Environmental Impact Assessment Checklist

Location: Within, and adjacent to, the rail corridor at Kembla Grange, Albion Park and Croom	Timeframe: Construction works would take about 12 - 18 months from about mid 2022 to about the end of 2023
Project Name: More Trains More Services – Kembla Grange, Albion Park and Croom Electrical Upgrades	
Description of proposed activity *(Describe ancillary activities, duration of work, working hours, machinery, staffing levels, impacts on utilities/authorities, wastes generated or hazardous substances/dangerous goods used). Split into Construction and Operation sections, as required.*	
Transport for NSW (TfNSW) proposes to deliver the Mariyung fleet which are a state-of-the-art fleet of intercity trains that would provide a new level of comfort and convenience for the thousands of customers who travel between Sydney and the Central Coast and Newcastle, the Blue Mountains, and the South Coast. TfNSW proposes to undertake electrical upgrades at Kembla Grange, Albion Park and Croom as part of the More Trains More Services (MTMS) Program, which once complete would facilitate the operation of the 10-car Mariyung trains on the south coast. The Proposal would be undertaken within the rail corridor at Kembla Grange, Albion Park and Croom. **Scope** <u>Kembla Grange</u> The Proposal would be undertaken within the rail corridor from about 350m northeast of Kembla Grange Station to about 100m northeast of the Mullet Creek rail bridge, including works at Kembla Grange Substation and the level railway crossing at West Dapto Road. The proposed scope would include: - Non-destructive digging (NDD) - Excavation for overhead wiring (OHW) footings - Removal of trees and other vegetation - Construction of about six OHW footings - Erection of about six OHW structures	

- Installation of about two anchor guys
- Replacement of about 1800m of twin contact wire
- Relocation and installation of overlaps
- Adjustment/ replacement of any other OHW as required
- Construction of external isolating and rail connecting switch (IRCS) and access platform at Kembla Grange Substation
- Installation of new direct current (DC) feeder cables in a combination of combined services route (CSR) and galvanised steel troughing (GST) from Kembla Grange Substation to about 100m to the northeast
- Construction of a walkway/GST access bridge over an existing stormwater culvert about 50m to the northeast of Kembla Grange Substation
- Establishment of a temporary construction compound and laydown areas within the rail corridor.

Figure 1 – Location of proposed works at Kembla Grange


N
0
250
500 m
More Trains More Services - Electrical Works
Kemble Grange
Works Alignment
Image: Nearmaps | Scale 1:8,500
GDA 1994 Zone 56
ADE GROUP
Compound / Stockpile Locations
General Alignment
Vegetation Management

Albion Park

The Proposal would be undertaken within, and adjacent to, the rail corridor from about 500m north of Albion Park Station to about 100m north of the Haywards Bay Drive overbridge, including works at Albion Park Substation.

The proposed scope would include:

- Removal of trees and other vegetation
- Installation of new DC feeder cables in a combination of CSR and GST from Albion Park Substation to about 50m to the north
- Installation of new cables in and around Albion Park Substation
- Construction of external IRCS access platform at Albion Park Substation
- Minor filling of a unmapped water course around Albion Park Substation
- Installation of earthing grid and earth stakes around Albion Park Substation
- Installation of perimeter fencing (about 3600mm in height plus 300mm barbed wire), including foundations, around Albion Park Substation
- Installation of pedestrian and vehicular access gates at Albion Park Substation
- Installation of down conductors and earthing stakes to about ten power poles extending about 800m north of Albion Park Substation and about ten power poles extending about 800m south of Albion Park Substation.
- Adjustments to OHW overlaps.
- Establishment of a temporary construction compound and laydown areas within the rail corridor.

Figure 2 – Location of proposed works at Albion Park


0
250
500 m
More Trains More Services - Electrical Works
Albion Park
Works Location
Image: Nearmaps | Scale 1:7000
GDA 1994 Zone 56
ADE GROUP
SOLUTIONS THROUGH INNOVATION
General Alignment
Substation Works
Intrusive Earth Works - Poles

Croom

The Proposal would be undertaken within the rail corridor near Croom Substation, which is situated about 1700m southeast of Oak Flats Station and about 1300m northwest of Shellharbour Junction Station.

The proposed scope would include:

- Adjustment of the location of one anchor weight.

Figure 3 – Location of proposed works at Croom

Any works outside of the Proposal areas or not included in the scope of works as listed above, would be subject to additional assessment and approval prior to commencement.

Duration of Work

Construction works would take about 12 - 18 months from about mid 2022 to about the end of 2023.

Working Hours

Kembla Grange

Works would be undertaken over about four weekend possessions as well as during standard construction hours (7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday), including occupation of the construction compound/laydowns.

Albion Park

Works would be undertaken over about five weekend possessions as well as during standard construction hours (7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday), including occupation of the construction compound/laydowns.

Croom

Works would be undertaken over about one weekend possession day shift, both within and outside standard construction hours (7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday). Plant and equipment may be delivered to the rail corridor or adjacent streets prior to the possession and demobilised after the possession.

Equipment

The following types of plant and equipment would be used for the works:

Kembla Grange and Albion Park

- Vacuum trucks
- Excavators
- Chainsaws
- Chippers
- Dump trucks
- Hi-rail telehandlers
- Concrete pumps

- Concrete trucks
- Hand tools
- Elevated work platforms
- Franna cranes
- Hi-rail flat trucks
- Dump trucks
- Flatbed trucks
- 3 tonne piling rigs
- Generators
- Lighting towers
- Light vehicles

Croom

- Telehandlers
- Light vehicles
- Flatbed trucks
- Hand tools

Construction Traffic, Access and Staffing Levels

Kembla Grange

About 30 site vehicle movements would be required per day during possessions, with about 20 vehicle movements required outside possessions. The site works team would be about 30 personnel during possessions, with about 20 personnel required outside possessions. The site would be accessed via existing Sydney Trains access gates on West Dapto Road, the Kembla Grange Station carpark and the Princes Highway, as outlined in Appendix B.

Albion Park

About 30 site vehicle movements would be required per day during possessions, with about 20 vehicle movements required outside possessions. The site works team would be about 30 personnel during possessions, with about 20 personnel required outside possessions. The site would be accessed via existing Sydney Trains access gates on Riverside

Crescent, Princes Motorway, Shearwater Boulevarde and Creamery Road, as well as access across private land from [redacted] and access across private land owned by RCL Group Pty Ltd to the north of Macquarie Rivulet as outlined in Appendix B.

Croom

About 10 site vehicle movements would be required for the day of works during the possession. About 1 truck movement would be required prior to, and following, the possession to deliver the telehandler via flatbed truck. The site team would consist of about 10 personnel during the possession and about 1 personnel during the delivery and removal of the telehandler. The site would be accessed via existing Sydney Trains access gates on College Avenue, as outlined in Appendix B.

Construction Compounds and Laydowns

Kembla Grange

All laydown and material storage would occur within the rail corridor. Laydown could occur anywhere within the project area. The main compound/laydown area would be to the southwest of Kembla Grange Substation on the northeast side of the rail tracks from Kembla Grange Station, as shown in Figure 1.

Albion Park

All laydown and material storage would occur within the rail corridor. Laydown could occur anywhere within the project area. The main compound/laydown area would be in the area south of Albion Park Substation, as shown in Figure 2.

Croom

There would be no laydown or construction compound at Croom. The telehandler would be delivered and removed via truck prior to and after the possession and parked either in the surrounding residential streets or access track within the rail corridor.

Site Characteristics
(Describe the environment (i.e. vegetation, nearby waterways, landuse, surrounding landuse), identify likely presence of protected flora/fauna and sensitive areas)

Kembla Grange

The Proposal is located within the Wollongong Local Government Area (LGA) in the suburb of Kembla Grange. The Proposal would be undertaken within the rail corridor from about 350m northeast of Kembla Grange Station to about 100m northeast of the Mullet Creek rail bridge, including works at Kembla Grange Substation, as shown in Figure 1. The area of the Proposal is zoned SP2 Infrastructure under the Wollongong Local Environmental Plan (LEP) 2009. The surrounding land is zoned as RE1 - Public Recreation, RE2 - Private Recreation, IN2 – Light Industrial, IN3 – Heavy Industrial and C3 – Environmental Management.

The area of the Proposal consists of cleared, planted and highly disturbed vegetation, with significant patches of weeds including Lantana *Lantana camara*. There are two bridges within the rail corridor in which two minor creeks run through; an unnamed ephemeral strahler order 2 creek that is located in the middle of the Proposal area and an unmapped water course located in the north of the Proposal area. Small pockets of native freshwater vegetation surround these creeks. Mullet Creek is located about 100m southwest of the southern extent of the Proposal area. Vegetation consisting of the Plant Community Type (PCT) 1071 *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion, which equates to the Threatened Ecological Community (TEC) Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions listed as endangered under the *Biodiversity Conservation Act 2016* (BC Act 2016) is present in the two water courses. Urban Native/Exotic PCT occurs in the remainder of the Proposal area. No threatened species were identified, or considered likely to occur, as detailed in the Ecological Assessment (Appendix C).

Except for the most southern portion, the Proposal area is mapped as flood prone land in Wollongong LEP 2009.

The Proposal would take place within and adjacent to the curtilage of Kembla Grange Railway Station Group, which is listed on the Transport Asset Holding Entity (TAHE) Section 170 Heritage and Conservation Register, and the Wollongong LEP 2009.

Searches of the AHIMS register on 9 June 2022 (Appendix G) did not identify any Aboriginal heritage items within the area of the Proposal.

The northern portion of the Proposal area is mapped as Class 5 Acid Sulfate Soils (ASS) and the southern portion of the Proposal area is mapped as Class 4 ASS in the Wollongong LEP 2009.

A search of the NSW Environment Protection Authority's (EPA) contaminated land register was undertaken on 6 June 2022 and did not identify any contaminated sites in the vicinity of the Proposal.

A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022 and identified the following contaminated sites near the area of the Proposal:

- ShawCor Australia at 66 West Dapto Road Kembla Grange

The Proposal includes one main compound/laydown area to the southwest of Kembla Grange Substation on the northeast side of the rail tracks from Kembla Grange Station which is located on an area of cleared grass and gravel (refer to Appendix B).

Albion Park

The Proposal is located within the Wollongong LGA in the suburb of Haywards Bay and within the Shellharbour LGA in the suburb of Albion Park Rail. The Proposal would be undertaken within, and adjacent to, the rail corridor from about 500m north of Albion Park Station to about 100m north of the Haywards Bay Drive overbridge, including works at Albion Park Substation, as shown in Appendix B. The area of the Proposal within the rail corridor is zoned SP2 Infrastructure under the Wollongong LEP 2009 and the Shellharbour LEP 2013. The access track across RCL Group Pty Ltd land to the north of Macquarie Rivulet is zoned C2 – Environmental Conservation under the Wollongong LEP 2009. The access track across private land from [redacted] is zoned C3 – Environmental Management under the Shellharbour LEP 2013. The surrounding land is zoned as SP3 - Tourist, R2 –

Low Density Residential, R3 – Medium Density Residential, RE1 - Public Recreation, C2 – Environmental Conservation, C3 – Environmental Management, IN2 - Light Industrial and W1 – Natural Waterways.

The area of the Proposal consists primarily of cleared and highly disturbed vegetation. Four waterways are present within this Proposal area, including; Wollingurry Creek (2nd Strahler Order), Macquarie Rivulet (5th Strahler Order), an unmapped unnamed creek and Albion Creek (2nd Strahler Order). The minor unmapped creek facilitates the growth of freshwater native vegetation and is intermittently connected to Macquarie Rivulet. Vegetation consisting of the PCT 1071 Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion, which equates to the TEC Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions listed as endangered under the Biodiversity Conservation Act 2016 is present in the creek. Urban Native/Exotic PCT occurs in the remainder of the Proposal area. No threatened species were identified, or considered likely to occur, as detailed in the Ecological Assessment (Appendix C).

The Proposal area includes Macquarie Rivulet, Wollingurry Creek and Albion Creek which drain into the nearby Lake Illawarra.

The Proposal area is flood prone land as mapped in the Macquarie Rivulet Flood Study (WMA Water, 2017).

The Proposal would include access via an existing Sydney Trains access gate on Creamery Road which is adjacent to the Albion Park Dairy (former) which is listed on the Transport Asset Holding Entity (TAHE) Section 170 Heritage and Conservation Register, and the Shellharbour LEP 2013.

Searches of the AHIMS register on 21 June 2022, completed as part of the preparation of the Aboriginal Due Diligence Assessment (Appendix G), identified two registered Aboriginal sites within 50 metres of the eastern boundary of the Proposal.

The area of the Proposal north of Macquarie Rivulet is mapped as Class 2, 3 and 5 ASS in Wollongong LEP 2009. The area of the Proposal south of Macquarie Rivulet is mapped as Class 3 and 4 ASS in Shellharbour LEP 2013. Macquarie Rivulet and Albion Creek that intersect the Proposal area are mapped as Class 1 ASS in Shellharbour LEP 2013.

A search of the NSW EPA contaminated land register was undertaken on 6 June 2022 and identified the following contaminated sites near the Proposal:

- Tallawarra Power Station Site

A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022 and identified the following contaminated sites near the area of the Proposal:

- Caltex Service Station at 174 Princes Highway Albion Park Rail
- Former Timber Storage Area at 36 Rivulet Crescent Albion Park Rail

The Proposal includes one main compound/laydown area which would be located in the area south of Albion Park Substation on an area of cleared grass and gravel (refer to Appendix B).

Croom

The Proposal is located within the Shellharbour LGA in the suburb of Croom. The Proposal would be undertaken within the rail corridor near Croom Substation, which is situated about 1700m southeast of Oak Flats Station and about 1300m northwest of Shellharbour Junction Station, as shown in Appendix B. The area of the Proposal is zoned SP2 Infrastructure under the Shellharbour LEP 2013. The surrounding land is zoned as R2 – Low Density Residential and RE1 - Public Recreation.

The area of the Proposal consists of cleared and highly disturbed vegetation and consists entirely of Urban Native/Exotic PCT. No threatened species were identified, or considered likely to occur, as detailed in the Ecological Assessment (Appendix C).

There are no natural waterways in the immediate vicinity of the Proposal. The Proposal area would drain to track drainage.

The Proposal area is not mapped as flood prone land.

The Proposal would take place in the vicinity of Memorial Norfolk Island Pine Trees and St Ives and Fig Trees which are located on the southwest side of the Princes Highway and listed on the Shellharbour LEP 2013.

A search of the AHIMS register on 9 June 2022 (Appendix G) did not identify any Aboriginal heritage items within the area of the Proposal.

The area of the Proposal is not mapped as ASS in Shellharbour LEP 2013.

A search of the NSW EPA contaminated land register was undertaken on 6 June 2022 and did not identify any contaminated sites in the vicinity of the Proposal.

A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022 and did not identify any contaminated sites in the vicinity of the Proposal.

The Proposal does not include any compound/laydown areas.

Control Measures

Will a project and site specific EMP be prepared? **Yes** Are appropriate control measures already identified in an existing EMP? **No**

The overarching Transport for Tomorrow MTMS Construction Environmental Management Plan and associated subplans would be updated to include the Proposal at Kembla Grange, Albion Park and Croom.

Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design?

The Proposal area at Kembla Grange and Albion Park may be affected by the impacts of climate change given both sites occur on flood prone land.

The Proposal area at Croom is unlikely to be adversely affected by the impacts of climate change.

During operation, climate change may cause increased extreme temperatures and an increase in floods, storms and storm surges. These changes could increase exposure of infrastructure to damage and cause an increase in maintenance events. The design development would consider potential flood impacts, the materials used for the project and

ongoing maintenance schedules to minimise the impacts of climate change. A climate change risk assessment (limited to a climate change prescreening using TfNSW CRA tools) will be undertaken and adaptations will be incorporated into the design.

Legislative Framework

The *Environmental Planning & Assessment Act 1979* (EP&A Act) establishes the system of environmental planning and assessment in NSW. Division 5.1 specifies the environmental impact assessment requirements for activities undertaken by public authorities, such as TfNSW, which do not require development consent under Part 4 of the EP&A Act. Division 15, section 2.91 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) allows for the development of 'rail infrastructure facilities' by or on behalf of a public authority without consent on any land. Consequently, development consent is not required for the Proposal, however the environmental impacts of the Proposal have been assessed under the provisions of Division 5.1 of the EP&A Act.

Section 171 of the EP&A Regulation 2021 defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act has or is likely to have a significant impact on the Environment. The impact assessment tables of this checklist provide an environmental impact assessment of the factors in the Proposal and Appendix A specifically responds to the factors for consideration under Section 171.

Consultation

Consultation has taken place with private landowners at Albion Park as the Proposal includes access across their properties. The consultation is detailed in Table 1 below.

Land details	Consultation details
Access is required across [redacted] Albion Park Rail – private residential ownership	The landowner was initially contacted via phone by Transport for Tomorrow's Manager Communication and Stakeholder Engagement on 15 June 2022 to discuss access requirements and provided details of the work. The landowner agreed to initial access for testing works and would be consulted on an ongoing basis prior to any future access.
Access is required across private land off Riverside Crescent on the northern side of Macquarie Rivulet – RCL Group Pty Ltd ownership	The landowner was initially contacted via email by Transport for Tomorrow's Senior Stakeholder and Public Affairs Manager on 5 July 2022 to discuss access requirements and provided details of the work. The landowner agreed to initial access for testing works and would be consulted on an ongoing basis prior to any future access.

Sections 2.10-2.15 of the Transport and Infrastructure SEPP require that public authorities undertake consultation with councils and other agencies when proposing to carry out development without consent. Requirements for consultation are also contained within other legislation. Consultation undertaken as part of the preparation of the Environmental Impact Assessment is detailed in Table 2 below.

Section	Relevance to the Proposal
Transport and Infrastructure SEPP Section 2.10 Consultation with councils—development with impacts on council-related infrastructure or services	The Proposal at Kembla Grange would involve minor impacts to the level crossing on West Dapto Road, Kembla Grange to enable OHW works to proceed. The road would be closed for about one weekend with a diversion in place via Darkes Road. Accordingly, Wollongong City Council was provided with notification of the Proposal on 19 May 2022. Council responded on 15 June 2022 that for the majority of instances they don't have concerns regarding the closure of West Dapto Road on weekends. However, if a weekend closure coincided with the Macedonian All Souls Day (held three times a year on various dates) then the impact would be significant as Council has between 600-1000 cars visit the Lawn Cemetery on these days. Dates do not get confirmed until closer to the date however in the past they have occurred at the beginning of June (2022 was on the 11th), November and March. TfNSW would consider these events when scheduling their weekend road closure to avoid impacts, where reasonable and feasible.
Transport and Infrastructure SEPP Section 2.11: Consultation with councils- development with impacts on local heritage	The Proposal does not include development which is likely to affect the heritage significance of a heritage item, or a heritage conservation area in a way that is more than minor or inconsequential. The Statement of Heritage Impact prepared for Kembla Grange Station (Appendix F) listed as a heritage item on Wollongong LEP, concluded the works would have no physical or visual impact on this item. Accordingly, consultation with Council under Section 2.11 is not required.
Transport and Infrastructure SEPP Section 2.12 Consultation with councils—development with impacts on flood liable land	The Proposal at Kembla Grange would involve works within flood liable land as identified in Wollongong LEP 2009. Accordingly, Wollongong City Council was provided with notification of the Proposal on 19 May 2022. Council responded on 15 June 2022 with the following comments: • The works should not include any fill within the extents (area of works are flood affected). • Downstream culvert (under rail line) size needs to be confirmed. • Pedestrian bridge should have clear depth and width at least equal to the downstream culvert. • Design of structure should cater for expected flood forces and depth.

	TfNSW would consider the above comments in the detailed design of the works where reasonable and feasible. The Proposal at Albion Park would involve works within flood liable land as identified in the Macquarie Rivulet Flood Study (WMA Water, 2017). Accordingly, Shellharbour City Council was provided with notification of the Proposal on 19 May 2022. Council responded on 14 June 2022 that they had no concerns regarding the Proposal.	
Transport and Infrastructure SEPP Section 2.13 Consultation with State Emergency Service—development with impacts on flood liable land	The Proposal at Kembla Grange would involve works within flood liable land as identified in Wollongong LEP 2009. The Proposal at Albion Park would involve works within flood liable land as identified in the Macquarie Rivulet Flood Study (WMA Water, 2017). Accordingly, the State Emergency Service was provided with notification of the Proposal on 19 May 2022. The State Emergency Service responded on 14 June 2022 that they had no comments.	
Transport and Infrastructure SEPP Section 2.14: Consultation with councils- development with impacts on certain land within the coastal zone	The Proposal does not include development with impacts on certain land within the coastal zone. Accordingly, consultation with Council under Section 2.14 is not required.	
Transport and Infrastructure SEPP Section 2.15: Consultation with public authorities other than councils	The Proposal does not include development of the kind specified in Section 2.15. Accordingly, consultation with the specified public authorities is not required.	
Fisheries Management Act 1994 Section 199 Circumstances in which a public authority (other than local authority) may carry out dredging or reclamation	The Proposal at Albion Park would include minor filling of a water course which constitutes 'reclamation work' of 'water land' as defined in Section 198A of the *Fisheries Management Act 1994*, as such written notice was provided to the Department of Primary Industries (DPI) Fisheries on 24 June 2022. DPI Fisheries responded on 12 July 2022 that as the Proposal is not located within key fish habitat that TfNSW is not required to formally notify DPI Fisheries under Section 199 of the *Fisheries Management Act 1994* and requested best practice erosion and sediment control measures be implemented during the proposed works. Appropriate erosion and sediment control measures would be implemented as detailed in the Water section of this EIA.	

Impact Assessment - Construction

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
Flora and fauna	**<u>All Sites</u>** The Proposal areas are located within, and adjacent to, the rail corridor, a previously disturbed environment that has been largely cleared. Areas that would be directly impacted by the Proposal include the location of the specific works, compound/laydown sites and access routes. Indirect impacts may occur in all remaining land within the Proposal area, compound/laydown sites and access routes (Appendix B). The Ecological Assessment (Appendix C) identified two PCTs in the areas of the Proposal: • *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion which equates to the TEC Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered BC Act 2016) present in the two watercourses at Kembla Grange and one unmapped minor watercourse at Albion Park. • Urban Native/Exotic which does not equate to a TEC in the remainder of the Proposal areas.	1. To the fullest extent practicable, minimise disturbance to any native vegetation surrounding the Proposal area. 2. Where works occur within tree protection zones, as defined in Australian Standard AS4970 – 2009 Protection of trees on development sites, of trees to be retained, tree protection measures detailed in the Standard would be implemented. 3. In the unlikely event that unexpected threatened species are identified during the project, works would cease, and an ecologist contacted. 4. Soil transportation would be minimised within, into or out of the Proposal area to reduce the spread of weeds. 5. Appropriate measures would be implemented to minimise the spread of the three priority weeds identified in accordance with the *Biosecurity Act 2015*	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	The Arboricultural Impact Assessment and Tree Protection Plan (Appendix D) for Albion Park, identified five trees subject to a major encroachment that would require removal. The trees consist of three native *Casuarina glauca* Swamp Oak, one exotic *Cinnamomum camphora* Camphor Laurel and one exotic *Salix babylonica* Weeping Willow. A further nine trees would be retained. The Proposal would involve the following impacts to ecological features: • Clearance of 0.01 hectares of Freshwater Wetlands on Coastal Floodplains TEC at Kembla Grange in the watercourse to the north of the substation due to construction of a walkway/GST access bridge. • Clearance of 0.03 hectares of Freshwater Wetlands on Coastal Floodplains TEC due to the proposed works around Albion Park Substation, including minor filling of the watercourse and installation of DC feeder cables. This includes removal of the three native trees identified in the Arboricultural Assessment. • Removal of two exotic trees at Albion Park as identified in the Arboricultural Assessment.	and TfNSW's *Weed Management and Disposal Guideline* - DMS-SD-110. 6. Appropriate erosion and sediment control measures would be installed to avoid sedimentation of receiving water bodies or other indirect impacts to surrounding biodiversity values. 7. Construction of the Proposal would be undertaken in accordance with TfNSW's *Vegetation Management (Protection and Removal) Guideline* (9TP-SD-111) and *Fauna Management Guideline* (3TP-SD-113). 8. Vegetation removed would be offset in accordance with TfNSW's – *Vegetation Offset Guide* - DMS-SD-087. A replanting proposal would be submitted to TfNSW for endorsement. 9. All tree removal work would be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture, in accordance with Australian Standard AS 4373-2007, Pruning of Amenity Trees, the *Work Health and Safety Act 2011*,		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	• Potential indirect impacts through use of access tracks and the use of construction compounds/laydowns. A Test of Significance for Freshwater Wetlands on Coastal Floodplains TEC was conducted and concluded that a significant impact from the Proposal is unlikely. No threatened species listed under the BC Act 2016 were identified or considered likely to occur. Therefore, the preparation of a Species Impact Statement/ Biodiversity Development Assessment Report is not required. No TECs or threatened species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999) were identified, or considered likely to occur, therefore, a referral of the proposed action to the Commonwealth Minister for the Environment is not required. Three priority weeds were identified within the area of the Proposal.	and Work Health and Safety Regulations 2017. 10. The mitigation measures identified in section 5 Tree Protection Plan of the Aboricultural Impact Assessment (Appendix D) would be implemented unless otherwise agreed with the Project Arborist.		
Water	**Kembla Grange** Mullet Creek is located about 100m southwest of the southern extent of the Proposal area. The Proposal includes the construction of a bridge over an unnamed	11. Prior to commencement of works, site-specific erosion and sediment control measures consistent with the 'Blue Book' *Managing Urban Stormwater: Soils and Construction Guidelines 4th Edition* (Landcom, 2004) would be	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	stormwater channel about 50m to the northeast of Kembla Grange Substation. Except for the most southern portion, the Proposal area is mapped as flood prone land in Wollongong LEP 2009. Kembla Grange Substation appears to have immunity under the 1% Annual Exceedance Probability (AEP) and is largely flood free during the Probable Maximum Flood (PMF). As such, the proposed works at the substation would be unlikely to be affected by flooding. Due to the minor nature of the remainder of the proposed works they would be unlikely to be negatively affected by, or increase impacts from, flooding. **Albion Park** The Proposal area includes Macquarie Rivulet, Wollingurry Creek and Albion Creek which drain into the nearby Lake Illawarra. None of the proposed works would take place within these three waterbodies. The Proposal would include minor filling in an unnamed drainage channel near Albion Park Substation. The Proposal area is flood prone land as mapped in the Macquarie Rivulet Flood Study (WMA Water, 2017). Albion Park Substation would be flood free in the 20% AEP event, however the ground mounted rectifier transformer and reactor would be inundated from the 10% AEP event or rarer. The substation building and the	detailed on the project Environmental Control Map and updated throughout construction so they remain relevant to the activities. 12. Erosion and sediment control measures would be established prior to any clearing, grubbing and site establishment activities and would be maintained and regularly inspected (particularly following rainfall events) to ensure their ongoing functionality. Erosion and sediment control measures would be maintained and left in place until the works are complete and areas are stabilised. 13. Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks. Construction plant, vehicles and equipment would also be refuelled offsite, or in a designated refuelling area. 14. All fuels, chemicals and hazardous liquids would be stored away from drainage lines, within an impervious bunded area in accordance with Australian Standards,		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	IRCS platform have been designed to be above the 1% AEP to minimise impacts from, or impacts to, flooding. The IRCS platform has been designed above the 1% AEP so that an operator can safely undertake the switching arrangements required to de-energise the substation in a flood event. Due to the minor nature of the remainder of the proposed works they would be unlikely to be negatively affected by, or increase impacts from, flooding. The minor filling of the floodplain in the vicinity of Albion Park Substation would have negligible impacts on flooding. **Croom** The Proposal area does not contain any natural waterways and is not mapped as being within a flood prone area. The Proposal area would drain to track drainage. **All Sites** The Proposal would have limited impacts on surface water during the construction phase. Surface water would be diverted around the Proposal, with existing stormwater infrastructure to remain in operation throughout construction.	EPA Guidelines and TfNSW's *Chemical Storage and Spill Response Guidelines* (SD-066). 15. Adequate water quality and hazardous materials procedures (including spill management procedures, use of spill kits and procedures for refuelling and maintaining construction vehicles/equipment) would be implemented in accordance with relevant EPA guidelines and the TfNSW *Chemical Storage and Spill response Guidelines* (SD-066) during the construction phase. All staff would be made aware of the location of the spill kits and be trained in how to use the kits in the case of a spill. 16. In the event of a pollution incident, works would cease in the immediate vicinity and the Contractor would immediately notify the TfNSW Project Manager and TfNSW Senior Environment and Sustainability Officer in accordance with TfNSW *Environmental Incident Procedure (EMF-FM-PR-0001)*.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Without the appropriate management of pollutants (such as fuel, chemicals or wastewater from accidental spills, and sediment from excavations and stockpiles), the Proposal has the potential to result in impacts on water quality in nearby stormwater infrastructure and watercourses. Given the minor nature of the Proposal, risks to groundwater are expected to be minimal. Appropriate control measures would limit any potential impact and ensure that any sedimentation or spills are managed appropriately.	17. A fully stocked spill kit(s) would be present at all times during construction and situated around areas of high risk (such as drains). 18. The existing drainage systems would remain operational throughout the construction phase.		
Air quality	**<u>All Sites</u>** The main air quality impacts that have the potential to occur during construction would be temporary and associated with dust generation and emissions from construction vehicles and equipment. Anticipated sources of dust and dust generating activities include: • Excavation works. • Dust generated from the loading and transfer of material to and from trucks. • Movement of construction vehicles. • Vegetation clearing.	19. Air quality management and monitoring for the Proposal would be undertaken in accordance with TfNSW's *Air Quality Management Guideline* (SD-107). 20. Methods for management of emissions would be incorporated into project inductions, training and pre-start/toolbox talks. 21. Plant and machinery would be regularly checked and maintained in a proper and efficient condition. Plant and machinery would be switched off when not in use, and not left idling.		

Y

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	The Proposal would have minimal impact on air quality as it would not involve extensive excavation or other land disturbance with the potential to generate significant quantities of dust. The operation of plant, machinery and trucks may also lead to increases in exhaust emissions in the local area however these impacts would be minor and short term. Sources of a reduction to air quality associated with the Proposal are considered to be able to be appropriately managed with the implementation of standard mitigation measures.	22. Vehicle and machinery movements during construction would be restricted to designated areas and sealed/compacted surfaces where practicable. 23. To minimise the generation of dust from construction activities, the following measures would be implemented: - apply water (or alternative measures) to exposed surfaces (e.g. unpaved roads, stockpiles, hardstand areas and other exposed surfaces) - cover stockpiles when not in use, appropriately cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading - prevent mud and dirt being tracked onto sealed road surfaces.		
Noise and vibration	Construction works would take about 12 - 18 months from about mid 2022 to about the end of 2023.	24. Prior to any works outside of standard construction hours an Out of Hours	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Kembla Grange Works would be undertaken over about four weekend possessions as well as during standard construction hours (7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday), including occupation of the construction compound/laydowns. To assess construction noise and vibration impacts a Construction Noise and Vibration Impact Assessment (CNVIA) was prepared (Appendix E). The Proposal's locality is considered suburban/urban, accordingly Rating Background Levels (RBLs) of Day 45, Evening 40 and Night 35 have been adopted in accordance with the TfNSW Construction Noise and Vibration Strategy (CNVS). The dominant ambient noise environment is natural fauna, road traffic noise from the nearby Princes Highway, rail traffic along the South Coast rail line, and some ambient noise from nearby commercial and industrial land use. The Kembla Grange Racecourse is located near the project site. During construction, noise and vibration impacts would be caused by construction plant and machinery, as well as vehicles. **Construction Noise**	Work application form would be prepared and submitted to TfNSW for approval. 25. The community and relevant stakeholders would be notified at least 7 days prior to commencement of construction, unless otherwise agreed with TfNSW Community and Place team. 26. Standard and additional construction noise and vibration mitigation would be carried out in accordance with TfNSW's *Construction Noise and Vibration Strategy* (CNVS). Standard mitigation measures apply at all times where airborne Noise Management Level (NML) exceedances are predicted. 27. Attended noise monitoring would be undertaken where OOHWs are anticipated to be in close proximity to noise sensitive receivers: - along the rail corridor between Kembla Grange and Brownsville		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	There are no residential receivers predicted to exceed noise levels of 75 dBA $L_{eq,15min}$ (highly noise affected). Some commercial and/or industrial receivers are anticipated to experience high noise during some high impact works such as concreting works. About 94 residential properties are predicted to exceed the sleep disturbance criterion of the prevailing background noise level +15 dB. These properties are concentrated in Brownsville. No residential receivers are predicted to experience night time external $L_{A1,1minute}$ noise levels exceeding 65 dBA L_{max} resulting in the probability of at least one (1) sleep awakening event per night. Up to 10 properties are predicted to trigger respite offers during works occurring in the Sunday Evening period. These are located within the locality of Kembla Grange and Brownsville. There are no residential premises triggered for any alternative accommodation. **Construction Traffic** Construction related traffic is not anticipated to have any impact to receivers as the project location passes near the Princes Highway. Construction traffic would utilise the Highway as the main thoroughfare to the site.	- along the rail corridor between Yallah/Haywards Bay and Albion Park localities - along the corridor in Flinders (where feasible). 28. In the event of noise or vibration complaints or adverse community comments or concerns: - Attended noise monitoring would be undertaken in accordance with the relevant standards, policies and guidelines - NML or sleep disturbance exceedances would be responded to through review of equipment on site - Review of implemented mitigation (standard and project specific if relevant) - Review of sensitive-land use specific mitigation measures (if relevant) - Review of feasible and reasonable mitigation		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Vibration The Proposal is not anticipated to include any vibration intensive plant, however bored piling works are anticipated to be undertaken at some locations within the rail corridor. Where any vibration intensive plant is anticipated to be operated within close proximity to Kembla Grange Station, vibration monitoring would be required to establish that the vibration levels from the works are operating within the safe values for the works prescribed. **Ground-borne Noise** No impacts are expected from ground-borne noise given no high-vibration intensive equipment would be used. **<u>Albion Park</u>** Works would be undertaken over about five weekend possessions as well as during standard construction hours, including occupation of the construction compound/laydowns. To assess construction noise and vibration impacts a CNVIA was prepared (Appendix E). The Proposal's locality is considered a mixture of suburban/urban and urban. Accordingly RBLs of Day 45, Evening 40 and Night 35 for suburban/urban and RBLs of	29. Vibration monitoring would be undertaken: - In the event of any one adverse community comment, complaint, or concern - Where any vibration intensive plant or equipment no longer operates within the prescribed safe working distances - Where any dilapidation report outlines conditional concerns for any structure, including heritage structures, and, where any vibration intensive plant or equipment no longer operates within the prescribed safe working distances of those structures. 30. Where bored piling works would take place near Kembla Grange Station, vibration monitoring would be undertaken to establish the vibration levels from the activity and ensure the vibration from the activity is within the safe limits.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Day 50, Evening 45 and Night 40 for urban have been adopted in accordance with the TfNSW CNVS. The dominant ambient noise environment is considered to be natural fauna, road traffic noise from the nearby Princes Motorway (Albion Park by-pass), Princes Highway and rail traffic along the South Coast rail line. Additionally, ambient noise from nearby commercial land use may be present within the area, as well as easterly winds from the nearby Haywards Bay and Koona Bay. During construction, noise and vibration impacts would be caused by construction plant and machinery, as well as vehicles. **Construction Noise** Most of the noise levels are anticipated to be concentrated to the first row of housing along both the east and west sides of the corridor. Noise spread would be due to the lack of natural barriers as the terrain is relatively flat. There are eight residential receivers predicted to exceed noise levels of 75 dBA $L_{eq,15min}$ (highly noise affected). These properties are located by the Haywards Bay Dr overbridge, Shearwater Boulevard, and one property located on Bateman Avenue.	31. At Albion Park a noise monitoring program would be implemented to confirm the anticipated construction traffic noise impact, with additional operator attended monitoring prior to site occupation to establish the existing ambient noise environment and determine if the predicted traffic noise levels are below the existing ambient noise levels during works. Noise monitoring during route use would be undertaken to establish the impact of construction traffic where ambient monitoring shows exceedances of the screening criteria (i.e. existing ambient + 2.1 dB). Where monitoring of construction traffic shows exceedances of the screening criteria additional mitigation measures would be considered, where feasible and reasonable, including: - Alternative route or access points to the corridor - Community notifications		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	About 716 residential properties are predicted to exceed the sleep disturbance criterion of the prevailing background noise level +15 dB. About 184 residential receivers are predicted to experience night-time external $L_{A1,1minute}$ noise levels exceeding 65 dBA L_{max} resulting in the probability of at least one (1) sleep awakening event per night. About 332 properties are triggered for respite offer during works occurring in the Sunday evening period. About 72 residential properties are triggered for alternative accommodation during most of the Sunday Evening (35) and weekday/Saturday/Sunday (72) night-time works. As the works are linear and would be concentrated at specific locations at any one point in time, respite offers and alternative accommodation would likely be required for fewer properties than the numbers presented above for any one work period. OOHWs would be subject to future noise modelling of specific activities and OOHW applications submitted to TfNSW for approval prior to works commencing. These future OOHWs applications would determine the final number of residential premises triggered for respite offers and/or alternative accommodation for each occasion of OOHWs.	- No local road use during the night-time period - Deliveries and truck use scheduled during the daytime period. 32. At Croom, an inclusive noise monitoring program would be undertaken including verification monitoring and truck noise. 33. At Albion Park, community notifications would be required where bored piles are located within 20 m of any residential premises and verification monitoring would be undertaken in response to complaints of regenerated noise.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Construction Traffic The predicted construction traffic noise level indicates exceedances of the local road traffic noise targets by up to 10 dB during the daytime, and up to 15 dB during the night-time. However, the existing traffic noise levels have not been ascertained, therefore it's difficult to determine if the predicted level exceeds the existing level by 2 dB. The presence of the existing rail line which includes passenger service rolling stock would have already existing relatively higher noise levels for receivers along the corridor. Therefore, it is reasonable to conclude that the predicted truck noise levels are not anticipated to have any impact to the receivers in which a 2 dB increase above existing noise levels would be noticeable. The screening assessment is considered worst-case, however inconclusive as to the potential impact from any additional construction traffic. Appropriate mitigation measures in the form of noise monitoring would be carried out to confirm if construction traffic noise levels would result in exceedances and require further mitigation. **Vibration** No vibration impacts are anticipated due to the lack of vibration-intensive machinery or plant proposed for use.			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	The likelihood of any adverse vibration related comment from within the community is unlikely. Truck use along the rail corridor would be the most vibration generating activity and is predicted to comply with the maximum night time value. Vibration levels from piling works are predicted to comply with the guideline values and no impacts to the heritage Dairy Factory are anticipated. **Ground-borne Noise** Vibration from bored piling works has the potential to produce regenerated ground-borne noise at some premises within 20 m from the rail corridor. Mitigation measures including, notifications and vibration monitoring in response to any complaints would adequately manage any impacts. **Croom** Works would be undertaken over about one weekend possession Saturday day shift, both within and outside standard construction hours. Plant and equipment may be delivered to the rail corridor or adjacent streets prior to the possession and demobilised after the possession. To assess construction noise and vibration impacts a CNVIA was prepared (Appendix E).			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	The Proposal's locality is considered suburban/urban, accordingly RBLs of Day 45, Evening 40 and Night 35 have been adopted in accordance with the TfNSW CNVS. The dominant ambient noise environment is considered to be natural fauna, road traffic noise from the nearby Princes Highway, rail traffic along the South Coast rail line, and some ambient noise from nearby Albion Park Quarry industrial land use may be present within the area. During construction, noise and vibration impacts would be caused by construction plant and machinery, as well as vehicles. **Construction Noise** Noise impacts are concentrated to residential receivers located along Whittaker Street and Bush Street. These properties shield residential receivers to the north and southeast. The proposed anchor weight adjustment works are not anticipated to have any meaningful noise impacts. Some short-term noise impacts are anticipated at residential receivers within close proximity to the works in which the use of trucks and one telehandler is proposed for use at a single location.			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Generally, project notification and verification monitoring additional noise mitigation measures are triggered during OOH daytime works. Three residential properties are triggered for respite offers. While the Proposal would be undertaken within a single day, additional mitigation such as respite offers may not be necessarily feasible or reasonable given the short-duration of the works. **Construction Traffic** The predicted construction traffic noise level indicates exceedances of the local road traffic noise targets, however the existing traffic noise levels have not been ascertained, therefore it's difficult to determine if the predicted level exceeds the existing level by 2 dB. The nearby Princes Highway would contribute to the ambient noise environment and would likely have existing noise levels close to the predicted construction traffic noise levels. There is no anticipated 2 dB screening level increase, and no impact is anticipated. As works are only anticipated to be undertaken during a single day, an inclusive noise monitoring may be implemented to confirm construction noise levels, and, construction traffic (if applicable).			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Vibration No vibration impacts are anticipated due to the lack of vibration-intensive machinery or plant proposed for use. **Ground-borne Noise** No impacts are expected from ground-borne noise given no high-vibration intensive equipment would be used. **All Sites** OOHWs would be subject to future noise modelling of specific activities and OOHW applications submitted to TfNSW for approval prior to works commencing. These future OOHWs applications would determine the final number of residential premises triggered for respite offers and/or alternative accommodation for each occasion of OOHWs.			
Aboriginal heritage	**All Sites** Construction of the Proposal would involve minor excavation, including for OHW footings, DC feeders and clearing of vegetation. Ground disturbing activities and vegetation clearing have the potential to impact Aboriginal sites, if present. **Kembla Grange**	34. All construction staff would undergo an induction in the recognition of Aboriginal cultural heritage material. This training would include information such as the importance of Aboriginal cultural heritage material and places to the Indigenous community, as well as the legal implications of removal, disturbance and damage to any	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Searches of the AHIMS register on 9 June 2022 (Appendix G) did not identify any Aboriginal heritage items within the area of the Proposal. Construction of the Proposal would have the potential to impact on previously unrecorded Aboriginal heritage items. However, the potential for such items is considered to be low due to the previous use and disturbance of the area. **<u>Albion Park</u>** Searches of the AHIMS register on 21 June 2022, completed as part of the preparation of the Aboriginal Due Diligence Assessment (Appendix G), identified two registered Aboriginal sites within 50 metres of the eastern boundary of the Proposal area. The Aboriginal Due Diligence Assessment concluded the Proposal area had low potential for Aboriginal archaeological objects in the locations of the proposed works. No Aboriginal objects or sites were identified during the site inspection. The proximity of the Proposal area to Lake Illawarra and various creeks and backswamps suggest that Aboriginal people would have had access to a number of water sources close by. However, broad rail infrastructure disturbances and the isolated disturbances related to the existing infrastructure to be upgraded and expanded, including targeted vegetation	Aboriginal cultural heritage material and sites. Training would also cover content within the TfNSW *Unexpected Heritage Finds Guideline* (SD- 115). 35. If unforeseen Aboriginal objects are uncovered during construction, the procedures contained in TfNSW's *Unexpected Heritage Finds Guideline* (SD- 115) would be followed and works within the vicinity of the find would cease immediately. The Contractor would immediately notify the TfNSW Project Manager and TfNSW Senior Environment and Sustainability Officer so they can assist in co-ordinating next steps which are likely to involve consultation with an Aboriginal heritage consultant, Heritage NSW and the Local Aboriginal Land Council. If human remains are found, work would cease, the site secured and the NSW Police and the Heritage NSW would be notified. Where required, further archaeological investigations and an Aboriginal Heritage		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	clearance and previous non-destructive digging excavations, would have likely removed or caused the displacement of any archaeological deposits which may have been located within the areas of proposed works across the Proposal area. Therefore, no further archaeological work is required due to the Proposal area being assessed as having low archaeological potential. **Croom** A search of the AHIMS register on 9 June 2022 (Appendix G) did not identify any Aboriginal heritage items within the area of the Proposal. As the Proposal does not involve excavation and is located in disturbed land, impacts to previously unrecorded Aboriginal heritage items would be unlikely.	Impact Permit would be obtained prior to works recommencing at the location.		
Non-Aboriginal heritage	**Kembla Grange** A Statement of Heritage Impact (SoHI) (Appendix F) has been prepared for the Proposal. The Proposal would take place within the curtilage of Kembla Grange Racecourse Railway Station, which is listed on the TAHE Section 170 Heritage and Conservation Register and Wollongong LEP. The component of the Proposal within the curtilage of the Kembla Grange Racecourse Station heritage item would be limited to like for like replacement of OHW.	36. A heritage induction would be provided to workers prior to construction, informing them of the heritage values of the Proposal area and the guidelines to follow if unanticipated heritage items or deposits are located during construction. 37. In the event that any unanticipated archaeological deposits are identified within the project site during construction, the procedures contained in TfNSW's *Unexpected Heritage Finds*	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Works outside the curtilage would consist of electrical upgrades consistent with the existing infrastructure. Therefore, the Proposal would not impact the heritage significance of the item. The Proposal area was assessed as having a low archaeological potential. **Albion Park** The Proposal would include access via an existing Sydney Trains access gate on Creamery Road which is adjacent to the Albion Park Dairy (former) which is listed on the Transport Asset Holding Entity (TAHE) Section 170 Heritage and Conservation Register, and the Shellharbour LEP 2013. No impacts would occur to the heritage item. The Proposal area has been the subject of past disturbance from the construction and operation of the rail line and as such would have low archaeological potential. **Croom** The Proposal would take place in the vicinity of Memorial Norfolk Island Pine Trees and St Ives and Fig Trees which are located on the southwest side of the Princes Highway and listed on the Shellharbour LEP 2013. The Proposal would not have any direct or indirect impacts on the listed heritage items. The Proposal area has been the subject of past disturbance from the	*Guideline* (SD- 115) would be followed and works within the vicinity of the find would cease immediately. The Contractor would immediately notify the TfNSW Project Manager and the TfNSW Senior Environment and Sustainability Officer so they can assist in co-ordinating the next steps which are likely to involve consultation with an Archaeologist and Heritage NSW. Works in the vicinity of the find would not recommence until clearance has been received by TfNSW. Where required, further archaeological work and/or consents would be obtained for any unanticipated archaeological deposits prior to works recommencing at the location.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	construction and operation of the rail line and as such would have low archaeological potential.			
Community, Social and Economic	The Proposal has the potential to temporarily impact the surrounding community as a result of: • Increased truck movements delivering materials and equipment and transporting waste, including via private property at [redacted], Albion Park Rail and private land on the northern side of Macquarie Rivulet owned by RCL Group Pty Ltd. • Construction amenity impacts such as noise, vibration, dust and visual impacts. The above impacts on the community are expected to be relatively short term in nature given much of the Proposal would be completed in possessions. The landowner of [redacted], Albion Park Rail and RCL Group Pty Ltd agreed to initial access for testing works and would be consulted on an ongoing basis prior to any future access.	38. Sustainability criteria for the Proposal would be established to encourage the Contractor to purchase goods and services locally, helping to ensure the local community benefits from the construction of the Proposal. 39. A Community Liaison Management Plan would be prepared prior to construction to identify all potential stakeholders and best practice methods for informing these groups of upcoming work during construction. 40. Contact details for a 24-hour construction response line, Project Infoline and email address would be provided for ongoing stakeholder contact throughout the construction phase. 41. The community would be kept informed of construction progress, activities and impacts in accordance with the	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
		Community Liaison Management Plan to be developed prior to construction. 42. Consultation would be undertaken on an ongoing basis with RCL Group Pty Ltd and the landowners of [redacted] to secure landowner's consent prior to each phase of the works requiring access across their private land.		
Traffic	**<u>All Sites</u>** Traffic generated by construction activities for the Proposal would include heavy vehicles associated with construction plant, deliveries and removal of materials along with light vehicles used by construction workers for transport. Construction traffic would generally park within the rail corridor and construction compounds for the duration of the works. **<u>Kembla Grange</u>** About 30 site vehicle movements would be required per day during possessions, with about 20 vehicle movements required outside possessions. The site would be accessed via existing Sydney Trains access gates on West Dapto Road, the Kembla Grange	43. Prior to the commencement of construction, a Traffic Management Plan (TMP) would be prepared as part of the CEMP and would include at a minimum: - ensuring adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised - maximising safety and accessibility for pedestrians and cyclists	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Station carpark and the Princes Highway, as outlined in Appendix B. For the majority of the works program these vehicle movements are not expected to adversely impact local traffic or vehicle flows. However, the Proposal would involve minor impacts to the level crossing on West Dapto Road, Kembla Grange to enable OHW works to proceed. The road would be closed for about one weekend possession with a diversion in place via Darkes Road. Appropriate traffic control plans and mitigation measures would be implemented to minimise impacts. Wollongong City Council responded to TfNSW's Transport and Infrastructure SEPP Consultation that for the majority of instances they don't have concerns regarding the closure of West Dapto Road on weekends. However, if a weekend closure coincided with the Macedonian All Souls Day (held three times a year on various dates) then the impact would be significant as Council has between 600-1000 cars visit the Lawn Cemetery on these days. Dates do not get confirmed until closer to the date however in the past they have occurred at the beginning of June (2022 was on the 11th), November and March. TfNSW would consider these	- ensuring adequate sight lines to allow for safe entry and exit from the site - ensuring access to railway stations, businesses, entertainment premises and residential properties (unless affected property owners have been consulted and appropriate alternative arrangements made) - parking locations for construction workers away from stations and busy residential areas and details of how this would be monitored for compliance - routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses. - measures to manage traffic flows around the area affected by the Proposal, including as required regulatory and directional signposting, line marking and variable message signs and all other		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	events when scheduling their weekend road closure to avoid impacts, where reasonable and feasible. Additionally, construction traffic is not anticipated to impact public transport including local bus routes or train replacement buses. Pedestrian access would not be impacted except during the temporary closure of the level crossing. There would be no impacts to commuter carparks or street parking as construction vehicles would park within the rail corridor and at the designated construction compound. **<u>Albion Park</u>** About 30 site vehicle movements would be required per day during possessions, with about 20 vehicle movements required outside possessions. The site would be accessed via existing Sydney Trains access gates on Riverside Crescent, Princes Motorway, Shearwater Boulevarde and Creamery Road, as well as access across private land from [redacted] and access across RCL Group Pty Ltd land to the north of Macquarie Rivulet, as outlined in Appendix B. The landowner of [redacted], Albion Park Rail and RCL Group Pty Ltd agreed to initial access for	traffic control devices necessary for the implementation of the TMP. - Consultation with the relevant roads authorities would be undertaken during preparation of the construction TMP. The performance of all project traffic arrangements must be monitored during construction. 44. Communication would be provided to the community and local residents to inform them of changes to pedestrian access and/or traffic conditions including vehicle movements and anticipated effects on the local road network relating to site works. 45. Consultation would be undertaken on an ongoing basis with RCL Group Pty Ltd and the landowners of [redacted] to secure landowner's consent prior to each phase of the works requiring access across their private land 46. Road Occupancy Licences for temporary road closures would be obtained, where required.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	testing works and would be consulted on an ongoing basis prior to any future access. These vehicle movements are not expected to adversely impact local traffic or vehicle flows. Additionally, construction traffic is not anticipated to impact public transport including local bus routes or train replacement buses. Pedestrian access would not be impacted. There would be no impacts to commuter carparks or street parking as construction vehicles would park within the rail corridor and at the designated construction compound. **Croom** About 10 site vehicle movements would be required for the day of works during the possession. About 1 truck movement would be required prior to, and following, the possession to deliver the telehandler via flatbed truck. The site would be accessed via existing Sydney Trains access gates on College Avenue, as outlined in Appendix B. These vehicle movements are not expected to adversely impact local traffic or vehicle flows. Additionally, construction traffic is not anticipated to impact public transport including local bus routes or train replacement buses. Pedestrian access would not be impacted. There would be no impacts to	47. TfNSW would consider the Macedonian All Souls Day (held three times a year on various dates) when scheduling the closure of West Dapto Road to avoid impacts, where reasonable and feasible.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	commuter carparks or street parking as construction vehicles would park within the rail corridor.			
Waste	**<u>All Sites</u>** The construction of the Proposal would generate the following waste: - NDD liquid waste - excavation spoil - excess concrete/concrete washout - various building material waste offcuts (metals, timbers, plastics, etc) - electrical wiring and conduit wastes (from electrical connections) - green waste from vegetation removal - general waste, including food and other wastes generated by construction workers. Waste management would be undertaken in accordance with the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act). A Waste Management Plan would be prepared that would identify all potential waste streams associated with the works and outline methods of disposal of waste that cannot be reused or recycled at appropriately licensed facilities along with other onsite	48. The CEMP and Waste Management Plan would address waste management and would at a minimum: - identify all potential waste streams associated with the works and outline methods of disposal of waste that cannot be reused or recycled at appropriately licensed facilities - detail other onsite management practices such as keeping areas free of rubbish - specify controls and containment procedures for hazardous waste and asbestos waste - outline the reporting regime for collating construction waste data. 49. All spoil and waste would be classified in accordance with the *NSW EPA Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) prior to disposal at a licensed facility.	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	management practices such as keeping areas tidy and free of rubbish. Waste management targets would be developed for the Proposal through the application of the TfNSW *Sustainable Design Guidelines – Version 4.0*. These targets would include reuse and recycling.	50. Any concrete washout would be established and maintained in accordance with TfNSW's *Concrete Washout Guideline* (SD-112) with details included in the CEMP and location marked on the ECM.		
Visual	**All Sites** Construction works would result in temporary visual impacts which may extend beyond the Proposal site. Visual impacts would be limited given the works would be temporary in nature and much of the work would be completed in possessions. Impacts may include the presence of hoarding, construction vehicles, equipment and workers, including vehicles travelling to and from site on the surrounding roads.	51. Temporary hoardings, barriers, traffic management and signage would be removed when no longer required.	Y	
Urban design	N/A	N/A	Y	
Geotechnical	**All Sites** The construction of the Proposal would not result in any geotechnical impacts and therefore, mitigation measures are not required	N/A	Y	
Land use	**All Sites**	52. Consultation would be undertaken on an ongoing basis with RCL Group Pty Ltd	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	The Proposal would not result in any property acquisition. The Proposal is primarily within the rail corridor on TAHE land, with some access via private land from [redacted] and access across RCL Group Pty Ltd land to the north of Macquarie Rivulet at Albion Park. The landowner of [redacted]e, Albion Park Rail and RCL Group Pty Ltd agreed to initial access for testing works and would be consulted on an ongoing basis prior to any future access.	and the landowners of [redacted] to secure landowner's consent prior to each phase of the works requiring access across their private land.		
Risk	**<u>All Sites</u>** The construction of the Proposal would not result in any additional risk over and above the currents risks present and therefore, mitigation measures are not required. The risk of unexpected finds are addressed above.	N/A	Y	
Climate Change	**<u>All Sites</u>** Construction of the Proposal would result in a minor contribution of greenhouse gas emissions associated with the operation of plant and machinery, including those used for transportation of material and personnel to the site.	53. A climate change risk assessment (limited to a climate change prescreening using TfNSW CRA tools) would be undertaken to address climate change risk and adaptation measures addressed in the design and operation.	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	Climate change risk will be managed in accordance with the Transport Strategic Risk Management Plan – Climate Change Due to the scale and temporary nature of the construction works, the Proposal would not result in any additional risk of climate change impacts over and above the current risks and therefore, mitigation measures are not required during construction. Climate adaptation measures will be adopted in the design and operation.			
Sustainability	Sustainability of the Proposal would be managed in accordance with the TfNSW *Sustainable Design Guidelines – Version 4.0*. Consistent with the Future Transport Strategy 2056, Transport is committed to managing impacts on the environment and operating in an environmentally sustainable manner. These commitments are set out in the Transport Environment and Sustainability Policy. The proposal is being developed and would be delivered in accordance with Transport's Sustainability Plan including Transport's vision - that every journey is people and planet positive. The Transport approach is to drive sustainability through eight key focus areas. These key focus areas and the	54. The Proposal would be designed and managed in accordance with the TfNSW Sustainable Design Guidelines – Version 4.0 and achieve a minimum Pass rating. 55. A suitably qualified and experienced Sustainability Manager who is responsible for implementing the sustainability objectives for the Project must be nominated by the design Contractor. The nominated Sustainability Manager is to be endorsed by the Director Sustainability (DS) or delegate. 56. A Sustainability Management Plan (SMP) would be prepared and submitted by the	Y	

	Sustainability Plan goals are aligned with the United Nations Sustainable Development Goals (UNSDGs) as part of best practice sustainability approaches. The Proposal would be designed and managed in accordance with the TfNSW *Sustainable Design Guidelines – Version 4.0*. The Guidelines 'seek to deliver sustainable development practices by embedding sustainability initiatives into the planning, design, construction, operations and maintenance of transport infrastructure projects', grouping sustainability into seven key themes: energy and greenhouse gases; climate resilience; materials and waste; biodiversity and heritage; water; pollution control; and community benefit.	design contractor to the SMS (or delegate) for approval at least 14 days prior to site mobilisation or unless otherwise agreed with DS or delegate.		
Soils and Contamination	**<u>All Sites</u>** Railway corridors have the potential to contain various contaminated materials from historical and operational sources. Such sources relate to the long-term operation of the railway and the history of nearby contaminating activities. Possible sources of contamination may include: • leaks and spills from fuels, oils, solvents and lubricants • stockpiles of waste materials	57. An appropriate Unexpected Finds Protocol, considering asbestos containing materials and other potential contaminants, would be included in the CEMP. Procedures for handling asbestos containing materials, including licensed contractor involvement as required, record keeping, site personnel awareness and waste disposal to be undertaken in accordance with SafeWork NSW requirements.		

Y

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	• uncontrolled fill material • fuels, oils, wash down solvents, lead and asbestos fines from former train brakes • heavy metals • pesticides associated with insect and weed control. **Kembla Grange** A search of the NSW EPA contaminated land register was undertaken on 6 June 2022 and did not identify any contaminated sites in the vicinity of the Proposal. A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022 and identified the following contaminated sites near the area of the Proposal: - ShawCor Australia at 66 West Dapto Road Kembla Grange Given the Proposal is about 200m from ShawCor Australia, impacts from this site are unlikely. The northern portion of the Proposal area is mapped as Class 5 ASS and the southern portion of the Proposal area is mapped as Class 4 ASS in the Wollongong LEP 2009. As the Proposal involves minimal excavation and would not lower the	58. All spoil to be removed from site would be tested to confirm the presence of any contamination. Any contaminated spoil would be disposed of at an appropriately licensed facility. 59. At Albion Park, ASS testing would be completed and/or an ASS Management Plan would be prepared and implemented, in consultation with an appropriately qualified Environmental Consultant. 60. If indicators of ASS, such as sulfurous (rotten egg) smell, milky blue/green water, jarosite (a pale-yellow mineral deposit) or iron oxide (rusty) mottling, extensive iron stains on drain surfaces or iron-stained runoff and ochre deposits, are encountered during the works, the works would cease and appropriate testing conducted to determine the presence of ASS. An ASS Management Plan would be prepared if ASS is present to detail appropriate management measures.		

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	watertable on adjacent Class 1, 2, 3 or 4 land, impacts from ASS are unlikely. **Albion Park** A search of the NSW EPA contaminated land register was undertaken on 6 June 2022 and identified the following contaminated sites near the Proposal: - Tallawarra Power Station Site A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022 and identified the following contaminated sites near the area of the Proposal: - Caltex Service Station at 174 Princes Highway Albion Park Rail - Former Timber Storage Area at 36 Rivulet Crescent Albion Park Rail The Tallawarra Power Station site and the Caltex Service Station are both about 200m from the Proposal, therefore impacts from these sites would be unlikely. The Former Timber Storage Area is adjacent to the rail corridor and about 100m from the Albion Park Substation, therefore there is some potential for impacts, however migration of contamination offsite is unlikely given the EPA concluded the site did not			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	require regulation under the *Contaminated Land Management Act 1997*. An Unexpected Finds Procedure would adequately manage the risk. The area of the Proposal north of Macquarie Rivulet is mapped as Class 2, 3 and 5 ASS in Wollongong LEP 2009. The area of the Proposal south of Macquarie Rivulet is mapped as Class 3 and Class 4 ASS in Shellharbour LEP 2013. Macquarie Rivulet and Albion Creek that intersect the Proposal area are mapped as Class 1 ASS in Shellharbour LEP 2013. However, no works would take place within these Class 1 ASS mapped areas. ASS may be encountered during the works, however this would be adequately managed with the implementation of an Unexpected Finds Procedure, soil testing and/or an ASS Management Plan in consultation with an appropriately qualified Environmental Consultant. **Croom** A search of the NSW EPA contaminated land register was undertaken on 6 June 2022 and did not identify any contaminated sites in the vicinity of the Proposal. A search of the list of the NSW contaminated sites notified to the EPA was undertaken on 6 June 2022			

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	and did not identify any contaminated sites in the vicinity of the Proposal. The area of the Proposal is not mapped as ASS in Shellharbour LEP 2013.			
Cumulative impacts	**Kembla Grange** A search of the Department of Planning and Environment's (DPE) Major Projects Register on 9 June 2022 identified a number of major projects associated with Wollongong City Council's Whytes Gully Waste Facility located on Reddalls Road, Kembla Grange, and Kembla Grange Resource Recovery Facility located at 50 Wyllie Road Kembla Grange, in close proximity to the Proposal area. **Albion Park** A search of the DPE Major Projects Register on 9 June 2022 identified one major project, the Albion Park Rail Bypass, in the vicinity of the Proposal. **Croom** A search of the DPE Major Projects Register on 9 June 2022 did not identify any major projects in the vicinity of the Proposal. **All Sites**	61. Works associated with the Proposal would be coordinated, as required, with construction activities nearby.	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction if control measures implemented	Proposed Control Measures	Endorsed [for Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
	During construction, the works would be coordinated with other construction activities in the area where feasible.			
Management and mitigation measures	The Transport for Tomorrow MTMS Construction Environmental Management Plan (CEMP) would be updated to identify appropriate mitigation measures to manage the Proposal.	62. The Transport for Tomorrow MTMS Construction Environmental Management Plan would be updated to identify appropriate mitigation measures to manage the Proposal for approval by the TfNSW Senior Manager Environment and Sustainability. 63. An Environmental Control Map would be prepared by the construction contractor in accordance with the TfNSW *Guide to Environmental Control Map* - DMS-SD-015 for approval by the TfNSW Senior Manager Environment and Sustainability and updated following any revisions made throughout construction. 64. Any modifications to the Proposal, if approved, would be subject to further assessment and approval by TfNSW. This assessment would need to demonstrate that any environmental impacts resulting from the modifications have been minimised.	Y	

Impact Assessment - Operation

Aspect	Nature and extent of impacts (negative and positive) during operation	Proposed Control Measures	Endorsed [Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
Flora and fauna	There are no anticipated impacts to flora and fauna during operation of the Proposal.	N/A	Y	
Water	There would be no increased risks to surface water or groundwater from the operation of the Proposal. Impacts to and from flooding from the minor filling works at Albion Park would be negligible.	N/A	Y	
Air quality	There are no anticipated impacts to air quality during operation of the Proposal.	N/A	Y	
Noise vibration	There are no anticipated impacts to noise and vibration during operation of the Proposal.	N/A	Y	
Aboriginal heritage	There are no anticipated impacts to Aboriginal Heritage during operation of the Proposal.	N/A	Y	
Non-Aboriginal heritage	There are no anticipated impacts to Non-Aboriginal Heritage during operation of the Proposal.	N/A	Y	
Community, Social and Economic	There are no anticipated community, social or economic impacts during operation of the Proposal.	N/A	Y	
Traffic	There are no anticipated impacts to traffic during operation of the Proposal.	N/A	Y	
Waste	There are no anticipated waste impacts during operation of the Proposal.	N/A	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation	Proposed Control Measures	Endorsed [Rail Development and Delivery, E&S Branch use only]	
			Y/N	Comments
Visual	As the new electrical infrastructure would be similar to the existing electrical infrastructure in the areas of the Proposal there would be no anticipated visual impacts from the new infrastructure during operation.	N/A	Y	
Urban design	N/A	N/A	Y	
Geotechnical	There are no anticipated geotechnical impacts during operation of the Proposal.	N/A	Y	
Land use	The operation of the Proposal would not result in any change to the current land use and therefore, mitigation measures are not required.	N/A	Y	
Risk	The operation of the Proposal would not result in any additional risk over and above the currents risks present and therefore, mitigation measures are not required.	N/A	Y	
Climate Change	The Proposal would not result in any additional risk from climate change impacts over and above the current risks. Climate change impacts across the network would be managed in accordance with the Transport Strategic Risk Management Plan – Climate Change.	N/A	Y	
Sustainability	There are no anticipated sustainability impacts during operation of the Proposal.	N/A	Y	
Other	N/A	N/A	Y	
Management and mitigation measures	N/A	N/A	Y	

Are you confident that the impacts of the activity are known and understood?		
Are you confident that the impacts of the activity can be managed so as not to have an adverse impact?		
I certify that to the best of my knowledge this EIA checklist: • examines and takes into account alto the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the project; and • is accurate in all material respects and does not omit any material information.		
Name [redacted] Title [redacted]	Signature [redacted]	Date 31/8/2022
Name [redacted] Title [redacted]	Signature [redacted]	Date
Name [redacted] Title [redacted]	Signature [redacted]	Date
Name [redacted]	Signature	Date

Title [redacted]	[redacted]	05/09/2022
Name [redacted]	Signature	Date
Title [redacted]	[redacted]	

THIS SECTION FOR RAIL DEVELOPMENT AND DELIVERY, ENVIRONMENT AND SUSTAINABILITY BRANCH USE ONLY

Project Approvals

Planning Approvals *(Refer to section 3 of the Guide to Planning and Environmental Approvals*)

Is the project a part of an activity/development which has already been approved under the EP&A Act ?

Yes ☐ If yes, does the approval need to be modified to accommodate the project? If yes, identify requirements for modification. .....

.....

No ☑ If no, is the project to be assessed under ~~Part 4~~ or Division 5.1?

If the project is to be assessed under Division 5.1, is it an activity that is likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats?

☐ Yes if yes, the project is required to be assessed under Division 5.2 .

☑ No, with the inclusion of the proposed control measures the project can be appropriately assessed under Division 5.1.

The environmental assessment has been undertaken in the context of Section 171 of the Environmental Planning & Assessment Regulation 2021 (refer to Appendix A), which includes 2 additional factors q and r.

☑ Yes

☐ No – further assessment required (planning approval cannot be granted).

Environmental Approvals *(Refer to section 2 of the Guide to Planning and Environmental Approvals)*

Identify all other approvals required for the project:

Tick appropriate box

	✓				

	[redacted]	
	[redacted]	

6 Sept. 2022

Abbreviations

Term	Meaning
AHIMS	Aboriginal Heritage Information Management System
AS	Australian Standard
APAS	Australian Paint Approval Scheme
ASS	Acid Sulfate Soils
BCA	Building Code of Australia
BC Act	*Biodiversity Conservation Act 2016* (NSW)
CEMP	Construction Environmental Management Plan
CCTV	Closed Circuit Television
DDA	*Disability Discrimination Act 1992* (Cwlth)
DES	TfNSW Director Environment & Sustainability
DPE	NSW Department of Planning and Environment
DSAPT	*Disability Standards for Accessible Public Transport (2002)*
E&S	Environment and Sustainability Branch of TfNSW
ECM	Environmental Controls Map
EMS	Environmental Management System
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
EPL	Environment Protection Licence
Heritage Act	*Heritage Act 1977* (NSW)
Transport and Infrastructure SEPP	*State Environmental Planning Policy (Transport and Infrastructure) 2021* (NSW)
LEP	Local Environmental Plan
LGA	Local Government Area
NML	Noise Management Level
NSW	New South Wales
OEH	Former NSW Office of the Environment and Heritage
PoEO Act	*Protection of the Environment Operations Act 1997* (NSW)

Term	Meaning
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory
VOC	Volatile Organic Compounds

Definitions

Term	Meaning
Concept design	The concept design is the preliminary design presented in this EIA Checklist, which would be refined by the Contractor (should the Proposal proceed) to a design suitable for construction (subject to Transport for NSW acceptance).
Construction	Includes all work in respect of the Project, other than survey, acquisitions, fencing, investigative drilling or excavation, building/road dilapidation surveys, or other activities determined by the TfNSW DES to have minimal environmental impact such as minor access roads, minor adjustments to services/utilities, establishing temporary construction compounds (in accordance with this approval), or minor clearing (except where threatened species, populations or ecological communities would be affected, unless otherwise agreed by the DES).
Contractor	The entity appointed by Transport for NSW to undertake the construction of the Proposal. The Contractor is therefore responsible for all work on the proposal, both design and construction.
Determining authority	A Minister or public authority on whose behalf an activity is to be carried out or public authority whose approval is required to carry out an activity (under Division 5.1 of the EP&A Act).
Disability Standards for Accessible Public Transport	The Commonwealth Disability Standards for Accessible Public Transport 2002 (as amended), authorised under the Commonwealth *Disability Discrimination Act 1992* (DDA).
Out of hours work	Defined as work undertaken *outside* standard construction hours (i.e. outside of 7am to 6pm Monday to Friday, 8am to 1pm Saturday and no work on Sundays/public holidays).
Proponent	A person or body proposing to carry out an activity under Division 5.1 of the EP&A Act.
The Proposal	The construction and operation of the Kembla Grange, Albion Park and Croom Electrical Upgrades.
Sensitive receivers	Land uses which are sensitive to potential noise, air and visual impacts, such as residential dwellings, schools and hospitals.

Appendix A – Consideration of Section 171

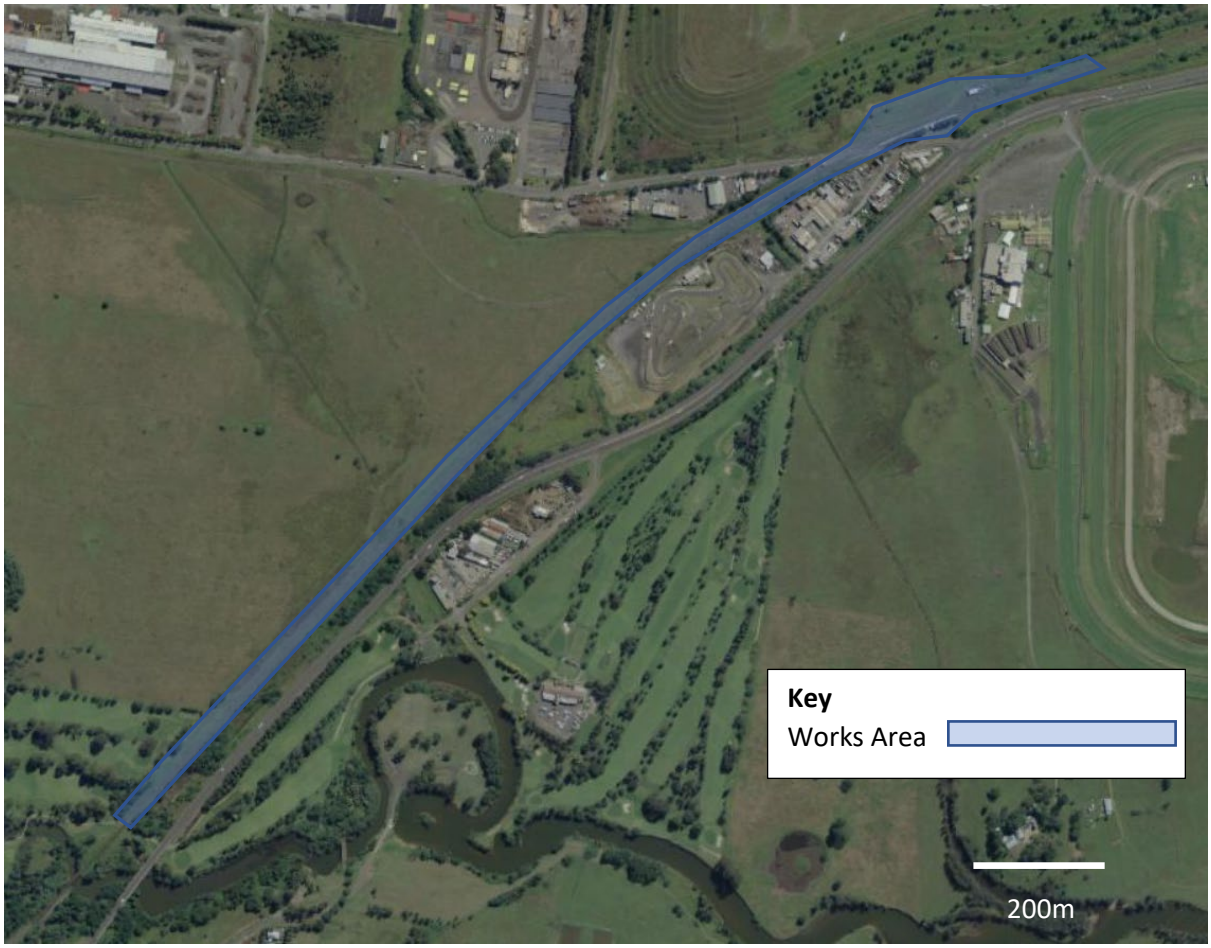
The following factors, listed in section 171 of the *Environmental Planning and Assessment Regulation 2021,* have been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impacts
(a) Any environmental impact on a community? The Proposal would result in a moderate, short term, negative impact on the community through construction noise and other potential minor impacts such as traffic and visual impacts.	Moderate Negative Short term
(b) Any transformation of a locality? The Proposal would not result in a transformation of the locality. The proposed electrical infrastructure upgrades are similar in nature to the existing electrical infrastructure.	Nil
(c) Any environmental impact on the ecosystem of the locality? The Proposal would result in minor, long term, negative impacts to the ecosystems of the localities due to the removal of vegetation. Given impacts to TECs were assessed as not being significant, and no threatened species of flora or fauna would be impacted, the impacts would be minor. The mitigation measures detailed in the Flora and Fauna section of this EIA would adequately manage the impacts.	Minor Negative Long term
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The Proposal would result in minor impacts to the aesthetic and recreational quality of the localities due to construction noise, traffic, vegetation and visual impacts.	Minor Negative Short term Long term
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? The Proposal would be undertaken within the curtilage of the Kembla Grange Racecourse Railway Station. However, works within the curtilage would be limited to like for like replacement of OHW. Works outside the curtilage would consist of electrical upgrades consistent with the existing infrastructure. Therefore, the Proposal would not impact the heritage significance of the item. Searches of the AHIMS register on 21 June 2022, completed as part of the preparation of the Aboriginal Due Diligence Assessment (Appendix G), identified two registered Aboriginal sites within 50 metres of the eastern boundary of the Proposal. The Aboriginal Due Diligence Assessment concluded the Proposal area had low potential for Aboriginal archaeological objects in the locations of the proposed works. Therefore, no further archaeological work is required due to the Proposal area being assessed as having low archaeological potential. The mitigation measures detailed in the heritage sections of this EIA would adequately manage the impacts, as well as any potential impacts from unexpected finds.	Minor Negative Short term Long term
(f) Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)? The Proposal would result in minor, long term, negative impacts on the habitat of protected fauna due to the removal of vegetation. Given impacts to TECs were assessed as not being significant, and no threatened species of flora or fauna would be impacted, the impacts would be minor. The mitigation measures detailed in the Flora and Fauna section of this EIA would adequately manage the impacts.	Minor Negative Long term
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The Proposal would not result in the endangering of any species of animal, plant or other form of life given impacts to TECs were assessed as not being significant, and no threatened species of flora or fauna would be impacted.	Nil

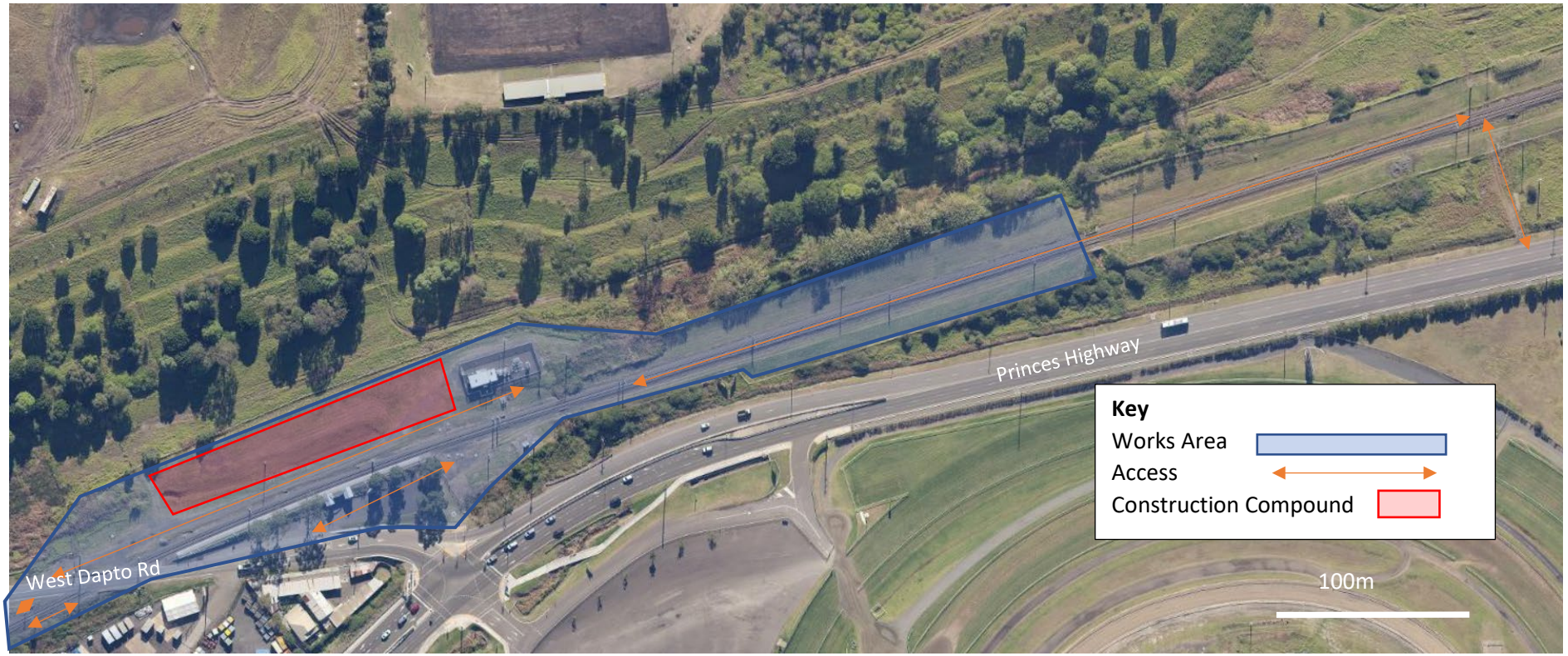
Factor	Impacts
(h) Any long-term effects on the environment? The Proposal would not have a long-term effect on the environment with implementation of the management and mitigation measures identified in the EIA.	Nil
(i) Any degradation of the quality of the environment? The Proposal would not cause any degradation in the quality of the environment with implementation of the management and mitigation measures identified EIA.	Nil
(j) Any risk to the safety of the environment? Construction of the Proposal would be managed in accordance with a CEMP to reduce any risks to the environment. The proposed construction works are of a type regularly undertaken within the rail corridor.	Minor Negative Short term
(k) Any reduction in the range of beneficial uses of the environment? The Proposal is not anticipated to cause any reduction in the range of beneficial uses of the environment.	Nil
(l) Any pollution of the environment? During construction, the Proposal has the potential to result in short-term noise, air and water pollution. These impacts would be managed in accordance with the mitigation measures outlined in the EIA.	Minor Negative Short term
(m) Any environmental problems associated with the disposal of waste? The Proposal is unlikely to result in any environmental problems associated with the disposal of waste. All waste requiring off-site disposal would be classified in accordance with the *Waste Classification Guidelines* (EPA, 2014) prior to disposal at an appropriate waste facility licenced to accept waste of the relevant classification.	Minor Negative Short term
(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The Proposal would not increase demands on resources (natural or otherwise) that are, or are likely to become, in short supply.	Nil
(o) Any cumulative environmental effect with other existing or likely future activities? The Proposal may have cumulative impacts due to the construction of other developments within the localities. These impacts are expected to be minor and would be limited to the construction phase.	Minor Negative Short term
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? The Proposal areas at Kembla Grange and Albion Park are mapped as Coastal Environment Area, Coastal Use Area and proximity to Coastal Wetlands under the State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP). Wollingurry Creek and Macquarie Rivulet intersect the Proposal area at Albion Park and are mapped as Coastal Wetlands under the Coastal Management SEPP, however no works would take place within the mapped Coastal Wetlands area. Given the minor nature of the Proposal, impacts on coastal processes and coastal hazards would be minimal and adequately managed via the mitigation measures in the EIA.	Minor Negative Short term
(q) Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1 The Proposal aligns with Section 7.1.1 Rail Transport of the *Wollongong Local Strategic Planning Statement 2020* (Wollongong City Council, June 2020) as it is a component of the MTMS program of works, which once completed would facilitate the operation of the 10-car Mariyung trains on the south coast. The Proposal aligns with actions P6.2 Public Transport and P6.6 Transport Strategy of the *Shellharbour Local Strategic Planning Statement* (Shellharbour City Council) as it is a component of the MTMS program of works, which once completed would facilitate the operation of the 10-car Mariyung trains on the south coast. The Proposal aligns with Objective 26 of the *Illawarra Shoalhaven Regional Plan 2041* (NSW Government, May 2021) as it is a component of the MTMS program of works, which once completed would facilitate the operation of the 10-car Mariyung trains on the south coast.	Moderate Positive Long term
(r) Other relevant environmental factors In considering the potential impacts of the Proposal all relevant environmental factors have been considered, refer to the Impact Assessment section of this EIA.	Nil

Factor	Impacts

APPENDIX B - Figures



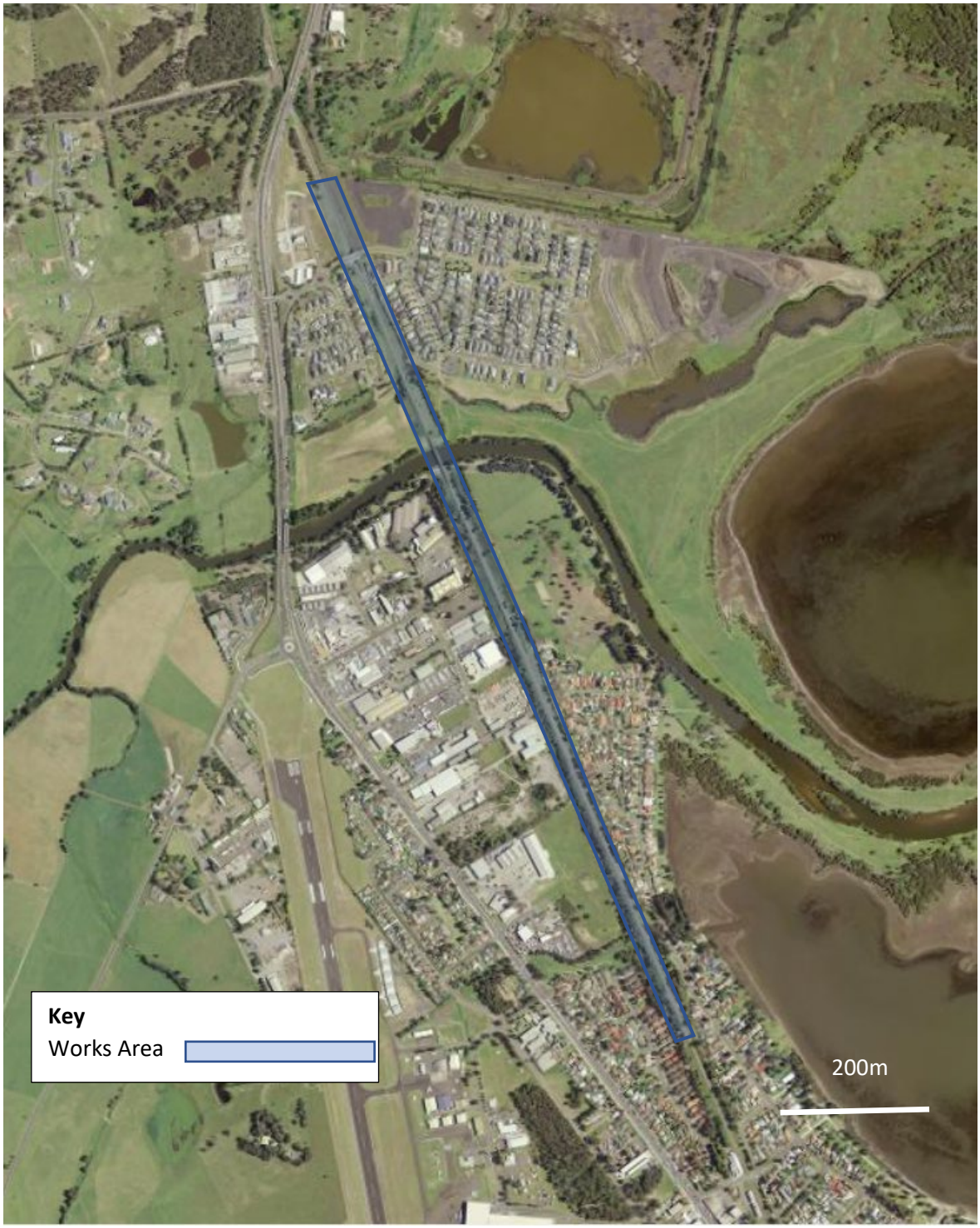
Kembla Grange Map 1



Kembla Grange Map 2

Kembla Grange Map 3

Kembla Grange Map 4



Albion Park Map 1

Albion Park Map 2

Albion Park Map 3

Albion Park Map 4

Albion Park Map 5

Albion Park Map 6

Croom Map 1