbury Road north of Jessie Street and is within a 5-minute 350-metre) walk to the south of the site. The stop is serviced by the following bus routes:

Bus Route	Details
711	Blacktown to Parramatta via Wentworthville
712	Westmead Children's Hospital to Parramatta
818	Westmead Hospitals to Merrylands
824	Westmead Hospitals to Parramatta via South Wentworthville

Bus route no. 711, 818 and 824 providing connection to/from the Westmead Station.

Details of the existing bus services and their connections to nearby railway stations/suburbs are provided in the following figure.



The site is also served by a comprehensive network of bus services with 800m of the site. The bus routes servicing the site vicinity include:

- Westmead Hospital T-Way along Darcy Road: 606, 661, 662, 663, 664, 665, 705, 708, 711, 818, 824
- Westmead Station along Alexandra Avenue: 660, 661, 662, 663, 664, 665, 705, 708, 711, 712, N70, N71

Bus Route	Details
606	Winston Hills to Parramatta
661	Blacktown to Parramatta via Kings Langley & North West Twy
662	Castle Hill to Parramatta via Bella Vista & North West Twy
663	Rouse Hill Station to Parramatta via Kellyville Ridge
664	Rouse Hill Station to Parramatta via Kellyville
665	Rouse Hill Station to Parramatta
705	Blacktown to Parramatta via Seven Hills
708	Constitution Hill to Parramatta via Pendle Hill
711	Blacktown to Parramatta via Wentworthville
712	Westmead Children's Hospital to Parramatta
818	Westmead Hospitals to Merrylands
824	Westmead Hospitals to Parramatta via South Wentworthville
N70	Penrith to City Town Hall (Night Service)
N71	Richmond to City Town Hall (Night Service)

Details of the existing bus services are provided in Appendix B.

2.2 Off-Street Public Parking

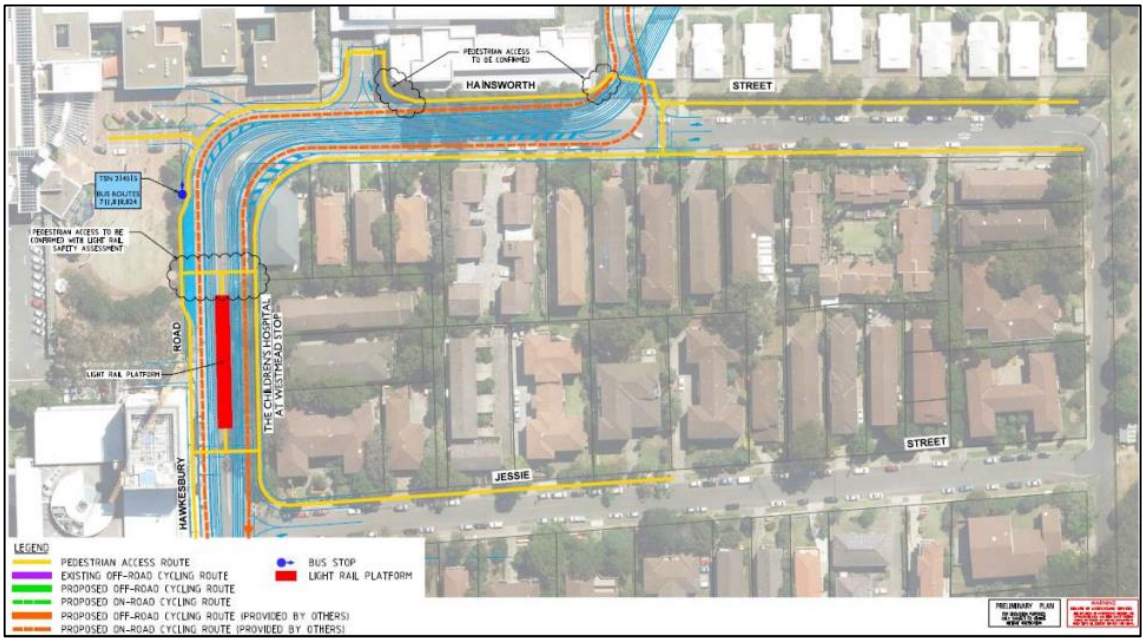
Workers who **needed** to drive to/from site can rely on the nearby public parking stations:

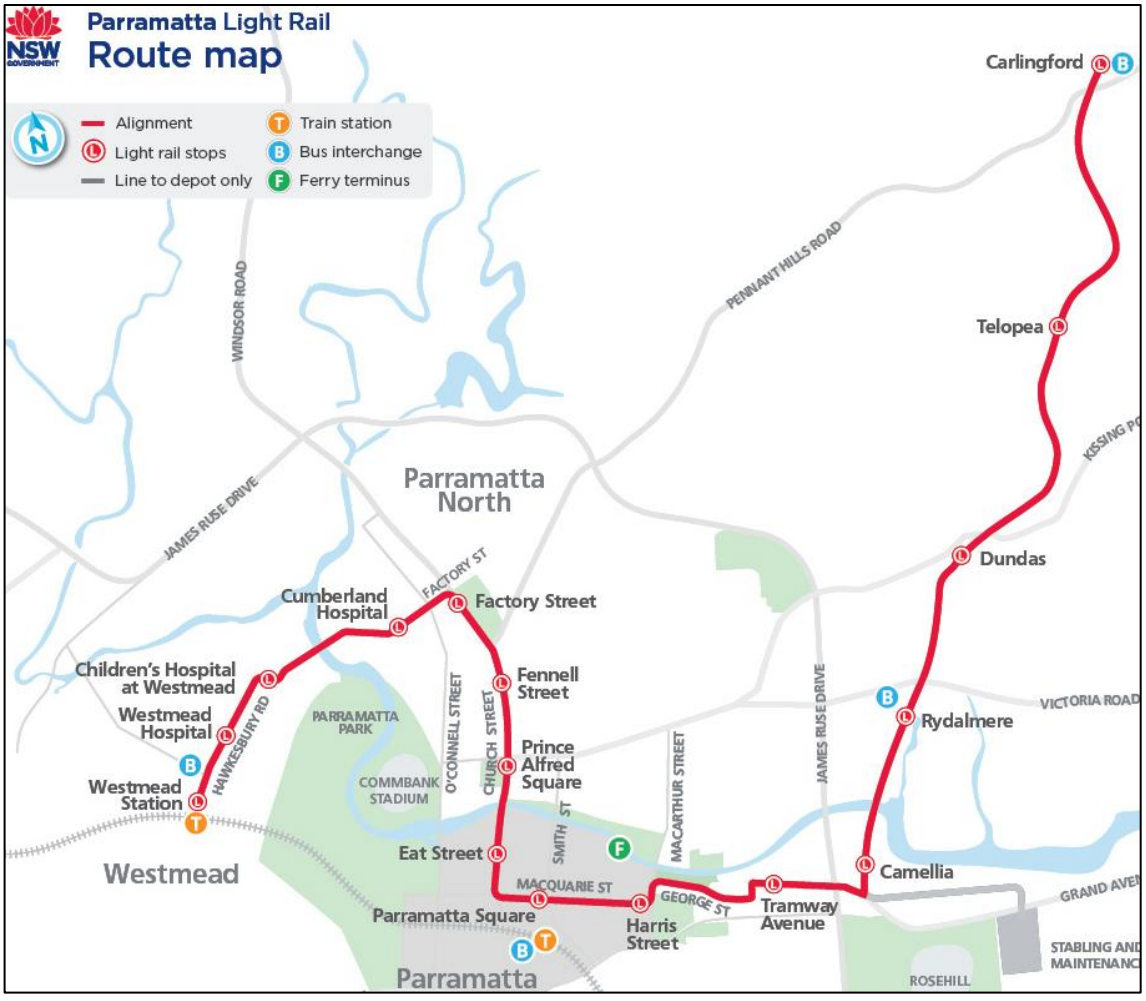
- Westmead Children's Hospital Car Park, Hawkesbury Road, Westmead (approx.. 400 spaces):
  Details: https://www.secureparking.com.au/en-au/car-parks/australia/new-south-wales/sydney/outer-western-sydney/westmead-childrens-hospital-car-park

- Westmead Hospital - P4 (360 spaces)
  Details: https://www.secureparking.com.au/en-au/car-parks/australia/new-south-wales/sydney/outer-western-sydney/westmead-hospital-car-park?utm_source=business.google.com&utm_medium=organic&utm_campaign=Google+My+Business+NSW+Westmead+Childrens+Hospital+Car+Park

2.3 Future Parramatta Light Rail

The Parramatta Light Rail Stage 1 will connect Westmead to Carlingford via Parramatta CBD and Camellia. The route will ink Parramatta's CBD and train station to the Westmead Precinct. The nearest station will be the Children's Hospital at Westmead Station, which is located 350m to the north of the site (see the following figure). The construction has begun in 2018 and is expected to be completed in 2023.


HAINSWORTH
STREET
JESSIE
STREET
HAWKESBURY ROAD
THE CHILDREN'S HOSPITAL AT WESTMEAD STOP
LIGHT RAIL PLATFORM
LEGEND
PEDESTRIAN ACCESS ROUTE
EXISTING OFF-ROAD CYCLING ROUTE
PROPOSED OFF-ROAD CYCLING ROUTE
PROPOSED ON-ROAD CYCLING ROUTE
PROPOSED OFF-ROAD CYCLING ROUTE (PROVIDED BY OTHERS)
PROPOSED ON-ROAD CYCLING ROUTE (PROVIDED BY OTHERS)
BUS STOP
LIGHT RAIL PLATFORM


Parramatta Light Rail
Route map
Alignment
Light rail stops
Line to depot only
Train station
Bus interchange
Ferry terminus
Carlingford
Telopea
Dundas
Rydalmere
Camellia
Tramway Avenue
Harris Street
Parramatta Square
Parramatta
Eat Street
Prince Alfred Square
Fennell Street
Factory Street
Cumberland Hospital
Children's Hospital at Westmead
Westmead Hospital
Westmead Station
Westmead
Parramatta North
WINDSOR ROAD
PENNANT HILLS ROAD
JAMES RUSE DRIVE
FACTORY ST
HAWKESBURY RD
O'CONNELL STREET
CHURCH STREET
SMITH ST
MACARTHUR STREET
MACQUARIE ST
GEORGE ST
VICTORIA ROAD
PARRAMATTA PARK
COMMBANK STADIUM
ROSEHILL

Appendix A

Rail Services

Parramatta, Fairfield & Liverpool region network effective 18 April 2021

B

St Marys & WSU Penrith inset

Kingswood Station
Kingswood
835
Second Ave
Burgelly Rd
O'Connell St
Great Western Hwy
Werrington Station
Werrington
St Marys Station
Station St
Charles Hackett Dr
Queen St
Glossop St
North St Marys
Whalan
Plumpton
Oxley Park
Mount Druitt Station
Mount Druitt
Rooty Hill
Rooty Hill Station
Kingswood
Claremont Meadows
Caddens
St Marys
Bennett Rd
Colyton
Minchinbury
Orchard Hills
St Clair
Erskine Park
Erskine Park Rd
Lenore Dr
Eastern Creek
Continues on main map

Merrylands inset

Treves St
McFarlane St
Pitt St
Terminal Pl
Neil St
Merrylands Rd
Addlestone Rd
Merrylands Station
Merrylands
809 818 822
810X 820

Fairfield inset

Smart St
Nelson St
The Hexagon Dr
Court Rd
The Crescent
Hamilton Rd
Fairfield Station
800 813
808 814
817
Fairfield

Parramatta inset

Parramatta
T80 810X
802 811X
804 824
806
Pitt St
Argyle St
Great Western Hwy
Church St
Parramatta Station
Pitt
T80 810X 811X

Cecil Park & Badgerys Creek inset

Horsley Park
Burley Rd
Delawarre Rd
Acuna Rd
Horsley Rd
Garfield Rd
Carroll Hill Dr
Mount Vernon
Mount Vernon Rd
Jersey Rd
Mamre Rd
Swick Ave
Cecil Park
Elizabeth Dr
Badgerys Creek Rd
Badgerys Creek
Western Rd
Kemps Creek
Devonshire Rd
Watts Rd
Herbert St
Lee & Clark Rd
Continues on main map

Continues on St Marys & WSU Penrith inset

Continues on Cecil Park & Badgerys Creek inset

Fairfield inset

Fairfield Station
See Fairfield inset for details

Cabramatta inset

McBurney Rd
Hughes St
Railway Pde
Hill St
John St
Cabramatta Rd W
Church St
Boundary Lane
Cabramatta Station
See Cabramatta inset for details

Liverpool inset

Lachlan St
Bigge St
Goulburn St
Campbell St
George St
Elizabeth Dr
Moore St
Northumberland St
College St
Memorial Ave
Copeland St
Macquarie
Liverpool Station
See Liverpool inset for details

Parramatta inset

See Parramatta inset for details

Merrylands inset

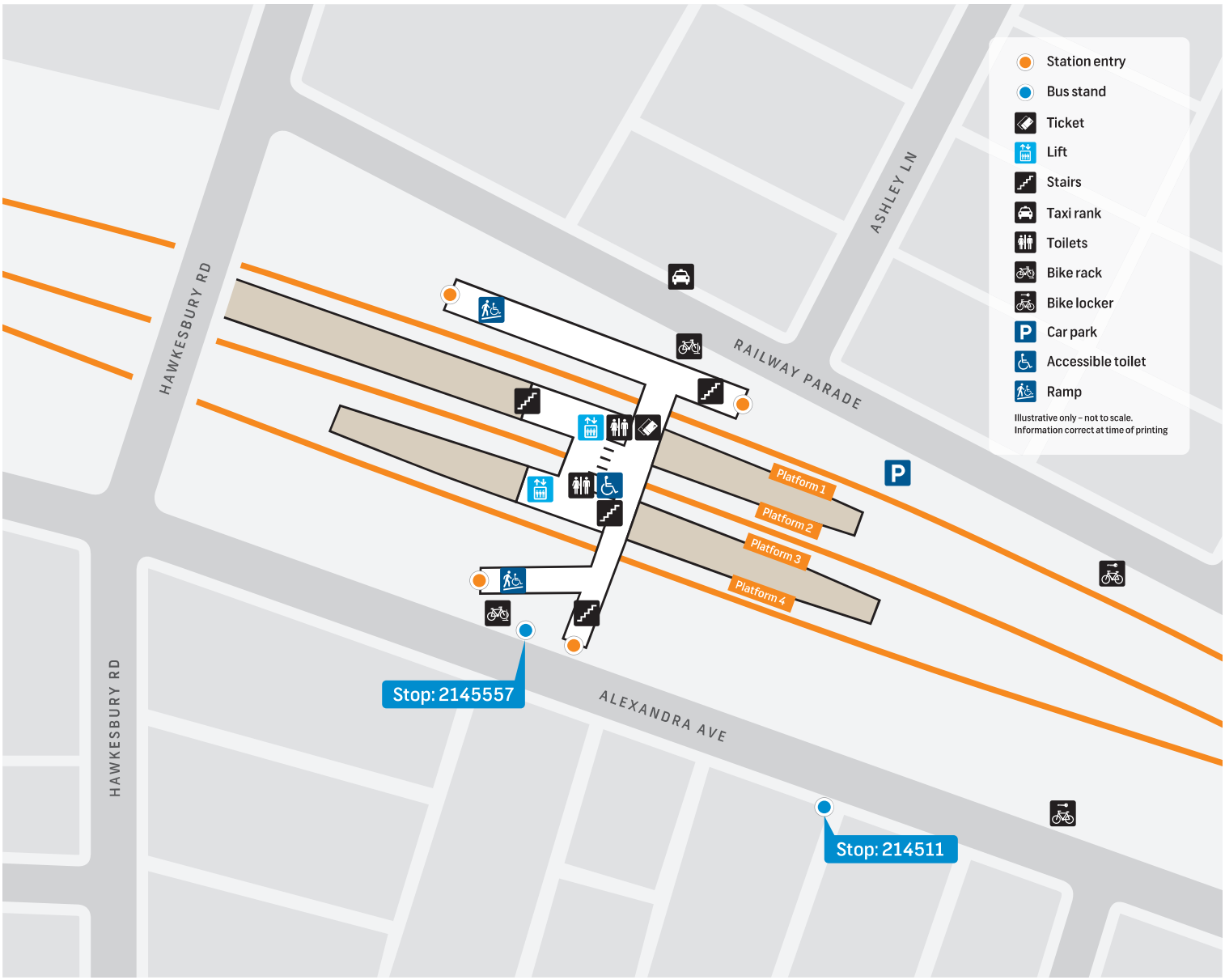
Merrylands Station
See Merrylands inset for details

Kings Park
Marayong Station
Blacktown
800 812
Blacktown
Blacktown Station
Richmond Rd
Patrick St
Newton Rd
Main St
Blacktown Rd
Seven Hills
Seven Hills Station
Toongabbie Station
Toongabbie
Constitution Hill
Northmead
Pendle Hill Station
Pendle Hill
Girraween
Prospect
Prospect Hwy
Prospect Reservoir
Pemulwuy
810X
Nijong Dr
Wombat St
Driftway Dr
Pemulwuy
809 811X
Bungarun Dr
Greystanes Rd
Bathurst St
Old Prospect Rd
Greystanes
Gipps Rd
Watson Tench Pde
Merrylands Rd
Whalans Rd
Kirkham St
Jonathan St
Cumberland Rd
Braeside Rd
Gossa Rd
Clunies Ross St
Wentworthville
Wentworthville Station
Dunmore St
Veron St
Station St
Lane St
Bridge Rd
Darcy Rd
Westmead
818 824
Westmead
Westmead Station
Hawkesbury Rd
Hainsworth St
Parramatta River
Park Ave
North Parramatta
Parramatta
T80 810X
802 811X
804 824
806
Parramatta Station
Pitt
Argyle St
Church St
Lansdowne St
Harris Park Station
Harris Park
South Wentworthville
Finlayson
T-way
Great Western Hwy
Allen St
Coleman
Mays Hill
Mays Hill
Pitt
Old Prospect Rd
Centenary Rd
Richmond St
Hamilton St
Friend St
Coleman St
Centenary
Wirralee St
Boronia St
Hollywood St
Frances St
Crimea St
Franklin St
Railway St
Burnett St
Marsden St
Douglas St
Irrigation Rd
Hilltop Rd
Holroyd Rd
Holroyd
Merrylands
Merrylands West
Sherwood
Kenyons Rd
Bruce St
Duffy St
Canal
Barcom St
Woodpark Rd
Woodpark
Warren
Warren Rd
Smithfield
Smithfield
821PM
821AM
Cooper
Summit St
Long St
Cooper St
T-way
Woodpark Rd
Guildford West
821
Guildford West
Bristol St
Albert St
Hawksview St
Chetwynd Rd
Tower Rd
Fowler Rd
Denmark St
Myall St
Railway Tce
Patten Ave
Lowe St
Claremont St
Ann St
Granville
Merrylands
809 818 822
810X 820
Merrylands Rd
Adderstone Rd
Treves St
McFarlane St
Neil St
Lotus St
Monroe Ave
Sheffield St
Windsor Rd
Yennora
Yennora Station
Fairfield East
Fairfield
Fairfield Heights
Fairfield West
Wakeley
Greenfield Park
Abbotsbury
Prairiewood
Bossley Park
Pemulwuy
Prairiewood
819 835
Prairiewood
Orphan School
T80 819
Prairie Vale Rd
Polding St
Brenan St
Shakespeare St
Wetherill St
Ully St
Justin St
Victoria St
Chifley St
Market St
Smithfield
814
Smithfield
Wetherill Park
Victoria
Elizabeth
Wetherill
Hassall St
Redfern St
Frank St
Gipps Rd
Davis Rd
Newton Rd
Victoria St
Cowpasture Rd
Canley Vale Rd
Canley Heights
Canley Vale
Canley Vale Station
Carramar
Carramar Station
Cabramatta West
Cabramatta
805 815 817
807 816
Cabramatta
Cabramatta Station
St Johns Rd
Humphries Rd
Edensor Rd
Harrington St
Gladstone St
Railway Pde
McBurney Rd
John St
Cabramatta Rd W
Meadows Rd
Mount Pritchard
Anderson Ave
David St
Oliphant St
Townview Rd
Orange Grove Rd
Warwick Farm
Warwick Farm Station
Lawrence Hargrave Dr
Gallop St
Nicholls St
Station Rd
Hume Hwy
Hinkler Ave
McGirr Pde
Homepride Ave
Parkes Rd
Lachlan St
Bigge St
Goulburn St
Campbell St
George St
Elizabeth St
College St
Moore St
Northumberland St
Macquarie
Liverpool
Liverpool Station
Georges River
Memorial
Memorial Ave
Copeland St
Brickmakers
Maxwells
Ash
Hoxton Park Rd
Hoxton Park
Carnes Hill
827
Kurrajong Rd
Carnes Hill
West Hoxton
Middleton Grange
Len Waters Estate
Green Valley
Busby
Heckenberg
Heckenberg
S10
Sadleir
Ashcroft
Miller
Miller
S10
Cartwright
Cartwright Ave
Hinchinbrook
Hinchinbrook Dr
Partridge Ave
Whitford Rd
Whitford Pde
Cowpasture Rd
Bonnyrigg
813
Bonnyrigg
Bonnyrigg Heights
Bonnyrigg Ave
Tarlington Pde
Wall Pl
Newleaf Pde
Edensor Park
Edensor Rd
Kalang Rd
Bonnymarang Rd
Smithfield Rd
Clear Paddock
St Johns
St Johns Park
Brisbane Rd
Melbourne Rd
Bulls Rd
Avoca Rd
King Rd
Thorney Rd
Maud St
Kalora Ave
The Boulevarde
Sackville St
Avenel St
Hampton St
Frederick St
Larkey St
Cunningham St
Smart St
Court Rd
Station St
Marlborough St
Sackville St
Cecil Hills
807
Cecil Hills
Athlone St
Lascelles St
Rosebank Ave
Gowanlea Ave
Reynolds Dr
Feodore Dr
Spencer Rd
Frederick Rd
Northumberland St
Elizabeth Hills
Nexgate Blvd
Lord Howe Dr
Wilton Rd
Gloucester St
Simpson Rd
Dowland St
Aplin Rd
Delgarno Rd
Capricorn Blvd
North Liverpool Rd
Green Valley Rd
The Valley Plaza
Whitford Rd
Busby Rd
Runcible Rd
Banks Rd
Marriott Rd
Gemalla St
Weanne Rd
Lalich Ave
Meadows Rd
Brown Rd
Brown
Elizabeth Dr
Lizard Log
Western Sydney Parklands
813
The Horsley Dr
Horsley
Horsley Park
Cowpasture Rd
Newton Rd
Victoria St
Quarry Rd
Marconi Rd
Bossley Rd
Mimosa Rd
Restwell Rd
Prairie Vale Rd
Roony Ave
Stockdale Cres
Darling St
Abbotsbury
Greenfield Rd
Powhatan St
Cheyenne Rd
Cherokee Ave
Mimosa Rd
Arrowhead Rd
Sweethaven Rd
Myrtle Rd
Clear Paddock
St Johns
Brisbane Rd
Edensor Park
Bonnyrigg
Bonnyrigg Heights
Cecil Hills
Elizabeth Hills
Len Waters Estate
Middleton Grange
West Hoxton
Hoxton Park
Carnes Hill
Green Valley
Busby
Heckenberg
Sadleir
Ashcroft
Miller
Cartwright
Hinchinbrook
Mount Pritchard
Cabramatta West
Canley Heights
Canley Vale
Carramar
Fairfield East
Yennora
Old Guildford
Guildford
Guildford West
Woodpark
Merrylands West
Merrylands
Granville
South Granville
Harris Park
Holroyd
Parramatta
Westmead
North Parramatta
Wentworthville
Pendle Hill
Girraween
Prospect
Pemulwuy
Greystanes
Seven Hills
Toongabbie
Constitution Hill
Northmead
Kings Park
Blacktown
Rooty Hill
Minchinbury
Eastern Creek
Erskine Park
Oxley Park
Plumpton
Whalan
North St Marys
Werrington
Kingswood
Claremont Meadows
Caddens
St Marys
Orchard Hills
St Clair
Colyton
Mount Druitt
Rooty Hill
Mount Vernon
Cecil Park
Badgerys Creek
Kemps Creek
Horsley Park

Legend
Bus Route
Diversion/Extended Route
Liverpool-Parramatta T-way
Multiple Routes on Corridor
800 Bus Route Number
Train Station
Bus Route Terminus
T-way Stop
Ferry Wharf
North

TRANSIT SYSTEMS

Westmead Station Public Transport Map



T1 *North Shore, Northern & Western Line*
North Shore
Western
Richmond

T5 *Cumberland Line*
Leppington
Richmond

Blue Mountains

B

Stop: 2145557	
705	Parramatta
708	Parramatta
711	Parramatta
N70	City Town Hall
N71	City Town Hall
T60	Parramatta
T61	Parramatta
T62	Parramatta
T63	Parramatta
T64	Parramatta
T65	Parramatta
T66	Parramatta

Stop: 214511	
705	Blacktown
708	Constitution Hill
711	Blacktown
N70	Penrith
N71	Richmond
T60	Castle Hill
T61	Blacktown
T62	Castle Hill
T63	Rouse Hill Town Centre
T64	Rouse Hill Town Centre
T65	Rouse Hill Town Centre
T66	Rouse Hill

For more information
transportnsw.info

NSW GOVERNMENT | Transport

1809PTM-E-WMD-A3P-WCAG

Appendix B

Bus Services

Parramatta, Fairfield & Liverpool region network effective 18 April 2021

B

St Marys & WSU Penrith inset

Kingswood Station
Kingswood
835
Second Ave
Burgelly Rd
O'Connell St
Great Western Hwy
Werrington Station
Werrington
St Marys Station
Station St
Charles Hackett Dr
Queen St
Glossop St
North St Marys
Whalan
Plumpton
Oxley Park
Mount Druitt Station
Mount Druitt
Rooty Hill
Rooty Hill Station
Kingswood
Claremont Meadows
Caddens
St Marys
Bennett Rd
Colyton
Minchinbury
Orchard Hills
St Clair
Erskine Park
Erskine Park Rd
Lenore Dr
Eastern Creek
Continues on main map

Merrylands inset

Treves St
McFarlane St
Pitt St
Terminal Pl
Neil St
Merrylands Rd
Addlestone Rd
Merrylands Station
Merrylands
809 818 822
810X 820

Fairfield inset

Smart St
Nelson St
The Hexagon Dr
Court Rd
The Crescent
Hamilton Rd
Fairfield Station
800 813
808 814
817
Fairfield

Parramatta inset

Parramatta
T80 810X
802 811X
804 824
806
Pitt St
Argyle St
Great Western Hwy
Church St
Parramatta Station
Pitt
T80 810X 811X

Cecil Park & Badgerys Creek inset

Horsley Park
Burley Rd
Delawarre Rd
Acuna Rd
Horsley Rd
Garfield Rd
Carroll Hill Dr
Mount Vernon
Mount Vernon Rd
Jersey Rd
Mamre Rd
Swick Ave
Cecil Park
Elizabeth Dr
Badgerys Creek Rd
Badgerys Creek
Western Rd
Kemps Creek
Devonshire Rd
Watts Rd
Herbert St
Lee & Clark Rd
Continues on main map

Continues on St Marys & WSU Penrith inset

Continues on Cecil Park & Badgerys Creek inset

Fairfield inset

Fairfield Station
See Fairfield inset for details

Cabramatta inset

McBurney Rd
Hughes St
Railway Pde
Hill St
John St
Cabramatta Rd W
Church St
Boundary Lane
Cabramatta Station
See Cabramatta inset for details

Liverpool inset

Lachlan St
Bigge St
Goulburn St
Campbell St
George St
Elizabeth Dr
Moore St
Northumberland St
College St
Memorial Ave
Copeland St
Macquarie
Liverpool Station
See Liverpool inset for details

Parramatta inset

See Parramatta inset for details

Merrylands inset

Merrylands Station
See Merrylands inset for details

Kings Park
Marayong Station
Blacktown
800 812
Blacktown
Blacktown Station
Richmond Rd
Patrick St
Newton Rd
Main St
Blacktown Rd
Seven Hills
Seven Hills Station
Toongabbie Station
Toongabbie
Constitution Hill
Northmead
Pendle Hill Station
Pendle Hill
Girraween
Prospect
Prospect Hwy
Prospect Reservoir
Pemulwuy
810X
Nijong Dr
Wombat St
Driftway Dr
Pemulwuy
809 811X
Bungarun Dr
Greystanes Rd
Bathurst St
Old Prospect Rd
Greystanes
Gipps Rd
Watson Tench Pde
Merrylands Rd
Whalans Rd
Kirkham St
Jonathan St
Cumberland Rd
Braeside Rd
Gossa Rd
Clunies Ross St
Wentworthville
Wentworthville Station
Dunmore St
Veron St
Station St
Lane St
Bridge Rd
Darcy Rd
Westmead
818 824
Westmead
Westmead Station
Hawkesbury Rd
Hainsworth St
Parramatta River
Park Ave
North Parramatta
Parramatta
T80 810X
802 811X
804 824
806
Parramatta Station
Pitt
Argyle St
Church St
Lansdowne St
Harris Park Station
Harris Park
South Wentworthville
Finlayson
T-way
Great Western Hwy
Allen St
Coleman
Mays Hill
Mays Hill
Pitt
Old Prospect Rd
Centenary Rd
Richmond St
Hamilton St
Friend St
Coleman St
Centenary
Wirralee St
Boronia St
Hollywood St
Frances St
Crimea St
Franklin St
Railway St
Burnett St
Marsden St
Douglas St
Irrigation Rd
Hilltop Rd
Holroyd Rd
Holroyd
Merrylands
Merrylands West
Sherwood
Kenyons Rd
Bruce St
Duffy St
Canal
Barcom St
Woodpark Rd
Woodpark
Warren
Warren Rd
Smithfield
Smithfield
821PM
821AM
Cooper
Summit St
Long St
Cooper St
T-way
Woodpark Rd
Guildford West
821
Guildford West
Bristol St
Albert St
Hawksview St
Chetwynd Rd
Tower Rd
Fowler Rd
Denmark St
Myall St
Railway Tce
Patten Ave
Lowe St
Claremont St
Ann St
Granville
Merrylands
809 818 822
810X 820
Merrylands Rd
Adderstone Rd
Treves St
McFarlane St
Neil St
Lotus St
Monroe Ave
Sheffield St
Windsor Rd
Yennora
Yennora Station
Fairfield East
Fairfield
Fairfield Heights
Fairfield West
Wakeley
Greenfield Park
Abbotsbury
Prairiewood
Bossley Park
Pemulwuy
Prairiewood
819 835
Prairiewood
Orphan School
T80 819
Prairie Vale Rd
Polding St
Brenan St
Shakespeare St
Wetherill St
Ully St
Justin St
Victoria St
Chifley St
Market St
Smithfield
814
Smithfield
Wetherill Park
Victoria
Elizabeth
Wetherill
Hassall St
Redfern St
Frank St
Gipps Rd
Davis Rd
Newton Rd
Victoria St
Cowpasture Rd
Canley Vale Rd
Canley Heights
Canley Vale
Canley Vale Station
Carramar
Carramar Station
Cabramatta West
Cabramatta
805 815 817
807 816
Cabramatta
Cabramatta Station
St Johns Rd
Humphries Rd
Edensor Rd
Harrington St
Gladstone St
Railway Pde
McBurney Rd
John St
Cabramatta Rd W
Meadows Rd
Mount Pritchard
Anderson Ave
David St
Oliphant St
Townview Rd
Orange Grove Rd
Warwick Farm
Warwick Farm Station
Lawrence Hargrave Dr
Gallop St
Nicholls St
Station Rd
Hume Hwy
Hinkler Ave
McGirr Pde
Homepride Ave
Parkes Rd
Lachlan St
Bigge St
Goulburn St
Campbell St
George St
Elizabeth St
College St
Moore St
Northumberland St
Macquarie
Liverpool
Liverpool Station
Georges River
Memorial
Memorial Ave
Copeland St
Brickmakers
Maxwells
Ash
Hoxton Park Rd
Hoxton Park
Carnes Hill
827
Kurrajong Rd
Carnes Hill
West Hoxton
Middleton Grange
Len Waters Estate
Green Valley
Busby
Heckenberg
Heckenberg
S10
Sadleir
Ashcroft
Miller
Miller
S10
Cartwright
Cartwright Ave
Hinchinbrook
Hinchinbrook Dr
Partridge Ave
Whitford Rd
Whitford Pde
Cowpasture Rd
Bonnyrigg
813
Bonnyrigg
Bonnyrigg Heights
Bonnyrigg Ave
Tarlington Pde
Wall Pl
Newleaf Pde
Edensor Park
Edensor Rd
Kalang Rd
Bonnymarang Rd
Smithfield Rd
Clear Paddock
St Johns
St Johns Park
Brisbane Rd
Melbourne Rd
Bulls Rd
Avoca Rd
King Rd
Thorney Rd
Maud St
Kalora Ave
The Boulevarde
Sackville St
Avenel St
Hampton St
Frederick St
Larkey St
Cunningham St
Smart St
Court Rd
Station St
Marlborough St
Sackville St
Cecil Hills
807
Cecil Hills
Athlone St
Lascelles St
Rosebank Ave
Gowanlea Ave
Reynolds Dr
Feodore Dr
Spencer Rd
Frederick Rd
Northumberland St
Elizabeth Hills
Nexgate Blvd
Lord Howe Dr
Wilton Rd
Gloucester St
Simpson Rd
Dowland St
Aplin Rd
Delgarno Rd
Capricorn Blvd
North Liverpool Rd
Green Valley Rd
The Valley Plaza
Whitford Rd
Busby Rd
Runcible Rd
Banks Rd
Marriott Rd
Gemalla St
Weanne Rd
Lalich Ave
Meadows Rd
Brown Rd
Brown
Elizabeth Dr
Lizard Log
Western Sydney Parklands
813
The Horsley Dr
Horsley
Horsley Park
Cowpasture Rd
Newton Rd
Victoria St
Quarry Rd
Marconi Rd
Bossley Rd
Mimosa Rd
Restwell Rd
Prairie Vale Rd
Roony Ave
Stockdale Cres
Darling St
Abbotsbury
Greenfield Rd
Powhatan St
Cheyenne Rd
Cherokee Ave
Mimosa Rd
Arrowhead Rd
Sweethaven Rd
Myrtle Rd
Clear Paddock
St Johns
Brisbane Rd
Edensor Park
Bonnyrigg
Bonnyrigg Heights
Cecil Hills
Elizabeth Hills
Len Waters Estate
Middleton Grange
West Hoxton
Hoxton Park
Carnes Hill
Green Valley
Busby
Heckenberg
Sadleir
Ashcroft
Miller
Cartwright
Hinchinbrook
Mount Pritchard
Cabramatta West
Canley Heights
Canley Vale
Carramar
Fairfield East
Yennora
Old Guildford
Guildford
Guildford West
Woodpark
Merrylands West
Merrylands
Granville
South Granville
Harris Park
Holroyd
Parramatta
Westmead
North Parramatta
Wentworthville
Pendle Hill
Girraween
Prospect
Pemulwuy
Greystanes
Seven Hills
Toongabbie
Constitution Hill
Northmead
Kings Park
Blacktown
Rooty Hill
Minchinbury
Eastern Creek
Erskine Park
Oxley Park
Plumpton
Whalan
North St Marys
Werrington
Kingswood
Claremont Meadows
Caddens
St Marys
Orchard Hills
St Clair
Colyton
Mount Druitt
Rooty Hill
Mount Vernon
Cecil Park
Badgerys Creek
Kemps Creek
Horsley Park

Legend
Bus Route
Diversion/Extended Route
Liverpool-Parramatta T-way
Multiple Routes on Corridor
800 Bus Route Number
Train Station
Bus Route Terminus
T-way Stop
Ferry Wharf
North

TRANSIT SYSTEMS

824 Westmead Hospitals to Parramatta via South Wentworthville

B

How to use this timetable

This timetable provides a snapshot of service information in 24-hour time (e.g. 5am = 05:00, 5pm = 17:00). Information contained in this timetable is subject to change without notice. Please note that timetables do not include minor stops, additional trips for special events, short term changes, holiday timetable changes, real-time information or any disruption alerts.

For the most up-to-date times, use the Trip Planner or Departures at **transportnsw.info**

Real-time planning

You can plan your trip with real-time information using the Trip Planner or Departures at **transportnsw.info** or by downloading travel apps on your smartphone or tablet.

The Trip Planner, Departures and travel apps offer various features:

- favourite your regular trips
- see where your service is on the route
- get estimated pick-up and arrival times
- receive service updates
- find nearby stations, stops, wharves and routes
- check accessibility information.

Find the latest apps at **transportnsw.info/apps**

Accessible services

All new buses are wheelchair-accessible with low-level floors and space for wheelchairs, prams or strollers. Look for the ♿ symbol in this timetable. Some older buses may not have all the features you need. There will be more accessible services as older buses are replaced.

Who is providing my bus services?

The bus services shown in this timetable are run by Transit Systems.

Fares

In Sydney and surrounding regions, fares are based on:

- the distance you travel from tap on to tap off
- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

You can use an Opal card or a contactless payment to pay for your travel.

Opal cards

An Opal card is a smartcard you keep and reuse. Add value before you travel, and tap on and tap off to pay your fares throughout Sydney, the Blue Mountains, the Central Coast, the Hunter and the Illawarra.

Which Opal card is right for you?

Adult – Customers 16 years or older who are not entitled to any concessions and normally pay full fare.

Child/Youth – For customers aged 4-15 (inclusive), or customers 16 years or older who hold a NSW/ACT Senior Secondary Student Concession Card.

Gold Senior/Pensioner – For eligible NSW and interstate seniors, pensioners, war widows/ers and asylum seekers.

Concession – For eligible tertiary students, job seekers, apprentices and trainees.

How to get an Opal card

You can get an Adult or Child/Youth Opal card over the counter at Opal retailers that display the Opal sign. To find your nearest retailer visit **transportnsw.info/opal**.

If you are eligible to travel with concession fares, you can apply for a Gold Senior/Pensioner or Concession Opal card online. Visit **transportnsw.info/opal** for more information.

Contactless payments

If you have an American Express, Mastercard, Visa card or linked device, you can use it to pay for all public transport on the Opal network. Just make sure to tap on and tap off at Opal readers at the beginning and end of your trip.

Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿ Wheelchair Accessible

NSW GOVERNMENT | Transport

824 Parramatta to Westmead Hospitals via South Wentworthville

B

Valid from: 01 Feb 2022

Creation date: 17 March 2022
NOTE: Information is correct on date of download.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	05:40	06:10	06:40	07:10	07:40	08:10	08:40	09:10	09:40
Hilltop Shops, Hilltop Rd, Merrylands	05:54	06:24	06:54	07:24	07:54	08:24	08:54	09:24	09:54
Hilltop Rd near Coleman St, Merrylands	05:55	06:25	06:55	07:25	07:55	08:25	08:55	09:25	09:55
Allen St near Finlayson St, South Wentworthville	06:01	06:31	07:01	07:31	08:01	08:31	09:01	09:31	10:01
Dunmore St at Station St, Wentworthville	-	-	07:06	07:36	08:06	08:36	09:06	09:36	10:06
Westmead Hospital, North West Twy, Westmead	-	-	07:17	07:47	08:17	08:47	09:17	09:47	10:17
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	-	-	07:21	07:51	08:21	08:51	09:21	09:51	10:21

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10
Hilltop Shops, Hilltop Rd, Merrylands	10:24	10:54	11:24	11:54	12:24	12:54	13:24	13:54	14:24
Hilltop Rd near Coleman St, Merrylands	10:25	10:55	11:25	11:55	12:25	12:55	13:25	13:55	14:25
Allen St near Finlayson St, South Wentworthville	10:31	11:01	11:31	12:01	12:31	13:01	13:31	14:01	14:31
Dunmore St at Station St, Wentworthville	10:36	11:06	11:36	12:06	12:36	13:06	13:36	14:06	14:36
Westmead Hospital, North West Twy, Westmead	10:47	11:17	11:47	12:17	12:47	13:17	13:47	14:17	14:47
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	10:51	11:21	11:51	12:21	12:51	13:21	13:51	14:21	14:51

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	14:40	15:10	15:40	16:10	16:40	17:10	17:40	18:10	18:40
Hilltop Shops, Hilltop Rd, Merrylands	14:54	15:24	15:54	16:24	16:54	17:24	17:54	18:24	18:54
Hilltop Rd near Coleman St, Merrylands	14:55	15:25	15:55	16:25	16:55	17:25	17:55	18:25	18:55
Allen St near Finlayson St, South Wentworthville	15:01	15:31	16:01	16:31	17:01	17:31	18:01	18:31	19:01
Dunmore St at Station St, Wentworthville	15:06	15:36	16:06	16:36	17:06	17:36	18:06	18:36	19:06
Westmead Hospital, North West Twy, Westmead	15:17	15:47	16:17	16:47	17:17	17:47	18:17	18:47	19:17
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	15:21	15:51	16:21	16:51	17:21	17:51	18:21	18:51	19:21

Monday to Friday	♿	♿	♿	♿	♿
Parramatta Station	19:10	19:40	20:10	20:40	21:40
Hilltop Shops, Hilltop Rd, Merrylands	19:24	19:54	20:24	20:54	21:54
Hilltop Rd near Coleman St, Merrylands	19:25	19:55	20:25	20:55	21:55
Allen St near Finlayson St, South Wentworthville	19:31	20:01	20:31	21:01	22:01
Dunmore St at Station St, Wentworthville	19:36	-	-	-	-
Westmead Hospital, North West Twy, Westmead	19:47	-	-	-	-
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	19:51	-	-	-	-

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	06:10	06:40	07:10	07:40	08:10	08:40	09:10	09:40	10:10
Hilltop Shops, Hilltop Rd, Merrylands	06:21	06:51	07:21	07:51	08:21	08:51	09:21	09:51	10:21
Hilltop Rd near Coleman St, Merrylands	06:22	06:52	07:22	07:52	08:22	08:52	09:22	09:52	10:22
Allen St near Finlayson St, South Wentworthville	06:29	06:59	07:29	07:59	08:29	08:59	09:29	09:59	10:29

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40
Hilltop Shops, Hilltop Rd, Merrylands	10:51	11:21	11:51	12:21	12:51	13:21	13:51	14:21	14:51
Hilltop Rd near Coleman St, Merrylands	10:52	11:22	11:52	12:22	12:52	13:22	13:52	14:22	14:52
Allen St near Finlayson St, South Wentworthville	10:59	11:29	11:59	12:29	12:59	13:29	13:59	14:29	14:59

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	15:10	15:40	16:10	16:40	17:10	17:40	18:10	18:40	19:10
Hilltop Shops, Hilltop Rd, Merrylands	15:21	15:51	16:21	16:51	17:21	17:51	18:21	18:51	19:21
Hilltop Rd near Coleman St, Merrylands	15:22	15:52	16:22	16:52	17:22	17:52	18:22	18:52	19:22
Allen St near Finlayson St, South Wentworthville	15:29	15:59	16:29	16:59	17:29	17:59	18:29	18:59	19:29

824 Parramatta to Westmead Hospitals via South Wentworthville

B

Saturday	♿	♿	♿	♿
Parramatta Station	19:40	20:40	21:40	22:40
Hilltop Shops, Hilltop Rd, Merrylands	19:51	20:51	21:51	22:51
Hilltop Rd near Coleman St, Merrylands	19:52	20:52	21:52	22:52
Allen St near Finlayson St, South Wentworthville	19:59	20:59	21:59	22:59

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	06:10	06:40	07:10	07:40	08:10	08:40	09:10	09:40	10:10
Hilltop Shops, Hilltop Rd, Merrylands	06:20	06:50	07:20	07:50	08:20	08:50	09:20	09:50	10:20
Hilltop Rd near Coleman St, Merrylands	06:21	06:51	07:21	07:51	08:21	08:51	09:21	09:51	10:21
Allen St near Finlayson St, South Wentworthville	06:27	06:57	07:27	07:57	08:27	08:57	09:27	09:57	10:27

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40
Hilltop Shops, Hilltop Rd, Merrylands	10:50	11:20	11:50	12:20	12:50	13:20	13:50	14:20	14:50
Hilltop Rd near Coleman St, Merrylands	10:51	11:21	11:51	12:21	12:51	13:21	13:51	14:21	14:51
Allen St near Finlayson St, South Wentworthville	10:57	11:27	11:57	12:27	12:57	13:27	13:57	14:27	14:57

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	15:10	15:40	16:10	16:40	17:10	17:40	18:10	18:40	19:10
Hilltop Shops, Hilltop Rd, Merrylands	15:20	15:50	16:20	16:50	17:20	17:50	18:20	18:50	19:20
Hilltop Rd near Coleman St, Merrylands	15:21	15:51	16:21	16:51	17:21	17:51	18:21	18:51	19:21
Allen St near Finlayson St, South Wentworthville	15:27	15:57	16:27	16:57	17:27	17:57	18:27	18:57	19:27

Sunday & Public Holidays	♿	♿	♿
Parramatta Station	19:40	20:40	21:40
Hilltop Shops, Hilltop Rd, Merrylands	19:50	20:50	21:50
Hilltop Rd near Coleman St, Merrylands	19:51	20:51	21:51
Allen St near Finlayson St, South Wentworthville	19:57	20:57	21:57

824 Westmead Hospitals to Parramatta via South Wentworthville

B

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	-	-	-	-	-	07:24	07:54	08:24	08:54
Dunmore St before Station St, Wentworthville	-	-	-	-	-	07:36	08:06	08:36	09:06
Allen St near Finlayson St, South Wentworthville	05:13	05:43	06:11	06:41	07:11	07:43	08:13	08:43	09:13
Hilltop Rd opp Hilltop Shops, Merrylands	05:19	05:49	06:19	06:49	07:19	07:49	08:19	08:49	09:19
Parramatta Station	05:30	06:00	06:30	07:00	07:30	08:00	08:30	09:00	09:30

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	09:24	09:54	10:24	10:54	11:24	11:54	12:24	12:54	13:24
Dunmore St before Station St, Wentworthville	09:36	10:06	10:36	11:06	11:36	12:06	12:36	13:06	13:36
Allen St near Finlayson St, South Wentworthville	09:43	10:13	10:43	11:13	11:43	12:13	12:43	13:13	13:43
Hilltop Rd opp Hilltop Shops, Merrylands	09:49	10:19	10:49	11:19	11:49	12:19	12:49	13:19	13:49
Parramatta Station	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	13:54	14:24	14:54	15:24	15:54	16:24	16:54	17:24	17:54
Dunmore St before Station St, Wentworthville	14:06	14:36	15:06	15:36	16:06	16:36	17:06	17:36	18:06
Allen St near Finlayson St, South Wentworthville	14:13	14:43	15:13	15:43	16:13	16:43	17:13	17:43	18:13
Hilltop Rd opp Hilltop Shops, Merrylands	14:19	14:49	15:19	15:49	16:19	16:49	17:19	17:49	18:19
Parramatta Station	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30

Monday to Friday					
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	18:24	18:54	19:24	19:54	-
Dunmore St before Station St, Wentworthville	18:36	19:06	19:36	20:06	-
Allen St near Finlayson St, South Wentworthville	18:43	19:13	19:43	20:13	21:11
Hilltop Rd opp Hilltop Shops, Merrylands	18:49	19:19	19:49	20:19	21:19
Parramatta Station	19:00	19:30	20:00	20:30	21:30

Saturday									
Allen St near Finlayson St, South Wentworthville	05:42	06:12	06:42	07:12	07:42	08:12	08:42	09:12	09:42
Hilltop Rd opp Hilltop Shops, Merrylands	05:48	06:18	06:48	07:18	07:48	08:18	08:48	09:18	09:48
Parramatta Station	06:00	06:30	07:00	07:30	08:00	08:30	09:00	09:30	10:00

Saturday									
Allen St near Finlayson St, South Wentworthville	10:12	10:42	11:12	11:42	12:12	12:42	13:12	13:42	14:12
Hilltop Rd opp Hilltop Shops, Merrylands	10:18	10:48	11:18	11:48	12:18	12:48	13:18	13:48	14:18
Parramatta Station	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30

Saturday									
Allen St near Finlayson St, South Wentworthville	14:42	15:12	15:42	16:12	16:42	17:12	17:42	18:12	18:42
Hilltop Rd opp Hilltop Shops, Merrylands	14:48	15:18	15:48	16:18	16:48	17:18	17:48	18:18	18:48
Parramatta Station	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00

Saturday				
Allen St near Finlayson St, South Wentworthville	19:12	20:12	21:12	22:12
Hilltop Rd opp Hilltop Shops, Merrylands	19:18	20:18	21:18	22:18
Parramatta Station	19:30	20:30	21:30	22:30

Sunday & Public Holidays									
Allen St near Finlayson St, South Wentworthville	05:42	06:12	06:42	07:12	07:42	08:12	08:42	09:12	09:42
Hilltop Rd opp Hilltop Shops, Merrylands	05:48	06:18	06:48	07:18	07:48	08:18	08:48	09:18	09:48
Parramatta Station	06:00	06:30	07:00	07:30	08:00	08:30	09:00	09:30	10:00

Sunday & Public Holidays									
Allen St near Finlayson St, South Wentworthville	10:12	10:42	11:12	11:42	12:12	12:42	13:12	13:42	14:12
Hilltop Rd opp Hilltop Shops, Merrylands	10:18	10:48	11:18	11:48	12:18	12:48	13:18	13:48	14:18
Parramatta Station	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30

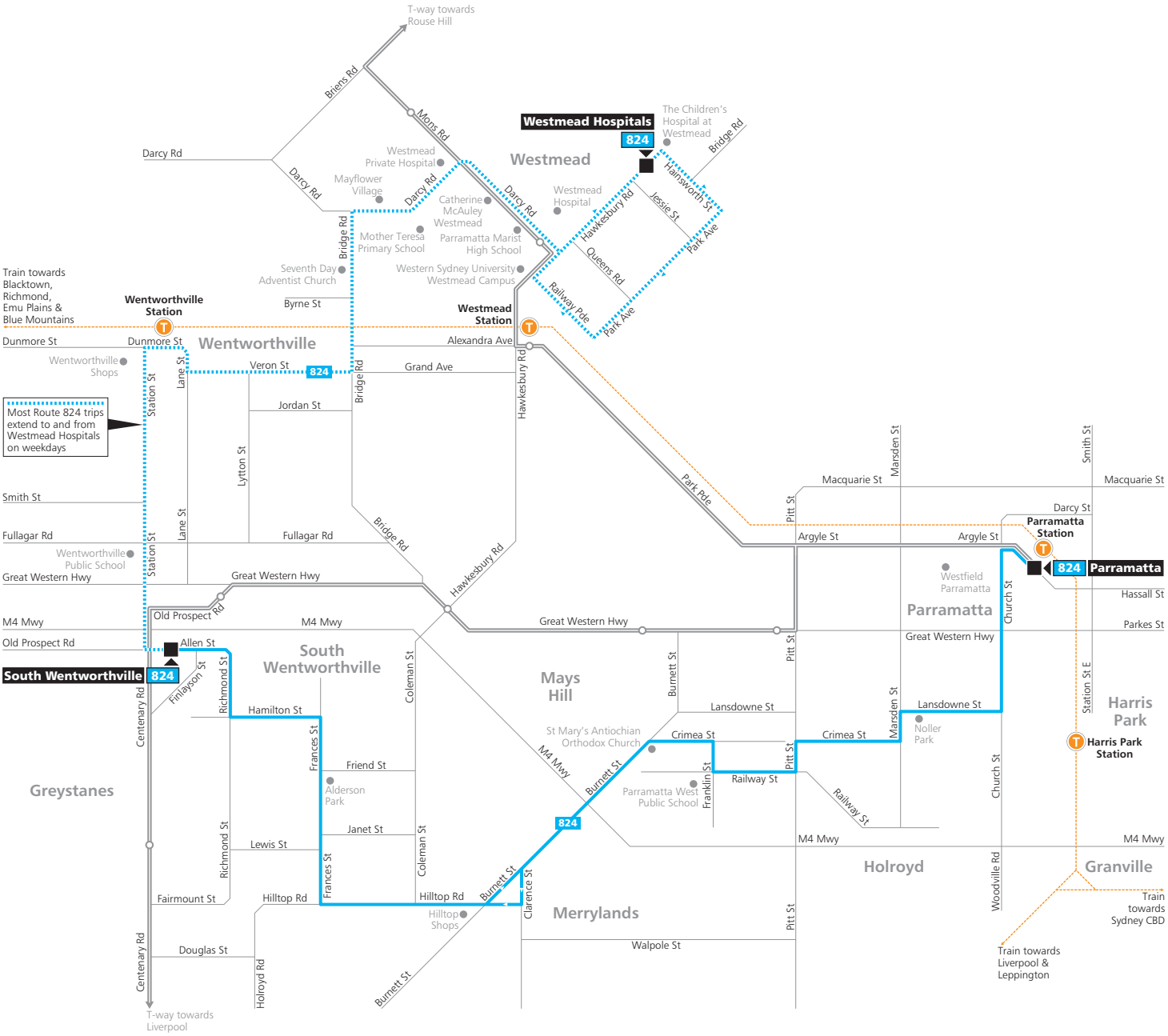
Sunday & Public Holidays									
Allen St near Finlayson St, South Wentworthville	14:42	15:12	15:42	16:12	16:42	17:12	17:42	18:12	18:42
Hilltop Rd opp Hilltop Shops, Merrylands	14:48	15:18	15:48	16:18	16:48	17:18	17:48	18:18	18:48
Parramatta Station	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00

824 Westmead Hospitals to Parramatta via South Wentworthville

B

Sunday & Public Holidays	♿	♿	♿
Allen St near Finlayson St, South Wentworthville	19:12	20:12	21:12
Hilltop Rd opp Hilltop Shops, Merrylands	19:18	20:18	21:18
Parramatta Station	19:30	20:30	21:30

Route 824



Legend

- Bus route
- 824 Bus route number
- Bus route start/finish
- Train line/station
- T-way/stop near route

North

Diagrammatic Map
Not to Scale

NSW GOVERNMENT

Transport

transportnsw.info

711 Blacktown to Parramatta via Wentworthville

B

How to use this timetable

This timetable provides a snapshot of service information in 24-hour time (e.g. 5am = 05:00, 5pm = 17:00). Information contained in this timetable is subject to change without notice. Please note that timetables do not include minor stops, additional trips for special events, short term changes, holiday timetable changes, real-time information or any disruption alerts.

For the most up-to-date times, use the Trip Planner or Departures at **transportnsw.info**

Real-time planning

You can plan your trip with real-time information using the Trip Planner or Departures at **transportnsw.info** or by downloading travel apps on your smartphone or tablet.

The Trip Planner, Departures and travel apps offer various features:

- favourite your regular trips
- see where your service is on the route
- get estimated pick-up and arrival times
- receive service updates
- find nearby stations, stops, wharves and routes
- check accessibility information.

Find the latest apps at **transportnsw.info/apps**

Accessible services

All new buses are wheelchair-accessible with low-level floors and space for wheelchairs, prams or strollers. Look for the ♿ symbol in this timetable. Some older buses may not have all the features you need. There will be more accessible services as older buses are replaced.

Who is providing my bus services?

The bus services shown in this timetable are run by Hillsbus.

Fares

In Sydney and surrounding regions, fares are based on:

- the distance you travel from tap on to tap off
- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

You can use an Opal card or a contactless payment to pay for your travel.

Opal cards

An Opal card is a smartcard you keep and reuse. Add value before you travel, and tap on and tap off to pay your fares throughout Sydney, the Blue Mountains, the Central Coast, the Hunter and the Illawarra.

Which Opal card is right for you?

Adult – Customers 16 years or older who are not entitled to any concessions and normally pay full fare.

Child/Youth – For customers aged 4-15 (inclusive), or customers 16 years or older who hold a NSW/ACT Senior Secondary Student Concession Card.

Gold Senior/Pensioner – For eligible NSW and interstate seniors, pensioners, war widows/ers and asylum seekers.

Concession – For eligible tertiary students, job seekers, apprentices and trainees.

How to get an Opal card

You can get an Adult or Child/Youth Opal card over the counter at Opal retailers that display the Opal sign. To find your nearest retailer visit **transportnsw.info/opal**.

If you are eligible to travel with concession fares, you can apply for a Gold Senior/Pensioner or Concession Opal card online. Visit **transportnsw.info/opal** for more information.

Contactless payments

If you have an American Express, Mastercard, Visa card or linked device, you can use it to pay for all public transport on the Opal network. Just make sure to tap on and tap off at Opal readers at the beginning and end of your trip.

Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿	Wheelchair Accessible
N	Departs from Parramatta Interchange Stand B2 Nightsafe area
N	Departs from Stand B2 Nightsafe area
A	Diverts via Pendle Hill HS (School Days)

NSW GOVERNMENT Transport

711 Parramatta to Blacktown via Wentworthville

B

Valid from: 31 Jan 2022

Creation date: 17 March 2022
NOTE: Information is correct on date of download.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	04:53	-	05:41	06:05	-	06:58	07:28	07:58	08:33
Westmead Station	04:58	-	05:46	06:10	-	07:04	07:34	08:04	08:39
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	05:02	-	05:50	06:14	-	07:09	07:39	08:09	08:44
Darcy Rd after Hawkesbury Rd, Westmead	05:05	-	05:53	06:17	-	07:13	07:43	08:13	08:48
Wentworthville Station	05:09	-	05:57	06:22	-	07:19	07:49	08:19	08:54
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	05:18	-	06:06	06:31	-	07:29	08:01	08:31	09:06
Toongabbie Station	05:27	-	06:16	06:41	-	07:39	08:11	08:41	09:16
The Hills Sports High School, Seven Hills	05:30	-	06:20	06:45	-	07:43	08:15	08:45	09:20
Seven Hills Interchange	05:35	06:05	06:26	06:51	07:26	07:50	08:22	08:52	09:27
Lalor Park Library, Freeman St, Lalor Park	05:41	06:13	06:34	06:59	07:36	08:00	08:32	09:02	09:37
Phillip St at Collins St, Seven Hills	05:44	06:16	06:37	07:03	07:41	08:05	08:37	09:07	09:42
Blacktown Station	05:53	06:27	06:48	07:14	07:55	08:19	08:51	09:21	09:56
Westpoint Bus Interchange, Blacktown	05:56	06:30	06:51	07:17	07:58	08:22	08:54	09:24	09:59

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	09:03	09:40	10:10	10:40	11:10	11:40	12:10	12:40	13:10
Westmead Station	09:09	09:46	10:16	10:46	11:16	11:46	12:16	12:46	13:16
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	09:14	09:51	10:21	10:51	11:21	11:51	12:21	12:51	13:21
Darcy Rd after Hawkesbury Rd, Westmead	09:18	09:55	10:25	10:55	11:25	11:55	12:25	12:55	13:25
Wentworthville Station	09:24	10:01	10:31	11:01	11:31	12:01	12:31	13:01	13:31
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	09:35	10:11	10:40	11:10	11:40	12:10	12:40	13:10	13:40
Toongabbie Station	09:45	10:21	10:49	11:19	11:49	12:19	12:49	13:19	13:49
The Hills Sports High School, Seven Hills	09:48	10:25	10:52	11:22	11:52	12:22	12:52	13:22	13:52
Seven Hills Interchange	09:54	10:31	10:58	11:28	11:58	12:28	12:58	13:28	13:58
Lalor Park Library, Freeman St, Lalor Park	10:03	10:39	11:06	11:36	12:06	12:36	13:06	13:36	14:06
Phillip St at Collins St, Seven Hills	10:07	10:43	11:10	11:40	12:10	12:40	13:10	13:40	14:10
Blacktown Station	10:18	10:54	11:21	11:51	12:21	12:51	13:21	13:51	14:21
Westpoint Bus Interchange, Blacktown	10:21	10:57	11:24	11:54	12:24	12:54	13:24	13:54	14:24

Monday to Friday	♿	♿	♿	♿	♿		♿	♿	♿
Parramatta Station	13:40	14:10	14:39	15:05	15:35	16:05	16:40	16:55	17:10
Westmead Station	13:46	14:17	14:46	15:12	15:42	16:12	16:47	17:02	17:18
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	13:51	14:22	14:51	15:17	15:47	16:17	16:52	17:08	17:23
Darcy Rd after Hawkesbury Rd, Westmead	13:55	14:26	14:56	15:22	15:52	16:22	16:57	17:13	17:28
Wentworthville Station	14:01	14:32	15:03	15:29	15:59	16:29	17:04	17:20	17:35
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	14:10	14:42	15:15	15:41	16:09	16:40	17:15	17:31	17:46
Toongabbie Station	14:21	14:54	15:28	15:54	16:21	16:51	17:26	17:42	17:57
The Hills Sports High School, Seven Hills	14:25	14:58	15:32	15:58	16:25	16:55	17:30	17:46	18:01
Seven Hills Interchange	14:33	15:05	15:39	16:06	16:32	17:02	17:37	17:53	18:08
Lalor Park Library, Freeman St, Lalor Park	14:41	15:14	15:48	16:16	16:41	17:11	17:46	18:02	18:17
Phillip St at Collins St, Seven Hills	14:45	15:18	15:52	16:20	16:45	17:15	17:50	18:06	18:21
Blacktown Station	14:56	15:29	16:03	16:29	16:54	17:24	17:59	18:15	18:30
Westpoint Bus Interchange, Blacktown	14:59	15:32	16:06	16:32	16:57	17:27	18:02	18:18	18:33

711 Parramatta to Blacktown via Wentworthville

B

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	17:25	17:40	17:55	18:15	18:48	19:18	19:48	20:18	20:48
Westmead Station	17:33	17:48	18:03	18:22	18:53	19:23	19:53	20:23	20:53
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	17:38	17:53	18:08	18:27	18:57	19:27	19:57	20:27	20:57
Darcy Rd after Hawkesbury Rd, Westmead	17:43	17:58	18:13	18:32	19:02	19:32	20:02	20:32	21:02
Wentworthville Station	17:50	18:05	18:20	18:39	19:07	19:37	20:07	20:37	21:07
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	18:01	18:15	18:30	18:48	19:16	19:45	20:15	20:45	21:15
Toongabbie Station	18:11	18:25	18:39	18:57	19:25	19:53	20:23	20:53	21:23
The Hills Sports High School, Seven Hills	18:15	18:29	18:43	19:01	19:29	19:57	20:27	20:57	21:27
Seven Hills Interchange	18:22	18:34	18:48	19:06	19:34	20:02	20:32	21:02	21:32
Lalor Park Library, Freeman St, Lalor Park	18:31	18:43	18:57	19:15	19:42	20:10	20:40	21:10	21:40
Phillip St at Collins St, Seven Hills	18:35	18:47	19:01	19:19	19:46	20:14	20:44	21:14	21:44
Blacktown Station	18:42	18:54	19:08	19:26	19:53	20:21	20:51	21:21	21:51
Westpoint Bus Interchange, Blacktown	18:45	18:57	19:11	19:29	19:56	20:24	20:54	21:24	21:54

Monday to Friday	♿	♿	♿	♿	♿
Parramatta Station	**N**21:18	**N**21:48	22:18	**N**22:48	23:48
Westmead Station	21:22	21:52	22:22	22:52	23:52
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	21:26	21:55	22:25	22:55	23:55
Darcy Rd after Hawkesbury Rd, Westmead	21:29	21:58	22:28	22:58	23:58
Wentworthville Station	21:34	22:03	22:33	23:03	00:03
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	21:42	22:11	22:41	23:11	00:11
Toongabbie Station	21:50	22:18	22:48	23:18	00:18
The Hills Sports High School, Seven Hills	21:54	22:22	22:52	23:22	00:22
Seven Hills Interchange	21:59	22:27	22:57	23:27	00:27
Lalor Park Library, Freeman St, Lalor Park	22:05	22:33	23:03	23:33	00:33
Phillip St at Collins St, Seven Hills	22:08	22:36	23:06	23:36	00:36
Blacktown Station	22:15	22:43	23:13	23:43	00:43
Westpoint Bus Interchange, Blacktown	22:18	22:46	23:16	23:46	00:46

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	-	07:30	08:30	09:00	09:30	10:00	10:30	11:00	11:30
Westmead Station	-	07:34	08:36	09:06	09:36	10:06	10:36	11:06	11:36
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	-	07:37	08:40	09:10	09:40	10:10	10:40	11:10	11:40
Darcy Rd after Hawkesbury Rd, Westmead	-	07:41	08:44	09:14	09:44	10:14	10:44	11:14	11:44
Wentworthville Station	-	07:46	08:50	09:20	09:50	10:20	10:50	11:20	11:50
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	-	07:54	08:59	09:29	09:59	10:29	10:59	11:29	11:59
Toongabbie Station	-	08:03	09:08	09:38	10:08	10:38	11:08	11:38	12:09
The Hills Sports High School, Seven Hills	-	08:06	09:11	09:41	10:11	10:41	11:11	11:41	12:12
Seven Hills Interchange	07:12	08:12	09:17	09:47	10:17	10:47	11:17	11:47	12:18
Lalor Park Library, Freeman St, Lalor Park	07:17	08:19	09:24	09:54	10:24	10:54	11:24	11:54	12:25
Phillip St at Collins St, Seven Hills	07:20	08:23	09:28	09:58	10:28	10:58	11:28	11:58	12:29
Blacktown Station	07:30	08:33	09:38	10:08	10:38	11:08	11:38	12:07	12:38
Westpoint Bus Interchange, Blacktown	07:33	08:36	09:41	10:11	10:41	11:11	11:41	12:10	12:41

711 Parramatta to Blacktown via Wentworthville

B

Saturday									
Parramatta Station	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00
Westmead Station	12:06	12:36	13:06	13:36	14:06	14:36	15:06	15:36	16:06
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10
Darcy Rd after Hawkesbury Rd, Westmead	12:14	12:44	13:14	13:44	14:14	14:44	15:14	15:44	16:14
Wentworthville Station	12:20	12:50	13:20	13:50	14:20	14:50	15:20	15:50	16:20
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	12:29	12:59	13:29	13:59	14:29	14:59	15:29	15:59	16:29
Toongabbie Station	12:39	13:09	13:39	14:09	14:39	15:09	15:39	16:09	16:39
The Hills Sports High School, Seven Hills	12:42	13:12	13:42	14:12	14:42	15:12	15:42	16:12	16:42
Seven Hills Interchange	12:48	13:18	13:48	14:18	14:48	15:18	15:48	16:18	16:48
Lalor Park Library, Freeman St, Lalor Park	12:55	13:25	13:55	14:25	14:55	15:25	15:55	16:25	16:55
Phillip St at Collins St, Seven Hills	12:59	13:29	13:59	14:29	14:59	15:29	15:59	16:29	16:59
Blacktown Station	13:08	13:38	14:08	14:38	15:08	15:38	16:08	16:38	17:08
Westpoint Bus Interchange, Blacktown	13:11	13:41	14:11	14:41	15:11	15:41	16:11	16:41	17:11

Saturday									
Parramatta Station	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30
Westmead Station	16:36	17:06	17:36	18:06	18:36	19:04	19:34	20:04	20:34
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	16:40	17:10	17:40	18:10	18:40	19:08	19:38	20:08	20:38
Darcy Rd after Hawkesbury Rd, Westmead	16:44	17:14	17:44	18:14	18:44	19:11	19:41	20:11	20:41
Wentworthville Station	16:50	17:20	17:50	18:20	18:50	19:16	19:46	20:16	20:46
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	16:59	17:29	17:59	18:29	18:59	19:24	19:54	20:24	20:54
Toongabbie Station	17:09	17:39	18:09	18:39	19:08	19:33	20:03	20:33	21:03
The Hills Sports High School, Seven Hills	17:12	17:42	18:12	18:42	19:11	19:36	20:06	20:36	21:06
Seven Hills Interchange	17:18	17:48	18:18	18:48	19:16	19:41	20:11	20:41	21:11
Lalor Park Library, Freeman St, Lalor Park	17:25	17:55	18:25	18:55	19:21	19:46	20:16	20:46	21:16
Phillip St at Collins St, Seven Hills	17:29	17:59	18:29	18:59	19:24	19:49	20:19	20:49	21:19
Blacktown Station	17:38	18:08	18:38	19:07	19:32	19:57	20:27	20:57	21:27
Westpoint Bus Interchange, Blacktown	17:41	18:11	18:41	19:10	19:35	20:00	20:30	21:00	21:30

Saturday				
Parramatta Station	**N**21:00	**N**21:30	**N**22:30	**N**23:30
Westmead Station	21:04	21:34	22:34	23:34
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	21:08	21:38	22:38	23:38
Darcy Rd after Hawkesbury Rd, Westmead	21:11	21:41	22:41	23:41
Wentworthville Station	21:15	21:45	22:45	23:45
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	21:23	21:53	22:53	23:53
Toongabbie Station	21:30	22:00	23:00	00:00
The Hills Sports High School, Seven Hills	21:33	22:03	23:03	00:03
Seven Hills Interchange	21:37	22:07	23:07	00:07
Lalor Park Library, Freeman St, Lalor Park	21:44	22:14	23:14	00:14
Phillip St at Collins St, Seven Hills	21:47	22:17	23:17	00:17
Blacktown Station	21:55	22:25	23:25	00:25
Westpoint Bus Interchange, Blacktown	21:57	22:27	23:27	00:27

711 Parramatta to Blacktown via Wentworthville

B

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	-	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00
Westmead Station	-	08:36	09:06	09:36	10:06	10:36	11:06	11:36	12:06
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	-	08:40	09:10	09:40	10:10	10:40	11:10	11:40	12:10
Darcy Rd after Hawkesbury Rd, Westmead	-	08:43	09:13	09:43	10:13	10:43	11:13	11:43	12:13
Wentworthville Station	-	08:48	09:18	09:48	10:18	10:48	11:18	11:48	12:18
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	-	08:56	09:26	09:56	10:26	10:56	11:26	11:56	12:26
Toongabbie Station	-	09:05	09:35	10:05	10:35	11:05	11:35	12:05	12:36
The Hills Sports High School, Seven Hills	-	09:08	09:38	10:08	10:38	11:08	11:38	12:08	12:39
Seven Hills Interchange	08:12	09:14	09:44	10:14	10:44	11:14	11:44	12:14	12:45
Lalor Park Library, Freeman St, Lalor Park	08:19	09:21	09:51	10:21	10:51	11:21	11:51	12:21	12:51
Phillip St at Collins St, Seven Hills	08:22	09:24	09:54	10:24	10:54	11:24	11:54	12:24	12:54
Blacktown Station	08:32	09:34	10:04	10:34	11:04	11:34	12:04	12:34	13:03
Westpoint Bus Interchange, Blacktown	08:35	09:37	10:07	10:37	11:07	11:37	12:07	12:37	13:06

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30
Westmead Station	12:36	13:06	13:36	14:06	14:36	15:06	15:36	16:06	16:36
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10	16:40
Darcy Rd after Hawkesbury Rd, Westmead	12:43	13:13	13:43	14:13	14:43	15:13	15:43	16:13	16:43
Wentworthville Station	12:49	13:19	13:49	14:19	14:49	15:19	15:49	16:19	16:49
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	12:58	13:28	13:58	14:28	14:58	15:28	15:58	16:28	16:58
Toongabbie Station	13:08	13:38	14:08	14:38	15:08	15:38	16:08	16:38	17:08
The Hills Sports High School, Seven Hills	13:11	13:41	14:11	14:41	15:11	15:41	16:11	16:41	17:11
Seven Hills Interchange	13:17	13:47	14:17	14:47	15:17	15:47	16:17	16:47	17:17
Lalor Park Library, Freeman St, Lalor Park	13:23	13:53	14:23	14:53	15:23	15:53	16:23	16:53	17:23
Phillip St at Collins St, Seven Hills	13:26	13:56	14:26	14:56	15:26	15:56	16:26	16:56	17:26
Blacktown Station	13:35	14:05	14:35	15:05	15:35	16:05	16:35	17:05	17:35
Westpoint Bus Interchange, Blacktown	13:38	14:08	14:38	15:08	15:38	16:08	16:38	17:08	17:38

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	N21:30
Westmead Station	17:06	17:36	18:06	18:36	19:04	19:34	20:04	20:34	21:34
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	17:10	17:40	18:10	18:40	19:08	19:38	20:08	20:38	21:38
Darcy Rd after Hawkesbury Rd, Westmead	17:13	17:43	18:13	18:43	19:11	19:41	20:11	20:41	21:41
Wentworthville Station	17:19	17:49	18:19	18:49	19:16	19:46	20:16	20:46	21:45
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	17:28	17:58	18:28	18:58	19:24	19:54	20:24	20:54	21:53
Toongabbie Station	17:38	18:08	18:38	19:06	19:32	20:02	20:32	21:02	22:00
The Hills Sports High School, Seven Hills	17:41	18:11	18:41	19:09	19:35	20:05	20:35	21:05	22:03
Seven Hills Interchange	17:47	18:17	18:47	19:14	19:40	20:10	20:40	21:10	22:07
Lalor Park Library, Freeman St, Lalor Park	17:53	18:23	18:53	19:19	19:45	20:15	20:45	21:15	22:14
Phillip St at Collins St, Seven Hills	17:56	18:26	18:56	19:22	19:48	20:18	20:48	21:18	22:17
Blacktown Station	18:05	18:35	19:04	19:29	19:55	20:25	20:55	21:25	22:25
Westpoint Bus Interchange, Blacktown	18:08	18:38	19:07	19:32	19:58	20:28	20:58	21:28	22:27

711 Parramatta to Blacktown via Wentworthville

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Sunday & Public Holidays	
Parramatta Station	**N**22:30
Westmead Station	22:34
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	22:38
Darcy Rd after Hawkesbury Rd, Westmead	22:41
Wentworthville Station	22:45
Toongabbie Anglican Church, Burrabogee Rd, Pendle Hill	22:53
Toongabbie Station	23:00
The Hills Sports High School, Seven Hills	23:03
Seven Hills Interchange	23:07
Lalor Park Library, Freeman St, Lalor Park	23:14
Phillip St at Collins St, Seven Hills	23:17
Blacktown Station	23:25
Westpoint Bus Interchange, Blacktown	23:27

711 Blacktown to Parramatta via Wentworthville

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Monday to Friday									
Westpoint Bus Interchange, Blacktown	04:36	05:06	05:36	06:06	06:19	06:34	06:43	06:55	07:23
Blacktown Station	04:39	05:09	05:39	06:09	06:22	06:37	06:46	06:58	07:26
Phillip St after Barbara Bvd, Seven Hills	04:47	05:17	05:47	06:17	06:30	06:45	06:54	07:06	07:35
Freeman St opp Lalor Park Library, Lalor Park	04:51	05:21	05:51	06:21	06:34	06:49	06:58	07:11	07:40
Seven Hills Interchange	04:57	05:27	05:57	06:28	06:42	06:57	07:07	07:21	07:51
The Hills Sports High School, Seven Hills	05:00	05:30	06:00	06:32	06:46	07:01	07:11	07:25	07:57
Toongabbie Station	05:03	05:33	06:05	06:37	06:51	07:06	07:17	07:31	08:04
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	05:11	05:41	06:14	06:46	07:00	07:17	07:28	07:43	08:15
Wentworthville Station	05:21	05:51	06:24	06:58	07:13	07:30	07:42	07:57	08:29
Westmead Hospital, North West Twy, Westmead	05:26	05:56	06:30	07:05	07:21	07:39	07:51	08:07	08:39
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	05:29	05:59	06:33	07:08	07:24	07:42	07:54	08:10	08:42
Westmead Station	05:33	06:03	06:38	07:13	07:29	07:47	07:59	08:15	08:48
Parramatta Station	05:38	06:08	06:43	07:19	07:35	07:53	08:05	08:21	08:54

Monday to Friday									
Westpoint Bus Interchange, Blacktown	07:58	08:38	09:18	09:48	10:18	10:48	11:18	11:48	12:18
Blacktown Station	08:01	08:41	09:21	09:51	10:21	10:51	11:21	11:51	12:21
Phillip St after Barbara Bvd, Seven Hills	08:10	08:50	09:30	10:00	10:29	10:59	11:29	11:59	12:29
Freeman St opp Lalor Park Library, Lalor Park	08:15	08:55	09:34	10:04	10:33	11:03	11:33	12:03	12:33
Seven Hills Interchange	08:25	09:02	09:40	10:10	10:39	11:09	11:39	12:09	12:39
The Hills Sports High School, Seven Hills	08:30	09:07	09:45	10:15	10:44	11:14	11:44	12:14	12:44
Toongabbie Station	08:37	09:12	09:50	10:20	10:49	11:19	11:49	12:19	12:49
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	08:50	09:23	10:00	10:30	10:59	11:29	11:59	12:29	12:59
Wentworthville Station	09:03	09:35	10:13	10:43	11:12	11:42	12:12	12:42	13:12
Westmead Hospital, North West Twy, Westmead	09:10	09:44	10:19	10:49	11:18	11:48	12:18	12:48	13:18
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	09:13	09:47	10:22	10:52	11:21	11:51	12:21	12:51	13:21
Westmead Station	09:18	09:52	10:27	10:57	11:26	11:56	12:26	12:56	13:26
Parramatta Station	09:24	09:57	10:32	11:02	11:31	12:01	12:31	13:01	13:31

Monday to Friday									
Westpoint Bus Interchange, Blacktown	12:48	13:17	13:47	14:09	14:34	15:08	15:38	15:53	16:20
Blacktown Station	12:51	13:20	13:50	14:12	14:37	15:11	15:41	15:56	16:23
Phillip St after Barbara Bvd, Seven Hills	12:59	13:28	13:58	14:24	14:49	15:23	15:52	16:06	16:33
Freeman St opp Lalor Park Library, Lalor Park	13:03	13:32	14:02	14:28	14:53	15:28	15:57	16:11	16:38
Seven Hills Interchange	13:09	13:38	14:08	14:34	14:59	15:36	16:04	16:18	16:45
The Hills Sports High School, Seven Hills	13:14	13:43	14:13	14:39	15:04	15:41	16:09	16:23	16:50
Toongabbie Station	13:19	13:48	14:17	14:43	15:08	15:47	16:15	16:29	16:55
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	13:29	13:58	14:27	14:55	**A** 15:20	15:59	16:27	16:38	17:04
Pendle Hill High School, Binalong Rd, Toongabbie	–	–	–	–	15:21	–	–	–	–
Wentworthville Station	13:42	14:09	14:38	15:09	15:35	16:10	16:38	16:49	17:15
Westmead Hospital, North West Twy, Westmead	13:48	14:17	14:46	15:17	15:43	16:18	16:46	16:57	17:23
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	13:51	14:21	14:50	15:21	15:47	16:22	16:50	17:01	17:27
Westmead Station	13:56	14:26	14:55	15:27	15:53	16:28	16:56	17:07	17:33
Parramatta Station	14:01	14:31	15:00	15:32	15:58	16:34	17:02	17:12	17:38

711 Blacktown to Parramatta via Wentworthville

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Monday to Friday									
Westpoint Bus Interchange, Blacktown	16:50	17:21	18:01	18:31	19:01	19:31	20:01	20:31	21:05
Blacktown Station	16:53	17:24	18:04	18:34	19:04	19:34	20:04	20:34	21:08
Phillip St after Barbara Bvd, Seven Hills	17:03	17:33	18:13	18:43	19:13	19:43	20:13	20:43	21:16
Freeman St opp Lalor Park Library, Lalor Park	17:08	17:37	18:17	18:47	19:17	19:47	20:17	20:47	21:20
Seven Hills Interchange	17:15	17:45	18:23	18:53	19:23	19:53	20:23	20:53	21:26
The Hills Sports High School, Seven Hills	17:20	17:49	18:27	18:57	19:27	19:57	20:27	20:57	21:30
Toongabbie Station	17:24	17:53	18:31	19:01	19:30	20:00	20:30	21:00	21:33
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	17:34	18:03	18:41	19:10	19:38	20:08	20:38	21:08	21:40
Wentworthville Station	17:45	18:13	18:51	19:19	19:47	20:17	20:47	21:17	21:49
Westmead Hospital, North West Twy, Westmead	17:53	18:21	18:59	19:24	19:52	20:22	20:52	21:22	21:53
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	17:57	18:25	19:03	19:27	19:55	20:25	20:55	21:25	21:55
Westmead Station	18:03	18:31	19:09	19:32	20:00	20:30	21:00	21:29	21:59
Parramatta Station	18:08	18:36	19:14	19:37	20:05	20:35	21:04	21:33	22:03

Monday to Friday				
Westpoint Bus Interchange, Blacktown	21:35	22:05	22:35	23:08
Blacktown Station	21:38	22:08	22:38	23:11
Phillip St after Barbara Bvd, Seven Hills	21:46	22:16	22:46	23:19
Freeman St opp Lalor Park Library, Lalor Park	21:50	22:20	22:50	23:23
Seven Hills Interchange	21:56	22:26	22:56	23:29
The Hills Sports High School, Seven Hills	22:00	22:30	23:00	23:33
Toongabbie Station	22:03	22:33	23:03	23:36
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	22:10	22:40	23:10	23:43
Wentworthville Station	22:19	22:49	23:19	23:52
Westmead Hospital, North West Twy, Westmead	22:23	22:53	23:23	23:56
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	22:25	22:55	23:25	23:58
Westmead Station	22:29	22:59	23:29	00:02
Parramatta Station	22:33	23:03	23:33	00:06

Saturday									
Westpoint Bus Interchange, Blacktown	05:45	06:45	07:15	07:45	08:13	08:41	09:11	09:41	10:11
Blacktown Station	05:48	06:48	07:18	07:48	08:16	08:44	09:14	09:44	10:14
Phillip St after Barbara Bvd, Seven Hills	05:55	06:55	07:25	07:55	08:23	08:53	09:23	09:53	10:23
Freeman St opp Lalor Park Library, Lalor Park	05:59	06:59	07:29	07:59	08:27	08:57	09:27	09:57	10:27
Seven Hills Interchange	06:06	07:06	07:36	08:06	08:35	09:05	09:35	10:05	10:35
The Hills Sports High School, Seven Hills	06:08	07:08	07:38	08:08	08:38	09:08	09:38	10:08	10:38
Toongabbie Station	06:13	07:13	07:43	08:13	08:43	09:13	09:43	10:13	10:43
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	06:21	07:21	07:51	08:21	08:52	09:22	09:52	10:22	10:52
Wentworthville Station	06:31	07:31	08:01	08:31	09:03	09:33	10:03	10:33	11:03
Westmead Hospital, North West Twy, Westmead	06:36	07:36	08:06	08:37	09:09	09:39	10:09	10:39	11:09
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	06:38	07:38	08:08	08:39	09:11	09:41	10:11	10:41	11:11
Westmead Station	06:42	07:42	08:12	08:44	09:16	09:46	10:16	10:46	11:16
Parramatta Station	06:46	07:46	08:16	08:49	09:21	09:51	10:21	10:51	11:21

711 Blacktown to Parramatta via Wentworthville

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Saturday									
Westpoint Bus Interchange, Blacktown	10:41	11:11	11:41	12:11	12:42	13:15	13:45	14:15	14:45
Blacktown Station	10:44	11:14	11:44	12:14	12:45	13:18	13:48	14:18	14:48
Phillip St after Barbara Bvd, Seven Hills	10:53	11:23	11:53	12:23	12:54	13:27	13:57	14:27	14:57
Freeman St opp Lalor Park Library, Lalor Park	10:57	11:27	11:57	12:27	12:58	13:31	14:01	14:31	15:01
Seven Hills Interchange	11:05	11:35	12:05	12:35	13:06	13:38	14:08	14:38	15:08
The Hills Sports High School, Seven Hills	11:08	11:38	12:08	12:38	13:09	13:41	14:11	14:41	15:11
Toongabbie Station	11:13	11:43	12:13	12:43	13:14	13:46	14:16	14:46	15:16
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	11:22	11:52	12:22	12:52	13:23	13:54	14:24	14:54	15:24
Wentworthville Station	11:33	12:03	12:33	13:03	13:34	14:04	14:34	15:04	15:34
Westmead Hospital, North West Twy, Westmead	11:39	12:09	12:39	13:09	13:39	14:09	14:39	15:09	15:39
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	11:41	12:11	12:41	13:11	13:41	14:11	14:41	15:11	15:41
Westmead Station	11:46	12:16	12:46	13:16	13:46	14:16	14:46	15:16	15:46
Parramatta Station	11:51	12:21	12:51	13:21	13:51	14:21	14:51	15:21	15:51

Saturday									
Westpoint Bus Interchange, Blacktown	15:15	15:45	16:15	16:45	17:15	17:47	18:17	18:48	19:18
Blacktown Station	15:18	15:48	16:18	16:48	17:18	17:50	18:20	18:51	19:21
Phillip St after Barbara Bvd, Seven Hills	15:27	15:57	16:27	16:57	17:27	17:59	18:29	18:59	19:29
Freeman St opp Lalor Park Library, Lalor Park	15:31	16:01	16:31	17:01	17:31	18:03	18:32	19:02	19:32
Seven Hills Interchange	15:38	16:08	16:38	17:08	17:38	18:10	18:38	19:08	19:38
The Hills Sports High School, Seven Hills	15:41	16:11	16:41	17:11	17:41	18:13	18:41	19:11	19:41
Toongabbie Station	15:46	16:16	16:46	17:16	17:46	18:18	18:46	19:16	19:46
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	15:54	16:24	16:54	17:24	17:54	18:26	18:54	19:24	19:54
Wentworthville Station	16:04	16:34	17:04	17:34	18:04	18:35	19:03	19:33	20:03
Westmead Hospital, North West Twy, Westmead	16:09	16:39	17:09	17:39	18:09	18:39	19:07	19:37	20:07
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	16:11	16:41	17:11	17:41	18:11	18:41	19:09	19:39	20:09
Westmead Station	16:16	16:46	17:15	17:45	18:15	18:45	19:13	19:43	20:13
Parramatta Station	16:21	16:51	17:20	17:50	18:20	18:49	19:17	19:47	20:17

Saturday					
Westpoint Bus Interchange, Blacktown	19:48	20:18	20:48	21:48	22:48
Blacktown Station	19:51	20:21	20:51	21:51	22:51
Phillip St after Barbara Bvd, Seven Hills	19:59	20:29	20:59	21:59	22:59
Freeman St opp Lalor Park Library, Lalor Park	20:02	20:32	21:02	22:02	23:02
Seven Hills Interchange	20:08	20:38	21:08	22:08	23:08
The Hills Sports High School, Seven Hills	20:11	20:41	21:11	22:11	23:11
Toongabbie Station	20:16	20:46	21:16	22:16	23:16
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	20:24	20:54	21:24	22:24	23:24
Wentworthville Station	20:33	21:03	21:33	22:33	23:33
Westmead Hospital, North West Twy, Westmead	20:37	21:07	21:37	22:37	23:37
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	20:39	21:09	21:39	22:39	23:39
Westmead Station	20:43	21:13	21:43	22:43	23:43
Parramatta Station	20:47	21:17	21:47	22:47	23:47

711 Blacktown to Parramatta via Wentworthville

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Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Westpoint Bus Interchange, Blacktown	06:45	07:45	08:15	08:45	09:15	09:45	10:15	10:45	11:15
Blacktown Station	06:48	07:48	08:18	08:48	09:18	09:48	10:18	10:48	11:18
Phillip St after Barbara Bvd, Seven Hills	06:55	07:55	08:25	08:56	09:26	09:56	10:26	10:56	11:26
Freeman St opp Lalor Park Library, Lalor Park	06:59	07:59	08:29	09:00	09:30	10:00	10:30	11:00	11:30
Seven Hills Interchange	07:06	08:06	08:36	09:07	09:37	10:07	10:37	11:07	11:37
The Hills Sports High School, Seven Hills	07:09	08:09	08:39	09:10	09:40	10:10	10:40	11:10	11:40
Toongabbie Station	07:14	08:14	08:44	09:15	09:45	10:15	10:45	11:15	11:45
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	07:21	08:21	08:52	09:23	09:53	10:23	10:53	11:23	11:53
Wentworthville Station	07:31	08:31	09:03	09:34	10:04	10:34	11:04	11:34	12:04
Westmead Hospital, North West Twy, Westmead	07:36	08:36	09:08	09:39	10:09	10:39	11:09	11:39	12:09
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	07:38	08:38	09:10	09:41	10:11	10:41	11:11	11:41	12:11
Westmead Station	07:42	08:43	09:15	09:46	10:16	10:46	11:16	11:46	12:16
Parramatta Station	07:47	08:48	09:20	09:51	10:21	10:51	11:21	11:51	12:21

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Westpoint Bus Interchange, Blacktown	11:45	12:15	12:45	13:15	13:45	14:15	14:45	15:15	15:46
Blacktown Station	11:48	12:18	12:48	13:18	13:48	14:18	14:48	15:18	15:49
Phillip St after Barbara Bvd, Seven Hills	11:56	12:26	12:56	13:26	13:57	14:27	14:57	15:27	15:58
Freeman St opp Lalor Park Library, Lalor Park	12:00	12:30	13:00	13:30	14:01	14:31	15:01	15:31	16:02
Seven Hills Interchange	12:07	12:37	13:07	13:37	14:08	14:38	15:08	15:38	16:09
The Hills Sports High School, Seven Hills	12:10	12:40	13:10	13:40	14:11	14:41	15:11	15:41	16:12
Toongabbie Station	12:15	12:45	13:15	13:45	14:16	14:46	15:16	15:46	16:17
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	12:23	12:53	13:23	13:53	14:24	14:54	15:24	15:54	16:25
Wentworthville Station	12:34	13:04	13:34	14:03	14:34	15:04	15:34	16:04	16:35
Westmead Hospital, North West Twy, Westmead	12:39	13:09	13:39	14:08	14:39	15:09	15:39	16:09	16:40
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	12:41	13:11	13:41	14:10	14:41	15:11	15:41	16:11	16:42
Westmead Station	12:46	13:16	13:46	14:15	14:46	15:16	15:46	16:16	16:47
Parramatta Station	12:51	13:21	13:51	14:20	14:51	15:21	15:51	16:21	16:52

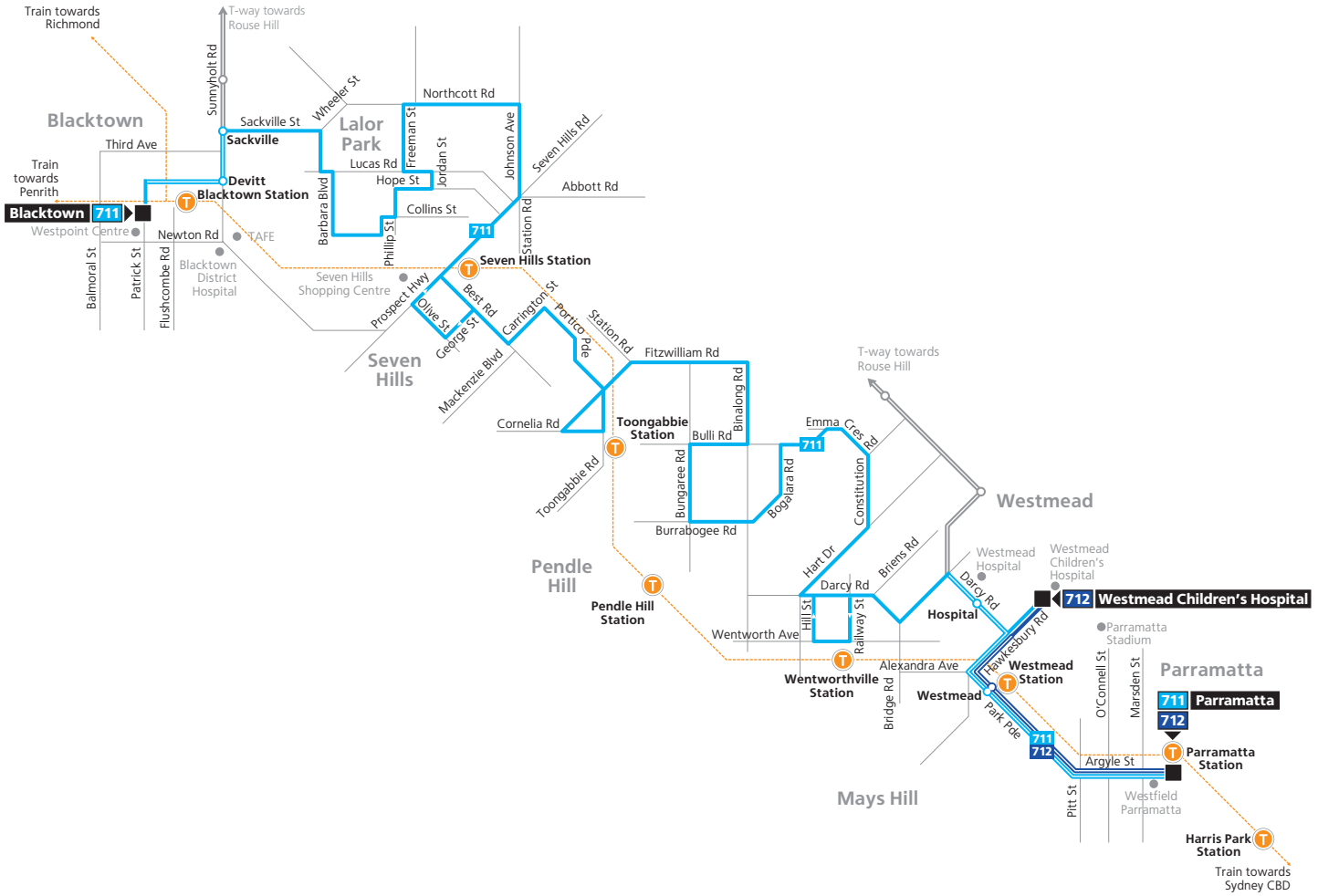
Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Westpoint Bus Interchange, Blacktown	16:15	16:47	17:17	17:50	18:20	18:50	19:20	19:50	20:50
Blacktown Station	16:18	16:50	17:20	17:53	18:23	18:53	19:23	19:53	20:53
Phillip St after Barbara Bvd, Seven Hills	16:27	16:59	17:28	18:01	18:31	19:00	19:30	20:00	21:00
Freeman St opp Lalor Park Library, Lalor Park	16:31	17:03	17:32	18:05	18:35	19:04	19:34	20:04	21:04
Seven Hills Interchange	16:38	17:10	17:39	18:12	18:41	19:10	19:40	20:10	21:10
The Hills Sports High School, Seven Hills	16:41	17:13	17:42	18:15	18:44	19:13	19:43	20:13	21:13
Toongabbie Station	16:46	17:18	17:47	18:20	18:49	19:18	19:48	20:18	21:18
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	16:54	17:26	17:55	18:28	18:56	19:25	19:55	20:25	21:25
Wentworthville Station	17:04	17:35	18:04	18:36	19:04	19:33	20:03	20:33	21:33
Westmead Hospital, North West Twy, Westmead	17:09	17:40	18:09	18:40	19:08	19:37	20:07	20:37	21:37
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	17:11	17:42	18:11	18:42	19:10	19:39	20:09	20:39	21:39
Westmead Station	17:15	17:46	18:15	18:46	19:14	19:43	20:13	20:43	21:43
Parramatta Station	17:20	17:51	18:20	18:51	19:19	19:48	20:18	20:48	21:48

711 Blacktown to Parramatta via Wentworthville

B

Sunday & Public Holidays	
Westpoint Bus Interchange, Blacktown	21:50
Blacktown Station	21:53
Phillip St after Barbara Bvd, Seven Hills	22:00
Freeman St opp Lalor Park Library, Lalor Park	22:04
Seven Hills Interchange	22:10
The Hills Sports High School, Seven Hills	22:13
Toongabbie Station	22:18
Burrabogee Rd opp Toongabbie Anglican Church, Old Toongabbie	22:25
Wentworthville Station	22:33
Westmead Hospital, North West Twy, Westmead	22:37
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	22:39
Westmead Station	22:43
Parramatta Station	22:48

Routes 711, 712



Legend

- Bus route
- 711 Bus route number
- Bus route start/finish
- Train line/station
- T-way/stop near route

Diagrammatic Map
Not to Scale
North

NSW GOVERNMENT Transport

transportnsw.info

712 Westmead Childrens Hospital to Parramatta

B

How to use this timetable

This timetable provides a snapshot of service information in 24-hour time (e.g. 5am = 05:00, 5pm = 17:00). Information contained in this timetable is subject to change without notice. Please note that timetables do not include minor stops, additional trips for special events, short term changes, holiday timetable changes, real-time information or any disruption alerts.

For the most up-to-date times, use the Trip Planner or Departures at **transportnsw.info**

Real-time planning

You can plan your trip with real-time information using the Trip Planner or Departures at **transportnsw.info** or by downloading travel apps on your smartphone or tablet.

The Trip Planner, Departures and travel apps offer various features:

- favourite your regular trips
- see where your service is on the route
- get estimated pick-up and arrival times
- receive service updates
- find nearby stations, stops, wharves and routes
- check accessibility information.

Find the latest apps at **transportnsw.info/apps**

Accessible services

All new buses are wheelchair-accessible with low-level floors and space for wheelchairs, prams or strollers. Look for the ♿ symbol in this timetable. Some older buses may not have all the features you need. There will be more accessible services as older buses are replaced.

Who is providing my bus services?

The bus services shown in this timetable are run by Hillsbus.

Fares

In Sydney and surrounding regions, fares are based on:

- the distance you travel from tap on to tap off
- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

You can use an Opal card or a contactless payment to pay for your travel.

Opal cards

An Opal card is a smartcard you keep and reuse. Add value before you travel, and tap on and tap off to pay your fares throughout Sydney, the Blue Mountains, the Central Coast, the Hunter and the Illawarra.

Which Opal card is right for you?

Adult – Customers 16 years or older who are not entitled to any concessions and normally pay full fare.

Child/Youth – For customers aged 4-15 (inclusive), or customers 16 years or older who hold a NSW/ACT Senior Secondary Student Concession Card.

Gold Senior/Pensioner – For eligible NSW and interstate seniors, pensioners, war widows/ers and asylum seekers.

Concession – For eligible tertiary students, job seekers, apprentices and trainees.

How to get an Opal card

You can get an Adult or Child/Youth Opal card over the counter at Opal retailers that display the Opal sign. To find your nearest retailer visit **transportnsw.info/opal**.

If you are eligible to travel with concession fares, you can apply for a Gold Senior/Pensioner or Concession Opal card online. Visit **transportnsw.info/opal** for more information.

Contactless payments

If you have an American Express, Mastercard, Visa card or linked device, you can use it to pay for all public transport on the Opal network. Just make sure to tap on and tap off at Opal readers at the beginning and end of your trip.

Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿ Wheelchair Accessible

NSW GOVERNMENT | Transport

712 Parramatta to Westmead Childrens Hospital

B

Valid from: 31 Jan 2022

Creation date: 17 March 2022
NOTE: Information is correct on date of download.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	06:43	07:13	07:43	08:13	08:48	09:20	09:55	10:25	10:55
Westmead Station	06:48	07:19	07:49	08:19	08:54	09:26	10:01	10:31	11:01
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	06:52	07:24	07:54	08:24	08:59	09:31	10:06	10:36	11:06

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Parramatta Station	11:25	11:55	12:25	12:55	13:25	13:55	14:24	14:54	15:20
Westmead Station	11:31	12:01	12:31	13:01	13:31	14:01	14:31	15:01	15:27
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	11:36	12:06	12:36	13:06	13:36	14:06	14:36	15:06	15:32

Monday to Friday	♿	♿	♿	
Parramatta Station	15:50	16:25	18:33	19:03
Westmead Station	15:57	16:32	18:39	19:08
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	16:02	16:37	18:44	19:12

712 Westmead Childrens Hospital to Parramatta

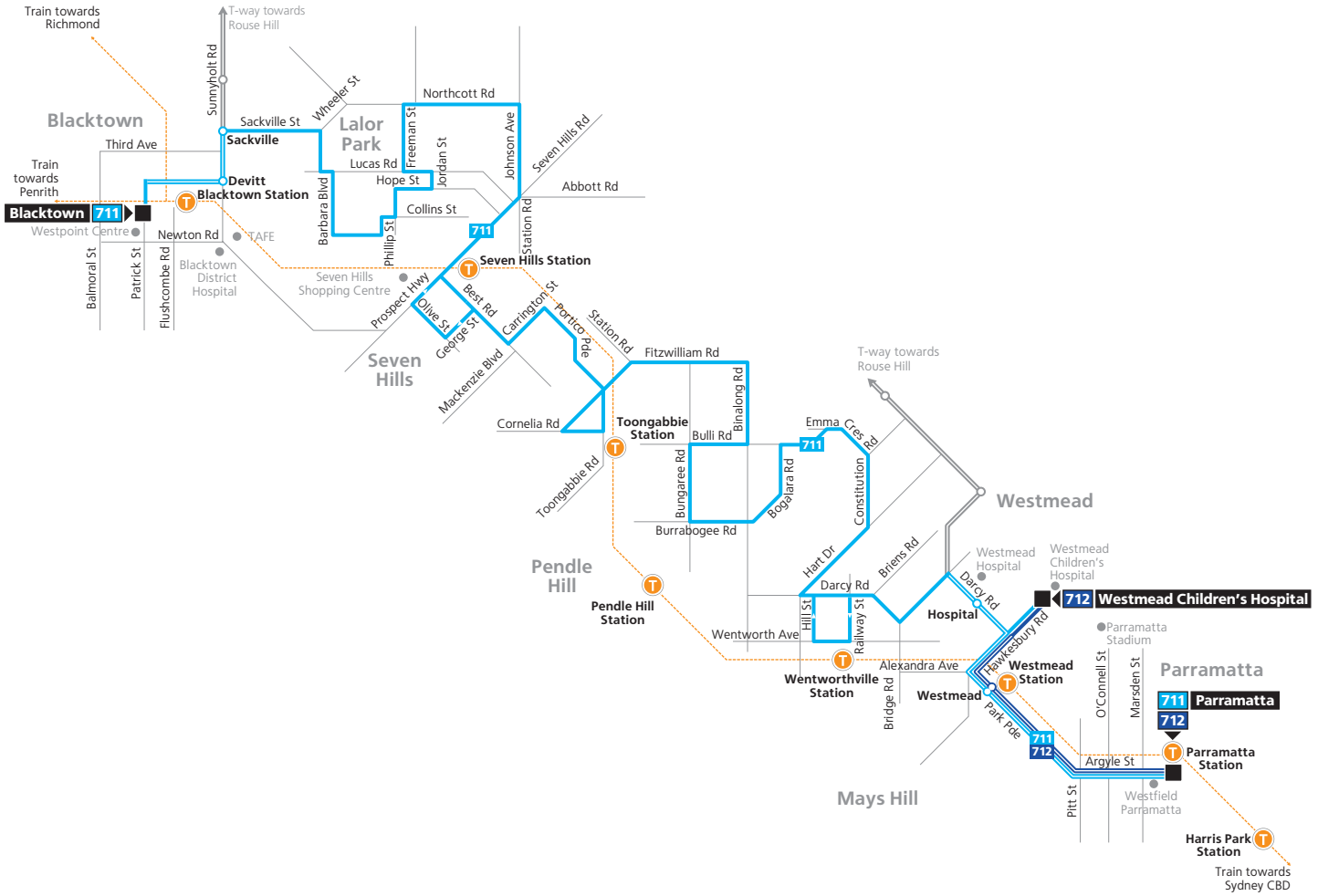
B

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	08:24	08:59	09:31	10:06	10:36	11:06	11:36	12:06	12:36
Westmead Station	08:29	09:04	09:36	10:11	10:41	11:11	11:41	12:11	12:41
Parramatta Station	08:35	09:10	09:41	10:16	10:46	11:16	11:46	12:16	12:46

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	13:06	13:36	14:06	14:36	15:06	15:32	16:02	16:37	17:14
Westmead Station	13:11	13:41	14:11	14:41	15:12	15:38	16:08	16:43	17:20
Parramatta Station	13:16	13:46	14:16	14:46	15:17	15:43	16:13	16:49	17:25

Monday to Friday			
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	17:38	18:08	18:44
Westmead Station	17:44	18:14	18:50
Parramatta Station	17:49	18:19	18:55

Routes 711, 712



Legend

- Bus route
- 711 Bus route number
- Bus route start/finish
- Train line/station
- T-way/stop near route

Diagrammatic Map
Not to Scale
North

NSW GOVERNMENT Transport

transportnsw.info

818 Westmead Hospitals to Merrylands B

How to use this timetable

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Who is providing my bus services?

The bus services shown in this timetable are run by Transit Systems.

Fares

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- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

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Contactless payments

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Always separate your cards when you tap on and tap off so your preferred card is charged.

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Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿ Wheelchair Accessible

NSW GOVERNMENT Transport

818 Merrylands to Westmead Hospitals B

Valid from: 01 Feb 2022

Creation date: 17 March 2022
NOTE: Information is correct on date of download.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Merrylands Station	06:41	07:42	08:45	09:48	10:48	11:48	12:48	13:48	14:43
Hilltop Rd near Coleman St, Merrylands	06:50	07:51	08:54	09:56	10:56	11:56	12:56	13:56	14:53
Irrigation Rd at Jersey Rd, Merrylands	06:54	07:56	08:59	10:00	11:00	12:00	13:00	14:00	14:58
Old Prospect Rd near Ringrose Av, Greystanes	07:00	08:02	09:05	10:06	11:09	12:09	13:09	14:09	15:06
Dunmore St at Station St, Wentworthville	07:08	08:15	09:14	10:14	11:16	12:16	13:16	14:16	15:16
Westmead Hospital, North West Twy, Westmead	07:19	08:27	09:24	10:24	11:25	12:25	13:25	14:25	15:26
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	07:21	08:29	09:26	10:26	11:26	12:26	13:26	14:27	15:28

Monday to Friday	♿	♿
Merrylands Station	15:40	16:40
Hilltop Rd near Coleman St, Merrylands	15:50	16:50
Irrigation Rd at Jersey Rd, Merrylands	15:55	16:55
Old Prospect Rd near Ringrose Av, Greystanes	16:03	17:03
Dunmore St at Station St, Wentworthville	16:10	17:10
Westmead Hospital, North West Twy, Westmead	16:19	17:19
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	16:21	17:21

818 Westmead Hospitals to Merrylands

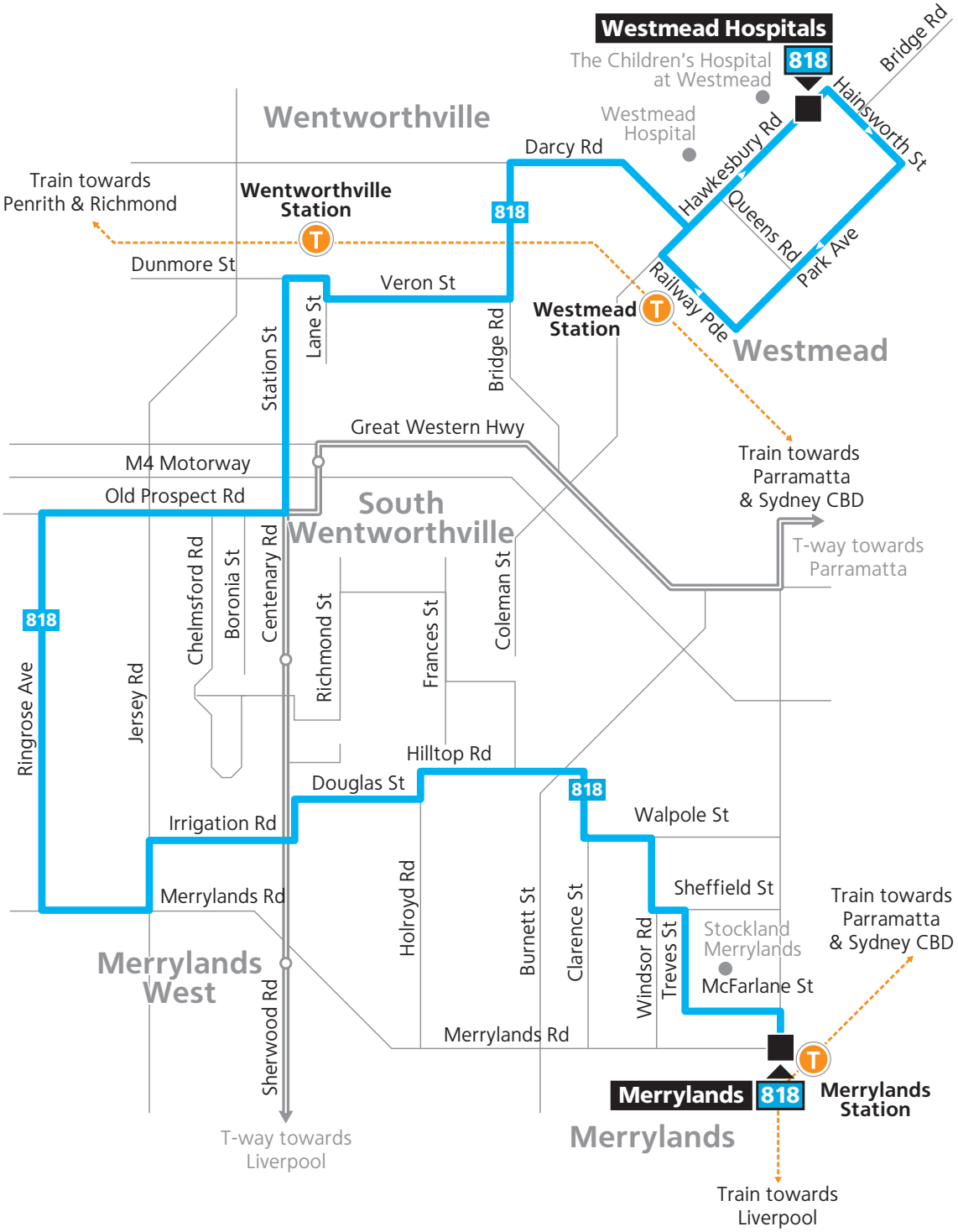
B

Monday to Friday									
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	-	07:25	08:40	09:30	10:30	11:30	12:30	13:30	14:30
Dunmore St before Station St, Wentworthville	-	07:37	08:54	09:43	10:43	11:43	12:43	13:43	14:44
Old Prospect Rd near Ringrose Av, Greystanes	06:45	07:46	09:03	09:50	10:50	11:50	12:50	13:50	14:53
Jersey Rd at Royal Pl, Greystanes	06:51	07:52	09:10	09:56	10:56	11:56	12:56	13:56	15:00
Hilltop Rd near Coleman St, Merrylands	06:56	07:57	09:18	10:01	11:00	12:00	13:00	14:01	15:06
Merrylands Station	07:05	08:06	09:27	10:10	11:09	12:09	13:09	14:10	15:16

Monday to Friday			
Westmead Childrens Hospital, Hawkesbury Rd, Westmead	15:30	16:30	17:30
Dunmore St before Station St, Wentworthville	15:44	16:45	17:45
Old Prospect Rd near Ringrose Av, Greystanes	15:53	16:53	17:53
Jersey Rd at Royal Pl, Greystanes	16:00	16:59	17:59
Hilltop Rd near Coleman St, Merrylands	16:06	17:04	18:04
Merrylands Station	16:16	17:13	18:13

Route 818

B



Legend

- Bus route
- 818 Bus route number
- Bus route start/finish
- Train line/station

Diagrammatic Map
Not to Scale
North

NSW GOVERNMENT Transport

transportnsw.info

Appendix E – Consultation with TfNSW and Council

technical@transportstrategies.com.au

From: Amir Mousavi <AMousavi@cityofparramatta.nsw.gov.au>
Sent: Thursday, 31 March 2022 11:21 AM
To: technical@transportstrategies.com.au
Cc: 'James Wright'; 'Traffic and Transport Planning Solutions'; 'Marcus Owen'; 'Steven Browne'; Saniya Sharmeen; Traffic; Richard Searle
Subject: RE: Conditions B12, B16, B17 & B25: Westmead Children's Hospital Multi Storey Car Park

Hi Meg,

I reviewed the submitted Construction Traffic and Pedestrian Management Plan (CTPMP) prepared by TTPS (reference N175 dated 18/03/2022) for the construction works of the Children's Hospital at Westmead Redevelopment - Stage 2 Multistorey Car Park – to satisfy Condition B12 (b) of SSD-10434896 and wish to advise that Council's Traffic and Transport Services section has no objection to the CTPMP subject to the following conditions:

- Construction vehicles and trucks must not wait outside the site on Redbank Road and Labyrinth Way. The site manager is to monitor area within the site to ensure adequate area is available for trucks. All construction vehicles are to enter and exit the site in a forward direction.
- Pedestrian movements are to be maintained along Redbank Road and Labyrinth Way at all times throughout the project. Traffic controllers are to be present during construction working hours to halt pedestrians whilst construction vehicles are entering/exiting the site only. At all times vehicles, entering and exiting the site are to be required to give way to pedestrians travelling on the footpath.
- All activities, including loading / unloading vehicles and storage for equipment, materials and waste are to be within the works site and are not to impede traffic flow along Redbank Road and Labyrinth Way.
- Materials are to be delivered and spoil removed during standard construction hours. Deliveries are to be planned to ensure a consistent and minimal number of trucks arriving at site at any one time.
- Traffic controllers are to manage vehicular and pedestrian traffic to ensure public safety whilst vehicles are entering or exiting the site. Traffic Control Plans (TCPs) are to be in accordance with AS1742.3 and RMS 'Traffic Control at Worksites' manual at all times and be signed by a person with RMS certification to prepare TCP's. A copy of the TCPs is to be held on site at all times by the responsible traffic controllers.
- Installation of a 'Works Zone' on public road shall require an approval through Parramatta Traffic Committee process. The applicant is to submit an application for a Works Zone through Council's Traffic and Transport Services, at least 6 weeks prior to the commencement of the restriction.
- Occupation of any part of the footpath or road (mobile crane, skip bin, carrying out work, erecting/dismantling hoarding, reconstruction of footpath and the like) during construction works of the development shall require a Road Occupancy Permit from Council. The applicant is to obtain a Temporary Road Occupancy Permit through Council's Traffic and Transport Services, prior to occupying any part of the footpath or road.
- Oversize vehicles using local roads require approval from the National Heavy Vehicle Regulator (NHVR). The applicant shall submit an application for an Oversize Vehicle Access Permit through NHVR's portal (www.nhvr.gov.au/about-us/nhvr-portal), prior to driving through local roads within the City of Parramatta LGA.
- The applicant is required to obtain a Hoarding/Tower Crane permit from Council prior to erecting any Hoarding/Tower Crane on Council road/footpath/construction site. The application can be access via Council's website www.cityofparramatta.nsw.gov.au → Business & Development → Development Application (DA) → Development & Building Form.
- The Contractor is to keep the roadway (including footpath) in a serviceable state for the duration of the project. Road pavement/footpath damaged as a result of truck movements/ construction activity is to be maintained during the duration of development by developer at no cost to Council to satisfaction of Council's Supervisor Civil Assets, contact 9806 8250.
- City of Parramatta Council is to be notified of any future disruption to roadways and footpaths and any changes to the CTPMP.

Please feel free to contact me if you would like to discuss this further.

Kind regards,

Amir Mousavi
Traffic & Transport Investigations Engineer | Development and Traffic Services | City Strategy & Development

(02) 9806 8404

City of Parramatta
126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

I acknowledge the Traditional Owners of the land I work on, the Darug Peoples, and pay my respects to their Elders past and present.

From: technical@transportstrategies.com.au <technical@transportstrategies.com.au>
Sent: Monday, 28 March 2022 9:45 PM
To: Amir Mousavi <AMousavi@cityofparramatta.nsw.gov.au>
Cc: 'James Wright' <jwright@kane.com.au>; 'Traffic and Transport Planning Solutions' <info@myttps.com>; 'Marcus Owen' <mowen@kane.com.au>; 'Steven Browne' <sbrowne@kane.com.au>; Saniya Sharmeen <SSharmeen@cityofparramatta.nsw.gov.au>; Traffic <Traffic@cityofparramatta.nsw.gov.au>
Subject: Conditions B12, B16, B17 & B25: Westmead Children's Hospital Multi Storey Car Park

Hi Amir

Hope you are keeping well. As part of Condition B12(b) of SSD-10434896 (attached), we would need to prepare the CTPMSP in consultation with TfNSW.

B12. The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be p achieve the objective of ensuring safety and efficiency of the road network and addres be limited to, the following:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council and TfNSW;

(c) detail the measures that are to be implemented to ensure road safety and netw efficiency during construction in consideration of potential impacts on general tr cyclists and pedestrians and bus services;

(d) detail the measures that are to be implemented to mitigate adverse impacts to t Parramatta Light Rail (PLR) Project;

(e) provide a description and route map for vehicles involved in spoil removal, mate delivery and machine floatage;

(f) provide the estimated number and type of construction vehicle movements inclu morning and afternoon peak and off peak movements;

(g) ensure that turning areas within the site allow the forward entry and egress of construction vehicles;

(h) outline the location of construction site entrances and exits (controlled by a certified tr controller), proposed work zones, proposed crane standing areas, vehicle loading / unloading points, truck layover zones, storage areas and on-site construction worker parking; and

(i) detail the proposed staging and the process for managing temporary road closures associated with the realignment of Redbank Road.

Please download the CTPMSP from the link below:

https://www.dropbox.com/t/TVs1ETxdfLBWYVO4

We have also included the following sections within the CTMP

- Construction Worker Transportation Strategy (Condition B17)
- Driver Code of Conduct (condition B16)

Appreciate Council's review and comments. Feel free to contact me if you have any questions.

Kind regards

Meg Kong
Transport Strategist
Mobile: 04 2400 7141
Email: technical@transportstrategies.com.au
Address: 207A/30 Campbell Street, Blacktown NSW 2148

technical@transportstrategies.com.au

From: Development Applications <Developments.CJP@transport.nsw.gov.au>
Sent: Tuesday, 29 March 2022 11:47 AM
To: technical@transportstrategies.com.au
Subject: RE: Conditions B12, B16, B17 & B25: Westmead Children's Hospital Multi Storey Car Park

Transport for NSW (TfNSW), Greater Sydney Division has reviewed the subject CTMP titled, ***The Children's Hospital at Westmead Redevelopment-Stage 2 Multistorey Car Park, SSD-10434896***, and endorse the proposed temporary construction arrangements, subject to the following conditions:

- Any Traffic Guidance Schemes (TGS) prepared are to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual and be signed by a person with TfNSW certification to prepare a TGS.
- Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures that may impact the state road network or is within 100m of traffic signals.
- Access must be maintained for local residents, businesses and emergency vehicles at all times.
- No marshalling or queuing of construction vehicles is to occur on public roads. Arriving vehicles that are not able to be clear of the carriageway must continue to a holding point until space becomes available.
- When heavy vehicles are entering or leaving the site a traffic controller is to be provided to manage any conflicts between pedestrians and heavy vehicles.
- Transport for New South Wales reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area.

Endorsement of the CTMP is not an approval to the type of traffic management or delineation devices used, nor is it an approval to any traffic guidance schemes depicted within the CTMP. It is assumed that the proponent has used type approved devices and has developed its traffic guidance schemes in accordance with the relevant Australian Standards and Guidelines.

The proponent is to ensure local residents, businesses, schools and other stakeholders in the affected area as well as emergency service organisations are notified of the changes associated with the CTMP, prior to its implementation.

Please ensure this CTMP is shared and adhered to by all contractors. If the CTMP changes, please forward a copy to Developments.CJP@transport.nsw.gov.au or further review and endorsement.

Operational Change| Customer Journey Planning | Greater Sydney
25 Garden Street Eveleigh NSW 2015
Transport for NSW

NSW GOVERNMENT | Transport for NSW

From: technical@transportstrategies.com.au <technical@transportstrategies.com.au>
Sent: Monday, 28 March 2022 9:41 PM
To: Development CTMP CJP <development.CTMP.CJP@transport.nsw.gov.au>; Development Sydney <Development.Sydney@transport.nsw.gov.au>; Christopher Smith <Christopher.SMITH3@transport.nsw.gov.au>; Development Applications <Developments.CJP@transport.nsw.gov.au>
Cc: 'James Wright' <jwright@kane.com.au>; 'Traffic and Transport Planning Solutions' <info@myttps.com>; 'Marcus Owen' <mowen@kane.com.au>; 'Steven Browne' <sbrowne@kane.com.au>
Subject: Conditions B12, B16, B17 & B25: Westmead Children's Hospital Multi Storey Car Park

Hi Chris

Hope you are keeping well. As part of Condition B12(b) of SSD-10434896 (attached), we would need to prepare the CTPMSP in consultation with TfNSW.

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(f) provide the estimated number and type of construction vehicle movements inclu morning and afternoon peak and off peak movements;

(g) ensure that turning areas within the site allow the forward entry and egress of construction vehicles;

(h) outline the location of construction site entrances and exits (controlled by a certified tr controller), proposed work zones, proposed crane standing areas, vehicle loading / unloading points, truck layover zones, storage areas and on-site construction worker parking; and

(i) detail the proposed staging and the process for managing temporary road closures associated with the realignment of Redbank Road.

Please download the CTPMSP from the link below:

https://www.dropbox.com/t/TVs1ETxdfLBWYVO4

We have also included the following sections within the CTMP

- Construction Worker Transportation Strategy (Condition B17)
- Driver Code of Conduct (condition B16)

Appreciate TfNSW's review and comments. Feel free to contact me if you have any questions.

Kind regards

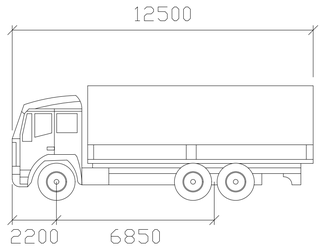
Meg Kong
Transport Strategist
Mobile: 04 2400 7141
Email: technical@transportstrategies.com.au
Address: 207A/30 Campbell Street, Blacktown NSW 2148

Transport Strategies

Appendix F Swept Path Assessments

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



HRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	6.0
Steering Angle	: 36.7

GATE 2

GATE 1

GATE 3

LEGEND:

- WORK SITE
- SITE ACCESS

MARK	REVISION	DATE

The Children's Hospital at Westmead Multi-storey Carpark
Swept Path Assessments
Truck Access for Heavy Rigid Vehicles (Entry)

DRAWING REF NO. SP-001-220705

ISSUE DATE 7 July 2022

DESIGNED BY S.A

REVIEWED BY M.K

SCALE A3

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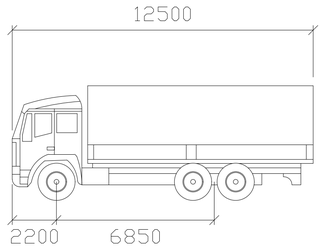
TTPS TRANSPORT MATTERS
Traffic and Transport Planning Solutions
Email: info@myttps.com
Phone: 02 8005 8042

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



HRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	6.0
Steering Angle	: 36.7

GATE 2

GATE 1

GATE 3

LEGEND:

- WORK SITE
- SITE ACCESS

MARK	REVISION	DATE

The Children's Hospital at Westmead Multi-storey Carpark
Swept Path Assessments
Truck Access for Heavy Rigid Vehicles (Exit)

DRAWING REF NO. SP-002-220705

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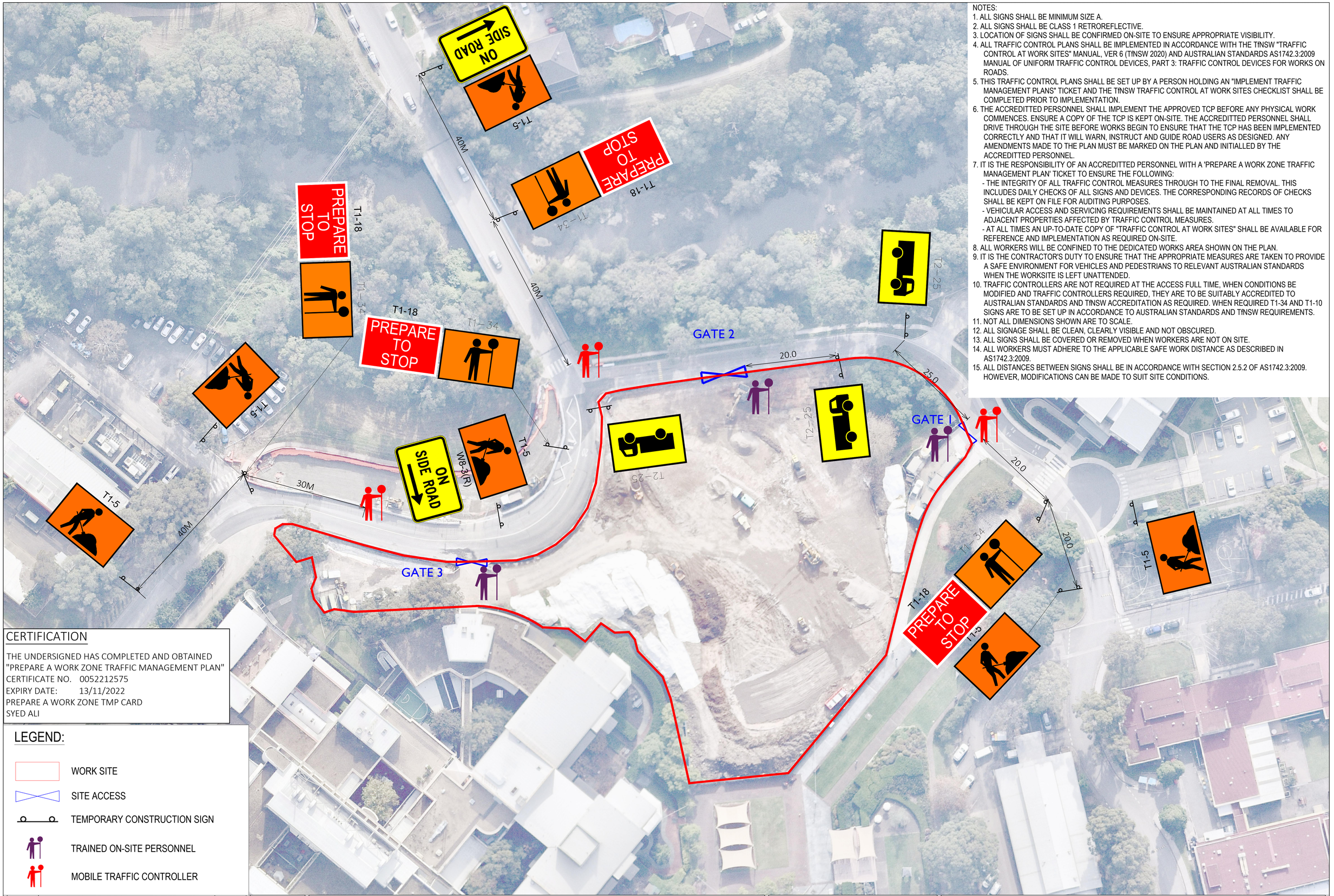
Appendix G Traffic Guidance Schemes



NOTES:

1. ALL SIGNS SHALL BE MINIMUM SIZE A.
2. ALL SIGNS SHALL BE CLASS 1 RETROREFLECTIVE.
3. LOCATION OF SIGNS SHALL BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
4. ALL TRAFFIC CONTROL PLANS SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE TfNSW "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER 6 (TfNSW 2020) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
5. THIS TRAFFIC CONTROL PLANS SHALL BE SET UP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC MANAGEMENT PLANS" TICKET AND THE TfNSW TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
6. THE ACCREDITTED PERSONNEL SHALL IMPLEMENT THE APPROVED TCP BEFORE ANY PHYSICAL WORK COMMENCES. ENSURE A COPY OF THE TCP IS KEPT ON-SITE. THE ACCREDITTED PERSONNEL SHALL DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TCP HAS BEEN IMPLEMENTED CORRECTLY AND THAT IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY AMENDMENTS MADE TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALLED BY THE ACCREDITTED PERSONNEL.
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15. ALL DISTANCES BETWEEN SIGNS SHALL BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS.

CERTIFICATION

THE UNDERSIGNED HAS COMPLETED AND OBTAINED
"PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN"
CERTIFICATE NO. 0052212575
EXPIRY DATE: 13/11/2022
PREPARE A WORK ZONE TMP CARD
SYED ALI

LEGEND:

- WORK SITE
- SITE ACCESS
- TEMPORARY CONSTRUCTION SIGN
- TRAINED ON-SITE PERSONNEL
- MOBILE TRAFFIC CONTROLLER

MARK	REVISION	DATE

The Children's Hospital at Westmead Multi-Storey Carpark
Traffic Guidance Scheme
Truck Access for Vehicles longer than Medium Rigid Vehicles

DRAWING REF NO. TCP-001-220705

ISSUE DATE 7 July 2022

DESIGNED BY	REVIEWED BY
S.A	M.K

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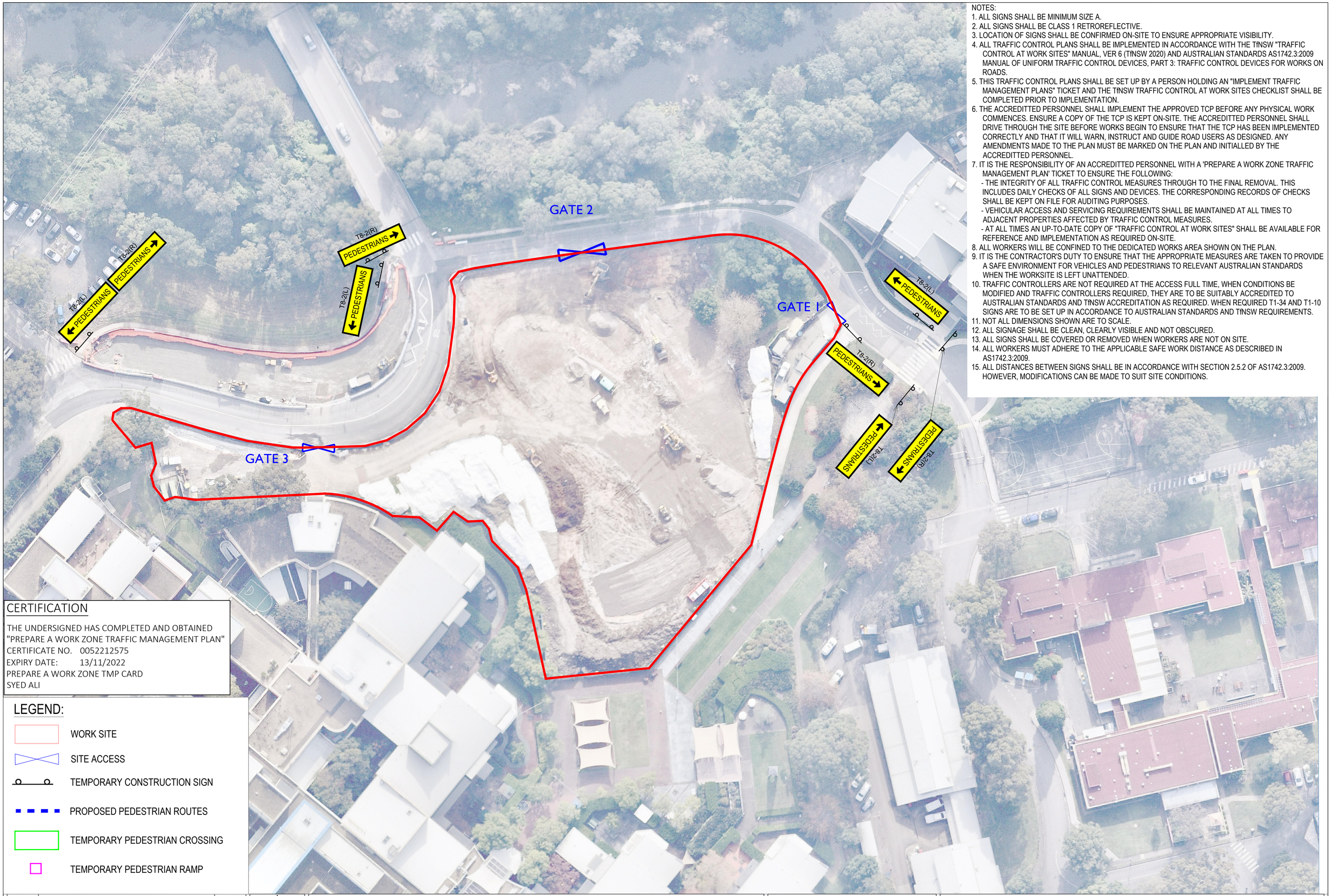
TTPS TRANSPORT MATTERS
Traffic and Transport Planning Solutions
Email: info@myttps.com
Phone: 02 8005 8042



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CERTIFICATE NO. 0052212575
EXPIRY DATE: 13/11/2022
PREPARE A WORK ZONE TMP CARD
SYED ALI

LEGEND:

- WORK SITE
- SITE ACCESS
- TEMPORARY CONSTRUCTION SIGN
- PROPOSED PEDESTRIAN ROUTES
- TEMPORARY PEDESTRIAN CROSSING
- TEMPORARY PEDESTRIAN RAMP

MARK	REVISION	DATE

The Children's Hospital at Westmead Multi-Storey Carpark
Traffic Control Plan
Pedestrian Detour

DRAWING REF NO. TCP-002-220705

ISSUE DATE 7 July 2022

DESIGNED BY S.A

REVIEWED BY M.K

SCALE A3

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TTPS TRANSPORT MATTERS
Traffic and Transport Planning Solutions
Email: info@myttps.com
Phone: 02 8005 8042

Traffic and Transport Planning Solution
PO Box 886
PARRAMATTA NSW 2124

PHONE: +612 8005 8042
E MAIL: info@myttps.com

MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

Westmead Children's Hospital MSCP

Construction Noise and Vibration Sub-Plan (CNVMSP)

SYDNEY
9 Sarah St
MASCOT NSW 2020
(02) 8339 8000

ABN 98 145 324 714
www.acousticlogic.com.au

Project ID	20220264.1
Document Title	Construction Noise and Vibration Sub-Plan
Attention To	Kane Constructions Pty Ltd

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	18/03/2022	20220264.1/1803C/R0/TH	TH		VF

TABLE OF CONTENTS

B13 Consent Satisfaction Table

Condition	Condition requirements	Document reference
B13	The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:	
	(a) be prepared by a suitably qualified and experienced noise expert;	Appendix A
	(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);	Section 9
	(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	Section 9.3
	(d) include strategies that have been developed with the community for managing high noise generating works;	Section 10
	(e) describe the community consultation undertaken to develop the strategies in condition B14;	Section 10
	(f) include a complaints management system that would be implemented for the duration of the construction; and	Section 10.1, 10.2
	(g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B11.	Section 9.7.7 & 9.7.8

1 INTRODUCTION

This report presents our assessment of the processes which will be followed in order to manage noise and vibration from construction activities associated with the development of Westmead Children's Hospital MSCP. This report is pursuant to development consent SSD conditions B13 for the provision of a Construction Noise and Vibration Management Sub-Plan.

The principal objective of this study is to undertake an evaluation of work to be performed during construction phases and forecast potential impacts of noise and vibration. The evaluation will be used to formulate and streamline effective regulation and mitigation measures.

The principal issues which will be addressed in this report are:

- Specific activities that will be conducted and the associated noise/vibration sources.
- Identification of potentially affected noise/ vibration sensitive receivers.
- The development, hours of work and excavation period.
- The construction noise requirements specified in consent condition B13.
- Noise/ vibration response procedures,
- Assessment of potential noise/ vibration from the proposed construction activities; and

Contingency plans to be implemented in the event of non-compliances and/or noise complaints.

2 SITE DESCRIPTION & PROPOSED DEVELOPMENT

The proposed works involves construction of structure and external/landscaping works for a multi-storey carparking facility.

Construction works will provide for 8 levels of car parking to accommodate approximately 1000 car parking spaces. This is to meet current and future growth demands within the hospital precinct.

The work generally involves ground/foundation works, erection of the new multi-story structure as well as associated civil/landscaping works to the site surrounds.

The previously conducted *SSDA Acoustics Report* prepared by Stantec dated 1st April 2021 (ref: 44311-1) indicates that nearest affected receivers are as follows:

- **R1:** Residential receivers north of Redbank Creek, east of Redbank Road.
- **C1:** Industrial uses - north of Redbank Creek, east of Redbank Road.
- **C2:** Industrial uses - north of Redbank Creek, west of Redbank Road.
- **S1:** 'Ronald McDonald House' short-term accommodation, directly adjacent the north-eastern site boundary.
- **H1:** Children's Hospital Westmead (CHW) buildings, to the east and south of the project site.
- **H2:** Westmead Hospital buildings, to the west and south of the project site.

An aerial photo of the site, monitoring locations and surrounding receivers is shown below in Figure 1. This image is taken from the site SSDA Acoustics Report prepared by Stantec (ref: 44311-1).

Figure 1 – Overview of site and surrounds, measurement locations and surrounding developments (obtained from SSDA Acoustics Report prepared by Stantec (ref: 44311-1))

3 ACTIVITIES TO BE CONDUCTED AND ASSOCIATED NOISE SOURCES

The construction period has been divided into the main work phases along with the primary noise producing equipment and activities likely to occur in each phase.

3.1 FOUNDATION WORKS

This stage will include the following noise intensive works:

- Excavator (up to 20 tonnes) – minor earthworks limited to detailing and trimming.
- Piling
- Hand tools – Saw cutters, Impact drills, electric drills and angle grinders.
- Electric powered tower crane.
- Hand tools – Saw cutters, Impact drills, electric drills, hammering (jack hammers) and angle grinders; and
- Materials handling.

3.2 STRUCTURE, ENVELOPE & INTERNAL FIT-OUT

Construction stage will include erection of the building structure, followed by internal fit out works and general landscaping. Typical activities during this stage include:

- Hand tools – Saw cutters, Impact drills, electric drills and angle grinders.
- Concrete pump, concrete truck and associated concrete vibrators.
- Trucks, trailers and forklifts delivering materials and removing spoil from site.
- Electric powered tower crane.
- Operation of mobile plant (i.e. bob cats and scissor lifts).

3.3 EXTERNAL WORKS & LANDSCAPING

- Hand tools – Saw cutters, Impact drills, electric drills and angle grinders.
- Concrete pump, concrete truck and associated concrete vibrators.
- Trucks, trailers and forklifts delivering materials and removing spoil from site.
- Operation of mobile plant (i.e. bob cats and scissor lifts).

4 HOURS OF WORK AND DURATION

4.1 HOURS OF WORK

Consent conditions C4-C8 stipulates that construction hours are limited as follows:

Construction Hours	
C4	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours: (a) between 7am and 6pm, Mondays to Fridays inclusive; and (b) between 8am and 1pm, Saturdays. No work may be carried out on Sundays or public holidays.
C5	Notwithstanding condition C4, provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours: between 1pm and 5pm, Saturdays.
C6	Construction activities may be undertaken outside of the hours in condition C4 and C5 if required: (a) by the Police or a public authority for the delivery of vehicles, plant or materials; or (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or (c) where the works are inaudible at the nearest sensitive receivers; or (d) for the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or (e) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.
C7	Notification of such construction activities as referenced in condition C6 must be given to affected residents before undertaking the activities or as soon as is practical afterwards
C8	Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours: (a) 9am to 12pm, Monday to Friday; (b) 2pm to 5pm Monday to Friday; and (c) 9am to 12pm, Saturday.

A summary of approved construction hours is provided in Table 1 below:

Table 1 – Summary of Approved Construction Hours

Construction Activity	Development Consent Condition	Day of the Week – Permitted Times		
		Monday - Friday	Saturday	Sunday & Public Holidays
Construction and delivery of materials to and from site	C4	7:00am – 6:00pm	8:00am – 1:00pm	None permitted.
Construction and delivery of materials to and from site	C5 (BG+5 noise limit)	N/A	1:00pm – 5:00pm	None permitted
Rock breaking, rock hammering, sheet piling, pile driving	C8	9:00am – 12:00pm, and 2:00pm – 5:00pm	9:00am – 12:00pm	None permitted

5 EXISTING BACKGROUND NOISE LEVELS

Long term unattended noise logging and attended noise measurements were previously conducted at SSDA stage in order to quantify the existing local acoustic environment. These measurements are detailed in the SSDA Acoustics Report prepared by Stantec (ref: 44311-1) and are summarised below:

Table 2 – Unattended Long-Term Noise Monitoring

Monitor Location	Measured Noise Level – Time of Day		
	Daytime (7am – 6pm)	Evening (6pm -10pm)	Night (10pm – 7am)
L1 (refer Figure 1)	51 dB(A)$L_{eq(Period)}$ 43 dB(A)$L_{90(Period)}$	52 dB(A)$L_{eq(Period)}$ 43* dB(A)$L_{90(Period)}$	48 dB(A)$L_{eq(Period)}$ 42 dB(A)$L_{90(Period)}$

*44dB(A) measured.

6 CONSTRUCTION NOISE AND VIBRATION EMISSION MANAGEMENT LEVELS

6.1 NOISE MANAGEMENT LEVELS

Noise emissions associated with construction activities on the project site to external areas of receivers will be assessed in with reference to the following:

- Development Consent Condition B13
- NSW EPA's I*nterim Construction Noise Guideline (DECC, 2009),*
- Protection of the Environment Operations Act 1997,
- Australian Standard AS2436:2010 "Guide to Noise Control on Construction, Maintenance and Demolition Sites.

6.1.1 Development Consent Condition B13

Consent conditions state the following with respect to construction nose limits:

Construction Noise Limits

C13	The development must achieve the construction noise management levels during construction as detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.

We note that DECC noise management levels as detailed in the Interim construction Noise Guideline (ICNG) are *not* regulatory stop-work limits. This is discussed further in section 6.1.2 below.

6.1.2 2009 NSW Environmental Protection Authority (EPA) document – "Interim Construction Noise Guideline (ICNG) 2009"

The EPA's ICNG assessment requires:

- Review of noise levels at nearby development
- If necessary, recommendation of noise control strategies in the event that compliance with noise emission goals is not possible.

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences for construction during the recommended standard hours:

- "*Noise Affected" level* – Where construction noise is predicted to exceed the "noise affected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the noise affected level. For residential properties, the noise affected level occurs when construction noise exceeds the rating background noise level by more than 10dB.
- "*Highly Noise Affected" level* – Where noise emissions are such that nearby properties are "highly noise affected", noise controls such as respite periods should be considered. For residential properties, the highly noise affected level occurs when construction noise exceeds 75dB(A)$L_{eq(15min)}$ at nearby residences.

The guideline also provides external management levels for land used for commercial or industrial purposes to be assessed at the most affect occupied point of the premises. EPA guidelines recommend a construction noise management level for industrial receivers of 75dB(A)$L_{eq(15\text{-}minute)}$.

Section 4.1.2 of the guideline provides that, for other sensitive land uses such as classrooms at educational institutions, the noise management level should not exceed 45 dB(A) internally.

6.1.3 Protection of the Environment Operations Act 1997,

We note that, in the absence of specific noise limits provided in the Protection of the Environment Operations Act 1997 with respect to construction noise, it is considered that adherence to the requirements of the NSW EPA's ICNG is sufficient in the assessment of 'offensive noise'.

6.1.4 Construction Noise Management Levels Summary

Nosie management levels applicable to the development site and surrounding receivers are summarised in the following tables.

Table 3 – Construction Noise Emission Management Levels – External of Westmead Hospital Precinct

Receiver Type	"Noise Affected" Level - dB(A)$L_{eq(15min)}$	"Highly Noise Affected" Level - dB(A)$L_{eq(15min)}$
Residential Receivers (R1)	Background + 10dB(A) (Standard Construction Hours)	75
Commercial Receivers (C1 & C2)	**Noise Management Level - dB(A)$L_{eq(15min)}$**	
	70	

In determining appropriate noise management levels for areas within the hospital precinct construction noise management levels are provided below:

Table 4 – Construction Noise Emission Management Level (Other)

Receiver Type	Noise Management Level - dB(A)$L_{eq(15min)}$
H1 & H2 – Children's Hospital Westmead	80*
S1 –Short-term Accommodation 'Ronald McDonald House'	80*

*Based on an AS2107+5dB(A) internal noise level and a 30dB(A) reduction across a fixed/closed façade.

6.1.5 Australian Standard AS2436:2010 "Guide to Noise Control on Construction, Maintenance and Demolition Sites

Australian Standard AS2436 does not provide specific noise management targets. The guideline focuses on strategies for developing feasible and reasonable mitigation methodologies, management controls and community liaison to reach realistic compromises between the needs of construction activities and potentially affected receivers.

For the control and regulation of noise from construction sites AS2436:2010 *Guide to noise control on construction, maintenance and demolition sites* nominates the following:

- That reasonable suitable noise management objectives are established.
- That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes to locations of the site where they can be shielded, selecting less noisy processes, and if required regulating demolition hours, and

6.2 VIBRATION OBJECTIVES

Development consent conditions state the following with respect to vibration:

Vibration Criteria	
C16	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and (b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).
C17	Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C16.
C18	The limits in conditions C16 and C17 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B13 of this consent.

The criteria and the application of the guidelines mentioned in condition C16-18 are discussed in separate sections below.

6.2.1 German Standard DIN 4150-3 (1999-02) - Ground Borne Vibrations and Damage Limits

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 5.

It is noted that the peak velocity is the absolute value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 5 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

TYPE OF STRUCTURE		PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

6.2.2 Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) - Managing Assessing Impacts

Department of Environment and Conservation NSW "Assessing Vibration: A Technical Guideline" (Feb 2006) is based on the guidelines contained in BS 6472:1992. This guideline provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings.

The recommendations of this guideline should be adopted to assess and manage vibration within the excavation/construction site.

Table 6 – EPA Recommended Vibration Criteria

Place	Time	RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
		Preferred	Maximum	Preferred	Maximum	Preferred	Maximum
Continuous Vibration							
Critical Working Areas	**Daytime**	0.005	0.01	0.1	0.2	0.14	0.28
Residences		0.01	0.02	0.2	0.4	0.28	0.56
Offices		0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Critical Working Areas	**Daytime**	0.005	0.01	0.1	0.2	0.14	0.28
Residences		0.3	0.6	6.0	12.0	8.6	17.0
Offices		0.64	1.28	13.0	26.0	18.0	36.0
Workshops		0.64	1.28	13.0	26.0	18.0	36.0

7 ASSESSMENT OF NOISE EMISSIONS

7.1 ACTIVITIES TO BE CONDUCTED AND THE ASSOCIATED NOISE SOURCES

We have been advised of the typical equipment/processes anticipated to be used on the project site. Noise impacts from these activities on the amenity of the surrounding identified sensitive receivers will be predicted based on the A-weighted sound power levels outlined in the table below.

Table 7 – Equipment Sound Power Levels

EQUIPMENT /PROCESS	SOUND POWER LEVEL dB(A)
Excavator with Bucket (up to 20 tonnes)	100
Concrete Saw	105
Bobcat	100
Heavy Trailers (idling)	95
Piling Plant	103
Concrete Pump	105
Concrete Vibrators	100
Hand Tools (Used Externally)	100
Work Zone (Forklifts, Trucks, etc.)	95
Crane (electric)	95

***Noise levels take into account correction factors (for tonality, intermittency where necessary).**

The noise levels presented in the above table are derived from the following sources:

1. On-site measurements;
2. Table D2 of Australian Standard 2436-1981 & Table A1 of Australian Standard 2436-2010; and
3. Data held by this office from other similar studies.

7.2 NOISE EMISSION PREDICTIONS AND ASSESSMENT

7.2.1 Methodology

Noise generated by plant and equipment will be managed to generally comply with the nominated noise management levels, and where this noise goal may be exceeded, noise will be managed based on principles consistent with Australian Standard 2436.

Predictions of noise levels at the sensitive receivers identified have been made of the construction processes with the potential to produce significant noise.

It is noted that many of the noise sources are present over a small period of the day or may be present for a few days with a significant intervening period before the activity occurs again.

7.2.2 Predicted Noise Levels

An assessment of the principal sources of noise emission has been undertaken to identify the activities that may produce noise and/or vibration impacts so that appropriate ameliorative measures can be formulated.

Noise levels from construction works have been predicted at the surrounding receivers and assessed against the construction noise management levels set out in Section 6. Refer to tables below for predicted noise levels for each receiver.

It is noted that:

- Many of the noise sources are present over a small period of the day or may be present for a few days with a significant intervening period before the activity occurs again. This assessment assumes all items of plant operate continuously over a 15minute period. As such, this is a decidedly conservative assessment.
- The distance between the noise source and the receiver.
- The screening effected provided by any remaining building structure/shell and topography.
- Proposed A class hoarding will provide additional screening benefit.

Table 8 – Predicted Noise Emissions to R1 Residential Receivers

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Excavator with Bucket (up to 20 tonnes)	47 to 54	**NSW EPA *Interim Construction Noise Guideline*** **Residential Areas** Noise Affected Level: 53 dB(A)$L_{eq(15min)}$ (for condition C4 approved hours) 48 dB(A)$L_{eq(15min)}$ (for condition C5 approved hours) Highly Noise Affected Level: 75dB(A)$L_{eq(15min)}$ (Assessed at property boundary)	See discussion in Section 7.3.
Concrete Saw	47 to 54		
Bobcat	47 to 54		
Heavy Trailers (idling)	42 to 49		
Piling Plant	48 to 55		
Concrete Pump	52 to 59		
Concrete Vibrators	47 to 54		
Hand Tools (Used Externally)	45 to 52		
Work Zone (Forklifts, Trucks, etc.)	45 to 49		
Crane (electric)	43 to 49		

Table 9 – Predicted Noise Emissions to S1 Receivers 'Ronald McDonald House'

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Excavator with Bucket (up to 20 tonnes)	50 to 67	80 dB(A)$L_{eq(15min)}$ (Assessed at building facade)	See discussion in Section 7.3.
Concrete Saw	51 to 68		
Bobcat	50 to 67		
Heavy Trailers (idling)	45 to 62		
Piling Plant	52 to 69		
Concrete Pump	55 to 72		
Concrete Vibrators	50 to 67		
Hand Tools (Used Externally)	49 to 66		
Work Zone (Forklifts, Trucks, etc.)	45 to 63		
Crane (electric)	47 to 53		

Table 10 – Predicted Noise Emissions to C1 & C2 Commercial Receivers

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Excavator with Bucket (up to 20 tonnes)	47 to 53	**NSW EPA *Interim Construction Noise Guideline*** **Commercial Areas** Noise Management Level: 70dB(A)$L_{ed(15min)}$ (Assessed at property boundary)	See discussion in Section 7.3.
Concrete Saw	47 to 53		
Bobcat	47 to 53		
Heavy Trailers (idling)	42 to 48		
Piling Plant	48 to 54		
Concrete Pump	52 to 58		
Concrete Vibrators	47 to 53		
Hand Tools (Used Externally)	45 to 51		
Work Zone (Forklifts, Trucks, etc.)	43 to 49		
Crane (electric)	41 to 47		

Table 11 – Predicted Noise Emissions to H1 & H2 Receivers

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$ (Internal)	Noise Management Level	Comment
Excavator with Bucket (up to 20 tonnes)	50 to 64	80 dB(A)$L_{eq(15min)}$ (Assessed at building facade)	See discussion in Section 7.3.
Concrete Saw	51 to 64		
Bobcat	50 to 64		
Heavy Trailers (idling)	45 to 59		
Piling Plant	52 to 65		
Concrete Pump	55 to 69		
Concrete Vibrators	50 to 64		
Hand Tools (Used Externally)	49 to 62		
Work Zone (Forklifts, Trucks, etc.)	45 to 59		
Crane (electric)	47 to 53		

7.3 DISCUSSION – NOISE

Predicted construction noise levels to surrounding receivers, as presented in tables above, are summarised and discussed below:

7.3.1 R1 - Residential Receivers

Construction noise impacts to residential receivers to the north of site are expected to intermittently exceed the noise affected level (NAL) when operating the following plant or undertaking the following processes:

- Excavator with bucket attachment
- Concrete saw
- Piling works
- Bobcats
- Concrete Pumps
- Concrete Vibrators

Exceedances from the use of the above are expected when operated/undertaken near to the northern site boundary. Generally, noise levels would be below the NAL.

In is not expected that the 'Highly Noise Affected Level' (HNAL) will be exceeded from any process at surrounding residential locations.

All proposed construction activities have the potential to exceed a BG+5 noise level during C5 hours. The use of mobile plant and powered hand tools is predicted to be below this limit where operated away from the northern site boundary or otherwise screened by the building form or site boundary hoarding.

7.3.2 C1 & C2 – Commercial Receivers

Noise levels from the proposed construction activities are not expected to exceed the 70dB(A) noise management at commercial receiver boundaries.

7.3.3 S1 – Short-term Accommodation 'Ronald McDonald House'

Construction activities are predicted to be below the adopted NML at this location.

7.3.4 H1 & H2 – Hospital Receivers

Construction activities are generally predicted to be below the adopted NML at this location.

7.3.5 Generally

Noise levels predicted to residences occasionally exceed EPA recommended noise management levels however, proposed activities are intermittent and will generally occur over a limited time period.

8 GROUND VIBRATION IMPACTS

Bulk excavation and groundworks is to be undertaken by others prior to use of site by Kane. The most vibration intensive works proposed by Kane will be pilling works for the foundations of structure. If piling is in soil, it is not typically expected to create vibration levels exceeding EPA guidelines.

Given the distance of the development site from residential receivers to the north, vibration levels are unlikely to exceed structural damage or amenity vibration criteria.

It is expected that piling works will be occurring near to adjacent buildings within the Westmead Hospital (H1&H2) site including the Ronald McDonald House (S1).

Due to the proximity of these works, it is recommended that vibration monitoring occur during the initial stage to confirm vibration criteria are not exceeded. Elsewhere, if complaints are received as a result of vibration impacts, the complaints procedure listed in Section 10 should be followed and, where required, vibration monitoring should be implemented.

8.1 SAFEGUARDS TO PROTECT SENSITIVE STRUCTURES

It is impossible to predict the vibrations induced by the excavation/construction operations on site at potentially affected receivers. This is because vibration level is principally proportional to the energy impact which is unknown nature of terrain in the area (type of soil), drop weight, height etc.

A suitably qualified acoustic consultant should undertake monitoring of initial excavation process when conducted near potentially affected receivers to ensure that vibration criteria set out in section 5 are not exceeded.

8.2 VIBRATION MONITORING

In the event of complaints or concern for structural damage to nearby buildings, vibration monitors can be installed during the key stages.

The monitors are proposed to be fitted with GSM modem and remotely signal up to five mobile phones indicating any exceedance of the prescribed vibration criteria to enable immediate notification to be sent to the contractor when vibration thresholds are approached.

We note, it is impossible to predict the vibrations induced by the excavation/construction operations on site at potentially affected receivers. However, the total vibration emissions are to be limited with real-time alarm notification given to the plant operators to ensure that the vibration limits are not exceeded. Based on feedback from the real-time monitoring system, the plant operators will be able to modify their operations to ensure the vibrations are kept within acceptable limits.

8.2.1 Vibration Monitoring Download

Downloading of the vibration logger will be conducted on a regular basis. In the event exceedance of vibration criteria or alarms occur, downloading of the logger will be conducted more frequently. Results obtained from the vibration monitor will be presented in a graph format and will be forwarded to the client for review. It is proposed that reports are provided fortnightly with any exceedance in the vibration criteria reported as detailed in this report.

8.2.2 Vibration Monitoring Reports

A fortnightly report will be submitted to the client via email summarising the vibration events. The vibration exceedance of limit is recorded the report shall be submitted within 24 hours. Complete results of the continuous vibration logging will be presented in fortnightly reports including graphs of collected data.

9 SPECIFIC NOISE CONTROLS

9.1 STATIC PLANT

If required, additional noise reduction can be achieved by erecting solid barriers around static plant such as diesel generators and any stationary concrete pumps.

The use of electric powered tower crane means that enclosing of crane motors or fitting of exhaust mufflers is not required. Adopting quieter plant is effective in reducing the noise emitted from its operation.

9.2 CONCRETE PUMPS, PILING PLANT

Noise from concrete pumps and piling rigs have the potential to result in intermittent exceedances of allowable noise levels. Screw piling is recommended above hammer or vibro-piling which pose greater risk of exceeding vibration criteria and noise management levels.

Concrete pumps should not be operated prior to 7:30 am and be placed as close as possible to the middle of the site (where feasible) to reduce proximity to the nearby receivers or otherwise near to site boundary hoardings which will also maximise noise reduction from screening.

We note that operational limits for piling are inherently addressed in consent condition C8.

9.3 VIBRATORY ROLLERS & COMPACTORS

Consent condition 17 stipulates vibratory compactors are not to be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C16.

Given that the nearest residence is approximately 80m from site, the use of compactor plant would be considered acceptable under the requirements of the development consent.

Notwithstanding, we recommend that only non-vibratory rollers be used on site, and that sample vibration measurements be undertaken to confirm compliance with DIN 4150-3 and EPA criteria prior to the use of other compacting plant.

9.4 ACOUSTIC BARRIERS

The placement of barriers at the source is generally only effective for static plant (i.e. diesel generators). Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source. Barriers can also be placed between the source and the receiver.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15 dB(A) can be affected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8 dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

Screens around work areas will provide no material benefit for multi storey receivers as these will overlook screening.

9.5 OTHER ACTIVITIES

In the event of complaint, noise management techniques identified in this report should be employed to minimise the level of noise impact if management levels are found to be exceeded. This may include additional community consultation and re-scheduling of loud construction processes.

Notwithstanding above, general management techniques and acoustic treatments are included in Section 9.6 which may be implemented on a case-by-case basis to reduce noise emissions to surrounding receivers.

9.6 GENERAL RECOMMENDATIONS

Other noise management practices which may be adopted are discussed below. In addition, notification, reporting and complaints handling procedures should be adopted as recommended in this report.

9.6.1 Treatment of Specific Equipment

Where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

9.6.2 Material Handling

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).

9.6.3 Selection of Alternate Appliance or Process

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. By carrying out this activity by use of bulldozers ripping and/or milling machines lower levels of noise will result.

9.6.4 Establishment of Site Practices

This involves the formulation of work practices to reduce noise generation. This includes locating fixed plant items as far as possible from residents as well as rotating plant and equipment to provide respite to receivers. Construction vehicles accessing the site should not queue in residential streets and should only use the designated construction vehicle routes. Loading of these vehicles should occur as far as possible from any sensitive receiver.

9.6.5 Management Training

All site managers should be aware of noise and vibration limits, applicable control measures and methods. They should ensure that all agreed noise and vibration measures are carried out by employees and sub-contractors.

A copy of the Noise Management Plan is to be available to contractors, and site inductions should detail the site contact in the event of noise complaints.

9.6.6 Respite Periods

We note that development consent condition C8 provides specific time periods in which plant or activities with the potential to exceed noise management levels are permitted to operate. This inherently provides periods, subsequently reducing the occurrence and severity of noise impacts to surrounding receivers.

The respite periods would apply to very noisy works exceeding the highly noise affected management levels or as stipulated for the activities included in Condition C8. It is noted that the only activities predicted to exceed the HNML's are those described in C8.

It is noted that, although DA hours allow for Saturday works, Kane have proposed a 5-day working week program which will provide further respite from construction activities for patients and families within the hospital precinct on Saturdays.

9.6.7 Noise Monitoring

Noise monitoring can be undertaken to determine the effectiveness of measures which are been implemented, whilst the results of monitoring can be used to devise further control measures.

Attended noise measurements can be undertaken at key stages (i.e; piling, first major concrete pour) when particularly noise generating activities are undertaken or specific items of plant are in operation.

Attended noise measurements are to be conducted in accordance with Australian Standard AS1055: 2018 *'Acoustics- Description and measurement of environmental noise'*, and should include the following:

- Type 1 or 2 sound meter (calibrated)
- Use of appropriate noise descriptor (in this case, $L_{eq(15min)}$).
- Detail of measurement position and proximity to reflecting surface if any (building or similar). Measurement positions will typically be a residential property boundary.

Monitoring not be should be conducted under adverse weather conditions. The conditions applying at the time of the measurements should be indicated in the reporting.

9.6.8 Vibration Monitoring

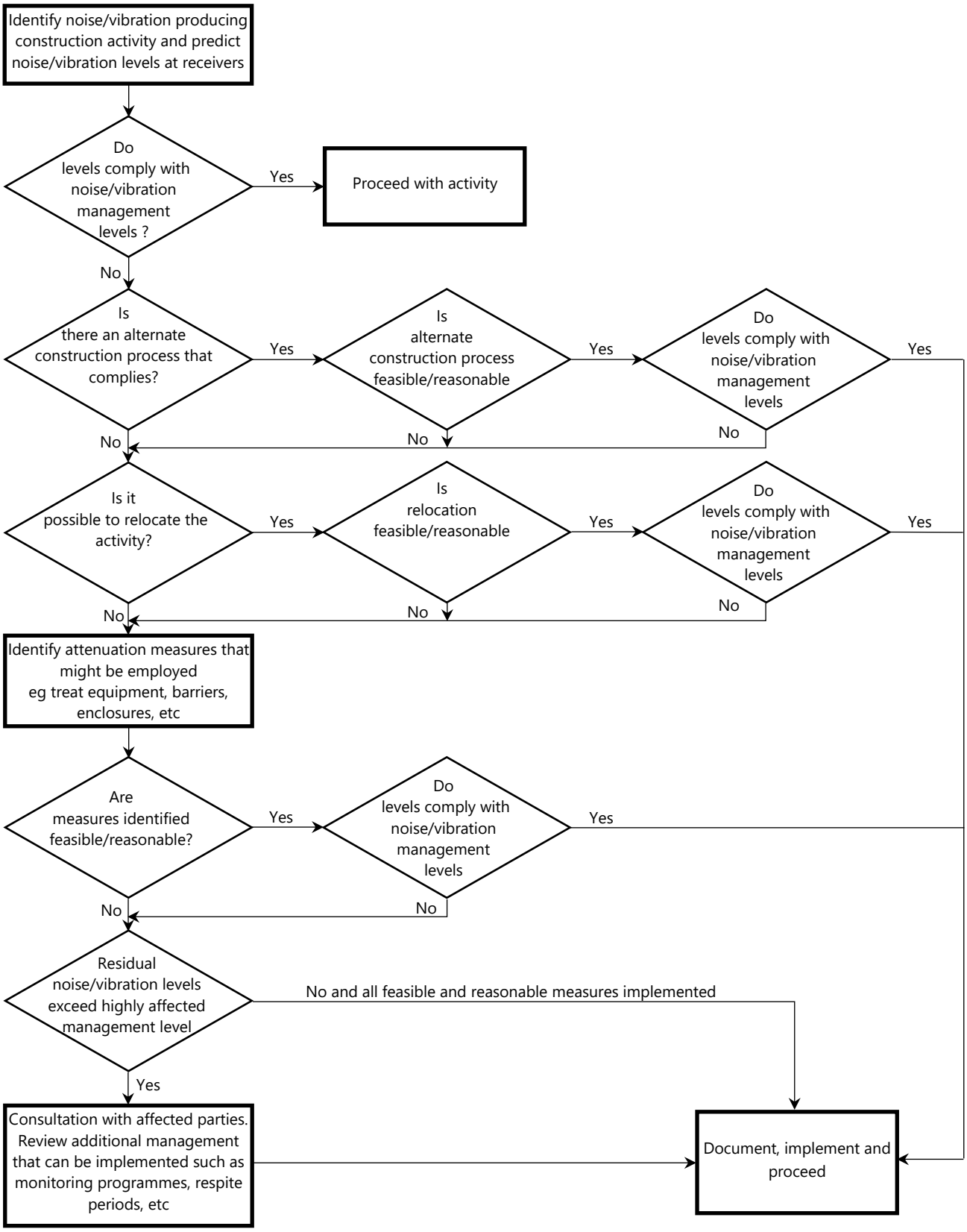
Vibration monitoring should occur at the nearby Ronald McDonald (S1) and Westmead Hospital (H1&H2) buildings during pilling works.

The measurement location should be near the middle of the common boundary between the two properties, or as otherwise determined from time to time to best measure representative vibration levels. The monitor used should log the peak particle velocities and also transmit SMS warnings to the contractor and acoustic expert if a pre-determined threshold is exceeded. Regular reports should be provided (twice monthly) showing the vibration levels recorded and comparing these to the criteria.

Attended or unattended monitoring should also be undertaken at other locations in response to complaints, or as needed to confirm the use of additional plant/processes with the potential to exceed vibration criteria.

9.7 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

The flow chart presented below illustrates the process that should be followed in assessing construction activities.



9.8 DEALING WITH OFFENSIVE NOISE LEVELS

Should ongoing complaints of excessive noise occur, immediate measures shall be undertaken to investigate the complaint, the cause of noise exceedances and identify the required changes to work practices.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

All complaints or offensive noise received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of offensive noise shall involve where applicable:

- noise measurements at the affected receiver.
- an investigation of the activities occurring at the time of the incident.
- inspection of the activity to determine whether any undue noise is being emitted by equipment.
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

10 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

10.1 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

Consent Condition B3 states the following with respect to community interaction:

B13. The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009);

(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;

(d) include strategies that have been developed with the community for managing high noise generating works;

(e) describe the community consultation undertaken to develop the strategies in condition B13(d);

(f) include a complaints management system that would be implemented for the duration of the construction; and

(g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B13.

Consultation Requirements under the SSDA Conditions

MSCP Condition B13 states that the Plan should be prepared in consultation with the relevant government organisations and surrounding stakeholders. These include:

- NSW Health
    - Western Sydney Local Health District (WSLHD) and Westmead Adult's Hospital.
    - Sydney Children's Hospital Network (SCHN) and Children's Hospital Westmead (CHW);
- Kids Research Institute (KRI)
- Ronald McDonald House

Ongoing consultation

Ongoing consultation with key hospital stakeholders, particularly SCHN and WSLHD, containing noise and/or vibration sensitive equipment will continue throughout the construction of the project. This will be in the way of weekly interface and disruption notice meetings.

A complaint procedure will also be implemented where stakeholder complaints are tracked weekly and reported back to the principal during weekly contractor and interface meetings.

These complaints, whether it be from the community members or from hospital stakeholders, will be tracked in KANE's Community Contacts and Complaints Register.

10.2 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration occur, immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action; and
- Setup vibration monitoring system at the location represents the nearest vibration receiver location with alarm device which can inform the project manager on site if the vibration exceedance happened.
- Summary of feedback to the complainant.

A permanent register of complaints should be held.

All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of a complaint shall involve where applicable;

- noise measurements at the affected receiver;
- an investigation of the activities occurring at the time of the incident;
- inspection of the activity to determine whether any undue noise is being emitted by equipment; and
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

11 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process.
2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
3. Implement additional acoustic treatment in the form of localised barriers, silencers etc. where practical.
4. Selecting alternative equipment/processes where practical
5. Setup noise monitoring devices at locations represent nearest noise receivers and provide noise data for each complain time period. Analysis is required and determine suitable noise mitigation measures.

Complaints associated with noise and vibration generated by site activities shall be recorded on a Noise Complaint Form. The person(s) responsible for complaint handling and contact details for receiving of complaints shall be established on site prior to construction works commencing. A sign shall be displayed at the site indicating the Site Manager to the general public and their contact telephone number.

12 CONCLUSION

This document presents a noise and vibration management plan for construction activities proposed at Westmead Children's Hospital MSCP.

The principal issues which addressed in this report are:

- Specific activities that will be conducted and the associated noise/vibration sources;
- Identification of potentially affected noise/ vibration sensitive receivers;
- The development, hours of work and excavation period;
- The construction noise and vibration requirements specified in development conditions of consent.
- Noise/ vibration response procedures;
- Assessment of potential noise/ vibration from the proposed construction activities; and
- Contingency plans to be implemented in the event of non-compliances and/or noise complaints.

The assessment of noise and vibration indicates that construction actives associated with the project development may generate noise levels that will require some additional management. Adoption of the controls detailed in Section 9 of this report and adherence to the requirements of development consent will ensure that noise impacts will be minimised.

Vibration goals have also been set in this report to minimise structural damage risk for existing structures close to the project site and to protect human comfort in line with the requirements of the consent.

Noting the above, we find the construction noise and vibration management requirements of development consent B13 to be satisfied.

Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd
Thomas Hutchens

APPENDIX A – CURRICULUM VITAE

Qualifications & Experience

2010-2012 Advanced Diploma of Sound Production, NMIT

2017-2019 Master of Architectural Science (Audio and Acoustics), University of Sydney

2019-Current Project Engineer, Acoustic Logic Consultancy

Outline of Experience

Beginning at ALC in 2019, Tom has worked in detailed assessment of acoustic impacts and been involved in the design of noise/vibration attenuation systems to meet relevant statutory codes (BCA, EPA guidelines and Australian Standards).

His work involves the investigation, design and construction supervision of noise and vibration control measures associated with mechanical services and building works.

Whilst being employed with Acoustic Logic, Tom has been responsible for noise and vibration engineering for residential, hospital, commercial and special projects including;

- Building acoustics and building services noise control.
- Environmental noise modelling and assessment.
- Traffic, train and aircraft noise prediction.
- Industrial Noise Control.
- Construction Noise and Vibration.
- NSW Office of Liquor and Gaming acoustic assessment.
- Testing and assessment of walls/floors/glazing/building services.
- Room acoustics modelling and design for critical listening and performance spaces.

Project Experience

A sample of projects Tom has been or is currently involved with as a Project Engineer include the following:

Bangarra Recording Studio (Walsh Bay Arts Precinct) – Commercial recording studio

Crown Resorts Sydney – Hotel, gaming, entertainment and residential development

School at the Meadowbank and Employment Precinct – State significant education development

Upgrades to Chatswood Public and High Schools – Educational development

Darlington Public School – Educational development

Hornsby Ku-ring Gai Hospital – Public hospital expansion

Campbell's Stores, Circular Quay – Entertainment precinct

1 Castlereagh Street, Sydney – Commercial development

Marriot, Auburn – Hotel development

KANE

WASTE MANAGEMENT PLAN

CHILDRENS HOSPITAL WESTMEAD STAGE 2 – MULTI STOREY CAR PARK
PROJECT CONTRACT NUMBER: HI 21359

5/08/2022

CHANGE HISTORY

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	First Issue	SB	29/04/2022
02	For Construction	No change	SB	5/08/2022
03				
04				
05				
06				
07				

TABLE OF CONTENTS

1.0 INTRODUCTION

This Waste Management Plan is relevant to the development of the MSCP located on the junction of Redbank Rd and Labyrinth Way, Westmead. The works include the following;

- The design and construction of all elements as per the principal's documentation that includes but not limited to relevant standards, BCA, HI Engineering Services Guidelines and HI MSCP Guidance Notes (DGN's)
- Transition from the Combined Civils works handover site conditions to the MSCP Contractor
- Construction of a minimum of 996 spaces on the site
- Stormwater connection to adjacent existing stormwater line
- The extension of the water main from Labyrinth way into the site
- All in-ground infrastructure
- Future proofing the MSCP structure for a link bridge to connect the MSCP to the CHW existing Level 2
- Construction of a landscaped area including security, lighting, grassed area, mounds, battering and planting in and around the site, ensuring the new and existing areas tie in together
- Construction of the playground areas
- Provision of improved pedestrian access, signage and lighting around the site during and after construction. Ensure all temporary and permanent pedestrian pathways are DDA / BCA compliant
- Opportunity for an ancillary retail kiosk
- Associated building services including but not limited to electrical, mechanical, hydraulic, security, IT / Communications, fire protection, solar PV, carpark management and the like
- Landscaping and signage to the items and make good landscaping where applicable
- Establishing a safe surrounding environment at the interfaces, and continuity of healthcare services, air quality, vibration management, acoustic controls, overland flow, fire egress and maintenance routes. (high risk workshops will be required prior to new work types to ascertain tooling and methodology appropriateness)

The Key Participants in the design and delivery of the MSCP project includes:

Principal	Health Infrastructure
User Group	Sydney Children's Hospital Network (SCHN)
Project Manager (Client)	Price Waterhouse Cooper (PwC)

The objective of this Waste Management Plan (WMP) is to outline measures to classify and dispose of all waste generated from the project during the Construction Phase and to ensure that resources are used efficiently in an attempt to minimise waste volumes. The processes detailed within this plan will ensure that waste will be correctly managed in line with the relevant Legislative requirements as well as the guidelines and priorities set out by the NSW Environment Protection Authority (EPA). Effective Waste Management is considered a communal responsibility, although specific responsibilities have been defined to ensure active implementation of Waste Management Procedures.

The management of Waste associated with the Operations of the completed facility are considered to be at the discretion of the End User Group and will therefore not be addressed within this Waste Management Plan.

2.0 LEGISLATION / STANDARDS / GUIDELINES

NSW Protection of the Environment Operations Act, 1997 (POEO Act);

NSW Protection of the Environment Operations (Waste) Regulation 1996;

NSW Waste Avoidance and Resource Recovery Act 2001;

NSW Waste Minimisation and Management Act 1995;

Office Environment & Heritage (OEH) Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a)

The strategies employed to minimise waste on-site will parallel the approach to Waste depicted in the EPA Waste Management Hierarchy:

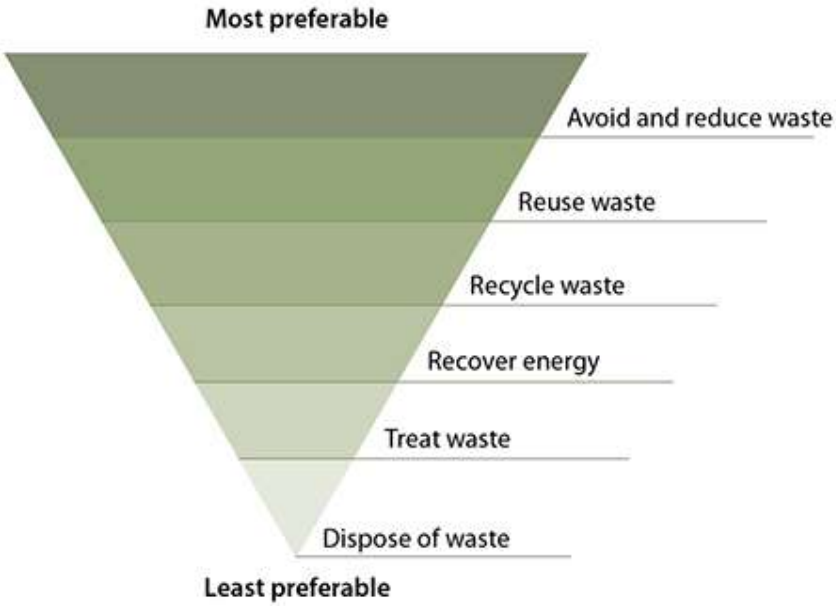


Figure 1: Waste Management Hierarchy. Sourced from EPA

3.0 PROCESS

Waste creation during the completion of construction works shall consist of a) Building material waste b) general waste from staff engaged during the creation of the facility.

During the construction phase, key waste sources include:

- green waste from vegetation clearance;
- excess spoil from excavations;
- construction and general waste such as demolition waste from the existing buildings currently onsite;
- asphalt and concrete waste;
- liquid wastes such as oils and used chemicals from equipment maintenance domestic waste from site personnel including food scraps, glass and plastic bottles, paper and plastic containers;
- site sewage and other wastewater run-off including water utilised for dust suppression.

Generally, activities identified to facilitate the reduction of waste creation include:

- Utilise separate re-cycling bins
- Where practical use “prefabrication” rather than “in-situ materials”
- Ensure materials are recycled where practical.
- Monitor waste disposal.
- Ensure adequate site bins are available to control waste.

The management of waste will be conducted in accordance with the process illustrated in Table 1.

ACTIONS	RESPONSIBILITY
Appropriate Training All personnel are to receive the project Environmental induction and ongoing waste management awareness and training via tool box talks on a regular basis.	**Environment Manager**
Assessment of Onsite Situation - Identify waste streams and approximate quantities prior to commencement of works. - Identify management measures to reduce, reuse, recover, and recycle in preference to disposing to a licenced landfill. - Advise Environment Manager prior to generating new waste streams. - Refer to Table 1 for waste stream types and disposal locations already identified.	**Site Foreman** **Project Engineer** **Environment Manager**

Waste Management Onsite
• Waste storage facilities/stockpile locations to be established prior to works commencing and identified on the Environmental Control Map.
• Waste storage facilities/stockpile locations to be appropriately signposted e.g. recyclables, steel, concrete, general waste.
• The waste hierarchy of avoid, reduce, reuse and recycle to be employed throughout the project. Examples to be employed on site include:
  ○ Alternative products with recycled content and/or lower embodied energy will be investigated, especially paper, landscaping and concrete products;
  ○ Beneficial reuse will occur on site where feasible to do so;
  ○ Possible offsite crushing and screening will be explored to create a potential reusable product;
  ○ Topsoil will be stockpiled for later reuse in site rehabilitation, where possible.
• Material sent offsite will be classified by an appropriately qualified professional in accordance with the Waste Classification Procedure and OEH's Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a).
	Site Foreman
	Superintendent
	Project Engineer
	Environment Manager

Monitoring and Recording • A waste tracking form is to be used for all materials that require off-site disposal. • Monitoring of waste management practices to be recorded using the **Weekly Environmental Inspection Checklist.** • Monitoring of goals and limits in regards to waste management will be completed by the Environment Manager. • Any actions from inspections to be assigned to the foreman for the area and recorded using the **Environmental Inspection Actions Form.** • Any observations will be kept in a site diary and significant issues are to be raised with the Environmental Manager.	**Site Foreman** **Project Engineer** **Environment Manager**

Table 1: Onsite Waste Management Actions and Responsibilities

4.0 MANAGEMENT

- Waste management and reuse strategies will be considered and implemented where practical and cost-effective. On-site reuse opportunities will be maximised, with efforts made to implement reuse and recycling initiatives. Examples to be employed on site include:
    - Beneficial reuse of spoil as fill where practicable for backfilling, access roads and retaining wall construction at fill locations;
    - Possible offsite crushing and screening will be explored to create a potential reusable product;
    - Topsoil will be stockpiled for later reuse in site rehabilitation, where possible;
    - Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other sources of water shall be used in preference to potable water for construction activities, including concrete mixing and dust control.
- Material sent offsite will be classified by an appropriately qualified professional in accordance with the Waste Classification Procedure and OEH's Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a).
- Table 1 lists the waste generating aspects and identifies the range of solid, hazardous, special and liquid wastes that are likely to be generated by construction. Table 1 also outlines the proposed reuse, recycling or disposal method.
- Staff will be inducted on the principles of waste management and resource use requirements while working on site.
- Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing or disposal on site, except as expressly permitted under the POEO Act, if a licence is required for that waste type.
- Mitigation and management measures for waste impacts during construction are outlined in Table 2.

WASTE	CLASSIFICATION	POTENTIAL RECOVERY/REUSE	DISPOSAL (ALL TRACKED)
Green waste from clearing and grubbing of vegetation	General Solid Waste (Non Putrescible)	• Green waste would be reused as mulch onsite or provided to local schools for landscaping.	• Clear and grub sub-contractor would remove timber and excess mulch to appropriately approved facilities.
Virgin Excavated Natural Material (VENM) – residual soil and shales	General Solid Waste (Non Putrescible)	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Wherever possible, VENM would be used on the project and excess material would be transferred to appropriately approved sites requiring VENM.
Excavated Natural Material (ENM)	General Solid Waste (Non Putrescible) – Resource Recovery Exemption	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Wherever possible, ENM would be used on the project and excess material would be transferred to appropriately approved sites requiring ENM.
Mixed Spoil	General Solid Waste (Non Putrescible)	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Mixed unsuitable spoil would be transferred to appropriately approved waste facilities.
Demolition concrete and bitumen	General Solid Waste (Non Putrescible)	• Stockpiled and transported to recycling centre and recycled for project construction activities.	• Nil. Valuable recourse.
Building rubble and structural element demolition materials	General Solid Waste (Non Putrescible)	• Collected in designated collection areas and reused as much as practically possible.	• Mixed unsuitable materials would be transferred to appropriately approved waste facilities.
Waste metals	General Solid Waste (Non Putrescible)	• Stockpiled and transported to recycling centre.	• Nil. Valuable recourse.
Liquid wastes – potholing slurries, site sewage, potholing, paint.	Liquid Waste	• Liquid waste would be clearly identified and stored separate from other waste materials for selective disposal.	• Liquid waste would be stored so as to prevent or control accidental releases to air, soil, and water resources in the area. • A licensed waste collection contractor would collect the liquid wastes generated on site and dispose to appropriately approved liquid waste facilities.
General office waste – paper, cardboard, used printer cartridges.	General Solid Waste (Non Putrescible)	• Office waste such as paper, cardboard boxes, comingled wastes (Cans, plastic bottles etc) and used printer cartridges would be recycled.	• Food wastes and non recyclables will be sent to landfill.
Asbestos or Asbestos Containing Material	Special Waste	• None currently identified	• A licensed waste collection contractor would collect the liquid wastes generated on site and dispose to appropriately approved special waste facilities.

Table 2: Construction Waste and Management

NO		MITIGATION MEASURE	TIMING	RESPONSIBILITY	TOOL
General					
1.		The 'waste hierarchy' will be maximised during construction and incorporated into work programs, purchase strategies and site inductions, and will be assessed quarterly to identify opportunities for improvement.	Pre-construction and construction	Environmental Manager	Site Inductions / Toolbox Talks
2.		Excavated material would be reused on-site, as far as practically possible.	Construction	Project Engineer	Site Inductions / Toolbox Talks
3.		Cleared vegetation will be reused on-site, as far as practically possible.	Construction	Project Engineer	Site Inductions / Toolbox Talks
4.		All liquid and/or non-liquid waste generated on the site from will be assessed and classified in accordance with Waste Classification Guidelines (DECC, 2008), as described in the **Waste Classification Procedure**.	Construction	Project Engineer	Site Inductions / Toolbox Talks / Waste Classification Procedure
5.		Waste disposal will be in accordance with the POEO Act. Wastes that are unable to be reused or recycled will be disposed of off-site at an appropriately licensed waste management facility, following classification.	Construction	Project Engineer	Site Inductions / Toolbox Talks / Waste Classification Procedure / Waste Tracking Form / Waste Register
6.		A section 143 notice under the POEO Act will be completed by both the project and the relevant property owner, should off-site disposal of construction waste material or VENM onto private property be deemed necessary.	Construction	Project Engineer / Environmental Manager	Section 143 Notice
7.		Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by the project's EPL.	Construction	Project Engineer	Site Inductions / Toolbox Talks
8.		Waste segregation and separation will be promoted to facilitate reuse and recycling as a priority of the waste management program as follows: – waste segregation at the worksites - all waste materials will be separated onsite into dedicated bins/areas where practicable for either reuse onsite or collection by a waste contractor; and – waste separation off-site - all wastes will be deposited into one bin where space is not available on the worksite(s) and the waste will be sorted by a waste contractor.	Construction	Environmental Manager	Site Inductions / Toolbox Talks
9.		Recycled material will be considered for use in rail construction where feasible and reasonable in accordance with the NSW Government's WRAPP.	Construction	Construction Manager	Site Inductions / Toolbox Talks
10.		Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other water sources will be used in preference to potable water for construction activities, including concrete mixing and dust control.	Construction	Construction Manager	Site Inductions / Toolbox Talks / Permit to Pump
11.		A procurement approach will be adopted to reduce waste at the higher end of the waste hierarchy. During the procurement process, alternative products with recycled content and/or lower embodied energy will be investigated,	Pre-Construction	Environmental Manager	Site Inductions / Toolbox Talks

NO		MITIGATION MEASURE	TIMING	RESPONSIBILITY	TOOL
		especially paper, landscaping and concrete products. These products will be preferred where they meet all required specifications, are fit-for-purpose, can meet supply requirements and are cost neutral.			
Tracking					
12.		Tracking of waste generation trends by type and amount of waste generated to be recorded on the **Waste Register**.	Construction	Environmental Manager	Toolbox Talks
13.		All waste collected for disposal and/or recycling, including amounts, date and time and details, and location of disposal to be recorded on the **Waste Register**.	Construction	Environmental Manager	Toolbox Talks / Waste Register
Transportation					
14.		On-site and off-site transportation of waste would be conducted so as to prevent or minimise spills, releases and exposures to employees and the public.	Construction	Project Engineer	Site Inductions / Toolbox Talks
15.		All trucks transporting wastes off-site will be appropriately licensed to carry the waste and will have load covers installed.	Construction	Project Engineer	Site Inductions / Toolbox Talks
Monitoring					
16.		Monitoring and reporting requirements to be undertaken including regular visual inspections of waste storage collection and storage areas for evidence of accidental releases and to verify that wastes are properly labelled and stored.	Construction	Environmental Co-ordinator	Site Inductions / Toolbox Talks / Weekly Environmental Inspection Checklist
Hazardous Waste					
17.		Any hazardous waste generated on-site, as classified in accordance with **Waste Classification Procedure**, will be disposed of in accordance with the DECCW Guidelines.	Construction	Project Engineer	Waste Classification Procedure
18.		Special management actions for any hazardous waste discovered, generated or procured on-site shall be implemented, including as appropriate: – storage in closed, bunded containers; – secondary containment systems available and to be at least 110 percent of the largest storage container, or 25 percent of the total storage capacity (whichever is greater), in that specific location; – information to be made readily available on chemical compatibility to employees, including labelling each container to identify its contents; – hazardous waste storage areas to be clearly identified (label) and demarcated, including documentation of the location on a facility map or site plan; and – spill response and emergency plans to be prepared to address accidental release of hazardous materials.	Construction	Construction Manager	Site Inductions / Toolbox Talks / Weekly Environmental Inspection Checklist

Table 3: Mitigation Measures

5.0 MONITORING AND REPORTING

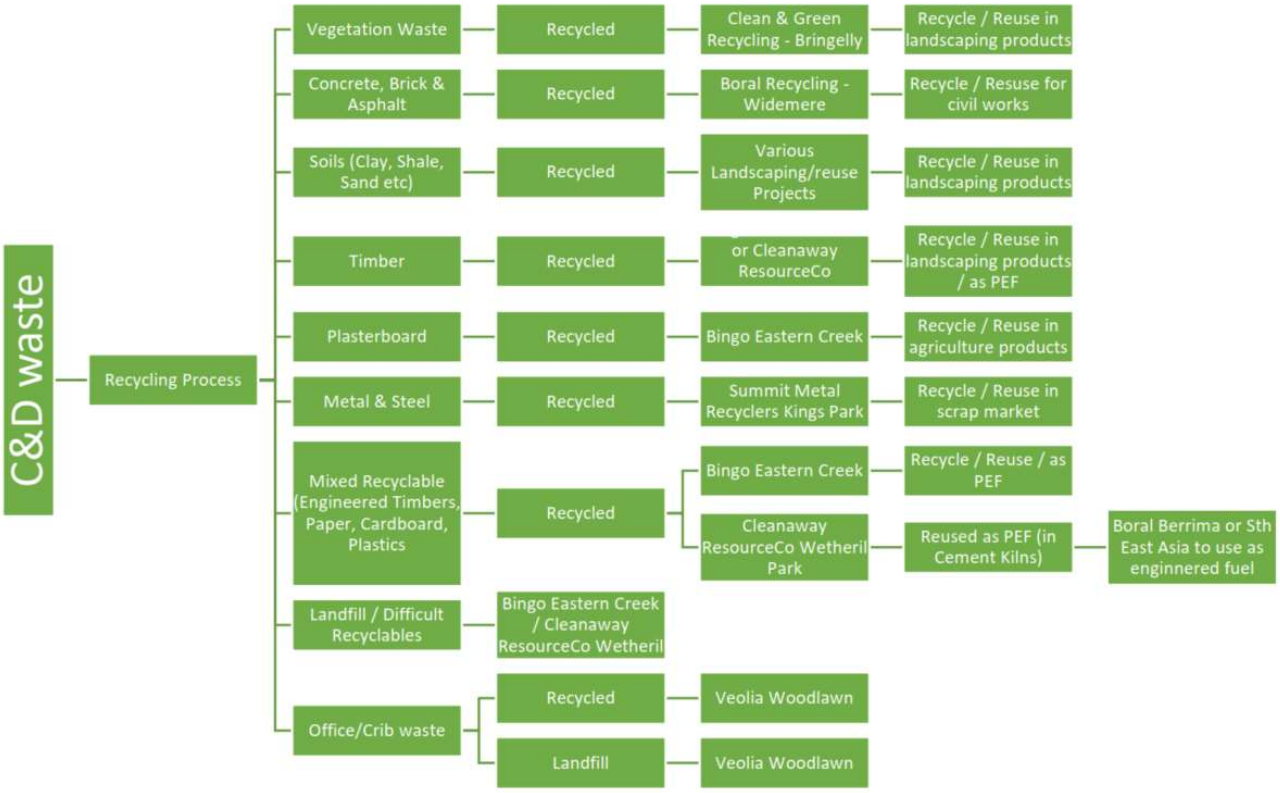
- A waste tracking form is to be used for all materials that require off-site disposal. A copy of the waste tracking form (including dockets and receipts) will be retained to record the date of waste removal, and identify the waste transport contractor and destination of the wastes from the worksite.
- Monitoring, inspection and reporting shall be undertaken including monitoring tools, monitoring frequencies, inspection records, tracking of actions, communication of outcomes and accountabilities.
- The following wastes are subject to special monitoring and reporting requirements by OEH under the waste tracking system:
    - hazardous non-liquid waste (e.g. batteries);
    - industrial non-liquid waste; and
    - liquid wastes including non-recyclable oils, fuels, chemicals and paint.
- The Weekly Environmental Inspection Checklist will be used to ensure that all environmental aspects are reviewed during inspection of the project.
- Regular inspections will also be undertaken to assess environmental compliance against regulatory requirements.
- Biannual reporting (within the first two weeks in January and July) will be provided to Health Infrastructure ("HI") on the amount of material generated and amount recycled.
- Actions arising from the inspections will be recorded on the Environmental Inspection Actions Form and each action will be allocated to the foreman for the work area.

6.0 RECYCLING AND DISPOSAL LOCATIONS

The primary recycling facility proposed is:

BM Recycling, Banksmeadow
38 McPherson St, Banksmeadow NSW 2019

The proposed recycling process and respective disposal locations are indicated below:



7.0 ASBESTOS MANAGEMENT

Refer to Construction Environmental Management Plan (CEMP) and the Asbestos Management Plan (AMP) for information regarding the management of Asbestos.

7.0 SUSTAINABILITY

Kane is committed to achieving Green Star credit 22 (construction & demolition waste), which requires demolition and construction waste contractors to provide a Compliance Verification Summary (CVS) and provide monthly reporting confirming >90% waste has been diverted from landfill.