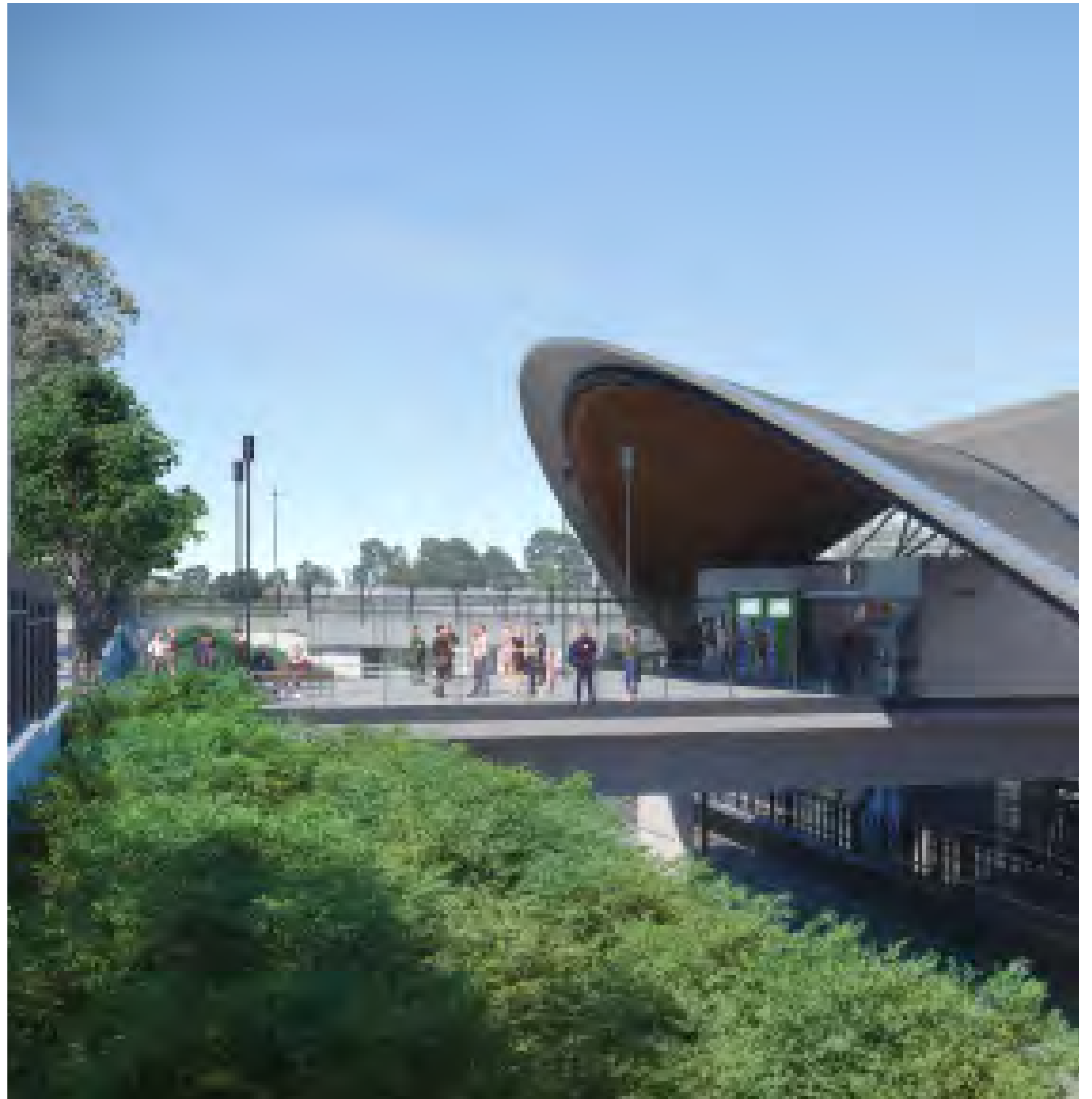


Appendices



Artist Impression of Cudgegong Road Station. Source: Ai3D.

**Appendix A
Planning Approval Urban Design Condition
44- Extract from SSI 5414 Ministerial
Infrastructure Approval**

Urban Design

C44. the Proponent shall, prior to the commencement of permanent built works and/or landscaping, unless otherwise agreed by the Director-General, prepare and implement an Urban Design and Corridor landscape Plan for the corresponding permanent built works and/or landscaping. The Plan shall be submitted to the Director-General and made publicly available.

In preparing the Plan, the Proponent shall consult with the Department (Land Release), RMS, relevant Councils and the community.

The Plan shall be prepared by appropriately qualified person(s) and detail the design initiatives to integrate rail infrastructure, stations and facilities into their existing and proposed settings, and landscaping measures to minimise, mitigate and/or offset the impacts of the SSI (such as open space), visual amenity and local vistas and heritage values. The Plan shall include, but not necessarily be limited to:

(a) identification of design objectives and standards based on local environmental and heritage values, strategic and statutory planning, future land release form and function, sustainable design and maintenance, transport and land use integration, passenger and community safety and security, community amenity and privacy, and relevant design standards and guidelines;

(b) details on the plans to provide, mitigate and/or augment landscaped areas and elements, with landscaping works to enhance ecological values, including riparian areas and fauna corridors, the

provision of water sensitive urban design initiatives and to mitigate impacts to heritage landscapes;

(c) design details of the built elements of the SSI, including retaining walls, embankments, viaducts, culverts, bridges and underpasses, noise barriers, train stabling facility, and substations, and the measures to minimise the impact of these elements, particularly with respect to the impacts on adjoining residences, educational facilities, open space areas and heritage items and landscapes, including the recommendations of the Visual Impact Strategy (condition C27);

(d) specific plans for station precincts to provide high quality sustainable stations that enhance the public domain and provide for active uses, ensure intermodal integration and equitable and safe access, including connectivity of the stations to surrounding precincts and integration into strategic planning directions for these areas consistent with Station Access Plan(s) (condition C5);

(e) details on pedestrian and cycle access elements and fixtures, including crossings, secure cycle facilities, and other fixtures such as seating, lighting, fencing and signs etc, to enhance connectivity and the provision of a safe and secure environment consistent with the Pedestrian and Cyclist Network Facilities Strategy (condition C10);

(f) details on parking elements and how commuter parking areas at stations shall be designed to minimise amenity impacts and so as not to preclude or prejudice the future functionality of town centres consistent with the Parking Management Strategy (condition C11);

(g) details on public art and heritage (indigenous and non-indigenous) interpretation installations;

(h) implementation, management and monitoring strategies to ensure the establishment and ongoing maintenance of built elements and landscaped areas, including performance standards; and

(i) consideration of relevant design standards, such as the Sustainable Design Guidelines for Stations, Commuter Car Parks and Maintenance Facilities Bridge Aesthetics Design guidelines to improve the appearance of bridges in NSW (2012), Guidelines for the Development of Public Transport Interchange Facilities (2008) and Crime Prevention Through Environmental Design Principles, and relevant Agency and Council design standards.

The Plan shall be endorsed by an independent Design Review Panel. The Design Review Panel shall consist of appropriately skilled professionals in the fields of architecture, landscape design, transport integration and heritage. The Panel representatives shall be approved by the Director-General.

Infrastructure Approval

Section 115ZB of the *Environmental Planning and Assessment Act 1979*

I grant approval to the State significant infrastructure application referred to in schedule A, subject to the conditions in schedules B to E.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

The Hon Brad Hazzard MP
Minister for Planning and Infrastructure

Sydney 08 MAY 2013

2013

SCHEDULE A

Application No:	SSI-5414
Proponent:	Transport for NSW
Consent Authority:	Minister for Planning and Infrastructure
Land:	Land required for the construction and operation of the proposal, generally between Epping and Rouse Hill
State significant infrastructure:	Construction works for the North West Rail Link (not subject to State significant Infrastructure approval SSI 5100) and operation of the railway, including the construction and operation of stations and wider precincts, services facilities and a stabling facility at Tallawong Road, and rail infrastructure and systems.
Critical infrastructure	The Proposal is critical State significant infrastructure by virtue of Schedule 5, Clause 2 of the State and Regional Development SEPP.

Appendix B
Summary of UDCLP Stakeholder
Consultation and Design Review Panel
Interaction

Organisation	Comment	Response
Blacktown Council	No comments received	
Hills Shire Council	No comments received	
Hornsby Council	No comments received	
TfNSW	Comments received - Issue 01	Comments acknowledged and response submitted
	Comments received - Issue 02 and 03	Comments acknowledged and response submitted
Design Review Panel (DRP)	Presented to DRP 12 April 2016	Issue 01 presented to DRP
Design Review Panel (DRP)	Presented to DRP 10th May 2016	Comments for Issue 01 acknowledged and response presented and submitted
Design Review Panel (DRP)	Presented to DRP 12th June 2016	Review of Issue 01 - comments received and document updated where necessary. DRP Endorsement of Issue 01 confirmed - Minute item 1.1 "The DRP endorsed UDCLP Issue 01 component for Bella Vista, Norwest and Showground Stations" Issue 02 and 03 presented to DRP
Design Review Panel (DRP)	Presented to DRP 19th July 2016	Review of DRP comments for Issue 02 and 03 acknowledged and response presented and submitted.
Community Consultation	UDCLP Exhibition Norwest Marketown - 22 July 2016 UDCLP Exhibition Community Information Centre - Castle Towers Shopping Centre - 25th July to 12 August 2016	Consultation feedback collected to date is positive.
	UDCLP Exhibition Community Information - Drop in Session at Ray Road, Epping - 11 August 2016	Consultation feedback collected to date is positive.
	UDCLP Exhibition Community Information - Display and Drop in Session at Rouse Hill Town Centre -28th July 2016	Consultation feedback collected to date is positive.
	UDCLP Exhibition Community Information - Community Forum Castle Howard Road, Cheltenham - 13th August 2016	Consultation feedback collected to date is positive. Bush Care groups request further consideration of impact of CSF layout on recent bush care work. NRT reviewing layout options with Stakeholders and Council to minimise impact.

**Appendix C
Authorship and Competence**

Condition 44 of the Ministerial Infrastructure Approval for SSI-5414 requires the Urban Design and Landscape Corridor Plan for the project, to be prepared by “appropriately qualified person (s)”.

The following qualified people have prepared this report.

Tony McCormick

BLA, FAILA, ASLA, MAICD, Registered Landscape Architect

Director, McCormick Associates Design Pty Ltd, Former Principal, HASSELL

Role: UDCLP Principal Editor and Contributing Author

Tony is a former Principal of HASSELL. He is a landscape architect and urban designer with specialised expertise in the planning and design of complex landscape and infrastructure projects and integrating them with urban and natural environments. He has had responsibilities for the authorship of strategic plans and documents for the NSW Government that involve the resolution of competing objectives in the formulation of the plans/strategies/guidelines.

Julieanne Boustead

BPD, MLA, Registered Landscape Architect

Principal, HASSELL

Role: UDCLP Editor and Contributing Author

Julieanne has over 25 years experience in the design and implementation of a wide range of complex landscape architectural projects. Julieanne is a specialist in master planning and design of major public domain and parkland projects. She has particular expertise in managing multi-disciplinary teams to successfully deliver complex urban landscape architectural projects. Many of the projects she has been responsible for have been recognised by awards.

Anne Lucas

BA (HONs) Landscape Architect

Associate, HASSELL

Role: UDCLP Project Manager

Anne has over 20 years experience, working in private practices in the United Kingdom and Australia. Anne has acquired expertise across the breadth of the landscape architecture profession, including site assessment, visual impact studies, conceptual design, heritage restoration and conservation, master planning, urban renewal strategies, documentation packages and contract administration.

Design Team

The following people have also contributed to this report.

Adam Griffin
Alastair Jaffray
Alexander Chow
Andrew Ewington
Angus Bruce
Anthony Charlesworth
Ben Charlton
Ben E Charlton
Bo Zhen
Carine MacLeod
Callum Bryan-Mathieson
Catherine Zhuang
Chris Carr
Christoph Kaufmann
Chris Tidswell
Emma Townsend
Ewen Wright
Geoff Crowe
Grace Rummery
Jason Hammond
Keith Allen
Leo Carson
Liam Fitzgerald
Michaelie Crawford
Matthew Watson
Michael Luders
Michael White
Peter McGregor
Peter Monckton
Richard Huxley
Riley Field
Ross de la Motte
Shane Marshall
Steve Fiorio
Tom Withecombe
Troy Cook
Yee Woon Juen

**Appendix D1
Glossary**

Acronym	Definition
EC	Electrical Conductivity
ECRL	Epping to Chatswood Rail Link
ECRTN	Environmental Criteria for Road Traffic Noise
EEC	Endangered ecological communities
EIS	Environmental Impact Statement
EIS	Environmental Impact Statement
EIS 1	EIS for Stage 1: Major Civil Construction Works
EIS 2	EIS for Stage 2: Stations, Rail Infrastructure and Systems
ENMM	Environmental Noise Management Manual
Environmental assessment	Generic term for describing the undertaking of an assessment of environmental impacts
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPI	Environmental planning instrument
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development. Using, conserving and enhancing the community's resources so that the ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased.
FSR	Floor Space Ratio
FTE	Full Time Equivalent
GDEs	Groundwater dependent ecosystems
GDR	Geotechnical Data Report
Geotechnical	Of or related to the soil and bedrock.
GIR	Geotechnical Interpretive Report
Global Economic Corridor	Macquarie Park – Chatswood – North Sydney – CBD
Greenhouse gas (GHG)	A gas that absorbs and emits reflected infrared radiation (heat) from the Earth's surface.
Ground-borne noise	Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces.
Ground-borne vibration	Generated by wheel/rail interaction and is transmitted from the trackbed, through the tunnel structure, via the ground and into the adjacent building structures.
Groundwater	Water located under the earth's surface in underground streams and aquifers.
Heavy rail	The structures and vehicles of railways not falling under the description of trams, light rail, medium capacity system, or rapid transit.
HF	Human Factors
HFIP	Human Factor Integration Plan

Acronym	Definition
Hills M2	The Hills Motorway Limited, the company responsible for the operation and maintenance of the M2 Motorway. Hills M2 is a wholly owned sub-sidiary of Transurban Limited.
IC	Independent Certifier
ICNG	Interim Construction Noise Guideline
In situ	In the ground, undisturbed.
INP	Industrial Noise Policy
IPCC	Intergovernmental Panel on Climate Change
IPCC	Intergovernmental Panel on Climate Change
Kiss and Ride	A passenger drop off area near a public transport stop
LAeq	The A-weighted equivalent noise level (basically the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.
Laydown area	An area that has been designated for the temporary storage of equipment and supplies.
LINSIG	A form of analysis which provides an estimate of intersection performance
L/s/km	Litres per second per kilometre
MEP	Mechanical Electrical Public Health
MTS	Metro Trains Sydney
M2 Motorway	M2 Motorway, which extends from the M7 Motorway/Abbott Road to the Lane Cove Tunnel including carriageways, ramps and associated structures and infrastructure
NRT	Northwest Rapid Transit
NSW State Plan 2021	NSW 2021: A Plan to Make NSW Number One (NSW Government, 2011)
O&M	Operations and Maintenance
OEMP	Operational Environmental Management Plan
OTS	Operations, Trains & Systems
Precautionary principle	Where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.
Precinct	Stations and land in vicinity of the stations, including station design and amenity, integrated transport facilities, pedestrian links and access facilities, traffic and parking, public domain amenities and improvements, re-tail and commercial development associated with rail, other development, and other matters ancillary to the operation of rail/ associated transport.
Rail Possession	Closure of the rail line to allow works to be safely undertaken on or adjacent to the existing infrastructure.
REMMS	Revised Environmental Mitigation Measures
RMS	Roads and Maritime Services
Running tunnels	The portion of tunnel that would house the operational alignment. Other tunnel types include tunnels for crossovers and turnbacks, cross passages and connections to maintenance facilities.
SAMP	Safety Assurance Management Plan

Acronym	Definition
SDG	Sustainable Design Guidelines
SEWPaC	Commonwealth Department of Sustainability, Environment, Water, Population and Communities
SID	Safety in Design
Spoil	Material produced by tunnelling, caverns and station excavation activities.
SMR	Station Management Room
SMS	Safety Management System
SRB	Sulphate Reducing Bacteria
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSI	State Significant Infrastructure
Station planning	Process to ensure the long-term integration and compatibility of land use surrounding each of the stations.
Substation	A facility that controls the flow of electricity by switching, changing, or regulating electric voltage.
SWG	Station Working Group
TCA	Transport Construction Authority (now Transport Projects Division of Tf NSW)
TIDC	Transport Infrastructure Development Corporation (now Transport Projects Division of Tf NSW)
TPD	Transport Projects Division (of Tf NSW) (Formerly Transport Construction Authority and Formerly Transport Infrastructure Development Corporation)
TTLG	Traffic and Transport Liaison Group
WC	Water Closet
WRAPP Guidelines	NSW Government's Waste Reduction and Purchasing Policy Guidelines
WSUD	Water Sensitive Urban Design

Appendix D2
References

References

- Blacktown Council (2006) Blacktown Development Control Plan
- Blacktown Council (2012) Blacktown Local Environment Plan
- Council of Australian Governments (2009) Cities Agenda of the Council of Australian Governments (COAG)
- EMGA Mitchell McLennan Pty Ltd (2013) North West Rail Link European Heritage Interpretation Strategy
- Hornsby Shire Council (2013) Hornsby Development Control Plan
- Hornsby Shire Council (2013) Hornsby Local Environmental Plan
- Hornsby Shire Council (2011) Beecroft-Cheltenham Link Track Beecroft Reserve
- Kelleher Nightingale Consulting Pty Ltd (2013) North West Rail Link Aboriginal Archaeological and Cultural Heritage Interpretation Options
- NSW Department of Planning and Infrastructure (2013) North West Rail Link Corridor Strategy
- NSW Department of Planning and Environment (2015) Bella Vista Station Precinct Proposal
- NSW Department of Planning and Environment (2015) Kellyville Station Precinct Proposal
- NSW Department of Planning and Environment (2015) Showground Station Precinct Proposal
- NSW Department of Planning and Environment (2014) A Plan for Growing Sydney
- NSW Government (2011) NSW 2021 Plan
- NSW Government (2013) Draft Metropolitan Strategy for Sydney to 2031
- NSW Government (2015) Rebuilding NSW - State Infrastructure Strategy - Update
- The Hills Shire Council (2012) The Hills Development Control Plan
- The Hills Shire Council (2012) The Hills Local Environmental Plan
- Transport for NSW (2015) NSW Long Term Transport Master Plan
- Transport for NSW (2012) North West Rail Link - Environmental Impact Statement Stage 1 – Major Civil Construction Works (EIS1)
- Transport for NSW (2012) North West Rail Link - Environmental Impact Statement Stage 2 – Stations, Rail Infrastructure and Systems (EIS2)
- Transport for NSW (2012) North West Rail Link - Sustainability Strategy
- Transport for NSW (2013) North West Rail Link Overarching Stakeholder and Community Involvement Plan (OSCIP)
- Transport for NSW (2015) North West Rail Link Tunnel and Stations Civil (TSC) Works - Community Liaison Implementation Plan
- Transport for NSW (2014) North West Rail Link Design and Construction of Surface and Viaduct Civil Works (SVC) - Urban Design and Corridor Landscape Plan

Appendix E
Relevant Design Standards and Guidelines

Regulatory Documents
Building Code of Australia (BCA)
Disability (Access to Premises – Buildings) Standards 2009 – Consultation Draft Paper
Disability Discrimination Act 1992 (DDA) Disability Standards for Accessible Public Transport (DSAPT) & DDA Advisory Notes on Access to Premises – HREOC, June 1997
Green Star Office Design and Office Interior rating tools - latest version
Infrastructure Sustainability Council of Australia (ISCA) - IS Tool available via: http://www.agic.net.au/
Infrastructure Sustainability Council of Australia's (ISCA) Guideline for Climate Change Adaptation (AGIC Revision 2.1: October 2011)
Interim Construction Noise Guideline (DECC 1999)
International Fire Engineering Guidelines (IFEG), Australian Building Codes Board (2005 or later edition)
Ministry of Transport Graphics Standards June 2008 Issue 1 Introduction to Graphic Standards for Public Transport Information in New South Wales
National Australian Built Environment Rating System (NABERS) – Office rating tools, NSW Office of Environment and Heritage.
North West Rail Link CAD Manual
North West Rail Link File Naming Convention
North West Rail Link Construction Noise and Vibration Strategy (TfNSW 2012)
North West Rail Link Programming Protocol
North West Rail Link Sustainability Strategy
NSW Code of Practice Work Health and Safety Consultation, Co-ordination and Co-ordination
NSW Code of Practice for Control of Legionella
NSW Code of Practice Plumbing and Drainage
NSW Department of Commerce Government Chief Information Office Information Security Guidelines for NSW Government Agencies
NSW Department of Environment and Climate change 'Industrial Noise Policy'
NSW Environmental Planning and Assessment Act (1979)
NSW Environmental Planning and Assessment Regulations (2000)
NSW Fire Brigades Guidelines for Emergency Vehicle Access
NSW Fire Brigades Hardstand Areas for NSWFB Appliances
NSW Government Energy Efficiency Opportunities Act 2006
NSW Government Floodplain Risk Management Guidelines – Practical Consideration of Climate Change 2007
NSW Government National Greenhouse and Energy Reporting Act 2007
NSW Government Protection of the Environment Operations Act (1997)

Regulatory Documents
NSW Government Protection of the Environment Operations Regulations
NSW Government Regulatory standards, guidelines and procedures
Transport for New South Wales Standards, guidelines and procedures
NSW Industrial Noise Policy (EPA 2000) and NSW EPA Sleep Disturbance Screening Criterion
NSW Public Transport Sign Standards
Occupational Health and Safety Act 2000 No. 40
Occupational Health and Safety Regulation 2001
NSW Government Occupational Health and Safety Management System Guidelines (4th Edition, June 2004)
Sydney Water Act 1994
Sydney Water Catchment Management Act 1998
The National Counter Terrorism Plan and the Anti-Terrorism Act (No2) 2005
The Australian Green Infrastructure Council Infrastructure Sustainability Rating Tool Technical Manual
Transport for NSW - NSW Sustainable Design Guidelines For Rail Version 2.0.
Transport for NSW, North West Rail Link Construction Environmental Management Framework
TfNSW Branding Strategy
TfNSW Wayfinding and Signage Concept
Workplace Health and Safety (WHS) Act 2011
Local Council requirements including: Blacktown City

Appendix E Relevant Design Standards and Guidelines

Australian Standards	Australian Standards
AS 1049 Telecommunication Cables Insulation, Sheath & Jacket	AS/NZS 1668.1 The use of ventilation and air conditioning in buildings - Fire and smoke control in multi-compartment buildings
AS/NZS 1055.1 Description and measurement of environmental noise	AS/NZS 1668.2 The use of ventilation and air conditioning in buildings - Mechanical ventilation in buildings
AS 1158 Lighting for Roads and Public Spaces	AS 1668.4 The use of ventilation and air-conditioning in buildings - Natural ventilation of buildings
AS/NZS 1163 Cold-formed structural steel hollow sections	AS 1670.1 Fire detection, warning, control and intercom systems – System design, installation and commissioning – Fire
AS/NZS 1170 (set) Structural Design Actions	AS/NZS 1680 Interior lighting
AS 1221 Fire hose reels	AS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
AS 1231 Aluminium and aluminium alloys - Anodic oxidation coatings	AS 1735 Lifts, Escalators and Moving Walk
AS 1288 Glass in buildings - Selection and installation	AS 1735.1 Lifts, escalators and moving walks - General requirements
AS 1316 Masonry cement	AS 1735.2 Lifts, escalators and moving walks. Passenger and goods lifts – Electric
AS 1319 Safety signs for the occupational environment	AS 1735.12 Lifts, escalators and moving walks - Facilities for persons with disabilities
AS 1365 Tolerances for flat-rolled steel products	AS 1743 Road signs - Specifications
AS 1379 Specification and supply of concrete	AS/NZS 1859 Reconstituted wood-based panels - Specifications
AS/NZS 1385 Textile floor coverings - Metric units and commercial tolerances for measurement	AS/NZS 1859.1 Reconstituted wood-based panels - Specifications - Particleboard
AS 1391 Metallic materials - Tensile testing at ambient temperature	AS/NZS 1859.2 Reconstituted wood-based panels - Specifications - Dry-processed fibreboard
AS 1397 Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium	AS/NZS 1866 Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
AS 1428 Design for Access and Mobility	AS 1884 Floor coverings - Resilient sheet and tiles - Installation practices
AS 1428.1 Design for access and mobility - General requirements for access - New building work	AS/NZS 1891 Industrial Fall-arrest Systems
AS 1428.2 Design for access and mobility - Enhanced and additional requirements – Buildings and facilities	AS/NZS 1891.1 Industrial fall-arrest systems and devices - Harnesses and ancillary equipment
AS 1428.4.1 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators	AS 1905 Components for the protection of openings in fire-resistant walls
AS 1442 Carbon steels and carbon-manganese steels - Hot rolled bars and semi-finished products	AS 2039.1.1 Methods for testing anodic oxidation coatings on aluminium and aluminium alloys
AS 1444 Wrought alloy steels - Standard, hardenability (H) series and hardened and tempered to designated mechanical properties	Thickness and related property tests - Local thickness of anodic oxidation coatings by micrographic examination of cross-sections
AS 1449 Wrought alloy steels: Stainless and heat resisting steel plate, sheet and strip	AS 2047 Windows in buildings - Selection and installation
AS 1478 Chemical admixtures for concrete, mortar and grout	AS/NZS 2107 Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors
AS 1530 Methods for fire tests on building materials, components and structures	AS/NZS 2208 Safety glazing materials in buildings
AS 1530.4 Method for Fire Tests on building materials, components and structures part 4 – fire-resistance test of elements of construction.	AS/NZS 2270 Plywood and blockboard for interior use
AS 1562.1 Design and installation of sheet roof and wall cladding - Metal	AS/NZS 2271 Plywood and blockboard for exterior use
AS 1580 Paints and related materials - Methods of test	AS/NZS 2272 Plywood - Marine
AS 1580.408.4 Paints and related materials - Methods of test - Adhesion (crosscut)	AS/NZS 2293 Emergency escape lighting and exit signs for buildings
AS 1657 Fixed platforms, walkways, stairways and ladders - Design, construction and Installation	AS/NZS 2311 Guide to the painting of buildings
AS/NZS 1664 Aluminium structures - Limit state design	AS/NZS 2312 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS/NZS 1664.2 Aluminium structures - Allowable stress design	AS/NZS 2327 Composite structures – A new standard for composite steel concrete buildings
AS 1665 Welding of aluminium structures	AS 2342 Development, testing and implementation of information and safety symbols and symbolic signs

Appendix E Relevant Design Standards and Guidelines

Australian Standards	Australian Standards
AS 2358 Adhesives - For fixing ceramic tiles	AS 3679.1 Structural steel - Hot-rolled bars and sections
AS 2436 Guide to noise and vibration control on construction, demolition and maintenance sites	AS 3679.2 Structural steel - Welded I sections
AS 2441 Installation of fire hose reels	AS 3700 Masonry structures
AS 2444 Portable fire extinguishers and fire blankets – selection and location	AS 3706 Geotextiles - Methods of test
AS/NZS 2455.1 Textile floor coverings - Installation practice - General	AS/NZS 3715 Metal finishing - Thermoset powder coating for architectural applications of aluminium and aluminium alloys
AS 2484.2 Fire – Glossary of terms – protection and fire fighting equipment	AS 3730 Guide to the properties of paints for buildings
AS/NZS 2588 Gypsum plasterboard	AS 3730.21 Guide to the properties of paints for buildings - Primer - Solvent-borne – For ferrous metallic surfaces
AS 2633 Guide to the specification of colours	AS 3735 Concrete structures retaining liquids
AS/NZS 2699 Built-in components for masonry construction	AS 3740 Waterproofing of domestic wet areas
AS/NZS 2699.1,.2, .3 Built-in components for masonry construction	AS/NZS 3750 Guide to the properties of paints for buildings Paints for steel structures
AS 2700 Colour standards for general purposes	AS/NZS 3750.6 Paints for steel structures - Full gloss polyurethane (two-pack)
AS 2700S Colour Standards for general purposes - Swatches	AS 3771 Road lighting luminaires with integral control gear
AS 2701 Methods of sampling and testing mortar for masonry constructions	AS/NZS 3799 Liquid membrane-forming curing compounds for concrete
AS/NZS 2785 Suspended ceilings - Design and installation	AS 3845 Road safety barrier systems
AS 2796.3 Timber - hardwood - sawn and milled products	AS 3894 Site testing of protective coatings
AS 2832 Cathodic protection of metals	AS 3958 Ceramic Tiles and Tiling
AS 2834 Computer Accommodation	AS 3958.1 Ceramic tiles - Guide to the installation of ceramic tiles
AS 2865 Confined spaces	AS 3995 Design of steel lattice towers and masts
AS 2890 Parking facilities	AS 3996 Access covers and grates
AS 2899.1 Public information symbol signs - General information signs	AS 4024.1 Safety of machinery
AS/NZS 2904 Damp-proof courses and flashings	AS 4100 Steel structures
AS/NZS 2908.2 Cellulose-cement products - Flat sheet	AS 4145.1 Locksets and hardware for doors and windows - Glossary of terms and rating system
AS/NZS 2924.1. High pressure decorative laminates - Sheets made from thermosetting resins	AS 4154 General Access Floors (Elevated Floors)
Classification and specifications	AS 4155.6 Test methods for general access floors - Test for floor resistance for electrostatic control
AS 2946 Suspended ceilings, recessed luminaires and air diffusers - Interface requirements for physical compatibility	AS 4254 Ductwork for Air Handling Systems in Buildings
AS/NZS 3012 Construction and demolition sites	AS 4254.1 Ductwork for air-handling systems in buildings – Flexible Duct
AS 3553 Adhesives for floor and wall applications - Resilient vinyl, linoleum and rubber sheet and tiles – Interior and exterior use	AS 4254.2 Ductwork for air-handling systems in buildings – Rigid Duct
AS 3590 Screen-based Workstations	AS 4282 Control of the obtrusive effects of outdoor lighting
AS 3600 Concrete Structures	AS/NZS 4284 Testing of building facades
AS 3610 Formwork for Concrete	AS 4288 Soft underlays for textile floor coverings
AS 3661.2 Slip resistance of pedestrian surfaces - Guide to the reduction of slip hazards	AS 4292 Railway safety management
AS/NZS 3666 Air handling and water systems of buildings – Microbial control	AS 4292.1 Railway safety Management - General Requirements
AS/NZS 3678 Structural steel - Hot-rolled plates, floor plates and slabs	AS 4292.4 Railway Safety Management - Part 4: Signalling and Telecommunications Systems and Equipment
AS/NZS 3679 Structural steel - Hot-rolled bars and sections	AS 4312 Atmospheric corrosivity zones in Australia

Appendix E Relevant Design Standards and Guidelines

Australian Standards	Australian Standards
AS 4360 Risk management	AS 60076.4 Power Transformers - Guide to the lightning impulse and switching impulse testing - Power transformers and reactors
AS 4419 Soils for landscaping and garden use	AS/NZS 60076.5 Power Transformers - Ability to withstand short circuit
AS 4426 Thermal Insulation of Pipe work, Ductwork and Equipment	AS/NZS 60076.10 Power Transformers - Determination of Sound Levels
AS 4431 Guidelines for Safe Working on New Lift Installations in New Constructions	AS 60076.11 Power Transformers - Dry Type Transformers
AS 4442 Office desks	AS 60118.4 Hearing Aids - Magnetic Field Strength in Audio-frequency Induction Loops for Hearing Aid Purposes
AS 4443 Office panel systems - Workstations	AS 60265.1 HV Switches - Switches for rated voltages above 1 kV and less than 52 kV
AS/NZS 4455 Masonry units and segmental pavers	AS 60265.2 HV Switches - Switches for rated voltages of 52 kV and above
AS 4456 Masonry units and segmental pavers and flags - Methods of test	AS/NZS 60479 Effects of current on human beings and livestock
AS 4459 Methods of Sampling and Testing Ceramic Tiles	AS 60529 Degrees of Protection Provided by Enclosures (IP Code)
AS/NZS 4536 Life cycle costing - An application guide	AS/NZS 60598 Luminaires - General requirements and tests
AS/NZS 4548 Guide to long-life coatings for concrete and masonry - Wall coatings – Latex extensible	AS 60849 Sound Systems for Emergency Purposes
AS/NZS 4586 Slip resistance classification of new pedestrian surface materials	AS 60947 Low Voltage Switchgear and Controlgear
AS 4600 Cold-formed steel structures	AS/NZS 61000 Electromagnetic Compatibility (EMC)
AS 4654 Waterproofing membrane systems for exterior use - Above ground level	AS/NZS61000.3.6 Electromagnetic compatibility (EMC) - Limits - Assessment of emission limits for distorting loads in MV and HV power systems
AS 4662 Ceramic tiles—Definitions, classification, characteristics and marking	AS 61000 Electromagnetic Compatibility (EMC)
AS/NZS 4663 Slip resistance measurement of existing pedestrian surfaces	AS 61508 Functional safety of electrical/electronic/ programmable electronic safety-related systems.
AS/NZS 4666 Insulating glass units	AS/NZS 61558 Safety of power transformers, power supplies, reactors and similar products
AS/NZS 4667 Quality requirements for cut-to-size and processed glass	AS 61935.1 Testing of Balanced Communication Cabling in Accordance with ISO/IEC 11801 - Installed Cabling
AS 4673 Cold-formed stainless steel structures	AS 62040 Uninterruptible power systems (UPS)
AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles	HB 39 Installation code for metal roof and wall cladding
AS 4687 Temporary Fencing and Hoardings	SAA HB 59 Ergonomics - The Human Factor
AS/NZS 4707 Chain of custody for certified wood and forest products	HB 167 Security risk management
AS/NZS 4740 Natural Ventilators Classification and Performance	HB 197 An introductory guide to the slip resistance of pedestrian surface materials
AS 4777 Grid connection of energy systems via inverters	HB 230 Rainwater Tank Design and Installation Handbook
AS 4785 Timber – Softwood – Sawn and milled products	RMS TD 2008/08 Technical Direction 2008/08
AS 4785.3 Timber - softwood - sawn and milled products	RTA Road design guideline June 1999
AS 4791 Hot-dip galvanized (zinc) coatings on ferrous open sections, applied by an in-line process	RTA Pub08.091 RMS Guide to Delineation
AS/NZS 4792 Hot-dip galvanized (zinc) coatings on ferrous hollow sections, applied by a continuous or a specialized process	RTA Pub 03.286 NSW Bicycle Guidelines
AS 4806 CCTV	TCA EN-ST- 106/4.0 Vertical Transportation – Lifts Specification
AS/NZS 4859.1 Materials for the thermal insulation of buildings - General criteria and technical provisions	TM P99/4 RTA Bicycle Policy (Maintenance Work)
AS/NZS 5033 Installation of photovoltaic (PV) arrays	TM P00/1 RTA Bicycle Policy Grates
ISO 14520 Gaseous fire-extinguishing systems	
AS 60076 Power transformers	
AS 60076.1 Power Transformers - General	
AS/NZS60076.3 Power Transformers - Insulation Levels, Dielectric Tests and external Clearances in Air	



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Meeting Minutes (Amended for UDCLP Endorsement)

Sydney Metro - Northwest

Design Review Panel, Northwest

Date:	13 September 2016	Time:	0900-1230
Venue:	Barcelona Meeting Room, Ground Floor, 22 Giffnock Ave Macquarie Park		
Chairperson:	Olivia Hyde	Prepared by:	Rebecca Want
Attendees:	Olivia Hyde Gabrielle Morrish Garth Paterson Rebecca Want John Andrews Stuart Bowden Julian Ardas Davide Andriola Geoff Crowe Kellie Pittaway Anne Lucas John McCormick	Representing NSW Government Architect, Chair Urban Design Landscape Architecture TfNSW - DRP Convenor TfNSW TfNSW TfNSW Independent Certifier NRT NRT NRT NRT	
Apologies:	Deo Prasad	Sustainability	

Item	Action by	Due date
1. Urban Design and Landscape Report		
1.1	The DRP agreed to review the UDCLP report (Rev H) issued by email on 9/9/16 with an email to confirm endorsement of the UDCLP by COB 21/9/16. Post Meeting Note 27 September 2016: DRP confirmed their endorsement of the UDCLP Report by emails received from Gabrielle Morrish dated 21/09/16, Garth Paterson dated 23/09/16, Peter Poulet dated 27/09/16 and Deo Prasad dated 27/09/16	DRP members 21/9/16
1.2	For the purposes of the UDCLP, the pedestrian overbridges have been set aside. The DRP believes that the pedestrian overbridges require further refinement and resolution but will not hold up the endorsement of the UDCLP.	Note
1.3	Epping Services Building was presented with landscaping however, the DRP will review this more fully when they look at documents over the next week.	DRP
1.4	Change to Cheltenham Community Facility was well received.	
2. Pedestrian Overbridge		
2.1	NRT presented update on the design, noting: <ul style="list-style-type: none"> Revised roof drainage to lower pitch and Bridge mesh – powdercote weldmesh Class 2 concrete to underside 	Note
2.2	NRT prepared public art as an option which was not adopted by TfNSW	Note



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2.3	Bridge is within OpCo LMA and any advertising is subject to OpCo proposal to RMS guidelines	Note	
2.4	Stair tower issues presented and discussed: <ul style="list-style-type: none"> NRT propose change of stair treads from precast to insitu to achieve flush finish to underside. Stair tower – NRT to review lighting for security and safety NRT propose to change depth of horizontal members to thin angle Impact of fan enclosure needs to be reduced 	NRT	
2.5	Final form of landscape link between bridge and station is subject to Urban Growth development proposals and vehicle access requirements.	Note	
2.6	DRP confirmed the pedestrian bridge design is closed out subject to NRT addressing the items noted above.	Note	
3. Kellyville Station Design Stage 3 Design Development			
3.1	The DRP raised concerns with a secondary canopy which leads to the fragmentation of the canopy forms. NRT's design has adapted the canopy form in order to achieve the customer comfort requirements. Review the CSW SPR to ensure same mistakes are not made....should state that the canopy needs to be a consistent form and continuous	SB	
3.2	Landscape strategy has developed well.	Note	
3.3	NRT to present more detail on the architectural quality of the Kellyville Car Park façade including: <ul style="list-style-type: none"> Colour treatment of the panels (timber and steel) How timber screen meets the junctions and soffit Lighting treatment of the external façade of the car park Outline of the architectural quality of the car park Profile of the external wall (so that it is not just a flat uninteresting large wall – it has	NRT	Next DRP meeting
3.4	Arrange a site visit to Kellyville in advance of next DRP meeting	RW	17/9
3.5	DRP sought clarification on how the material selection is considerate of spider festooning	NRT	
3.0 Showground Station Stage 3 Design Development			
3.1	DRP has requested a reasonable design solution and street trees is applied to the verge of the Showground Station Traction Substation - country end along Carrington Rd	NRT	Sept DRP
3.2	Canopy around the country end service building does not provide adequate cover or protection of the footpath – retail and bike storage along Doran Dr. The DRP supports that the awning provides function and amenity for pedestrians and future uses (such as a café).	NRT	Sept DRP
3.3	DRP requested coordination of the bus shelter design with the topography.	NRT	Sept DRP
3.4	The DRP raised concerns of the integration and public domain impacts due to lack of visibility / development of Urban Growth are doing at all Northwest Sites and in particular at Showground Station.	Note	
4.0 General – Commentary from DRP			
4.1	Lessons Learnt: Quality of service buildings and pedestrian overbridges are lacking in architectural finish and treatment in comparison to the Stations. Lack of integration of the service buildings with sleeving, etc.	Note to TfNSW	
4.2	In future presentation –	Note to	



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	<ul style="list-style-type: none"> Street level views would be helpful Views from train Show outlines of future development buildings 	TfNSW	
5.0	Foreward meeting agenda		
5.1	<ul style="list-style-type: none"> Close out of design review comments Cheltenham community facility update Castle Hill Service Building Pedestrian Bridges Kellyville and Showground Car Parks 	Note	
6.0	Close meeting		
	The meeting closed at 12:30.		